Our vision
Better data. Better decisions.
Healthier Canadians.

Our mandate
To lead the development and maintenance of comprehensive and integrated health information that enables sound policy and effective health system management that improve health and health care.

Our values
Respect, Integrity, Collaboration, Excellence, Innovation
Introduction

As part of the Canadian Institute for Health Information’s (CIHI’s) commitment to quality data, the National Ambulatory Care Reporting System (NACRS) is routinely analyzed for data quality issues during the submission year and after database closure. Suspect findings are communicated back to the submitting facilities for investigation and correction while the database is still open for submission.

Purpose

This document was created to

- Accompany the Open-Year Data Quality (OYDQ) reports that will be sent at a later date to facilities to communicate suspect data quality issues for investigation and/or correction as applicable; and
- Help NACRS clients create their own data quality audits to identify abstracts with suspected data quality issues.

This document lists the OYDQ tests performed on the NACRS, along with their rule, patient care type, submission level, selection criteria, and the data elements used in the analysis. Each test is indexed by a reference number and this number is used for all communication with clients.

For certain OYDQ tests that include day surgery and other types of ambulatory care please refer to the National MIS Standards Functional Centre Accounts to Ambulatory Care Group Mapping Table. It is located in Appendix D of the NACRS Manual and will provide a list of valid MIS functional centres for a variety of ambulatory visit types.

Once clients have identified abstracts, with suspected data quality issues, using the selection criteria found within this OYDQ document, it is highly recommended they resolve the issues and submit corrections to CIHI.

Updates

The NACRS Open-Year Data Quality Test Specifications document is updated every fiscal year with new or deleted OYDQ tests. An OYDQ test may be deleted if new edits are created or if the data quality issue is no longer relevant. An OYDQ test may also be modified to reflect enhancements to the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Canada (ICD-10-CA), the Canadian Classification of Health Interventions (CCI) and/or to align with the most recent version of the Canadian Coding Standards for ICD-10-CA and CCI.

The results for the tests showing very low volumes of data quality issues are not included in the OYDQ reports.

For more information, please contact CIHI at cad@cihi.ca.
# Open-Year Data Quality Tests: Summary and Rationale

The following table provides a brief summary of the NACRS OYDQ tests for 2015-2016. In the rationale column, the table also highlights a number of key impacts of correcting these DQ issues.

<table>
<thead>
<tr>
<th>OYDQ Test Number</th>
<th>OYDQ Test Title</th>
<th>Short Description</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>N0045-52</td>
<td>Post-Procedure Disorder Code (see Appendix A) Recorded Without an External Cause Code</td>
<td>All post-procedural disorder codes require an external cause code (Y60–Y84 or V01–X59).</td>
<td>Results not included in OYDQ reports due to low volumes. Originally included since post-procedural codes are used in reports which are provided to external clients.</td>
</tr>
<tr>
<td>N0047-83</td>
<td>Status Attribute Not Equal to DX (Diagnostic) With Coronary Angiogram</td>
<td>The Intervention code 3.IP.10.VX Xray, heart with coronary arteries of left heart structures using percutaneous transluminal arterial (retrograde) approach should have a status attribute of DX (Diagnostic) when the only intervention episode is coronary angiogram 3.IP.10.VX and there is only one intervention episode.</td>
<td>Results not included in OYDQ reports due to low volumes. It is important to distinguish diagnostic coronary angiogram from other coronary angiograms.</td>
</tr>
<tr>
<td>N0039-105</td>
<td>Institution To Assigned With Visit Disposition In 12 (Intra-facility transfer to day surgery), 13 (Intra-facility transfer to the emergency department) or 14 (Intra-facility transfer to clinic)</td>
<td>Institution To must be blank when Visit Disposition indicates intra facility transfer.</td>
<td>Results not included in OYDQ reports due to low volumes. An Intra-facility transfer to day surgery, emergency department or clinic applies to transfers within the reporting facility. The information is important for patient flow within the system and across sectors.</td>
</tr>
<tr>
<td>N9340-99</td>
<td>Stroke Diagnosis Code Without Project 340 Field Recorded</td>
<td>When a stroke Diagnosis Code is recorded, the Project Number 340 should also be recorded.</td>
<td>Stroke is a high priority health initiative.</td>
</tr>
<tr>
<td>N9340-103 MODIFIED</td>
<td>Not Applicable or Unknown Value for Field 157 (Prescription for Antithrombotic Medication at Discharge) When Project 340 Recorded for ischaemic stroke</td>
<td>When Project 340 is recorded, it is mandatory to complete the field Prescription for antithrombotic medication at discharge whether patients with a diagnosis of ischaemic stroke received a prescription for antithrombotic medication from the ED.</td>
<td>Stroke is a high priority health initiative.</td>
</tr>
<tr>
<td>N9340-123 NEW</td>
<td>Missing, Invalid or Unknown Value for Fields 158 to 169 (Stroke Symptom Onset Date and Time) When Project 340 Recorded</td>
<td>When Project 340 is recorded, it is mandatory to complete Fields 158 to 169 (Stroke Symptom Onset Date and Time). This field captures the date and time that the patient first started to experience stroke symptoms, regardless of the location of the patient at the time of symptom onset.</td>
<td>Stroke is a high priority health initiative.</td>
</tr>
<tr>
<td>OYDQ Test Number</td>
<td>OYDQ Test Title</td>
<td>Short Description</td>
<td>Rationale</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------</td>
<td>-------------------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>N9340-124 NEW</strong></td>
<td>Stroke Symptom Onset Date and Time after Arrival Date and Time When Project 340 Recorded</td>
<td>When Project 340 is recorded, it is mandatory to complete Fields 158 to 169 (Stroke Symptom Onset Date and Time). This field captures the date and time that the patient first started to experience stroke symptoms, regardless of the location of the patient at the time of symptom onset. The Stroke Symptom Onset Date and Time must be a date/time earlier than the emergency department arrival date.</td>
<td>Stroke is a high priority health initiative</td>
</tr>
<tr>
<td><strong>N9340-125 NEW</strong></td>
<td>High Level of N (No) for Field 147 (Referral to Stroke Prevention Services at ED Discharge) When Project 340 Recorded</td>
<td>When Project 340 is recorded, it is mandatory to complete Field 147 (Referral to Stroke Prevention Services at ED Discharge). This field captures whether patients with a diagnosis of stroke or transient ischemic attack receive a referral for stroke prevention follow-up at discharge.</td>
<td>Stroke is a high priority health initiative</td>
</tr>
</tbody>
</table>
Open-Year Data Quality Tests

1. Post-Procedure Disorder Code Recorded Without an External Cause Code (N0045-52)

Rule

All post-procedural disorder codes (see Appendix A) require an external cause code (Y60–Y84 or V01–X59).

<table>
<thead>
<tr>
<th>Patient Care Type</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission Level</td>
<td>Level 3</td>
</tr>
<tr>
<td>Selection Criteria</td>
<td>Abstracts with a post-procedural disorder diagnosis code (see Appendix A) AND without an external cause code (Y60–Y84 or V01–X59).</td>
</tr>
<tr>
<td>Data Elements</td>
<td>Main Problem; Other Problem(s)</td>
</tr>
</tbody>
</table>

2. Status Attribute Not Equal to DX (Diagnostic) With Coronary Angiogram (N0047-83)

Rule

The code 3.IP.10.VX Xray, heart with coronary arteries of left heart structures using percutaneous transluminal arterial (retrograde) approach must have a status attribute of DX (Diagnostic) when the only intervention performed during ambulatory care visit is coronary angiogram 3.IP.10.VX and there is only one intervention code.

<table>
<thead>
<tr>
<th>Patient Care Type</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission Level</td>
<td>Level 3</td>
</tr>
<tr>
<td>Selection Criteria</td>
<td>Abstracts where only Main Intervention is recorded in the abstract, the intervention code is 3.IP.10.VX and Main Intervention Status Attribute is not equal to DX.</td>
</tr>
<tr>
<td>Data Elements</td>
<td>Main Intervention; Other Intervention(s); Main Intervention Attributes Status</td>
</tr>
</tbody>
</table>

3. Institution To Assigned With Visit Disposition In 12 (Intra-facility transfer to day surgery), 13 (Intra-facility transfer to the emergency department) or 14 (Intra-facility transfer to clinic) (N0039-105)

Rule

Institution To must be blank when Visit Disposition indicates intra facility transfer.

<table>
<thead>
<tr>
<th>Patient Care Type</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission Level</td>
<td>Level 3</td>
</tr>
<tr>
<td>Selection Criteria</td>
<td>Visit Disposition in (12, 13 or 14) and Institution To is not blank.</td>
</tr>
<tr>
<td>Data Elements</td>
<td>Visit Disposition; Institution To</td>
</tr>
</tbody>
</table>
4. Stroke Diagnosis Code Without Project 340 Field Recorded (N9340-99)

Rule

Project 340 is mandatory in select jurisdictions. This test will only be completed for those jurisdictions where Project 340 is mandatory.

Project 340 should be completed for all new ischemic and haemorrhagic stroke and transient ischemic attack cases in NACRS Level 3 Emergency Department, where the stroke is recorded as the Main Problem (data element 44):

I60.- Subarachnoid haemorrhage *(excluding I60.8- Other subarachnoid haemorrhage)*;
I61.- Intracerebral haemorrhage;
I63.- Cerebral infarction *(excluding I63.6 Cerebral infarction due to cerebral venous thrombosis, nonpyogenic)*;
I64 Stroke, not specified as haemorrhage or infarction;
I67.6 Nonpyogenic thrombosis of intracranial venous system;
H34.0 Transient retinal artery occlusion;
H34.1 Central retinal artery occlusion;
G45.- Transient cerebral ischaemic attacks and related syndromes; *(excluding G45.4 Transient global amnesia)*.

Includes cases where the stroke is secondary to a complication of pregnancy (O99.4, O88.-).

Please note that, it is not possible to identify “NEW” stroke cases among the data already submitted with the selection criteria of Project Number 340. Therefore, there may be cases flagged with this test that do not require correction.

Notes: There may be cases flagged with this test that do not require completion of project 340. Refer to the NACRS manual for complete data collection instructions.

<table>
<thead>
<tr>
<th>Patient Care Type</th>
<th>ED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission Level</td>
<td>Level 3</td>
</tr>
<tr>
<td>Selection Criteria</td>
<td>Inclusions: Facility Province: ON AND Diagnosis Code of Stroke or TIA: I60.- (excluding I60.8), I61.-, I63.- (excluding I63.6), I64, I67.6, H34.0, H34.1, G45.- (excluding G45.4) recorded as Main Problem (data element 44). Exclusions: 1. Cases where the stroke is a complication of poisoning with Diagnosis of T36.0 to T50.9. 2. Cases where the stroke (hemorrhage) is due to a brain neoplasm (C71.-, C79.3, D33.0 - D33.2, D43.0 - D43.2). 3. Cases that are transferred to inpatient within the same reporting facility (Visit Disposition = 06, 07)</td>
</tr>
<tr>
<td>Data Elements</td>
<td>Main Problem; Other Problem(s); Project Number</td>
</tr>
</tbody>
</table>
5. Not Applicable or Unknown Value for Field 157 (Prescription for Antithrombotic Medication at Discharge) When Project 340 Recorded for ischaemic stroke (N9340-103)

*Rule*

When Project 340 is recorded, it is mandatory to complete Field 157 (*Prescription for Antithrombotic Medication at Discharge*). This field captures whether patients with a diagnosis of ischaemic stroke (I63.– (excluding I63.6), I64, I67.6, H34.0, H34.1, G45.– (excluding G45.4)) receive a prescription for antithrombotic medication at discharge from ED.

This test will be completed for all abstracts where Project 340 has been completed, regardless of whether it is mandatory in a particular jurisdiction. A high percent of abstracts with not applicable (8) or unknown (9) value for Field 157 may indicate a need to investigate practices around the capturing of prescription for antithrombotic medication at discharge.

*Please note that this test will only be included in the summary reports and only the results for facilities with greater than 0% of abstracts with missing, invalid or unknown value for Field 157 when Project 340 recorded will be reported. Abstract identification information will not be provided for this test.*

<table>
<thead>
<tr>
<th>Patient Care Type</th>
<th>ED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission Level</td>
<td>Level 3</td>
</tr>
<tr>
<td>Selection Criteria</td>
<td>Project Number 340 where ischaemic stroke diagnosis cases (I63.– (excluding I63.6), I64, I67.6, H34.0, H34.1, G45.– (excluding G45.4)) are recorded and Field 157 is not applicable (8) or unknown (9)</td>
</tr>
<tr>
<td></td>
<td>Exclusions: Records where the stroke diagnosis is I60.- or I61.-</td>
</tr>
<tr>
<td></td>
<td>Records where visit disposition='10' or '11' (Death after or on arrival) and Field 157 = '8'</td>
</tr>
<tr>
<td>Data Elements</td>
<td>Project Number, Field 157</td>
</tr>
</tbody>
</table>
6. Missing, Invalid or Unknown Value for Fields 158 to 169 (*Stroke Symptom Onset Date and Time*) When Project 340 Recorded (N9340-123)

**Rule**

When Project 340 is recorded, it is mandatory to complete Fields 158 to 169 (*Stroke Symptom Onset Date and Time*). This field captures the date and time that the patient first started to experience stroke symptoms, regardless of the location of the patient at the time of symptom onset.

This test will be completed for all abstracts where Project 340 has been completed, regardless of whether it is mandatory in a particular jurisdiction. A high percent of abstracts with missing, invalid or unknown date and time for Fields 158 to 169 may indicate a need to investigate practices around the capturing of stroke symptom onset date and time.

Please note that this test will only be included in the summary reports and only the results for facilities with greater than 0% of abstracts with missing, invalid or unknown date and time for Fields 158 to 169 when Project 340 recorded will be reported. Abstract identification information will not be provided for this test.

<table>
<thead>
<tr>
<th>Patient Care Type</th>
<th>ED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission Level</td>
<td>Level 3</td>
</tr>
<tr>
<td>Selection Criteria</td>
<td>Project Number 340 for stroke diagnosis cases is recorded and Fields 158 to 169 are missing, invalid or unknown date and/or time, as follows: Fields 158-161 (Year): is blank or has unknown value (9999) or is not valid four character code of 2015 or 2016 Fields 162-163 (Month): is blank or has unknown value (99) or is not valid two character code of 01-12 Fields 164-165 (Day): is blank or has an unknown value (99) or is not a valid two character code of 01-31 Fields 166-167 (Hour): is blank or has an unknown value (99) or is not a valid two digit character of 00-23) Fields 168-169: Minutes: is blank or has an unknown value of (99) or is not a valid two digit character of 00-59</td>
</tr>
</tbody>
</table>

**Data Elements** Project Number, Fields 158 to 169

7. Stroke Symptom Onset Date and Time after Arrival Date and Time When Project 340 Recorded (N9340-124)

Rule

When Project 340 is recorded, it is mandatory to complete Fields 158 to 169 (Stroke Symptom Onset Date and Time). This field captures the date and time that the patient first started to experience stroke symptoms, regardless of the location of the patient at the time of symptom onset. The Stroke Symptom Onset Date and Time must be a date/time earlier than the emergency department arrival date.

This test will be completed for all abstracts where Project 340 has been completed, regardless of whether it is mandatory in a particular jurisdiction.

<table>
<thead>
<tr>
<th>Patient Care Type</th>
<th>ED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission Level</td>
<td>Level 3</td>
</tr>
<tr>
<td>Selection Criteria</td>
<td>Arrival Date, Date of Registration or Triage Date is a valid date and Project Number 340 for stroke diagnosis cases is recorded and Fields 158 to 165 (Stroke Symptom Onset Date) is a valid date: • Fields 158-161 (Year): is a valid four character code of any year • Fields 162-163 (Month): is a valid two character code of 01-12 • Fields 164-165 (Day): is a valid two character code of 01-31 And One of the following conditions is met: • If Arrival Time and Fields 166-169 (Stroke Symptom Onset Time) are a valid four digit character of 0000-2359, values recorded in Fields 158 to 169 are after the Arrival Date and Time • If Arrival Time or Fields 166-169 (Stroke Symptom Onset Time) is not a valid four digit character of 0000-2359, values recorded in Fields 158 to 169 are after the Arrival Date Note: If Arrival Date/Time is not a valid date, the earlier of the Triage Date/Time and Date of Registration/Registration Time is used to compare with Stroke Symptom Onset Date/Time</td>
</tr>
<tr>
<td>Data Elements</td>
<td>Arrival Date, Arrival Time, Date of Registration, Time of Registration, Triage Date, Triage Time, Project Number, Fields 158 to 169</td>
</tr>
</tbody>
</table>
8. High Level of N (No) for Field 147 *(Referral to Stroke Prevention Services at ED Discharge)* When Project 340 Recorded (N9340-125)

**Rule**

When Project 340 is recorded, it is mandatory to complete Field 147 *(Referral to Stroke Prevention Services at ED Discharge)*. This field captures whether patients with a diagnosis of stroke or transient ischemic attack receive a referral for stroke prevention follow-up at discharge.

This test will be completed for all abstracts where Project 340 has been completed, regardless of whether it is mandatory in a particular jurisdiction. A percentage higher than 50% of abstracts with value N (No) for Field 147 may indicate a need to investigate practices around the capturing of referral to stroke prevention services at ED discharge.

Please note that this test will only be included in the summary reports and only the results for facilities with greater than 50% of abstracts with N for Field 147 when Project 340 recorded will be reported. Abstract identification information will not be provided for this test.

<table>
<thead>
<tr>
<th>Patient Care Type</th>
<th>ED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submission Level</td>
<td>Level 3</td>
</tr>
<tr>
<td>Selection Criteria</td>
<td>Project Number 340 for stroke diagnosis cases is recorded and at least 50% of these records have the Field 147 recorded as N, at one facility.</td>
</tr>
<tr>
<td>Data Elements</td>
<td>Project Number, Field 147</td>
</tr>
</tbody>
</table>
Appendix A — Post-Procedural Disorder Codes

This list identifies all post-procedural disorder codes. When a code from this list is assigned, it always requires an external cause code. When the applicable external cause is from Y60–Y84, a Diagnosis Cluster must be applied.

E89.0  Postprocedural hypothyroidism
E89.1  Postprocedural hypoinsulinaemia
E89.2  Postprocedural hypoparathyroidism
E89.3  Postprocedural hypopituitarism
E89.4  Postprocedural ovarian failure
E89.5  Postprocedural testicular hypofunction
E89.6  Postprocedural adrenocortical (-medullary) hypofunction
E89.8  Other postprocedural endocrine and metabolic disorders
E89.9  Postprocedural endocrine and metabolic disorder, unspecified
G97.0  Cerebrospinal fluid leak from spinal puncture
G97.1  Other reactions to spinal and lumbar puncture
G97.2  Intracranial hypotension following ventricular shunting
G97.8  Other postprocedural disorders of nervous system
G97.9  Postprocedural disorder of nervous system, unspecified
H59.0  Keratopathy (bullous aphakic) following cataract surgery
H59.80 Cataract (lens) fragments in eye following cataract surgery
H59.81 Cystoid macular oedema following cataract surgery
H59.88 Other postprocedural disorders of eye and adnexa
H59.9  Postprocedural disorder of eye and adnexa, unspecified
H95.0  Recurrent cholesteatoma of postmastoidectomy cavity
H95.1  Other disorders following mastoidectomy
H95.8  Other postprocedural disorders of ear and mastoid process
H95.9  Postprocedural disorder of ear and mastoid process, unspecified
I97.0  Postcardiotomy syndrome
I97.1  Other functional disturbances following cardiac surgery
I97.2  Postmastectomy lymphoedema syndrome
I97.8  Other postprocedural disorders of circulatory system, not elsewhere classified
I97.9  Postprocedural disorder of circulatory system, unspecified
J95.00 Haemorrhage from tracheostomy stoma
J95.01 Infection of tracheostomy stoma
J95.02 Malfunction of tracheostomy stoma
J95.03  Tracheo-esophageal fistula following tracheostomy
J95.08  Other tracheostomy complication
J95.1  Acute pulmonary insufficiency following thoracic surgery
J95.2  Acute pulmonary insufficiency following nonthoracic surgery
J95.3  Chronic pulmonary insufficiency following surgery
J95.4  Mendelson’s syndrome
J95.5  Postprocedural subglottic stenosis
J95.80  Postprocedural pneumothorax
J95.81  Transfusion related acute lung injury (TRALI)
J95.88  Other postprocedural respiratory disorders
J95.9  Postprocedural respiratory disorder, unspecified
K91.0  Vomiting following gastrointestinal surgery
K91.1  Postgastric surgery syndromes
K91.2  Postsurgical malabsorption, not elsewhere classified
K91.3  Postoperative intestinal obstruction
K91.40  Haemorrhage from colostomy stoma
K91.41  Infection of colostomy stoma
K91.42  Malfunction of colostomy stoma, not elsewhere classified
K91.43  Haemorrhage from enterostomy stoma
K91.44  Infection of enterostomy stoma
K91.45  Enterostomy malfunction, not elsewhere classified
K91.5  Postcholecystectomy syndrome
K91.60  Haemorrhage from gastrostomy stoma
K91.61  Infection of gastrostomy stoma
K91.62  Gastrostomy malfunction, not elsewhere classified
K91.8  Other postprocedural disorders of digestive system, not elsewhere classified
K91.9  Postprocedural disorder of digestive system, unspecified
M96.0  Pseudarthrosis after fusion or arthrodesis
M96.1  Postlaminectomy syndrome, not elsewhere classified
M96.2  Postradiation kyphosis
M96.3  Postlaminectomy kyphosis
M96.4  Postsurgical lordosis
M96.5  Postradiation scoliosis
M96.60  Fracture of bone following insertion of joint prosthesis
M96.68  Fracture of bone following insertion of other and unspecified orthopaedic implant
M96.8  Other postprocedural musculoskeletal disorders
M96.9  Postprocedural musculoskeletal disorder, unspecified
N99.0  Postprocedural renal failure
N99.1  Postprocedural urethral stricture
N99.2  Postoperative adhesions of vagina
N99.3  Prolapse of vaginal vault after hysterectomy
N99.4  Postprocedural pelvic peritoneal adhesions
N99.50 Haemorrhage from external stoma of urinary tract
N99.51 Infection of external stoma of urinary tract
N99.52 Other malfunction of external stoma of urinary tract, NEC
N99.8  Other postprocedural disorders of genitourinary system
N99.9  Postprocedural disorder of genitourinary system, unspecified
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