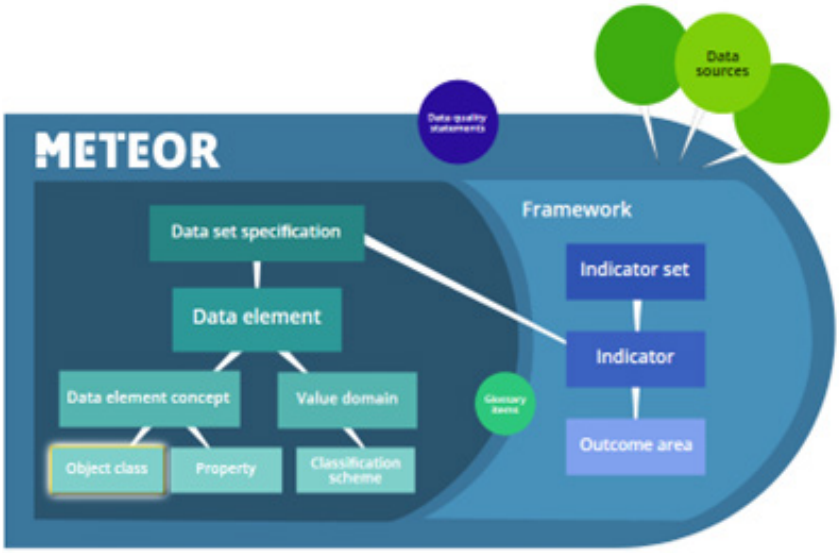
AIHW | METEOR
Metadata Online Registry
meteor.aihw.gov.au

18. Data source business rules & Appendices

18 Data source business rules



18.1 Introduction

A data source is a specific data set, database or reference from where data are sourced. Data sources are listed for indicators, specifying where the data for that particular indicator has come from. An indicator may have several data sources. Linking a data source with an indicator provides more robust information, which is especially important for reports and research. An example of a data source is the ABS 2017–18 National Health Survey (NHS).

Where a data source is used multiple times (i.e. used in both the numerator and denominator) it will only be displayed once.

If you are developing metadata, you don't have to specify a data source in an indicator, but it is recommended.

N.B. Data sources in METEOR can only be created by a registrar, and do not go through a formal registration process. Once created, data sources are immediately publicly visible.

Data sources in METEOR reflect the most recent status of the relevant data source, and may be amended over time (i.e. they do not use superseding relationships like other metadata.) Where the scope of a data source has changed significantly over time, information to this effect should be included in a Comment.

18.1.1 For registrars: Overview of data source attributes

Table 18.1.1.1 below provides an overview of the attributes requiring action by a registrar when a data source is created in METEOR. The business rules relating to these attributes are provided in the relevant sections in this chapter.

Table 18.1.1.1: Overview of data source attributes for registrar action

Attribute	Definition	Obligation to complete	Section in this Chapter
Name	A single or multi-word designation assigned to the data source.	Mandatory	18.2.1
Description	A concise description of the data source.	Mandatory	18.2.2
Link to data source	Hyperlink or address of the data source.	Conditional completion: complete for data sources that have a clearly described electronic link.	18.2.3
Data quality statement	A statement of multiple quality dimensions for the purpose of assessing the quality of the data for reporting against an Indicator.	Optional	18.2.4
National reporting arrangement	The arrangement under which the data source is reportable.	Optional	18.2.5
Frequency	The frequency at which a data collection is conducted.	Conditional completion: complete for data sources that have a clearly described frequency of collection.	18.2.6
Implementation start date	The date upon which the collection of data for this specific version of the data set was first implemented.	Optional	18.2.7
Implementation end date	The date upon which the collection of data for this specific version of the data set was completed.	Optional	18.2.8
Comments	Any additional information that adds to the understanding of the data source.	Optional	18.2.9
Data custodian	A person or organisation that ensures that data holdings are properly documented, maintained, controlled and accessed.	Mandatory	18.2.10
Data custodian contact details	The primary contact person's name and organisation, and contact details such as postal address, email address, website or telephone number.	Optional	18.2.11
Submitting organisation	One or more organisations responsible for the submission of the metadata item for endorsement as a standard.	Mandatory	18.2.12
Submitting organisation contact details	The details of at least one contact person for each listed submitting organisation.	Optional	18.2.13

Attribute	Definition	Obligation to complete	Section in this Chapter
Origin	Any publication(s), website(s), organisation(s) and/or committee(s) from which any content of the metadata item originates.	Conditional: Complete for metadata items based on the content outside of METEOR.	18.2.14
Reference documents	Significant documents that contributed to the development of the metadata item which were not the direct source for the metadata content.	Conditional: Complete for metadata items developed in consultation with a significant publication and/or website outside of METEOR.	18.2.15

18.2 Attributes requiring registrar action

Attributes in the data source template requiring action by a registrar are described below.

18.2.1 Name

A single or multi-word designation assigned to the data source.	
Obligation to complete:	Mandatory
Completed by:	Registrar
Visibility:	All users
Rules:	1. State the full and formal name of the data source, for example, National Prisoner Health Data Collection, as specified by the auspice body responsible for defining the data source. 2. A data source name must begin with a capital letter. The use of capital letters is used for: • the first letter of each word • for proper nouns • when necessary for an acceptable abbreviation or acronym.
Notes	Where the name of a data source has changed over time, use the current name. Information about any changes to the name of the data source should be included in a Comment.

18.2.2 Description

A concise description of the data source.	
Obligation to complete:	Mandatory
Completed by:	Registrar
Visibility:	All users
Rules:	Provide a concise description of the data source, including any relevant background information. Aspects to consider include the data source's scope, objectives, data collection methods, etc.

18.2.3 Link to data source

Hyperlink or address of the data source.	
Obligation to complete:	Conditional completion: complete for data sources that have a clearly described electronic link.
Completed by:	Registrar
Visibility:	All users
Rules:	1. Use the most recent version of data source available. 2. Insert hyperlinks using the editor toolbar by clicking on the 'insert/edit link' option.

18.2.4 Data quality statement

A statement of multiple quality dimensions for the purpose of assessing the quality of the data collected in the data source.	
Obligation to complete:	Optional
Completed by:	Registrar
Visibility:	All users
Rules:	3. To add a data quality statement: • click the Choose button • enter the Item ID or A–Z listing for relevant statement • click the Add button.
Notes	See chapter 17 'Data quality statement business rules.'

18.2.5 National reporting arrangement

The arrangement under which the data source is reportable.	
Obligation to complete:	Optional
Completed by:	Registrar
Visibility:	All users
Rules:	Provide a concise description of any national reporting arrangements. Aspects to consider include the organisation(s) responsible, reporting periods, etc.

18.2.6 Frequency

The frequency at which data collection is conducted.	
Obligation to complete:	Conditional completion: complete for data sources that have a clearly described frequency of collection.
Completed by:	Registrar
Visibility:	All users
Rules:	State how frequently the data source is collected, e.g., 'quarterly'; 'annual data collection.'

18.2.7 Implementation start date

The date upon which the collection of data for this specific version of the data source was first implemented.	
Obligation to complete:	Optional
Completed by:	Registrar
Visibility:	All users
Rules:	1. Select the implementation start date from the calendar. 2. When the implementation start date calendar is selected it automatically defaults to today's date. To specify the implementation start date, select the relevant day, month and year from the drop-down date selector to indicate a fully formed date (i.e., 15 February 2006). 3. If the data source does not have an implementation start date, tick the Not applicable box.

18.2.8 Implementation end date

The date upon which the collection of data for this specific version of the data source was completed.	
Obligation to complete:	Optional
Completed by:	Registrar
Visibility:	All users
Rules:	1. Select the implementation end date from the calendar. 2. When the implementation end date calendar is selected it automatically defaults to today's date. 1. To specify the implementation end date, select the relevant day, month and year from the drop-down date selector to indicate a fully formed date (i.e., 15 February 2006). 3. If the end date is absent, this indicates that data source is still valid. 4. If data source does not have an implementation end date, tick the Not applicable box

18.2.9 Comments

A person or organisation that ensures that data holdings are properly documented, maintained, controlled and accessed.	
Obligation to complete:	Mandatory
Completed by:	Registrar
Visibility:	All users
Rules:	1. A data source may be associated with only one data custodian. 2. State the complete and official organisation title for the data custodian (including a committee where necessary). 3. Abbreviations and symbols should only be used when they are part of the official organisation title.

18.2.10 Data custodian

The primary contact person's name and organisation, and avenue of contact such as postal address, email address, website or telephone number.	
Obligation to complete:	Optional
Completed by:	Registrar
Visibility:	Registrar
Rules:	For each data custodian contact, list their name, position title, organisational unit, telephone number and email address.

18.2.11 Data custodian contact details

The primary contact person's name and organisation, and avenue of contact such as postal address, email address, website or telephone number.	
Obligation to complete:	Optional
Completed by:	Registrar
Visibility:	Registrar
Rules:	For each data custodian contact, list their name, position title, organisational unit, telephone number and email address.

18.2.12 Submitting organisation

One or more organisations responsible for the submission of the metadata item for endorsement as a standard.	
Obligation to complete:	Mandatory
Completed by:	Registrar
Visibility:	All users
Rules:	For each organisation responsible for the submission of the metadata item: 1. State the complete and official organisation title at the time of submission. 2. Abbreviations and symbols should only be used when they are part of the official organisation title. 3. Conclude and separate each organisation's name with a new line (without a full stop).
Notes	1. Click on the arrow to show drop-down list of departments and organisations. 2. Click on chosen organisation. 3. If you skip this process, you will not be able to proceed to change registration status to *Standard* when you update the status later down the track. You must fill this template in. 4. In the case of a metadata with missing submitting organisation, go back to the item and choose 'edit item' to add the submitting organisation, in order to update registration status.

18.2.13 Submitting organisation contact details

The details of at least one contact person for each listed submitting organisation.	
Obligation to complete:	Optional
Completed by:	Registrar
Visibility:	Registrar
Rules:	1. Approval from each submitting organisation contact person must be provided before any contact information is stored within METEOR. 2. For each submitting organisation contact, list their name, position title, organisational unit, telephone number and email address.

18.2.14 Origin

Any publication(s), website(s), organisation(s) and/or committee(s) from which any content of the metadata item originates.	
Obligation to complete:	Conditional: Complete for metadata items based on the content outside of METEOR.
Completed by:	Registrar
Visibility:	All users
Rules:	1. Origin references should comply with the referencing guidelines in Appendix C 'Referencing guidelines'. 2. List the full reference for any in-text references cited in the body of that metadata item. 3. Conclude and separate each reference with a new line (without a full stop).
Notes	1. References included in the 'origin' attribute are not included in the 'references' attribute and vice versa.

18.2.15 Reference documents

Significant publication(s) and/or website(s) used in the aid of the development of the metadata item.	
Obligation to complete:	Conditional: Complete for metadata items developed in consultation with a significant publication and/or website outside of METEOR.
Completed by:	Registrar
Visibility:	All users
Rules:	1. References should comply with the referencing guidelines in Appendix C 'Referencing guidelines'. 2. Conclude and separate each reference with a new line (without a full stop).
Notes	Notes: References included in the 'reference' attribute are not included in the 'origin' attribute and vice versa.

Appendix A: Use of abbreviations in name and definition/description attributes

It is important to note that an abbreviation that has a specific meaning in one environment, may have a different meaning in another environment. This can create confusion and misunderstandings and lead to the misinterpretation of data.

For this reason abbreviations should be used with care, especially in names or definitions/ descriptions.

Name attribute

Name rule:	A name should avoid abbreviations (including acronyms and initialisms), unless they are commonly understood or widely accepted within the context of the metadata item.
Use of abbreviations in a name:	Commonly understood or widely accepted abbreviations include those that are more readily understood than the full form of a complex term and have been adopted as a term in their own right, such as 'radar', 'laser' or 'pH'. If an abbreviation (such as an acronym) is used in a name, it should be spelt out in full followed by the abbreviation in parenthesis when the term is next used (generally this will be in the definition). For example: Name: AUDIT frequency alcohol consumption Definition: The frequency of alcohol consumption as measured by the Alcohol Use Disorders Identification Test (AUDIT).

Definition/description attribute

Definition rule:	A definition may use abbreviations (including acronyms and initialisms) provided they are first spelled out in full, or else are commonly understood or widely accepted within the context of the metadata item.
Use of abbreviations in a definition or description:	Commonly understood or widely accepted abbreviations in a definition include those such as 'i.e.' (for 'that is') and 'e.g.' (for 'for example') and the like. Also included are abbreviations that are more readily understood than the full form of a complex term and have been adopted as terms in their own right, such as 'radar', 'laser' or 'pH'. When an abbreviation (such as an acronym) is used in a definition or description, it should be spelt out in full on its first occurrence, followed by the abbreviation in parenthesis; for example: Definition: A National Disability Agreement (NDA) service user is a person with a disability who received one or more NDA-funded services during the reporting period. An exception is in the case of a concept that is only ever used within the context in which the abbreviation is commonly understood. For example, the abbreviation 'ACE inhibitor' in a definition would be understood by persons collecting data in a pharmacological or acute coronary care setting.

For the use of abbreviations in attributes other than 'name' or 'definition', see Appendix B 'Formatting and stylistic guidelines'.

Appendix B: Formatting and stylistic guidelines

This appendix outlines the formatting and stylistic guidelines that apply to metadata content in METEOR. The guidelines listed in Table B1 below should be used in order to enable metadata standards in METEOR to be presented in a consistent manner across the system. This will result in data elements in a data set specification, or indicators in an indicator set, having similar formatting applied to them, regardless of who they are developed by.

Default METEOR font

The default (normal) font automatically applied to text in METEOR is Open Sans. This font complies with the Web Content Accessibility Guidelines (WCAG) 2.0.

Inputting content into metadata attributes

Depending on the metadata attribute being actioned, there are three ways of inputting content into METEOR:

1. For some attributes, such as 'name', 'short name' and 'synonymous name(s)', text is typed into a plain text field that does not have any formatting or stylistic options.
2. For attributes such as 'definition', 'context' , 'guide for use', 'collection methods', 'comments' , 'origin', 'reference documents', 'unresolved issues', 'submitting organisation contact details' and 'steward contact details', there is an editor toolbar (see Figure B1 below) with various formatting and stylistic options for text (e.g., bold and italics). Other formatting functions (e.g., insert a table, image or glossary item) can be accessed via the drop-down menus.
3. It is also possible to copy/paste text into an attribute from another source, such as a Word document. It is recommended, after pasting, to select the inserted text and use the 'clear formatting' tool (represented by a capital T and a subscript x) to remove unwanted formatting and convert the text to the default font.

Figure B1: Editor toolbar in METEOR

Source: METEOR

Table B1: Formatting and stylistic guidelines (in alphabetical order)

Formatting/stylistic item	Guidelines
Abbreviations	For the use of abbreviations (including acronyms and initialisms) in the name or definition (or description) of a metadata item, see Appendix A 'Use of abbreviations in name and definition attributes'. Where an abbreviation (such as an acronym) is used for the first time in an attribute other than 'name' or 'definition', spell out the term in full followed by the abbreviation in parentheses. For example: Body Mass Index (BMI) categories to be reported: obese, overweight, normal, underweight. Commonly understood abbreviations may be used such as: 'i.e.' (for 'that is') and 'e.g.' (for 'for example') and the like. When using abbreviations such as these the abbreviation and its accompanying text should appear in parentheses; for example: '... show details of how often each person works (e.g., a psychologist visits the service one morning session per month).' Abbreviations that are more readily understood than the full form of a complex term that have been adopted as terms in their own right, such as 'radar' (for 'radio detecting and ranging') and 'laser' for (for 'light amplification by stimulated emission of radiation') and the like. Spell out the names of states and territories in full, except in figures or tables where the shortened forms may be used and when towns or smaller areas are mentioned followed by the state/territory abbreviation in parentheses (e.g., Mullumbimby (NSW)). The recommended shortened forms for states and territories are: NSW, Vic, Qld, WA, SA, Tas, ACT, and NT.
Acronyms and initialisms	See 'abbreviations'.
Alignment	Sentences or paragraphs are left-aligned and not indented. Right or centre alignment of text is not recommended
Bol	

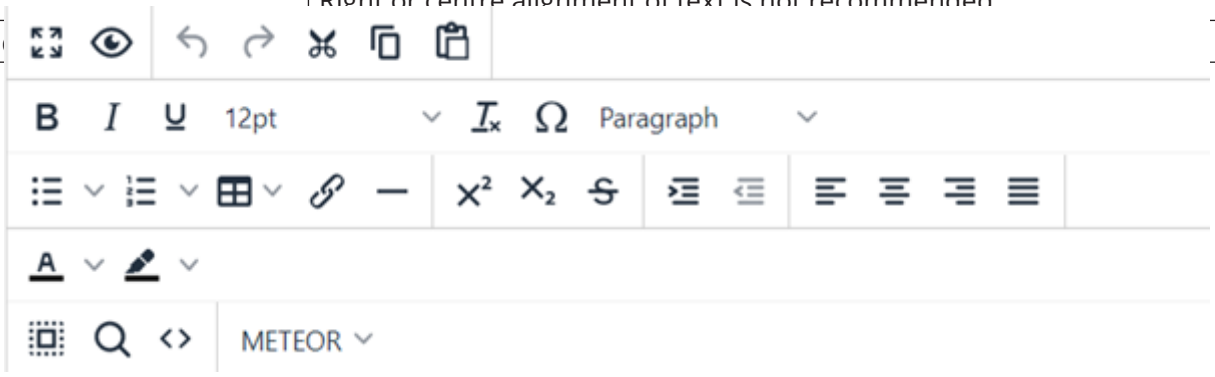


Table B1: Formatting and stylistic guidelines (in alphabetical order)

Bulleted lists	Bulleted or numbered lists can be inserted via the editor toolbar in METEOR. A numbered list should be used when it is necessary to indicate priority, the chronological flow of the series, or where individual items may be required to be identified for later reference. Introduce each series of bulleted or numbered lists with a full sentence or sentence fragment (i.e. part of a sentence). Capitalisation of bulleted or numbered lists follows normal sentence rules. If all points in the list are full sentences, begin each point with a capital letter. If each point in the list consists of, or begins with, a sentence fragment, no initial capital is used. Use a full stop only at the end of list items which are full sentences, and at the end of the last item within the series.
Capitalisation	Use minimal capitalisation except for proper nouns.
Figures	Figures are permitted in the body of a metadata item, if required. See 'images' for further details.
Font	The default (normal) font in METEOR is Open Sans 12.5. When text is copy/pasted into METEOR from another source, use the 'clear formatting' tool (represented by a capital T and a subscript x) to remove unwanted formatting and convert the text to the default font.
Formulae, symbols and other special characters	Special characters can be inserted via the editor toolbar in METEOR. If a complex formula is required, it may be inserted as an image (see the help topic How to add formulae to metadata items for further information). Separate units of measure within a ratio and the components of a fraction or date with a slash (e.g., 60 km/h, 4 ½ centimetres, 20/12/2018. Express alternatives and compound terms using a slash where required (e.g., January/February, not January and/or February). For time periods use an endash (e.g., 2008–2009, not 2008 to 2009). (A quick way to insert an endash is to use the Windows keyboard shortcut: Alt + 0150)
Glossary items	Insert glossary items using the editor toolbar by clicking on the 'metadata items' option. Do not insert as simple hyperlinks, as these will not create a 'mouseover' displaying the definition, and 'metadata items which use this glossary item' links. See also chapter 11 'Glossary item business rules.'
Headings	Headings within metadata content are in bold font (Open Sans 12.5); for example: Health care services

Table B1: Formatting and stylistic guidelines (in alphabetical order)

Horizontal line	The use of a horizontal line within the body of a metadata item is not recommended.
Hyperlinks	Insert hyperlinks using the editor toolbar by clicking on the 'insert/edit link' option.
Images	Images of figures, diagrams, complex tables or formulae are permitted in the body of a metadata item, if required. Insert images using the editor toolbar by clicking the METEOR button and choosing 'Image' from the drop-down options. (See also the help topic How to add formulae to metadata items).
Indentation	See 'alignment'.
In-text citations	See Appendix C for the formatting of in-text citations. Note: The documentary-note system with footnotes is not permitted in METEOR.
Italics	Italics is used within the main body of a metadata item for titles of publications, legislation, legal cases, and terms to which emphasis is being applied. When a publication is included in either the 'origin' or 'reference documents' attributes, the publication title is not italicised.
Links	See 'hyperlinks'.
Numbered lists	See 'bulleted lists'.
Numbers	Express numbers as numerals, not words, except when a sentence begins with a number. In text and tables, express a number with a value of less than one by placing a zero (0) in front of the decimal point (e.g., 0.5 not .5) For time periods use an endash (e.g., 2018–2019). (A quick way to insert an endash is to use the Windows keyboard shortcut: Alt + 0150) Use numerals for an indicator reference number (e.g., PI 10).
Percentage	Use '%' in preference to 'per cent' in text and tables, including in captions. Use 'per cent' on figure axis labels. Use 'per cent' where the number must be spelt out in text at the beginning of a sentence or in the name of a metadata item (e.g., in an indicator name). Use 'percentage' when using as a noun; for example, 'the percentage of males'.
Quotation marks	Enclose quotations within single, rather than double, quotation marks.
Reference list	See Appendix C for the formatting of references.

Table B1: Formatting and stylistic guidelines (in alphabetical order)

Spelling	Use Australian English except for: the name of an organisation that has a non-Australian English spelling (e.g., World Health Organization spelt with a 'z' instead of an 's' in 'Organization'). In such cases, spell the name of the organisation as the organisation itself spells it terms that have recommended spellings (e.g., use the US spelling for 'fetus').
Tables	Tables are permitted within the body of a metadata, if required. A table may be inserted via the editor toolbar or as an image if a detailed or complex table is required (see 'images'). Place a caption above the table, left aligned in bold. Minimal capitalisation applies to table captions. Care should be taken when copy/pasting tables from Word, as this may introduce unwanted formatting.
Underlining	Avoid underlining text as it may be mistaken for a hyperlink. Instead of underlining a word for emphasis, use italics.

Appendix C: Referencing guidelines

This appendix outlines the guidelines for the formatting of references within metadata items in METEOR. The author–date referencing style used in METEOR is based on the Australian Government Style Manual. We suggest you follow the guidelines in Table C1 to enable metadata standards in METEOR to be presented in a consistent manner across the system. This will result in data elements in a data set specification, or indicators in an indicator set, having their references formatted consistently, regardless of who they are developed by.

Table C1: Referencing guidelines

Reference type	Guidelines
Footnotes	The documentary-note system with footnotes is not permitted in METEOR.
Journal articles	Author's last name + initial+ year of publication (in parentheses) + article title (in single quotation marks) + comma + journal title (in italics) + comma + volume number + colon+ page number/range + full stop + comma + doi + colon + doi number + full stop. For example: Rose G (1984). 'International trends in cardiovascular disease: implications for prevention and treatment', Australia New Zealand Journal of Medicine 14:375–80, doi:10.1111/j.1445-5994.1984.tb03599.x.

Reference type	Guidelines
In-text (general)	Use the author–date system for in-text citations. Put the author's name and year of publication. The author's name can be part of a sentence or it can be included in parentheses with the year of publication. Use only the author's family name or the shortened form of an organisation's name (In the reference list, use the shortened form followed by spelt-out form in parentheses). Example of shortened form: AIHW (2022) reports that... Always include the year in parentheses. Don't separate the name and date with a comma. Examples: AIHW (2022) redeveloped METEOR using a collaboration of in-house development and resources. OR METEOR was developed collaboratively using in-house development and resources (AIHW 2022). In multiple-authored references, include both names. Example: MIMCU and B&D (2022) collaborated on the redevelopment of METEOR. Example for more than 3 authors: Smith et al. (2022) reported on updated numbers for public hospitals beds. Provide page number(s) only when the work has page numbers and if including a direct quotation. If applicable use a colon between date and page number(s). Examples: The FAQs page is a good starting point to learn about how to use METEOR (AIHW 2022:5–12). OR According to AIHW, METEOR's FAQs page is a good way to learn about the website (2022:5–12). When citing a classification scheme or other document which is better known by a short title, use the short title for the in-text citation. For example, the in-text citation for the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification Twelfth Edition is: ICD-10-AM Twelfth Edition. Enclose quotations within single, rather than double quotation marks. See 'Legislation' for in-text references to legislation. See also 'Multiple publication/authors' for in-text references to multiple publications by the same author, or a publication with multiple authors. See 'Organisations' for in-text references to organisations. Notes: 1. In-text references to content outside of METEOR should only be used when ascribing a statement to its source and where such statements support, rather than constitute, metadata content. For example, an in-text reference may be required to support content about the justification for a particular assessment criteria in a data element.

Reference type	Guidelines
Legislation	The first in-text reference to a piece of legislation should cite the short, formal title of the legislation exactly, in full, and in italics, followed by the jurisdiction (abbreviated without italics and enclosed in parentheses) if it is necessary to specify the relevant jurisdiction. For example: The Privacy Act 1988 (Cth) .... For subsequent references to the same piece of legislation, the title is not italicised and the date is omitted. For example: 'The Privacy Act ...'. An in-text reference to legislation is sufficient; do not reference legislation in full.
Multiple publications/ authors (in-text and reference list)	If more than one publication is cited that was published in given year by the same author, append the date with a lower case letter in the in-text reference: In-text example: 'Rose (2018a, 2018b)' Full reference example: 'Rose G (2018a)...') Publications are ordered alphabetically by title. If more than one publication is cited that was published in different years by the same author, list in chronological order. Rose G (2022) Rose G (2018) If a publication has two authors, spell out 'and'; do NOT join the names with an ampersand (&) in the in-text citation or full reference. In-text example: 'Rose and Smith (2018)') Full reference example: 'Rose G and Smith A (2018)...') If a publication has three or more authors, append the first author with the term 'et al.' For example: 'Rose et al. (2018)'
Organisations (in-text and reference list)	Acronyms may be used for organisation names in an in-text reference. The acronym is the author (e.g., '(AIHW 2017)'), In the full reference, list the acronym, followed by the full name of the organisation enclosed in parentheses (e.g., 'AIHW (Australian Institute of Health and Welfare) (2017)'). Use the abbreviation only in subsequent entries.

Reference type	Guidelines
Publications (general)	The general format for a book publication or journal: Author last name + initial + year of publication + title/or series or issue details (in italics) + publisher details + place of publication. For example: Brennan D (1994) The politics of Australian childcare: from philanthropy to feminism, Cambridge University Press, Melbourne. Book publication compiled by editor/s. Editor/s last name + initial + year (in parentheses) + title (in italics) + publisher + place of publication For example: Kuykendall S (ed) (2018) Encyclopedia of Public Health, Greenwood, California. See also 'Websites and webpage content' for guidelines on the referencing electronic publications.
Reports	Reports are sometimes known better for its short or unofficial title. If using a source like this, use the short title in text. In-text example: The Gonski report (2011) states that... For government reports: Author/organisation + year (in parentheses) + title of report (in italics) + name of agency + name of government For example: AIHW (Australian Institute of Health and Welfare) (2022) National partnership on essential vaccines: performance report 2019–20, AIHW, Australian Government. Online report example: AIHW (Australian Institute of Health and Welfare) (2022) National partnership on essential vaccines: performance report 2019–20, AIHW, Australian Government, accessed 25 May 2022. Note: For organisation names that may have changed, use the name that appears in the source at the time. For example, the organisation IHPA changed to IHACPA in 2022 – use the previous name if the document/report predates 2022.

Reference type	Guidelines
Websites and webpage content	Hyperlink the title of works available online and include the access date. There is no need to include the URL in references in digital content. For example: DFAT (Department of Foreign Affairs and Trade) (2018) Fact sheets for countries, economies and regions, DFAT, accessed 25 May 2022 If a document is print only, include a URL after the reference. Put the URL after the full stop. Print-only example: DFAT (Department of Foreign Affairs and Trade) (2018) Fact sheets for countries and regions – India, DFAT, accessed 25 May 2022. https://www.dfat.gov.au/trade/resources/trade-and-economic-fact-sheets-for-countries-economies-and-regions For online reports, hyperlink the title of the report and include date of access. If citing a PDF, avoid linking directly to the PDF, link to the page that hosts the PDF (i.e. a link that targets the landing page, not the PDF). PDF example: AIHW (Australian Institute of Health and Welfare) (2021) Australian Institute of Health and Welfare Corporate Plan 2022-23, AIHW, accessed 25 May 2022. Digital object identifiers (DOIs) are a series of number and punctuation that identifies a document. Works that have DOIs include journal articles, some e-books and PDFs. If a document has a DOI, include it in the reference list. DOI example: de Visser R (2009) 'One size fits all?' Promoting condom use for sexually transmitted infection prevention among heterosexual young adults'. Health Education Research, 20:557–566, doi: https://doi.org/10.1093/her/cyh015 For more extensive examples for electronic content and reports, see Author–date | Style Manual.

Appendix D: Metadata attributes automatically generated by METEOR

This appendix provides a table listing the attributes that are automatically generated by the METEOR system. Table D1 lists attributes in alphabetical order.

Table D1: Attributes automatically generated by METEOR

Attribute name	Definition	Business rules
Created by	The name of the original creator of the metadata item.	Automatically generated when the metadata item is created and saved for the first time.
Created date/time	The date and time the metadata item was created.	Automatically generated when the metadata item is created and saved for the first time.
Data element concepts implementing this object class	A list of the data element concept(s) that implement this object class.	Automatically generated when an object class is implemented in a data element concept. This attribute is unique to object classes.
Data elements implementing this value domain	A list of the data elements that implement this value domain.	Automatically generated when a value domain is implemented in a data element. This attribute is unique to value domains.
Implementation in data set specifications	Definition when attribute appears in a data element: A list of the data set specifications that implement this data element.	Automatically generated in a data element when the data element is implemented in a data set specification. Where applicable, information provided may include: implementation start date, implementation end date, conditional obligation, and/or data set specification specific information.

Attribute name	Definition	Business rules
	Definition when attribute appears in a data set specification (including clusters): A list of the data set specifications that implement this data set specification.	Automatically generated when a data set specification is implemented in a data set specification (i.e. automatically generated in data set specification A when data set specification A is implemented in data set specification B). Where applicable, information provided may include: implementation start date, implementation end date, conditional obligation, and/or data set specification specific information.
Indicators linked to this indicator set	A list of the indicators that are associated with an indicator set.	Automatically generated when an indicator is linked to an indicator set.
Indicators linked to this outcome area	A list of the indicators associated with an outcome area	Automatically generated when an outcome area is implemented in an indicator set. This attribute is unique to outcome areas.
Last updated by	The name of the person who last updated the metadata item	Automatically generated when the metadata item is updated and saved.
Last updated date/ time	The date and time the metadata item was last updated.	Automatically generated when the metadata item is updated and saved.

Attribute name	Definition	Business rules
Metadata items in this Data Set Specification	A list of the metadata items (either data elements and/or data set specifications) that are implemented in this data set specification.	Automatically generated in a data set specification based on the data elements and/or data set specifications that are implemented in the data set specification. Information provided includes: sequence number (if applicable), metadata item name, obligation, maximum occurrences, conditional obligation text, and/or data set specification specific information.
Metadata items which use this glossary item	A list of the metadata items that reference this glossary item.	Automatically generated when a glossary item is referenced (inserted) in a metadata item. N.B. for this functionality to work correctly, glossary items must be inserted using the 'metadata items' option under the METEOR drop-down menu of the WYSIWIG editor toolbar. Glossary items should not be inserted as simple html links.
METEOR identifier	A unique identifier within METEOR for the metadata item. For example: 724282 N.B. METEOR identifiers also form part of the permanent URL of items within METEOR.	Automatically generated when the metadata item is created and saved for the first time.
Outcome areas linked to this indicator set	A list of the outcome areas that are associated with an indicator set.	Automatically generated when an indicator in the indicator set is linked to an outcome area.
Type	The type of metadata. For example: Object class.	Automatically generated when the metadata item is created and saved for the first time.
Value domains based on this classification scheme	A list of the value domains that implement the classification scheme.	Automatically generated when a value domain implements a classification scheme. This attribute is unique to classification schemes.

Appendix E: Registration status values and associated meanings

This appendix provides information on the registration status values and their accompanying business rules. The registration status values used in METEOR are based on ISO 11179-6-2005(E).

The registration status for a metadata item indicates what stage the item is at in the registration process (or metadata lifecycle).

There are three components to a registration status:

- the registration authorities in which the metadata item has a status
- the status of the metadata item
- the date this status was granted.

When a metadata item is created and saved for the first time, it has a status of Unregistered/no registration status. A metadata item will remain unregistered until the registration status is changed by the developer or registrar.

Ideally, a metadata item should go through each of the pre-standard registration status values (i.e. *Incomplete*, then *Candidate*, then *Recorded*, and onto *Qualified*) as it progresses to become a *Standard*; however, it is not mandatory to do so. This means that a metadata item can, for example, go from *Candidate* registration status to *Standard* registration status if necessary. As metadata items progress through the registration process, this also affects their visibility to different users. Metadata items with the registration statuses of *Recorded*, *Qualified*, *Standard*, *Superseded* and *Retired* are visible to the public user.

Registration status values and their meaning are listed in Table E1 below.

Business rules for registration status changes:

When changing a metadata item's registration status, the following business rules apply:

1. Each registration status must be associated with a registration date. The registration date is the 'effective date' of the registration status change and defaults to today's date. If necessary, the 'effective date' should be changed to a specific date if, for example, a metadata item is endorsed as a standard on a date that is different to the METEOR-generated 'effective date' (e.g., the date the endorsing body met.)
2. Each registration status must be associated with an authorisation statement. Write relevant information and date approved in the 'notes' template at the end of the page. The authorisation statement specifies the authority and date upon which the decision for a registration status change was made. (e.g., 'Endorsed by NHDISC in the 2022_1 March–May Review Cycle, see paper 2022_1_3')

Authorisation statements for metadata elements are visible to signed-in users with access to the element's workgroup – they can be seen under 'View authorisation' under the 'Register' section on the right hand side of the screen. A metadata item with a registration status of *Superseded* must also have a related metadata relationship of *Superseded* by. See Appendix F 'Metadata relationship types and associated meaning' for further information on relationships.

Table E1: Registration status values and meanings

(NB. ISO 11179-6-2005(E) definitions are also included)

Registration status	Meaning	Workflow action	Visibility
Unregistered/ No registration status	Status on initial creation [11179 definition: Submitter wishes to make the community that uses this metadata register aware of the existence of an Administered Item in their local domain.]	System generated A metadata item at this stage can be edited by the developer and other members of the workgroup.	Developer, registrar and members of workgroup
Incomplete	A developer has created and submitted this item for consideration by the registrar. [11179 definition: Submitter wishes to make the community that uses this metadata register aware of the existence of an Administered Item in their local domain.]	Developer, registrar, and other members of the workgroup may progress metadata item from 'unregistered/no registration status' to 'incomplete'. A metadata item at this stage' can be edited by the developer, registrar, and other members of the workgroup.	Developer, registrar and members of workgroup
Candidate	The metadata item has been reviewed by a data committee and has been accepted onto their work program. [11179 definition: The Administered Item has been proposed for progression through the registration levels.]	Registrar may progress metadata item from 'incomplete' to 'candidate'. A metadata item at this stage can be edited by the developer or registrar, or other members of the workgroup.	Developer, registrar and members of workgroup.

Registration status	Meaning	Workflow action	Visibility
Recorded	The registrar has determined that the item meets basic quality criteria and is ready for consideration by the relevant data committee. [11179 definition: The Registration Authority has confirmed that — all mandatory metadata attributes have been completed.]	Registrar may progress metadata item from 'candidate' to 'recorded'. A metadata item at this stage can be edited by the developer or registrar, or other members of the workgroup.	All users (public)
Qualified	A data committee has recommended the item to a registration authority for approval as a standard. [11179 definition: The Registration Authority has confirmed that the mandatory metadata attributes are complete, and the mandatory metadata attributes conform to applicable quality requirements.]	Registrar may progress metadata item from 'recorded' to 'qualified'. A metadata item at this stage can only be edited by the registrar. A registrar may also revert the status from 'qualified' to 'recorded' to allow the developer to make their own edits. Any edits must be recorded in 'notes' attribute.	All users (public)
Standard	The item has been endorsed by a registration authority as a data standard. [11179 definition: The Registration Authority confirms that the Administered Item is of sufficient quality, and of broad interest for use in the community that uses this metadata register.]	Registrar may progress metadata item from 'qualified' to 'standard'. The metadata item can only be edited by the registrar. Edits at this status should be limited to typing errors or similar that may have been previously missed and which do not change the meaning of the item. Any edits must be recorded in the 'notes' attribute.	All users (public)

Registration status	Meaning	Workflow action	Visibility
Preferred Standard*	Where more than one similar data standard is available, the registration authority recommends this item is preferred for use within the community that uses this metadata register. [11179 definition: The Registration Authority confirms that the Administered Item is preferred for use within the community that uses this metadata register.]	Registrar may progress metadata item from to 'standard' to 'preferred standard'. The metadata item can only be edited by the registrar. Edits at this status should be limited to typing errors or similar that may have been previously missed and which do not change the meaning of the item. Any edits must be recorded in the 'notes' attribute.	All users (public)
Superseded	The item is no longer endorsed as a current data standard by a registration authority, as it has been superseded by another standard. [11179 definition: The Registration Authority determined that the Administered Item is no longer recommended for use by the community that uses this metadata register, and a successor Administered Item is now preferred for use.]	Registrar may progress metadata item from 'standard' or 'preferred standard' to 'superseded'. The metadata item can only be edited by the registrar. Edits at this status should be limited to typing errors or similar that may have been previously missed and which do not change the meaning of the item. Any edits must be recorded in the 'notes' attribute.	All users (public)

Registration status	Meaning	Workflow action	Visibility
Retired	The item is no longer endorsed as a current data standard by a registration authority, and it has not been superseded by another standard. [11179 definition: The Registration Authority has approved the Administered Item as no longer recommended for use in the community that uses this metadata register, and should no longer be used.]	Registrar may progress metadata item from 'standard' or 'preferred standard' to 'retired'. The metadata item can only be edited by the registrar. Edits at this status should be limited to typing errors or similar that may have been previously missed and which do not change the meaning of the item. Any edits must be recorded in the 'notes' attribute.	All users (public)
Not progressed	The item will no longer be considered by the registrar, data committee or registration authority. [NB. Extension to 11179]	Registrar may progress item from any status before 'standard' to 'not progressed'.	Registrar and members of workgroup

The Registration statuses and criteria are based on ISO 11179-6-2005(E).

NB. A metadata administrator may progress a metadata item from any status to any other status. Care should be taken regarding any item that has reached a status after *Standard*.

*The *Preferred standard* registration status is part of the updated ISO/IEC 11179-6:2023, however was not used in the legacy METEOR system.

Appendix F: Metadata relationship types and associated meaning

When creating a relationship between metadata items, the following business rules apply:

1. A relationship may be created between any two metadata items. Note that some relationship types can only be created to link items of the same metadata type (e.g., between two data elements). See also relationships may be created to link items of a different metadata type (e.g., a between a property and a value domain).

Relationship type	Applicable to
Supersedes	All metadata item types that are of the same metadata type
See also	All metadata item types
Is formed using	Data elements only

2. When a metadata item is developed to supersede (revise) a *Standard*, a *Supersedes* relationship must be created between the two metadata items. The registration status of the *superseded* item must be changed to *Superseded* once the new item becomes *Standard*.
3. Relationships between metadata items must not duplicate information stored or be available elsewhere in METEOR. For example, when a metadata item is implemented in another metadata item (such as when an object class is implemented in a data element concept), a See also relationship between the two items is not required, and must not be created, as an 'implemented in' relationship is automatically generated by METEOR

Valid relationships are listed in Table F1 below.

Table F1: Valid relationship types

Relationship type (Developer-created in metadata item A)	Complementary relationship (System-generated in metadata item B)	Relationship description	Type of metadata the relationship is applicable to
Supersedes	Has been superseded by	This relationship signifies a superseded metadata item and the metadata item that it was superseded by. The relationship type is applied when a metadata item is developed to revise (supersede) a standard.	All metadata item types that are of the same metadata type (e.g., an object class can only be superseded by an object class; a data element can only be superseded by a data element; etc.).
See also	See also	This relationship signifies an associated metadata item, irrespective of the nature of the association. This relationship type may be applied when it is critical to acknowledge the existence of another metadata item. When a *See* also relationship is applied between two metadata items, no other relationship type can be applied between the two metadata items.	All metadata item types
Is formed using	Is used in the formation of	This relationship signifies that a data element is used in the calculation of, or is a component of, another data element. For example, the data element Emergency service stay—waiting time, total minutes NNNNN might be formed using data elements Emergency service stay—presentation time, hhmm and Emergency service stay—clinical care commencement time, hhmm	Data elements only

Note: METEOR contains metadata items that may have an 'Is re-engineered from' relationship type. This relationship type was applied to metadata that was based on content in the Knowledgebase repository that existed prior to the original METeOR (2005). The 'Is re-engineered from' relationship no longer applies for current METEOR.

Appendix G: Value representation tables

This appendix provides the tables referred to in Chapter 8 'Value domain business rules' and Chapter 13 'Indicator business rules':

- Table G1: Value domain representation class values and their associated meaning
- Table G2: Indicator representation class values and their associated meaning
- Table G3: Value domain data type values and their associated meaning
- Table G4: Indicator data type values and their associated meaning
- Table G5: Data type value options for each representation class
- Table G6: Format values and their associated meaning
- Table G7: Examples of values to be represented and their associated format
- Table G8: Value domain units of measure classifications
- Table G9: Indicator units of measure
- Table G1: Value domain representation class values and their associated meaning

Value	Meaning	Metadata type used in
Average	A numeric value representing an arithmetic mean.	Value domain
Code	A system of valid symbols that substitute for longer values.	Value domain
Count	A sub-type class of 'total'. A numeric value representing a non-monetary numeric value arrived at by counting.	Value domain
Currency	A sub-type class of 'total'. A numeric value representing a monetary value.	Value domain
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).	Value domain
Identifier	A value which establishes identity.	Value domain
Percentage	A percentage is a proportion multiplied by 100.	Value domain
Quantity	A sub-type class of 'total'. A numeric value representing a continuous number such as the linear dimensions, capacity/ amount (non-monetary) of an object.	Value domain
Ratio	The relationship between two groups or amounts that expresses how much bigger one is than the other	Value domain
Text	An unformatted, descriptive value.	Value domain
Time	A numeric value representing a specific instance in time.	Value domain
Total	A numeric value representing the sum of a set of values or an entire quantity (including monetary).	Value domain

Table G2: Indicator representation class values and their associated meaning

Value	Meaning	Metadata type used in
Count	A sub-type class of 'total'. A numeric value representing a non-monetary numeric value arrived at by counting.	Indicator
Incidence	The number of new cases of a condition (e.g. an illness, disease or event) occurring during a given time period.	Indicator
Mean (average)	The simple mathematical average of a set of two or more numbers. To determine the mean of a set of numerical values, add values together and divide the total by the number of values in the set.	Indicator
Median	The median is based on the value(s) of the observation (s) at the midpoint of a list of observations ranked from the smallest to largest. If the number of observations is odd the median is equal to the value of the middle observation. If there are even number of observations the median is the average of the two middle observations.	Indicator
Percentage	A percentage is a proportion multiplied by 100.	Indicator
Percentile	Any of ninety-nine points that divide an ordered set of observations into one hundred parts, each containing one hundredth of the observations.	Indicator
Prevalence	The total number of individuals (e.g., people) with a given condition in a population at a given point in time, regardless of when the condition may have first appeared.	Indicator
Proportion	A fraction in which the numerator contains a subset of the individuals contained in the denominator.	Indicator
Qualitative measure	Used where an indicator does not represent a mathematical calculation, e.g., where it considers achievement against a target.	
Rate	The number of events (numerator) divided by the total population who could have experienced the event (denominator), multiplied by a constant (e.g., 100, 1000, 10,000) over a specific time period.	Indicator
Ratio	The relationship between two groups or amounts that expresses how much bigger one is than the other.	Indicator

Table G3: Value domain data type values and their associated meaning

Value	Meaning	Metadata type used in
Boolean	A binary value expressed using a string e.g., true or false/yes or no.	Value domain
Currency	A numeric value expressed using a particular medium of exchange.	Value domain
Date/time	A specific instance of time expressed in numeric form.	Value domain
Number	A sequence of numeric characters which may contain decimals, excluding codes with 'leading' characters (e.g., '01','02','03', etc.).	Value domain
String	A sequence of alphabetic and/or numeric characters, including 'leading' characters e.g., '01','02','03'.	Value domain
Image	A depiction recorded electronically to allow viewing or transmission on a computer (e.g., 'jpg', 'png', 'gif')	Value domain
Geospatial	A value representing locational information (i.e. geographic data in the form of coordinates, address, city, postcode, etc.).	Value domain

Table G4: Indicator data type values and their associated meaning

Value	Meaning	Metadata type used in
Coded category	**A set of pre-defined data classifications. The output of the indicator is not a number but one of the potential categories. For example CODE 1 'First quintile', CODE 2 'Second quintile',**	**Indicator**
Integer	An integer number (e.g., –1, 0, 1, 2, 100, 3398129, etc.) is a precise number that is a result of counting and enumerating. Integer numbers are discrete, the set of integers is infinite but countable. No arbitrary limit is imposed on the range of integer numbers.	Indicator
Monetary amount	A quantity expressing the amount of money in some currency.	Indicator
Point in time	A quantity specifying a point on the axis of natural time. A point in time is most often represented as a calendar expression.	Indicator
Real	Fractional numbers. Typically used whenever quantities are measured, estimated or computed from other real numbers. The typical representation is decimal, where the number of significant decimal digits is known as the precision.	Indicator
Time period	A time interval of a single repetition of a phenomenon which repeats itself regularly. Used to denote time interval or average interval between identifiable points of recurrence (e.g., month, quarter, year, etc.).	Indicator

Table G5: Data type value options for each representation class value

Representation class	Data type
Average	Currency or Number
Boolean	Number or String
Code	Number or String
Count	Number
Currency	Currency
Date	Date/time
Identifier	Number or String
Percentage	Number
Quantity	Number
Ratio	Number
Text	String
Time	Date/time
Total	Currency or Number

Table G6: Format values and their associated meaning

Value	Valid character range
A	Alphabetic character set: may represent the letters a-z, A-Z, and special characters(a), but not numeric characters.
N	Numeric character set: may represent whole and decimal numbers including special characters(a), but not alphabetic characters.
X	Alphanumeric character set: contains the alphabetic and numeric character sets (including special characters), and may contain blank characters.
D	A numeric character representing a number of days(b)
M	A numeric character representing a number of months(b).
Y	A numeric character representing a number of years(b).
h	Any numeric character representing a number of hours(b).
m	Any numeric character representing a number of minutes(b).
s	Any numeric character representing number of seconds(b).
{ }	The string within the curly brackets (braces) is optional in its entirety (e.g., X{XX} indicates 1 or 3 alphanumeric characters (i.e. X or XXX)). This notation is often used with decimals, e.g., N[N]{.N} is a number of 1 or 2 digits, with a precision of up to 1 decimal place.
[ ]	The string within the square brackets is optional in any ordered combination (e.g., [XXX] indicates 0, 1, 2 or 3 alphanumeric characters (i.e. blank, X, XX or XXX)).
( )	The character preceding the round brackets (parentheses) is repeated the number of times specified (e.g., X(9) indicates 9 alphanumeric characters).

A special character is a character which has a visual representation and is neither a letter, number, ideogram, or blank. For example, punctuation marks and mathematical symbols.

An ideogram is a character that represents an object or concept e.g., Chinese ideogram or Japanese Kanji.

A blank is a character that represents an empty position in an alphanumeric character field e.g., space. A blank is conceptually different from a null value, which is defined as the absence of a stored value.

Valid in value domains of representation class 'date' or 'time' only. These format values indicate the valid unit(s) of measure to be presented. For value domains of all other representation classes, only the characters A, N, X, { }, [ ], and ( ) may be used to denote the presence of a value.

Table G7: Examples of values to be represented and their associated format

Values to be represented	Representation format	Examples
5 alphabetic characters are required, followed by up to 2 numeric characters.	AAAAA[NN]	AAAAA or AAAAAN or AAAAANN
Up to 5 alphabetic characters are allowed, followed by up to 2 numeric characters. Note: this format accepts blank entries.	[AAAAANN]	A AA AAA AAAA AAAAA AN AAN AAAN AAAAN AAAAAN ANN AANN AAANN AAAANN AAAAANN N NN or blank
Either 1 alphabetic character or 4 alphabetic characters are required.	A{AAA}	A or AAAA
Either 1, 2, 3 or 4 alphabetic characters are required:	A[AAA]	A or AA or AAA or AAAA
15 alphanumeric characters are required.	X(15)	XXXXXXXXXXXXXXX

Values to be represented	Representation format	Examples
At least 1, and up to 15 alphanumeric characters.	X[X(14)]	X or XX or XXX or XXXX or XXXXX etc.
Up to 15 alphanumeric characters. Note: this format accepts blank entries.	[X(15)]	X or XX or XXX or XXXX or XXXXX etc. or blank
2 numeric characters are required, followed by up to 3 alphabetic characters, and 4 required alphabetic characters.	NN[AAA]AAAA	NNAAAA or NNAAAAA or NNAAAAAA or NNAAAAAAA
1 alphabetic character followed by 1 numeric character is required, followed by a either a full stop and up to 2 numeric characters or nothing.	AN{.N[N]}	AN or AN.N or AN.NN
1 alphabetic character, followed by 1 numeric character, a full stop, and 1 numeric character is required, followed by up to 1 numeric character.	AN.N[N]	AN.N or AN.NN
Either 9 numeric characters and 1 alphabetic character or nothing.	{N(9)A}	NNNNNNNNA or blank

Values to be represented	Representation format	Examples
Up to 3 numeric characters followed by up to 1 alphabetic character.	[NNNA]	N or NN or NNN or NA or NNA or NNNA or A or Blank
6 numeric characters are required, followed by either 2 alphabetic characters or nothing.	NNNNNN{AA}	NNNNNN or NNNNNNAA
1 numeric character is required followed by up to 2 numeric characters, followed by either a full stop and 2 numeric characters or nothing	N[NN]{.NN}	N N.NN NN NN.NN NNN or NNN.NN

Table G8: Value domain units of measure classifications

Measurement	Unit of measure name	Unit of measure symbol
Concentration	Catalytic rate of an enzyme	kCat/L
	Gray	Gy
	International Units	IU
	Microgram per litre	µg/L
	Microgram per minute	µg/min
	Micromole per litre	µmol/L
	Millimole per mole	mmol/mol
	Milliequivalent	mEq
	Milliequivalent per litre	mEq/L
	Millimetre of mercury	mmHg
	Millimole per litre	mmol/L
	Milligram per millimole	mg/mmol
	Milligram per litre	mg/L
	Milligram per 24-hour period	mg/24h
	Nanogram per decilitre	ng/dl
	Units per litre	U/L
Currency	Australian currency	AU$
Co-ordinates	Degree Minute Second	
	Decimal degree	
Length	Centimetre	cm
	Millimetre	mm
Temperature	Degree Celsius	°C
Time	Second	s
	Minute	m
	Hour	h
	Hour and minute	hm
	Day	D
	Week	W
	Month	M
	Year	Y
Weight	Gram	g
	Kilogram	Kg
Other	Attendance	
	Bed	
	Bedroom	
	Caesarean sections	
	Cigarette	
	Completed weeks	
	Dose	
	Event	
	Full-time equivalent (FTE) staff	FTE

Measurement	Unit of measure name	Unit of measure symbol
	Full-time equivalent (FTE) student load	
	Group session	
	Heart beats per minute	
	Occasion of service	
	Period	
	Person	
	Phase of care	
	Pregnancy	
	Ranking	
	Score	
	Separation	
	Service contact	
	Service contact date	
	Service event	
	Standard drink	
	Tenancy agreement	
	Tenancy/rental unit*	
	Tenancy unit	

* The unit of measurement Tenancy/rental unit has been superseded by Tenancy unit, however remains in the list as it is used in superseded elements.

Table G9: Indicator units of measure

	Unit of measure name	
	Currency	
	Day	
	Disease type	
	Dwelling	
	Episode	
	Event	
	Hospital bed	
	Household	
	Jurisdiction	
	Life event (e.g., birth, death)	
	Person	
	Phase of care	
	Service contact	
	Service event	
	Service type	
	Time (e.g., days, hours)	

Appendix H: Data element clusters

A data element cluster is one of three types of data set specifications in METEOR. A data element cluster consists of two or more data elements that are required for capturing a response and/or building a data item for statistical purposes on a particular subject.

A data element cluster may be included in a data set specification when there is a need to better describe a group of related data elements and how they are to be collected or interpreted. The relationship between the data elements in a cluster is clearly defined in the cluster's scope statement.

However, a data element cluster should not be used to simply organise data elements within a data set specification or mimic how questions are grouped within a data collection tool, such as a survey instrument. A data element cluster should also not be used to represent how data are outputted for data analysis purposes.

When implementing a data element cluster within a data set specification, a level of caution is required due to the amount of superseding activity needed when a data element within a cluster is superseded (revised). The use of data element clusters can also result in too many layers within a data set specification. See 'Cautionary note on the use of data element clusters' below for further information.

The two typical types of data element clusters in METEOR are a matched data element cluster and a conditional data element cluster.

Matched data element cluster

A matched data element cluster may be appropriate when data are to be reported for the purpose of cross classificatory data collection (i.e. where the value of one data element is associated with the value of another). This type of data element cluster is useful for aggregate functions, such as totals, counts, averages, and the like. The use of a matched data element cluster can reduce the number of data elements required in a data set specification when data are collected in the same format. For example, if the average number of full-time equivalent staff are to be collected, rather than having individual data elements for each type of staffing category, one data element could exist representing all staffing categories (i.e. as a code.) This data element could be combined in a cluster with another data element representing the average full-time equivalent staff units. These two data elements can be collected together to obtain the number of full-time equivalent staff in establishments (see example below).

Example of a matched data element cluster

Full-time equivalent staffing data element cluster

- Establishment—full-time equivalent staff, average N[N(7){.N}]
- Establishment—staffing categories, health code N[N]

The two data elements together can be used to create a matrix, as below:

Staffing category	Full-time equivalent staff
Administrative and clerical staff	N[N(7).{N}]
Enrolled nurses	N[N(7).{N}]
Specialist salaried medical officers (SMOs)	N[N(7).{N}]
...	...
Total	N[N(7).{N}]

Conditional data element cluster

A conditional data element cluster may be appropriate where a group of data elements are to be reported in conjunction with each other in a particular data set specification. For example, in a data set specification on acute coronary syndrome, collecting clinical data about an electrocardiogram may require data on the date and time of the test and the presence or absence of abnormalities. Such data elements could be grouped into an electrocardiogram data element cluster (see example below). This cluster could be recorded multiple times per each person (the statistical unit of the data set specification.)

Example of a conditional data element cluster

Electrocardiogram data element cluster

- Electrocardiogram—electrocardiogram date, DDMMYYYY
- Electrocardiogram—electrocardiogram time, hhmm
- Electrocardiogram—electrocardiogram bundle-branch block indicator, yes/no code N
- Electrocardiogram—electrocardiogram bundle-branch block location, code N
- Electrocardiogram—electrocardiogram bundle-branch block status, code N
- Electrocardiogram—electrocardiogram change location, code N
- Electrocardiogram—electrocardiogram change type, code N
- Electrocardiogram—electrocardiogram lead V4R indicator, yes/no code N
- Electrocardiogram—electrocardiogram Q waves indicator, yes/no code N
- Electrocardiogram—electrocardiogram Q waves, code N Electrocardiogram electrocardiogram ST-segment elevation in lead V4R indicator, yes/no code N
- Electrocardiogram—heart rhythm type, code N[N]

A conditional data element cluster may also be appropriate when collecting data on a subset of a target population. For example, in a cancer screening or other health-related data set specification, a diagnosis data element cluster may be appropriate when collecting data on those who have been diagnosed with cancer (see example below). This cluster could have a conditional obligation within the data set specification (i.e. conditional on a positive cancer diagnosis.)

Example of a conditional data element cluster

Bowel cancer diagnosed data element cluster

Person with cancer—primary site of cancer, topography code (ICD-O-3) ANN.N

Patient—diagnosis date of cancer, DDMMYYYY

Cancer staging—cancer staging scheme source, code N[N]

Cancer staging—staging basis of cancer, code A

Person with cancer—extent of primary cancer, TNM stage (UICC TNM Classification of Malignant Tumours, 7th ed) code X[XX]

Episode of admitted patient care—admission date, DDMMYYYY

Cautionary note on the use of data element clusters

It is recommended that the use of data element clusters is kept to a minimum, where possible. If a data element cluster is implemented in a DSS (including an NBEDS or NPBDS) or an NMDS and, for example, a value domain in one of the data elements in the cluster is superseded, then not only will the data element(s) that implements the value domain require superseding, but the entire cluster and the DSS or NMDS the cluster is implemented in will need to be superseded. This can result in considerable superseding activity and metadata maintenance work for a developer.

In addition to the reasons above, the implementation of a data element cluster within another data element cluster is not recommended as it creates even further layers within a data set specification. As a result, data elements can end up being buried within a data set specification and may not be clearly visible to users.

Business rules for data element clusters

Data element clusters are created in METEOR using the data set specification template. In addition to the business rules on data set specifications in Chapter 12, the following rules apply specifically to data element clusters:

1. Only data elements are permitted in a data element cluster.
2. A data element cluster must implement at least two data elements.
3. A data element cluster may be implemented in a DSS (including NBEDS and NBPDS) or NMDS.
4. The relationship between the data elements implemented in a data element cluster must be clearly described in the cluster's 'Scope' attribute.

Glossary

AS 21667–2012 The indicator sets, indicators and outcome areas are based on the Australian Standards Health indicators conceptual framework.

attribute: A characteristic of a metadata item (e.g., name or definition). Each attribute appears as a field in the metadata item template.

classification scheme: A metadata type that represents an official terminological system for classifying data that is recognised and endorsed by a national or international body.

A classification scheme contains descriptive information to arrange concepts into groups based on criteria such as the characteristics which they have in common. Types of classification schemes include controlled vocabularies, uncontrolled vocabularies, taxonomies, thesaurii, and ontologies. An example of a classification scheme is the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification, Twelfth edition.

In METEOR, a classification scheme may be implemented by one or more value domains. The classification scheme acts as a type of reference, pointing to where the user may find the list of permissible values for the value domain, without the need to enumerate them explicitly in the value domain.

data element: A metadata type that is the basic unit of identifiable and definable data information in METEOR used to standardise the representation of data. A data element is commonly referred to as a 'DE'. It is created by the union of a data element concept and a value domain.

data element concept: A metadata type that represents a concept created by the union of one object class and one property. A data element concept is commonly referred to as a 'DEC'.

data quality statement: A data quality statement (DQS) provides information on the quality and suitability of the collected data for its original intended use and potential re-use. A DQS includes a range of information to help users understand the important data limitations, in order to make informed judgements about use of the data.

data set specification: A data set specification (DSS) is a grouping of data elements and/or other data set specifications, and the conditions under which the grouping should be collected or reported.

data source: A metadata type that is a specific data set, database or reference from where data are sourced.

data standard: Metadata that has undergone the endorsement process by a registration authority to become a standard. A data standard endorsed for use across Australia is referred to as a national data standard.

developer: A person who has authorised access to METEOR to create and develop metadata with the aim of producing data standards.

framework and dimensions: A conceptual framework monitors progress or outcomes of a particular system and broader determinants of performance of a system in order to improve the services provided for target populations over time.

glossary item: A metadata type that defines the meaning of a term within a specific context. A glossary item allows a term to be defined precisely and consistently within the context without the need for the full definition to be repeated each time it is used.

indicator: A metadata type that defines the specification for a statistical measure used to describe the progress or performance of a particular aspect of the system or program being examined.

indicator set: A metadata type that consists of a group of indicator specifications combined to provide analysis on a broader topic.

ISO/IEC 11179: The international standard for metadata registries on which METEOR's architecture is based. Please note that METEOR also includes some non-ISO 11179 components, i.e. extensions to the ISO 11179 protocol.

metadata: Metadata are 'data about data' – information about how data are defined, structured and represented. Metadata make data files meaningful by describing the information that has been captured in data, and how it is measured and represented.

METEOR metamodel: The architectural framework model that defines how METEOR is structured (see Figure 1.1).

object class: A metadata type that represents the 'thing' of interest being described for which data are collected. An object class is commonly referred to as an 'OC'.

outcome area: An outcome area defines the target, standard, or the ideal result which an indicator is being assessed against (e.g., a government policy).

property: A metadata type that represents the characteristic or aspect of the 'thing' of interest (i.e. the identified object class) that one wishes to know about and collect data on.

registrar: An authorised person who works on behalf of a METEOR registration authority. A registrar's access to METEOR enables them to review and manage metadata items through the data standards endorsement process.

registration authority: An organisation that has the authority to endorse a metadata item as a data standard for a particular sector.

registration status: Indicates what stage a metadata item is at in the registration process (or metadata lifecycle) in METEOR.

template: metadata within METEOR is created and edited by means of templates, i.e. forms containing the attributes available for each item type. Mandatory attributes are marked with an asterisk (*).

value domain: A metadata type that provides the implied, or explicit, set of permitted, or valid, values and representation for the concept defined by a data element. A value domain is commonly referred to as a 'VD'.

References

AIHW (Australian Institute of Health and Welfare) (2007) A guide to data development. Cat. No. HWI 94. Canberra: AIHW

AS (Australian Standards) (2012) AS 21667—2012: Health indicators conceptual framework. SAI Global Limited, Sydney

IHACPA (Independent Health and Aged Care Pricing Authority) (2023) International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM/ACHI/ACS Twelfth Edition): IHACPA

ISO (International Standards Organization) (2011). ISO 21090. Health informatics—Harmonized data types for information interchange. 1st edn, 2011-02-15. Geneva: ISO.

ISO/IEC (International Standards Organization/International Electrotechnical Commission) (2004). ISO/IEC 11179-4. Information technology—Metadata registries (MDR)—Part 4: Formulation of data definitions. 2nd edn, 2004-07-15. Geneva: ISO/IEC.

––(2015) ISO/IEC 11179-1. Information technology—Metadata registries (MDR)—Part 1: Framework. 3rd edn, 2015-12-15. Geneva: ISO/IEC.

–– (2013) ISO/IEC 11179-3/AMD 1:2020. Information technology – Metadata registries (MDR) – Part 3: Registry metamodel and basic attributes – Amendment 1. Geneva: ISO/IEC.

ISO/IEC (International Standards Organization/International Electrotechnical Commission) (2015) ISO/IEC 11179-5. Information technology—Metadata registries (MDR)—Part 5: Naming principles. 3rd edn, 2015-04-01. Geneva: ISO/IEC.

––(2019) ISO/IEC TR 11179-2. Information technology—Metadata registries (MDR)—Part 2: Classification. 1st edn, 2019-04. Geneva: ISO/IEC.

––(2023) ISO/IEC 11179-6. Information technology—Metadata registries (MDR)—Part 6: Registration. 4th edn, 2023-01-16. Geneva: ISO/IEC.

OECD (Organisation for Economic Co-operation and Development) (2005) Glossary of statistical terms OECD Glossary of Statistical Terms – Ratio Definition.

List of tables

List of figures

Related publications

ABS Data Quality Framework (2009) The ABS Data Quality Framework, accessed 7 July 2022

This report, Juvenile justice in Australia 2007–08, is part of an annual series. The four earlier editions and any published subsequently can be downloaded for free from the AIHW website <http://www.aihw.gov.au/publications/index.cfm/series/405>. The website also includes information on ordering printed copies.

Interim tables relating to this report were published separately online as Juvenile justice in Australia 2008-09: Interim report—main tables. See <http://www.aihw.gov.au/publications/index.cfm/title/12624>.

The following AIHW publications relating to children, youth and families might also be of interest:

AIHW 2010. Health and wellbeing of young Australians: indicator framework and key national indicators. Bulletin no. 77. Cat. no. AUS 123. Canberra: AIHW.

AIHW 2011. Child protection Australia 2009–10. Child welfare series no. 51. Cat. no. CWS 39. Canberra: AIHW.

AIHW 2011. Educational outcomes of children under guardianship or custody orders: a pilot study, stage 2. Child welfare series no. 49. Cat. no. CWS 37. Canberra: AIHW.

AIHW 2016 (forthcoming). Australian hospital statistics 2012–13: private hospitals. Canberra: AIHW.