ANZICS

ANZICS Centre for Outcome and Resource Evaluation

APD Data Dictionary for Software Programmers

ANZICS CORE - ADULT PATIENT DATABASE

Version 5.6

June 2017

Note: This data dictionary represents a major revision of the ANZICS CORE Adult Patient Database minimum dataset. As such, every effort has been made to highlight changes in yellow throughout this document. Attention should be paid to the **Summary of changes in Version 5** section, this section outlines when the various changes can be implemented in local systems.

ANZICS core

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Data Collection Rules

The APD collects data on individual episodes of care in critical care units, and data submitted to the APD must comply with the APD definitions and minimum dataset (refer to Appendix A). Datasets should be exported and submitted to the APD as an excel file.

We appreciate that some of the rules/definitions within the APD data dictionary will not comply with all opinions. However we strongly suggest that it is better to comply with these rules/definitions when collecting APD data, rather than following your own personal interpretations.

What patient episodes should be included:

1. All admissions to ICU (including readmissions)
2. All admissions/readmissions to other units under the care umbrella of ICU (including HDU)

What patient episodes should be excluded:

1. Admissions to units remote from ICU which are not controlled by Intensivists or staff providing intensive care services (e.g. separate neurosurgical HDU or cardiothoracic unit)
2. Coronary care admissions to combined ICU/CCUs
3. Ward admissions
4. All admissions to ICU (or other units under the umbrella of ICU) for solitary procedures (e.g. central line insertion)

What physiological data should be included:
The data submitted should include physiological data from the first 24 hours of admission to the ICU (or umbrella unit). Data from 1 hour prior to admission may be used when no data is available from the first 24 hours of admission. Where a patient is not in ICU for a full 24 hours, only data from the time in ICU (or 1 hour prior to ICU admission when no data is available from the time in ICU) should be used.

Data that are recorded in any part of the written or electronic medical record may be used.

What constitutes the "first 24 hours"
The first 24 hours begins when the patient physically enters your ICU.

When a patient is admitted for pre-surgical preparation, the first 24 hours in your unit begins at the time of admission to your unit for the pre-surgical preparation and ends precisely 24 hours later.

When determining when the first 24 hours ends, time spent outside the unit during the first 24 hours (e.g. while undergoing surgery) is included. In this way, even if the patient spends time outside the unit during their first 24 hours of admission, the 24 hours period ends precisely 24 hours following their initial admission to your unit. As previously, if a patient is discharged from ICU before the first 24 hours finishes, only data from their time in ICU (or 1 hour prior to admission) can be used.

Data recorded during the first 24 hours while the patient is outside the unit are only valid while the patient is managed by the intensive care team (e.g. data collected during surgery, after admission to ICU but within the first 24 hours, are excluded).

Cardiac arrest and/or death – what data is valid:
In the event of a cardiac arrest during the first 24 hours in your unit, data are valid except during active internal or external cardiac massage. Variables such as heart rate, respiratory rate and mean arterial pressure can not be recorded as zero.

Patients admitted to the ICU with treatment limitations already in place or admitted to assess for organ donation or for palliative care should have physiology data collected in the same way as patients admitted for active treatment. In the event of brain death tests, data are valid up to and including the time of certification of brain death, physiology data measured and recorded after this time should be disregarded.

In the event of a formal documented decision to withdraw all active treatment after admission to the ICU, data are valid up to the time of this documented decision, physiology data measured and recorded after this time should be disregarded.

In the event of death during the first 24 hours in your unit and, in the absence of either a formal documented decision to withdraw active treatment or testing and certification of brain death, data are valid up to certification of death – agonal values are valid if charted.

Missing data
If data are missing or measurements were not made, the field should be left blank. It is accepted that for some patients, certain data elements may not be measured.

What about patients who move between ICU and HDU levels of care within the same unit:
Patients transferred between ICU and HDU levels of care within the same unit should be treated as a single admission (only entered once). The ICU admission date and time for such patients will be their initial admission to the unit, whether that be ICU or HDU, and all physiological data will come from the first 24 hours following that initial admission.

What about patients who move between separate ICU and HDU units within the same hospital:
If the HDU is separate to the ICU and run by an Intensive Care team, then patients transferred between the ICU and HDU should be coded as transfers to and from "another ICU, same hospital". Each admission to the ICU or HDU should be treated as a new admission within the Adult Patient Database, with data collected for each admission.

If the HDU is separate to the ICU and not run by an Intensive Care team then patients transferred to and from the HDU should be coded as transfers to and from "ward". Data should not be collected for patients admitted to such a HDU.

What about CCU admissions:
Data on coronary care unit (CCU) admissions should not be submitted to the APD.

APD submission File:
Submissions to the ANZICS CORE APD are based on ICU admission dates. All patients admitted to ICU within the required date range should be included in the data sent to ANZICS CORE, regardless of discharge status. It is anticipated that missing discharge dates will be updated during subsequent, overlapping data submissions.

Mandatory Fields:
The APD has 2 levels of mandatory fields – submission level: where a field must be included in your submission file (i.e., column heading must be present) but we accept that not all records will have completed data for all of these fields, and record level: where a field must be completed for every record within your submission file. The fields that are mandatory at a submission level appear in Section 2.0 (Mandatory fields), where a field is mandatory at a record level this is noted within the Value Domain Attributes of each field (see validation rules) and is also summarised in Appendix B.

Primary Risk Prediction Model: ANZROD

From April 2015, ANZICS CORE implemented the Australian and New Zealand Risk of Death (ANZROD) model as the primary risk prediction model. This model is derived using components of the APACHE III-J score, with additional data elements added. It has been developed using Australian and New Zealand patient data from the APD. While Apache III-J has two prediction algorithms (CABG and non-CABG), ANZROD has eight different algorithms, based on the major diagnostic categories.

ANZROD is a more accurate predictor of mortality and provides better adjustment for case-mix variation than APACHE III-J. In addition, ANZROD has less exclusions than APACHE III-J. All initial admissions to ICU aged 16 years and over (other than those specifically admitted for organ donation or palliative care) are included when an ANZROD SMR is calculated.

ANZROD will be regularly recalibrated so that the SMR continues to sit around 1 in the years to come. ANZROD provides a single number for each patient which represents the individual's risk of death before hospital discharge.

Validation Rules and Check

Validation rules are now listed in this data dictionary for relevant fields. These rules identify if a field is mandatory at a record level and/or provide cross-validation rules that should be applied before submitting data to the APD.

Validation checks provide an indication of where data quality checks or data review would be useful prior to submission of data to the APD.

Summary of changes in Version 5

Changes required immediately:

Version 5 of the APD data dictionary contains a major revision of the variables included in the Adult Patient Database.

Table 1. New Data Elements

Data element	Description	Format	Mandatory
ALBUMHI	Highest albumin	N[N]	Yes
ALBUMLO	Lowest albumin	N[N]	Yes
ECMO_IND	ECMO indicator	N	Yes
ELECT_SURG	Elective surgery admission	N	Yes
GCS_SEDATED	GCS unavailable due to sedation	N	Yes
INOTROP_IND	Inotropes indicator	N	Yes
INV_DAYONE	Invasively ventilated on day 1	N	Yes
INV_IND	Invasive ventilation indicator	N	Yes
NIV_IND	Non-invasive ventilation indicator	N	Yes
PLAN_ICU	Planned ICU admission	N	Yes
RENAL_IND	Renal replacement therapy indicator	N	Yes
RRHI_VENT	Invasive ventilation status for RR high	N	Yes
RRLO_VENT	Invasive ventilation status for RR low	N	Yes
SLK581	Statistical linkage key	XXXXXDDMMYYYYN	Yes
TRACHE_IND	Tracheostomy indicator	N	Yes
DIABETES	Diabetes status	N	No
FRAILTY	Frailty	N	No
INV_HOURS	Total invasive ventilation hours	N[NNN]	No
LACTATE	Lactate (high)	N[N]	No
NIV_HOURS	Total non-invasive ventilation hours	N[NNN]	No
DELIRIUM	Delirium status	N	No
PRESSURE INJURY	Pressure injury status	N	No

**mandatory indicates that this field must be included as a column in your submission file.*

Table 2. Revised Data Elements

Data element	Description	Description of Revision
ALL FIELDS	NULL values (e.g., 999)	NULL values are no longer required. If no data is available the field should be left blank.
AGE	Age	Change in calculation, based on hospital admission
AP3_SUBCODE	APACHE III subcode	New options (see Appendix E)
AP3PH	APACHE III worst pH	Must come from the highest scoring blood gas (no longer independent)
APACHE3	Apache 3 score	This field is no longer mandatory
BILI	Bilirubin	Range change
CABG_REDO	CABG redo value	Missing/unknown option removed
CARDARREST	Cardiac arrest	Missing/unknown option removed
DIASTOLICHI	Diastolic high	Range change
DIASTOLICLO	Diastolic low	Range change
EMG_RSP_ADM	Emergency response admission	Missing/unknown option removed
GLUCHI	Glucose high	Range change
GLUCLO	Glucose low	Range change
HCO3HI	Bicarbonate high	Range change
HCO3LO	Bicarbonate low	Range change
HEIGHT	Height (patient)	Range change
HOSP_OUTCM	Destination on discharge	New options

Table 2. Revised Data Elements		
HOSP_SRCE	Hospital admission source	New options
ICU_SRCE	ICU admission source	New options
KHI	Potassium high	Range change
KLO	Potassium low	Range change
MAPHI	Mean arterial pressure high	Range change
MAPLO	Mean arterial pressure low	Range change
pH: APACHE II	Apache II worst pH	Range change
pH: APACHE III-J	Apache III-J worst pH	Range change
PREG_STAT	Pregnancy status	Missing/unknown option removed
SEX	Sex	New options
SYSTOLICHI	Systolic BP high	Range change
SYSTOLICLO	Systolic BP low	Range change
TEMPHI	Temperature high	Range change
TEMPLO	Temperature low	Range change
THROMB_THERAPY	Thrombolytic therapy value	Missing/unknown option removed
TREAT_LMT	Treatment goals on admission	Missing/unknown option removed
WEIGHT	Weight (patient)	Range change

Table 3. Obsolete Data Elements – no longer required	
Data Element	**Description**
AP2DIAG	APACHE II diagnosis
ALBUMIN	APACHE III worst albumin
AP3CO2P	APACHE III paco2 related to pH
APACHE2	APACHE II score
CREAT	APACHE II worst creatinine
DIASTOLIC	APACHE II worst diastolic BP
ELECT	Elective admission
GLUCOSE	APACHE III worst glucose
HCO3	APACHE II worst HCO3
HCT	APACHE II haematocrit
HR	APACHE II worst heart rate
ICU_STAY	ICU length of stay
ICU_STAY	ICU LOS in days
IDDM	Insulin dependent diabetes
K	APACHE II worst potassium
MAP	APACHE II worst MAP
NA	APACHE II worst sodium
RESPARREST	Respiratory arrest in last 24 hrs
ROD	Apache II ROD
RODSAPS2	SAPS2 ROD
RR	APACHE II worst respiratory rate
SAPS	SAPS score
SAPS2	SAPS2 score
SMOKINGINTENSITY	Smoking intensity
SMOKINGSTATUS	Smoking status
SYSTOLIC	APACHE II worst systolic BP
TEMP	APACHE II worst temp
VENTILATED	Ventilation status of worst blood gas
WCC	APACHE II white cell count

* ***Note: requirements for these fields can be found in Version 4 of the APD data dictionary***

Non-COMET Sites - Migrating Data into COMET

The ANZICS CORE data collection software, COMET, is being designed to enable import of the APD dataset. The aim of this mechanism is to provide non-COMET sites with access to the functionality available within COMET. There are several fields, identified in Table 4, where coding changes are needed if migration of data into COMET is required.

If you wish to do so, please contact the CORE Team.

Table 4. Coding changes needed if import of data into COMET is required

Data Element	Description	Coding Change
CARDARREST	Cardiac arrest	For all these fields the 'No' options was formerly coded with a two (2). In order to import data into COMET for these fields, the 'No' option must be coded as a zero (0).
EMG_RSP_ADM	Emergency response admission	
INDIGENOUS	Indigenous status	
THROMB_THERAPY	Thrombolytic therapy with AMI	
ARF	Acute renal failure	These fields are currently coded as Y and N. In order to import data into COMET the coding must be changed to 1 (yes) and 0 (no).
INTUBATED	Intubation status	

Other changes:

Version 5.5 to 5.6

- Table 6 correctly numbered as Table 4.
- Heart Rate – Permissible range altered
- Respiratory Rate - Permissible range altered
- Mean Arterial Pressure - Permissible range altered
- Blood Pressure – Systolic - Permissible range altered

How to use this data dictionary

Page Heading Name of data element.

Definition Basic definition.

Specific Attributes Component of the definition that is specific to the ANZICS CORE APD.

Field Name Indicates the field name that should be used for this data element in the APD submission file. The field name is not case sensitive.

Version Indicates the current version of the data element, and includes the date of last revision.

Data item type Identifies the type of metadata item. All data items in the APD data dictionary are data elements, a basic unit of identifiable and definable information.

Representation class Describes the main structure of the valid values for this data item, as outlined below.

Representation class	Definition
Code	A system of valid symbols that substitute for longer values.
Identifier	A value which establishes identity.
Date	A numeric value representing a calendar date (i.e. day, month and year) or recognised part of a calendar date (i.e. day, month, and/or year).
Time	A numeric value representing a specific instance in time.
Total	A numeric value representing the sum of a set of values or an entire quantity.

Data type Identifies the type of symbol or character that is used to represent the main structure of the data element, as outlined below.

Data Type	Definition
Number	A sequence of numeric characters which may contain decimals.
Date/Time	A specific instance of time expressed in numeric form.
String	A sequence of alphabetic and/or numeric characters.
Boolean	A binary value expressed using a string e.g. true or false.

Format

A generic example of what the data element should look like, showing the layout of the permitted characters and the minimum and maximum size. Characters not enclosed in brackets signify a value which must be represented. The different format values are explained below.

Value	Valid character range
N	Numeric character set: contains whole and decimal.
A	Alphabetic character set: contains the letters a-z and A-Z.
X	Alphanumeric character set: contains alphabetic and numeric characters.
D	A numeric character representing a number of days.
M	A numeric character representing a number of months.
Y	A numeric character representing a number of years.
h	Any numeric character representing a number of hours.
m	Any numeric character representing a number of minutes.

Maximum character length

The maximum number of characters permitted to represent the data element. Where the data type is String, the maximum character length includes all alphabetic, numeric and other ASCII characters (full stops, forward slash, back slash, hyphens. e.g. YYYY-YY contains a maximum of 7 characters). Where the data type is Number, the maximum character length includes numeric characters only (excludes decimal points, plus and minus characters etc. e.g. 3.142 contains a maximum of 4 characters).

Permissible range/values

Shows the allowed range/allowed codes for this data element.

Unknown/Null value

Shows the value that should be entered if no data is available for this data element.

Unit of measure

The valid unit of measurement assigned for this data element.

Source

An indication of where this data element may be sourced from.

Context

How the data element is used/why we collect this data element.

Collection method(s)

Provides direction on how this data element should be collected, including any rules relating to the collection of this data element.

APACHE II and III-J Scoring tables

Shows the weighting of this data element within each scoring system.

Data Submission Validation Report

Identifies why this data element may appear in the validation report email. Here it tells you how the APD will respond to this data quality issue (e.g. Age < 0 is set to null and scored as “normal”), and what we expect the unit to do in response to such an alert (e.g. check DOB and update record).

References

Provides a link to supporting documentation.

Additional comments

Identifies whether this data element matches a data element in the Australian National Health Data Dictionary (NHDD), and provides additional information where required (e.g. obsolete codes).

1.0 Data elements held by ANZICS CORE

Provided in this document for information only

Hospital Identifier

Definition	A unique identifier for a hospital.

Value Domain Attributes	
Version	1 (Introduced June 2013)
Data item type	Data Element
Representation class	Code
Data type	Number
Format	N[NN]
Maximum character length	3
Permissible value(s)	Numeric code (generated by ANZICS CORE)

Data Element Attributes	
Source	ANZICS CORE
Context	Required to identify the hospital at which a patient received treatment.
Collection method(s)	· This data element is used to identify the hospital to which the patient was admitted for the episode of care which includes the current episode of ICU care. · The hospital identifier is generated/assigned by ANZICS CORE. *Note: The hospital identifier is not currently included in the submission file sent to ANZICS CORE; this data is held centrally by ANZICS CORE.*

References	Appendix G: 1

Additional Comments	This data element is equivalent to the NHDD, Version 16 data element "Hospital identifier". Definition: A unique identifier for a hospital, as represented by a combination of numeric and/or alphabetic characters.

Hospital Type

Definition	The type of facility to which the patient was admitted for the current episode of care, as represented by a code.

Value Domain Attributes	
Version	2 (Revised June 2013)
Data item type	Data Element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 Rural/Regional 2 Metropolitan 3 Tertiary/Teaching 4 Private

Data Element Attributes	
Source	Hospital Administration
Context	· Required to stratify data by hospital type (to control for different patient profiles). · Necessary to relate different case mix and outcomes to type of hospital.
Collection method(s)	· Hospital type is self-assigned by the submitting institution. · At commencement of the data submission process, each site must inform ANZICS CORE of their hospital type. · There are four hospital types recognised in Australia and New Zealand based on management type and other demographic attributes; Tertiary, Metropolitan, Rural/Regional and Private. · Changes in hospital type over time should be notified to ANZICS CORE by the submitting institution. *Note: Hospital Type is not currently included in the submission file sent to ANZICS CORE; this data is held centrally by ANZICS CORE.*

References	Appendix G: 1, 6 and 11

Additional Comments	This data element is not compliant with the NHDD, Version 16 data elements “Establishment sector” and “Establishment Type”.

2.0 Mandatory Fields

These fields must be included in submissions to the ANZICS CORE APD from January 1 2017.

Please note these fields are mandatory at a file level (i.e., they must appear as a column in your submission file). Only some fields are mandatory at a record level (i.e., must be completed for all records), this is noted in the individual field itself and summarised in Appendix B.

Care Unit Identifier

Definition	A unique identifier specific to each critical care unit at an individual site.
Specific Attributes	Identifies the critical care unit to which the patient was admitted for the current episode of ICU care.
Field Name	CAREUNIT

Value Domain Attributes	
Version	2 (Revised February 2016)
Data item type	Data Element
Representation class	Code
Data type	Number
Format	N[N]
Maximum character length	2
Permissible range	· Each critical care unit within the institution should be given a numeric identifier (1 – 98). · These identifiers are self-assigned, or auto-generated by the data collection software (e.g. COMET).
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU admission summary/Progress notes
Context	Required to stratify data by critical care unit type at an individual site.
Collection method(s)	· Multiple critical care units can exist within a single institution. · This data element is used to differentiate between units within the same submission file. · Each episode of intensive care is associated with the information about the specific care unit where the episode occurred.

Patient Identifier

Definition	A unique identifier specific for each patient.
Specific Attributes	The same identifier should be used for all episodes of care for a given patient.
Field Name	PATIENTID

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Identifier
Data type	String
Format	X[XXXXXXXXXX]
Maximum character length	12
Permissible value(s)	· Alphabetic, alphanumeric or numeric string · Maximum length of 12 digits
Validation rule	This field is mandatory and cannot be left blank

Data Element Attributes	
Source	Auto-generated by data collection software such as COMET
Context	· Required for identification of ICU readmissions during the same hospital admission. · Necessary to allow individual sites to identify and check any ICU admission data queried by ANZICS CORE.
Collection method(s)	· This unique identifier is usually auto-generated by the database systems like COMET. · Individual sites that use their own non-COMET database may use their own alphabetic, alphanumeric or numeric coding system. *Note:* ***Generally accessible identifiers such as the medical record number should not be used.*** *Instead, an identifier generated and used only by the database system at the ICU should be used. This identifier should only be used by a password secured database on a computer system requiring password access for its operation.*

References	Appendix G: 2

SLK-581 (Statistical Linkage Key)

Definition	A statistical linkage key based on a patient's family name, given name, date of birth and sex.
Field Name	SLK581

Value Domain Attributes	
Version	2 (Revised May 2016)
Data item type	Data element
Representation class	Code
Data type	String
Format	XXXXXDDMMYYYYN
Maximum character length	14
Validation rule	This field is mandatory, cannot be left blank

Data Element Attributes	
Source	Auto-generated by data collection software such as COMET
Context	Required to enable linkage of episodes of care within the APD itself, and between the APD and other datasets (both within ANZICS CORE and external).
Collection method(s)	· This data element is used to enable data linkage while maintaining patient privacy. · The SLK-581 is generated as follows: The SLK-581 format is: **XXXXXDDMMYYYYN** The sequence in which the linkage key is completed is as follows: · Family name (the first 3 Xs) · Given name (the 4th and 5th X) · Date of birth by day, month and four-digit year · Sex **[XXX]**XXDDMMYYYYN - **2nd, 3rd and 5th letters of the family name.** In the first three spaces record the 2nd, 3rd and 5th letters of the patient's family name. · Example: John S**mi**t**h** = MIH. · Short names: if the family name is not long enough to provide the 3 letters, place a '2' in the place of the missing character(s). Example: Ming L**ee** = EE2 · Non-alphabetic characters: ignore non-alphabetic characters Example: John O'**Do**n**n**ell = DON · Missing family name = enter 999 XXX**[XX]**DDMMYYYYN - **2nd and 3rd letters of given name** In the fourth and fifth spaces record the 2nd and 3rd letters of the patient's given name.

	· Example: J**oh**n Smith = OH. · Short names: if the given name is not long enough to provide the 2 letters, place a '2' in the place of the missing character(s). Example: J**o** Brown = O2 · Non-alphabetic characters: ignore non-alphabetic characters Example: J**o**-**a**nne Simons = OA · Missing given name = enter 99 XXXXX**[DDMMYYYY]**N **- Date of Birth** The sixth through to the thirteenth characters represent the patient's date of birth. · DD represents the day in the month a person was born · MM represents the month in the year a person was born · YYYY represents the year a person was born · If date of birth is not known or cannot be obtained the default of 01011900 should be entered. XXXXXDDMMYYYY**[N] - Sex** The fourteenth character represents the sex of the patient. 1 = male 2 = female 3 = Intersex/Indeterminate 9 = unknown

Additional Comments	SLK-581 is standard Health data element cluster, registered with METeOR.

Age

Definition	The age of a person in years.
Specific Attributes	Collected at the time of admission to hospital, for the hospital stay that includes the current ICU episode.
Field Name	AGE

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN.N]
Maximum character length	4
Permissible range	0 – 110 years
Unknown/Null value	999.9
Unit of measure	Years
Validation rule	This field is mandatory and cannot be left blank.
Validation check	Confirm if Age < 1

Data Element Attributes	
Source	Patient admission details (Date of birth)
Context	· Important epidemiological information. · Used to determine those patients included in an APACHE III and ANZROD SMR analysis. · Required to calculate APACHE II/III-J scores and predicted risk of deaths, and ANZROD predicted risk of death.
Collection method(s)	· Calculate age and round down to one decimal place. · Estimate age if not known.

APACHE III-J Scoring for Age							
Age	< 45	45-59.9	60-64.9	65-69.9	70-74.9	75-84.9	≥ 85
APACHE III-J Score	0	5	11	13	16	17	24

APACHE II Scoring for Age					
Age	< 45	45-54.9	55-64.9	65-74.9	≥ 75
APACHE II Score	0	2	3	5	6

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Age < 0.0 or > 110.0	Age is set to null and scored as “normal” Check DOB and update record

References	Appendix G: 2, 3, 4, 12

Additional Comments	This data element is equivalent to the NHDD, Version 16 data element "Age". Definition: The age of the person in (completed) years at a specific point in time. 2016 revision: Changed from age on ICU admission to age on hospital admission.

Sex

Definition	The biological distinction between male and female.
Field Name	SEX

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Code
Data type	String
Format	A
Maximum character length	1
Permissible value(s)	M Male F Female I Intersex/Indeterminate U Unknown
Validation rule	This field is mandatory and cannot be left blank

Data Element Attributes	
Source	Patient admission details
Context	· Required to stratify data on the basis of gender. · Used to determine risk of death for certain diagnoses.
Collection method(s)	The data element is collected as Male, Female, Intersex/Indeterminate or Unknown for each patient admitted to the care unit.

References	Appendix G: 2 and 6

Additional Comments	This data element is compliant with the NHDD, Version 16 data element "Sex" options; 1 Male 2 Female 3 Intersex or Indeterminate 9 Not stated/Inadequately described 2016 Revision: The option "Intersex/Indeterminate'" was added.

Indigenous Status

Definition	Indigenous status of a patient, as represented by a code.
Field Name	INDIGENOUS

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 Indigenous 0 or 2 Non-indigenous *Use of zero (0) allows import of data into COMET for reporting purposes.* *Please see page 12.*
Unknown/null value	Leave blank

Data Element Attributes	
Source	Hospital administration system/ICU admission summary/Progress notes
Context	Required to stratify the data based on indigenous status.
Collection method(s)	· This data element captures whether a patient identifies as indigenous to the country where they are receiving treatment. · In Australia a patient who identifies as Aboriginal or Torres Strait Islander should be coded as Indigenous. · In New Zealand a patient who identifies as Maori should be coded as Indigenous. · **Indigenous:** patient identifies as indigenous to the country where they are receiving treatment. · **Non-indigenous**: patient does not identify as indigenous to the country where they are receiving treatment.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Indigenous status missing	Check data source, update record

References	Appendix G: 1, 2 and 6

Additional Comments	This data element is not compliant with the NHDD, Version 16 data element “Indigenous status – Person” options; 1. Aboriginal but not Torres Strait Islander origin 2. Torres Strait Islander but not Aboriginal origin 3. Both Aboriginal and Torres Strait Islander origin 4. Neither Aboriginal nor Torres Strait Islander origin 9. Not stated/Inadequately described

Postcode

Definition	The numeric descriptor for a postal delivery area for an address.
Specific Attributes	Must relate to a patient's residential address at the time of admission to hospital.
Field Name	POSTCODE

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	NNNN
Maximum character length	4
Permissible value	Four digit string of numbers
Unknown/Null value	Leave blank

Data Element Attributes	
Source	Patient admission details
Context	Required to stratify data on the basis of geographical regions.
Collection method(s)	· This information is collected for patients with an Australian or New Zealand postcode. · This is collected as a string of four digits. · Where a patient has a postal address that is different to their residential address, please use the residential postcode. · For patients admitted while on holiday, the home postcode should be entered rather than the postcode of holiday accommodation. · This field should be left blank for patients with an international postcode.

References	Appendix G: 1, 2 and 6

Additional Comments	This data element is equivalent to the NHDD, Version 16 data element "Australian postcode (address)". Definition: The Australian numeric descriptor for a postal delivery area for an address.

Weight

Definition	The weight (body mass) of a person measured in kilograms (kg).
Field Name	WEIGHT

Value Domain Attributes	
Version	2 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN.N]
Maximum character length	4
Permissible range	1 – 400 kg
Missing value	Leave blank
Unit of measure	Kilograms (kg)

Data Element Attributes	
Source	Patient admission details/Medical history/Progress notes (e.g. dietician/ anesthetics)/ICU observation chart
Context	· Weight is an overall measure of body size that does not distinguish between fat and muscle. · Weight is an indicator of nutrition status and health status. · It enables the calculation of body mass index which requires the measurement of height and weight for adults.
Collection method(s)	A continuous data element measured to the nearest 0.1 kg.

References	Appendix G: 1, 2 and 6

Additional Comments	This data element is compliant with the NHDD, Version 16 data element "Weight in Kilograms (measured)". 2016 Revision: Permissible range was changed from 1 – 300 kg to 1 – 400 kg.

Height

Definition	The height of a person measured in centimetres (cm).
Field Name	HEIGHT

Value Domain Attributes	
Version	2 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN]
Maximum character length	3
Permissible range	10 – 300 cm
Unknown/Null value	Leave blank
Unit of measure	Centimetres (cm)

Data Element Attributes	
Source	Patient admission details /Medical history/Progress notes (e.g. dietician/ anesthetics)/ICU observation chart
Context	· Stature is a major indicator of general body size, bone length and the nutritional and health status of the individual and the community at large. · It is important in screening for disease or malnutrition, and in the interpretation of weight. · It enables the calculation of body mass index which requires the measurement of height and weight (body mass) for adults.
Collection method(s)	A continuous data element measured to the nearest cm.

References	Appendix G: 1, 2 and 6

Additional Comments	This data element is compliant with the NHDD, Version 16 data element "Height (measured)". 2016 Revision: Permissible range changed from 1 – 300 cm to 10 – 300 cm.

Pregnancy Status

Definition	A female patient's pregnancy status, as represented by a code.
Specific Attributes	Collected at the time of admission to ICU for the current episode of care.
Field Name	PREG_STAT

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 Currently pregnant 2 Not pregnant 3 Postpartum period
Unknown/Null value	Leave blank

Data Element Attributes	
Source	Patient admission details/ICU admission summary
Context	Required to stratify female patient data based on pregnancy status.
Collection method(s)	· The person's current pregnancy status should be recorded as a code. · This data element describes whether the female patient is pregnant or in the postpartum period at the time of ICU admission. · ANZICS CORE defines the postpartum period as the 42 days after the date of delivery. · The information should be collected on ICU admission for all female patients over the age of 10 and under the age of 61. · All other patients should be left blank for this field.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Pregnancy status for female ≤ 10 or ≥ 61 yrs	Should be treated as null (rather than not pregnant) Update record
Pregnancy status for male	Should be treated as null (rather than not pregnant) Update record

References	Appendix G: 1, 2 and 6

Additional Comments	This data element is not compliant with the NHDD, Version 16 data element "Pregnancy- current status" options; 1 Yes 2 No 9 Not stated/Inadequately described 2016 Revision: Code 4 Unknown – OBSOLETE.

Hospital Admission Date

Definition	Date on which the patient was admitted to the hospital for the episode of care which included the current episode of ICU care.
Field Name	HOSP_AD_DT

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Date
Data type	Date/Time
Format	DD/MM/YYYY
Maximum character length	10
Permissible value	Valid date in DD/MM/YYYY format
Validation rule	This field is mandatory, cannot be left blank. The hospital admission cannot overlap with another hospital admission for the same patientID.

Data Element Attributes	
Source	Hospital administration system/Hospital admission details/Progress notes
Context	Required to identify the period in which the admitted patient episode and hospital stay occurred and for derivation of hospital length of stay.
Collection method(s)	· Hospital admission date should be collected in DD/MM/YYYY format. · The hospital admission date should be the date on which the acute, inpatient episode of care, that includes the current episode of ICU care, began. · When a patient is admitted via the emergency department, the hospital admission date should be the triage date.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Hospital admission date missing	Check data source, update record
Hospital admission date > Hospital discharge date	Check dates, update record

References	Appendix G: 1 and 6

Additional Comments	This data element is equivalent to the NHDD, Version 16 data element “Admission Date”. Definition: Date on which an admitted patient commences an episode of care.

Hospital Admission Time

Definition	Time at which the patient was admitted to the hospital for the episode of care which included the current episode of ICU care.
Field Name	HOSP_AD_TM

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Time
Data type	Date/time
Format	HHMM
Maximum character length	4
Permissible range	0000 – 2359 (24 hour clock)
Validation rule	This field is mandatory, cannot be left blank.

Data Element Attributes	
Source	Hospital administration system/ Hospital admission details/Progress notes
Context	Required to identify the time of commencement of the episode or hospital stay, for calculation of waiting times and hospital length of stay.
Collection method(s)	· Hospital admission time should be collected in 24 hour clock format. · The hospital admission time should be the time at which the acute, inpatient episode of care, that includes the current episode of ICU care, began. · When a patient is admitted via the emergency department, the hospital admission time should be the triage time.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Hospital admission time missing	Check data source, update record
Hospital admission time < 00:00 or > 23:59	Check times, update record

References	Appendix G: 1, 2 and 6

Additional Comments	This data element is equivalent to the NHDD, Version 16 data element “Admission Time”. Definition: Time at which an admitted patient commences an episode of care.

Hospital Admission Source

Definition	The mechanism by which a person was admitted to the hospital for the episode of care which includes the current episode of ICU care, as represented by a code.
Field Name	HOSP_SRCE

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 Home 2 Other Acute Hospital (not ICU/ED) 3 Nursing home/Chronic care/Palliative care 4 Other hospital - ICU 5 Rehabilitation 6 Mental health 7 Inborn 8 Other hospital – ED
Unknown/Null value	Leave blank

Data Element Attributes	
Source	Hospital administration system/Hospital admission details/Progress notes
Context	Provides information for analysis of admission patterns and referrals.
Collection method(s)	· Hospital admission source should be collected as a code. · For patients brought to hospital from the site of an accident or from a local GP etc., the hospital admission source should be their usual place of residence (home or chronic care hospital). · A patient who is homeless should be coded as being admitted from home (unless admitted from another hospital).

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Hospital admission source missing	Check data source, update record

References	Appendix G: 1, 2 and 6

Additional Comments	This data element is equivalent to the NHDD, Version 16 data element "Mode of admission". Definition: The mechanism by which a person begins an episode of care, as represented by a code. 2016 Revision: New codes added: 5, 6, 7, 8

Hospital Discharge Date

Definition	Date on which the patient was separated from the hospital for the episode of care which included the current episode of ICU care.
Field Name	HOSP_DS_DT

Value Domain Attributes	
Version	4 (Revised February 2016)
Data item type	Data element
Representation class	Date
Data type	Date/Time
Format	DD/MM/YYYY
Maximum character length	10
Permissible value	Valid date in DD/MM/YYYY format
Unknown/Null value	Leave blank
Validation rule	Hospital discharge date/time must be later than hospital admission date/time AND later than or equal to ICU discharge date/time

Data Element Attributes	
Source	Hospital administration system/Hospital discharge summary/Progress notes
Context	Required to identify the period in which an admitted patient hospital stay or episode occurred and for derivation of hospital length of stay.
Collection method(s)	· Hospital Discharge Date should be collected in DD/MM/YYYY format. · Hospital separation includes discharge, death, statistical discharges and transfers to another hospital. · Statistical discharge: where the patient is no longer considered an acute care patient. Patient is moved to a separate rehabilitation, palliative care or mental health unit within the same hospital. · For the purposes of APD data collection, if a patient is transferred to hospital-in-the-home (HITH) they should be considered discharged from hospital. The date the patient physically leaves the hospital should be entered as the hospital discharge date.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Hospital discharge date ≤ Hospital admission date	Check dates, update record

References	Appendix G: 1, 2, and 6

Additional Comments	This data element is equivalent to the NHDD, Version 16 data element “Separation Date”. Definition: The date on which an episode of care ceases.

Hospital Discharge Time

Definition	Time at which the patient was discharged from the hospital for the episode of care which included the current episode of ICU care.
Field Name	HOSP_DS_TM

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Time
Data type	Date/Time
Format	HHMM
Maximum character length	4
Permissible range	0000 - 2359 (24 hour clock)
Unknown/Null value	Leave blank

Data Element Attributes	
Source	Hospital administration system/Hospital discharge summary/Progress notes
Context	Required to identify the period in which an admitted patient hospital stay or episode occurred and for derivation of hospital length of stay.
Collection method(s)	· Hospital discharge time should be collected in 24 hour clock format. · Hospital separation includes discharge, death, statistical discharges and transfers to another hospital. · Statistical discharge: where the patient is no longer considered an acute care patient. Patient is moved to a separate rehabilitation, palliative care or mental health unit within the same hospital. · For the purposes of APD data collection, if a patient is transferred to hospital-in-the-home (HITH) they should be considered discharged from hospital. The time the patient physically leaves the hospital should be entered as the hospital discharge time.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Hospital discharge time < 00:00 or > 23:59	Check times, update record

References	Appendix G: 1, 2, and 6

Additional Comments	This data element is equivalent to the NHDD, Version 16 data element “Separation Time”. Definition: The time at which an episode of care ceases.

Hospital Outcome

Definition	Status at separation of person (discharge/transfer/death) and place to which person was released, as represented by a code.
Specific Attributes	Collected on separation from hospital.
Field Name	HOSP_OUTCM

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N[N]
Maximum character length	2
Permissible value(s)	2 Died 3 Home 4 Transferred to Nursing home/Chronic care/Palliative care 5 Transferred to other hospital – ICU 6 Transferred to other acute hospital 7 Transferred to Rehabilitation 8 Transferred to Mental health 9 Hospital in the home 10 Other
Unknown/Null value	Leave blank
Validation rule	If hospital discharge date has been entered this field becomes mandatory, cannot be left blank. If ICU outcome = 2, hospital outcome must also = 2. If ICU outcome = 6, hospital outcome must also = 6.

Data Element Attributes	
Source	Hospital administration system/Hospital discharge summary/Progress notes
Context	Outcome measure required to determine SMR for the APACHE II, APACHE III-J and ANZROD.
Collection method(s)	· Hospital outcome should be collected as a code. · For the purposes of APD data collection, if a patient is transferred to hospital in the home (HITH) they should be considered discharged from hospital. Such patients should be given a hospital outcome of "Hospital in the home". · Discharges to codes 4, 7, 8 and 9 should include: 1. Statistical discharges where care changes from acute to chronic and patient is transferred to a unit that is geographically separate from the acute wards and managed by a different team. 2. Discharges to a nursing home even if it is the patient's usual place of residence. 3. Transfers to a separate palliative care hospice, rehabilitation facility, or mental health unit either within the same hospital, or at a different location. *Note.* Transfer of treatment to a palliative care/mental health/ rehabilitation team while the patient remains in the acute ward is not

	considered a statistical discharge and should not be considered a discharge from hospital.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Hospital outcome missing	Check data source and update record. Admission is excluded from APACHE Risk of Death and SMR calculations.

References	Appendix G: 1, 2 and 6

Additional Comments	Code 1: Still in hospital – OBSOLETE This data element is not compliant with the NHDD, Version 16 data element "Mode of separation" options; 1 Discharge/transfer to (an)other acute hospital 2 Discharge/transfer to a residential aged care service, unless this is the usual place of residence 3 Discharge/transfer to (an)other psychiatric hospital 4 Discharge/transfer to other health care accommodation (includes mothercraft hospitals) 5 Statistical discharge – type change 6 Left against medical advice/discharge at own risk 7 Statistical discharge from leave 8 Died 9 Other (includes discharge to usual residence, own accommodation/welfare institution (includes prisons, hostels and group homes providing primarily welfare services)) 2016 Revision: New codes added: 7, 8, 9, 10

ICU Admission Date

Definition	Date on which the patient was admitted to ICU unit for the current episode of ICU care.
Field Name	ICU_AD_DT

Value Domain Attributes	
Version	2 (Revised February 2016)
Data item type	Data element
Representation class	Date
Data type	Date/Time
Format	DD/MM/YYYY
Maximum character length	10
Permissible value	Valid date in DD/MM/YYYY format
Validation rule	This field is mandatory, cannot be left blank. The ICU admission cannot overlap with or duplicate an existing ICU admission with the same patient ID. ICU admission date/time must be later than or equal to hospital admission date/time.

Data Element Attributes	
Source	Hospital administration system/ICU admission summary/Progress notes
Context	Provides information relating to admission patterns and ICU length of stay.
Collection method(s)	· ICU admission date should be collected in DD/MM/YYYY format. · ICU admission date should be the date on which the patient physically enters the ICU.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
ICU admission date missing	Check data source, update record
ICU admission date < Hospital admission date	Check dates, update record
ICU admission date > Hospital discharge date	Check dates, update record
ICU admission date > ICU discharge date	Check dates, update record

References	Appendix G: 1 and 2

ICU Admission Time

Definition	Time at which the patient was admitted to the intensive care unit for the current episode of ICU care.
Field Name	ICU_AD_TM

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Time
Data type	Date/Time
Format	HHMM
Maximum character length	4
Permissible range	0000 – 2359 (24 hr clock)
Validation rule	This field is mandatory, cannot be left blank.

Data Element Attributes	
Source	Hospital administration system/ICU admission summary/Progress notes
Context	Provides information relating to admission patterns and ICU length of stay.
Collection method(s)	· ICU admission time should be collected in 24 hour clock format. · ICU admission time should be the time that the patient physically enters the ICU.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
ICU admission time missing	Check data source, update record
ICU admission time < 00:00 or > 23:59	Check times, update record

References	Appendix G: 1 and 2

ICU Admission Source

Definition	The mechanism by which a person was admitted to the intensive care unit for the current episode of ICU care, as represented by a code.
Field Name	ICU_SRCE

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 OT/Recovery 2 Accident & Emergency 3 Ward 4 Other ICU, same hospital 5 Other hospital 6 Other Hospital ICU 9 Direct ICU admission (from home)
Validation rule	This field is mandatory, cannot be left blank.

Data Element Attributes	
Source	Hospital administration system/ICU admission summary/Progress notes
Context	· Provides information for analysis of admission patterns and referrals. · Used in the calculation of the APACHE II, APACHE III-J scoring and ANZROD predicted risk of death. · Where applicable, and in conjunction with the elective admission data element, determines the number of chronic health points assigned for chronic conditions at the time of hospital admission (for APACHE III-J).
Collection method(s)	· ICU admission source should be collected as a code. · For patients that are admitted to ICU from a procedure room (e.g. cathlab/radiology), their location prior to such procedure room should be regarded as the source of ICU admission. The only caveat to this rule is if a patient receives a general anaesthetic during their procedure. Patients with a general anaesthetic should be coded with an ICU admission source of OT/Recovery. · If a patient is admitted to the ICU from the Operating Room/Recovery Room but no surgical procedure was performed (for example, the case was cancelled or the procedure was not initiated), then the patient is considered a Non-Operative patient and the ICU Admission Source should be the patient's location prior to the OT/Recovery. An example would be anaphylaxis following anaesthesia prior to surgery. Once surgery begins the patient is considered a Post-Operative patient. · See Appendix F

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
ICU admission source missing	Check data source, update record
ICU admission source invalid	Update record with a valid code

References	Appendix G: 1 and 2

Additional Comments	2016 Revision: Code 9 added

Type of Care

Definition	The type of care for which a patient was admitted.
Specific Attributes	Changes in care type are not considered and only the type which was planned on the admission to the ICU should be recorded.
Field Name	CARETYPE

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 ICU admission 2 HDU admission
Validation rule	This field is mandatory, cannot be left blank.

Data Element Attributes	
Source	ICU admission summary/Progress notes
Context	Required to stratify data by type of care intended.

Collection method(s)	· This data element identifies whether the patient was admitted to the critical care unit for ICU or HDU level of care.
	· Type of care should be coded based on the level of care planned on admission. Changes to the level of care given during an admission should not be considered.
	· ICU is defined as a patient under the care of an intensive care team for whom one of the following is needed:
	  · invasive ventilation
	  · non-invasive ventilation (> 50% of stay or continuously > 6 h)
	  · 1:1 nursing
	  · continuous renal replacement therapy
	· HDU will be all other patients admitted as needing, in the opinion of the treating specialist, the specific expertise of the ICU/HDU environment that do not fit this criteria (excluding coronary care patients, ward patients or those admitted solely for specific procedures within ICU).
	· ***Important:*** CCU patients, patients admitted to ICU for a solitary procedure or ward type patients (in ICU due to lack of resources on the ward) should not be included in data submitted to the APD.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Care type ≠ 1, 2	Data is set to null Check data source, update record

ICU admission following elective surgery

Definition	An ICU admission directly following an elective surgery.
Field Name	ELECT_SURG

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum field size	1
Permissible value(s)	1 Elective Surgery 0 Not Elective Surgery
Unknown/Null value	0 (should be used where ICU source ≠ 1)
Validation rule	This field cannot be left blank. ELECT_SURG can only be coded as 1 if APACHE III-J diagnosis is post-operative

Data Element Attributes	
Source	Hospital admission details/ICU admission summary/Progress notes
Context	Used in the APACHE II, APACHE III-J and ANZROD scoring systems for calculation of predicted risk of death.
Collection method(s)	· This data element identifies patients who come to ICU following an elective surgery. · Elective surgery is surgery for which the admission can be delayed for more than 24 hours. · Elective surgical admissions must be admitted to the ICU from OT (or from the OT at another hospital). · A patient can be coded as YES to elective surgery even if their admission to ICU is a result of an unplanned intra-operative complication. Examples: · *A patient admitted to ICU after unexpected bleeding during a routine elective hip replacement = Elective surgery* · *A patient admitted to ICU in whom the ICU admission was foreseen and planned following emergency surgery for evacuation of an intra-cranial bleed = Not elective surgery.*

References	Appendix G: 1, 4, 6 and 12

Additional Comments	This data element relates to, but is not compliant with, the NHDD, Version 16 data elements “Waiting list category” and “Urgency of admission”. Waiting list category definition: The type of elective hospital care that a patient requires, as represented by a code. Urgency of admission definition: Whether the admission has an urgency status assigned and, if so, whether admission occurred on an emergency basis, as represented by a code.

Planned ICU Admission

Definition	A planned admission to ICU.
Field Name	PLAN_ICU

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum field size	1
Permissible value(s)	1 Planned admission to ICU 0 Unplanned admission to ICU
Validation rule	This field is mandatory, cannot be left blank. If ICU Source = 2 (ED), PLAN_ICU must = 0.
Validation check	If ICU Source = 3 (ward) and PLAN_ICU = 1, please confirm coding, combination unlikely.

Data Element Attributes	
Source	Hospital admission details/ICU admission summary/Progress notes
Context	Used in the APACHE II, APACHE III-J and ANZROD scoring systems for calculation of predicted risk of death.
Collection method(s)	· If following surgery or a procedure, a planned admission to ICU is one where the need for ICU admission was anticipated prior to commencement of the surgical procedure. · For non-surgical admissions to ICU, a planned admission to ICU should be considered as one that could be postponed for 24 hours with no adverse effect. · Planned admissions are common following elective surgery, but can also occur when patients are transferred between hospitals or when an ICU admission is anticipated following emergency surgery. Examples: · *A patient transferred to your ICU following emergency surgery in another hospital = Planned admission to ICU* · *A patient admitted to ICU in whom the ICU admission was foreseen and planned following emergency surgery for evacuation of an intra-cranial bleed = Planned admission to ICU* · *A patient admitted following emergency cardiac surgery where post-operative ICU admission was anticipated prior to surgery commencing = Planned admission to ICU* · *A patient admitted to ICU after an intra-operative complication of surgery which would normally not need ICU = Unplanned admission to ICU* · *A patient admitted after deterioration on a ward or following acute presentation to ED = Unplanned admission to ICU*

Examples	Planned ICU admission	Unplanned ICU admission
Elective surgery	Elective Coronary Bypass Surgery	Intra-operative complication during elective total hip replacement in previously well patient
Emergency surgery	Evacuation of traumatic subdural haemorrhage	Intra-operative complication during operation for incarcerated inguinal hernia in previously well patient
Non-surgical/ Medical	Inter-hospital transfer of patient from another ICU ICU admission for administration of chemotherapy and management of potential complications	Acute medical presentations to ED Patients admitted to ICU following deterioration on the ward. Admissions following MET calls

References	Appendix G: 1, 4, 6 and 12

Additional Comments	This data element relates to, but is not compliant with, the NHDD, Version 16 data elements “Waiting list category” and “Urgency of admission”. Waiting list category definition: The type of elective hospital care that a patient requires, as represented by a code. Urgency of admission definition: Whether the admission has an urgency status assigned and, if so, whether admission occurred on an emergency basis, as represented by a code.

Emergency Response Admission

Definition	An ICU admission arising from an emergency response on a general ward, as represented by a code.
Field Name	EMG_RSP_ADM

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible value(s)	1 MET/RRT/Code Blue call 0 or 2 No *Use of zero (0) allows import of data into COMET for reporting purposes. Please see page 12.*
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU admission summary/Progress notes
Context	Required to stratify the data based on emergency call information.
Collection method(s)	· This data element describes whether a patient is admitted to the ICU as a result of any emergency response made on a general ward. · Emergency response admissions include; MET (Medical Emergency Team), RRT (Rapid Response Team) and Code Blue (Cardio-Respiratory Arrest) calls. · A patient admitted from another ICU or from an intensivist-supervised HDU cannot be coded as 'yes'. · It is acceptable to code this field as 'yes' for all other ICU admission sources.

References	Appendix G: 1 and 2

Additional Comments	2016 Revision: Code 3 Unknown – OBSOLETE

Treatment Goals for Admission

Definition	The treatment goals for a patient at time of admission to ICU, as represented by a code.
Field Name	TREAT_LMT

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 Full active management (without treatment limitation) 2 Treatment limitation order 3 Palliative care of a dying patient 4 Potential Organ donation
Validation rule	This field is mandatory, cannot be left blank.

Data Element Attributes	
Source	ICU admission summary/Progress notes
Context	Required to stratify data based on treatment goals and enables recognition of patients who would not be expected to survive their ICU admission.
Collection method(s)	· This data element describes the treatment goals for a patient at the time of admission to ICU, it should be coded as follows: · **Full active treatment:** Implies no limitation to treatment when patient was admitted to the ICU. Patients who have limitations to therapy instituted later during their ICU stay should be considered as having "full active treatment" on admission. · **Treatment limitation order:** Implies medical treatment would be constrained by patient wishes (e.g. Jehovah's Witness) or medical futility (not for intubation/CPR) but does not necessarily imply an expectation of death during this ICU admission. Only patients with treatment limitations **on admission to ICU** should be coded as such. · **Palliative care of a dying patient:** Patients admitted to ICU for palliative care; care given to improve the quality of life of patients who have a serious or life-threatening disease from which they are not expected to survive. The goal of palliative care is to prevent or treat as early as possible the symptoms of the disease, side effects caused by treatment of the disease, and psychological, social, and spiritual problems related to the disease or its treatment. It is also referred to as comfort care, supportive care, and symptomatic management. · **Potential Organ Donation:** Terminally ill patients admitted to ICU with the intention of organ donation.

References	Appendix G: 1, 2 and 12

Additional Comments	2016 Revision: Code 5 Unknown – OBSOLETE

Thromboembolism Prophylaxis Administration

Definition	The administration of appropriate thromboembolism prophylaxis within the first 24 hours of ICU admission, as represented by a code.
Field Name	THROMBPRO

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 Yes 2 No 3 Contraindicated 4 Not Indicated
Unknown/null value	Leave blank

Data Element Attributes	
Source	ICU admission summary/Progress notes
Context	Required to calculate ACHS ICU Indicator "Thromboembolism Prophylaxis".
Collection method(s)	· This data element describes whether the patient has received appropriate thromboembolism prophylaxis within the first 24 hours of admission to ICU. · Thromboembolism is also referred to as deep vein thrombosis (DVT) or venous thromboembolism (VTE). · This data element should be coded as follows: · **YES:** Patients that have received any form of thromboembolism prophylaxis (e.g. heparin, low molecular weight heparin, pneumatic compression devices, compression stocking) **OR** Patients who are already fully anti-coagulated (e.g. heparin infusion/warfarin prior to admission). · **NO:** Patients that did not receive treatment. · **CONTRAINDICATED:** Patients that are unsuitable for thromboembolism prophylaxis (e.g. trauma patient with severe bleeding and multiple lower limb injuries who cannot have heparin, lower limb compression devices or IVC filter). · **NOT INDICATED:** Patients that did not receive treatment because it was not required (e.g. patient is ambulant).

References	Appendix G: 1, 2 and 8

Cardiac Arrest

Definition	The presence of a cardiac arrest in the 24 hours prior to ICU admission, as represented by a code.
Field Name	CARDARREST

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 Cardiac arrest in previous 24 hours (prior to ICU admission) 0 or 2 No cardiac arrest *Use of zero (0) allows import of data into COMET for reporting purposes.* *Please see page 12.*
Unknown/Null value	Leave blank

Data Element Attributes	
Source	Ambulance report/Hospital admission details/ICU admission summary/Progress notes
Context	Required to stratify the data based on patients with cardiac arrest in the 24 hours before admission to ICU.
Collection method(s)	· This data element describes whether a patient suffered a cardiac arrest in the 24 hours prior to ICU admission. · Cardiac arrest refers to the cessation or sudden reduction of cardiac output leading to loss of effective circulation.

References	Appendix G: 1 and 2

Additional Comments	2016 Revision: Code 8 Missing – OBSOLETE

ICU Discharge Decision Date

Definition	Date when patient is ready for separation from the intensive care unit for the current episode of ICU care.
Specific Attributes	As determined by medical staff.
Field Name	ICU_DS_DEC_DT

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Date
Data type	Date/Time
Format	DD/MM/YYYY
Maximum character length	10
Permissible value	Valid Date in DD/MM/YYYY format
Unknown/Null value	Leave blank
Validation rule	ICU discharge decision date/time must be earlier than or equal to ICU discharge date/time.

Data Element Attributes	
Source	Hospital administration system/Progress notes
Context	· Provides information relating to bed block and actual ICU length of stay. · Used to calculate ACHS ICU indicator “Bed Block”.
Collection method(s)	· ICU discharge decision date should be collected in DD/MM/YYYY format. · This should be the date on which medical staff determine that the patient is ready for discharge from ICU.

References	Appendix G: 1 and 2

ICU Discharge Decision Time

Definition	Time when patient was ready for separation from the intensive care unit for the current episode of ICU care.
Specific Attributes	As determined by medical staff.
Field Name	ICU_DS_DEC_TM

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Time
Data type	Date/Time
Format	HHMM
Maximum character length	4
Permissible range	0000 – 2359 (24 hr clock)
Unknown/Null value	Leave blank
Validation rule	If ICU discharge decision date has been entered this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	Hospital administration system/Progress notes
Context	· Provides information relating to bed block and actual ICU length of stay. · Used to calculate ACHS ICU indicator “Bed Block”.
Collection method(s)	· ICU discharge decision time should be collected in 24 hour clock format. · This should be the time when medical staff determine that the patient is ready for discharge from ICU.

References	Appendix G: 1 and 2

ICU Discharge Date

Definition	Date on which the patient was separated from the intensive care unit for the current episode of ICU care.
Field Name	ICU_DS_DT

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Date
Data type	Date/Time
Format	DD/MM/YYYY
Maximum character length	10
Permissible value	Valid date in DD/MM/YYYY format
Unknown/Null value	Leave blank
Validation rule	ICU discharge date/time must be later than ICU admission date/time.

Data Element Attributes	
Source	Hospital administration system/ICU discharge summary/Progress notes
Context	Provides information relating to discharge patterns and ICU length of stay.
Collection method(s)	· ICU discharge date should be collected in DD/MM/YYYY format. · For patients discharged alive from ICU, the date on which the patient physically leaves the ICU should be recorded. · For patients who die in ICU (including brain dead patients), the discharge date should be listed as the date of certification of death. For brain dead patients this will be the date of the second set of brain death tests.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
ICU discharge date missing	Check data source, update record
ICU discharge date < ICU admission date	Check dates, update record
ICU discharge date > Hospital discharge date	Check dates, update record

References	Appendix G: 1 and 2

ICU Discharge Time

Definition	Time at which the patient was separated from the intensive care unit for the current episode of ICU care.
Field Name	ICU_DS_TM

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Time
Data type	Date/Time
Format	HHMM
Maximum character length	4
Permissible range	0000 – 2359 (24 hr clock)
Unknown/Null value	Leave blank
Validation rule	If ICU discharge date has been entered this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	Hospital administration system/ICU discharge summary/Progress notes
Context	Provides information relating to discharge patterns and ICU length of stay.
Collection method(s)	· ICU discharge time should be collected in 24 hour clock format. · For patients discharged alive from ICU, the time at which the patient physically leaves the ICU should be recorded. · For patients who die in ICU (including brain dead patients), the discharge time should be listed as the time of certification of death. For brain dead patients this will be the time of the second set of brain death tests.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
ICU discharge time missing	Check data source, update record
ICU discharge time < 00:00 or > 23:59	Check times, update record

References	Appendix G: 1 and 2

ICU Outcome

Definition	Status at separation of person and place to which person was released, as represented by a code.
Specific Attributes	Collected on separation from the intensive care unit.
Field Name	ICU_OUTCM

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	2 Died in ICU 3 Survived ICU 5 Transferred to another ICU 6 Transferred to another hospital
Unknown/Null value	Leave blank
Validation rule	If ICU discharge date has been entered this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	Hospital administration system/ICU discharge summary/Progress notes
Context	Required to stratify data based on outcome on discharge from ICU (transfers, deaths etc.).
Collection method(s)	· ICU outcome should be collected as a code. · Patients who are transferred from ICU to theatre and then subsequently die during surgery should be coded as “died in ICU”. · Patients who self-discharge from ICU should be coded as ‘3’, survived ICU.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
ICU outcome missing	Check data source, update record
ICU outcome invalid	Update record with a valid code

References	Appendix G: 1 and 2

Additional Comments	Code 1: Still in ICU – OBSOLETE Code 4: Left ICU but returned – OBSOLETE

Total Glasgow Coma Score

Definition	The person's total Glasgow Coma Score (GCS).
Specific Attributes	· For non-sedated patients, enter the lowest GCS during the first 24 hours in ICU. · For patients sedated for the first 24 hours in ICU, enter the GCS at the time of/just prior to sedation.
Field Name	GCS

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[N]
Maximum character length	2
Permissible range	3 – 15
Unknown/Null value	Leave blank
Validation check	If ICU source = 1, ELECT_SURG = 1 and GCS = 3, check whether patient was sedated.

Data Element Attributes	
Source	ICU observation chart/Progress notes/Transfer, Referral or ED notes/Ambulance report
Context	Used in the calculation of APACHE II scores.

Collection method(s)	· The total GCS is the sum of the scores for the three GCS components: eye opening, verbal and motor. The individual GCS components must be recorded to enable APACHE III-J scoring.
	· The lowest GCS during the first 24 hours of the ICU admission should be recorded provided the patient is free from the effects of sedative, paralysing or neuromuscular blocking agents.
	· **Paralysed/Sedated patients:** the GCS taken ***at the time of*** or ***just prior*** to sedation should be recorded.
	  · **Post-operative patients:** pre-theatre GCS should be recorded.
	  · **Transfer/Retrieval patients:** the GCS determined by the medical/paramedical assessment prior to intubation/sedation should be recorded.
	Important: The pre-sedation GCS may not necessarily be the "lowest" GCS for the patient. The pre-sedation GCS does not need to be from the first 24 hours of ICU admission or 1 hour prior to admission. You should go back as far as necessary to the time at which the patient was sedated and identify the GCS at the time of/just prior to sedation. If you cannot locate the GCS at the time of/just prior to sedation please leave the GCS fields blank
	· **Drug overdose patients:** the GCS at the time of/just prior to administration of sedative agents by medical/paramedical/nursing staff should be recorded.
	· **Seizure patients:** the GCS at the time of/just prior to administration of sedative agents by medical/paramedical/nursing staff should be recorded.

	· If the total GCS cannot be determined – leave blank. · Missing values are treated as normal (no points assigned).
APACHE II Scoring for GCS	
APACHE II Score	15 minus GCS

APACHE III-J Scoring for GCS if a patient's eyes open spontaneously or to verbal/painful stimulation (GCS eye = 2, 3 or 4)				
Verbal Score / **Motor Score**	Orientated (5)	Confused (4)	Inappropriate words, incomprehensible sounds (3,2)	No response (1)
Obeys commands (6)	0	3	10	15
Localizes (5)	3	8	13	15
Flexion withdrawal/ Decorticate flexion (4,3)	3	13	24	24
Extends/ No response (2,1)	3	13	29	29

APACHE III-J Scoring for GCS if a patient's eyes do not open (GCS eye = 1)				
Verbal score / **Motor score**	Orientated (5)	Confused (4)	Inappropriate words, incomprehensible sounds (3,2)	No response (1)
Obeys commands (6)				16
Localizes (5)				16
Flexion withdrawal/ Decorticate flexion (4,3)			24	33
Extends/ No response (2,1)			29	48

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Total GCS missing	Total GCS is set to null, GCS is scored as "normal" Check data source, update record
Total GCS < 3 or > 15	Total GCS is set to null, GCS is scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 3, 4, 5, 9 and 12

Glasgow Coma Score Unavailable Due to Sedation

Definition	An indicator that the patient's GCS was unavailable due to sedation, as represented by a code.
Field Name	GCS_SEDATED

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible value(s)	1 Yes, GCS unavailable due to sedation 0 No, GCS available
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Progress notes/Transfer, Referral or ED notes/Ambulance report
Context	Used in the calculation of APACHE III-J scores and ANZROD risk of death calculations.
Collection method(s)	· This data element can only be coded as 'yes' if the patient is sedated throughout the first 24 hrs in ICU AND for at least 12 hours prior to ICU admission AND the GCS at the time of sedation (going back as far as needed to the time of sedation) cannot be identified. In all other situations this field should be coded as 'No'. Examples: · Patient is sedated for the first 24 hours in ICU and for the 12 hours prior to admission but the GCS at the time of sedation can be located (going back as far as needed to the time of sedation) – code as No and enter the GCS in the GCS fields. · Patient is sedated for first 24 hours in ICU and for less than 12 hours prior to admission – code as No; GCS should be entered if located, otherwise leave GCS fields blank. · Patient is not sedated during the first 24 hours of ICU admission – code as No; GCS should be entered if located, otherwise leave GCS fields blank.

References	Appendix G: 1, 2, 4, 5 and 9

Additional Comments	2016 Revision: New Data Element

Eye Opening Component Glasgow Coma Score

Definition	Eye opening component of the patient's total Glasgow Coma Score (GCS).
Field Name	GCSEYE

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	4 Open spontaneously 3 Open to voice 2 Open to pain 1 Do not open
Unknown/Null value	Leave blank
Validation rule	If GCS total has been entered this field becomes mandatory, cannot be left blank

Data Element Attributes	
Source	ICU observation chart/Progress notes/Transfer, Referral or ED notes/Ambulance report
Context	Used in the calculation of APACHE III-J scores and ANZROD risk of death.
Collection method(s)	The value entered should be the eye opening component from the patient's total GCS. (Refer to Collection Methods: Total Glasgow Coma Score, page 53).

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Eye opening component missing	Eye opening component and Total GCS are set to null GCS is scored as "normal" Check data source, update record
Eye opening component < 1 or > 4	Eye opening component and Total GCS are set to null GCS is scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 4, 5 and 9

Verbal Component Glasgow Coma Score

Definition	Verbal component of the patient's total Glasgow Coma Score (GCS).
Field Name	GCSVERB

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	**Verbal: Non-intubated** 5 Orientated 4 Confused 3 Inappropriate words 2 Incomprehensible sounds 1 No response **Verbal: Intubated (without sedation)** 5 Appears orientated 3 Ability to converse in doubt 1 Generally unresponsive
Unknown/Null value	Leave blank
Validation rule	If GCS total has been entered this field becomes mandatory, cannot be left blank

Data Element Attributes	
Source	ICU observation chart/Progress notes/Transfer, Referral or ED notes/Ambulance report
Context	Used in the calculation of APACHE III-J scores and ANZROD risk of death.
Collection method(s)	The value entered should be the verbal component from the patient's total GCS. (Refer to Collection Methods: Total Glasgow Coma Score, page 53). · The 'verbal: non-intubated' scale should be used for the majority of patients to determine the verbal GCS component when the patient is free from sedation and not intubated. · The 'verbal: intubated' scale can be used to estimate the verbal GCS component for a non-sedated, intubated patient.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Verbal component missing	Verbal component and Total GCS are set to null GCS is scored as "normal" Check data source, update record
Verbal component < 1 or > 5	Verbal component and Total GCS are set to null GCS is scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 4, 5 and 9

Motor Component Glasgow Coma Score

Definition	Motor component of the patient's total Glasgow Coma Score (GCS).
Field Name	GCSMOTOR

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	6 Obeys commands 5 Localises 4 Flexion – withdrawal 3 Decorticate flexion 2 Extends 1 No response
Unknown/Null value	Leave blank
Validation rule	If GCS total has been entered this field becomes mandatory, cannot be left blank

Data Element Attributes	
Source	ICU observation chart/Progress notes/Transfer, Referral or ED notes/Ambulance report
Context	Used in the calculation of APACHE III-J scores and ANZROD risk of death.
Collection method(s)	The value entered should be the motor component from the patient's total GCS. (Refer to Collection Methods: Total Glasgow Coma Score, page 53).

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Motor component missing	Motor component and Total GCS are set to null GCS is scored as "normal" Check data source, update record
Motor component < 1 or > 6	Motor component and Total GCS are set to null GCS is scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 4, 5 and 9

Core Temperature

Definition		The person's core temperature measured in degrees Celsius (°C).
Specific Attributes		2 temperature values are included in the APD minimum dataset.
Field Names	**TEMPHI**	Highest temp value recorded during the first 24 hours of ICU admission.
	TEMPLO	Lowest temp value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	NN[.N]
Maximum character length	3
Permissible range	20 – 46°C
Unknown/Null value	Leave blank
Unit of measure	Degrees Celsius (°C)
Validation check	If temperature < 34, check that patient wasn't actively cooled at the time of collection.

Data Element Attributes	
Source	ICU observation chart
Context	Used in the calculation of APACHE II, APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· Core temperature sites include oral, tympanic, nasopharyngeal, rectal, oesophageal, pulmonary artery and bladder. (Measurements from a skin sensor or axillary thermometer should only be used if there are no measurements from one of the preferred routes). · The highest and lowest core temperature during the first 24 hours in ICU should be collected. · If only one temperature value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the temperature fields blank. · Missing values are treated as normal (no points assigned). · Core temperature needs to be assessed when the patient is free from the effects of active cooling. **For actively cooled patients:** · Active cooling refers to therapeutic hypothermia where a patient is cooled to below 36°C. · Only consider temperatures taken prior to the onset of active cooling. Remembering these temperatures must be from within the first 24 hours of ICU admission or 1 hour prior to admission. · If no pre-cooled temperatures are available then leave blank and temperature will be treated as normal.

APACHE III-J Scoring for Core Temperature							
Core Temperature (°C)	Low Abnormal Range					Normal Range	High Abnormal Range
	< 32.9	33-33.4	33.5-33.9	34-34.9	35-35.9	36-39.9	≥ 40
APACHE III-J Score	20	16	13	8	2	0	4

APACHE II Scoring for Core Temperature								
Core Temperature (°C)	Low Abnormal Range				Normal Range	High Abnormal Range		
	< 30	30-31.9	32-33.9	34-35.9	36-38.4	38.5-38.9	39-40.9	≥ 41
APACHE II Score	4	3	2	1	0	1	3	4

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Core temperature missing	Temperature set to null, scored as “normal” Check data source, update record
Core temperature < 20°C or > 46°C	Temperatures are set to null, scored as “normal” Check data source, update record

References	Appendix G: 1, 2, 3, 4, 5 and 12

Additional Comments	2016 Revision: Permissible range changed from 25 – 46°C to 20 – 46°C

Heart Rate

Definition		The person's heart rate (HR) measured in beats per minute (bpm).
Specific Attributes		2 HR values are included in the APD minimum dataset.
Field Names	**HRHI**	Highest HR value recorded during the first 24 hours of ICU admission.
	HRLO	Lowest HR value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	3 (Revised July 2017)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN]
Maximum character length	3
Permissible range	1 – 300 bpm
Unknown/Null value	Leave blank
Unit of measure	Beats per minute (bpm)

Data Element Attributes	
Source	ICU observation chart/ECG Trace (not pulse rate)
Context	Used in the calculation of APACHE II, APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· HR refers to the ventricular heart rate. · When there is no underlying intrinsic rate, enter the paced rate. · The highest and lowest HR during the first 24 hours in ICU should be collected. · If only one HR value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the HR fields blank. · Missing values are treated as normal (no points assigned). · Patients who suffer a cardio/respiratory arrest or death during the first 24 hours in ICU should not be given a HR = 0. In such cases, and where intermittent recording of physiological values is used, please use values available prior to arrest or death to determine the highest and lowest HR. If a clinical information system with continuous monitoring of physiological values is used, please use values obtained from ICU admission up to one hour before the cardiac arrest.

APACHE III-J Scoring for Heart Rate (HR)								
HR (bpm)	Low Abnormal Range		Normal Range	High Abnormal Range				
	≤ 39	40-49	50-99	100-109	110-119	120-139	140-154	≥ 155
APACHE III-J Score	8	5	0	1	5	7	13	17

APACHE II Scoring for Heart Rate (HR)							
HR (bpm)	Low Abnormal Range			Normal Range	High Abnormal Range		
	≤ 39	40-54	55-69	70-109	110-139	140-179	≥ 180
APACHE II Score	4	3	2	0	2	3	4

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
HR missing	HR is set to null and scored as "normal" Check data source, update record
HR < 1 or > 300 bpm	HR is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 3, 4, 5 and 12

Additional Comments	This data element is compliant with the NHDD, Version 16 data element "heart rate".

Respiratory Rate

Definition		The person's respiratory rate (RR) measured in breaths per minute (bpm).
Specific Attributes		2 RR values are included in the APD minimum dataset.
Field Names	**RRHI**	Highest RR value recorded during the first 24 hours of ICU admission.
	RRLO	Lowest RR value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	3 (Revised July 2017)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[N]
Maximum character length	2
Permissible range	1 – 80 bpm
Unknown/Null value	Leave blank
Unit of measure	Breaths per minute (bpm)

Data Element Attributes	
Source	ICU observation chart
Context	Used in the calculation of APACHE II, APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· **For Ventilated patients:** the RR is the combined total of spontaneous and ventilator/mechanical breaths. · The highest and lowest RR during the first 24 hours in ICU should be collected. · If only one RR value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the RR fields blank. · Missing values are treated as normal (no points assigned). · Patients who suffer a cardio/respiratory arrest or death during the first 24 hours in ICU should not be given a RR = 0. In such cases, and where intermittent recording of physiological values is used, please use values available prior to arrest or death to determine the highest and lowest RR. If a clinical information system with continuous monitoring of physiological values is used, please use values obtained from ICU admission up to one hour before the cardiac arrest.

APACHE III-J Scoring for Respiratory Rate (RR)								
RR (bpm)	Low Abnormal Range			Normal Range	High Abnormal Range			
	≤ 5	6-11	12-13	14-24	25-34	35-39	40-49	≥ 50
APACHE III-J Score	17	8	7	0	6	9	11	18

Note: If patient is ventilated and respiratory rate is 6 – 13, Apache III-J score is zero (0).

APACHE II Scoring for Respiratory Rate (RR)							
RR (bpm)	Low Abnormal Range			Normal Range	High Abnormal Range		
	≤ 5	6-9	10-11	12-24	25-34	35-49	≥ 50
APACHE II Score	4	2	1	0	1	3	4

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
RR missing	RR is set to null and scored as "normal" Check data source, update record
RR < 1 or > 80 bpm	RR is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 3, 4, 5 and 12

Ventilation Status for Respiratory Rate (high)

Definition	The invasive ventilation status of a patient.
Specific Attributes	The invasive ventilation status of a patient at the time of the highest respiratory rate recorded during their first 24 hours in ICU.
Field Name	RRHI_VENT

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible range	1 Yes, patient was invasively ventilated at time of highest RR 0 No, patient was not invasively ventilated at time of highest RR
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart
Context	Used in the calculation of APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· The highest respiratory rate should be selected following the instructions on page 63. · The invasive ventilation status at the time of the highest respiratory rate should then be recorded. · Any form of positive pressure ventilation delivered through an artificial airway such as oral/nasal endo-tracheal tube or tracheostomy is considered invasive ventilation. It includes all modes of mandatory ventilation, spontaneous pressure support ventilation and continuous positive airways pressure (CPAP). · For definitions around when ventilation is considered to have started and ended, please see the field “Invasive Ventilation Hours”, page 121.

Additional Comments	2016 Revision: New Data Element

Ventilation Status for Respiratory Rate (low)

Definition	The invasive ventilation status of a patient.
Specific Attributes	The invasive ventilation status of a patient at the time of the lowest respiratory rate recorded during their first 24 hours in ICU.
Field Name	RRLO_VENT

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible range	1 Yes, patient was invasively ventilated at time of lowest RR 0 No, patient was not invasively ventilated at time of lowest RR
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart
Context	Used in the calculation of APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· The lowest respiratory rate should be selected following the instructions on page 63. · The invasive ventilation status at the time of the lowest respiratory rate should then be recorded. · Any form of positive pressure ventilation delivered through an artificial airway such as oral/nasal endo-tracheal tube or tracheostomy is considered invasive ventilation. It includes all modes of mandatory ventilation, spontaneous pressure support ventilation and continuous positive airways pressure (CPAP). · For definitions around when ventilation is considered to have started and ended, please see the field “Invasive Ventilation Hours”, page 121.

Additional Comments	2016 Revision: New Data Element

Mean Arterial Blood Pressure

Definition		The person's mean arterial blood pressure (MAP) measured in millimeters of mercury (mmHg).
Specific Attributes		2 MAP values are included in the APD minimum dataset.
Field Names	**MAPHI**	Highest MAP value recorded during the first 24 hours of ICU admission.
	MAPLO	Lowest MAP value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	3 (Revised July 2017)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN]
Maximum character length	3
Permissible range	1 – 300 mmHg
Unknown/Null value	Leave blank
Unit of measure	Millimeters of mercury (mmHg)

Data Element Attributes	
Source	ICU observation chart
Context	Used in the calculation of APACHE II, APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· The MAP is obtained from an arterial line transducer or other electronic device (e.g. Dinamap). · The highest and lowest MAP during the first 24 hours in ICU should be collected. · If only one MAP value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the MAP fields blank. · Missing values are treated as normal (no points assigned). · Patients who suffer a cardio/respiratory arrest or death during the first 24 hours in ICU should not be given a MAP = 0. In such cases, and where intermittent recording of physiological values is used, please use values available prior to arrest or death to determine the highest and lowest MAP. If a clinical information system with continuous monitoring of physiological values is used, please use values obtained from ICU admission up to one hour before the cardiac arrest.

APACHE III-J Scoring for Mean Arterial Blood Pressure (MAP)									
MAP (mmHg)	Low Abnormal Range				Normal Range	High Abnormal Range			
	≤ 39	40-59	60-69	70-79	80-99	100-119	120-129	130-139	≥ 140
APACHE III-J Score	23	15	7	6	0	4	7	9	10

APACHE II Scoring for Mean Arterial Blood Pressure (MAP)						
MAP (mmHg)	Low Abnormal Range		Normal Range	High Abnormal Range		
	≤ 49	50-69	70-109	110-129	130-159	≥ 160
APACHE II Score	4	2	0	2	3	4

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
MAP missing	MAP is set to null and scored as "normal" Check data source, update record
MAP < 1 mmHg or > 300 mmHg	MAP is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 3, 4, 5 and 12

Additional Comments	2016 Revision: Permissible range changed from 1 – 250 mmHg to 1 – 300 mmHg

Blood Pressure – Systolic

Definition		The person's systolic blood pressure (SBP) measured in millimetres of mercury (mmHg).
Specific Attributes		2 SBP values are included in the APD minimum dataset.
Field Names	**SYSTOLICHI**	Highest SBP value recorded during the first 24 hours of ICU admission.
	SYSTOLICLO	Lowest SBP value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	3 (Revised July 2017)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN]
Maximum character length	3
Permissible range	1 – 350 mmHg
Unknown/Null value	Leave blank
Unit of measure	Millimeters of mercury (mmHg)

Data Element Attributes	
Source	ICU observation chart
Context	· Used to calculate the Mean Arterial Pressure (MAP) if no direct measure is available.
Collection method(s)	· The highest and lowest SBP during the first 24 hours in ICU should be collected. · If only one SBP value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the SBP fields blank. · Missing values are treated as normal (no points assigned). · Patients who suffer a cardio/respiratory arrest or death during the first 24 hours in ICU should not be given a SBP = 0. In such cases, and where intermittent recording of physiological values is used, please use values available prior to arrest or death to determine the highest and lowest SBP. If a clinical information system with continuous monitoring of physiological values is used, please use values obtained from ICU admission up to one hour before the cardiac arrest.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
SBP missing	SBP is set to null and scored as "normal" Check data source, update record
SBP < 1 mmHg or BP > 350 mmHg	SBP is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 5

Additional Comments	This data element is compliant with the NHDD, Version 16 data element "blood pressure – systolic". 2016 Revision: Permissible range changed from 1 – 300 mmHg to 1 – 350 mmHg

Blood Pressure – Diastolic

Definition		The person's diastolic blood pressure (DBP) measured in millimetres of mercury (mmHg).
Specific Attributes		2 DBP values are included in the APD minimum dataset.
Field Names	**DIASTOLICHI**	The DBP value that accompanies the highest SBP value recorded during the first 24 hours of ICU admission.
	DIASTOLICLO	The DBP value with accompanies the lowest SBP value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN]
Maximum character length	3
Permissible range	1 – 250 mmHg
Unknown/Null value	Leave blank
Unit of measure	Millimeters of mercury (mmHg)

Data Element Attributes	
Source	ICU observation chart
Context	Used to calculate the Mean Arterial Pressure (MAP) if no direct measure is available.
Collection method(s)	· The DBP values are those that accompany/pair with the highest and lowest SBP values (the highest and lowest DBP values are irrelevant). · If only one SBP reading is recorded in the first 24 hours in ICU, the DBP value accompanying that SBP should be entered as both the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the DBP fields blank.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
DBP missing	DBP is set to null Check data source, update record
DBP < 1 mmHg or > 250 mmHg	DBP is set to null Check data source, update record

References	Appendix G: 1, 2, 3, 4

Additional Comments	This data element is compliant with the NHDD, Version 16 data element "blood pressure – diastolic". 2016 Revision: Permissible range changed from 1 – 200 mmHg to 1 – 250 mmHg

Sodium

Definition		The person's sodium concentration (Na) measured in mmol/L.
Specific Attributes		2 Na values are included in the APD minimum dataset.
Field Names	**NAHI**	Highest Na value recorded during the first 24 hours of ICU admission.
	NALO	Lowest Na value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	NNN
Maximum character length	3
Permissible range	100 – 215 mmol/L
Unknown/Null value	Leave blank
Unit of measure	Millimoles per litre (mmol/L)

Data Element Attributes	
Source	Pathology results
Context	Used in the calculation of APACHE II, APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· Na readings can be taken from serum or plasma samples. · The highest and lowest Na during the first 24 hours in ICU should be collected. · If only one Na value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the Na fields blank. · Missing values are treated as normal (no points assigned).

APACHE III-J Scoring for Sodium (Na)				
Na (mmol/L)	Low Abnormal Range		Normal Range	High Abnormal Range
	≤ 119	120-134	135-154	≥ 155
APACHE III-J Score	3	2	0	4

APACHE II Scoring for Sodium (Na)								
Na (mmol/L)	Low Abnormal Range			Normal Range	High Abnormal Range			
	≤ 110	111-119	120-129	130-149	150-154	155-159	160-179	≥ 180
APACHE II Score	4	3	2	0	1	2	3	4

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Na missing	Na is set to null and scored as “normal” Check data source, update record
Na < 100 mmol/L or > 215 mmol/L	Na is set to null and scored as “normal” Check data source, update record

References	Appendix G: 1, 2, 3, 4, 5 and 12

Potassium

Definition		The person's potassium concentration (K) measured in mmol/L.
Specific Attributes		2 K values are included in the APD minimum dataset.
Field Names	**KHI**	Highest K value recorded during the first 24 hours of ICU admission.
	KLO	Lowest K value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[N.NN]
Maximum character length	3
Permissible range	0.05 – 15 mmol/L
Unknown/Null value	Leave blank
Unit of measure	Millimoles per litre (mmol/L)

Data Element Attributes	
Source	Pathology results
Context	Used in the calculation of APACHE II score.
Collection method(s)	· K readings can be taken from serum or plasma samples. · The highest and lowest K during the first 24 hours in ICU should be collected. · If only one K value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the K fields blank. · Missing values are treated as normal (no points assigned).

APACHE II Scoring for Potassium (K)							
K (mmol/L)	Low Abnormal Range			Normal Range	High Abnormal Range		
	< 2.5	2.5-2.9	3-3.4	3.5-5.4	5.5-5.9	6-6.9	≥ 7
APACHE II Score	4	2	1	0	1	3	4

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
K missing	K is set to null and scored as "normal" Check data source, update record
K < 0.05 or >15 mmol/L	K is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 3, 5

Additional Comments	2016 Revision: Permissible range changed from 0.05 – 12 mmol/L to 0.05 – 15 mmol/L

Bicarbonate

Definition		The person's bicarbonate level (HCO_3) measured in mmol/L.
Specific Attributes		2 HCO_3 values are included in the APD minimum dataset.
Field Names	**HCO3HI**	Highest HCO_3 value recorded during the first 24 hours of ICU admission.
	HCO3LO	Lowest HCO_3 value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	4 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[N.N]
Maximum character length	3
Permissible range	1 – 60 mmol/L
Unknown/Null value	Leave blank
Unit of measure	Millimoles per litre (mmol/L)

Data Element Attributes	
Source	Pathology results
Context	The worst (highest) scoring HCO_3 value is used in the calculation of APACHE II score when no arterial blood gases are available
Collection method(s)	· HCO_3 readings can be taken from serum or plasma samples. · HCO_3 readings should not be taken from ABG results, unless no other source of HCO_3 readings is available. · The highest and lowest HCO_3 during the first 24 hours in ICU should be collected. · If only one HCO_3 value is recorded for the first 24 hours in ICU, it should be entered for the high and low. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the HCO_3 fields blank. · Missing values are treated as normal (no points assigned).

APACHE II Scoring for Bicarbonate (HCO_3)							
HCO_3 (mmol/L)	Low Abnormal Range			Normal Range	High Abnormal Range		
	< 15	15-17.9	18-21.9	22-31.9	32-40.9	41-51.9	≥ 52
APACHE II Score	4	3	2	0	1	3	4

Note: Bicarbonate is only included in the Apache II score if pH is missing.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
HCO_3 missing	HCO_3 is set to null and scored as "normal" Check data source, update record
HCO_3 < 1 mmol/L or > 60 mmol/L	HCO_3 is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 3, 4, 5

Additional Comments	2016 Revision: Permissible range changed from 2 – 60 mmol/L to 1 – 60 mmol/L

Creatinine

Definition		The person's creatinine concentration measured in µmol/L.
Specific Attributes		2 creatinine values are included in the APD minimum dataset.
Field Names	**CREATHI**	Highest creatinine value recorded during the first 24 hours of ICU admission.
	CREATLO	Lowest creatinine value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	NN[NN]
Maximum character length	4
Permissible range	10 – 2500 µmol/L
Unknown/Null value	Leave blank
Unit of measure	Micromoles per litre (µmol/L)

Data Element Attributes	
Source	Pathology results
Context	Used in the calculation of APACHE II, APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· Creatinine readings can be taken from serum or plasma samples. · The highest and lowest creatinine during the first 24 hours in ICU should be collected. · If only one creatinine value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the creatinine fields blank. · Missing values are treated as normal (no points assigned).

APACHE III-J Scoring for Creatinine						
Creatinine (µmol/L)	With acute renal failure		Without acute renal failure			
	≥ 0-132	≥ 133	< 44	44-132	133-171	≥ 172
APACHE III-J Score	0	10	3	0	4	7

APACHE II Scoring for Creatinine					
Creatinine (µmol/L)	Low Abnormal Value	Normal Range	High Abnormal Value		
	< 53	53-132	133-176	177-309	≥ 310
APACHE II Score	2	0	2	3	4

Note: Creatinine score is doubled for APACHE II if the patient has acute renal failure (ARF).
ARF is defined as a 24 hour urine output <410ml, creatinine ≥133 µmol/L and no chronic dialysis.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Creatinine missing	Creatinine is set to null and scored as “normal” Check data source, update record
Creatinine < 10 or > 2500 µmol/L	Creatinine is set to null and scored as “normal” Check data source, update record

References	Appendix G: 1, 2, 3, 4 and 12

Urea

Definition	The person's urea concentration measured in mmol/L.
Specific Attributes	The highest urea concentration recorded during the first 24 hours of ICU admission.
Field Name	UREA

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN.N]
Maximum character length	4
Permissible range	0.5 – 100 mmol/L
Unknown/Null value	Leave blank
Unit of measure	Millimoles per litre (mmol/L)

Data Element Attributes	
Source	Pathology results
Context	Used in the calculation of APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· Urea readings can be taken from serum or plasma samples. · The highest urea concentration recorded during the first 24 hours in ICU should be collected. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the urea field blank. · Missing values are treated as normal (no points assigned).

APACHE III-J Scoring for Urea					
Urea (mmol/L)	Normal Range				High Abnormal Range
	< 6.2	6.2 -7.1	7.2 – 14.3	14.4 – 28.5	≥ 28.6
APACHE III-J Score	0	2	7	11	12

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Urea missing	Urea is set to null and scored as "normal" Check data source, update record
Urea < 0.5 or > 100 mmol/L	Urea is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1,2, 4, 5 and 12

Albumin

Definition		The person's albumin concentration measured in g/L.
Specific Attributes		2 albumin values are included in the APD minimum dataset.
Field Names	**ALBUMHI**	Highest albumin concentration recorded during the first 24 hours of ICU admission.
	ALBUMLO	Lowest albumin concentration recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[N]
Maximum character length	2
Permissible range	5 – 65 g/L
Unknown/Null value	Leave blank
Unit of measure	Grams per litre (g/L)

Data Element Attributes	
Source	Pathology results
Context	Used in the calculation of APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· Albumin readings must be taken from serum samples. · The highest and lowest albumin during the first 24 hours in ICU should be collected. · If only one albumin value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the albumin fields blank. · Missing values are treated as normal (no points assigned).

APACHE III-J Scoring for Albumin				
Albumin (g/L)	Low Abnormal Range		Normal Range	High Abnormal Range
	≤ 19	20-24	25-44	≥ 45
APACHE III-J Score	11	6	0	4

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Albumin missing	Albumin is set to null and scored as "normal" Check data source, update record
Albumin values < 5 or > 65 g/L	Albumin is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 4, 5 and 12

Bilirubin

Definition	The person's bilirubin concentration measured in µmol/L.
Specific Attributes	The highest bilirubin concentration recorded during the first 24 hours of ICU admission.
Field Name	BILI

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NNN]
Maximum character length	4
Permissible range	1 – 1200 µmol/L
Unknown/Null value	Leave blank
Unit of measure	Micromoles per litre (µmol/L)

Data Element Attributes	
Source	Pathology results
Context	Used in the calculation of APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· Bilirubin readings can be taken from serum or plasma samples. · The highest bilirubin concentration recorded during the first 24 hours in ICU should be collected. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the bilirubin field blank. · Missing values are treated as normal (no points assigned).

APACHE III-J Scoring for Bilirubin					
Bilirubin (µmol/L)	Normal Range				High Abnormal Range
	< 35	35-51	52-85	86-135	≥ 136
APACHE III-J Score	0	5	6	8	16

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Bilirubin missing	Bilirubin is set to null and scored as "normal" Check data source, update record
Bilirubin < 0 or > 1200 µmol/L	Bilirubin is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 4, 5 and 12

Additional Comments	2016 Revision: Permissible range changed from 5 – 1200 µmol/L to 1 – 1200 µmol/L

Glucose

Definition		The person's glucose concentration measured in mmol/L.
Specific Attributes		2 glucose values are included in the APD minimum dataset.
Field Names	**GLUCHI**	Highest glucose value recorded during the first 24 hours of ICU admission.
	GLUCLO	Lowest glucose value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	2 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[N.N]
Maximum character length	3
Permissible range	0 – 90 mmol/L
Unknown/Null value	Leave blank
Unit of measure	Millimoles per litre (mmol/L)

Data Element Attributes	
Source	Pathology results/ICU observation chart
Context	Used in the calculation of APACHE II, APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· Glucose readings can be taken from serum or plasma samples. · Finger prick results may be used when no other results are available. · The highest and lowest glucose during the first 24 hours in ICU should be collected. · If only one glucose value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the glucose fields blank. · Missing values are treated as normal (no points assigned).

APACHE III-J Scoring for Glucose					
Glucose (mmol/L)	Low Abnormal Range		Normal Range	High Abnormal Range	
	< 2.2	2.2-3.3	3.4-11.1	11.2-19.3	≥ 19.4
APACHE III-J Score	8	9	0	3	5

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Glucose missing	Glucose is set to null and scored as "normal" Check data source, update record
Glucose < 0 mmol/L or > 90 mmol/L	Glucose is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 4, 5 and 12

Additional Comments	2016 Revision: Permissible range changed from 0.1 – 90 mmol/L to 0 – 90 mmol/L

Urine Output for 24 Hours

Definition	The person's urine output measured in millilitres (ml).
Specific Attributes	Total urine output for the first 24 hours of ICU admission.
Field name	URINEOP

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NNNN]
Maximum character length	5
Permissible range	0 – 30,000 ml
Unknown/Null value	Leave blank
Unit of measure	Millilitres (ml)
Validation check	If URINEOP < 400, ensure value entered is for 24 hrs.

Data Element Attributes	
Source	ICU observation chart/ Fluid Balance sheet
Context	· Used in the calculation of APACHE III-J scores and ANZROD predicted risk of death. · Urine output forms part of the definition for acute renal failure (ARF). ARF influences the weighting of points allocated to the creatinine value in the APACHE II and APACHE III-J scoring systems.
Collection method(s)	· The urine output total is for 24 hours. If urine collection is incomplete or patient was in ICU for less than 24 hours, extrapolate volume to 24 hours e.g. 1700 mls collected in 19 hrs: 1700/19 x 24 = urine output) · Only include urine in total (not nasogastric drains etc.). · Only include urine collected during the first 24 hours of ICU admission (do not include volumes from ED, OT). · If urine output is not being collected (patient is free-voiding), leave blank and it will be treated as normal. · If patient is anuric, a volume of 0 should be entered.

APACHE III-J Scoring for Urine Output							
Urine Output (ml)	Low Abnormal Range					Normal Range	High Abnormal Range
	≤ 399	400-599	600-899	900-1499	1500-1999	2000-3999	≥ 4000
APACHE III-J Score	15	8	7	5	4	0	1

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Urine Output missing	Urine output is set to null and scored as "normal" Check data source, update record
Urine output < 0 or > 30,000 ml/day	Urine output is set to null and scored as "normal" Check data source, update record

References	Appendix G: 2, 4, 5, 9 and 12

Haematocrit

Definition		The person's haematocrit (Hct), expressed as a fraction.
Specific Attributes		2 Hct values are included in the APD minimum dataset.
Field Names	**HCTHI**	Highest Hct value recorded during the first 24 hours of ICU admission.
	HCTLO	Lowest Hct value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N.N[N]
Maximum character length	3
Permissible range	0.05 – 0.75 (expressed as a fraction not %)
Unknown/Null value	Leave blank

Data Element Attributes	
Source	Haematology/Pathology results
Context	Used in the calculation of APACHE II, APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· The highest and lowest Hct during the first 24 hours in ICU should be collected. · If only one Hct value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the Hct fields blank. · Missing values are treated as normal (no points assigned).

APACHE III-J Scoring for Haematocrit (Hct)			
Hct (fraction)	Low Abnormal Range	Normal Range	High Abnormal Range
	< 0.41	0.41-0.49	≥ 0.50
APACHE III-J Score	3	0	3

APACHE II Scoring for Haematocrit (Hct)						
Hct (fraction)	Low Abnormal Range		Normal Range	High Abnormal Range		
	< 0.20	0.20-0.29	0.30-0.45	0.46-0.49	0.50-0.59	≥ 0.6
Score	4	2	0	1	2	4

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Hct missing	Hct is set to null and scored as "normal" Check data source, update record
Hct < 0.05 or > 0.75	Hct is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 4, 5, 9 and 12

White Blood Cell Count

Definition		The person's white blood cell count (WCC) measured in 10^9/L.
Specific Attributes		2 WCC values are included in the APD minimum dataset.
Field Names	**WCCHI**	Highest WCC value recorded during the first 24 hours of ICU admission.
	WCCLO	Lowest WCC value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	4 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN.N]
Maximum character length	4
Permissible range	0 – 300 x 10^9/L
Unknown/Null value	Leave blank
Unit of measure	10^9/L

Data Element Attributes	
Source	Haematology/Pathology results
Context	Used in the calculation of APACHE II, APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· The highest and lowest WCC during the first 24 hours in ICU should be collected. · If only one WCC value is recorded for the first 24 hours in ICU, it should be entered for the high and low values. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the WCC fields blank. · Missing values are treated as normal (no points assigned).

APACHE III-J Scoring for White Cell Count (WCC)					
WCC ($x10^9$/L)	Low Abnormal Range		Normal Range	High Abnormal Range	
	< 1	1-2.9	3-19.9	20-24.9	≥ 25
APACHE III-J Score	19	5	0	1	5

APACHE II Scoring for White Cell Count (WCC)						
WCC ($x10^9$/L)	Low Abnormal Range		Normal Range	High Abnormal Range		
	< 1	1-2.9	3-14.9	15-19.9	20-39.9	≥ 40
Score	4	2	0	1	2	4

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
WCC missing	WCC is set to null and scored as "normal" Check data source, update record
WCC < 0 or > 300 x 10^9/L	WCC is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 3, 4, 5 and 12

Haemoglobin

Definition		The person's haemoglobin concentration (Hmgn) measured in g/dL.
Specific Attributes		2 haemoglobin values are included in the APD minimum dataset.
Field Names	**HMGNHI**	Highest haemoglobin value recorded during the first 24 hours of ICU admission.
	HMGNLO	Lowest haemoglobin value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	2 (Introduced February 2016)
Data item type	Data Element
Representation class	Total
Data type	Number
Format	N[N.N]
Maximum character length	3
Permissible range	1 – 25 g/dL
Unknown/Null value	Leave blank
Unit of measure	g/dL

Data Element Attributes	
Source	Haematology/Pathology Results
Context	Important epidemiological information
Collection method(s)	· The highest and lowest haemoglobin values during the first 24 hours in ICU should be collected. · If only one haemoglobin value is recorded for the first 24 hours in ICU, it should be entered for both the high and low value. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the haemoglobin fields blank.

Platelets

Definition		The person's platelet count measured in 10^9/L.
Specific Attributes		2 platelet count values are included in the APD minimum dataset.
Field Names	**PLATHI**	Highest platelet value recorded during the first 24 hours of ICU admission.
	PLATLO	Lowest platelet value recorded during the first 24 hours of ICU admission.

Value Domain Attributes	
Version	2 (Introduced February 2016)
Data item type	Data Element
Representation class	Total
Data type	Number
Format	N[NNN]
Maximum character length	4
Permissible range	0 – 1500 x 10^9/L
Unknown/Null value	Leave blank
Unit of measure	10^9/L

Data Element Attributes	
Source	Haematology/Pathology Results
Context	Important epidemiological information
Collection method(s)	· The highest and lowest platelet values during the first 24 hours in ICU should be collected. · If only one platelet value is recorded for the first 24 hours in ICU, it should be entered for both the high and low value. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the platelet fields blank.

Fraction of Inspired Oxygen: APACHE III-J

Definition	The person's fraction of inspired oxygen (FiO_2), expressed as a fraction
Specific Attributes	The FiO_2 from the arterial blood gas taken during the first 24 hours of the ICU admission that produces the highest oxygenation score using the APACHE III-J scoring algorithm (table below).
Field Name	AP3FIO

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[.NN]
Maximum character length	3
Permissible range	0.21 – 1.00 (expressed as a fraction not %)
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Pathology results/Blood Gas machine printouts
Context	Used in the calculation of APACHE III-J scores and ANZROD predicted risk of death for intubated patients with FiO_2 values ≥0.5.
Collection method(s)	· All arterial blood gases (ABGs) taken during the first 24 hours in ICU should be considered (venous samples cannot be used). · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be used. · If there are still no results available – leave the ABG fields blank. · Missing values are treated as normal (no points assigned). · The ANZROD and APACHE III-J FiO_2, paO_2, $paCO_2$ and pH values must all come from the same ABG. **How the highest scoring ABG is determined:** · Determine the ABG that meets the criteria above and has the highest APACHE III-J score. · For ABGs where the patient is intubated and the FiO_2 values are ≥ 0.5, the A-a gradient is used to determine the APACHE III-J score. · For ABGs where the patient is not intubated, or for intubated patients with FiO_2 values < 0.5, the paO_2 value is used to determine the APACHE III-J score. · The APACHE III-J score for all ABGs taken during the first 24 hours in ICU should be determined, and the FiO_2 from the ABG with the highest score should be submitted. · The formula used to calculate the A-a gradient is: $A\text{-}a\ gradient = (713 \times FiO_2) - PaO_2 - (PaCO_2 / 0.8)$ *Note: All data elements used in the calculation of the A-a gradient must come from the same arterial blood gas sample.* **Help determining FiO_2:** · For patients with assisted breathing, the FiO2 is read from the controlled oxygen source e.g. Venturi masks, ventilator and CPAP systems with calibrated oxygen blenders.

	· For patients breathing unassisted i.e. room air, the FiO2 is recorded as 0.21. · If a patient is on an uncontrolled oxygen source, the table below allows for the conversion of oxygen flow in L/min to FiO2.

Conversion Table of Oxygen Flow (L/min) to FiO_2									
Oxygen (L/min)	1	2	3	4	5	6	8	15	15 *Reservoir Mask
FiO_2 (% ÷ 100)	0.23	0.25	0.27	0.30	0.35	0.40	0.45	0.50	0.70

Reservoir Mask is a mask fitted with a reservoir bag and a non-rebreathing valve

APACHE III-J Scoring for Arterial Blood Gases (ABG)									
ABG	Patient not intubated, or intubated and $FiO_2 < 0.5$ – use paO_2				Patient intubated and $FiO_2 \geq 0.5$ – use A-a gradient				
	paO_2				A-a gradient				
	≤ 49	50-69	70-79	≥ 80	< 100	100-249	250-349	350-499	≥ 500
APACHE III-J Score	15	5	2	0	0	7	9	11	14

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
AP3FiO_2 missing	FiO_2 is set to null APACHE III-J oxygenation is scored as "normal" Check data source, update record
AP3FiO_2 < 0.21 or > 1	FiO_2 is set to null APACHE III-J oxygenation is scored as "normal" Check data source, update record

References	Appendix G: 1,2, 4, 5 and 12

Additional Comments	2016 Review: Change in formula to the A-a gradient – previously A-a gradient = (713 x FiO_2) – PaO_2 – $PaCO_2$

Partial Pressure of Oxygen: APACHE III-J

Definition	The person's partial pressure of oxygen (paO_2), measured in millimetres of mercury (mmHg).
Specific Attributes	The paO_2 from the arterial blood gas taken during the first 24 hours of the ICU admission that produces the highest score using the APACHE III-J scoring algorithm (see page 89).
Field Name	AP3PO2

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	NN[N]
Maximum character length	3
Permissible range	15 – 720 mmHg
Unknown/Null value	Leave blank
Unit of measure	Millimetres of mercury (mmHg)
Validation rule	If AP3FIO has been entered this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	ICU observation chart/Pathology results/Blood Gas machine printouts
Context	Used in the calculation of APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· To determine the arterial blood gas (ABG) with the highest APACHE III-J score, follow the instructions listed on page 89 in the collection methods for the FiO_2 (APACHE III-J) data element. · The paO_2 from the ABG with the highest APACHE III-J score should be submitted. · The APACHE III-J FiO_2, paO_2, $paCO_2$ and pH values must all come from the same ABG.

APACHE III-J Scoring for Arterial Blood Gases (ABG)
See the FiO_2 (APACHE III-J) data element on page 89.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
$AP3PO_2$ missing	paO_2 is set to null APACHE III-J oxygenation is scored as "normal" Check data source, update record
$AP3PO_2$ < 15 mmHg or > 720 mmHg	paO_2 is set to null APACHE III-J oxygenation is scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 4, 5 and 12

Partial Pressure of Carbon Dioxide using Worst Oxygenation: APACHE III-J

Definition	The person's partial pressure of carbon dioxide ($paCO_2$), measured in millimetres of mercury (mmHg).
Specific Attributes	The $paCO_2$ from the arterial blood gas taken during the first 24 hours of the ICU admission that produces the highest score using the APACHE III-J scoring algorithm (see page 89).
Field Name	AP3CO2O

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN]
Maximum character length	3
Permissible range	5 – 250 mmHg
Unknown/Null value	Leave blank
Unit of measure	Millimetres of mercury (mmHg)
Validation rule	If AP3FIO has been entered this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	ICU observation chart/Pathology results/Blood Gas machine printouts
Context	Used in the calculation of APACHE III-J scores and ANZROD predicted risk of death for intubated patients with FiO_2 values ≥0.5.
Collection method(s)	· To determine the arterial blood gas (ABG) with the highest APACHE III-J score, follow the instructions listed on page 89 in the collection methods for the FiO_2 (APACHE III-J) data element. · The $paCO_2$ from the ABG with the highest APACHE III-J score should be submitted. · The APACHE III-J FiO_2, paO_2, $paCO_2$ and pH values must all come from the same ABG.

APACHE III-J Scoring for Arterial Blood Gases (ABG)
See the FiO_2 (APACHE III-J) data element on page 89.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
$AP3CO_2O$ missing	$paCO_2$ is set to null APACHE III-J oxygenation is scored as "normal" Check data source, update record
$AP3CO_2O$ < 5 mmHg or > 250 mmHg	$paCO_2$ is set to null APACHE III-J oxygenation is scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 4, 5 and 12

pH: APACHE III-J

Definition	The person's arterial pH.
Specific Attributes	The pH from the arterial blood gas taken during the first 24 hours of the ICU admission that produces the highest score using the APACHE III-J oxygenation scoring algorithm (see page 89).
Field Name	AP3PH

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N.N[N]
Maximum character length	3
Permissible range	6.3 – 8.5
Unknown/Null value	Leave blank
Validation rule	If AP3FIO has been entered this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	ICU observation chart/Pathology results/Blood Gas machine printouts
Context	Used in the calculation of APACHE III-J scores and ANZROD predicted risk of death.
Collection method(s)	· All arterial blood gases (ABGs) taken during the first 24 hours in ICU should be considered (venous samples cannot be used). · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be used. · If there are still no results available – leave the ABG fields blank. · Missing values are treated as normal (no points assigned). · The pH from the ABG with the highest APACHE III-J oxygenation score should be submitted (page 89). · The APACHE III-J FiO_2, paO_2, $paCO_2$ and pH values must all come from the same ABG. · To calculate the APACHE III pH score, use the pH and $paCO_2$ from the highest scoring ABG, and calculate the acid-base score from the table below.

APACHE III-J Scoring for Acid-base disturbance (pH/$paCO_2$ combination)									
pH \ **$PaCO_2$**	≤25	25-<30	30-<35	35-<40	40-<45	45-<50	50-<55	55-<60	≥60
<7.15	12						4		
7.15 - <7.2									
7.20 - <7.25	9		6		3		2		
7.25 - <7.30									
7.30 - <7.35			0			1			
7.35 - <7.40	5								
7.40 - <7.45									
7.45 - <7.50			0	2					
7.50- <7.55	3				12				
7.55 - <7.60									
7.60 - <7.65	0								
≥7.65									

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
AP3pH missing	pH is set to null APACHE III-J acid-base disturbance is scored as “normal” Check data source, update record
AP3pH < 6.3 or > 8.5	pH is set to null APACHE III-J acid-base disturbance is scored as “normal” Check data source, update record

References	Appendix G: 1, 2, 4, 5 and 12

Additional Comments	2016 Revision: Permissible range changed from 6.5 – 8.5 to 6.3 – 8.5

Intubation

Definition	Intubation status of a patient.
Specific Attributes	The intubation status of a patient at the time of the highest scoring arterial blood gas, using the APACHE III-J oxygenation scoring algorithm.
Field Name	INTUBATED

Value Domain Attributes	
Version	4 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	A or N
Maximum character length	1
Permissible value(s)	Y or 1 Intubated N or 0 Not intubated *Use of one (1) and zero (0) allows import of data into COMET for reporting purposes. Please see page 12.*
Null value	Leave blank
Validation rule	If AP3FIO has been entered this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	ICU observation chart/Progress notes
Context	Used in the APACHE III-J scoring system.
Collection method(s)	· This data element identifies the intubation status of the patient when their highest scoring APACHE III-J arterial blood gas was taken. · The ABG with the highest APACHE III-J score should be identified (page 89), the intubation status of the patient at the time of this ABG can then be recorded.

References	Appendix G: 1, 2, 4 and 12

Fraction of Inspired Oxygen: APACHE II

Definition	The person's fraction of inspired oxygen (FiO_2), expressed as a fraction.
Specific Attributes	The FiO_2 from the arterial blood gas taken during the first 24 hours of the ICU admission that produces the highest score using the APACHE II scoring algorithm (table below).
Field Name	FIO2

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[.NN]
Maximum character length	3
Permissible range	0.21 – 1.00 (expressed as a fraction not %)
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Pathology results/ Blood Gas machine printouts
Context	· Used in calculating the oxygenation score within APACHE II for patients with FiO_2 values ≥ 0.5.
Collection method(s)	· All arterial blood gases (ABGs) taken during the first 24 hours in ICU should be considered (venous samples cannot be used). · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be used. · If there are still no results available – leave the ABG fields blank. · Missing values are treated as normal (no points assigned). · The APACHE II FiO_2, paO_2 and $paCO_2$ values must all come from the same ABG. **How the highest scoring ABG is determined** · Determine the ABG that meets the criteria above and has the highest APACHE II score. · For ABGs where the FiO_2 values are ≥ 0.5, the A-a gradient is used to determine the APACHE II score. · For ABGs where the FiO_2 values are < 0.5, the paO_2 value is used to determine the APACHE II score. · The APACHE II score for all ABGs taken during the first 24 hours in ICU should be determined, and the FiO_2 from the ABG with the highest score should be submitted. · The formula used to calculate the A-a gradient is: $A\text{-}a\ gradient = (713 \times FiO_2) - PaO_2 - (PaCO_2 / 0.8)$ *Note: All data elements used in the calculation of the A-a gradient must come from the same arterial blood gas sample.* · The FiO_2 from the ABG with the highest APACHE II score should be submitted.

	Help determining FiO_2: · For patients with assisted breathing, the FiO_2 is read from the controlled oxygen source e.g. Venturi masks, ventilator and CPAP systems with calibrated oxygen blenders. · For patients breathing unassisted i.e. room air, the FiO_2 is recorded as 0.21. · If a patient is on an uncontrolled oxygen source, the table below allows for the conversion of oxygen flow in L/min to FiO_2.

Conversion Table of Oxygen Flow (L/min) to FiO_2									
Oxygen (L/min)	1	2	3	4	5	6	8	15	15 *Reservoir Mask
FiO_2 (% ÷ 100)	0.23	0.25	0.27	0.30	0.35	0.40	0.45	0.50	0.70

Reservoir Mask is a mask fitted with a reservoir bag and a non-rebreathing valve

APACHE II Scoring for Arterial Blood Gases								
ABG	FiO_2 < 0.5, use paO_2				FiO_2 ≥ 0.5, use A-a gradient			
	paO_2				A-a gradient			
	< 55	55-60	61-70	≥ 71	< 200	200-349	350-499	≥ 500
APACHE II Score	4	3	1	0	0	2	3	4

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
FiO_2 missing	FiO_2 is set to null and scored as "normal" Check data source, update record
FiO_2 < 0.21 or > 1	FiO_2 is set to null, APACHE II oxygenation is scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 5 and 9

Additional Comments	2016 Review: Change in formula to the A-a gradient – previously A-a gradient = (713 x FiO_2) – PaO_2 – $PaCO_2$

Partial Pressure of Oxygen: APACHE II

Definition	The person's partial pressure of oxygen (paO_2), measured in millimetres of mercury (mmHg).
Specific Attributes	The paO_2 from the arterial blood gas taken during the first 24 hours of the ICU admission that produces the highest score using the APACHE II scoring algorithm (see page 96).
Field Name	PAO2

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	NN[N]
Maximum character length	3
Permissible range	15 – 720 mmHg
Unknown/Null value	Leave blank
Unit of measure	Millimetres of mercury (mmHg)
Validation rule	If FIO2 has been entered this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	ICU observation chart/Pathology results/ Blood Gas machine printouts
Context	· Used in calculating the oxygenation score within APACHE II for all patients.
Collection method(s)	· To determine the arterial blood gas (ABG) with the highest APACHE II score, follow the instructions listed on page 96 in the collection methods for the FiO_2 (APACHE II and SAPS II) data element. · The paO_2 from the ABG with the highest APACHE II score should be submitted. · The APACHE II FiO_2, paO_2 and $paCO_2$ values must come from the same ABG.

APACHE II Scoring for Arterial Blood Gases (ABG)
See the FiO_2 (APACHE II) data element, page 96.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
PaO_2 missing	paO_2 is set to null APACHE II oxygenation is scored as "normal" Check data source, update record
Pa O_2 < 15 or > 720 mmHg	paO_2 is set to null APACHE II oxygenation is scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 5

Partial Pressure of Carbon Dioxide: APACHE II

Definition	The person's partial pressure of carbon dioxide ($paCO_2$), measured in millimetres of mercury (mmHg).
Specific Attributes	The $paCO_2$ from the arterial blood gas taken during the first 24 hours of the ICU admission that produces the highest score using the APACHE II scoring algorithm (see page 96).
Field Name	PACO2

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN]
Maximum character length	3
Permissible range	5 – 250 mmHg
Unknown/Null value	Leave blank
Unit of measure	Millimetres of mercury (mmHg)
Validation rule	If FIO2 has been entered this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	ICU observation chart/Pathology results/Blood Gas machine printouts
Context	Used in calculating the oxygenation score within APACHE II for patients with FiO_2 values ≥ 0.5.
Collection method(s)	· To determine the arterial blood gas (ABG) with the highest APACHE II score, follow the instructions listed on page 96 in the collection methods for the FiO_2 (APACHE II) data element. · The $paCO_2$ from the ABG with the highest APACHE II score should be submitted. · The APACHE II FiO_2, paO_2 and $paCO_2$ values must come from the same ABG.

APACHE II Scoring for Arterial Blood Gases (ABG)
See the FiO_2 (APACHE II) data element, page 96.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
$PaCO_2$ missing	$paCO_2$ is set to null APACHE II oxygenation is scored as "normal" Check data source, update record
$PaCO_2$ < 5 mmHg or > 250 mmHg	$paCO_2$ is set to null APACHE II oxygenation is scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 3 and 5

pH: APACHE II

Definition	The person's arterial pH.
Specific Attributes	The pH from the first 24 hours of ICU admission with the highest APACHE II score (table below).
Field Name	PH

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N.N[N]
Maximum character length	3
Permissible range	6.3 – 8.5
Unknown/Null value	Leave blank
Validation rule	If FIO2 has been entered this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	ICU observation chart/Pathology results/Blood Gas machine printouts
Context	Used in the calculation of APACHE II scores.
Collection method(s)	· All arterial blood gases (ABGs) taken during the first 24 hours in ICU should be considered (venous samples cannot be used). · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be used. · If there are still no results available – leave the pH field blank. · Missing values are treated as normal (no points assigned). · The pH with the highest APACHE II score should be submitted (see scoring table below). · The highest scoring pH is independent of the highest scoring ABG.

APACHE II Scoring for Arterial pH							
Arterial pH	Low Abnormal Range			Normal Range	High Abnormal Range		
	< 7.15	7.15-7.24	7.25-7.32	7.33-7.49	7.5-7.59	7.6-7.69	≥ 7.7
APACHE II Score	4	3	2	0	1	3	4

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
pH missing	pH is set to null and scored as "normal" Check data source, update record
pH < 6.3 or > 8.5	pH is set to null and scored as "normal" Check data source, update record

References	Appendix G: 1, 2, 3 and 5

Additional Comments	2016 Revision: Permissible range changed from 6.5 – 8.5 to 6.3 – 8.5

Invasively Ventilated on Day 1

Definition	An indicator of invasive ventilation delivery, as represented by a code.
Specific Attributes	Identifies whether a patient received invasive ventilation during their first 24 hours in ICU.
Field Name	INV_DAYONE

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible value(s)	1 Yes, patient invasively ventilated on day 1 in ICU 0 No, patient not invasively ventilated on day 1 in ICU
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Progress notes
Context	Used in the APACHE IV scoring system.
Collection method(s)	· This data element identifies whether the patient received invasive ventilation during their first 24 hours in ICU. · Any form of positive pressure ventilation delivered through an artificial airway such as oral/nasal endo-tracheal tube or tracheostomy is considered invasive ventilation. It includes all modes of mandatory ventilation, spontaneous pressure support ventilation and continuous positive airways pressure (CPAP). · For definitions around when ventilation is considered to have started and ended, please see the field “Invasive Ventilation Hours”, page 121.

Additional Comments	2016 Revision: New data element – INV_DAYONE

Acute Renal Failure Status

Definition	The presence of acute renal failure in a patient.
Specific Attributes	Relates to the APACHE definition of acute renal failure: 24 hour urine output is < 410ml **AND** creatinine > 133 µmol/L **AND** patient is not receiving chronic dialysis.
Field Name	ARF

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	A or N
Maximum character length	1
Permissible value(s)	Y or 1 Acute renal failure N or 0 No acute renal failure *Use of one (1) and zero (0) allows import of data into COMET for reporting purposes. Please see page 12.*
Unknown/Null value	N or 0

Data Element Attributes	
Source	ICU observation chart/Progress notes/Fluid balance sheet
Context	· Used in the calculation of APACHE II and III-J scores and APACHE III-J and ANZROD predictive risk of death. · When ARF is recorded as Yes, the APACHE II and III-J point score for the worst creatinine value is increased.
Collection method(s)	· To code a patient as "Yes" ensure all three criteria listed above are met. · If a patient meets the criteria for ARF on admission to ICU but then does not meet the criteria after 24 hours in ICU because they received treatment – such patients can be coded as "Yes".

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
ARF code missing	Check data source, update record

References	Appendix G: 1, 2, 3, 4 and 5

Chronic Health Evaluation: APACHE II

Definition	Evidence of organ insufficiency or immunocompromised state PRIOR to the hospital admission.
Field Name	CHRON

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	String
Format	AAAAAA
Maximum character length	6
Permissible value(s)	String of 6 characters must be in the order of the variables below; Y Co morbidity exists N Co morbidity does not exist
Unknown/Null value	Missing data coded as N

Data Element Attributes	
Source	Hospital admission details/Transfer, Referral and/or ED notes/Progress notes.
Context	Used in the calculation of the APACHE II score. Some fields are also used in the ANZROD risk of death calculation.
Collection method(s)	Evidence/existence of the 6 co-morbidities listed below should be recorded at the time of admission to hospital AND must conform to the following criteria; · **Respiratory:** Chronic restrictive, obstructive disease resulting in severe exercise restriction (unable to climb stairs or perform household duties); or documented chronic hypoxia, hypercapnia, secondary polycythaemia, severe pulmonary hypertension (mean > 40 mmHg); or ventilator dependency. · **Cardiovascular:** New York Heart Association Class IV: angina or symptoms at rest or on minimal exertion (whilst getting dressed or during self-care). · **Liver:** ***Biopsy proven*** cirrhosis and documented portal hypertension; or episodes of past upper GI bleed attributed to portal hypertension. If the patient has a functioning liver transplant, this chronic health item does not apply. · **Renal:** Must be receiving chronic haemodialysis or peritoneal dialysis. · **Immune Suppressive Disease (Immune disease):** The patient has a disease that is sufficiently advanced to suppress resistance to infection: leukaemia, AIDS, lymphoma, severe autoimmune disease or documented diffuse metastatic cancer. · **Immunosuppressive Therapy (Immunosuppressed):** The patient has received therapy that has suppressed resistance to infection: e.g. immunosuppression, chemotherapy within 4 weeks of admission, radiation, high-dose steroid treatment (e.g. >1.5mg/kg methyl prednisolone or equivalent for ≥5 days), long term treatment with >20 mg/day steroid.

APACHE II Scoring Table for chronic co-morbidities If a patient is coded as YES for one or more chronic co-morbidity, the following scoring is applied		
ICU Admission Source	**Where Elect_surg = yes and plan_icu = yes**	**All other admissions**
OT/Recovery	2	5
All Other	5	5

References	Appendix G: 1, 2, 3, 5 and 12

Additional Comments	2016 Revision: Collection method – Metastatic carcinoma changed to metastatic cancer.

Chronic Health Evaluation: APACHE III-J

Definition	Evidence of organ insufficiency or immunocompromised state PRIOR to the hospital admission.
Field Name	COMORB

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	String
Format	AAAAAAA
Maximum character length	7
Permissible value(s)	String of 7 characters must be in the order of the variables below; Y Co morbidity exists N Co morbidity does not exist
Unknown/Null value	Missing data coded as N

Data Element Attributes	
Source	Hospital admission details/Transfer, Referral and/or ED notes/Progress notes.
Context	· Used in the calculation of the APACHE III-J score · Some fields used in the calculation of ANZROD predicted risk of death.
Collection method(s)	Evidence/existence of the 7 co-morbidities listed below should be recorded at the time of the hospital admission AND must conform to the following criteria; · **AIDS:** Clinical syndrome of AIDS-HIV positive with AIDS defining complications e.g. Pneumocystis carinii pneumonia, Kaposi's sarcoma, lymphoma, tuberculosis or Toxoplasma infection. · **Hepatic failure:** Episodes of hepatic failure and/or encephalopathy or coma. · **Lymphoma:** Any type of lymphoma. · **Metastatic cancer:** Proven distant metastases (not regional lymph nodes or contiguous spread) by surgery, CAT scan or other method. · **Leukaemia/Myeloma:** Acute leukaemia or multiple myeloma. · **Immunosuppressed:** The patient has received therapy that has suppressed resistance to infection: e.g. immunosuppression, chemotherapy within 4 weeks of admission, radiation, high-dose steroid treatment (e.g. >1.5mg/kg methyl prednisolone or equivalent for ≥5 days), long term treatment with >20 mg/day steroid. · **Cirrhosis:** ***Biopsy proven*** cirrhosis and documented portal hypertension; or episodes of past upper GI bleed attributed to portal hypertension. If the patient has a functioning liver transplant, this chronic health item does not apply. **Note:** If the cancer or haematological malignancy has been in remission for ≥5 years, they are no longer considered co-morbidities and should not be coded as chronic.

APACHE III-J Scoring Table for chronic co-morbidities **If a patient is coded as YES for one or more chronic co-morbidity, they receive the score for the "highest" scoring co-morbidity only**		
Chronic co-morbidity	**APACHE III-J score**	
	If elect_surg = YES and plan_icu = yes and ICU source = OT/Recovery	**All other admissions**
AIDS	0	23
Hepatic failure		16
Lymphoma		13
Metastatic cancer		11
Leukaemia/myeloma		10
Immunosuppressed		10
Cirrhosis		4

References	Appendix G: 1, 2, 4, 5 and 12

Tracheostomy Indicator

Definition	An indicator of tracheostomy, as represented by a code.
Specific Attributes	Indicates tracheostomy performed during the patient's stay in ICU.
Field Name	TRACHE_IND

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible value(s)	1 Yes, Tracheostomy performed during ICU stay 0 No, Tracheostomy not performed during ICU stay
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Progress notes
Context	Used in the APACHE III-J scoring system.
Collection method(s)	· This data element identifies the whether the patient had a tracheostomy performed during their stay in ICU. · Any patient receiving a new tracheostomy at any stage during their stay in ICU should be coded "Yes, tracheostomy performed during ICU stay" (1). This includes patients who go from ICU to theatre for a surgical tracheostomy, and then return to ICU. · Patients admitted to ICU with a tracheostomy already in-situ should be coded as "No, tracheostomy not performed during ICU stay" (0). · Patients where the tracheostomy is not used as an airway (i.e., tracheostomy for suctioning [minitrache]) should be coded as "No" (0).

Additional Comments	2016 Revision: New Data Element

Invasive Ventilation Indicator

Definition	An indicator of invasive ventilation delivery, as represented by a code.
Specific Attributes	Indicates delivery of invasive ventilation during the patient's stay in ICU.
Field Name	INV_IND

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible value(s)	1 Yes, patient received invasive ventilation during ICU stay 0 No, Patient did not receive invasive ventilation during ICU stay
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Progress notes
Context	Important epidemiological data
Collection method(s)	· This data element identifies whether a patient received invasive ventilation during their stay in ICU. · Any patient receiving invasive ventilation at any stage during their stay in ICU should be coded yes (1). · Any form of positive pressure ventilation delivered through an artificial airway such as oral/nasal endo-tracheal tube or tracheostomy is considered invasive ventilation. It includes all modes of mandatory ventilation, spontaneous pressure support ventilation and continuous positive airways pressure (CPAP). · For definitions around when ventilation is considered to have started and ended, please see the field "Invasive Ventilation Hours", page 121.

Additional Comments	2016 Revision: New Data Element

Non-Invasive Ventilation Indicator

Definition	An indicator of non-invasive ventilation delivery, as represented by a code.
Specific Attributes	Indicates administration of non-invasive ventilation during the patient's stay in ICU.
Field Name	NIV_IND

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible value(s)	1 Yes, patient received non-invasive ventilation during ICU stay 0 No, patient did not receive non-invasive ventilation during ICU stay
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Progress notes
Context	Important epidemiological data
Collection method(s)	· This data element identifies whether a patient received non-invasive ventilation during their stay in ICU. · Any patient receiving non-invasive ventilation at any stage during their stay in ICU should be coded yes (1). · Any form of positive pressure ventilation delivered through a mask or helmet is considered non-invasive ventilation. Non-invasive ventilation may also include negative pressure ventilation such as using a cuirass. (Please note positive pressure ventilation delivered through a tracheostomy is considered invasive ventilation. High flow nasal oxygen/air is not considered as non-invasive ventilation.) · For definitions around when ventilation is considered to have started and ended, please see the field "Non-Invasive Ventilation Hours", page 123.

Additional Comments	2016 Revision: New Data Element

ECMO Indicator

Definition	An indicator of ECMO delivery, as represented by a code.
Specific Attributes	Indicates administration of ECMO during the patient's stay in ICU.
Field Name	ECMO_IND

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible value(s)	1 Yes, patient received ECMO during ICU stay 0 No, patient did not receive ECMO during ICU stay
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Progress notes
Context	Important epidemiological data
Collection method(s)	· This data element identifies whether a patient received extracorporeal membrane oxygenation (ECMO) during their stay in ICU. · All forms of ECMO (e.g. veno-venous, veno-arterial and other combinations) are included, irrespective of site of cannulation or location where the ECMO was instituted. · Any patient receiving ECMO at any stage during their stay in ICU should be coded 'yes' (1). · Patients already on ECMO on admission to ICU should be coded as 'yes'.

Additional Comments	2016 Revision: New Data Element

Renal-Replacement Therapy Indicator

Definition	An indicator of renal-replacement therapy delivery, as represented by a code.
Specific Attributes	Indicates administration of renal-replacement therapy during the patient's stay in ICU.
Field Name	RENAL_IND

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible value(s)	1 Yes, patient received renal-replacement therapy during ICU stay 0 No, patient did not receive renal-replacement therapy during ICU stay
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Progress notes
Context	Important epidemiological data
Collection method(s)	· This data element identifies whether a patient received renal-replacement therapy during their stay in ICU. · Any patient receiving renal-replacement therapy at any stage during their stay in ICU should be coded yes (1). This includes patients previously on chronic dialysis prior to ICU admission. All forms of renal replacement therapy should be included, irrespective of mode or site.

Additional Comments	2016 Revision: New Data Element

Inotropes/Vasopressor Indicator

Definition	An indicator of inotrope/vasopressor administration, as represented by a code.
Specific Attributes	Indicates administration of inotropes or vasopressors during the patient's stay in ICU.
Field Name	INOTROP_IND

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible value(s)	1 Yes, patient received inotropes/vasopressors during ICU stay 0 No, patient did not receive inotropes/vasopressors during ICU stay
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Progress notes
Context	Important epidemiological data
Collection method(s)	· This data element identifies whether a patient received inotropes or vasopressors during their stay in ICU. · Any patient receiving either inotropes or vasopressors at any stage during their stay in ICU should be coded yes (1).

Additional Comments	2016 Revision: New Data Element

APACHE III-J Diagnosis (ANZICS Modified)

Definition	APACHE III-J (ANZICS modified) diagnosis which best describes the reason for the ICU admission, as represented by a code.
Field Name	AP3DIAG

Value Domain Attributes	
Version	3 (Revised May 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	NNN[N]
Maximum character length	4
Permissible value(s)	3-4 character codes as listed in Appendix C and C
Unknown/Null value	Leave blank
Validation rule	If hospital discharge date has been entered this field becomes mandatory, cannot be left blank. If ICU source = 1, a post-operative diagnosis must be entered. If ICU source = 2 or 3, a non-operative diagnosis must be entered.

Data Element Attributes	
Source	ED Notes/ICU admission summary/Progress notes/ICU observation chart
Context	Used in the APACHE III-J scoring system algorithm for calculation of predictive risk of death.
Collection method(s)	· The choice of diagnosis is dependent upon whether the patient is a 'post-operative' or 'non-operative' admission (see Appendix F). **Post-operative admissions:** · All patients with an ICU source of OT/Recovery must be given a post-operative diagnosis that corresponds to the surgical procedure that was performed (even if the admission to ICU was due to an intra-operative or post-operative complication). · **Exception:** If a patient was admitted to the ICU from the Operating Room/Recovery Room but no surgical procedure was performed (for example, the case was cancelled or the procedure was not initiated), then the patient is considered a Non-Operative patient. In such cases, the ICU Admission Source should be the patient's location prior to the OT/Recovery. Such patients would be given a non-operative diagnosis. An example would be anaphylaxis following anaesthesia prior to surgery. · Patients admitted post-endoscopy or bronchoscopy should also be given a post-operative diagnosis based on the procedure performed. · Patients admitted from a procedure room (e.g. cathlab/radiology) should be treated as post-operative patients **ONLY** if a general anaesthetic was administered. Otherwise such admissions should be treated as non-operative. **Non-operative admissions:** · Patients with an admission source other than OT/Recovery must be given a non-operative diagnosis that corresponds to what is regarded

	by the clinician, in the first 24 hours of the ICU admission, as the predominant reason for the ICU admission. · In such cases, the APACHE III-J diagnosis is NOT necessarily the discharge diagnosis. · The reason for ICU admission may not be the same as the reason for hospital admission. · Every effort should be made to determine the cause of an event (such as chest pain, shortness of breath, respiratory failure etc.), with the first 24 hours of ICU admission being used to choose a diagnosis. · **Exception:** Patients transferred to ICU directly from the OT/Recovery at another hospital may be given a post-operative diagnosis even though their ICU admission source will be "other hospital" or possibly "other hospital ICU". **Additional considerations when choosing a diagnosis:** · **Cardiac arrest:** when a non-operative patient is admitted to ICU post-cardiac arrest, the APACHE III-J diagnosis should always be cardiac arrest. · **Sepsis:** when sepsis is part of the working diagnosis for a non-operative patient it must be selected as the APACHE III-J diagnosis unless definitively ruled out within 24 hours. · **Trauma:** any patient whose injury or illness is a result of trauma should have a Trauma diagnosis selected. First, identify whether the patient is a post-operative or non-operative admission, then identify all major sites of injury. The selection of a diagnosis should be that which includes as many sites of trauma as possible. ALWAYS select head trauma when the head has been involved. **Diagnosis hierarchy:** can be used to decide on a diagnosis when the working diagnosis has multiple components. 1. Cardiac arrest takes priority over all other non-operative diagnosis codes. 2. Sepsis is the next non-operative consideration. 3. When trauma is present, choose it as the diagnosis, unless cardiac arrest or sepsis is also present. **Patients with a missing APACHE III-J diagnosis are excluded from the APACHE III-J SMR calculations.**

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
APACHE III-J diagnosis missing	Admission excluded from SMR calculation Check data source and update record
APACHE III-J diagnosis invalid	Admission excluded from SMR calculation Check data source and update record

References	Appendix G: 1, 2, 4, 5 and 10

APACHE III-J Sub-Diagnosis (ANZICS Modified)

Definition	APACHE III-J sub-diagnosis (ANZICS modified) which best describes the reason for the ICU admission in detail.
Field Name	AP3_SUBCODE

Value Domain Attributes	
Version	4 (Revised May 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	NNN[N].NN
Maximum character length	6
Permissible value(s)	6-7 character sub-codes as listed in Appendix E. Sub-codes have been updated with the release of version 5 of the data dictionary.
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ED notes/ICU admission summary/Progress notes/ICU observation chart
Context	The sub-diagnosis describes the reason for the ICU admission in greater detail and can assist in selecting the appropriate primary APACHE III-J diagnosis for the predicted risk of death calculation.
Collection method(s)	The rules used to determine the APACHE III-J diagnosis should also be applied when determining the APACHE III-J sub-diagnosis. Please refer to page 113.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
APACHE III-J sub-diagnosis code invalid	Check data source and update record

References	Appendix G: 1, 2, 6, 4 and 10

Thrombolytic Therapy

Definition	The delivery of thrombolytic treatment to a patient diagnosed with acute myocardial infarct, as represented by a code.
Specific Attributes	Collected for patients with an APACHE III-J diagnosis of AMI (107).
Field Name	THROMB_THERAPY

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 Yes 0 or 2 No *Use of zero (0) allows import of data into COMET for reporting purposes. Please see page 12.*
Unknown/Null value	Leave blank
Validation rule	If Apache III-J diagnosis = 107 this field becomes mandatory, cannot be left blank

Data Element Attributes	
Source	ICU observation chart/Progress notes
Context	Used in the APACHE III-J scoring system algorithm for calculation of predicted risk of death for patients whose APACHE III-J diagnosis is acute myocardial infarct (diagnosis code 107).

Collection method(s)	· This data element is only collected for patients who are admitted to ICU for this admission with an APACHE III-J diagnosis of AMI (107).
	· For such patients, this data element describes whether a patient has received thrombolytic therapy within the 24 hours preceding ICU admission or immediately following ICU admission.
	· Examples of thrombolytic therapy include:
	  · rTPA
	  · Reteplase
	  · Streptokinase
	  · Urokinase
	· Patients with an APACHE III-J diagnosis other than AMI (107) should not be coded (leave blank).

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Thrombolytic therapy ≠ 1, 2 or 0	Data is set to missing.

References	Appendix G: 10

Additional Comments	2016 Revision: Code 8 Missing – Obsolete

CABG REDO

Definition	The identification of a primary or repeat coronary artery bypass graft (CABG) operation, as represented by a code.
Specific Attributes	Collected for patients with an APACHE III-J diagnosis of CABG only (1207).
Field Name	CABG_REDO

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 First CABG 2 Repeat CABG 3 Not Applicable
Unknown/Null value	Leave blank
Validation rule	If Apache III-J diagnosis = 1207 this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	Referral/ICU admission summary/Progress notes/ICU observation chart
Context	Used in the APACHE III-J scoring system algorithm for calculation of predicted risk of death for patients whose APACHE III-J diagnosis is CABG only (diagnosis code 1207).
Collection method(s)	· This data element is only collected for patients who are admitted to ICU for this admission with an APACHE III-J diagnosis of CABG only (1207). · For such patients this data element describes whether the CABG procedure was the first such procedure this patient has undergone (coded as first) or whether the patient has undergone a CABG procedure in the past (coded as repeat). · Patients with an APACHE III-J diagnosis other than CABG only (1207) should not be coded (leave blank).

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
CABG Redo ≠ 1, 2	Data is set to missing
Patients with an APACHE III-J diagnosis of CABG only (1207) will not receive a risk of death and will be excluded from SMR calculations if this data element is not coded as 1 or 2.	

References	Appendix G: 10

CABG Grafts

Definition	The total number of coronary arteries bypassed with a graft during a coronary artery bypass graft (CABG) operation.
Specific Attributes	Collected for patients with an APACHE III-J diagnosis of CABG only (1207).
Field Name	CABG_GRAFT

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N
Maximum character length	1
Permissible range	1 – 8
Unknown/Null value	Leave blank
Validation rule	If Apache III-J diagnosis = 1207 this field becomes mandatory, cannot be left blank.

Data Element Attributes	
Source	Referral/ICU admission summary/Progress notes/ICU observation chart
Context	Used in the APACHE III-J scoring system algorithm for calculation of predicted risk of death for patients whose APACHE III-J diagnosis is CABG only (diagnosis code 1207).
Collection method(s)	· This data element is only collected for patients who are admitted to ICU for this admission with an APACHE III-J diagnosis of CABG only (1207). · This data element describes the total number of coronary arteries with a bypass graft in an operation on a patient leading to this admission. · Where the APACHE III-J diagnosis is 1207, a CABG grafts value of 0 is invalid and will be treated as missing. The predicted risk of death for such an admission cannot be calculated. · Patients with an APACHE III-J diagnosis other than CABG only (1207) should not be coded (leave blank).

Data Submission Validation Report	
Issue(s)	Action to be taken by unit
CABG Grafts missing	CABG Grafts is set to null Record does not receive a risk of death and is excluded from SMR calculation if APACHE III-J diagnosis is 1207 Check data source and update record
CABG Grafts < 1 or > 8	CABG Grafts is set to null Record does not receive a risk of death and is excluded from SMR calculation if APACHE III-J diagnosis is 1207 Check data source and update record

References	Appendix G: 10

3.0 Non-Mandatory Fields

These fields can be submitted to the ANZICS CORE APD from January 1 2017, but are not mandatory

APACHE III-J Score

Definition	Composite score describing the severity of the patient's condition; generated using the APACHE III-J severity of disease classification system.
Field Name	APACHE3

Value Domain Attributes	
Version	3 (Revised February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[NN]
Maximum character length	3
Permissible range	0 – 299
Missing/Null value	Leave blank

Data Element Attributes	
Source	Auto-generated by data collection software such as COMET
Context	· Standardised and validated measure of severity of illness required to estimate predicted risk of death. · The score is validated by a relationship between the score and the predicted risk of death for a diagnosis. · Enables comparison/analysis where severity may be a confounding factor. · The scoring system was devised using multiple logistic regressions to select data elements that predict hospital mortality risk for critically ill hospitalised adults.

Collection method(s)	· The point score is generated using the APACHE III-J severity of disease classification by adding together the points scored from:
	  · 17 Acute physiological data elements
	  · Chronic health evaluation at hospital admission
	  · Age group
	· Admissions where no physiology data is collected will not receive an APACHE III-J score.
	· Admissions where 'type of care' is ward, CCU or procedure only in ICU will not receive an APACHE III-J score.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
APACHE III-J Score < 0 or > 299	Check calculation APACHE III-J score is recalculated by ANZICS CORE

References	Appendix G: 1, 2 and 4

Invasive Ventilation Hours

Definition	Total invasive ventilation hours during the patient's stay in ICU.
Field Name	INV_HOURS

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Number
Data type	Total
Format	N[NNN]
Maximum character length	4
Permissible range	0 – 9999
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Progress notes
Context	Important epidemiological data
Collection method(s)	Any form of positive pressure ventilation delivered through an artificial airway such as oral/nasal endo-tracheal tube or tracheostomy is considered invasive ventilation. It includes all modes of mandatory ventilation, spontaneous pressure support ventilation and continuous positive airways pressure (CPAP). This field should reflect the total invasive ventilation hours of a patient during their stay in ICU (total completed hours). If multiple episodes of invasive ventilation were provided, these should be added together for submission. Ventilation that occurs outside the ICU but during the ICU admission (e.g., in theatre) should be included in the total. *Start date/time:* This is date and time when the patient with the invasive artificial airway was connected to positive pressure ventilation. It may begin prior to the time of ICU admission. For the purpose of ANZICS CORE data collection, if ventilation starts prior to ICU admission then the start date/time of ventilation should default to the ICU admission date/time. This ensures that data submitted to ANZICS CORE only includes total duration of invasive ventilation which occurred within the ICU. *End date/time:* For patients with an endo-tracheal tube, the end date/time of ventilation is to be recorded as when the patient is extubated. Patients who require re-intubation even if within 24 hours of extubation should be considered to have started a new episode of invasive ventilation. For patients with a tracheostomy, the end date/time of ventilation is to be recorded as when positive pressure ventilation via the tracheostomy discontinued. Any episode of ventilation via a tracheostomy which is re-instituted within 24 hours should be considered as on-going ventilation (with the interim time included in the total hours). If ventilation via the

	tracheostomy is not re-instituted within 24 hours, then the ventilation end date/time would be the time at which the patient was last on the ventilator. The end date/time may occur after the time of ICU discharge. For the purpose of ANZICS CORE data collection, if ventilation continues after discharge from ICU, then the end date/time of ventilation should default to the ICU discharge date/time. This ensures that data submitted to ANZICS CORE only includes total duration of invasive ventilation which occurred within the ICU.

References	Appendix G: 14

Non-Invasive Ventilation Hours

Definition	Total non-invasive ventilation hours during the patient's stay in ICU.
Field Name	NIV_HOURS

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Number
Data type	Total
Format	N[NNN]
Maximum character length	4
Permissible range	0 - 9999
Unknown/Null value	Leave blank

Data Element Attributes	
Source	ICU observation chart/Progress notes
Context	Important epidemiological data
Collection method(s)	Any form of positive pressure ventilation delivered through a mask or helmet is considered non-invasive ventilation. Non-invasive ventilation may also include negative pressure ventilation such as using a cuirass. (Please note positive pressure ventilation delivered through a tracheostomy is considered invasive ventilation. High flow nasal oxygen/air is not considered as non-invasive ventilation.) This field should reflect the total non-invasive ventilation hours of a patient during their stay in ICU (total completed hours). If multiple episodes of non-invasive ventilation were provided, these should be added together for submission. Ventilation that occurs outside the ICU but during the ICU admission (e.g., in theatre) should be included in the total. *Start date/time:* This is date and time when the patient is commenced on non-invasive ventilation. It may begin prior to the time of ICU admission. For patients who already receive non-invasive ventilation or continuous positive airways pressure (CPAP) as chronic therapy, the start time should be considered as the time of admission to hospital. For the purpose of ANZICS CORE data collection, if ventilation starts prior to ICU admission then the start date/time of ventilation should default to the ICU admission date/time. This ensures that data submitted to ANZICS CORE only includes total duration of invasive ventilation which occurred within the ICU. *End date/time:* The end date/time of non-invasive ventilation is to be recorded as when ventilation is discontinued. Patients who receive intermittent non-invasive ventilation are considered to have been ceased non-invasive ventilation once the patient has been free from ventilation for more than 24 hours. Any episode of non-invasive ventilation which is re-instituted within 24 hours should be considered as on-going ventilation.

	The end date/time may occur after the time of ICU. For the purpose of ANZICS CORE data collection, if ventilation starts prior to ICU admission then the start date/time of ventilation should default to the ICU admission date/time. This ensures that data submitted to ANZICS CORE only includes total duration of invasive ventilation which occurred within the ICU.

References	Appendix G: 14

Additional Comments	This field may not match the data collected for administrative datasets due to the exclusion of High-flow nasal oxygen.

Diabetes Status

Definition	Whether a person has or is at risk of diabetes, as represented by a code.
Specific Attributes	Collected at the time of admission to ICU.
Field Name	DIABETES

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N
Maximum character length	1
Permissible Value(s)	1 Type 1 diabetes 2 Type 2 diabetes 3 Gestational diabetes 4 Other (secondary diabetes, previous gestational diabetes, impaired fasting glucose/glucose intolerance) 5 Not diagnosed with diabetes
Unknown/Null value	Leave blank

Data Element Attributes	
Source	Hospital admission details/Transfer, Referral and/or ED notes/Progress notes
Context	· Required to stratify data based on diabetes status · Important epidemiological information
Collection method(s)	· This data element identifies the diabetic status of the patient using the definitions outlined below. · This information should be collected when the patient is admitted to hospital for the stay that includes the current episode of ICU care. · Where there is a gestational diabetes mellitus (GDM) or previous GDM, or any condition falling under code 4 in combination with a current history of Type 2 diabetes then record as code 2, type 2 diabetes. · Patients who receive insulin while in ICU to control high blood glucose, but who have no evidence of meeting the definitions for codes 1-4 should be coded as 'not diagnosed with diabetes' (5). <u>Type 1 diabetes:</u> Beta-cell destruction (either autoimmune or idiopathic), usually leading to absolute insulin deficiency. It does not include those forms of beta-cell destruction or failure to which specific causes can be assigned (e.g. cystic fibrosis, mitochondrial defects). <u>Type 2 diabetes:</u> Type 2 includes the common major form of diabetes, which results from defect(s) in insulin secretion, almost always with a major contribution from insulin resistance. <u>Gestational diabetes mellitus (GDM):</u> GDM is a carbohydrate intolerance resulting in hyperglycaemia with onset or first recognition during pregnancy. The definition applies irrespective of whether or not insulin is used for treatment or the condition persists after pregnancy.

	Other (secondary diabetes): This includes less common causes of diabetes mellitus, including (for example) genetic defects of beta-cell function, genetic defects in insulin action, diseases of the exocrine pancreas, endocrinopathies, drug or chemical induced, infections, uncommon forms of immune-mediated diabetes, other genetic syndromes sometimes associated with diabetes. Previous GDM: Where the person has a history of GDM. Impaired fasting glycaemia (IFG): IFG refers to fasting glucose concentrations which are lower than those required to diagnose diabetes mellitus but higher than the normal reference range. An individual is considered to have IFG if they have a fasting plasma glucose of 6.1 or greater and less than 7.0 mmol/L AND the 2 hour value in the Oral Glucose Tolerance Test (OGTT) is less than 7.8 mmol/L. Impaired glucose tolerance (IGT): IGT refers to a metabolic state intermediate between normal glucose homeostasis and diabetes. Those individuals with IGT manifest glucose intolerance only when challenged with an oral glucose load. IGT is diagnosed if the 2 hour value in the OGTT is greater than 7.8 mmol/L. and less than 11.1 mmol/L AND the fasting plasma glucose concentration is less than 7.0 mmol/L. Not diagnosed with diabetes: The subject has no known diagnosis of Type 1, Type 2, GDM, Previous GDM, IFG, IGT or Other (secondary diabetes).

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Diabetes ≠ 1, 2, 3, 4, 5	Diabetes status is nulled.

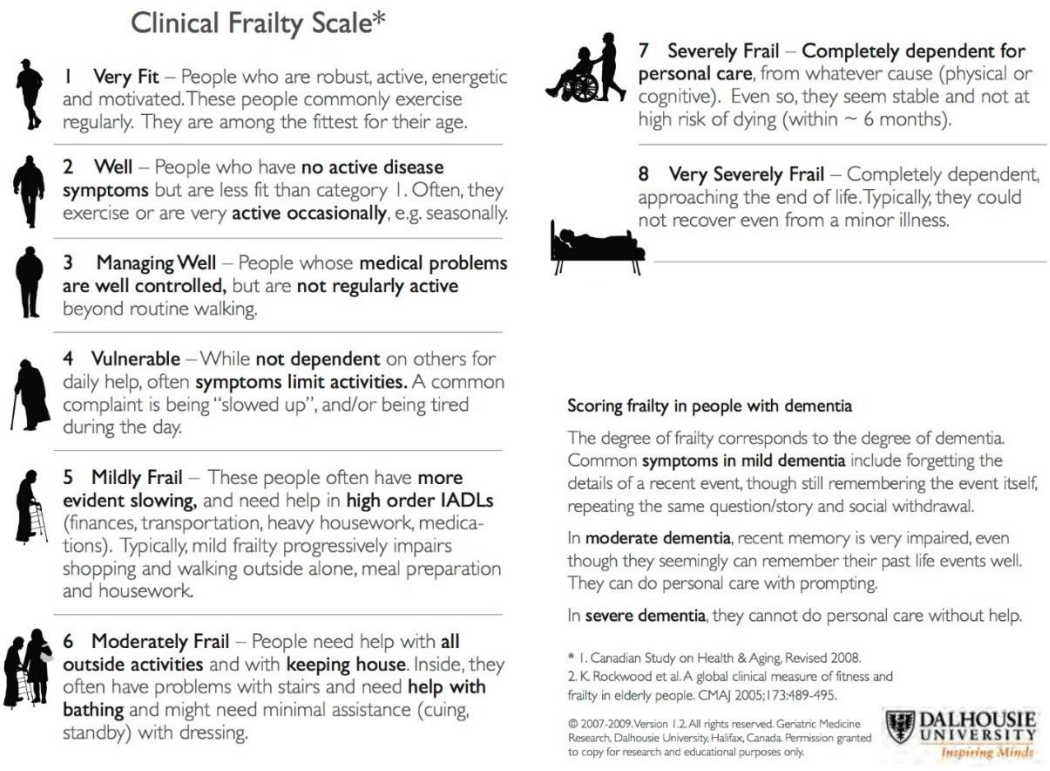
References	Appendix G: 1 and 6

Additional Comments	This data element is aligned with, but not compliant with, the NHDD, Version 16 data element “diabetes status”. Definition: Whether a person has or is at risk of diabetes, as represented by a code.

Clinical Frailty Score

Definition	Patient's frailty assessment.
Specific Attributes	Collected at the time of admission to ICU, based on the patient's level of physical function in the 2 months prior to ICU admission.
Field Name	FRAILTY

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Code
Data type	Number
Format	N
Maximum character length	1
Permissible value(s)	1 Very fit 2 Well 3 Managing Well 4 Vulnerable 5 Mildly Frail 6 Moderately Frail 7 Severely Frail 8 Extremely Frail
Unknown/Null value	Leave blank



Clinical Frailty Scale*

1 **Very Fit** – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 **Well** – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.

3 **Managing Well** – People whose **medical problems are well controlled,** but are **not regularly active** beyond routine walking.

4 **Vulnerable** – While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up", and/or being tired during the day.

5 **Mildly Frail** – These people often have **more evident slowing,** and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 **Moderately Frail** – People need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.

7 **Severely Frail** – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 **Very Severely Frail** – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging, Revised 2008.
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

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Data Element Attributes	
Source	Progress notes (medical history)
Context	Used to stratify data based on patient's physical function. This frailty score represents the ANZICS modification of the Dalhousie Clinical Frailty Score.
Collection method(s)	This data element identifies the patient's level of physical function in the two months preceding admission to ICU. Very fit: People who are robust, active, energetic and motivated. These people commonly exercise regularly. Well: People who have no active disease symptoms but exercise less regularly than those in group 1. Often the exercise or are very active occasionally (e.g., seasonally) Managing Well: People whose medical problems are well controlled, but are not regularly active beyond walking. Vulnerable: While not dependent on others for daily help, often symptoms limit activities. A common complaint is being 'slowed up', and/or being tired during the day. Mildly Frail: These people often have more evident slowing, and need help in higher order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping, walking outside alone, meal preparation and house work. Moderately Frail: People need help with all outside activities and with keeping house. Inside, they often have problems with stairs, need help with bathing and may need minimal assistance with dressing. Severely Frail: Completely dependent for personal care (resulting from physical or cognitive issues). But seem stable and not at high risk of dying within the next 6 months. Extremely Frail: Completely dependent, approaching end of life. Typically, they could not recover from even a minor illness.

References	Appendix G: 13

Lactate

Definition	The person's lactate measured in mmol/L.
Specific attributes	Highest lactate value recorded during the first 24 hours of ICU admission.
Field Names	LACTATE

Value Domain Attributes	
Version	1 (Introduced February 2016)
Data item type	Data element
Representation class	Total
Data type	Number
Format	N[N]
Maximum character length	2
Permissible range	0 – 50 mmol/L
Unknown/Null value	Leave blank
Unit of measure	Millimoles per litre (mmol/L)

Data Element Attributes	
Source	Pathology results
Context	Important epidemiological information, acid-base disturbance is associated with increased mortality.
Collection method(s)	· Lactate readings can be taken from biochemistry analysis or from blood gas analysis. · The highest lactate during the first 24 hours in ICU should be collected. · If results are not available from the first 24 hours in ICU, then results from 1 hour prior to ICU admission can be recorded. · If there are still no results available – leave the lactate field blank.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Lactate missing	Lactate is set to null Check data source, update record
Lactate < 0 or >50 mmol/L	Lactate is set to null Check data source, update record

Delirium

Definition	An indicator of whether the patient developed delirium during the current episode of ICU care, as represented by a code.
Field Names	DELIRIUM

Value Domain Attributes	
Version	1 (Introduced May 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible value(s)	1 Yes, delirium developed 0 No, delirium did not develop
Unknown/Null value	Leave blank

Data Element Attributes	
Source	Progress notes
Context	Important epidemiological information
Collection method(s)	· Delirium is defined as an acute or fluctuating mental state (which represents a change from the patient's normal baseline) and is characterised by inattention with altered level of consciousness, agitation or disorganised thought processes. It should be diagnosed by standardised assessment tools such as (but not limited to) the Confusion Assessment Method for ICU (CAM-ICU). · Patients who are admitted to ICU due to delirium or with another diagnosis but are noted to have delirium present at the time of ICU admission, should NOT be included. Patients who develop delirium after discharge from ICU should NOT be included.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Delirium not 1 or 0	Delirium is set to null Check data source, update record

Pressure Injury

Definition	An indicator of whether the patient developed a pressure injury during the current episode of ICU care, as represented by a code.
Field Names	PRESS_INJ

Value Domain Attributes	
Version	1 (Introduced May 2016)
Data item type	Data element
Representation class	Code
Data type	Boolean
Format	N
Maximum character length	1
Permissible range	1 Yes, pressure injury developed 0 No, pressure injury did not develop
Unknown/Null value	Leave blank

Data Element Attributes	
Source	Progress notes
Context	Important epidemiological information
Collection method(s)	· Patients who develop pressure injuries as a consequence of their stay in ICU should be coded as 'yes'. Pressure injuries of stage II and above should be included. The following should be included: · Stage II (partial thickness skin loss), · Stage III (full thickness skin loss), · Stage IV (full thickness tissue loss) and · Unstageable/suspected deep tissue pressure injuries (where skin is breached but depth is unknown) · Pressure injuries at any site which meet the above criteria should be included (e.g. include pressure injuries at mouth due to endotracheal tube securing devices and perineal pressure injuries). Pressure injuries which are noted up to 48 hours after discharge from ICU and are considered to be a consequence of the ICU admission may also be included. · A patient who had developed a pressure injury during an earlier stay in ICU, and is then readmitted to ICU, should be coded as YES only if a new pressure injury develops during this second ICU admission. Do not include: · Stage I pressure injuries with non-blanchable erythema should NOT be included. · Patients who are admitted to ICU with a pre-existing pressure injury or in whom a pressure injury is thought to have developed prior to ICU admission and is diagnosed within 48 hours of ICU admission, should NOT be included. · Patients with skin loss due to other conditions (e.g. necrotising soft tissue infections or burns) should not be included.

Data Submission Validation Report	
Issue(s)	**Action to be taken by unit**
Pressure Injury not 1 or 0	Pressure injury is set to null Check data source, update record

Appendix A: Minimum Data Set export layout

MS Excel spreadsheet format (COMET EXPORT)

Key:

Value	Valid character range
N	Numeric character set: contains whole and decimal.
A	Alphabetic character set: contains the letters a-z and A-Z.
X	Alphanumeric character set: contains alphabetic and numeric characters.
D	A numeric character representing a number of days.
M	A numeric character representing a number of months.
Y	A numeric character representing a number of years.
h	Any numeric character representing a number of hours.
m	Any numeric character representing a number of minutes.

Changes made in February 2016 highlighted in yellow

Export Field Name	Description	Format	Maximum Character Length	Mandatory (must be in submission file)
AGE	Age	N[NN.N]	4	yes
ALBUMHI	Highest value for albumin concentration	N[N]	2	Yes
ALBUMLO	Lowest value for albumin concentration	N[N]	2	Yes
AP3_SUBCODE	APACHE III-J sub-diagnosis using ANZICS modified list of more detailed description of diagnoses, this is a numeric code assigned to a text diagnosis	NNN[N].NN	6	Yes
AP3CO2O	APACHE III-J partial pressure of carbon dioxide (from highest scoring ABG)	N[NN]	3	Yes
AP3DIAG	APACHE III-J diagnosis using ANZICS modified listing of diagnoses, this is a numeric code assigned to a text diagnosis	NNN[N]	4	Yes
AP3FIO	APACHE III-J fraction of inspired oxygen	N[.NN]	3	Yes
AP3PH	APACHE III-J pH of arterial blood gas	N.N[N]	3	Yes
AP3PO2	APACHE III-J partial pressure of oxygen	NN[N]	3	Yes
APACHE3	Apache III-J score	N[NN]	3	No
ARF	Is acute renal failure present?	A or N	1	Yes
BILI	Bilirubin concentration	N[NNN]	4	Yes
CABG_GRAFT	Number of coronary arteries bypassed with a graft during a CABG procedure	N	1	Yes
CABG_REDO	First or redo CABG procedure?	N	1	Yes
CARDARREST	Cardiac arrest in previous 24 hours?	N	1	Yes
CARETYPE	Type of care on admission	N	1	Yes
CAREUNIT	Care unit identifier	N[N]	2	Yes
CHRON	Chronic health evaluation (APACHE II)	AAAAAA	6	Yes
COMORB	Chronic health evaluation (APACHE III-J)	AAAAAAA	7	Yes
CREATHI	Highest value for creatinine	NN[NN]	4	Yes
CREATLO	Lowest value for creatinine	NN[NN]	4	Yes

Export Field Name	Description	Format	Maximum Character Length	Mandatory (must be in submission file)
DELIRIUM	Indicator of Delirium within ICU	N	1	No
DIABETES	Patient's diabetes status	N	1	No
DIASTOLICHI	Highest value for diastolic blood pressure	N[NN]	3	Yes
DIASTOLICLO	Lowest value for diastolic blood pressure	N[NN]	3	Yes
ECMO_IND	Indicator of ECMO during ICU stay	N	1	Yes
ELECT_SURG	ICU admission following elective surgery	N	1	Yes
EMG_RSP_ADM	Is this admission to ICU the result of an emergency response?	N	1	Yes
FIO2	APACHE II fraction of inspired oxygen	N[.NN]	3	Yes
FRAILTY	Patient's frailty assessment	N	1	No
GCS	Total GCS score	N[N]	2	Yes
GCSEYE	Eye component of GCS	N	1	Yes
GCSMOTOR	Motor component of GCS	N	1	Yes
GCSVERB	Verbal component of GCS	N	1	Yes
GCS_SEDATED	GCS unavailable due to sedation	N	1	Yes
GLUCHI	Highest value for glucose concentration	N[N.N]	3	Yes
GLUCLO	Lowest value for glucose concentration	N[N.N]	3	Yes
HCO3HI	Highest value for bicarbonate of blood	N[N.N]	3	Yes
HCO3LO	Lowest value for bicarbonate of blood	N[N.N]	3	Yes
HCTHI	Highest value for haematocrit	N.N[N]	3	Yes
HCTLO	Lowest value for haematocrit	N.N[N]	3	Yes
HEIGHT	Height	N[NN]	3	Yes
HMGNHI	Highest value for haemoglobin	N[N.N]	3	Yes
HMGNLO	Lowest value for haemoglobin	N[N.N]	3	Yes
HOSP_AD_DT	Date of hospital admission	DD/MM/YYYY	10	Yes
HOSP_AD_TM	Time of hospital admission	HHMM	4	Yes
HOSP_DS_DT	Date of hospital discharge	DD/MM/YYYY	10	Yes
HOSP_DS_TM	Time of hospital discharge	HHMM	4	Yes
HOSP_OUTCM	Hospital outcome	N[N]	2	Yes
HOSP_SRCE	Source of admission to hospital	N	1	Yes
HRHI	Highest value for heart rate	N[NN]	3	Yes
HRLO	Lowest value for heart rate	N[NN]	3	Yes
ICU_AD_DT	ICU admission date	DD/MM/YYYY	10	Yes
ICU_AD_TM	ICU admission time	HHMM	4	Yes
ICU_DS_DEC_DT	ICU discharge decision date	DD/MM/YYYY	10	Yes
ICU_DS_DEC_TM	ICU discharge decision time	HHMM	4	Yes
ICU_DS_DT	ICU discharge date	DD/MM/YYYY	10	Yes
ICU_DS_TM	ICU discharge time	HHMM	4	Yes
ICU_OUTCM	ICU outcome	N	1	Yes
ICU_SRCE	ICU admission source	N	1	Yes
INDIGENOUS	Indigenous status	N	1	Yes

Export Field Name	Description	Format	Maximum Character Length	Mandatory (must be in submission file)
INOTROP_IND	Indicator of inotrope/vasopressor administration during ICU stay	N	1	Yes
INTUBATED	Was the patient intubated at time of highest scoring Apache III-J blood gas?	A or N	1	Yes
INV_DAYONE	Invasively ventilated on day 1	N	1	Yes
INV_HOURS	Total invasive ventilation hours	N[NNN]	4	No
INV_IND	Indicator of invasive ventilation during ICU stay	N	1	Yes
KHI	Highest value for potassium concentration	N[N.NN]	3	Yes
KLO	Lowest value for potassium concentration	N[N.NN]	3	Yes
LACTATE	Highest value for lactate	N[N]	2	No
MAPHI	Highest value for mean arterial pressure	N[NN]	3	Yes
MAPLO	Lowest value for mean arterial pressure	N[NN]	3	Yes
NAHI	Highest value for sodium concentration	NNN	3	Yes
NALO	Lowest value for sodium concentration	NNN	3	Yes
NIV_HOURS	Total non-invasive ventilation hours	N[NNN]	4	No
NIV_IND	Indicator of non-invasive ventilation during ICU stay	N	1	Yes
PACO2	APACHE II partial pressure of carbon dioxide	N[NN]	3	Yes
PAO2	APACHE II partial pressure of oxygen	NN[N]	3	Yes
PATIENTID	Patient identifier	X[XXXXXXXXXXX]	12	Yes
PH	APACHE II pH of arterial blood	N.N[N]	3	Yes
PLAN_ICU	Planned admission to ICU	N	1	Yes
PLATHI	Highest value for platelets	N[NNN]	4	Yes
PLATLO	Lowest value for platelets	N[NNN]	4	Yes
POSTCODE	Residential postcode	NNNN	4	Yes
PREG_STAT	Pregnancy status of a female patient	N	1	Yes
PRESS_INJ	Indicator of pressure injury within ICU	N	1	No
RENAL_IND	Indicator of renal replacement therapy during ICU stay	N	1	Yes
RRHI	Highest value for respiratory rate	N[N]	2	Yes
RRHI_VENT	Invasive ventilation status for RR high	N	1	Yes
RRLO	Lowest value for respiratory rate	N[N]	2	Yes
RRLO_VENT	Invasive ventilation status for RR low	N	1	Yes
SEX	Sex	A	1	Yes
SLK581	Statistical linkage key	XXXXXDDMMYYYYN	14	Yes
SYSTOLICHI	Highest value for systolic blood pressure	N[NN]	3	Yes
SYSTOLICLO	Lowest value for systolic blood pressure	N[NN]	3	Yes
TEMPHI	Highest value for core temperature	NN[.N]	3	Yes

Export Field Name	Description	Format	Maximum Character Length	Mandatory (must be in submission file)
TEMPLO	Lowest value for core temperature	NN[.N]	3	Yes
THROMB_THERAPY	Thrombolytic therapy status	N	1	Yes
THROMBPRO	Thromboembolism prophylaxis	N	1	Yes
TRACHE_IND	Indicator of tracheostomy performed during ICU stay	N	1	Yes
TREAT_LMT	Treatment goals on admission	N	1	Yes
UREA	Urea concentration	N[NN.N]	4	Yes
URINEOP	Urine output	N[NNNN]	5	Yes
WCCHI	Highest value for white cell count	N[NN.N]	4	Yes
WCCLO	Lowest value for white cell count	N[NN.N]	4	Yes
WEIGHT	Weight	N[NN.N]	4	Yes

Appendix B: Validation Rules and Mandatory fields

This table summarises the validation rules and checks that should be applied to your data collection. Range and look-up checks are applied to all relevant fields. Anything out of range or not an allowed look-up value will be deleted during processing.

Export Field Name	Description	Validation Rule	Validation Check *(Human eye would be useful)*
AGE	Age	Mandatory, cannot be left blank	Check if age < 1
AP3DIAG	APACHE III-J diagnosis using ANZICS modified listing of diagnoses, this is a numeric code assigned to a text diagnosis	If hospital discharge date is entered this field becomes mandatory, cannot be left blank If ICU source = 1, Apache III-J diagnosis must be post-operative If ICU source = 2 or 3, Apache III-J diagnosis must be non-operative	Ensure diagnosis (and ICU source) align with rules
AP3PO2	APACHE III-J partial pressure of oxygen	If AP3FIO is entered this field becomes mandatory, cannot be left blank	
AP3CO2O	APACHE III-J partial pressure of carbon dioxide (from highest scoring ABG)	If AP3FIO is entered this field becomes mandatory, cannot be left blank	
AP3PH	APACHE III-J pH of arterial blood gas	If AP3FIO is entered this field becomes mandatory, cannot be left blank	
CABG_GRAFT	Number of coronary arteries bypassed with a graft during a CABG procedure	If Apache III-J diagnosis = 1207 this field becomes mandatory, cannot be left blank	
CABG_REDO	First or redo CABG procedure?	If Apache III-J diagnosis = 1207 this field becomes mandatory, cannot be left blank	
CARETYPE	Type of care on admission	Mandatory, cannot be left blank	
ELECT_SURG	ICU admission following elective surgery	ELECT_SURG can only = 1 IF Apache III-J diagnosis is Post-operative	
GCS	Total GCS score		If ICU source = 1,ELECT_SURG = 1 and GCS = 3, check that patient was not sedated
GCSEYE	Eye component of GCS	If GCS total is entered this field becomes mandatory, cannot be left blank	
GCSMOTOR	Motor component of GCS	If GCS total is entered this field becomes mandatory, cannot be left blank	

Export Field Name	Description	Validation Rule	Validation Check *(Human eye would be useful)*
GCSVERB	Verbal component of GCS	If GCS total is entered this field becomes mandatory, cannot be left blank	
HOSP_AD_DT	Date of hospital admission	Mandatory, cannot be left blank Hospital admission cannot overlap with an existing hospital admission	
HOSP_AD_TM	Time of hospital admission	Mandatory, cannot be left blank	
HOSP_DS_DT	Date of hospital discharge	Hospital discharge date/time must be later than hospital admission date/time AND later than or equal to ICU discharge date/time	
HOSP_OUTCM	Hospital outcome	If hospital discharge date is entered this field becomes mandatory, cannot be left blank If ICU outcome = 2, hospital outcome must also = 2 If ICU outcome = 6, hospital outcome must also = 6	
ICU_AD_DT	ICU admission date	Mandatory, cannot be left blank ICU admission cannot overlap with or duplicate an existing ICU admission. ICU admission date/time must be later than or equal to hospital admission date/time	
ICU_AD_TM	ICU admission time	Mandatory, cannot be left blank	
ICU_DS_DEC_DT	ICU discharge decision date	ICU discharge decision date/time must be earlier than or equal to ICU discharge date/time	
ICU_DS_DEC_TM	ICU discharge decision time	If ICU discharge decision date is entered this field becomes mandatory, cannot be left blank	
ICU_DS_DT	ICU discharge date	ICU discharge date/time must be later than ICU admission date/time	
ICU_DS_TM	ICU discharge time	If ICU discharge date is entered this field becomes mandatory, cannot be left blank	
ICU_OUTCM	ICU outcome	If ICU discharge date is entered this field becomes mandatory, cannot be left blank	

Export Field Name	Description	Validation Rule	Validation Check *(Human eye would be useful)*
ICU_SRCE	ICU admission source	Mandatory, cannot be left blank	Check ICU source aligns with rules
INTUBATED	Was the patient intubated at time of highest scoring Apache III-J blood gas?	If AP3FIO is entered this field becomes mandatory, cannot be left blank	
PATIENTID	Patient identifier	Mandatory, cannot be left blank	
PACO2	APACHE II partial pressure of carbon dioxide	If FIO2 is entered this field becomes mandatory, cannot be left blank	
PAO2	APACHE II partial pressure of oxygen	If FIO2 is entered this field becomes mandatory, cannot be left blank	
PH	APACHE II pH of arterial blood	If FIO2 is entered this field becomes mandatory, cannot be left blank	
PLAN_ICU	Planned admission to ICU	Mandatory, cannot be left blank If ICU Source = 2 (ED), PLAN_ICU must = 0	If ICU Source = 3 (ward) and PLAN_ICU = 1, please confirm coding, combination unlikely
SEX	Sex	Mandatory, cannot be left blank	
TEMPHI	Highest value for core temperature		If TEMPHI < 34, check patient wasn't actively cooled.
TEMPLO	Lowest value for core temperature		If TEMPLO < 34, check patient wasn't actively cooled.
THROMB_THERAPY	Thrombolytic therapy status	If Apache III-J diagnosis = 107 this field becomes mandatory, cannot be left blank	
TREAT_LMT	Treatment goals on admission	Mandatory, cannot be left blank	
URINEOP	Urine output		If URINEOP < 400, ensure 24 hr value has been entered

Appendix C: ICU Diagnosis – APACHE III-J non-operative

Cardiovascular		Diagnosis co-efficient
101	Cardiogenic shock	0.78463
102	Cardiac arrest	0.552243
103	Aortic aneurysm	1.26578
104	Congestive heart failure	0
105	Peripheral vascular disease	0.13398
106	Rhythm disturbance	-0.236138
107	Acute myocardial infarction	0.67761
108	Hypertension	-0.130588
109	Other cardiovascular disease	-0.291881
110	Cardiomyopathy	1.361203
111	Unstable angina	-0.259457
Respiratory		
201	Aspiration pneumonia	0.123363
202	Respiratory neoplasm including larynx/trachea	1.114274
203	Respiratory arrest	0.300772
204	Pulmonary oedema – non-cardiac	0.741514
206	Chronic obstructive pulmonary disease	0.437855
207	Pulmonary embolism	0.214629
208	Mechanical airway obstruction	0.916672
209	Asthma	-0.738478
210	Parasitic pneumonia	1.240371
211	Other respiratory diseases	0.219583
212	Bacterial pneumonia	0.356565
213	Viral pneumonia	0.524507
Gastrointestinal		
301	Hepatic failure	0.296943
303	GI bleeding – varices	0.153806
305	GI bleeding – ulcer/laceration	0.021764
306	GI bleeding – diverticulosis	0.098954
307	Other GI disease	0.195821
308	GI perforation	-0.218601
309	GI obstruction	0.252631
310	GI vascular insufficiency	0.198405
311	Pancreatitis	0.088466
312	GI cancer	1.391097
313	Other GI inflammatory disease	-0.017995
Neurological		
401	Intracerebral haemorrhage	1.520735
402	Subarachnoid haemorrhage	1.574573
403	Stroke	0.879518
404	Neurologic infection	0.692197
405	Neurologic neoplasm	0.170705
406	Neuromuscular disease	-0.228204
407	Seizure	-0.513583
408	Other neurologic disease	0.133291
409	Epidural haematoma	0.639308
410	Coma	-0.396898

Sepsis			Diagnosis co-efficient
501	Sepsis, other than urinary		0.353941
502	Sepsis of urinary tract origin		-0.485673
503	Sepsis with shock, other than urinary		0.353941
504	Sepsis of urinary tract origin with shock	(ANZICS Addition)	-0.485673
Trauma			
601	Head trauma +/- multi trauma		0.369166
602	Multiple trauma excluding head		-0.619483
603	Burns	(ANZICS Addition)	-0.619483
604	Multi trauma with spinal injury	(ANZICS Addition)	-0.619483
605	Isolated cervical spine injury	(ANZICS Addition)	-0.619483
Metabolic			
701	Metabolic coma		-0.396898
702	Diabetic ketoacidosis		-1.919836
703	Drug overdose		-1.528488
704	Other metabolic disorders		-0.248306
Hematological			
801	Coagulopathy/Neutropaenia/Thrombocytopaenia		1.095134
802	Other haematologic disorders		0.407784
Renal/Genitourinary			
901	Renal disorders		-0.226863
902	Pre-eclampsia		-0.130588
903	Haemorrhage, post-partum (female only)		-0.291881
Musculoskeletal/Skin disease			
1101	Musculoskeletal/skin disease		-0.130586
1102	Cellulitis/soft tissue infection		0.13398
Undefined/Unknown			
0	No Diagnosis Entered		.

Note: A diagnosis co-efficient of [.] indicates that there is no APACHE III-J diagnosis co-efficient for the given diagnosis. A patient coded with such a diagnosis will not receive an APACHE III-J predicted risk of death and will be excluded from APACHE III-J SMR calculations.

Appendix D: ICU Diagnosis – APACHE III-J post-operative

Cardiovascular			Diagnosis co-efficient
1202	Peripheral vascular disease		-0.062337
1203	Peripheral artery bypass graft		-0.768555
1204	Elective AAA		-0.828717
1205	Carotid endarterectomy		-1.019287
1206	Valvular heart surgery		-0.501745
1207	Coronary artery bypass grafts	(ANZICS Addition)	No co-efficient assigned*
1208	Other cardiovascular diseases		-0.258392
1209	Dissecting aortic aneurysm		0.965189
1210	Ruptured aortic aneurysm		0.24349
1211	Aorto-femoral bypass graft		-0.637542
1212	CABG with valve repair/replacement		-0.537793
1213	Endoluminal aortic repair	(ANZICS Addition)	-0.828717
Respiratory			
1301	Respiratory infection		-0.232717
1302	Respiratory neoplasm – lung		-0.113698
1303	Respiratory neoplasm – mouth, larynx, sinus, trachea		-0.226492
1304	Other respiratory diseases		0.257491
Gastrointestinal			
1401	GI perforation/rupture (not peritonitis)		0.488538
1403	GI bleeding		-0.297464
1404	GI obstruction		-0.013338
1405	GI neoplasm		-0.149182
1406	Cholecystitis/Cholangitis		-0.755966
1407	Liver transplant		-1.282196
1408	Other GI diseases		-0.236372
1409	Fistula/Abscess surgery		-0.254507
1410	GI vascular ischaemia resection surgery		0.679961
1411	Pancreatitis		-0.287223
1412	Peritonitis		-0.287223
1413	Other GI inflammatory disease		-0.287223
Neurological			
1501	Intracerebral haemorrhage		1.064711
1502	Subdural/Epidural haematoma		0.835429
1503	Subarachnoid haemorrhage		0.312849
1504	Laminectomy/Spinal cord surgery		-0.150739
1505	Craniotomy for neoplasm		0.051966
1506	Other neurologic disease		0.335437
Trauma			
1601	Head trauma +/- multi trauma		0.182766
1602	Multiple trauma excluding head		-0.508191
1603	Burns	(ANZICS Addition)	-0.508191
1604	Multi trauma with spinal injury	(ANZICS Addition)	-0.508191
1605	Isolated cervical spine injury	(ANZICS Addition)	-0.508191
Renal/Genitourinary			
1701	Renal neoplasm		-0.631767
1703	Other renal diseases		-1.422721
1704	Kidney transplant		-1.422721

1705	Genitourinary surgery/procedure	-0.130586
Gynaecological		**Diagnosis co-efficient**
1801	Hysterectomy	-0.466038
1802	Pregnancy-related disorder	-0.130586
1803	Other gynaecological disease	-0.130586
Musculoskeletal		
1902	Orthopaedic surgery	-0.130586
1903	Skin surgery	-0.130586
1904	Cellulitis/soft tissue infection	0.13398
Haematological		
2101	Haematological disease	0.407784
Metabolic		
2201	Metabolic disease	0.407784
Undefined/Unknown		
0	No diagnosis entered	.

*Risk of death calculation for CABG only patients (1207) is based on CABG_redo and CABG_graft values.

Note: A diagnosis co-efficient of [.] indicates that there is no APACHE III-J diagnosis co-efficient for the given diagnosis. A patient coded with such a diagnosis will not receive an APACHE III-J predicted risk of death and will be excluded from APACHE III-J SMR calculations.

Appendix E: APACHE III-J Sub-Diagnosis codes

New sub-codes (in yellow) cannot be used until confirmation is received from ANZICS CORE.

APACHE III-J Diagnostic Code	APACHE III-J Sub-code	Description
101	101.01	Shock; cardiogenic
	101.02	Papillary muscle rupture
102	102.01	Cardiac arrest with or without respiratory arrest; for respiratory arrest see Respiratory System
	102.02	Poisoning, carbon monoxide, arsenic and cyanide; non-traumatic coma due to anoxia/ischemia
103	103.01	Aneurysm, dissecting aortic
104	104.01	Congestive heart failure
105	105.01	Aneurysm/pseudoaneurysm, other
	105.02	Thrombus, arterial
106	106.02	rhythm disturbance (conduction defect)
	106.03	Rhythm disturbance (atrial, supraventricular)
	106.04	Rhythm disturbance (ventricular)
107	107.02	Infarction, acute myocardial (MI), ANTERIOR
	107.03	Infarction, acute myocardial (MI), INFEROLATERAL
	107.04	Infarction, acute myocardial (MI), NON Q Wave
	107.05	Infarction, acute myocardial (MI), none of the above
108	108.01	Hypertension, uncontrolled (for cerebrovascular accident see Neurological)
109	109.01	Anaphylaxis
	109.02	Angina, stable (asymptomatic or stable pattern of symptoms with meds)
	109.03	Cardiovascular medical, other
	109.04	Chest pain, atypical (non-cardiac chest pain)
	109.05	Effusion, pericardial
	109.06	Endocarditis
	109.07	Haematomas
	109.08	Haemorrhage (for GI bleeding see GI, for trauma see Trauma)
	109.09	Hypovolemia (including dehydration). Do NOT include shock states
	109.10	MI admitted >24 hrs after ischemia onset
	109.11	Monitoring, hemodynamic (pre-operative evaluation)
	109.12	Pericarditis
	109.13	Tamponade, pericardial
	109.14	Thrombosis, vascular (deep vein)
	109.15	Toxicity, drug (e.g. digoxin, theophylline, dilantin, etc.)
	109.16	Vascular medical, other
	109.17	Complications of previous open heart surgery
	109.18	Chest pain, musculoskeletal
	109.19	Chest pain, respiratory
	109.20	Chest pain, unknown origin
110	110.01	Cardiomyopathy
111	111.01	Angina, unstable (angina interferes with quality of life or meds are tolerated poorly)
201	201.01	Pneumonia, aspiration, toxic, chemical pneumonitis
202	202.02	Cancer, laryngeal
	202.03	Cancer, lung
	202.04	Cancer, oral

APACHE III-J Diagnostic Code	APACHE III-J Sub-code	Description
	202.05	Cancer, tracheal
203	203.01	Arrest, respiratory (without cardiac arrest)
204	204.01	ARDS-adult respiratory distress syndrome, non-cardiogenic pulmonary edema
206	206.01	Emphysema/bronchitis
207	207.01	Embolus, pulmonary
208	208.01	Obstruction-airway (e.g. acute epiglottitis, post-extubation edema, foreign body, *etc.)*
209	209.01	Asthma
210	210.01	Pneumonia, fungal
	210.02	Pneumonia, parasitic (e.g. Pneumocystis pneumonia)
211	211.01	Apnea, sleep
	211.02	Atelectasis
	211.03	Effusions, pleural
	211.04	Hemorrhage/haemoptysis, pulmonary
	211.05	Hemothorax
	211.06	Hypertension-pulmonary, primary/idiopathic
	211.07	Near drowning accident
	211.08	Pneumothorax
	211.09	Respiratory-medical, other
	211.10	Restrictive lung diseases (e.g. sarcoidosis, pulmonary fibrosis)
	211.11	Smoke inhalation
	211.12	Weaning from mechanical ventilation (transfer from other unit or hospital only)
212	212.01	Pneumonia, bacterial
	212.02	Pneumonia, other
213	213.01	Pneumonia, viral
301	301.01	Acute hepatic failure
	301.02	Hepatic encephalopathy
	301.03	Hepato-renal syndrome
	301.04	Liver transplant rejection
303	303.01	Bleeding, GI from oesophageal varices/portal hypertension
305	305.01	Bleeding, GI- location unknown
	305.02	Bleeding, upper GI
306	306.01	Bleeding, lower GI
307	307.01	GI medical, other
	307.02	Haemorrhage, intra/retroperitoneal
	307.03	Ulcer disease, peptic
	307.04	Adrenal neoplasm (including phaeochromocytoma)
	307.05	Chest pain, epigastric
308	308.01	GI perforation/rupture
309	309.01	GI obstruction
310	310.01	GI vascular insufficiency
311	311.01	Pancreatitis
312	312.01	Cancer of the colon/rectal
	312.02	Cancer of the oesophagous
	312.03	Cancer of the pancreas
	312.04	Cancer of the stomach
	312.05	Cancer of other GI
313	313.01	Cholangitis

APACHE III-J Diagnostic Code	APACHE III-J Sub-code	Description
	313.02	Diverticular disease
	313.03	GI abscess/cyst
	313.04	Inflammatory bowel disease
	313.05	Peritonitis
401	401.01	Haemorrhage/haematoma, intracranial
402	402.01	Subarachnoid haemorrhage/arteriovenous malformation
	402.02	Subarachnoid haemorrhage/intracranial aneurysm
403	403.01	CVA, Cerebrovascular accident/stroke
404	404.01	Abscess, neurologic
	404.02	Encephalitis
	404.03	Meningitis
405	405.01	Neoplasm, neurologic
406	406.01	Amyotrophic lateral sclerosis
	406.02	Guillian-Barre syndrome
	406.03	Myasthenia gravis
	406.04	Neuromuscular medical, other
407	407.01	Seizures (primary-no structural brain disease)
408	408.01	Hydrocephalus, obstructive
	408.02	Neurologic medical, other
	408.03	Palsy, cranial nerve
409	409.01	Haematoma, epidural
	409.02	Haematoma, subdural
410	410.01	Coma/change in level of consciousness (not hepatic, diabetic or CA related)
501	501.01	Sepsis, cutaneous/soft tissue
	501.02	Sepsis, GI
	501.03	Sepsis, gynaecologic
	501.04	Sepsis, other
	501.05	Sepsis, pulmonary
	501.06	Sepsis, unknown
502	502.01	Sepsis, renal/UTI (including bladder)
503	503.01	Sepsis with shock, not urinary tract
504	504.01	Sepsis with shock, urinary tract
601	601.01	Head (CNS) only trauma
	601.02	Head/abdomen trauma
	601.03	Head/chest trauma
	601.04	Head/extremity trauma
	601.05	Head/face trauma
	601.06	Head/multiple trauma
	601.07	Head/pelvis trauma
	601.08	Head/spinal trauma
602	602.01	Abdomen only trauma
	602.02	Abdomen/extremity trauma
	602.03	Abdomen/face trauma
	602.04	Abdomen/multiple trauma
	602.05	Abdomen/pelvis trauma
	602.06	Chest/abdomen trauma
	602.07	Chest/extremity trauma
	602.08	Chest/face trauma
	602.09	Chest/multiple trauma

APACHE III-J Diagnostic Code	APACHE III-J Sub-code	Description
	602.10	Chest/pelvis trauma
	602.11	Chest/thorax trauma
	602.12	Extremity only trauma
	602.13	Extremity/face trauma
	602.14	Extremity/multiple trauma
	602.15	Face only trauma
	602.16	Face/multiple trauma
	602.17	Pelvis/extremity trauma
	602.18	Pelvis/face trauma
	602.19	Pelvis/hip only trauma
	602.20	Pelvis/multiple trauma
	602.21	Trauma medical, other
	602.22	Contusion, myocardial
603	603.01	Burns
604	604.01	Abdomen/spinal trauma
	604.02	Chest/spinal trauma
	604.03	Pelvis/spinal trauma
	604.04	Spinal/extremity trauma
	604.05	Spinal/face trauma
	604.06	Spinal/multiple trauma
605	605.01	Isolated cervical spine injury
701	701.01	Diabetic hyperglycaemic hyperosmolar non-ketotic coma (HHNC)
	701.02	Encephalopathies (excluding hepatic)
702	702.01	Diabetic ketoacidosis
703	703.01	Alcohol withdrawal
	703.02	Drug withdrawal
	703.04	Overdose, alcohols (ethanol, methanol, ethylene glycol)
	703.05	Overdose, analgesic (aspirin, acetaminophen)
	703.06	Overdose, antidepressants (tricyclic, lithium)
	703.07	Overdose, other toxin, poison or drug
	703.08	Overdose, sedatives, hypnotics, antipsychotics, benzodiazepines
	703.09	Overdose, street drugs (opiates, cocaine, amphetamine)
	703.10	Envenomation by snake
	703.11	Envenomation by jellyfish and other invertebrates
	703.12	Envenomation by other animal
704	704.01	Acid-Base electrolyte disturbance
	704.02	Addisons disease/Hypoadrenal crisis
	704.03	Cushing's Syndrome/Disease
	704.04	Heat exhaustion/stroke
	704.05	Hyperthermia
	704.06	Hyperthyroid storm/crisis
	704.07	Hypoglycaemia
	704.08	Hypothermia
	704.09	Hypothyroid/Myxedema
	704.10	Metabolic/Endocrine medical, other
	704.11	Thyroid neoplasm
801	801.01	Coagulopathy
	801.02	Neutropaenia
	801.03	Pancytopaenia
	801.04	Thrombocytopaenia

APACHE III-J Diagnostic Code	APACHE III-J Sub-code	Description
802	802.01	Anaemia
	802.02	Blood transfusion reaction
	802.03	Leukaemia; ALL
	802.04	Leukaemia; AML
	802.05	Leukaemia; CLL
	802.06	Leukaemia; CML
	802.07	Lymphoma, Hodgkin
	802.08	Lymphoma, non-Hodgkin
	802.09	Sickle cell crisis
	802.10	Leukaemia, other
	802.11	Hematologic medical, other
901	901.01	Genitourinary medical, other
	901.02	Renal bleeding
	901.03	Renal failure, acute
	901.04	Renal infection/abscess
	901.05	Renal neoplasm, cancer
	901.06	Renal obstruction
	901.07	Kidney transplant
902	902.01	Pre-eclampsia/Eclampsia (female only)
903	903.01	Haemorrhage, postpartum (female only)
1101	1101.01	Arthritis, rheumatoid
	1101.02	Arthritis, septic
	1101.03	Connective tissue disease (mixed)
	1101.04	Musculoskeletal medical, other
	1101.05	Lupus, systemic
	1101.06	Myositis, viral
	1101.07	Rhabdomyolysis without acute renal failure
	1101.08	Scleroderma
	1101.09	Vasculitis
1102	1102.01	Cellulitis and localized soft tissue infections
1202	1202.01	Dilation (with general anaesthesia)
	1202.02	Dilation (without general anaesthesia)
	1202.03	Embolectomy (with general anaesthesia)
	1202.04	Embolectomy (without general anaesthesia)
	1202.05	Grafts, all other bypass (except renal)
	1202.06	Grafts, all renal bypass
	1202.07	Thrombectomy (with general anaesthesia)
	1202.08	Thrombectomy (without general anaesthesia)
1203	1203.01	Graft, aorto-iliac bypass
	1203.02	Graft, femoral-popliteal bypass
1204	1204.01	Aneurysm, abdominal aortic
	1204.02	Aneurysm, thoracic
1205	1205.01	Endarterectomy, carotid
1206	1206.01	Valve, double; repair/replacement
	1206.05	Valve, triple, repair/replacement
	1206.06	Aortic valve replacement (isolated)
	1206.07	Mitral valve repair
	1206.08	Mitral valve replacement
	1206.09	Pulmonary valve surgery
	1206.10	Tricuspid valve surgery

APACHE III-J Diagnostic Code	APACHE III-J Sub-code	Description
1207	1207.01	CABG alone, coronary artery bypass grafting
	1207.02	CABG alone, redo
	1207.03	CABG with other operation (not valve repair/replacement)
1208	1208.01	Ablation or mapping of cardiac conduction pathway
	1208.02	Aneurysm repair, ventricular
	1208.03	Aneurysms, repair of other (except ventricular)
	1208.05	CABG, Minimally invasive; Mid-CABG
	1208.06	Cardiovascular surgery, other
	1208.07	Complications of previous peripheral vascular surgery
	1208.08	Complications of previous open-heart surgery, surgery for (e.g. bleeding, infection, mediastinal rewire)
	1208.09	Defibrillator, automatic implantable cardiac; insertion of
	1208.10	Endarterectomy (other vessels)
	1208.11	Graft for dialysis, insertion of
	1208.12	Grafts, removal of infected vascular
	1208.13	Pericardial effusion/tamponade
	1208.14	Pericardiectomy (total/subtotal)
	1208.15	Tumour removal, intracardiac
	1208.16	Vascular surgery, other
	1208.17	Vena cava clipping
	1208.18	Vena cava filer insertion
	1208.19	Congenital Defect Repair (Other)
	1208.20	Atrial Septal Defect (ASD) Repair
	1208.21	Ventricular Septal Defect (VSD) Repair
	1208.22	Heart Transplant
	1208.23	TAVI (Transcatheter aortic valve implantation)
1209	1209.01	Aneurysm, abdominal aortic; with dissection
	1209.02	Aneurysm, thoracic aortic; with dissection
1210	1210.01	Aneurysm, abdominal aortic; with rupture
	1210.02	Aneurysm, thoracic aortic; with rupture
1211	1211.01	Graft, aorto-femoral bypass
	1211.02	Graft, femoral-femoral bypass
1212	1212.01	CABG redo with valve repair/replacement
	1212.02	CABG with double valve repair/replacement
	1212.04	CABG with aortic valve replacement
	1212.05	CABG with mitral valve repair
	1212.06	CABG with mitral valve replacement
	1212.07	CABG with pulmonic or tricuspid valve repair or replacement.
1213	1213.01	Aneurysm, abdominal aortic endoluminal repair
	1213.02	Aneurysm, thoracic aortic endoluminal repair
1301	1301.01	Infection/abscess, other surgery for
	1301.02	Thoracotomy for thoracic/respiratory infection
1302	1302.01	Thoracotomy for benign tumour (e.g. mediastinal chest wall mass, thymectomy)
	1302.02	Thoracotomy for lung cancer
	1302.03	Thoracotomy for other malignancy in chest
1303	1303.01	Cancer oral/sinus surgery for
	1303.02	Cancer-laryngeal/tracheal, surgery for
1304	1304.01	Apnea-sleep; surgery for (e.g. UPPP-uvulopalatopharyngoplasty)
	1304.02	Biopsy, open lung

APACHE III-J Diagnostic Code	APACHE III-J Sub-code	Description
	1304.03	Bullectomy
	1304.04	Facial surgery (if related to trauma, see Trauma)
	1304.05	Respiratory surgery, other
	1304.06	Thoracotomy for bronchopleural fistula
	1304.07	Thoracotomy for lung reduction
	1304.08	Thoracotomy for other reasons
	1304.09	Thoracotomy for pleural disease
	1304.10	Tracheostomy
	1304.11	Lung transplant (including heart/lung)
1401	1401.01	GI Perforation/rupture, surgery for
1403	1403.01	Bleeding-lower GI, surgery for
	1403.02	Bleeding-other GI, surgery for
	1403.03	Bleeding-upper GI, surgery for
	1403.04	Bleeding-variceal, surgery for (excluding vascular shunting-see surgery for portosystemic shunt, 1408.12)
1404	1404.01	GI obstruction, surgery for (including lysis of adhesions)
1405	1405.01	Thoracotomy for oesophageal cancer
	1405.02	Cancer-colon/rectal, surgery for (including abdominoperineal resections)
	1405.03	Cancer - oesophageal, surgery for (abdominal approach)
	1405.04	Cancer-other GI tract, surgery for (e.g. hepatoma, gallbladder etc.)
	1405.05	Cancer-small intestinal, surgery for
	1405.06	Cancer-stomach, surgery for
	1405.07	Whipple surgery for pancreatic cancer
1406	1406.01	Cholecystectomy/Cholangitis, surgery for (gallbladder removal)
1407	1407.01	Liver transplant
1408	1408.01	Appendectomy
	1408.02	CAPD catheter insertion
	1408.03	Complications of previous GI surgery; surgery for anastomotic leak, bleeding, abscess, infection etc.
	1408.04	Oesophageal surgery, other
	1408.05	Gastrostomy
	1408.06	GI surgery, other
	1408.07	Hernia-hiatal, oesophageal surgery for
	1408.08	Herniorrhaphy
	1408.09	Obesity-morbid, surgery for
	1408.10	Peritoneal lavage
	1408.11	Shunt, peritoneal-venous surgery for
	1408.12	Shunt, portosystemic surgery for
	1408.13	Splenectomy
1409	1409.01	Fistula/abscess, surgery for (not inflammatory bowel disease)
	1409.02	GI abscess/cyst-primary, surgery for (for complications of GI surgery, see 1408.03)
1410	1410.01	GI vascular ischaemia, surgery for (resection)
1411	1411.01	Pancreatitis, surgery for
1412	1412.01	Peritonitis, surgery for
1413	1413.01	Diverticular disease, surgery for
	1413.02	Inflammatory bowel disease, surgery for
1501	1501.01	Haemorrhage/Haematoma - intracranial, surgery for
1502	1502.01	Haematoma, extradural, surgery for

APACHE III-J Diagnostic Code	APACHE III-J Sub-code	Description
	1502.02	Haematoma, subdural, surgery for; if a result of trauma, please code as trauma
1503	1503.01	Arteriovenous malformation, surgery for
	1503.02	Subarachnoid haemorrhage/Intracranial aneurysm, surgery for
1504	1504.01	Complications of previous spinal cord surgery, surgery for
	1504.02	Devices for spine fracture/dislocation
	1504.03	Fusion-spinal/Harrington rods
	1504.04	Neoplasm-spinal cord surgery or other related procedures
	1504.05	Spinal cord surgery, other
	1504.06	Sympathectomy
	1504.07	Laminectomy
1505	1505.01	Neoplasm-cranial, surgery for (excluding transphenoidal)
	1505.02	Transphenoidal surgery
1506	1506.01	Abscess/Infection-cranial, surgery for
	1506.02	Anastomosis, vascular
	1506.03	Biopsy, brain
	1506.04	Burr hole placement
	1506.05	Cerebrospinal fluid leak, surgery for
	1506.06	Cranioplasty and complications from previous craniotomies
	1506.07	Neurologic surgery, other
	1506.08	Seizures-intractable, surgery for
	1506.09	Shunts and revisions
	1506.10	Stereotactic procedure
	1506.11	Ventriculostomy
	1506.12	Cranial nerve, decompression/ligation
1601	1601.01	Head (CNS) only trauma, surgery for
	1601.02	Head/abdomen trauma, surgery for
	1601.03	Head/chest trauma, surgery for
	1601.04	Head/extremity trauma, surgery for
	1601.05	Head/face trauma, surgery for
	1601.06	Head/multiple trauma, surgery for
	1601.07	Head/pelvis trauma, surgery for
	1601.08	Head/spinal trauma, surgery for
1602	1602.01	Abdomen only trauma, surgery for
	1602.02	Abdomen/extremity trauma, surgery for
	1602.03	Abdomen/face trauma, surgery for
	1602.04	Abdomen/multiple trauma, surgery for
	1602.05	Abdomen/pelvis trauma, surgery for
	1602.06	Chest/abdomen trauma, surgery for
	1602.07	Chest/extremity trauma, surgery for
	1602.08	Chest/face trauma, surgery for
	1602.09	Chest/multiple trauma, surgery for
	1602.10	Chest/pelvis trauma, surgery for
	1602.11	Chest/thorax only trauma, surgery for
	1602.12	Extremity only trauma, surgery for
	1602.13	Extremity/face trauma, surgery for
	1602.14	Extremity/multiple trauma, surgery for
	1602.15	Face only trauma, surgery for
	1602.16	Face/multiple trauma, surgery for
	1602.17	Pelvis/extremity trauma, surgery for

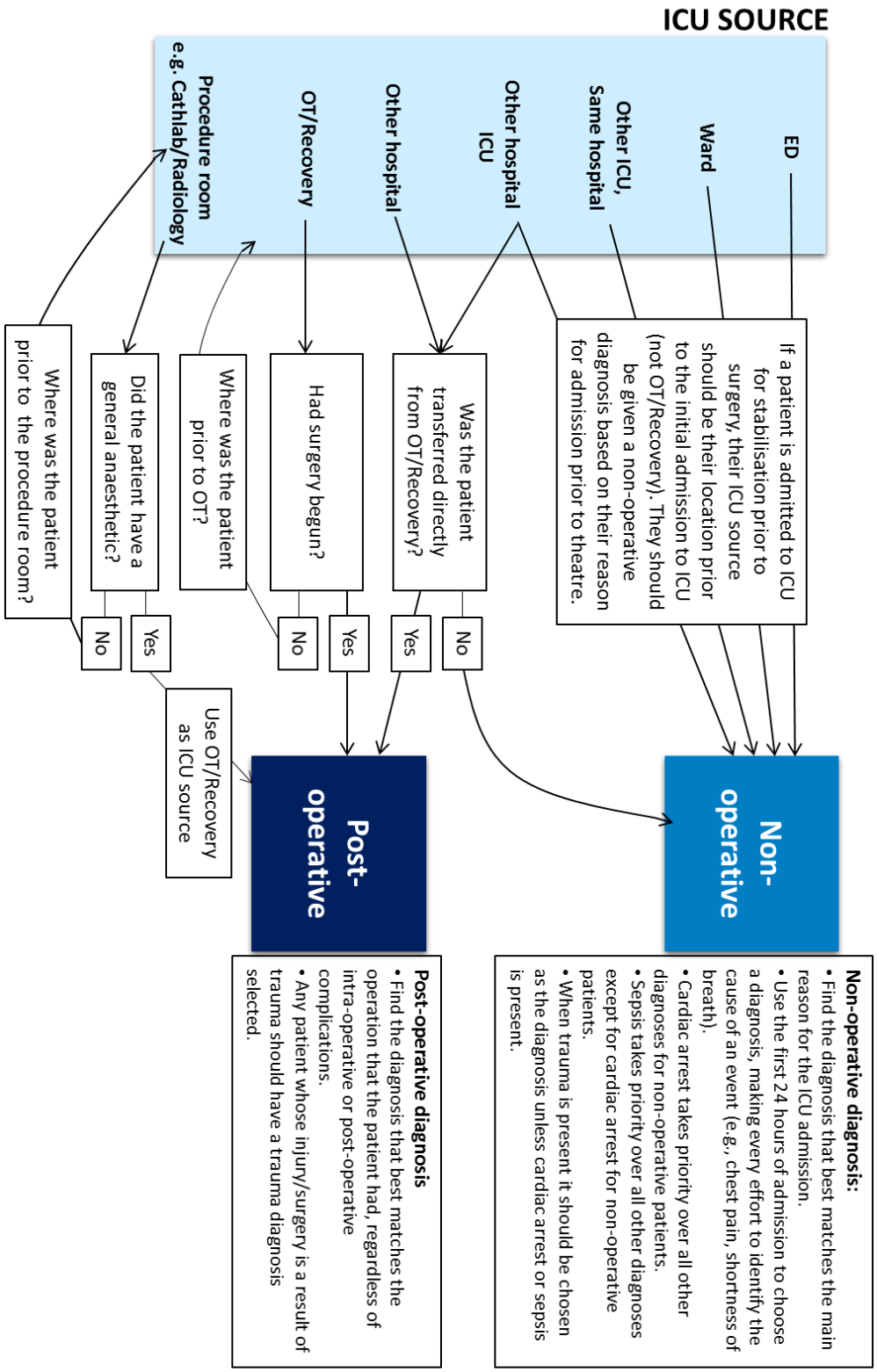
APACHE III-J Diagnostic Code	APACHE III-J Sub-code	Description
	1602.18	Pelvis/face trauma, surgery for
	1602.19	Pelvis/hip trauma, surgery for
	1602.20	Pelvis/multiple trauma, surgery for
	1602.21	Trauma surgery, other
1603	1603.01	Burns
1604	1604.01	Abdomen/spinal trauma, surgery for
	1604.02	Chest/spinal trauma, surgery for
	1604.03	Spinal/extremity trauma, surgery for
	1604.04	Spinal/face trauma, surgery for
	1604.05	Spinal/multiple trauma, surgery for
	1604.06	Pelvis/spinal trauma, surgery for
1605	1605.01	Spinal cord only trauma, surgery for
1701	1701.01	Cystectomy for neoplasm
	1701.02	Nephrectomy for neoplasm
	1701.03	Prostatectomy, suprapubic: for cancer
	1701.04	TURP, transurethral prostate resection for cancer
	1701.05	Obstruction due to neoplasm, surgery for; (with or without ileal-conduit)
1703	1703.01	Bladder repair for perforation/rupture
	1703.02	Cystectomy (other reasons)
	1703.03	Nephrectomy(other reasons)
	1703.04	Obstruction due to nephrolithiasis, surgery for (with or without ileal-conduit)
	1703.05	Obstruction/other, surgery for (with or without ileal-conduit)
	1703.06	Orchiectomy with/without pelvic lymph node dissection
	1703.07	Prostatectomy, suprapubic; for benign prostatic hypertrophy
	1703.08	TURP, transurethral prostate resection for benign prostatic hypertrophy
1704	1704.01	Kidney transplant
1705	1705.01	Exenteration, pelvic-male
	1705.02	Exenteration, pelvic-female
	1705.03	Genitourinary surgery, other
	1705.04	Lymph node dissection, pelvic or retroperitoneal (female)
	1705.05	Lymph node dissection, pelvic or retroperitoneal (male)
	1705.06	Pelvic relaxation (cystocele, rectocele, etc.)
1801	1801.01	Hysterectomy for cancer with or without lymph node dissection
	1801.02	Hysterectomy for other benign neoplasm/fibroids
1802	1802.01	Caesarean section
	1802.02	Ectopic pregnancy (all)
1803	1803.01	Cyst, ruptured ovarian
	1803.02	Oophorectomy with/without salpingectomy with/without lymph node dissection
1902	1902.01	Amputation (non-traumatic)
	1902.02	Fracture-pathological, non-union, non-traumatic
	1902.03	Hip replacement (non-traumatic)
	1902.04	Knee replacement (non-traumatic)
	1902.05	Orthopedic surgery, other
1903	1903.01	Cosmetic surgery (all)
	1903.02	Grafting skin (all)
	1903.03	Skin surgery, other
	1903.04	Mastectomy (all)

APACHE III-J Diagnostic Code	APACHE III-J Sub-code	Description
1904	1904.01	Cellulitis and localized soft tissue infections, surgery for
2101	2101.01	Haematologic surgery, other
	2101.02	Lymphoma, Hodgkin's, surgery for (including staging)
	2101.03	Lymphoma, non-Hodgkin's, surgery for (including staging)
2201	2201.01	Adrenalectomy
	2201.02	Metabolic/endocrine surgery, other
	2201.03	Pathyroidectomy
	2201.04	Thyroidectomy and parathyroidectomy
	2201.05	Thyroidectomy

Retired APACHE III-J sub-codes – will no longer be used once confirmation is received from ANZICS CORE.

APACHE III-J Diagnostic Code	APACHE III-J Sub-code	Description
106	106.01	rhythm disturbance (primary, i.e. conductive defect)
107	107.01	AMI
202	202.01	cancer of laryngeal, lung, oral or tracheal
703	703.03	overdose, self-inflicted
1002	1002.01	Other medical
1206	1206.02	Valve, redo, single
1206	1206.03	Valve, single; repair/replacement
1208	1208.04	anomaly, cardiac congenital
1212	1212.03	CABG with single valve repair/replacement

Appendix F: Rules for Choosing a Diagnosis



Appendix G: Reference Table

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5	ICON 2.1 Database Manual 1993, ICU Database Project, D McWilliam 1999
6	National Health Data Dictionary Version 16 2012
7	http://www.cancer.gov/Templates/db_alpha.aspx?CdrID=306510 National Cancer Institute Definition of Pack Year
8	ACHS Intensive Care Clinical Indicators, version 4 (2012)
9	Knaus WA, Data Dictionary For Introduction to Data Collection: The APACHE II System: A Severity of Disease Classification System
10	Cerner, APACHE III-J Risk adjusted Hospital Mortality for ICU Patients/ICU CABG patients. http://www.apache-web.com/public/HospMortality.xls Accessed 1/03/2004
11	National Minimum Dataset Data Dictionary Version 7 2012
12	Paul E, Bailey M, Pilcher D. Risk prediction of hospital mortality for adult patients admitted to Australian and New Zealand intensive care units: Development and validation of the Australian and New Zealand Risk of Death Model. Journal of Critical Care 2013; 28: 935-941
13	Rockwood K, Song X, MacKnight C, Bergman H, Hogan D, McDowell I, Mitnitski A. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005; 173: 489-495
14	ACS 1006 Ventilatory support http://education.accd.net.au/SitePages/13.%20ACS%201006%20Ventilatory%20support.aspx Accessed February 2016.

Source Organisation
ANZICS CORE Management Committee