**Abstract**

**Objectives** Todetermine: the proportion of older people moving to care homes with a recent stroke, incidence of stroke after moving to a care home, mortality following stroke and secondary stroke prevention management in older care home residents.

**Design** Retrospective cohort study using population-scale individual-level linkeddata sources between 2003 and 2018 in the Secure Anonymised Information Linkage (SAIL) Databank.

**Setting and participants** People aged ≥65 years residing in long-term care homes in Wales.

**Methods** Competing risk models and logistic regression models were used to examine the association between prior stroke, incident stroke and mortality following stroke.

**Results** Of 86,602 individuals, 7.0% (n=6,055) experienced a stroke in the 12-months prior to care home entry. The incidence of stroke within 12-months after entry to a care home was 26.2 per 1000 person-years (95% confidence interval (CI): 25.0, 27.5). Previous stroke was associated with higher risk of incident stroke after moving to a care home (subdistribution Hazard Ratio 1.83, 95% CI: 1.57, 2.13) and 30-day mortality following stroke (Odds Ratio 2.18, 95% CI: 1.59, 2.98). Severe frailty was not significantly associated with risk of stroke or 30-day mortality following stroke. Secondary stroke prevention included statins (50.5%), antiplatelets (61.2%), anticoagulants (52.4% of those with atrial fibrillation) and antihypertensives (92.1% of those with hypertension).

**Conclusions** **and Implications** At the time of care home entry, individuals with history of stroke in the previous 12 months are at a higher risk of incident stroke and mortality following an incident stroke. These individuals are frequently not prescribed medications for secondary stroke prevention. Further evidence is needed to determine the optimal care pathways for older people living in long-term care homes with history of stroke.

**Introduction**

In the UK there are an estimated 421,000 older people (≥65 years) living in care homes.1 Older people living in care homes often have multiple long-term health conditions, polypharmacy, high levels of disability and unmet needs, and may have less access to healthcare services compared to people living in their own homes.2-4 The global age-standardised incidence of stroke declined by 8.1% between 1990 and 2016, and the age-standardised mortality with stroke declined by 36.2%.5 Nevertheless, it is unclear if this trend has also been observed in older adults living in care homes, as these individuals are under-represented in epidemiological studies and clinical trials.

A report from the Sentinel Stroke National Audit Programme (SSNAP) suggested approximately 7% of over 85,000 patients were discharged directly from hospital to care homes for the first-time following stroke in England, Wales and Northern Ireland in 2017, but this figure had declined from 12-15% in previous years.6 Although the SSNAP can provide a national estimate of the proportion of people being discharged directly to a care home following a stroke, the proportion of people with a recent stroke upon care home entry, and incidence of stroke after moving to a care home remains unclear.

People with history of stroke should receive optimal treatment for secondary stroke prevention, and guidelines state that persistence with these treatments for individuals with previous stroke is critical to long-term risk reduction. However, treatment decisions in older adults living in care homes are complex due to a high prevalence of co-morbidities and polypharmacy.

Provision of optimal care for people living in care homes is a recognised health policy challenge worldwide.7 The use of linked routinely collected data are valuable to answer important research questions for this population.8

The objective of this study was to use population-scale individual-level linked routinely collected data sources to determine the proportion of older people moving to care homes with a recent stroke, incidence of stroke after moving to a care home and mortality following stroke in older care home residents. A secondary objective was to examine secondary stroke prevention management in older care home residents.

**Methods**

*Data sources*

The Secure Anonymised Information Linkage (SAIL) Databank is a privacy-protecting trusted research environment (TRE) that holds population-scale individual-level linkable anonymised data sources regarding the health and service utilisation for the population of Wales.9 The SAIL Databank includes secondary care data for the entire population of Wales and primary care data for approximately ~80% of the population.

Care home identifiers in the SAIL Databank have been previously determined using records held by the Care Inspectorate Wales (CIW).10 Each care home was assigned a Residential Anonymous Linking Field (RALF)11 which were linked to the anonymised address data for participants. Care homes with a classification of either care homes for older adults or care homes for older adults with nursing were included. The inclusion criteria for this study were: 1) identified as moving to a care home between 1st January 2003 and 31st December 2018, 2) aged ≥65 years at the date of care home entry, 3) had a minimum of 12-months coverage at a participating general practitioner (GP) prior to the date of entry to a care home.

*Stroke definition*

Stroke (including ischaemic stroke, haemorrhagic stroke or unspecified stroke) in the 12-month period prior to entering a care home was determined from hospital admissions recorded in Patient Episode Database for Wales (PEDW) and GP data sourced from the Welsh Longitudinal General Practice (WLGP). PEDW uses International Classification of Diseases version 10 (ICD-10) codes and WLGP uses Read codes (version 2). Read codes have been used in the National Health Service (NHS) in the UK since 1985, and this extensive list of codes was based on ICD codes and provides a standard vocabulary for healthcare professionals to record patient diagnoses and procedures. All ICD-10 and Read codes used in this study are provided in Table S1 and Table S2.

*Covariates*

Age, sex, Welsh Index of Multiple Deprivation (WIMD) (grouped in to quintiles, with the lowest quintile representing the most deprived postcodes and the highest quintile representing the least deprived postcodes), smoking history, and health conditions including hypertension, diabetes mellitus, renal disease, pulmonary embolism, atrial fibrillation, peripheral vascular disease, myocardial infarction and heart failure were included in statistical models as covariates. Frailty was determined using the electronic Frailty Index (eFI).10 The eFI is based on the internationally established cumulative deficit model, and assigns a frailty score to an individual calculated using 36 variables from primary care data including symptoms, signs, diseases, disabilities and abnormal laboratory values, referred to as deficits.10, 12, 13 Further details are provided in the supplementary methods.

*Outcomes*

Incident stroke after entry to a care home was determined from PEDW or WLGP records, or if stroke was recorded as a cause of death. Date and cause of death were determined from the Annual District Death Extract (ADDE) data sourced from the Office for National Statistics (ONS) mortality register.

*Statistical analyses*

The age and sex-standardised proportions of people entering care homes with stroke by year of entry to a care home (2003-2018) were calculated using direct standardisation based on a recording of ischaemic, haemorrhagic or unspecified stroke within the 12-month period before moving to a care home. Incidence of stroke in the 12-month period after moving to a care home adjusted for age and sex were calculated by year of entry to care home (2003-2017 only to allow for 12-month follow-up). Poisson regression models adjusted for age and sex were used to determine the annual and absolute change in incidence of stroke over time.

Fine-Gray competing risk models were used to estimate subdistribution hazard ratios (sHRs) for the association between stroke in the previous 12-months before care home entry and incident stroke in the 12-months following entry to a care home, with mortality as a competing risk. The only variable with missing data was the Welsh Index of Multiple Deprivation. Individuals with missing data for this variable were excluded from multivariate analyses as the number was <1% of the total number of participants.

For individuals with history of stroke in the 12 months prior to care home entry, the following medicines which can be prescribed for secondary stroke prevention management were examined: antiplatelets, statins, oral anticoagulants and antihypertensives. Antihypertensives included beta-blockers, angiotensin-converting enzyme (ACE) inhibitors, angiotensin receptor blockers (ARBs), calcium channel blockers, thiazide and thiazide-like diuretics, alpha blockers, centrally acting antihypertensives, neprilysin inhibitors and vasodilators. The proportion of individuals who received each type of medicine in the six months before care home entry was reported for any stroke and by type of most recent stroke before care home entry. The odds of receiving each type of medicine was examined by type of most recent stroke recorded (ischaemic, haemorrhagic or unspecified), and ischaemic stroke was the reference group. Prescriptions of medicines were captured using Read codes from the WLGP. All analyses were completed using Stata v.15 (StataCorp, College Station, Texas 77845, USA).

*Ethical approval*

Approval for the use of anonymised data in this study, provisioned within the SAIL Databank was granted by an independent Information Governance Review Panel (IGRP) under project 0912.

**Results**

*Cohort characteristics at the time of moving to a care home*

Between 2003 and 2018, 86,602 people aged ≥65 years became new residents in care homes in Wales and had at least 12-months of primary care data captured within the SAIL Databank prior to care home entry. The median (interquartile range (IQR)) age of the participants was 86.0 (80.8, 90.6) and 63.9% were females (Table 1). Of the total participants, 0.7% (n=644) had missing data for the Welsh Index of Multiple Deprivation.

*Trends in the proportion of people with stroke at time of entry to a care home*

Of the individuals who moved to a care home in Wales between 2003 and 2018, 7.0% (95% CI: 6.8%, 7.2%, n=6,055) had a stroke in the 12-months prior to moving to a care home (4.8% (95% CI: 4.6%, 4.9%, n=4,141) had an ischaemic stroke, 1.1% (95% CI: 1.0%, 1.2%, n=959) had a haemorrhagic stroke and 1.4% (95% CI: 1.3%, 1.5%, n=1,202) had a stroke of unspecified origin).

There was no statistically significant change over time in the annual and absolute proportions of participants with a stroke in the 12-months prior to care home entry [age and sex-standardised estimate 6.2% (95% CI: 5.5%, 6.9%) in 2003 vs. 5.5% (95% CI: 4.9%, 6.1%) in 2018; absolute change 2018 vs. 2003 adjusted for age and sex: -0.6% (95% CI: -1.6%, 0.4%), and annual change adjusted for age and sex: 0.03% (95% CI: -0.1%, 0.1%)] (Figure 1).

*Time between stroke and care home entry*

The median (IQR) number of days between the date of stroke and date of care home entry was 109 days (68-172). There was a statistically significant decline in the number of days between stroke and care home entry over time [median (IQR) 135 (75-197) days in 2003 and 97 (70-150) days in 2018; absolute change 2018 vs. 2003 adjusted for age and sex -25.1 days (95% CI: -38.2, -12.0) and annual change adjusted for age and sex -1.49 days (95% CI -1.95, -1.02) (Figure 2)]. Being in a higher quintile of the WIMD (less deprived) was associated with fewer days between date of stroke and date of care home entry [-2.42 days per increasing quintile (95% CI -3.98, -0.87) after adjusting for covariates].

*Trends in the incidence of stroke after care home entry*

The incidence of stroke within 12-months after entry to a care home was 26.2 per 1000 person-years (95% CI: 25.0, 27.5). The incidence of stroke was 24.6 per 1000 person-years (95% CI: 23.4, 25.9) for people with no prior stroke in the 12-months before care home entry, and the incidence of recurrent stroke was 47.1 per 1000 person-years (95% CI: 41.1, 54.0) for people with prior stroke.

There was no statistically significant change over time in the annual and absolute incidence of stroke in the 12-months after care home entry [age and sex-adjusted incidence 26.4 per 1,000 person-years (95% CI: 21.5, 32.3) in 2003 vs. 26.5 per 1000 person-years (95% CI: 22.0, 32.0) in 2017; incidence rate ratio (IRR) 2017 vs. 2003 adjusted for age and sex: 0.94 (95% CI: 0.72, 1.24) and annual IRR adjusted for age and sex: 0.99 (95% CI: 0.98, 1.00) (Figure 3)].

*Associations between prior stroke and incident stroke and mortality*

Mortality within 12-months of entry to a care home was similar for individuals entering a care home with and without history of stroke in the previous 12 months before care home entry (36.0% vs. 34.8%). Of the 1,653 individuals who experienced an incident stroke within 12-months of entry to a care home, 30-day mortality after the stroke was 49.3% (95% CI: 46.9%, 51.7%, n=815). Stroke in the 12 months prior to care home entry was significantly associated with both a higher risk of incident stroke after care home entry (adjusted sHR 1.83 95% CI: 1.57, 2.13), and 30-day mortality after incident stroke [65.2% (95% CI: 58.4%, 71.7%, n=137) vs. 47.0% (95% CI: 44.4%, 49.6%, n=678), adjusted OR 2.18 (95% CI: 1.59, 2.98)].

*Frailty and stroke risk*

After adjusting for potential confounding factors, severe frailty was not significantly associated with a higher risk of incident stroke after care home entry or 30-day mortality after incident stroke (Table S3).

*Secondary stroke prevention at time of entry to a care home*

At the time of entry to care home, 61.2% (n=3,707) of individuals with a stroke in the previous 12 months were prescribed antiplatelets, and 51.0% (n=3,087) were prescribed statins. Of those with a stroke in the previous 12 months, 25.8% had a diagnosis of atrial fibrillation (n=1,559) and 43.8% had a diagnosis of hypertension (n=2,653). Of individuals with prior stroke and hypertension, 92.1% (n=2,292) were prescribed antihypertensives. Of individuals with prior stroke and atrial fibrillation, 52.4% (n=817) were prescribed oral anticoagulants (46.1% (n=718) were prescribed vitamin-K antagonists (VKA), 11.7% (n=183) were prescribed non-VKA oral anticoagulants (NOACs), and 5.4% (n=84) individuals had a record of both VKA and NOACs prescribed in the six months before care home entry). Over time, there was a marked increase in the use of oral anticoagulants in those with prior stroke and atrial fibrillation, from 35.0% (n=14) in 2003 to 75.0% (n=66) in 2018. Of all individuals with prior stroke 7.2% (n=323) were receiving oral anticoagulants with no recorded diagnosis of atrial fibrillation.

The proportions of people with prior stroke receiving medicines for secondary stroke prevention, by type of most recent stroke recorded before care home entry (ischaemic, haemorrhagic or unspecified), are shown in Table 2. Haemorrhagic stroke was associated with significantly lower odds of receiving antiplatelets and statins compared to ischaemic stroke [adjusted ORs 0.44 (95% CI: 0.37, 0.52) and 0.61 (95% CI: 0.51, 0.72), respectively], but there was no significant association for receiving oral anticoagulants or antihypertensives. Unspecified stroke was associated with significantly lower odds of receiving statins [adjusted OR (95% CI: 0.59 (0.50, 0.70)] and antihypertensives [adjusted OR 0.59 (95% CI: 0.39, 0.88)] compared to ischaemic stroke.

**Discussion**

This study provides several novel findings in a population where there is a relative paucity of outcome data available. Over time, there was no statistically significant change in the proportion of people moving to care homes with a recent stroke or in the incidence of stroke after care home entry. However, there was a decline in the median number of days from experiencing a stroke to moving to a care home. Individuals who moved to a care home with a stroke in the previous 12 months had a higher risk of incident stroke and mortality following an incident stroke. Treatments to reduce risk of secondary stroke were frequently not prescribed in this population.

Previous evidence from data provided by the SSNAP has suggested there has been a decline nationally in the proportion of people moving directly to a care home following a hospitalisation with stroke.6 In the current study, there was no significant decline observed in the proportion of people with stroke in the 12-month period prior to moving to a care home. In the current study, there was a significant reduction over time in the number of days between previous stroke and care home entry. This could have important implications for the level of care required by individuals entering a care home following a recent stroke; however, data were not available to determine the functional status of the participants, therefore, this could not be explored further. Furthermore, being in a higher quintile of the Welsh Index of Multiple Deprivation (less deprived) was associated with fewer days between stroke and moving to a care home. This may be due to differences in accessibility for care homes depending on socioeconomic status. Previous research using the SAIL Databank has also shown living in less deprived areas was associated with a faster rate of care home admission for people living with dementia.14

In Wales, annually approximately 7,000 people are hospitalised with stroke and 1,900 people die from stroke.15 People with history of stroke are at high-risk of recurrent stroke, with one in four people experiencing a recurrent stroke within 5-years.16 The results of this study show people with a prior stroke living in care homes are at higher risk not only for a stroke, but also of mortality following incident stroke. It is, therefore, important to ensure that secondary stroke risk reduction strategies are optimised for all individuals with prior stroke. Decision making regarding optimal stroke prevention pathways in older care home residents is complicated due to high levels of polypharmacy and multimorbidity within this population.13, 14 There has been increased interest in the potential to deprescribe medicines in the older population to reduce inappropriate polypharmacy and reduce the potential burden of medicines which may not be adding quality or length of life. For instance, in a randomised controlled trial, deprescribing statins in older adults with limited life expectancy and no recent active cardiovascular disease resulted in no significant difference in mortality and a potential improvement in quality of life.15 However, in a recent large observational study of older adults with polypharmacy, deprescribing statins was associated with an increased risk of fatal and non-fatal cardiovascular outcomes.20 Discontinuation of statin therapy between three to six months after stroke has been associated with higher risk of recurrent stroke within one year,17 but the evidence for the long-term use of statins for secondary stroke prevention in older people living in care homes who often have frailty, multimorbidity and polypharmacy is unclear.

The results of this study suggest that many residents with a stroke in the previous 12 months before care home entry were not receiving secondary stroke prevention treatments. Overall, we did find higher rates of secondary stroke prevention prescribing compared to a previous study of the South London Stroke Register, which showed in 427 stroke survivors discharged to care homes, rates of secondary stroke prevention prescribing were lower at one-year follow-up compared to individuals living in their own homes.18

Consideration of the use of oral anticoagulants for people with prior stroke and atrial fibrillation is important to optimise risk reduction of future ischaemic stroke.22 In this study, there was a substantial increase in the proportion of people with prior stroke and atrial fibrillation receiving oral anticoagulants, and the introduction of NOACs within the last ten years will likely have contributed to the observed increase. In the current study, prescription of antiplatelets was significantly lower for people with prior haemorrhagic stroke compared to ischaemic stroke. This may be expected as the National Institute for Health and Care Excellence (NICE) guidelines for stroke state that for long-term management following intracerebral haemorrhage, the use of aspirin and oral anticoagulants are not normally recommended, but specialist advice should be sought for individuals with atrial fibrillation and those at a high-risk of future ischaemic stroke.22 In this study there was also an observed small proportion of participants with prior stroke receiving oral anticoagulants but with no recorded diagnosis of atrial fibrillation. This may be due to other indications for oral anticoagulants following stroke, such as cardiac source of embolism, cerebral venous thrombosis or arterial dissection,22 but within the available data it was not possible to explore this further.

Non-pharmacological strategies to reduce risk of recurrent stroke may be challenging to promote to older adults living in care homes. Physical inactivity may be an important risk factor for primary and recurrent stroke but could not be explored in the current study.18 Physical rehabilitation interventions in older care home residents may have a small effect on reducing disability with few adverse events.24 A recent review of available evidence suggested improvements in diet quality is likely to reduce recurrent stroke risk.25 However, dietary modifications for older care home residents can be complex as inadequate food intake and malnutrition is common in older care home residents.3, 26 Further research is needed to determine the impact of physical rehabilitation, dietary interventions or multifaceted non-pharmacological intervention strategies for older adults living in care homes to reduce risk of recurrent stroke. However, insufficient funding and staffing availability may also limit the ability of care home providers to support physical activity and dietary interventions for residents.

Rehabilitation for people following a stroke should be patient-centred and include multidisciplinary assessment, identification of functional difficulties and their measurement, and treatment planning.27 People with stroke who are transferred from hospital to care homes should be offered assessment and treatment from stroke rehabilitation and social care services to the same standards that they would receive in their own home.27 A structured health and social care review should be offered to people with stroke living in care homes at six months and 12-months following the stroke, in addition to community stroke rehabilitation support to identify activities or adaptations to improve quality of life.28 Indeed, a survey of 60 care homes in Ireland suggested almost three-quarters of residents with previous stroke had a high level of dependency, but stroke rehabilitation guidelines were lacking and there was little structured care specifically for stroke survivors.29 This study suggests that although there has been a decline in stroke prevalence in the general population, there has not been a decline in the proportion of older people entering care homes with a recent history of stroke, and 30-day mortality following stroke in older care home residents is high. For those at the highest-risk of stroke, the consideration of care priorities following a stroke in advance care planning is warranted. Further research should determine the level of funding, recognition and resources required to ensure optimal care for these individuals.

*Strengths and limitations*

This study uses a national-level databank with linked data from multiple sources including primary and secondary care data. There are several limitations to consider. The study uses routinely collected health data and, therefore, some variables of interest were not available such as data about the functional status of participants and stroke severity. Within the SAIL Databank records are linked using an individual’s NHS number which is supplied in routine NHS data. The use of this as a unique identifier has previously been shown to have specificity values >99.8% and sensitivity values >94.6%, and error rates were <0.2%.9 Previous studies have shown recording of ICD codes in electronic medical records may vary by factors such as age, number of comorbidities, severity of illness, length of hospitalisation, and whether in-hospital death occurred;30 however, using multiple linked data sources, rather than relying on a single data source will have improved the accuracy of the dataset to identify the different health conditions of interest. Identification of care homes in the SAIL Databank was based on anonymised addresses of care homes from Care Inspectorate Wales, but the study may not capture all care home residents. However, the results are deemed to be generalisable to the wider population of Wales.

**Conclusions and implications**

Older people moving to a care home with a recent stroke are at a higher risk of incident stroke and mortality with incident stroke. Medications to reduce risk of secondary stroke are often not prescribed in this population. Further evidence is needed to determine the optimal care pathways for older people living in care homes with history of stroke. A greater understanding of the epidemiology of stroke in older care home residents is useful to improve planning and provision of services.

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|  | **All participants****(n=86,602)** | **Participants with stroke in 12 months prior to care home entry****(n=6,055)** | **Participants with no stroke in 12 months prior to care home entry****(n=80,547)** |
| Age, median (IQR) | 86.0 (80.8, 90.6) | 84.4 (79.0, 88.9) | 86.1 (80.9, 90.7) |
| Female | 58,941 (68.1%) | 3,869 (63.9%) | 55,072 (68.4%) |
| WIMD-2014 quintile |  |  |  |
|  1 most deprived  | 14,695 (17.1%) | 1,082 (18.0%) | 13,613 (17.0%) |
|  2 | 18,375 (21.4%) | 1,204 (20.0%) | 17,171 (21.5%) |
|  3 | 20,340 (23.7%) | 1,370 (22.8%) | 18,970 (23.7%) |
|  4 | 17,395 (20.2%) | 1,314 (21.9%) | 16,081 (20.1%) |
|  5 least deprived | 15,123 (17.6%) | 1,043 (17.3%) | 14,080 (17.6%) |
| Frailty |  |  |  |
|  No frailty | 28,870 (33.3%) | 1,938 (32.0%) | 26,932 (33.4%) |
|  Mild | 26,505 (30.6%) | 1,915 (31.6%) | 24,590 (30.5%) |
|  Moderate | 21,433 (24.7%) | 1,525 (25.2%) | 19,908 (24.7%) |
|  Severe | 9,794 (11.3%) | 677 (11.2%) | 9,117 (11.3%) |
| Smoking history | 20,775 (24.0%) | 1,609 (26.6%) | 19,166 (23.8%) |
| Hypertension | 31,850 (36.8%) | 2,653 (43.8%) | 29,197 (36.2%) |
| Atrial fibrillation | 14,528 (16.8%) | 1,559 (25.8%) | 12,969 (16.1%) |
| Diabetes mellitus | 3,631 (4.2%) | 223 (3.7%) | 3,408 (4.2%) |
| Heart failure | 9,502 (11.0%) | 609 (10.1%) | 8,893 (11.0%) |
| Myocardial infarction | 4,469 (5.2%) | 330 (5.5%) | 4,139 (5.1%) |
| Peripheral vascular disease | 3,308 (3.8%) | 298 (4.9%) | 3,010 (3.7%) |
| Renal disease | 4,158 (5.0%) | 252 (4.2%) | 3,906 (4.9%) |
| Pulmonary embolism | 1,656 (1.9%) | 113 (1.9%) | 1,543 (1.9%) |

**Table 1. Characteristics of adults aged ≥65 years on admission to care homes within the SAIL Databank, by prior stroke status.**

IQR: interquartile range; SAIL: Secure Anonymised Information Linkage; WIMD: Welsh Index of multiple deprivation. Frailty determined with the electronic frailty index. All characteristics are n (%), unless otherwise stated.

**Table 2. Proportions of individuals with prior stroke receiving medicines for secondary stroke prevention management in the six months before care home entry, by type of stroke.**

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| --- | --- | --- | --- | --- | --- | --- |
|  | **Any prior stroke****(n=6,055)** | **Ischaemic stroke(n=4,088)** | **Haemorrhagic stroke(n=959)** | **Unspecified stroke(n=1,008)** | **Odds of receiving medicines haemorrhagic vs. ischaemic stroke****Adjusted OR (95% CI)** | **Odds of receiving medicines unspecified vs. ischaemic stroke****Adjusted OR (95% CI)** |
| Antiplatelet | 61.2 (3,707) | 63.7 (2,602) | 48.0 (460) | 64.0 (645) | 0.44 (0.37, 0.52) | 0.88 (0.74, 1.04) |
| Statin | 51.0 (3,087) | 54.1 (2,210) | 43.5 (417) | 45.6 (460) | 0.61 (0.51, 0.72) | 0.59 (0.50, 0.70) |
|  | **Any prior stroke and hypertension****(n=2,653)** | **Ischaemic stroke and hypertension(n=1,185)** | **Haemorrhagic stroke and hypertension(n=394)** | **Unspecified stroke and hypertension(n=444)** |  |  |
| Antihypertensive | 92.1 (2,292) | 92.8 (1,684) | 92.1 (363) | 90.5 (402) | 0.84 (0.54, 1.30) | 0.59 (0.39, 0.88) |
|  | **Any prior stroke and AF****(n=1,559)** | **Ischaemic stroke and AF(n=1,156)** | **Haemorrhagic stroke and AF(n=195)** | **Unspecified stroke and AF(n=208)** |  |  |
| Oral anticoagulant | 52.4 (817) | 52.4 (606) | 58.0 (113) | 47.1 (98) | 1.19 (0.85, 1.67) | 0.78 (0.57, 1.07) |

Only including individuals who experienced a stroke within 12 months before care home entry. If multiple types of stroke recorded in this time period then the most recent type of stroke was used. All values are % (n), unless otherwise specified. AF: atrial fibrillation; CI: confidence interval; OR: odds ratio. Odds ratios adjusted for age, sex, Welsh Index of Multiple Deprivation (quintiles), frailty, smoking status, diabetes, hypertension, atrial fibrillation, renal disease, pulmonary embolism and prior cardiovascular disease (peripheral vascular disease, myocardial infarction or heart failure).

**Figure 1. Changes over time in the proportion of older people entering a care home with a stroke in the 12 months prior to moving to a care home (n=86,602).**

**Figure 2. Changes over time in the median number of days between a stroke and moving to a care home (n=86,602).**

**Figure 3. Changes over time in the incidence of stroke within 12 months of moving to a care home (n=80,681).**