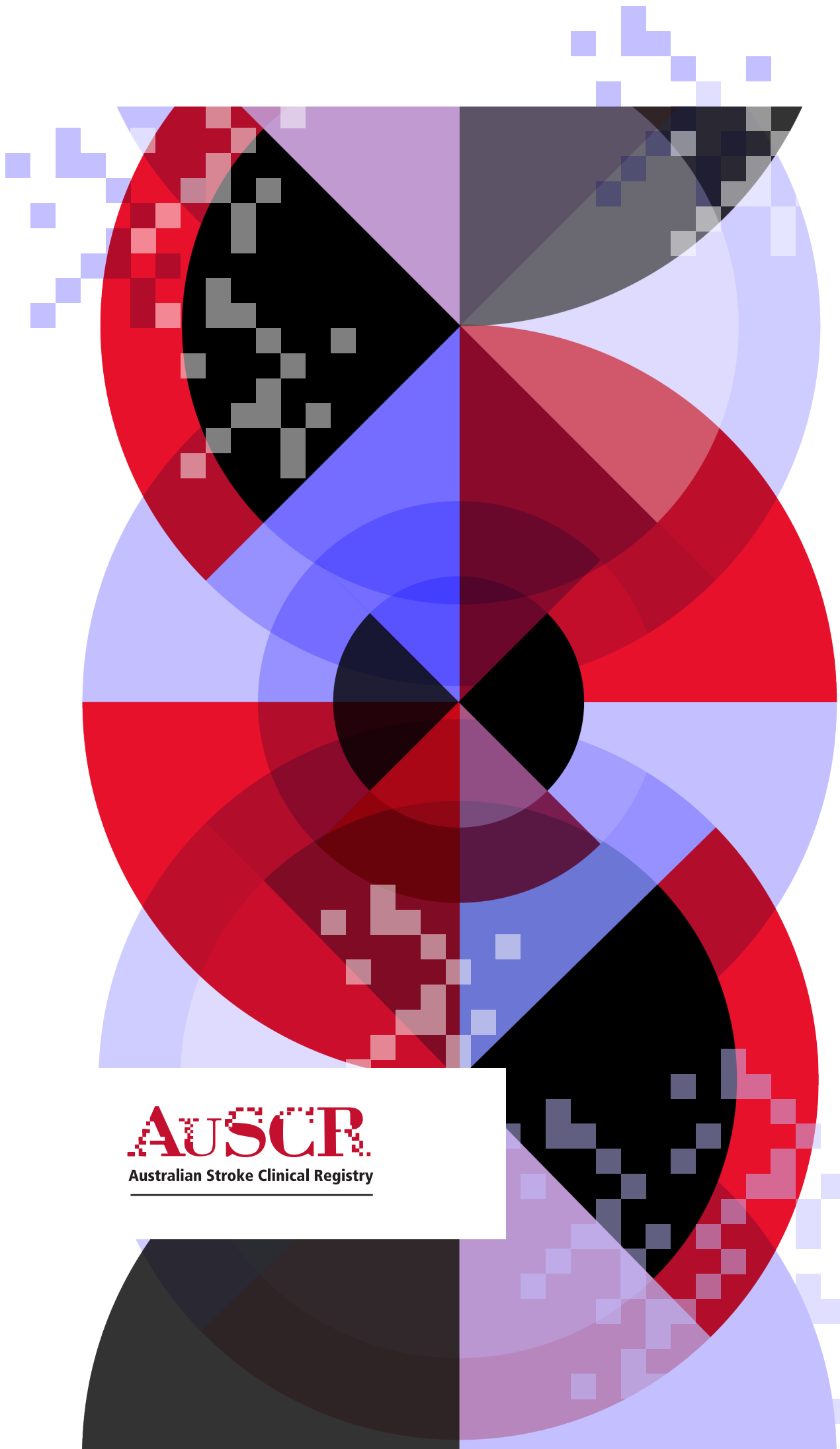


DATA QUALITY REPORT 2022



AUSCR
Australian Stroke Clinical Registry



This report was produced on behalf of the Australian Stroke Clinical Registry (AuSCR) Consortium partners and was approved by the AuSCR Management Committee.

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INTRODUCTION

The Australian Stroke Clinical Registry (AuSCR) was established in 2009 to provide national data on the processes of care and outcomes for patients admitted to hospital with acute stroke or transient ischaemic attack (TIA). The quality of the data in the Registry is critical to its purpose, which is to provide reliable and representative data to improve the quality of stroke care, nationally.

Accountability for the accuracy and completeness of hospital data is the responsibility of the participating hospitals. However, it is the role of the AuSCR office to support hospitals to collect high quality data via education, training and feedback. Therefore, the combined efforts of hospitals and the AuSCR office ensures the most complete data for each annual reporting period. Hospitals participating in the AuSCR are encouraged to use this report alongside site-specific feedback provided throughout the calendar year to improve data quality.

This annual Data Quality Report covers data collected for patients admitted to participating hospitals between 1 January 2022 and 31 December 2022. It is supplementary to, and should be read in conjunction with, the Australian Stroke Clinical Registry 2022 Annual Report (<https://auscr.com.au/about/annual-reports/>).

METHODS FOR ENSURING DATA QUALITY

Data quality is supported by ongoing training and education processes for all contributors of data to the AuSCR. In addition, the AuSCR office undertakes a range of regular data checking and quality assurance procedures to support improved data quality.

DATA PLATFORM DATA QUALITY FEATURES

Since July 2016, the collection of AuSCR data by staff at participating hospitals has been facilitated in the Australian Stroke Data Tool (AuSDaT, <https://australianstrokecoalition.org.au/projects/ausdat/>).¹ The AuSDaT contains in-built functions to auto-check the logic of manually entered data to minimise the potential for inaccurate or discrepant data during data entry. In AuSDaT there is also the function to search for incomplete records and records with data errors.

DATA CHECKS BEFORE IMPORT

Where data exports from hospital systems are supplied in separate files via secure cloud data sharing (CloudStor) for import into the AuSDaT, these are reviewed by AuSCR Data Managers prior to upload. This centralised process is used to ensure the data are in the correct format and provide an opportunity for any inconsistent or erroneous data to be corrected prior to performing the import. Hospital staff who import their own data into the AuSDaT can also request the AuSCR Data Managers check for errors prior to import into the live tool.

CASE ASCERTAINMENT

Case ascertainment is an essential process for ensuring that the data recorded in the AuSCR are representative of the patient population with stroke admitted to each participating hospital. It is a requirement for all clinical registries to collect and report this information. Case ascertainment results provide an indication of the representativeness of data and whether there are any potential selection biases in the patient sample.

To simplify this process, in 2022 only episodes where the stroke ICD-10 (International Statistical Classification of Diseases 10th revision) code was the principal diagnosis code was included. Patients diagnosed with TIA and those admitted and discharged on the same day were excluded from the case ascertainment calculation. Case ascertainment for Emergency Department (ED) presentations recorded prior to hospital transfer was also not undertaken.

For the AuSCR 2022 case ascertainment reports, non-Victorian hospitals were asked to provide a list of all admissions based on eligible ICD-10 principal diagnosis stroke codes for comparison and matching with episodes recorded in the AuSCR. Following matching, the hospitals are provided with a list of episodes, per period, that are not in the AuSCR to assist with improving overall ascertainment of cases.

In Victoria, the Victorian Agency for Health Information facilitated data linkage with the government-held admitted episodes dataset to provide case ascertainment results for all Victorian hospitals centrally to AuSCR office.

The overall proportion of completeness for case ascertainment was estimated using the formula $(A+B)/(A+C)$, where: 'A' was the number of eligible episodes that were registered in the AuSCR, 'B' was the number of episodes that were opted out of the registry and unmatched, and 'C' was the number of episodes included in the hospital's list of eligible episodes that were missing from the AuSCR database.

DATA QUALITY REPORTS

Data quality reports are used to provide hospitals with a list of AuSCR episodes containing missing data and/or data discrepancies (e.g. a discharge date prior to an admission date). These reports are designed to assist hospitals to quickly identify and update, where appropriate, individual AuSCR episodes. The dissemination of these reports is bi-annual and provides hospitals with the opportunity to action any updates to their data prior to closure of a calendar year. Data closure occurs annually in July prior to extraction for formal reporting or secondary research.

MEDICAL RECORD AUDITS

The AuSCR office conducts medical record audits at participating hospitals to assess the accuracy of data in the registry compared to information documented in the hospital medical record. These audits assist in verifying that data quality for the AuSCR and information on areas to improve standardised collection of variables. The process is useful for the identification of data collection training that may be required for staff at participating hospitals. Medical record audits are scheduled to occur for a newly participating hospital following entry of the first 50 episodes of stroke/TIA and every two years thereafter.

In 2022, hospital audit visits were limited due to the COVID-19 pandemic and AuSCR Office resourcing. We conducted Medical Record Audits at four hospitals, one in Victoria, one in Queensland and two in South Australia. Five to six records were reviewed per site and a total of 21 records reviewed. Generally, data were found to be correct. Emergency contact details were the most commonly found to be discrepant, in addition to known mapping issues from one hospital system.

DATA CLEANING

The cleaning of AuSCR data is completed monthly. Duplicate data are identified and removed by the AuSCR Senior Data Manager using registrant identifiers (name, date of birth, Medicare number and/or hospital medical record number) in addition to date of stroke onset, date of hospital arrival and dates of admission and discharge. Additional checks are undertaken following the closure of data entry for the year and prior to undertaking analysis for the AuSCR Annual Report. These data are subsequently de-identified and extracted for analysis. Additional data cleaning processes are then undertaken by Monash University epidemiologists prior to undertaking data analyses.

DATA COMPLETENESS

For 2022, 17,184 episodes of stroke care (16,814 admitted episodes and 370 emergency department [ED] episodes) were provided by 61 hospitals. The proportion of data completeness for individual variables is presented only for eligible episodes, since not all variables are relevant to every patient. Episodes of transient ischaemic attack (TIA) are not included in this report, to align with the main Annual Report.

Individual variables ranged in completeness from 29% for medical complication ICD-10 codes, which do not occur in every episode, to 100% for a range of variables, with similar overall results to the 2021 dataset (n=19,753 episodes from 62 hospitals, Table 1).

Five variables had $\geq 5\%$ improvement in completeness compared to 2021 data, including: National Institutes of Health Stroke Scale (NIHSS) score before ECR (increase from 78% to 94%), Oral medications (increase from 83% to 91%), Oral food or fluids (increase from 77% to 91%), Mobilisation during admission (increase from 85% to 94%), and medical procedure ICD-10 code(s) (increase from 72% to 77%)

One variable had reduced completion by more than 5% in 2022: Method of mobilisation (decreased from 96% to 90%).

In addition to missing data, some variables such as the National Institutes of Health Stroke Scale (NIHSS) score have a large proportion of responses recorded as unknown (Table 2). In 2022, the combination of missing data plus the entry of unknown values meant that there were no valid data for: 31% of NIHSS at baseline; 3% of pre-ECR NIHSS; and 30% of post-ECR NIHSS. A second 'pre-ECR' NIHSS may not always be clinically warranted, and where this is not recorded, the baseline NIHSS is used for calculations. This approach helps to reduce the amount of missing or unknown values for pre-ECR NIHSS scores from 31% to only 3%.

Table 1: Completeness of variables in the Australian Stroke Clinical Registry, by year

Variable N=16,814 episodes in 2022	2021 % complete N hospitals=62**	2022 % complete N hospitals=61
Patient details		
Title	97	99
First name	98	99
Surname	98	99
Date of birth	98	98
Medicare number (optional)#	90	99
Hospital Medical Record Number (MRN)	97	98
Gender	98	98
Country of birth	99	98
Language spoken	87	89
Interpreter needed	87	89
Aboriginal and Torres Strait Islander status	91	92
Patient phone number	96	99
Complete address (street address, suburb, state)	97	91
Emergency contact		
Emergency contact first name	90	88
Emergency contact last name	89	88
Address for emergency contact	63	74
Emergency contact phone number	88	85
Arrival and admission data		
Date of stroke onset	95	96
Time of stroke onset	79	79
Stroke occurred while in hospital	98	99
Date of arrival to ED	97	98
Time of arrival to ED	96	98
Arrival by ambulance	94	95
Transfer from another hospital	98	99
Date of admission	100	100
Time of admission	99	99
Treated in a stroke unit	100	100
History of known risk factors		
Documented evidence of a previous stroke	96	98
Acute clinical data		
Brain scan after this stroke	100	100
Date of first brain scan	89	93
Time of first brain scan	86	89
Date of subsequent brain scan	100	100
Time of subsequent brain scan	99	99
Type of stroke	99	99
Cause of stroke	97	99
Acute occlusion site	100	100
Telemedicine and reperfusion		
Stroke telemedicine consultation conducted	99	99
Receipt of thrombolysis	97	97
Date of delivery	96	100
Time of delivery	99	99
Adverse event related to thrombolysis	99	99
Type of adverse event	89	87
Other reperfusion (ECR)	100	100
Treatment date for ECR	100	100
Time groin puncture	99	99
Time of completing	97	98
Final eTICI	79	79

Table 1: Completeness of variables in the Australian Stroke Clinical Registry, by year (continued)

Variable N=16,814 episodes in 2022	2021 % complete N hospitals=62**	2022 % complete N hospitals=61
24 hour data		
Haemorrhage within the infarct on follow up imaging	95	100
Details	91	91
Swallowing		
Swallowing screen	90	91
Date of swallowing screen	96	100
Time of swallow screen	93	94
Did the patient pass the screening	97	100
Swallowing assessment	90	91
Date of swallow assessment	96	100
Time of swallow assessment	93	98
Oral medications	83	91
Oral food or fluids	77	91
Mobilisation		
Ability to walk independently on admission	93	95
Mobilised during the admission	85	94
Date of mobilisation	99	100
Method of mobilisation	96	90
Antithrombotic therapy		
Antithrombotic given as hyperacute therapy	89	92
Date of administration	99	100
Time of administration	95	96
Secondary prevention		
Discharge antithrombotics	97	100
Discharge antihypertensives	97	99
Discharge lipid lowering	97	100
Discharge information		
Patient died during hospital stay	99	99
Date of death (for episodes deceased during hospital stay)	100	100
Date of discharge if not deceased while in hospital	99	99
Principal diagnosis ICD-10 code(s)	85	83
Medical condition ICD-10 code(s)*	75	78
Medical complication ICD-10 code(s)*	28	29
Medical procedure ICD-10 code(s)*	72	77
Discharge destination if not deceased while in hospital	98	99
Evidence of care plan on discharge if discharged to the community	97	97

Bold numbers indicate $\geq 10\%$ missing or discrepant data.

Includes data from paediatric hospitals.

* Denominator includes some patients with no other medical condition, complication or procedure codes.

**Includes episodes of transient ischaemic attack.

ECR: Endovascular Clot Retrieval.

eTICI: Expanded Thrombolysis In Cerebral Infarction.

ICD: International Classification of Diseases.

Table 2: Completeness of National Institutes of Health Stroke Scale Scores in the Australian Stroke Clinical Registry

Variable	2021	2022
N=16,814 episodes in 2022	% complete	% complete
National Institutes of Health Stroke Scale (NIHSS)		
Baseline	65	69
Pre-ECR*	95	97
24 hours post-ECR	60	70

*Note: where Pre-ECR NIHSS was not captured, baseline NIHSS is used in this calculation.

NIHSS: National Institutes of Health Stroke Scale.

ECR: Endovascular Clot Retrieval.

EMERGENCY DEPARTMENT DATASET

The Emergency Department (ED) dataset is an optional program that went live on 1 July 2019. This dataset enables the collection of data for stroke/TIA patients who presented to an ED and prior to transfer to another hospital for ongoing acute stroke care. The ED dataset includes 85 variables. There were 26 hospitals that contributed 370 episodes of stroke during 2022 (18 in Victoria, 6 in QLD, and 2 in SA), four more than in 2021. The completeness of ED variables ranged from 80% (for Triage category) to 100% for a range of variables and were overall similar to 2021.

Emergency Department dataset variables were included in the data quality report provided to participating hospitals for the full 2022 year in May 2023.

Table 3: Completeness of Emergency Department dataset variables

Variable N=370 episodes in 2022	2021 % complete N hospitals=22	2022 % complete N hospitals=26
Stroke onset and arrival data		
Stroke onset date	98	99
Stroke onset time	93	93
Date of arrival to emergency department	100	99
Time of arrival to emergency department	99	99
Arrival by ambulance	100	99
Pre-hospital notification by paramedics	100	100
Acute clinical data		
Functional status prior to stroke (mRS)	99	98
Triage category	100	80
NIHSS at baseline	100	97
Brain scan after this stroke	100	100
Date of first brain scan	96	99
Time of first brain scan	89	98
Advanced imaging	100	100
Type of stroke	100	100
Telemedicine consultation	100	99
Receipt of thrombolysis	99	98
Date of delivery	100	100
Time of delivery	100	99
Drug used	100	100
Type of adverse event	100	98
Swallow screen	94	96
Was the swallow screen or swallow assessment performed before the patient was given:		
Oral medications	94	96
Oral food or fluids	94	96
Walk on admission	88	86
Transfer		
Date of transfer	98	99
Time of transfer	90	96
Reason for transfer	100	99
Discharge Information		
What is the discharge destination	100	99

NIHSS: National Institutes of Health Stroke Scale.

mRS: Modified Rankin Scale.

FEVER SUGAR SWALLOW DATASET

The optional Fever Sugar Swallow (FeSS) dataset went live on 1 July 2019. The FeSS dataset includes a total of six variables in addition to the swallow variables collected in the admitted datasets. Hospitals chose to complete these variables for all admitted episodes entered in the AuSCR, or for only a subset of the admitted cohort of patients. There were 20 hospitals that contributed to the FeSS dataset in 2022, 5 more than in 2021. A total of 3,554 FeSS episodes were recorded (Table 4) over 1,000 more than in 2021 and were generally well completed.

Table 4: Completeness of Fever, Sugar, Swallow dataset variables

Variable N= 3,554 episodes in 2022	2021 % complete N hospitals=15	2022 % complete N hospitals=20
Temperature recorded at least four times on day one of admission	100	100
Fever development in the first 72 hours following admission	100	100
Paracetamol for the first elevated temperature administered within 1 hour	97	93
Finger-prick blood glucose level recorded at least four times on day one of admission	100	100
Elevated glucose in the first 48 hours following admission	100	100
Insulin administered within 1 hour if elevated glucose	100	96

CASE ASCERTAINMENT

For 2022 admissions, the AuSCR office conducted three rounds of case ascertainment reviews. The first two rounds provide feedback to hospitals on episodes potentially missing in the AuSCR, the third round is completed once the dataset is closed and hospitals have had the opportunity to enter any additional episodes and feedback on ineligible episodes to the AuSCR Office. The first was for the period 1 January to 30 June 2022, the second and third included the full 2022 calendar year.

Episode matching for case ascertainment may be affected by data entry errors, in those variables used to match episodes between the datasets (e.g. patient names, hospital medical record number). However, following assessment of the resultant cases using automated and manual matching processes conducted by the AuSCR office, these matching errors made up a relatively small proportion of the overall total.

Of the 61 hospitals that contributed data in 2022, 54 (89%) provided data for case ascertainment, similar to participation in 2021. Of the 54 hospitals that provided data, the overall case ascertainment estimates ranged from 54% to 100% (for nine hospitals). The median case ascertainment result was 92% in 2022, an improvement from the median of 88% recorded in 2021.

Table 5: Hospital case ascertainment results for 2022 data compared to the 2021 dataset

Hospital ID	Episodes in the AuSCR 2022	Episodes in hospital records not in the AuSCR 2022	Case ascertainment 2022 N=61 hospitals	Case ascertainment 2021 N=62 hospitals
	n	n	%	%
3	444	118	79%	83%
5	605	19	97%	89%
11	33	10	65%	25%
13	115	0	102%	83%
14	387	109	76%	85%
15	500	237	66%	9%*
20	444	27	94%	94%
22	50	-	Not provided	98%
23	188	9	95%	99%
24	746	69	90%	87%
25	78	14	78%	98%
26	182	42	80%	84%
27	233	46	82%	100%
29	135	3	98%	72%
30	134	3	99%	100%
31	329	49	86%	71%*
32	157	51	73%	91%
33	109	5	98%	98%
34	241	10	96%	89%
35	248	8	95%	100%
36	207	-	Not Provided	76%
37	379	5	98%	100%
38	197	6	96%	70%
39	236	-	Not provided	84%
40	581	8	99%	92%
41	150	8	95%	100%
42	15	13	54%	86%
43	192	2	99%	100%
44	146	113	55%	69%
45	147	17	82%	94%
46	822	138	85%	87%
47	162	21	87%	89%
48	69	5	93%	79%
49	31	18	58%	79%
50	240	12	95%	90%
51	75	17	80%	73%
52	386	29	92%	76%
53	499	2	100%	90%
56	7	-	Not provided	10%
57	251	57	78%	79%
58	1,101	0	100%	96%
61	169	-	Not provided	Not provided
62	65	0	100%	100%
63	128	0	103%	100%
64	65	0	100%	98%
65	551	125	79%	Nor provided
66	404	129	74%	79%
67	62	6	92%	100%

Table 5: Hospital case ascertainment results for 2022 data compared to the 2021 dataset (continued)

Hospital ID	Episodes in the AuSCR 2022	Episodes in hospital records not in the AuSCR 2022	Case ascertainment 2022 N=61 hospitals	Case ascertainment 2021 N=62 hospitals
	n	n	%	%
68	72	1	98%	74%
69	1,051	1	100%	99%
70	353	0	100%	99%
71	291	149	61%	99%
80	95	8	90%	64%
89	58	17	70%	67%
90	11	-	Not provided	Not provided
91	468	38	93%	88%
92	150	57	65%	67%
93	133	1	99%	Not provided
94	495	157	73%	Not provided
95	130	-	Not provided	Not applicable
97	325	0	100%	Not applicable

*Hospital had data pause and did not collect data for the full 2021 year

TIME TO RECORD CREATION

The median time from admission to record creation in the AuSCR was 92 days (interquartile range: 54 to 131 days), five days slower than the median in 2020 of 87 days. Only 57% of AuSCR hospitals had a median time to record creation below 90 days. The shortest hospital-level median time to record creation was one day, and the longest was 230 days.

OPT-OUT REQUESTS AND REFUSAL TO COMPLETE FOLLOW-UP SURVEY

Since 2016, approval from National Human Research Ethics Committees (HREC) for the AuSCR to retain anonymous clinical data independently of personal data opt-outs has been in place. Though registrants are provided with the opportunity to opt-out *both* their personal and clinical data upon request.

A total of 389 opt-out requests (2.0% of all episodes) were received from patients or their nominated contact person for 2022 admissions (Table 6). These data are consistent with the opt-out rate recorded in 2021 of 2.3%. The request for removal of both clinical and personal data has remained very low each year, at less than 0.1%. The number of patients refusing follow-up participation prior to 90 days post-admission remained low at 0.4 %.

Table 6: Opt-out requests and refusal to complete follow-up survey data

Year	Total episodes	Total opt-out episodes	Complete clinical and personal data to be removed	Personal data only to be removed	Refused to complete follow-up survey prior to 90 days
2021	19,753	458 (2.3%)	4 (<0.05%)	454 (2.2%)	58 (0.3%)
2022	19,694	389 (2.0%)	5 (<0.05%)	384 (2.0%)	73 (0.4%)

COMPARISON OF CLINICAL STROKE DIAGNOSIS AND CODED PRINCIPAL DIAGNOSIS

The AuSCR office reviews the clinician designated type of stroke within the registry against the ICD-10 discharge coding undertaken by hospital administrative staff. The ICD-10 discharge diagnosis code was compared to the documented clinical stroke type. Stroke and TIA discharge diagnosis codes were either recorded as the principal diagnosis, or in the medical complication or medical condition fields available in the AuSCR dataset. Where more than one eligible stroke or TIA code was recorded for an individual episode, it was included in both clinical diagnosis categories.

For episodes recorded clinically as an ischaemic stroke, 77% of these episodes had an I63 discharge diagnosis code (ICD-10 codes for cerebral infarction: I63.0 to I63.9), and 5% were coded as I64 (stroke, not specified; Table 7). Eighty-one percent of episodes recorded as an intracerebral haemorrhage by the clinician were coded as an intracerebral haemorrhage (ICH) code (ICD-10 code range: I61.0 to I61.9 and I62.9). Undetermined stroke type was recorded in 2.7% of episodes, similar to 2021 (2.3%).

Table 7: Comparison of clinician assigned stroke diagnosis and the ICD-10 principal diagnosis codes

Principal, medical or complication code	Clinical diagnosis (N=15,967)		
	ICH N=2,340 (%)	Ischaemic N=13,184 (%)	Undetermined N=443 (%)
ICH ICD-10 codes (I61.x and I62.9)	81%	1%	2%
Ischaemic ICD-10 codes (I63.x)	3%	77%	25%
TIA ICD-10 code (G45.9)	<1%	1%	15%
Unspecified stroke ICD-10 code (I64)	<1%	5%	44%
Multiple stroke/TIA ICD-10 codes	3%	4%	<1%
Missing or non-stroke/TIA ICD-10 codes	13%	13%	14%

Bold numbers indicate a match between clinical diagnosis recorded by the clinician and ICD-10 codes. Excludes ED episodes and 269 episodes with missing data for clinical diagnosis recorded by the clinician. ICH: intracerebral haemorrhage; TIA: transient ischaemic attack. Clinical diagnosis of TIA excluded from table.

SUMMARY

The overall quality of the data in the AuSCR in 2022 remained high and was comparable to that reported in 2021. From the 54 hospitals contributing case ascertainment data, the median case ascertainment result was excellent at 92%.

Overall completeness of variables was high and similar to 2021. The variables with the lowest completion, ICD-10 complication and procedure codes, were not available for all episodes. Five variables had improved completeness compared to 2021 by 5% or more, with one having 6% poorer completion (method of mobilisation). The 2022 results may not be directly comparable to 2021, given the removal of episodes of TIA this year. Some hospitals have chosen not to complete all variables, or complete for all patients and this will partly explain the lower completeness of swallow, mobilisation, brain scan time and eTICI variables. Completion of variables in the optional FeSS and ED datasets was generally high, and comparable to 2021.

Baseline NIHSS is an important prognostic indicator of stroke severity and the capture of valid data for NIHSS scores has continued to improve this year. Baseline NIHSS improved to 69%, NIHSS prior to ECR increased to 97% and NIHSS 24 hours post-ECR increased from 60% to 70%.

The capture of all eligible stroke episodes at participating hospitals is important to ensure that AuSCR data is unbiased and is a nationally representative sample. The opt-out rate for the AuSCR remains very low at 2%, with the majority of these being personal opt-outs, allowing the clinical data to remain and be included in analysis. Centralised case ascertainment in Victoria assisted to capture all hospitals and reduce the burden on hospital staff to provide this information. A process for establishing this process in 2023 is underway in Queensland.

The time from hospital admission to creating an AuSCR record is important for follow-up processes, which begin at 90 days post-admission until approximately 180 days post-admission. Registrants will receive the full follow-up cycle (two mail attempts and a phone call) only if their data is included prior to 90 days post-admission. Unfortunately, in 2022 over half of all episodes entered were entered more than 90 days post-admission (median 92 days). This was slightly worse than in 2021 (median time to creation 87 days). This may be a result of competing demands by clinicians entering the data and the impacts of the COVID-19 pandemic. The AuSCR office will continue to work with hospitals to assist with exporting data from hospital systems and data uploads into the registry.

There was generally agreement between the clinical diagnosis and ICD-10 codes assigned by hospital coders. Patients assigned a clinical diagnosis of 'undetermined' stroke type were most frequently coded as ischaemic strokes (35%), with 31% also being coded as unspecified stroke code (I64). The AuSCR office flags episodes with a clinical diagnosis of undetermined in data quality reports and suggested this be reviewed if the proportion was over 5% and will continue to work with hospitals where high rates of undetermined stroke types are recorded.

Only a small number of medical record audits could be undertaken in 2022 due to resourcing constraints and restrictions associated with the COVID-19 pandemic. We look forward to increasing these in 2023.

The AuSCR Office continues to provide support to staff at participating hospitals to ensure the quality of data recorded in the registry. Each state has a dedicated coordinator and data

manager who actively work with hospital staff to facilitate improvements to the quality and representativeness of their data within the registry. We have comprehensive processes to monitor and provide feedback on the quality of the data entered by hospitals.

AuSCR interactive data dashboards were released in 2023. These include lists of episodes with missing or discrepant data for hospital contributors to review and track their data quality in real time. We hope this continues to improve the quality of the data in the registry.

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