**Appendix**: Cohort definitions

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# Target: Ticagrelor user with percutaneous coronary intervention due to acute coronary syndrome

Initial Event Cohort

People having any of the following: 

* a procedure of PCI9
  + for the first time in the person's history
  + with age >= 20

Having all of the following criteria:

* + - at least 1 occurrences of a drug exposure of ticagrelor11

where event starts between 7 days Before and 0 days After index start date   
**occurring within the same visit**

with continuous observation of at least 365 days prior and 0 days after event index date, and limit initial events to: **earliest event per person.**

For people matching the Primary Events, include:

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of ACS1

where event starts between 7 days Before and 0 days After index start date

Limit cohort of initial events to: **earliest event per person.**

Inclusion Rules

Inclusion Criteria #1: aspirin

*concomittant aspirin*

Having all of the following criteria:

* at least 1 occurrences of a drug exposure of aspirin2

where event starts between 7 days Before and 0 days After index start date

Inclusion Criteria #2: Without clopidogrel or prasugrel on the day of PCI

Having all of the following criteria:

* at most 0 occurrences of a drug exposure of clopidogrel3

where event starts between 30 days Before and 0 days After index start date

* and at most 0 occurrences of a drug exposure of Prasugrel10

where event starts between 30 days Before and 0 days After index start date

Inclusion Criteria #3: Without previous stroke

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of Ischemic stroke7

where event starts between all days Before and 0 days After index start date

* and at most 0 occurrences of a condition occurrence of ICH6

where event starts between all days Before and 0 days After index start date

Inclusion Criteria #4: Without previous GI bleeding

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of GI bleeding5

where event starts between all days Before and 0 days After index start date

Limit qualifying cohort to: **earliest event per person.**

End Date Strategy

Custom Drug Era Exit Criteria

This strategy creates a drug era from the codes found in the specified concept set. If the index event is found within an era, the cohort end date will use the era's end date. Otherwise, it will use the observation period end date that contains the index event.

Use the era end date of ticagrelor11

* allowing 7 days between exposures
* adding 0 days after exposure end

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. ACS

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 315296 | Preinfarction syndrome | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

2. aspirin

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 1112807 | Aspirin | Drug | RxNorm | NO | YES | NO |

3. clopidogrel

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 1322184 | clopidogrel | Drug | RxNorm | NO | YES | NO |

4. Coronary Stent Implantation

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 4283892 | Placement of stent in coronary artery | Procedure | SNOMED | NO | YES | NO |

5. GI bleeding

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 192671 | Gastrointestinal hemorrhage | Condition | SNOMED | NO | YES | NO |
| 194158 | Perinatal gastrointestinal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 443530 | Hematochezia | Condition | SNOMED | NO | YES | NO |
| 4048282 | Perinatal melena | Condition | SNOMED | YES | NO | NO |
| 4048286 | Neonatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048601 | Perinatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4048602 | Perinatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048608 | Neonatal melena | Condition | SNOMED | YES | NO | NO |
| 4071070 | Neonatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4103703 | Melena | Condition | SNOMED | NO | YES | NO |

6. ICH

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 376713 | Cerebral hemorrhage | Condition | SNOMED | NO | NO | NO |
| 432923 | Subarachnoid hemorrhage | Condition | SNOMED | NO | NO | NO |
| 436430 | Nontraumatic extradural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439040 | Subdural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439847 | Intracranial hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4049659 | Subcortical hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4108952 | Subarachnoid hemorrhage from carotid siphon and bifurcation | Condition | SNOMED | NO | NO | NO |
| 4110185 | Intracerebral hemorrhage, intraventricular | Condition | SNOMED | NO | NO | NO |
| 4111708 | Subarachnoid hemorrhage from vertebral artery | Condition | SNOMED | NO | NO | NO |
| 4111709 | Non-traumatic subdural hemorrhage | Condition | SNOMED | NO | NO | NO |

7. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

8. MI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

9. PCI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2000064 | Percutaneous transluminal coronary angioplasty [PTCA] | Procedure | ICD9Proc | NO | YES | NO |
| 2001505 | Insertion of non-drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 2001506 | Insertion of drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 4006788 | Percutaneous transluminal coronary angioplasty | Procedure | SNOMED | NO | YES | NO |
| 4020653 | Percutaneous transluminal balloon angioplasty of bypass graft of coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4139198 | Percutaneous transluminal thrombolysis of artery | Procedure | SNOMED | NO | YES | NO |
| 4171077 | Fluoroscopic angiography of coronary artery and insertion of stent | Procedure | SNOMED | NO | NO | NO |
| 4175997 | Percutaneous transluminal thrombolysis and reconstruction of artery | Procedure | SNOMED | NO | YES | NO |
| 4178148 | Placement of stent in anterior descending branch of left coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4181025 | Percutaneous transluminal balloon angioplasty with insertion of stent into coronary artery | Procedure | SNOMED | NO | YES | NO |

10. Prasugrel

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 40163718 | prasugrel | Drug | RxNorm | NO | YES | NO |

11. ticagrelor

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 40241186 | Ticagrelor | Drug | RxNorm | NO | YES | NO |

# Narrow Target: Ticagrelor user with percutaneous coronary intervention due to acute coronary syndrome from 2013 to 2015

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a procedure of PCI9
  + for the first time in the person's history
  + occurrence start is between 2013-02-28 and 2015-12-31 (inclusive)
  + with age >= 20

Having all of the following criteria:

* + - at least 1 occurrences of a drug exposure of ticagrelor11

where event starts between 7 days Before and 0 days After index start date   
**occurring within the same visit**

with continuous observation of at least 365 days prior and 0 days after event index date, and limit initial events to: **earliest event per person.**

For people matching the Primary Events, include:

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of ACS1

where event starts between 7 days Before and 0 days After index start date

Limit cohort of initial events to: **earliest event per person.**

Inclusion Rules

Inclusion Criteria #1: aspirin

*concomittant aspirin*

Having all of the following criteria:

* at least 1 occurrences of a drug exposure of aspirin2

where event starts between 7 days Before and 0 days After index start date

Inclusion Criteria #2: Without clopidogrel or prasugrel on the day of PCI

Having all of the following criteria:

* at most 0 occurrences of a drug exposure of clopidogrel3

where event starts between 30 days Before and 0 days After index start date

* and at most 0 occurrences of a drug exposure of Prasugrel10

where event starts between 30 days Before and 0 days After index start date

Inclusion Criteria #3: Without previous stroke

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of Ischemic stroke7

where event starts between all days Before and 0 days After index start date

* and at most 0 occurrences of a condition occurrence of ICH6

where event starts between all days Before and 0 days After index start date

Inclusion Criteria #4: Without previous GI bleeding

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of GI bleeding5

where event starts between all days Before and 0 days After index start date

Limit qualifying cohort to: **earliest event per person.**

End Date Strategy

Custom Drug Era Exit Criteria

This strategy creates a drug era from the codes found in the specified concept set. If the index event is found within an era, the cohort end date will use the era's end date. Otherwise, it will use the observation period end date that contains the index event.

Use the era end date of ticagrelor11

* allowing 7 days between exposures
* adding 0 days after exposure end

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. ACS

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 315296 | Preinfarction syndrome | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

2. aspirin

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 1112807 | Aspirin | Drug | RxNorm | NO | YES | NO |

3. clopidogrel

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 1322184 | clopidogrel | Drug | RxNorm | NO | YES | NO |

4. Coronary Stent Implantation

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 4283892 | Placement of stent in coronary artery | Procedure | SNOMED | NO | YES | NO |

5. GI bleeding

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 192671 | Gastrointestinal hemorrhage | Condition | SNOMED | NO | YES | NO |
| 194158 | Perinatal gastrointestinal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 443530 | Hematochezia | Condition | SNOMED | NO | YES | NO |
| 4048282 | Perinatal melena | Condition | SNOMED | YES | NO | NO |
| 4048286 | Neonatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048601 | Perinatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4048602 | Perinatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048608 | Neonatal melena | Condition | SNOMED | YES | NO | NO |
| 4071070 | Neonatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4103703 | Melena | Condition | SNOMED | NO | YES | NO |

6. ICH

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 376713 | Cerebral hemorrhage | Condition | SNOMED | NO | NO | NO |
| 432923 | Subarachnoid hemorrhage | Condition | SNOMED | NO | NO | NO |
| 436430 | Nontraumatic extradural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439040 | Subdural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439847 | Intracranial hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4049659 | Subcortical hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4108952 | Subarachnoid hemorrhage from carotid siphon and bifurcation | Condition | SNOMED | NO | NO | NO |
| 4110185 | Intracerebral hemorrhage, intraventricular | Condition | SNOMED | NO | NO | NO |
| 4111708 | Subarachnoid hemorrhage from vertebral artery | Condition | SNOMED | NO | NO | NO |
| 4111709 | Non-traumatic subdural hemorrhage | Condition | SNOMED | NO | NO | NO |

7. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

8. MI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

9. PCI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2000064 | Percutaneous transluminal coronary angioplasty [PTCA] | Procedure | ICD9Proc | NO | YES | NO |
| 2001505 | Insertion of non-drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 2001506 | Insertion of drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 4006788 | Percutaneous transluminal coronary angioplasty | Procedure | SNOMED | NO | YES | NO |
| 4020653 | Percutaneous transluminal balloon angioplasty of bypass graft of coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4139198 | Percutaneous transluminal thrombolysis of artery | Procedure | SNOMED | NO | YES | NO |
| 4171077 | Fluoroscopic angiography of coronary artery and insertion of stent | Procedure | SNOMED | NO | NO | NO |
| 4175997 | Percutaneous transluminal thrombolysis and reconstruction of artery | Procedure | SNOMED | NO | YES | NO |
| 4178148 | Placement of stent in anterior descending branch of left coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4181025 | Percutaneous transluminal balloon angioplasty with insertion of stent into coronary artery | Procedure | SNOMED | NO | YES | NO |

10. Prasugrel

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 40163718 | prasugrel | Drug | RxNorm | NO | YES | NO |

11. ticagrelor

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 40241186 | Ticagrelor | Drug | RxNorm | NO | YES | NO |

# Comparator: Clopidogrel user with percutaneous coronary intervention due to acute coronary syndrome

Initial Event Cohort

People having any of the following: 

* a procedure of PCI9
  + for the first time in the person's history
  + with age >= 20

Having all of the following criteria:

* + - at least 1 occurrences of a drug exposure of clopidogrel3

where event starts between 7 days Before and 0 days After index start date   
**occurring within the same visit**

with continuous observation of at least 365 days prior and 0 days after event index date, and limit initial events to: **earliest event per person.**

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Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of ACS1

where event starts between 7 days Before and 0 days After index start date

Limit cohort of initial events to: **earliest event per person.**

Inclusion Rules

Inclusion Criteria #1: aspirin

*concomittant aspirin*

Having all of the following criteria:

* at least 1 occurrences of a drug exposure of aspirin2

where event starts between 7 days Before and 0 days After index start date

Inclusion Criteria #2: Without ticagrelor or prasugrel on the day of PCI

Having all of the following criteria:

* at most 0 occurrences of a drug exposure of ticagrelor11

where event starts between 30 days Before and 0 days After index start date

* and at most 0 occurrences of a drug exposure of Prasugrel10

where event starts between 30 days Before and 0 days After index start date

Inclusion Criteria #3: Without previous stroke

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of Ischemic stroke7

where event starts between all days Before and 0 days After index start date

* and at most 0 occurrences of a condition occurrence of ICH6

where event starts between all days Before and 0 days After index start date

Inclusion Criteria #4: Without previous GI bleeding

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of GI bleeding5

where event starts between all days Before and 0 days After index start date

Limit qualifying cohort to: **earliest event per person.**

End Date Strategy

Custom Drug Era Exit Criteria

This strategy creates a drug era from the codes found in the specified concept set. If the index event is found within an era, the cohort end date will use the era's end date. Otherwise, it will use the observation period end date that contains the index event.

Use the era end date of clopidogrel3

* allowing 7 days between exposures
* adding 0 days after exposure end

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. ACS

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 315296 | Preinfarction syndrome | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

2. aspirin

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 1112807 | Aspirin | Drug | RxNorm | NO | YES | NO |

3. clopidogrel

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 1322184 | clopidogrel | Drug | RxNorm | NO | YES | NO |

4. Coronary Stent Implantation

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 4283892 | Placement of stent in coronary artery | Procedure | SNOMED | NO | YES | NO |

5. GI bleeding

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 192671 | Gastrointestinal hemorrhage | Condition | SNOMED | NO | YES | NO |
| 194158 | Perinatal gastrointestinal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 443530 | Hematochezia | Condition | SNOMED | NO | YES | NO |
| 4048282 | Perinatal melena | Condition | SNOMED | YES | NO | NO |
| 4048286 | Neonatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048601 | Perinatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4048602 | Perinatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048608 | Neonatal melena | Condition | SNOMED | YES | NO | NO |
| 4071070 | Neonatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4103703 | Melena | Condition | SNOMED | NO | YES | NO |

6. ICH

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 376713 | Cerebral hemorrhage | Condition | SNOMED | NO | NO | NO |
| 432923 | Subarachnoid hemorrhage | Condition | SNOMED | NO | NO | NO |
| 436430 | Nontraumatic extradural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439040 | Subdural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439847 | Intracranial hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4049659 | Subcortical hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4108952 | Subarachnoid hemorrhage from carotid siphon and bifurcation | Condition | SNOMED | NO | NO | NO |
| 4110185 | Intracerebral hemorrhage, intraventricular | Condition | SNOMED | NO | NO | NO |
| 4111708 | Subarachnoid hemorrhage from vertebral artery | Condition | SNOMED | NO | NO | NO |
| 4111709 | Non-traumatic subdural hemorrhage | Condition | SNOMED | NO | NO | NO |

7. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

8. MI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

9. PCI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2000064 | Percutaneous transluminal coronary angioplasty [PTCA] | Procedure | ICD9Proc | NO | YES | NO |
| 2001505 | Insertion of non-drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 2001506 | Insertion of drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 4006788 | Percutaneous transluminal coronary angioplasty | Procedure | SNOMED | NO | YES | NO |
| 4020653 | Percutaneous transluminal balloon angioplasty of bypass graft of coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4139198 | Percutaneous transluminal thrombolysis of artery | Procedure | SNOMED | NO | YES | NO |
| 4171077 | Fluoroscopic angiography of coronary artery and insertion of stent | Procedure | SNOMED | NO | NO | NO |
| 4175997 | Percutaneous transluminal thrombolysis and reconstruction of artery | Procedure | SNOMED | NO | YES | NO |
| 4178148 | Placement of stent in anterior descending branch of left coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4181025 | Percutaneous transluminal balloon angioplasty with insertion of stent into coronary artery | Procedure | SNOMED | NO | YES | NO |

10. Prasugrel

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 40163718 | prasugrel | Drug | RxNorm | NO | YES | NO |

11. ticagrelor

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 40241186 | Ticagrelor | Drug | RxNorm | NO | YES | NO |

# Narrow comparator: Clopidogrel user with percutaneous coronary intervention due to acute coronary syndrome from 2013 to 2015

Initial Event Cohort

People having any of the following: 

* a procedure of PCI9
  + for the first time in the person's history
  + occurrence start is between 2013-02-28 and 2015-12-31 (inclusive)
  + with age >= 20

Having all of the following criteria:

* + - at least 1 occurrences of a drug exposure of clopidogrel3

where event starts between 7 days Before and 0 days After index start date   
**occurring within the same visit**

with continuous observation of at least 365 days prior and 0 days after event index date, and limit initial events to: **earliest event per person.**

For people matching the Primary Events, include:

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of ACS1

where event starts between 7 days Before and 0 days After index start date

Limit cohort of initial events to: **earliest event per person.**

Inclusion Rules

Inclusion Criteria #1: aspirin

*concomittant aspirin*

Having all of the following criteria:

* at least 1 occurrences of a drug exposure of aspirin2

where event starts between 7 days Before and 0 days After index start date

Inclusion Criteria #2: Without ticagrelor or prasugrel on the day of PCI

Having all of the following criteria:

* at most 0 occurrences of a drug exposure of ticagrelor11

where event starts between 30 days Before and 0 days After index start date

* and at most 0 occurrences of a drug exposure of Prasugrel10

where event starts between 30 days Before and 0 days After index start date

Inclusion Criteria #3: Without previous stroke

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of Ischemic stroke7

where event starts between all days Before and 0 days After index start date

* and at most 0 occurrences of a condition occurrence of ICH6

where event starts between all days Before and 0 days After index start date

Inclusion Criteria #4: Without previous GI bleeding

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of GI bleeding5

where event starts between all days Before and 0 days After index start date

Limit qualifying cohort to: **earliest event per person.**

End Date Strategy

Custom Drug Era Exit Criteria

This strategy creates a drug era from the codes found in the specified concept set. If the index event is found within an era, the cohort end date will use the era's end date. Otherwise, it will use the observation period end date that contains the index event.

Use the era end date of clopidogrel3

* allowing 7 days between exposures
* adding 0 days after exposure end

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. ACS

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 315296 | Preinfarction syndrome | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

2. aspirin

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 1112807 | Aspirin | Drug | RxNorm | NO | YES | NO |

3. clopidogrel

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 1322184 | clopidogrel | Drug | RxNorm | NO | YES | NO |

4. Coronary Stent Implantation

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 4283892 | Placement of stent in coronary artery | Procedure | SNOMED | NO | YES | NO |

5. GI bleeding

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 192671 | Gastrointestinal hemorrhage | Condition | SNOMED | NO | YES | NO |
| 194158 | Perinatal gastrointestinal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 443530 | Hematochezia | Condition | SNOMED | NO | YES | NO |
| 4048282 | Perinatal melena | Condition | SNOMED | YES | NO | NO |
| 4048286 | Neonatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048601 | Perinatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4048602 | Perinatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048608 | Neonatal melena | Condition | SNOMED | YES | NO | NO |
| 4071070 | Neonatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4103703 | Melena | Condition | SNOMED | NO | YES | NO |

6. ICH

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 376713 | Cerebral hemorrhage | Condition | SNOMED | NO | NO | NO |
| 432923 | Subarachnoid hemorrhage | Condition | SNOMED | NO | NO | NO |
| 436430 | Nontraumatic extradural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439040 | Subdural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439847 | Intracranial hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4049659 | Subcortical hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4108952 | Subarachnoid hemorrhage from carotid siphon and bifurcation | Condition | SNOMED | NO | NO | NO |
| 4110185 | Intracerebral hemorrhage, intraventricular | Condition | SNOMED | NO | NO | NO |
| 4111708 | Subarachnoid hemorrhage from vertebral artery | Condition | SNOMED | NO | NO | NO |
| 4111709 | Non-traumatic subdural hemorrhage | Condition | SNOMED | NO | NO | NO |

7. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

8. MI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

9. PCI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2000064 | Percutaneous transluminal coronary angioplasty [PTCA] | Procedure | ICD9Proc | NO | YES | NO |
| 2001505 | Insertion of non-drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 2001506 | Insertion of drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 4006788 | Percutaneous transluminal coronary angioplasty | Procedure | SNOMED | NO | YES | NO |
| 4020653 | Percutaneous transluminal balloon angioplasty of bypass graft of coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4139198 | Percutaneous transluminal thrombolysis of artery | Procedure | SNOMED | NO | YES | NO |
| 4171077 | Fluoroscopic angiography of coronary artery and insertion of stent | Procedure | SNOMED | NO | NO | NO |
| 4175997 | Percutaneous transluminal thrombolysis and reconstruction of artery | Procedure | SNOMED | NO | YES | NO |
| 4178148 | Placement of stent in anterior descending branch of left coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4181025 | Percutaneous transluminal balloon angioplasty with insertion of stent into coronary artery | Procedure | SNOMED | NO | YES | NO |

10. Prasugrel

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 40163718 | prasugrel | Drug | RxNorm | NO | YES | NO |

11. ticagrelor

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 40241186 | Ticagrelor | Drug | RxNorm | NO | YES | NO |

# Outcome: Net adverse clinical event

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of Acute Myocardial Infarction1
* a condition occurrence of ICH4
  + for the first time in the person's history
* a condition occurrence of Ischemic stroke6
  + for the first time in the person's history
* a condition occurrence of GI bleeding3
  + for the first time in the person's history
* a procedure of PCI7
* a procedure of CABG2

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **all events per person.**

Inclusion Rules

Inclusion Criteria #1: Hospitalization

Having all of the following criteria:

* at least 1 occurrences of a visit occurrence of Inpatient or ED visit5

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. Acute Myocardial Infarction

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

2. CABG

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2001514 | Single internal mammary-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2001515 | Double internal mammary-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2001516 | Abdominal-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2107216 | Coronary artery bypass, vein only; single coronary venous graft | Procedure | CPT4 | NO | YES | NO |
| 2107217 | Coronary artery bypass, vein only; 2 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107218 | Coronary artery bypass, vein only; 3 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107219 | Coronary artery bypass, vein only; 4 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107220 | Coronary artery bypass, vein only; 5 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107221 | Coronary artery bypass, vein only; 6 or more coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107222 | Coronary artery bypass, using venous graft(s) and arterial graft(s); single vein graft (List separately in addition to code for primary procedure) | Procedure | CPT4 | NO | YES | NO |

3. GI bleeding

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 192671 | Gastrointestinal hemorrhage | Condition | SNOMED | NO | YES | NO |
| 194158 | Perinatal gastrointestinal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 443530 | Hematochezia | Condition | SNOMED | NO | YES | NO |
| 4048282 | Perinatal melena | Condition | SNOMED | YES | NO | NO |
| 4048286 | Neonatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048601 | Perinatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4048602 | Perinatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048608 | Neonatal melena | Condition | SNOMED | YES | NO | NO |
| 4071070 | Neonatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4103703 | Melena | Condition | SNOMED | NO | YES | NO |

4. ICH

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 376713 | Cerebral hemorrhage | Condition | SNOMED | NO | NO | NO |
| 432923 | Subarachnoid hemorrhage | Condition | SNOMED | NO | NO | NO |
| 436430 | Nontraumatic extradural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439040 | Subdural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439847 | Intracranial hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4049659 | Subcortical hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4108952 | Subarachnoid hemorrhage from carotid siphon and bifurcation | Condition | SNOMED | NO | NO | NO |
| 4110185 | Intracerebral hemorrhage, intraventricular | Condition | SNOMED | NO | NO | NO |
| 4111708 | Subarachnoid hemorrhage from vertebral artery | Condition | SNOMED | NO | NO | NO |
| 4111709 | Non-traumatic subdural hemorrhage | Condition | SNOMED | NO | NO | NO |

5. Inpatient or ED visit

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 262 | Emergency Room and Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9201 | Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9203 | Emergency Room Visit | Visit | Visit | NO | YES | NO |

6. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

7. PCI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2000064 | Percutaneous transluminal coronary angioplasty [PTCA] | Procedure | ICD9Proc | NO | YES | NO |
| 2001505 | Insertion of non-drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 2001506 | Insertion of drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 4006788 | Percutaneous transluminal coronary angioplasty | Procedure | SNOMED | NO | YES | NO |
| 4020653 | Percutaneous transluminal balloon angioplasty of bypass graft of coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4139198 | Percutaneous transluminal thrombolysis of artery | Procedure | SNOMED | NO | YES | NO |
| 4171077 | Fluoroscopic angiography of coronary artery and insertion of stent | Procedure | SNOMED | NO | NO | NO |
| 4175997 | Percutaneous transluminal thrombolysis and reconstruction of artery | Procedure | SNOMED | NO | YES | NO |
| 4178148 | Placement of stent in anterior descending branch of left coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4181025 | Percutaneous transluminal balloon angioplasty with insertion of stent into coronary artery | Procedure | SNOMED | NO | YES | NO |

# Narrow outcome: Net adverse clinical event

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of Acute Myocardial Infarction1
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Outpatient detail - primary position, Outpatient header - primary position, Primary Condition
* a condition occurrence of ICH4
  + for the first time in the person's history
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Outpatient detail - primary position, Outpatient header - primary position, Primary Condition
* a condition occurrence of Ischemic stroke6
  + for the first time in the person's history
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Outpatient detail - primary position, Outpatient header - primary position, Primary Condition
* a condition occurrence of GI bleeding3
  + for the first time in the person's history
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Outpatient detail - primary position, Outpatient header - primary position, Primary Condition
* a procedure of PCI7
* a procedure of CABG2

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **all events per person.**

Inclusion Rules

Inclusion Criteria #1: Hospitalization

Having all of the following criteria:

* at least 1 occurrences of a visit occurrence of Inpatient or ED visit5

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. Acute Myocardial Infarction

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

2. CABG

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2001514 | Single internal mammary-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2001515 | Double internal mammary-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2001516 | Abdominal-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2107216 | Coronary artery bypass, vein only; single coronary venous graft | Procedure | CPT4 | NO | YES | NO |
| 2107217 | Coronary artery bypass, vein only; 2 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107218 | Coronary artery bypass, vein only; 3 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107219 | Coronary artery bypass, vein only; 4 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107220 | Coronary artery bypass, vein only; 5 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107221 | Coronary artery bypass, vein only; 6 or more coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107222 | Coronary artery bypass, using venous graft(s) and arterial graft(s); single vein graft (List separately in addition to code for primary procedure) | Procedure | CPT4 | NO | YES | NO |

3. GI bleeding

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 192671 | Gastrointestinal hemorrhage | Condition | SNOMED | NO | YES | NO |
| 194158 | Perinatal gastrointestinal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 443530 | Hematochezia | Condition | SNOMED | NO | YES | NO |
| 4048282 | Perinatal melena | Condition | SNOMED | YES | NO | NO |
| 4048286 | Neonatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048601 | Perinatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4048602 | Perinatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048608 | Neonatal melena | Condition | SNOMED | YES | NO | NO |
| 4071070 | Neonatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4103703 | Melena | Condition | SNOMED | NO | YES | NO |

4. ICH

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 376713 | Cerebral hemorrhage | Condition | SNOMED | NO | NO | NO |
| 432923 | Subarachnoid hemorrhage | Condition | SNOMED | NO | NO | NO |
| 436430 | Nontraumatic extradural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439040 | Subdural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439847 | Intracranial hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4049659 | Subcortical hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4108952 | Subarachnoid hemorrhage from carotid siphon and bifurcation | Condition | SNOMED | NO | NO | NO |
| 4110185 | Intracerebral hemorrhage, intraventricular | Condition | SNOMED | NO | NO | NO |
| 4111708 | Subarachnoid hemorrhage from vertebral artery | Condition | SNOMED | NO | NO | NO |
| 4111709 | Non-traumatic subdural hemorrhage | Condition | SNOMED | NO | NO | NO |

5. Inpatient or ED visit

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 262 | Emergency Room and Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9201 | Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9203 | Emergency Room Visit | Visit | Visit | NO | YES | NO |

6. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

7. PCI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2000064 | Percutaneous transluminal coronary angioplasty [PTCA] | Procedure | ICD9Proc | NO | YES | NO |
| 2001505 | Insertion of non-drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 2001506 | Insertion of drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 4006788 | Percutaneous transluminal coronary angioplasty | Procedure | SNOMED | NO | YES | NO |
| 4020653 | Percutaneous transluminal balloon angioplasty of bypass graft of coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4139198 | Percutaneous transluminal thrombolysis of artery | Procedure | SNOMED | NO | YES | NO |
| 4171077 | Fluoroscopic angiography of coronary artery and insertion of stent | Procedure | SNOMED | NO | NO | NO |
| 4175997 | Percutaneous transluminal thrombolysis and reconstruction of artery | Procedure | SNOMED | NO | YES | NO |
| 4178148 | Placement of stent in anterior descending branch of left coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4181025 | Percutaneous transluminal balloon angioplasty with insertion of stent into coronary artery | Procedure | SNOMED | NO | YES | NO |

# Outcome: Ischemic event

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of Acute Myocardial Infarction1
* a condition occurrence of Ischemic stroke6
  + for the first time in the person's history
* a procedure of PCI7
* a procedure of CABG2

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **all events per person.**

Inclusion Rules

Inclusion Criteria #1: Hospitalization

Having all of the following criteria:

* at least 1 occurrences of a visit occurrence of Inpatient or ED visit5

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. Acute Myocardial Infarction

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

2. CABG

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2001514 | Single internal mammary-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2001515 | Double internal mammary-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2001516 | Abdominal-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2107216 | Coronary artery bypass, vein only; single coronary venous graft | Procedure | CPT4 | NO | YES | NO |
| 2107217 | Coronary artery bypass, vein only; 2 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107218 | Coronary artery bypass, vein only; 3 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107219 | Coronary artery bypass, vein only; 4 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107220 | Coronary artery bypass, vein only; 5 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107221 | Coronary artery bypass, vein only; 6 or more coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107222 | Coronary artery bypass, using venous graft(s) and arterial graft(s); single vein graft (List separately in addition to code for primary procedure) | Procedure | CPT4 | NO | YES | NO |

5. Inpatient or ED visit

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 262 | Emergency Room and Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9201 | Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9203 | Emergency Room Visit | Visit | Visit | NO | YES | NO |

6. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

7. PCI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2000064 | Percutaneous transluminal coronary angioplasty [PTCA] | Procedure | ICD9Proc | NO | YES | NO |
| 2001505 | Insertion of non-drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 2001506 | Insertion of drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 4006788 | Percutaneous transluminal coronary angioplasty | Procedure | SNOMED | NO | YES | NO |
| 4020653 | Percutaneous transluminal balloon angioplasty of bypass graft of coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4139198 | Percutaneous transluminal thrombolysis of artery | Procedure | SNOMED | NO | YES | NO |
| 4171077 | Fluoroscopic angiography of coronary artery and insertion of stent | Procedure | SNOMED | NO | NO | NO |
| 4175997 | Percutaneous transluminal thrombolysis and reconstruction of artery | Procedure | SNOMED | NO | YES | NO |
| 4178148 | Placement of stent in anterior descending branch of left coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4181025 | Percutaneous transluminal balloon angioplasty with insertion of stent into coronary artery | Procedure | SNOMED | NO | YES | NO |

# Narrow outcome: Ischemic event

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of Acute Myocardial Infarction1
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Outpatient detail - primary position, Outpatient header - primary position, Primary Condition
* a condition occurrence of Ischemic stroke6
  + for the first time in the person's history
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Outpatient detail - primary position, Outpatient header - primary position, Primary Condition
* a procedure of PCI7
* a procedure of CABG2

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **all events per person.**

Inclusion Rules

Inclusion Criteria #1: Hospitalization

Having all of the following criteria:

* at least 1 occurrences of a visit occurrence of Inpatient or ED visit5

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. Acute Myocardial Infarction

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

2. CABG

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2001514 | Single internal mammary-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2001515 | Double internal mammary-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2001516 | Abdominal-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2107216 | Coronary artery bypass, vein only; single coronary venous graft | Procedure | CPT4 | NO | YES | NO |
| 2107217 | Coronary artery bypass, vein only; 2 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107218 | Coronary artery bypass, vein only; 3 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107219 | Coronary artery bypass, vein only; 4 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107220 | Coronary artery bypass, vein only; 5 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107221 | Coronary artery bypass, vein only; 6 or more coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107222 | Coronary artery bypass, using venous graft(s) and arterial graft(s); single vein graft (List separately in addition to code for primary procedure) | Procedure | CPT4 | NO | YES | NO |

5. Inpatient or ED visit

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 262 | Emergency Room and Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9201 | Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9203 | Emergency Room Visit | Visit | Visit | NO | YES | NO |

6. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

7. PCI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2000064 | Percutaneous transluminal coronary angioplasty [PTCA] | Procedure | ICD9Proc | NO | YES | NO |
| 2001505 | Insertion of non-drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 2001506 | Insertion of drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 4006788 | Percutaneous transluminal coronary angioplasty | Procedure | SNOMED | NO | YES | NO |
| 4020653 | Percutaneous transluminal balloon angioplasty of bypass graft of coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4139198 | Percutaneous transluminal thrombolysis of artery | Procedure | SNOMED | NO | YES | NO |
| 4171077 | Fluoroscopic angiography of coronary artery and insertion of stent | Procedure | SNOMED | NO | NO | NO |
| 4175997 | Percutaneous transluminal thrombolysis and reconstruction of artery | Procedure | SNOMED | NO | YES | NO |
| 4178148 | Placement of stent in anterior descending branch of left coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4181025 | Percutaneous transluminal balloon angioplasty with insertion of stent into coronary artery | Procedure | SNOMED | NO | YES | NO |

# Outcome: Bleeding event

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of ICH4
  + for the first time in the person's history
* a condition occurrence of GI bleeding3
  + for the first time in the person's history

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **all events per person.**

Inclusion Rules

Inclusion Criteria #1: Hospitalization

Having all of the following criteria:

* at least 1 occurrences of a visit occurrence of Inpatient or ED visit5

where event starts between 0 days Before and 0 days After index start date

Inclusion Criteria #2: Without concomitant ischemic stroke

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of Ischemic stroke6

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

3. GI bleeding

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 192671 | Gastrointestinal hemorrhage | Condition | SNOMED | NO | YES | NO |
| 194158 | Perinatal gastrointestinal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 443530 | Hematochezia | Condition | SNOMED | NO | YES | NO |
| 4048282 | Perinatal melena | Condition | SNOMED | YES | NO | NO |
| 4048286 | Neonatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048601 | Perinatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4048602 | Perinatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048608 | Neonatal melena | Condition | SNOMED | YES | NO | NO |
| 4071070 | Neonatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4103703 | Melena | Condition | SNOMED | NO | YES | NO |

4. ICH

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 376713 | Cerebral hemorrhage | Condition | SNOMED | NO | NO | NO |
| 432923 | Subarachnoid hemorrhage | Condition | SNOMED | NO | NO | NO |
| 436430 | Nontraumatic extradural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439040 | Subdural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439847 | Intracranial hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4049659 | Subcortical hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4108952 | Subarachnoid hemorrhage from carotid siphon and bifurcation | Condition | SNOMED | NO | NO | NO |
| 4110185 | Intracerebral hemorrhage, intraventricular | Condition | SNOMED | NO | NO | NO |
| 4111708 | Subarachnoid hemorrhage from vertebral artery | Condition | SNOMED | NO | NO | NO |
| 4111709 | Non-traumatic subdural hemorrhage | Condition | SNOMED | NO | NO | NO |

5. Inpatient or ED visit

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 262 | Emergency Room and Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9201 | Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9203 | Emergency Room Visit | Visit | Visit | NO | YES | NO |

6. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

# Narrow outcome: Bleeding event

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of ICH4
  + for the first time in the person's history
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Outpatient detail - primary position, Outpatient header - primary position, Primary Condition
* a condition occurrence of GI bleeding3
  + for the first time in the person's history
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Outpatient detail - primary position, Outpatient header - primary position, Primary Condition

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **all events per person.**

Inclusion Rules

Inclusion Criteria #1: Hospitalization

Having all of the following criteria:

* at least 1 occurrences of a visit occurrence of Inpatient or ED visit5

where event starts between 0 days Before and 0 days After index start date

Inclusion Criteria #2: Without concomitant ischemic stroke

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of Ischemic stroke6

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

3. GI bleeding

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 192671 | Gastrointestinal hemorrhage | Condition | SNOMED | NO | YES | NO |
| 194158 | Perinatal gastrointestinal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 443530 | Hematochezia | Condition | SNOMED | NO | YES | NO |
| 4048282 | Perinatal melena | Condition | SNOMED | YES | NO | NO |
| 4048286 | Neonatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048601 | Perinatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4048602 | Perinatal rectal hemorrhage | Condition | SNOMED | YES | NO | NO |
| 4048608 | Neonatal melena | Condition | SNOMED | YES | NO | NO |
| 4071070 | Neonatal hematemesis | Condition | SNOMED | YES | NO | NO |
| 4103703 | Melena | Condition | SNOMED | NO | YES | NO |

4. ICH

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 376713 | Cerebral hemorrhage | Condition | SNOMED | NO | NO | NO |
| 432923 | Subarachnoid hemorrhage | Condition | SNOMED | NO | NO | NO |
| 436430 | Nontraumatic extradural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439040 | Subdural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439847 | Intracranial hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4049659 | Subcortical hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4108952 | Subarachnoid hemorrhage from carotid siphon and bifurcation | Condition | SNOMED | NO | NO | NO |
| 4110185 | Intracerebral hemorrhage, intraventricular | Condition | SNOMED | NO | NO | NO |
| 4111708 | Subarachnoid hemorrhage from vertebral artery | Condition | SNOMED | NO | NO | NO |
| 4111709 | Non-traumatic subdural hemorrhage | Condition | SNOMED | NO | NO | NO |

5. Inpatient or ED visit

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 262 | Emergency Room and Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9201 | Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9203 | Emergency Room Visit | Visit | Visit | NO | YES | NO |

6. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

# Outcome: Recurrent myocardial infarction

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of Acute MI1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **all events per person.**

Inclusion Rules

Inclusion Criteria #1: Inpatient Only

*Inpatient Only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of Acute MI1
  + visit occurrence is any of: Emergency Room Visit, Emergency Room and Inpatient Visit, Inpatient Visit, Discharged/transferred to other short term general hospital for inpatient care., Discharged/transferred to another type of institution for inpatient care (designated cancer center or childrens hospital), Admitted as an inpatient to this hospital, Inpatient Hospital, Inpatient Long-term Care, Other Inpatient Care, Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital, Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission, Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission, Discharged/transferred to a designated cancer center or children?s hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission, Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission, Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission, Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission, Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission, Discharged/transferred to a psychiatric hospital/distinct part unit of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission, Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission, Inpatient Cardiac Care Facility, Inpatient Critical Care Facility, Inpatient Intensive Care Facility, Emergency Room - Hospital, Emergency Room Critical Care Facility

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. Acute Myocardial Infarction

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

# Narrow outcome: Recurrent myocardial infarction

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of Acute MI1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **all events per person.**

Inclusion Rules

Inclusion Criteria #1: Inpatient Only

*Inpatient Only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of Acute MI1
  + visit occurrence is any of: Emergency Room Visit, Emergency Room and Inpatient Visit, Inpatient Visit, Discharged/transferred to other short term general hospital for inpatient care., Discharged/transferred to another type of institution for inpatient care (designated cancer center or childrens hospital), Admitted as an inpatient to this hospital, Inpatient Hospital, Inpatient Long-term Care, Other Inpatient Care, Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital, Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission, Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission, Discharged/transferred to a designated cancer center or children?s hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission, Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission, Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission, Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission, Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission, Discharged/transferred to a psychiatric hospital/distinct part unit of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission, Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission, Inpatient Cardiac Care Facility, Inpatient Critical Care Facility, Inpatient Intensive Care Facility, Emergency Room - Hospital, Emergency Room Critical Care Facility

where event starts between 0 days Before and 0 days After index start date

Inclusion Criteria #2: Primary diagnosis only

*Primary diagnosis only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of Acute MI1
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Primary Condition

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. Acute Myocardial Infarction

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312327 | Acute myocardial infarction | Condition | SNOMED | NO | YES | NO |
| 434376 | Acute myocardial infarction of anterior wall | Condition | SNOMED | NO | YES | NO |
| 438170 | Acute myocardial infarction of inferior wall | Condition | SNOMED | NO | YES | NO |
| 444406 | Acute subendocardial infarction | Condition | SNOMED | NO | YES | NO |

# Outcome: Any revascularization

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a procedure of PCI3
* a procedure of CABG1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **all events per person.**

Inclusion Rules

Inclusion Criteria #1: Hospitalization

Having all of the following criteria:

* at least 1 occurrences of a visit occurrence of Hospitalization2

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. CABG

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2001514 | Single internal mammary-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2001515 | Double internal mammary-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2001516 | Abdominal-coronary artery bypass | Procedure | ICD9Proc | NO | YES | NO |
| 2107216 | Coronary artery bypass, vein only; single coronary venous graft | Procedure | CPT4 | NO | YES | NO |
| 2107217 | Coronary artery bypass, vein only; 2 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107218 | Coronary artery bypass, vein only; 3 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107219 | Coronary artery bypass, vein only; 4 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107220 | Coronary artery bypass, vein only; 5 coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107221 | Coronary artery bypass, vein only; 6 or more coronary venous grafts | Procedure | CPT4 | NO | YES | NO |
| 2107222 | Coronary artery bypass, using venous graft(s) and arterial graft(s); single vein graft (List separately in addition to code for primary procedure) | Procedure | CPT4 | NO | YES | NO |

2. Hospitalization

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 262 | Emergency Room and Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9201 | Inpatient Visit | Visit | Visit | NO | YES | NO |
| 9203 | Emergency Room Visit | Visit | Visit | NO | YES | NO |

3. PCI

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 2000064 | Percutaneous transluminal coronary angioplasty [PTCA] | Procedure | ICD9Proc | NO | YES | NO |
| 2001505 | Insertion of non-drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 2001506 | Insertion of drug-eluting coronary artery stent(s) | Procedure | ICD9Proc | NO | NO | NO |
| 4006788 | Percutaneous transluminal coronary angioplasty | Procedure | SNOMED | NO | YES | NO |
| 4020653 | Percutaneous transluminal balloon angioplasty of bypass graft of coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4139198 | Percutaneous transluminal thrombolysis of artery | Procedure | SNOMED | NO | YES | NO |
| 4171077 | Fluoroscopic angiography of coronary artery and insertion of stent | Procedure | SNOMED | NO | NO | NO |
| 4175997 | Percutaneous transluminal thrombolysis and reconstruction of artery | Procedure | SNOMED | NO | YES | NO |
| 4178148 | Placement of stent in anterior descending branch of left coronary artery | Procedure | SNOMED | NO | YES | NO |
| 4181025 | Percutaneous transluminal balloon angioplasty with insertion of stent into coronary artery | Procedure | SNOMED | NO | YES | NO |

# Outcome: Ischemic stroke

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of Ischemic stroke1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **earliest event per person.**

Inclusion Rules

Inclusion Criteria #1: Inpatient Only

*Inpatient Only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of Ischemic stroke1
  + visit occurrence is any of: Emergency Room Visit, Emergency Room and Inpatient Visit, Inpatient Visit, Discharged/transferred to other short term general hospital for inpatient care., Discharged/transferred to another type of institution for inpatient care (designated cancer center or childrens hospital), Admitted as an inpatient to this hospital, Inpatient Hospital, Inpatient Long-term Care, Other Inpatient Care, Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital, Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission, Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission, Discharged/transferred to a designated cancer center or children?s hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission, Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission, Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission, Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission, Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission, Discharged/transferred to a psychiatric hospital/distinct part unit of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission, Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission, Inpatient Cardiac Care Facility, Inpatient Critical Care Facility, Inpatient Intensive Care Facility, Emergency Room - Hospital, Emergency Room Critical Care Facility

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

# Narrow outcome: Ischemic stroke

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of Ischemic stroke1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **earliest event per person.**

Inclusion Rules

Inclusion Criteria #1: Inpatient Only

*Inpatient Only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of Ischemic stroke1
  + visit occurrence is any of: Emergency Room Visit, Emergency Room and Inpatient Visit, Inpatient Visit, Discharged/transferred to other short term general hospital for inpatient care., Discharged/transferred to another type of institution for inpatient care (designated cancer center or childrens hospital), Admitted as an inpatient to this hospital, Inpatient Hospital, Inpatient Long-term Care, Other Inpatient Care, Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital, Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission, Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission, Discharged/transferred to a designated cancer center or children?s hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission, Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission, Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission, Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission, Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission, Discharged/transferred to a psychiatric hospital/distinct part unit of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission, Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission, Inpatient Cardiac Care Facility, Inpatient Critical Care Facility, Inpatient Intensive Care Facility, Emergency Room - Hospital, Emergency Room Critical Care Facility

where event starts between 0 days Before and 0 days After index start date

Inclusion Criteria #2: Primary diagnosis only

*Primary diagnosis only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of Ischemic stroke1
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Primary Condition

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

# Outcome: Intracranial hemorrhage

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of hemorrhagic stroke1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **earliest event per person.**

Inclusion Rules

Inclusion Criteria #1: Inpatient Only

*Inpatient Only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of hemorrhagic stroke1
  + visit occurrence is any of: Emergency Room Visit, Emergency Room and Inpatient Visit, Inpatient Visit, Discharged/transferred to other short term general hospital for inpatient care., Discharged/transferred to another type of institution for inpatient care (designated cancer center or childrens hospital), Admitted as an inpatient to this hospital, Inpatient Hospital, Inpatient Long-term Care, Other Inpatient Care, Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital, Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission, Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission, Discharged/transferred to a designated cancer center or children?s hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission, Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission, Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission, Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission, Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission, Discharged/transferred to a psychiatric hospital/distinct part unit of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission, Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission, Inpatient Cardiac Care Facility, Inpatient Critical Care Facility, Inpatient Intensive Care Facility, Emergency Room - Hospital, Emergency Room Critical Care Facility

where event starts between 0 days Before and 0 days After index start date

Inclusion Criteria #2: Primary diagnosis only

*Primary diagnosis only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of hemorrhagic stroke1
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Primary Condition

where event starts between 0 days Before and 0 days After index start date

Inclusion Criteria #3: Without concomitant ischemic stroke

*Without concomitant ischemic stroke*

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of Ischemic stroke2

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. hemorrhagic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 376713 | Cerebral hemorrhage | Condition | SNOMED | NO | NO | NO |
| 432923 | Subarachnoid hemorrhage | Condition | SNOMED | NO | NO | NO |
| 436430 | Nontraumatic extradural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439040 | Subdural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439847 | Intracranial hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4049659 | Subcortical hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4108952 | Subarachnoid hemorrhage from carotid siphon and bifurcation | Condition | SNOMED | NO | NO | NO |
| 4110185 | Intracerebral hemorrhage, intraventricular | Condition | SNOMED | NO | NO | NO |
| 4111708 | Subarachnoid hemorrhage from vertebral artery | Condition | SNOMED | NO | NO | NO |
| 4111709 | Non-traumatic subdural hemorrhage | Condition | SNOMED | NO | NO | NO |

2. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

# Narrow outcome: Intracranial hemorrhage

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of hemorrhagic stroke1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **earliest event per person.**

Inclusion Rules

Inclusion Criteria #1: Inpatient Only

*Inpatient Only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of hemorrhagic stroke1
  + visit occurrence is any of: Emergency Room Visit, Emergency Room and Inpatient Visit, Inpatient Visit, Discharged/transferred to other short term general hospital for inpatient care., Discharged/transferred to another type of institution for inpatient care (designated cancer center or childrens hospital), Admitted as an inpatient to this hospital, Inpatient Hospital, Inpatient Long-term Care, Other Inpatient Care, Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital, Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission, Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission, Discharged/transferred to a designated cancer center or children?s hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission, Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission, Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission, Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission, Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission, Discharged/transferred to a psychiatric hospital/distinct part unit of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission, Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission, Inpatient Cardiac Care Facility, Inpatient Critical Care Facility, Inpatient Intensive Care Facility, Emergency Room - Hospital, Emergency Room Critical Care Facility

where event starts between 0 days Before and 0 days After index start date

Inclusion Criteria #2: Primary diagnosis only

*Primary diagnosis only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of hemorrhagic stroke1
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Primary Condition

where event starts between 0 days Before and 0 days After index start date

Inclusion Criteria #3: Without concomitant ischemic stroke

*Without concomitant ischemic stroke*

Having all of the following criteria:

* at most 0 occurrences of a condition occurrence of Ischemic stroke2

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. hemorrhagic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 376713 | Cerebral hemorrhage | Condition | SNOMED | NO | NO | NO |
| 432923 | Subarachnoid hemorrhage | Condition | SNOMED | NO | NO | NO |
| 436430 | Nontraumatic extradural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439040 | Subdural hemorrhage | Condition | SNOMED | NO | NO | NO |
| 439847 | Intracranial hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4049659 | Subcortical hemorrhage | Condition | SNOMED | NO | NO | NO |
| 4108952 | Subarachnoid hemorrhage from carotid siphon and bifurcation | Condition | SNOMED | NO | NO | NO |
| 4110185 | Intracerebral hemorrhage, intraventricular | Condition | SNOMED | NO | NO | NO |
| 4111708 | Subarachnoid hemorrhage from vertebral artery | Condition | SNOMED | NO | NO | NO |
| 4111709 | Non-traumatic subdural hemorrhage | Condition | SNOMED | NO | NO | NO |

2. Ischemic stroke

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 443454 | Cerebral infarction | Condition | SNOMED | NO | YES | NO |
| 4043731 | Infarction - precerebral | Condition | SNOMED | NO | YES | NO |

# Outcome: Gastrointestinal bleeding

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of GI bleeding1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **earliest event per person.**

Inclusion Rules

Inclusion Criteria #1: Inpatient Only

*Inpatient Only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of GI bleeding1
  + visit occurrence is any of: Emergency Room Visit, Emergency Room and Inpatient Visit, Inpatient Visit, Discharged/transferred to other short term general hospital for inpatient care., Discharged/transferred to another type of institution for inpatient care (designated cancer center or childrens hospital), Admitted as an inpatient to this hospital, Inpatient Hospital, Inpatient Long-term Care, Other Inpatient Care, Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital, Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission, Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission, Discharged/transferred to a designated cancer center or children?s hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission, Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission, Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission, Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission, Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission, Discharged/transferred to a psychiatric hospital/distinct part unit of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission, Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission, Inpatient Cardiac Care Facility, Inpatient Critical Care Facility, Inpatient Intensive Care Facility, Emergency Room - Hospital, Emergency Room Critical Care Facility

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. GI bleeding

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 22665 | Chronic peptic ulcer with hemorrhage AND with perforation but without obstruction | Condition | SNOMED | NO | NO | NO |
| 23237 | Acute peptic ulcer with hemorrhage AND obstruction | Condition | SNOMED | NO | NO | NO |
| 23245 | Esophageal bleeding | Condition | SNOMED | NO | NO | NO |
| 24076 | Chronic peptic ulcer with hemorrhage AND obstruction | Condition | SNOMED | NO | NO | NO |
| 24397 | Chronic peptic ulcer with hemorrhage, with perforation AND with obstruction | Condition | SNOMED | NO | NO | NO |
| 26441 | Bleeding ulcer of esophagus | Condition | SNOMED | NO | NO | NO |
| 26727 | Hematemesis | Condition | SNOMED | NO | NO | NO |
| 27026 | Acute peptic ulcer with hemorrhage AND with perforation but without obstruction | Condition | SNOMED | NO | NO | NO |
| 30770 | Chronic peptic ulcer with hemorrhage but without obstruction | Condition | SNOMED | NO | NO | NO |
| 31335 | Acute peptic ulcer with hemorrhage but without obstruction | Condition | SNOMED | NO | NO | NO |

# Narrow outcome: Gastrointestinal bleeding

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of GI bleeding1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **earliest event per person.**

Inclusion Rules

Inclusion Criteria #1: Inpatient Only

*Inpatient Only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of GI bleeding1
  + visit occurrence is any of: Emergency Room Visit, Emergency Room and Inpatient Visit, Inpatient Visit, Discharged/transferred to other short term general hospital for inpatient care., Discharged/transferred to another type of institution for inpatient care (designated cancer center or childrens hospital), Admitted as an inpatient to this hospital, Inpatient Hospital, Inpatient Long-term Care, Other Inpatient Care, Discharged/transferred to an inpatient rehabilitation facility including distinct parts units of a hospital, Discharged/transferred to a short term general hospital for inpatient care with a planned acute care hospital inpatient readmission, Discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission, Discharged/transferred to a designated cancer center or children?s hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission, Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission, Discharged/transferred to a federal health care facility with a planned acute care hospital inpatient readmission, Discharged/transferred to a hospital-based Medicare approved swing bed with a planned acute care hospital inpatient readmission, Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a Medicare certified long term care hospital (LTCH) with a planned acute care hospital inpatient readmission, Discharged/transferred to a psychiatric hospital/distinct part unit of a hospital with a planned acute care hospital inpatient readmission, Discharged/transferred to a critical access hospital (CAH) with a planned acute care hospital inpatient readmission, Discharged/transferred to another type of health care institution not defined elsewhere in this code list with a planned acute care hospital inpatient readmission, Inpatient Cardiac Care Facility, Inpatient Critical Care Facility, Inpatient Intensive Care Facility, Emergency Room - Hospital, Emergency Room Critical Care Facility

where event starts between 0 days Before and 0 days After index start date

Inclusion Criteria #2: Primary diagnosis only

*Primary diagnosis only*

Having all of the following criteria:

* at least 1 occurrences of a condition occurrence of GI bleeding1
  + condition type is any of Inpatient detail - primary, Inpatient detail - primary position, Inpatient header - primary, Inpatient header - primary position, Primary Condition

where event starts between 0 days Before and 0 days After index start date

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. GI bleeding

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 22665 | Chronic peptic ulcer with hemorrhage AND with perforation but without obstruction | Condition | SNOMED | NO | NO | NO |
| 23237 | Acute peptic ulcer with hemorrhage AND obstruction | Condition | SNOMED | NO | NO | NO |
| 23245 | Esophageal bleeding | Condition | SNOMED | NO | NO | NO |
| 24076 | Chronic peptic ulcer with hemorrhage AND obstruction | Condition | SNOMED | NO | NO | NO |
| 24397 | Chronic peptic ulcer with hemorrhage, with perforation AND with obstruction | Condition | SNOMED | NO | NO | NO |
| 26441 | Bleeding ulcer of esophagus | Condition | SNOMED | NO | NO | NO |
| 26727 | Hematemesis | Condition | SNOMED | NO | NO | NO |
| 27026 | Acute peptic ulcer with hemorrhage AND with perforation but without obstruction | Condition | SNOMED | NO | NO | NO |
| 30770 | Chronic peptic ulcer with hemorrhage but without obstruction | Condition | SNOMED | NO | NO | NO |
| 31335 | Acute peptic ulcer with hemorrhage but without obstruction | Condition | SNOMED | NO | NO | NO |

# Outcome: dyspnea

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a condition occurrence of dyspnea1

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **all events per person.**

Limit qualifying cohort to: **all events per person.**

End Date Strategy

Date Offset Exit Criteria

This cohort defintion end date will be the index event's start date plus 1 days

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions

1. dyspnea

| **Concept Id** | **Concept Name** | **Domain** | **Vocabulary** | **Excluded** | **Descendants** | **Mapped** |
| --- | --- | --- | --- | --- | --- | --- |
| 312437 | Dyspnea | Condition | SNOMED | NO | YES | NO |

# Outcome: Death

New Cohort Definition

Initial Event Cohort

People having any of the following: 

* a death occurrence from Any Death

with continuous observation of at least 0 days prior and 0 days after event index date, and limit initial events to: **earliest event per person.**

Limit qualifying cohort to: **earliest event per person.**

End Date Strategy

No end date strategy selected. By default, the cohort end date will be the end of the observation period that contains the index event.

Cohort Collapse Strategy:

Collapse cohort by era with a gap size of 0 days.

Appendix 1: Concept Set Definitions