

## **SUPPLEMENTAL MATERIAL**

**Quality of care for secondary cardiovascular disease prevention in 2009-2017:  
population-wide cohort study of antiplatelet therapy use in Scotland**

## TABLES

**Table A** Overview of the four linked NHS Scotland datasets used in this study

| <b>Dataset</b>                               | <b>Examples of information included</b>   |
|--|---|
| General/Acute Inpatient and Day Case (SMR01) | <p>Contains episode-level data on inpatient and day case discharges and covers all individuals (residents and non-residents of Scotland) who receive care in non-obstetric, non-psychiatric NHS general acute specialties and hospitals.</p> <p>Each episode contains information on diagnoses using International Classification of Diseases (ICD) codes, operations and procedures, as well as patient and hospital details, such as patient demographics, episode management, socio-economic and geographical information.</p> |
| Mental Health Inpatient and Day Case (SMR04) | <p>Contains episode-level data on individuals admitted to care in NHS hospital mental health specialties and psychiatric hospitals.</p> <p>Each episode contains information on diagnoses using International Classification of Diseases (ICD) codes, as well as patient and hospital details, such as patient demographics, episode management.</p>  |
| National Records of Scotland (NRS deaths)    | Contains death-related information (date of death, age and specific causes of death classified under ICD-10)  |
| Prescribing Information System (PIS)         | Contains general information on all medicines that were both prescribed and dispensed in the community (i.e., primary care) in Scotland (e.g., information on prescribed items such as formulation code, strength, dose instructions, quantity prescribed; details of the prescribing individuals, practice and dispenser: list size of practice, geographical location). It does not contain information on medicines that were prescribed but not dispensed.  |

**Table B** Overview of the definitions of atherosclerotic cardiovascular disease types by International Classification of Diseases Revision 10 code

| <b>ASCVD Type</b>           | <b>ICD-10 codes</b>   |
|-----------------------------|---|
| Total ASCVD                 | I20-25, I63- 67, I70-71, and I73.9 recorded in the primary diagnostic field             |
| Myocardial infarction       | I21-I22 and min. 1 day hospital length of stay recorded in the primary diagnostic field |
| Ischaemic stroke            | I63-I64 and min. 1 day hospital length of stay recorded in the primary diagnostic field |
| Peripheral arterial disease | I71, I73.9 recorded in the primary diagnostic field                                     |
| Other ASCVD                 | I20, I23, I24, I25.0-1, I25.8-9, I65-I67, I70 recorded in the primary diagnostic field  |
| Atrial fibrillation         | I48X recorded in the primary and secondary diagnostic fields                            |

ASCVD: atherosclerotic cardiovascular disease; ICD-10: International Classification of Diseases Revision 10.

**Table C** Overview of Anatomical Therapeutic Chemical and British National Formulary codes for antiplatelet therapies

| <b>Antiplatelet</b>    | <b>ATC code</b> | <b>BNF Code</b> |
|------------------------|-----------------|-----------------|
| Aspirin                | N02BA01         | 0209000A0       |
| Clopidogrel            | B01AC04         | 0209000C0       |
| Dipyridamole           | B01AC07         | 0209000L0       |
| Dipyridamole & Aspirin | B01AC30         | 0209000V0       |
| Prasugrel              | B01AC22         | 0209000Y0       |
| Ticagrelor             | B01AC24         | 0209000Z0       |

ATC: Anatomical Therapeutic Chemical; BNF: British National Formulary

**Table D** Detailed overview of the list of conditions and associated International Classification of Diseases Revision 10 codes included in the Charlson Comorbidity Index

| <b>Condition included in the Charlson Comorbidity Index</b>                            | <b>ICD-10 code</b>  |
|--|---|
| 1. AIDS/HIV  | B20.X - B22.X, B24.X  |
| 2. Any malignancy, including lymphoma and leukaemia, except malignant neoplasm of skin | C00.X - C26.X, C30.X - C34.X, C37.X - C41.X, C43. X, C45. X - C58.X, C60. X - C76.X, C81.X - C85.X, C88.X, C90.X - C97.X  |
| 3. Cerebrovascular disease   | G45.X, G46.X, H34.0, I60.X - I69.X  |
| 4. Chronic pulmonary disease   | I27.8, I27.9, J40.X - J47.X, J60.X - J67.X, J68.4, J70.1, J70.3   |
| 5. Congestive heart failure  | I09.9, I11.0, I13.0, I13.2, I25.5, I42.0, I42.5 - I42.9, I43.X, I50.X, P29.0  |
| 6. Dementia  | F00.X - F03.X, F05.1, G30.X, G31.1  |
| 7. Diabetes without chronic complication   | E10.0, E10.1, E10.6, E10.8, E10.9, E11.0, E11.1, E11.6, E11.8, E11.9, E12.0, E12.1, E12.6, E12.8, E12.9, E13.0, E13.1, E13.6, E13.8, E13.9, E14.0, E14.1, E14.6, E14.8, E14.9 |
| 8. Diabetes with chronic complication  | E10.2 - E10.5, E10.7, E11.2 - E11.5, E11.7, E12.2 - E12.5, E12.7, E13.2 - E13.5, E13.7, E14.2 - E14.5, E14.7  |
| 9. Hemiplegia or paraplegia  | G04.1, G11.4, G80.1, G80.2, G81.X, G82.X, G83.0 - G83.4, G83.9  |
| 10. Metastatic solid tumour  | C77.X - C80.X   |
| 11. Mild liver disease   | B18.X, K70.0 - K70.3, K70.9, K71.3 - K71.5, K71.7, K73.X, K74.X, K76.0, K76.2 - K76.4, K76.8, K76.9, Z94.4  |
| 12. Moderate or severe liver disease   | I85.0, I85.9, I86.4, I98.2, K70.4, K71.1, K72.1, K72.9, K76.5, K76.6, K76.7   |
| 13. Myocardial infarction  | I21.X, I22.X, I25.2   |
| 14. Peptic ulcer disease   | K25.X - K28.X   |
| 15. Peripheral vascular disease  | I70.X x, I71.X, I73.1, I73.8, I73.9, I77.1, I79.0, I79.2, K55.1, K55.8, K55.9, Z95.8, Z95.9   |
| 16. Renal disease  | I12.0, I13.1, N03.2 - N03.7, N05.2 - N05.7, N18.X, N19.X, N25.0, Z49.0 - Z49.2, Z94.0, Z99.2  |
| 17. Rheumatic disease  | M05.X, M06.X, M31.5, M32.X - M34.X, M35.1, M35.3, M36.0   |

ICD-10: International Classification of Diseases Revision 10.

**Table E** Baseline characteristics of individuals hospitalised for an atherosclerotic cardiovascular disease-related event at index discharge

|   | <b>Total ASCVD</b> |
|---|--------------------|
| <b>N</b>  | 150,728            |
| <b>Age on discharge, years (mean, SD)</b>   | 66.5 (12.7)        |
| <b>Female</b>   | 58,321 (38.7)      |
| <b>Ethnic group</b>   |                    |
| White   | 128,323 (85.0)     |
| Other   | 2,250 (1.5)        |
| Missing   | 20,246 (13.5)      |
| <b>SIMD deprivation quintile (2009) <sup>a</sup></b>  |                    |
| 5 (least deprived)  | 23,149 (15.4)      |
| 4   | 27,507 (18.3)      |
| 3   | 30,858 (20.4)      |
| 2   | 33,527 (22.2)      |
| 1 (most deprived)   | 35,687 (23.7)      |
| <b>ASCVD-related hospitalisation prior to 1 October 2009</b>  | 58,238 (39.0)      |
| <b>Charlson Comorbidity Index (within 12 months prior and incl. index event)</b>                                      |                    |
| 0 (no-comorbidities) <sup>b</sup>   | 28,962 (19.2)      |
| 1   | 70,225 (46.6)      |
| 2   | 29,389 (19.5)      |
| 3   | 12,558 (8.3)       |
| 4 or more comorbidities   | 9,594 (6.4)        |
| <b>Mental health inpatient/day case within 12 months prior to index admission</b>                                     | 2,692 (1.8)        |
| <b>At least one antiplatelet prescription in last 12 months prior to index admission <sup>c</sup></b>                 | 77,392 (51.3)      |
| <b>ASCVD Type</b>   |                    |
| MI  | 45,841 (30.4)      |
| Stroke  | 26,867 (17.8)      |
| PAD   | 14,307 (9.5)       |
| Other ASCVD   | 63,713 (42.3)      |
| <b>Deaths recorded in the time period between the index discharge date and the study end date on 31 December 2017</b> |                    |
| Total (%)   | 34,257 (23)        |
| <b>Time to death in days (months) since index discharge (% of all deaths)</b>   |                    |
| 0-150 days (0-4.9 months)   | 0                  |
| 151-365 days (5-12 months)  | 6,101 (18)         |
| 366-730 days (13-24 months)   | 7,625 (22)         |
| 731-1095 days (25-36 months)  | 6,247 (18)         |

|                               | <b>Total ASCVD</b> |
|-------------------------------|--------------------|
| 1096-1461 days (37-48 months) | 5,036 (15)         |
| 1462-1826 days (49-60 months) | 3,838 (11)         |
| 1827-2191 days (61-72 months) | 2,813 (8)          |
| 2192-2556 days (73-84 months) | 1,746 (5)          |
| 2557-2992 days (85-96 months) | 851 (2)            |

ASCVD: atherosclerotic cardiovascular disease; APT: antiplatelet therapy; CCI: Charlson Comorbidity Index; MI: myocardial infarction; PAD: peripheral arterial disease; SD: standard deviation; SIMD: Scottish Index of Multiple Deprivation.

<sup>a</sup> SIMD is a relative measure of deprivation across Scottish data zones.

<sup>b</sup> Absence of comorbidities as defined by CCI: in the case of the total ASCVD and other ASCVD populations, this means that individuals were not hospitalised for any of the 17 specified conditions. In the case of the MI, stroke and PAD populations, every individual has at least one CCI comorbidity, their index condition (i.e., MI, stroke or PAD), thus absence of comorbidity is not applicable (N/A).

<sup>c</sup> For individuals with index hospitalisations in 2009, information on prior medication use is available from 1 April 2009 and onward, thereby contributing a minimum of 6 months and up to 12 months of medication history. For all discharges recorded after 1 April 2010, medication history is available for 12 months prior to index admission.

*Note:* The following characteristics were assessed: sex (male, female), age group at index event date ( $\leq 49$ , 50-59, 60-69, 70-79, 80-89,  $\geq 90$  years), deprivation quintiles based on the SIMD (where 1 indicates most deprived and 5, least deprived) (11), CCI (defined as the number of comorbidities reported in the hospital admissions data within the 12 months prior to and including index admission discharge, where 'no comorbidities' is defined as the absence of 17 specified medical conditions (see **Supplements, Table D**): no comorbidities, 1, 2, 3, or  $\geq 4$  comorbidities), inpatient or outpatient admission to a mental health specialty or psychiatric hospital within 12 months prior to index ASCVD admission (yes, no), history of any previous ASCVD event and/or previous antiplatelet therapy use in the last 12 months prior to index ASCVD admission (no history of ASCVD and no prior use of APT; history of ASCVD and no prior use of APT; no history of ASCVD and prior use of APT; and history of ASCVD and prior use of APT), and discharge calendar year (2009-2011, 2012-2014, 2015-2017).

**Table F** Participant characteristics of antiplatelet therapy initiators and non-initiators at index admission discharge, total atherosclerotic cardiovascular disease and by atherosclerotic cardiovascular disease type

| APT initiation, results presented in %          | Total ASCVD       |                  | MI               |                | Ischaemic stroke |                 | PAD             |                 | Other ASCVD      |                  |
|---|-------------------|------------------|------------------|----------------|------------------|-----------------|-----------------|-----------------|------------------|------------------|
|   | Yes               | No               | Yes              | No             | Yes              | No              | Yes             | No              | Yes              | No               |
| <b>Total number (%)</b>                         | 126,338<br>(83.8) | 24,390<br>(16.2) | 42,943<br>(93.7) | 2,898<br>(6.3) | 22,303<br>(83.0) | 4,564<br>(17.0) | 9,729<br>(68.0) | 4,578<br>(32.0) | 51,363<br>(80.6) | 12,350<br>(19.4) |
| <b>Age on discharge, years</b> (mean, SD)       | 66.3 (12.4)       | 67.5 (14.2)      | 64.6 (13.3)      | 70.4 (14.8)    | 68.9 (13.4)      | 71.8 (16.1)     | 68.6 (10.9)     | 67.6 (13.4)     | 66.1 (11.1)      | 65.5 (13.7)      |
| <b>Hospital length of stay, days</b> (mean, SD) | 6.3 (11.4)        | 9.1 (16.0)       | 6.0 (6.9)        | 10.3 (12.1)    | 14.3 (18.9)      | 21.4 (23.1)     | 8.1 (13.1)      | 9.2 (13.4)      | 2.7 (7.1)        | 3.8 (10.0)       |
| <b>Female</b>                                   | 37.4              | 45.3             | 34.2             | 42.5           | 46.6             | 51.8            | 35.0            | 35.7            | 36.6             | 47.1             |
| <b>Ethnic group</b>                             |                   |                  |                  |                |                  |                 |                 |                 |                  |                  |
| White   | 85.0              | 85.3             | 85.3             | 85.7           | 84.7             | 85.7            | 86.7            | 86.2            | 84.6             | 84.8             |
| Other   | 1.5               | 1.3              | 1.7              | 2.1            | 1.0              | 0.9             | 0.4             | 0.5             | 1.8              | 1.6              |
| Missing   | 13.5              | 13.3             | 13.0             | 12.3           | 14.3             | 13.4            | 12.9            | 13.3            | 13.6             | 13.6             |
| <b>SIMD quintile (2009)<sup>1</sup></b>         |                   |                  |                  |                |                  |                 |                 |                 |                  |                  |
| 5 (least deprived)                              | 15.4              | 15.4             | 15.2             | 13.8           | 14.9             | 15.6            | 12.9            | 14.1            | 16.1             | 16.1             |
| 4   | 18.3              | 17.8             | 18.5             | 15.7           | 17.6             | 16.4            | 18.2            | 19.2            | 18.6             | 18.3             |
| 3   | 20.5              | 20.3             | 20.5             | 20.3           | 19.8             | 19.7            | 21.1            | 20.7            | 20.7             | 20.3             |
| 2   | 22.3              | 22.2             | 22.1             | 22.1           | 22.5             | 22.7            | 24.5            | 22.9            | 21.8             | 21.8             |
| 1 (most deprived)                               | 23.6              | 24.3             | 23.7             | 28.1           | 25.2             | 25.6            | 23.3            | 23.1            | 22.7             | 23.4             |
| <b>Urban-Rural Classification<sup>2</sup></b>   |                   |                  |                  |                |                  |                 |                 |                 |                  |                  |
| Large urban areas                               | 31.5              | 34.9             | 32.0             | 39.9           | 32.7             | 37.1            | 27.3            | 29.6            | 31.4             | 34.9             |
| Other urban areas                               | 9.7               | 8.8              | 9.9              | 8.3            | 9.7              | 8.1             | 9.6             | 9.4             | 9.5              | 8.9              |
| Accessible small towns                          | 4.1               | 3.9              | 4.0              | 3.8            | 3.9              | 4.2             | 4.9             | 3.7             | 4.1              | 3.9              |
| Remote small towns                              | 11.6              | 10.9             | 11.7             | 9.0            | 11.1             | 9.9             | 12.2            | 12.7            | 11.6             | 11.0             |
| Accessible rural                                | 6.7               | 6.3              | 6.4              | 4.9            | 6.1              | 5.6             | 7.6             | 6.4             | 7.0              | 6.8              |
| Remote rural                                    |                   |                  |                  |                |                  |                 |                 |                 |                  |                  |

<sup>1</sup> SIMD is a relative measure of deprivation across Scottish data zones.<sup>2</sup> Scottish Government Urban Rural Classification: (1) Large urban areas: settlements of 125,000 or more people; (2) Other urban areas: settlements of 10,000 to 124,999 people; (3) Accessible small towns: settlements of 3,000 to 9,999 people and within 30 minutes' drive of a settlement of 10,000 or more; (4) Remote small towns: settlements of 3,000 to 9,999 people and a drive time of over 30 minutes to a settlement of 10,000 or more; (5) Accessible rural: Areas with a population of less than 3,000 people, and within a 30 minute drive time from a settlement of 10,000 or more; (6) Remote rural: Areas with a population of less than 3,000 people, and with a drive time of over 30 minutes to a settlement of 10,000 or more.

| APT initiation, results presented in %  | Total ASCVD |                | MI          |                | Ischaemic stroke |                | PAD         |                | Other ASCVD |                |
|---|-------------|----------------|-------------|----------------|------------------|----------------|-------------|----------------|-------------|----------------|
|   | Yes         | No             | Yes         | No             | Yes              | No             | Yes         | No             | Yes         | No             |
| <b>Charlson Comorbidity Index</b>   | 9.7         | 8.8            | 9.9         | 8.3            | 9.7              | 8.1            | 9.6         | 9.4            | 9.5         | 8.9            |
| 0 (no-comorbidities) <sup>3</sup>   | 18.7        | 22.1           | N/A         | N/A            | N/A              | N/A            | N/A         | N/A            | 45.9        | 43.6           |
| 1   | 47.2        | 43.5           | 55.2        | 39.7           | 58.7             | 54.6           | 64.7        | 62.7           | 32.2        | 33.2           |
| 2   | 20.0        | 16.9           | 27.5        | 27.6           | 22.7             | 22.6           | 17.6        | 16.6           | 13.0        | 12.4           |
| 3   | 8.2         | 9.3            | 9.9         | 16.5           | 10.9             | 12.7           | 9.7         | 10.2           | 5.2         | 5.9            |
| 4 or more comorbidities   | 6.0         | 8.2            | 7.4         | 16.2           | 7.8              | 10.1           | 8.0         | 10.4           | 3.7         | 4.8            |
| <b>Mental health inpatient/day case 12 months prior to index admission</b>                              | 1.6         | 3.0            | 1.3         | 4.0            | 2.2              | 4.6            | 1.1         | 1.8            | 1.5         | 2.7            |
| <b>ASCVD history and APT prescription 12 months prior to index admission<sup>4</sup></b>                |             |                |             |                |                  |                |             |                |             |                |
| No ASCVD hospitalisation + no APT use   | 39.6        | 41.0           | 61.5        | 43.3           | 54.2             | 48.1           | 15.9        | 40.3           | 19.5        | 38.2           |
| ASCVD hospitalisation + no APT use  | 6.5         | 21.0           | 8.0         | 16.1           | 8.5              | 16.8           | 5.6         | 26.3           | 4.4         | 21.7           |
| No ASCVD hospitalisation + APT use  | 22.6        | 15.6           | 10.3        | 11.9           | 16.2             | 14.6           | 32.7        | 13.6           | 33.9        | 17.6           |
| ASCVD hospitalisation + APT use   | 31.3        | 22.4           | 20.2        | 28.6           | 21.2             | 20.5           | 45.9        | 19.8           | 42.2        | 22.5           |
| <b>Time to first primary care level prescription since index discharge, days (mean, SD)<sup>5</sup></b> | 18.2 (17.8) | Not applicable | 14.1 (13.7) | Not applicable | 16.0 (16.5)      | Not applicable | 25.9 (22.0) | Not applicable | 21.2 (19.5) | Not applicable |
| <b>Time from prescription to dispense, days (mean, SD)</b>  | 11.5 (13.4) |                | 11.1 (13.0) |                | 12.7 (14.8)      |                | 11.5 (13.4) |                | 11.2 (13.0) |                |

APT: antiplatelet therapy; ASCVD: atherosclerotic cardiovascular disease; CCI: Charlson Comorbidity Index; MI: myocardial infarction; PAD: peripheral arterial disease; SD: standard deviation.

<sup>3</sup> Absence of comorbidities as defined by CCI: in the case of the total ASCVD and other ASCVD populations, this means that individuals were not hospitalised for any of the 17 specified conditions. In the case of the MI, stroke and PAD populations, every individual has at least one CCI comorbidity, their index condition (i.e., MI, stroke or PAD), thus absence of comorbidity is not applicable (N/A).

<sup>4</sup> For individuals with index hospitalisations in 2009, information on prior medication use is available from 1 April 2009 and onward, thereby contributing a minimum of 6 months and up to 12 months of medication history. For all discharges recorded after 1 April 2010, medication history is available for 12 months prior to index admission.

<sup>5</sup> Please note that this statistic only includes individuals who initiated the prescribed treatment, as the Prescribing Information System (PIS) data do not contain prescribing information for patients who were not dispensed treatment.



**Table G** Characteristics of patients who did and did not discontinue antiplatelet therapy, total atherosclerotic cardiovascular disease and by atherosclerotic cardiovascular disease type

| APT discontinuation, results presented in %      | Total ASCVD      |                  | MI              |                  | Ischaemic stroke |                  | PAD             |                 | Other ASCVD      |                  |
|--|------------------|------------------|-----------------|------------------|------------------|------------------|-----------------|-----------------|------------------|------------------|
|  | Yes              | No               | Yes             | No               | Yes              | No               | Yes             | No              | Yes              | No               |
| <b>Total number (%)</b>                          | 28,343<br>(22.4) | 97,995<br>(77.6) | 8,039<br>(18.7) | 34,904<br>(81.3) | 5,355<br>(24.0)  | 16,948<br>(76.0) | 2,690<br>(27.7) | 7,039<br>(72.3) | 12,259<br>(23.9) | 39,104<br>(76.1) |
| <b>Time to discontinuation</b><br>(mean, SD)     | 2.0 (1.7)        | Not applicable   | 2.1 (1.7)       | Not applicable   | 1.8 (1.7)        | Not applicable   | 1.9 (1.8)       | Not applicable  | 2.0 (1.8)        | Not applicable   |
| <b>Age on discharge</b> , in years<br>(mean, SD) | 67.7 (12.9)      | 65.8 (12.2)      | 67.2 (14.2)     | 64.0 (13.0)      | 70.1 (13.8)      | 68.6 (13.2)      | 69.2 (11.7)     | 68.4 (10.5)     | 66.7 (11.8)      | 65.8 (10.9)      |
| <b>Female</b>                                    | 40.9             | 36.4             | 38.6            | 33.1             | 48.0             | 46.2             | 35.7            | 34.8            | 40.4             | 35.4             |
| <b>Ethnic group</b>                              |                  |                  |                 |                  |                  |                  |                 |                 |                  |                  |
| White  | 86.4             | 84.6             | 87.0            | 84.9             | 86.1             | 84.2             | 87.7            | 86.3            | 85.8             | 84.2             |
| Other  | 1.7              | 1.5              | 1.9             | 1.6              | 1.1              | 0.9              | 0.3             | 0.4             | 2.1              | 1.8              |
| Missing  | 11.9             | 13.9             | 11.1            | 13.4             | 12.8             | 14.8             | 12.0            | 13.3            | 12.2             | 14.0             |
| <b>SIMD quintile (2009)<sup>6</sup></b>          |                  |                  |                 |                  |                  |                  |                 |                 |                  |                  |
| 5 (least deprived)                               | 15.4             | 15.3             | 14.8            | 15.3             | 15.8             | 14.7             | 12.8            | 12.9            | 16.2             | 16.1             |
| 4  | 18.5             | 18.3             | 18.3            | 18.5             | 18.0             | 17.4             | 17.5            | 18.5            | 19.0             | 18.5             |
| 3  | 21.2             | 20.3             | 20.9            | 20.4             | 19.9             | 19.8             | 22.6            | 20.5            | 21.7             | 20.4             |
| 2  | 22.2             | 22.3             | 22.4            | 22.1             | 22.7             | 22.4             | 23.2            | 25.0            | 21.5             | 21.9             |
| 1 (most deprived)                                | 22.7             | 23.8             | 23.6            | 23.8             | 23.6             | 25.7             | 23.9            | 23.1            | 21.6             | 23.1             |
| <b>Urban-Rural Classification<sup>7</sup></b>    |                  |                  |                 |                  |                  |                  |                 |                 |                  |                  |
| Large urban areas                                | 32.5             | 31.3             | 34.1            | 31.6             | 33.8             | 32.4             | 26.1            | 27.7            | 32.2             | 31.1             |
| Other urban areas                                | 34.5             | 37.1             | 33.8            | 36.7             | 33.8             | 37.4             | 39.8            | 38.1            | 34.0             | 37.2             |
| Accessible small towns                           | 9.3              | 9.8              | 9.3             | 10.0             | 9.2              | 9.6              | 9.1             | 9.8             | 9.2              | 9.6              |
| Remote small towns                               | 4.5              | 3.9              | 4.5             | 3.8              | 4.2              | 3.9              | 5.3             | 4.7             | 4.5              | 4.0              |
| Accessible rural                                 | 11.6             | 11.5             | 11.1            | 11.8             | 11.7             | 10.9             | 11.2            | 12.5            | 11.9             | 11.5             |

<sup>6</sup> SIMD is a relative measure of deprivation across Scottish data zones.

<sup>7</sup> Scottish Government Urban Rural Classification: (1) Large urban areas: settlements of 125,000 or more people; (2) Other urban areas: settlements of 10,000 to 124,999 people; (3) Accessible small towns: settlements of 3,000 to 9,999 people and within 30 minutes' drive of a settlement of 10,000 or more; (4) Remote small towns: settlements of 3,000 to 9,999 people and a drive time of over 30 minutes to a settlement of 10,000 or more; (5) Accessible rural: Areas with a population of less than 3,000 people, and within a 30 minute drive time from a settlement of 10,000 or more; (6) Remote rural: Areas with a population of less than 3,000 people, and with a drive time of over 30 minutes to a settlement of 10,000 or more.

| APT discontinuation, results presented in %   | Total ASCVD |      | MI   |      | Ischaemic stroke |      | PAD  |      | Other ASCVD |      |
|---|-------------|------|------|------|------------------|------|------|------|-------------|------|
|   | Yes         | No   | Yes  | No   | Yes              | No   | Yes  | No   | Yes         | No   |
| Remote rural  | 7.6         | 6.4  | 7.2  | 6.2  | 6.4              | 6.0  | 8.5  | 7.3  | 8.2         | 6.6  |
| <b>Charlson Comorbidity Index</b>   |             |      |      |      |                  |      |      |      |             |      |
| 0 (no-comorbidities) <sup>8</sup>   | 20.4        | 18.2 | N/A  | N/A  | N/A              | N/A  | N/A  | N/A  | 47.1        | 45.5 |
| 1   | 44.2        | 48.1 | 48.2 | 56.8 | 58.3             | 58.8 | 64.5 | 64.7 | 30.9        | 32.5 |
| 2   | 19.5        | 20.2 | 28.8 | 27.2 | 21.9             | 22.9 | 17.0 | 17.9 | 12.8        | 13.1 |
| 3   | 8.8         | 8.0  | 12.5 | 9.3  | 11.2             | 10.8 | 9.9  | 9.7  | 5.1         | 5.2  |
| 4 or more comorbidities   | 7.2         | 5.7  | 10.6 | 6.7  | 8.6              | 7.5  | 8.6  | 7.7  | 4.0         | 3.6  |
| <b>Mental health inpatient/day case 12 months prior to index admission</b>                      | 2.7         | 1.2  | 2.6  | 1.1  | 3.5              | 1.8  | 1.8  | 0.9  | 2.6         | 1.2  |
| <b>ASCVD history and APT prescription in the 12 months prior to index admission<sup>9</sup></b> |             |      |      |      |                  |      |      |      |             |      |
| No ASCVD hospitalisation + no APT   | 35.3        | 37.4 | 52.3 | 57.0 | 49.7             | 49.9 | 18.4 | 14.1 | 21.6        | 18.5 |
| No ASCVD hospitalisation + APT use  | 8.7         | 7.3  | 11.8 | 16.6 | 17.0             | 21.6 | 7.1  | 6.9  | 6.5         | 6.3  |
| ASCVD hospitalisation + no APT use  | 22.9        | 26.1 | 11.7 | 7.8  | 9.8              | 9.0  | 31.8 | 33.8 | 30.8        | 35.2 |
| ASCVD hospitalisation + APT use   | 33.1        | 29.2 | 24.2 | 18.6 | 23.5             | 19.5 | 42.7 | 45.2 | 41.1        | 40.0 |

APT: antiplatelet therapy; ASCVD: atherosclerotic cardiovascular disease; Charlson Comorbidity Index; MI: myocardial infarction; PAD: peripheral arterial disease; SD: standard deviation.

<sup>8</sup> Absence of comorbidities as defined by CCI: in the case of the total ASCVD and other ASCVD populations, this means that individuals were not hospitalised for any of the 17 specified conditions. In the case of the MI, stroke and PAD populations, every individual has at least one CCI comorbidity, their index condition (i.e. MI, stroke or PAD), thus absence of comorbidity is not applicable (N/A).

<sup>9</sup> For individuals with index hospitalisations in 2009, information on prior medication use is available from 1 April 2009 and onward, thereby contributing a minimum of 6 months and up to 12 months of medication history. For all discharges recorded after 1 April 2010, medication history is available for 12 months prior to index admission.

**Table H** Associations of patient characteristics with antiplatelet therapy initiation among individuals with atherosclerotic cardiovascular disease, by atherosclerotic cardiovascular disease type (multivariable logistic regression models)

|   | MI      |           | Ischaemic stroke |           | PAD     |           | Other ASCVD |           |
|---|---------|-----------|------------------|-----------|---------|-----------|-------------|-----------|
|   | OR      | 95% CI    | OR               | 95% CI    | OR      | 95% CI    | OR          | 95% CI    |
| <b>Female (vs. male)</b>  | 0.91*   | 0.84-0.99 | 0.89**           | 0.83-0.95 | 1.02    | 0.93-1.11 | 0.69***     | 0.66-0.72 |
| <b>Age (vs. 60-69 years old)</b>  |         |           |                  |           |         |           |             |           |
| <50   | 0.83*   | 0.71-0.96 | 0.59***          | 0.52-0.67 | 0.62*** | 0.53-0.73 | 0.62***     | 0.57-0.66 |
| 50-59 years   | 1.06    | 0.93-1.21 | 0.97             | 0.86-1.10 | 0.88    | 0.77-1.00 | 0.93*       | 0.87-0.99 |
| 70-79 years   | 0.68*** | 0.60-0.76 | 0.73***          | 0.66-0.81 | 0.89*   | 0.80-0.99 | 0.87***     | 0.82-0.92 |
| 80-80 years   | 0.44*** | 0.38-0.49 | 0.54***          | 0.49-0.60 | 0.73*** | 0.64-0.82 | 0.64***     | 0.60-0.69 |
| ≥ 90 years  | 0.26*** | 0.22-0.32 | 0.43***          | 0.36-0.50 | 0.63**  | 0.46-0.86 | 0.52***     | 0.44-0.61 |
| <b>Deprivation quintile (vs. 5, least deprived)</b>                         |         |           |                  |           |         |           |             |           |
| 4   | 1.07    | 0.93-1.24 | 1.13*            | 1.00-1.26 | 1.00    | 0.87-1.15 | 1.04        | 0.96-1.11 |
| 3   | 0.93    | 0.81-1.06 | 1.06             | 0.95-1.18 | 1.09    | 0.95-1.25 | 1.06        | 0.98-1.13 |
| 2   | 0.93    | 0.82-1.07 | 1.04             | 0.93-1.15 | 1.10    | 0.96-1.26 | 1.04        | 0.97-1.12 |
| 1 (most deprived)   | 0.74*** | 0.65-0.85 | 0.99             | 0.89-1.10 | 1.03    | 0.90-1.18 | 1.04        | 0.97-1.11 |
| <b>Charlson Comorbidity Index (vs. no comorbidities)<sup>1</sup></b>        |         |           |                  |           |         |           |             |           |
| 1   | N/A     |           | N/A              |           | N/A     |           | 1.04        | 0.99-1.20 |
| 2   | 0.83*** | 0.75-0.91 | 0.95             | 0.88-1.04 | 0.96    | 0.86-1.06 | 1.08*       | 1.00-1.15 |
| 3   | 0.58*** | 0.51-0.65 | 0.85**           | 0.76-0.94 | 0.85*   | 0.75-0.97 | 0.86**      | 0.78-0.95 |
| 4 or more comorbidities   | 0.49*** | 0.44-0.56 | 0.79***          | 0.70-0.88 | 0.62*** | 0.55-0.72 | 0.74***     | 0.67-0.83 |
| <b>Receiving specialist mental health care</b>                              | 0.38*** | 0.30-0.47 | 0.50***          | 0.42-0.60 | 0.70*   | 0.50-0.97 | 0.64***     | 0.55-0.73 |
| <b>History of prior ASCVD or APT use (vs. no prior ASCVD, no prior APT)</b> |         |           |                  |           |         |           |             |           |
| Prior ASCVD, no prior APT   | 0.49*** | 0.43-0.55 | 0.50***          | 0.46-0.56 | 0.56*** | 0.49-0.63 | 0.41***     | 0.39-0.44 |
| No prior ASCVD, prior APT   | 0.87*   | 0.76-0.99 | 1.09             | 0.99-1.21 | 5.96*** | 5.34-6.66 | 3.63***     | 3.42-3.84 |
| Prior ASCVD, prior APT  | 0.81*** | 0.73-0.90 | 1.07             | 0.98-1.17 | 6.17*** | 5.56-6.85 | 3.83***     | 3.62-4.06 |
| <b>Discharge year (vs. 2009-11)</b>   |         |           |                  |           |         |           |             |           |
| 2012-14   | 1.24*** | 1.13-1.35 | 1.09*            | 1.00-1.17 | 1.27*** | 1.16-1.39 | 1.11***     | 1.05-1.16 |
| 2015-17   | 1.54*** | 1.39-1.71 | 1.27***          | 1.17-1.38 | 1.22*** | 1.11-1.36 | 1.27***     | 1.20-1.34 |

Note: (\*\*\*): p<0.001; (\*\*): p<0.01; (\*): p<0.5; ASCVD: atherosclerotic cardiovascular disease; CI: Confidence Interval; MI: myocardial infarction; OR: Odds Ratio; PAD: peripheral arterial disease; <sup>1</sup> In the case of MI, stroke and PAD, the reference group is 'one comorbidity' as the Charlson Comorbidity Index classifies the presence of these conditions as a comorbidity.

**Table I** Association of patient characteristics with dual-antiplatelet therapy initiation (vs. monotherapy) among individuals with atherosclerotic cardiovascular disease who underwent percutaneous coronary intervention and initiated antiplatelet therapy, excluding individuals who did not initiate treatment (multivariable logistic regression model)

| <b>Percutaneous coronary intervention</b>   |         |           |
|---|---------|-----------|
|   | OR      | 95% CI    |
| <b>Female (vs. male)</b>  | 0.92    | 0.85-1.00 |
| <b>Age (vs. 60-69 years old)</b>  |         |           |
| <50   | 1.22**  | 1.07-1.38 |
| 50-59 years   | 1.03    | 0.94-1.13 |
| 70-79 years   | 0.83*** | 0.75-0.91 |
| 80-89 years   | 0.82*   | 0.70-0.96 |
| ≥ 90 years  | 0.88    | 0.32-2.45 |
| <b>Deprivation quintile (vs. 5, least deprived)</b>   |         |           |
| 4   | 1.03    | 0.92-1.14 |
| 3   | 0.92    | 0.82-1.03 |
| 2   | 0.90    | 0.90-1.00 |
| 1 (most deprived)   | 0.82**  | 0.73-0.92 |
| <b>Charlson Comorbidity Index (vs. no comorbidities)</b>                                      |         |           |
| 1   | 1.71*** | 1.56-1.87 |
| 2   | 1.64*** | 1.48-1.83 |
| 3   | 1.43*** | 1.22-1.67 |
| 4 or more comorbidities   | 1.55*** | 1.26-1.91 |
| <b>Receiving specialist mental health care</b>  | 1.22    | 0.80-1.86 |
| <b>History of prior ASCVD or antiplatelet use (vs. no prior ASCVD, no prior antiplatelet)</b> |         |           |
| Prior ASCVD, no prior APT   | 0.55*** | 0.47-0.64 |
| No prior ASCVD, prior APT   | 0.15*** | 0.14-0.17 |
| Prior ASCVD, prior APT  | 0.13*** | 0.12-0.15 |
| <b>Discharge year (vs. 2009-11)</b>   |         |           |
| 2012-14   | 1.33*** | 1.22-1.45 |
| 2015-17   | 1.63*** | 1.49-1.78 |

Note: (\*\*\*):  $p < 0.001$ ; (\*\*):  $p < 0.01$ ; (\*):  $p < 0.05$ ; APT: antiplatelet therapy; ASCVD: atherosclerotic cardiovascular disease; CI = Confidence Interval; DAPT: dual-antiplatelet therapy; OR: Odds Ratio; PCI: percutaneous coronary intervention.

**Table J** Associations of patient characteristics with antiplatelet therapy discontinuation among individuals with atherosclerotic cardiovascular disease, by atherosclerotic cardiovascular disease type (multivariable Cox proportional hazards models)

|   | MI      |           | Ischaemic stroke |           | PAD     |           | Other ASCVD |           |
|---|---------|-----------|------------------|-----------|---------|-----------|-------------|-----------|
|   | HR      | 95% CI    | HR               | 95% CI    | HR      | 95% CI    | HR          | 95% CI    |
| <b>Female (vs. male)</b>  | 1.08*** | 1.03-1.14 | 1.01             | 0.96-1.07 | 0.99    | 0.91-1.07 | 1.16***     | 1.12-1.20 |
| <b>Age (vs. 60-69 years old)</b>                                      |         |           |                  |           |         |           |             |           |
| <50   | 1.10 *  | 1.02-1.19 | 1.21***          | 1.09-1.36 | 1.25*   | 1.05-1.49 | 1.22***     | 1.13-1.31 |
| 50-59 years   | 0.89**  | 0.83-0.96 | 0.92             | 0.83-1.01 | 1.01    | 0.88-1.15 | 0.96        | 0.91-1.01 |
| 70-79 years   | 1.35*** | 1.27-1.44 | 1.40***          | 1.30-1.51 | 1.27*** | 1.15-1.40 | 1.24***     | 1.19-1.30 |
| 80-80 years   | 1.90*** | 1.77-2.05 | 1.55***          | 1.42-1.68 | 1.74*** | 1.55-1.96 | 1.56***     | 1.47-1.66 |
| ≥ 90 years  | 2.87*** | 2.53-3.49 | 1.82***          | 1.57-2.10 | 2.31*** | 1.74-3.06 | 1.91***     | 1.65-2.22 |
| <b>Deprivation quintile (vs. 5, least deprived)</b>                   |         |           |                  |           |         |           |             |           |
| 4   | 0.99    | 0.92-1.07 | 0.96             | 0.87-1.05 | 0.94    | 0.82-1.09 | 1.24***     | 1.13-1.36 |
| 3   | 1.03    | 0.96-1.11 | 0.89*            | 0.82-0.98 | 1.07    | 0.93-1.22 | 1.01        | 0.93-1.09 |
| 2   | 1.02    | 0.95-1.10 | 0.92             | 0.84-1.00 | 0.95    | 0.83-1.08 | 0.99        | 0.94-1.05 |
| 1 (most deprived)   | 1.03    | 0.96-1.11 | 0.87**           | 0.80-0.95 | 1.08    | 0.95-1.24 | 0.94**      | 0.90-0.98 |
| <b>Charlson Comorbidity Index (vs. no comorbidities)<sup>10</sup></b> |         |           |                  |           |         |           |             |           |
| 1   | N/A     |           | N/A              |           | N/A     |           | 0.94**      | 0.90-0.98 |
| 2   | 1.11*** | 1.05-1.17 | 1.01             | 0.95-1.08 | 1.01    | 0.91-1.12 | 0.99        | 0.94-1.05 |
| 3   | 1.33*** | 1.24-1.43 | 1.08             | 0.99-1.18 | 1.15*   | 1.01-1.31 | 1.01        | 0.93-1.09 |
| 4 or more comorbidities   | 1.66*** | 1.54-1.80 | 1.29***          | 1.16-1.42 | 1.40*** | 1.22-1.61 | 1.24***     | 1.13-1.36 |
| <b>Receiving specialist mental health care</b>                        | 1.77*** | 1.54-2.04 | 1.55***          | 1.34-1.80 | 1.50**  | 1.13-1.99 | 1.71***     | 1.53-1.91 |
| <b>History of prior ASCVD or antiplatelet use (vs. no prior</b>       |         |           |                  |           |         |           |             |           |

<sup>10</sup> Absence of comorbidities as defined by CCI: in the case of the total ASCVD and other ASCVD populations, this means that individuals were not hospitalised for any of the 17 specified conditions within 12 months prior to and including the index admission. In the case of the MI, stroke and PAD populations, every individual has at least one CCI comorbidity, their index condition (i.e., MI, stroke or PAD), thus absence of comorbidity is not applicable (N/A).

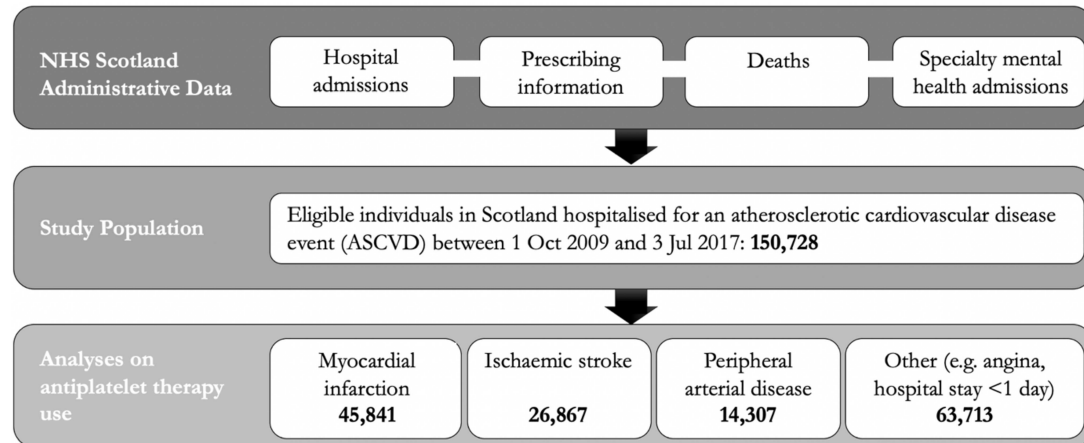
|   | <b>MI</b> |           | <b>Ischaemic stroke</b> |           | <b>PAD</b> |           | <b>Other ASCVD</b> |           |
|---|-----------|-----------|-------------------------|-----------|------------|-----------|--------------------|-----------|
| <b>ASCVD, no prior antiplatelet)<sup>11</sup></b> |           |           |                         |           |            |           |                    |           |
| Prior ASCVD, no prior APT                         | 1.69***   | 1.57-1.83 | 1.30***                 | 1.18-1.43 | 1.11       | 0.94-1.33 | 1.34***            | 1.24-1.46 |
| No prior ASCVD, prior APT                         | 1.12**    | 1.04-1.21 | 1.06                    | 0.98-1.14 | 0.75***    | 0.67-0.84 | 0.76***            | 0.72-0.80 |
| Prior ASCVD, prior APT                            | 1.14***   | 1.07-1.21 | 1.12**                  | 1.05-1.21 | 0.66***    | 0.59-0.73 | 0.70***            | 0.66-0.73 |
| <b>Discharge year (vs. 2009-11)</b>               |           |           |                         |           |            |           |                    |           |
| 2012-14   | 0.92**    | 0.88-0.97 | 1.05                    | 0.99-1.12 | 0.98       | 0.90-1.07 | 0.99               | 0.95-1.03 |
| 2015-17   | 0.82***   | 0.76-0.88 | 0.85***                 | 0.78-0.92 | 0.80**     | 0.71-0.91 | 0.79***            | 0.75-0.84 |

Note: (\*\*): p<0.01; (\*\*): p<0.01; (\*): p<0.5; APT: antiplatelet therapy; ASCVD: atherosclerotic cardiovascular disease; CI: Confidence Interval; HR: Hazard Ratio; MI: myocardial infarction; PAD: peripheral arterial disease.<sup>1</sup>In the case of MI, stroke and PAD the reference group is 'one comorbidity' as the Charlson Comorbidity Index classifies the presence of these conditions as a comorbidity.

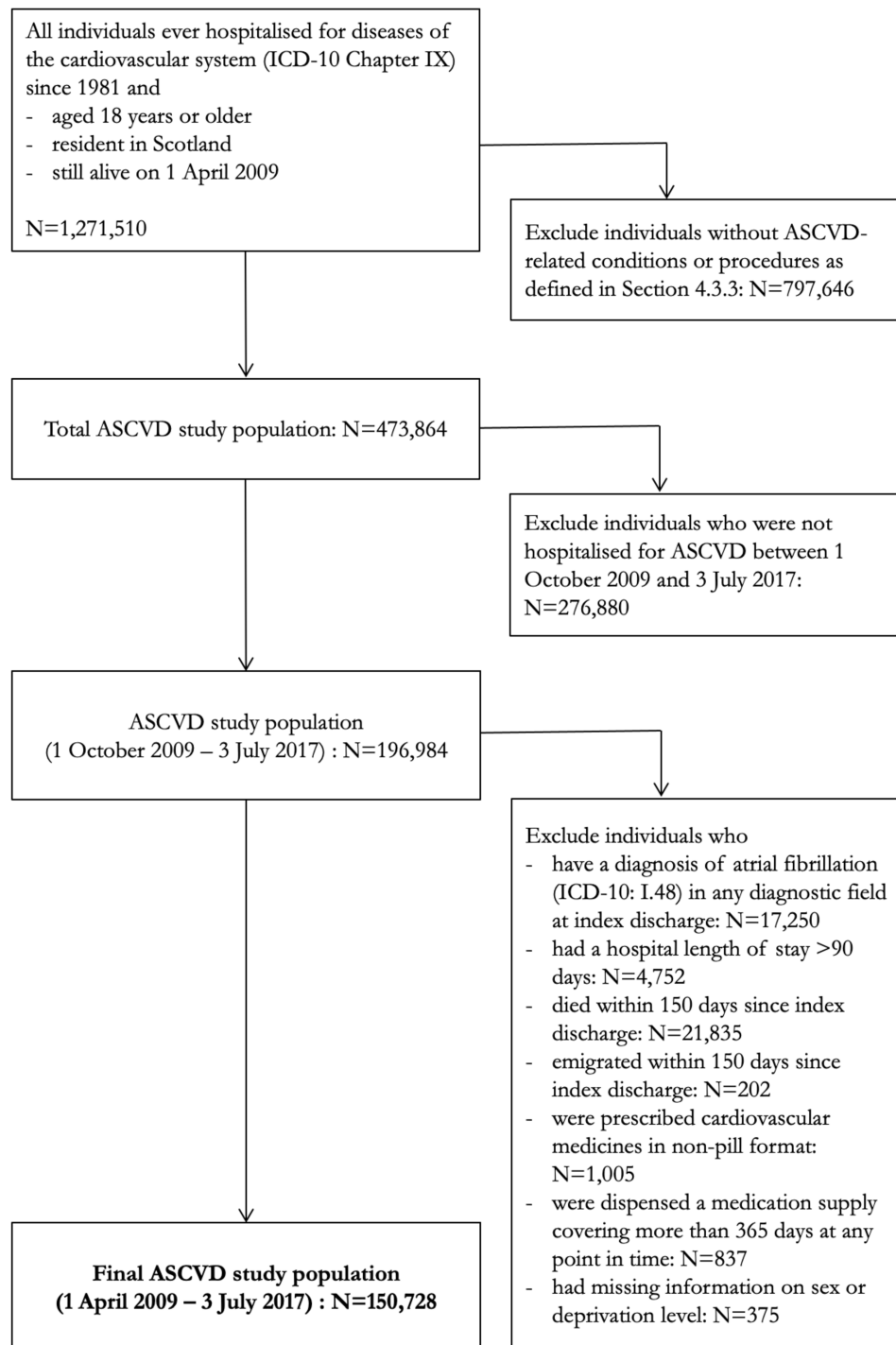
<sup>11</sup> For individuals with index hospitalisations between October 2009 and March 2010, information on prior medication use is available for the 6 to 11 months prior to index admission. For all discharges recorded after 1 April 2010, medication history is available for 12 months prior to index admission.

## FIGURES

**Figure A** Overview of the linkage and study population



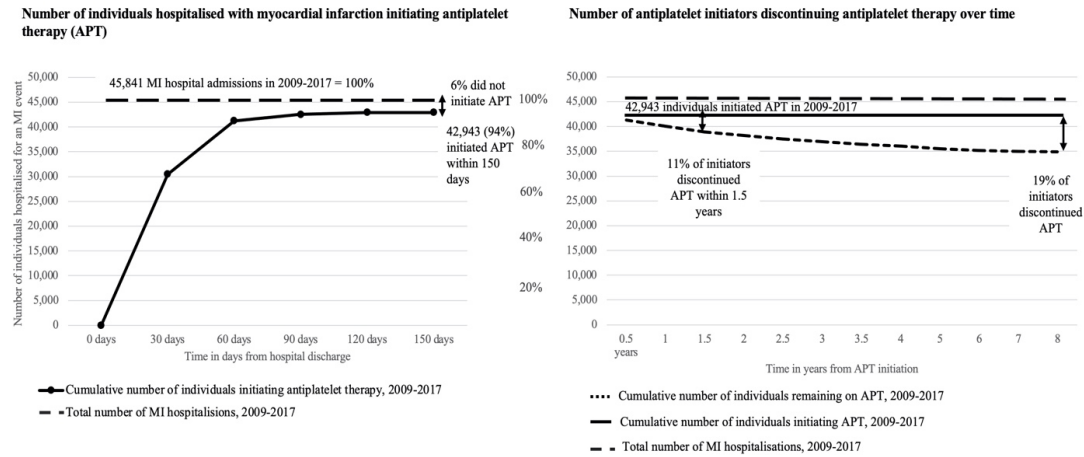
NHS: National Health Service

**Figure B** Flowchart of the study population

ASCVD: atherosclerotic cardiovascular disease; ICD-10: International Classification of Diseases Revision 10.

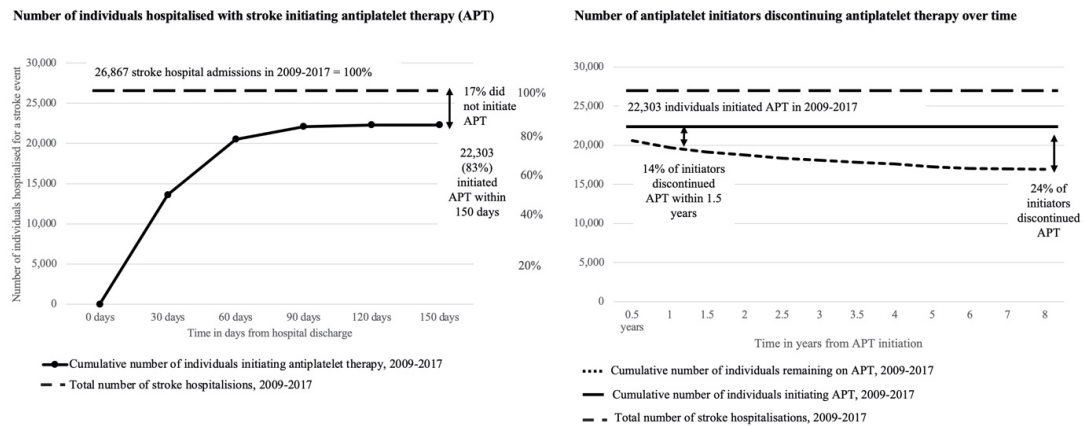


**Figure C** Antiplatelet therapy initiation and discontinuation rates over time following a myocardial infarction event



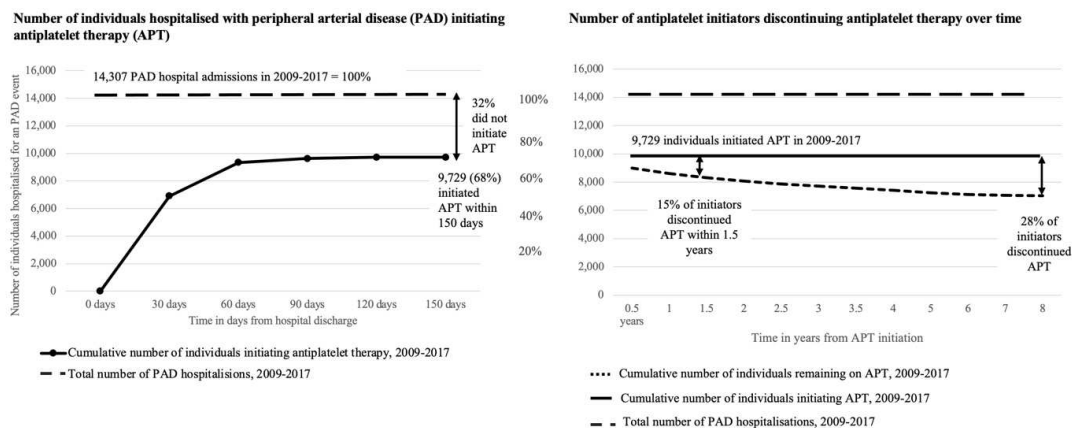
APT: antiplatelet therapy; MI: myocardial infarction

**Figure D** Antiplatelet therapy initiation and discontinuation rates over time following an ischaemic stroke event



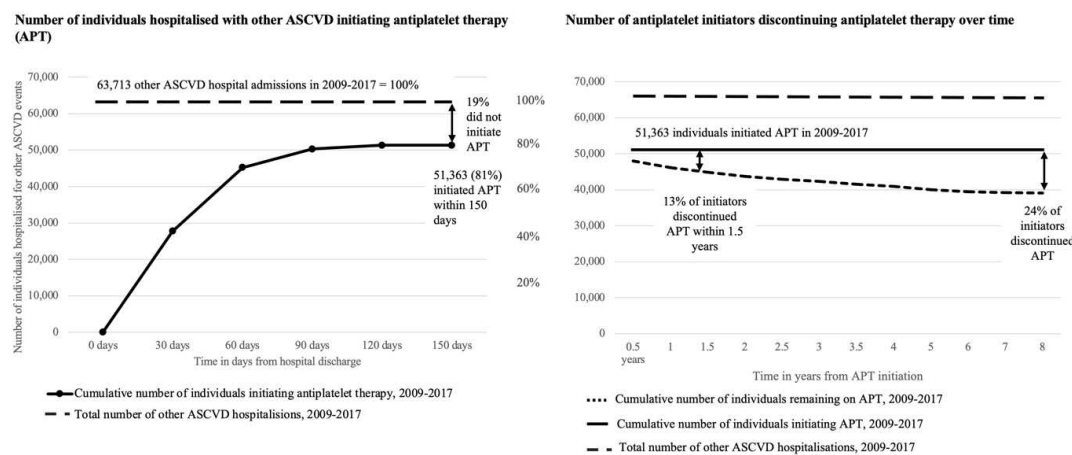
APT: antiplatelet therapy

**Figure E** Antiplatelet therapy initiation and discontinuation rates over time following a peripheral arterial disease event



APT: antiplatelet therapy; PAD: peripheral arterial disease

**Figure F** Antiplatelet therapy initiation and discontinuation rates over time following other ASCVD events



APT: antiplatelet therapy; ASCVD: atherosclerotic cardiovascular disease