KENT PUBLIC HEALTH OBSERVATORY

Stroke and Transient Ischaemic Attack

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Stroke and Transient Ischaemic Attack

Key Findings

Across Kent the Quality and Outcomes Framework (QOF) findings for stroke and transient ischaemic attack were:

- higher recorded prevalence in comparison to England in 2015 to 2016
- Canterbury and Coastal, South Kent Coast and Thanet CCGs were higher, whereas, Dartford, Gravesham and Swanley, Swale and West Kent CCGs were lower than Kent.

Across Kent the Quality and Outcomes Framework findings for risk factors were:

- higher recorded prevalence of atrial fibrillation and hypertension in comparison to England in 2015 to 2016
- lower recorded prevalence of diabetes in comparison to England in 2015 to 2016
- South Kent Coast and Thanet CCG had higher prevalence than Kent for all three indicators in 2015 to 16.

Across Kent the hospital admission findings for stroke and transient ischaemic attack were:

- for Kent the rate was 296.2 per 100,000 registered Kent population in 2014 to 2015
- Canterbury and Coastal, South Kent Coast and Thanet were higher, whereas, Dartford, Gravesham and Swanley and West Kent CCGs were lower than Kent.

Across Kent the premature mortality findings for stroke and transient ischaemic attack were:

- the Kent rate was 11.5 per 100,000 registered Kent population in 2013 to 2015
- Dartford, Gravesham and Swanley CCG was higher than Kent; the remaining CCGs were similar to Kent.

The clinical achievement for risk factors, as well as, stroke clinical indicators has been presented.

Introduction

What is a Stroke

Stroke is one of the diseases of the arteries – these are known collectively as cardiovascular disease (CVD).

A stroke happens when the blood supply to part of the brain is cut off. This can happen in two ways:

- through a blockage of an artery cutting off oxygen to parts of the brain (ischaemic stroke) – this type is most common (88% of all strokes, BHF 2009)
- bleeding from an artery in the brain (primary inter-cerebral haemorrhage).

A Transient Ischaemic Attack (TIA) or 'mini stroke' is caused by a brief delay in blood supply to a particular area of the brain. Neurological dysfunction lasts for less than 24 hours, but this is often an important warning sign of a more serious stroke, heart attack or other vascular event.

What do we know?

Who is at Risk and Why?

It is well known that there are contributing risk factors for stroke. There are modifiable risk factors that are amenable to change, as well as, fixed risk factors that are important for awareness.

The modifiable risk factors for stroke include:

- **Hypertension**, raised blood pressure of 150/90mmHg or more. A known contributing factor in 50% of strokes[1]
- **Atrial fibrillation**, an irregular heartbeat, and a known contributing factor in 20% of strokes[1]
- **Diabetes**, both type 1 and type 2 diabetes; which affect blood sugar regulation. A known contributing factor in 20% of strokes[1]
- **Lifestyle factors**, including smoking, high alcohol intake and substance misuse. All known to contribute to risk of stroke.

The fixed risk factors for stroke include:

- **Increasing age**, stroke incidence increases with age, with an average age of 70 years for stroke occurrence from epidemiological research[2]
- **Certain ethnic groups**, higher risk of stroke has been reported within black groups, with a younger average age for stroke occurrence from epidemiological research.[3]

[1] Royal College of Physicians Sentinel Stroke National Audit Programme (SSNAP). Clinical audit April - June 2015 report prepared by Royal College of Physicians, Clinical Effectiveness and Evaluation Unit on behalf of the Intercollegiate Stroke Working Party
[2] Wang, Y. et al (2013) Age and ethnic disparities in incidence of stroke over time: the South London Stroke Register. Stroke, 44: 3298-3304.

The following reports are available as further reading, including; the diabetes JSNA, the behaviour and lifestyle JSNAs, the Kent and Medway Stroke Profile and a series of smoking reports.

Recorded prevalence provides an underestimate of true expected prevalence, as this represents persons who present to general practice and are diagnosed with a condition. The latest recorded prevalence of risk factors across Kent for 2015-16 are:

Atrial fibrillation – at 2.1% was **higher** than 1.7% for England.

- Ashford, Canterbury and Coastal, South Kent Coast and Thanet CCGs were **higher**, whereas, Dartford, Gravesham and Swanley, Swale and West Kent CCGs were **lower** than Kent.

Diabetes - at 6.4% was **lower** than 6.5% for England.

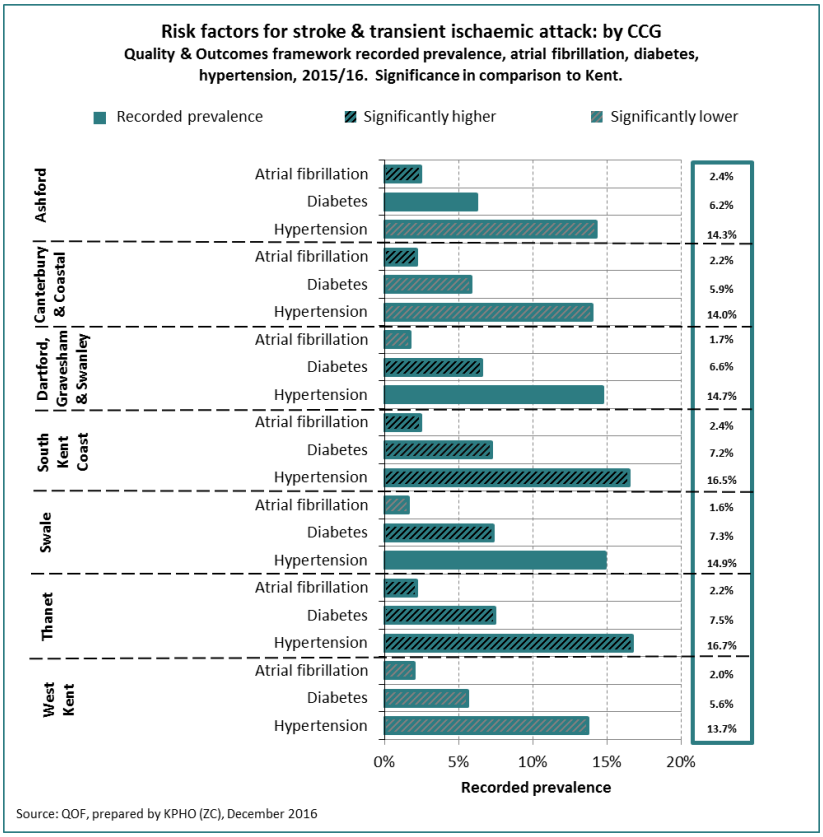
- Dartford, Gravesham and Swanley, South Kent Coast, Swale and Thanet CCGs were **higher**, whereas, Canterbury and Coastal and West Kent CCGs were **lower** than Kent.

Hypertension - at 14.7% was **higher** than 13.8% for England.

- South Kent Coast, Swale and Thanet CCGs were **higher**, whereas, Ashford, Canterbury and Coastal and West Kent CCGs were **lower** than Kent.

[3] Markus, H.S., et al (2007) Differences in stroke subtypes between black and white patients with stroke: the South London Ethnicity and Stroke study. Stroke, 116: 2157-2164.

Figure 1



Across Kent, between 2006 to20 07 and 2015 to 2016, trend analysis shows:

- **Atrial fibrillation** – an increase of 0.07% with each passing year, **higher** than 0.05% for England
- based on past trends across Kent, total patient registers could be projected to grow by 21 persons with each passing year[4]
- compared to Kent, Ashford CCG showed a **higher** rate of change at 0.09%, whereas, Thanet CCG showed a **lower** rate of change at 0.05%.

Diabetes - an increase of 0.21% with each passing year, **similar** to 0.22% for England.

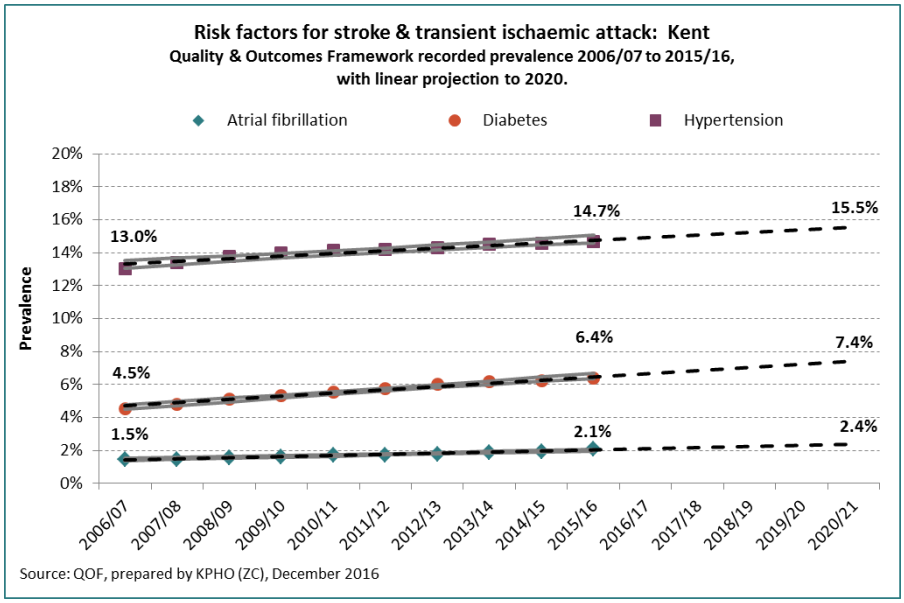
- based on past trends across Kent, total patient registers could be projected to grow by approximately 162 persons with each passing year[4]
- compared to Kent, all CCGs showed **similar** rates of change.

Hypertension - an increase of 0.17% with each passing year, **similar** to 0.14% for England.

- based on past trends across Kent, total patient registers could be projected to grow by approximately 382 persons with each passing year[4]
- compared to Kent, only Thanet CCG showed a **lower** rate of change at 0.07%.

[4] Note limitations with projections based on past trends.

Figure 2



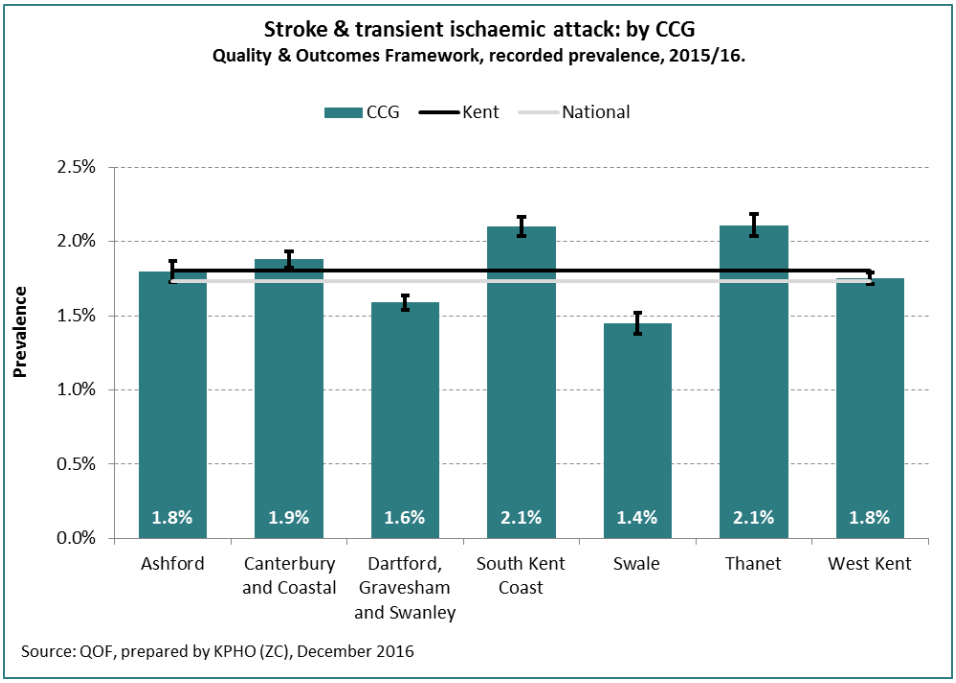
This projected increase in the key risk factors for stroke, whilst based on past trends, places emphasis on the proven secondary prevention strategies.

Kent stroke statistics

The Kent recorded prevalence of stroke and transient ischaemic attack was 1.8% and was **higher** than 1.7% for England in 2015 to 16.

- Canterbury and Coastal, South Kent Coast and Thanet CCGs were **higher**, whereas, Dartford, Gravesham and Swanley, Swale and West Kent CCGs were **lower** than Kent.

Figure 3



The Kent stroke and transient ischaemic attack prevalence has **increased** from 1.6% in 2006 to 2007.

- an increase of 0.02%, with each passing year, **similar** to 0.01% for England
- compared to Kent over this period, all CCGs showed **similar** rates of change
- based on past trends across Kent, patient registers could be projected to grow by five persons with each passing year, to a projected prevalence of 1.9% in 2020.

Table 1: Quality and Outcomes Framework recorded numbers with stroke and transient ischaemic attack, 2010 to 2011 – 2014 to 2015, Kent.

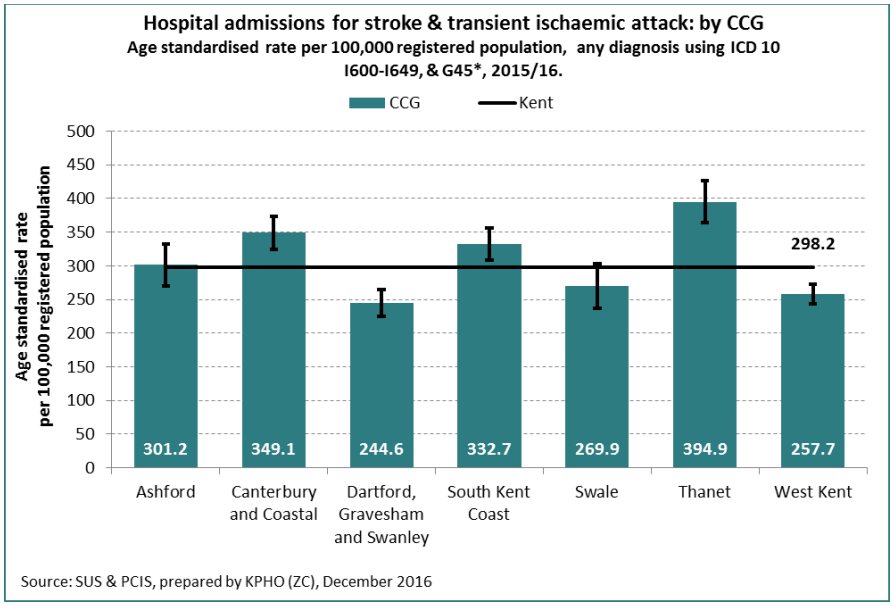
	2011 to 2012	2012 to 2013	2013 to 2014	2014 to 2015	2015 to 2016
Kent	27,151	26,786	27,254	27,379	27,697

Source: QOF, prepared by KPHO (ZC), December 2016

The age standardised rate for hospital admissions for stroke and transient ischaemic attack[5] was 298.2 per 100,000 registered Kent population in 2014 to 2015.

- Canterbury and Coastal, South Kent Coast and Thanet were **higher**, whereas, Dartford, Gravesham and Swanley and West Kent CCGs were **lower** than Kent.

Figure 4

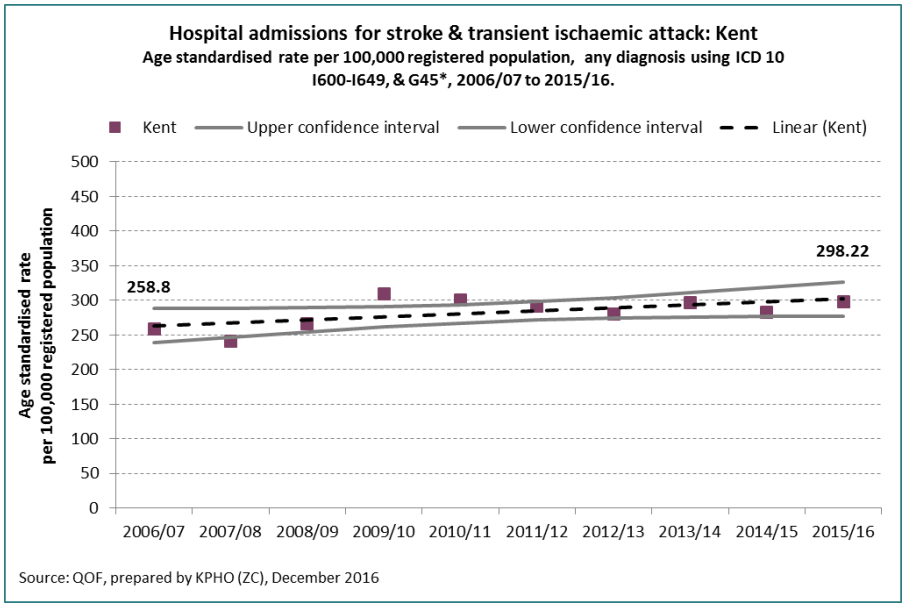


The Kent age standardised rate for hospital admissions for stroke and transient ischaemic attack has remained **similar** to 258.8 in 2006 to 2007.

- compared to Kent over this period, all CCGs showed **similar** rates of change.

[5] Finished consultant episode 1, with any diagnosis, using ICD 10: I60.0-I64.9 & G45*

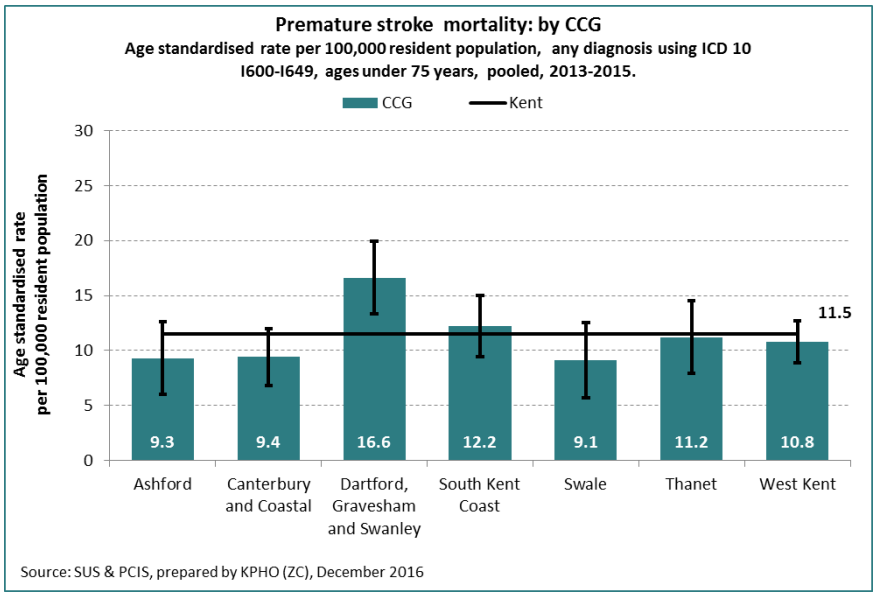
Figure 5



The age standardised rate for premature stroke[6] mortality was 11.5 per 100,000 resident Kent population in 2013 to 2015.

- Dartford, Gravesham and Swanley CCG was **higher** than Kent; the remaining CCGs were similar to Kent.

Figure 6



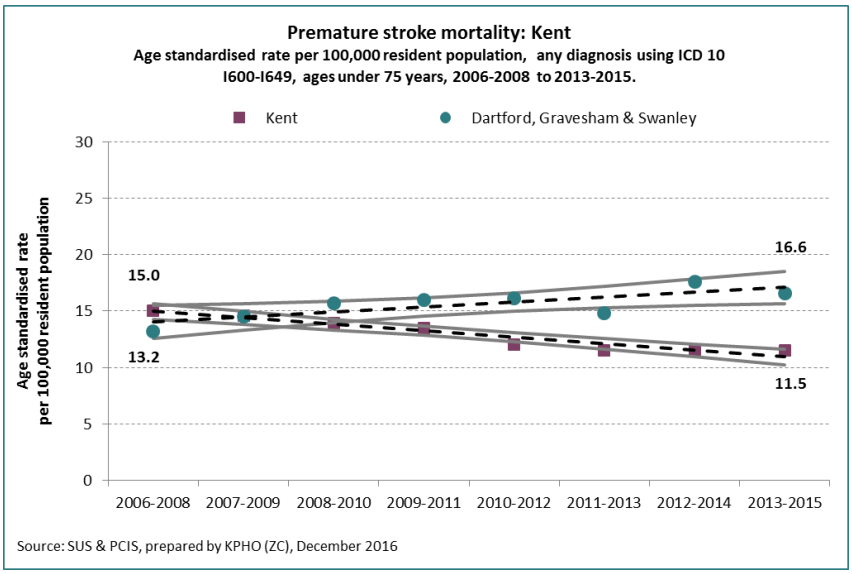
The Kent age standardised rate for premature stroke mortality has significantly **decreased** from 15.0 in 2006 to 2008.

- compared to Kent for this period, Dartford, Gravesham and Swanley, was **increasing**

[6] By CCG of residence, ages under 75 years, underlying cause, using ICD 10: I60.0-I64.9

- other CCGs were either decreasing at a greater pace of change[7] or similar to Kent.

Figure 7



Secondary prevention strategies

The clinical achievement for risk factors related to stroke and transient ischaemic attack across Kent in 2015 to 2016:

- **AF006**, assessments using the CHA2DS2-VASc risk stratification within atrial fibrillation, CCGs were generally **higher or similar** to Kent
- **BP002**, record of blood pressure in the preceding five years in those aged 45 or over, only West Kent CCG was **lower** than Kent
- **HYP006**, last blood pressure reading 150/90 mmHg or less within hypertension, CCGs were generally **higher or similar** to Kent
- **CVD PP01**, prescription of statins when CVD risk assessment score 20% in those newly diagnosed with hypertension aged 30 to 75 years, only Dartford, Gravesham and Swanley CCG was **lower** than Kent
- **DM007**, last IFCC-HbA1c is 59 mmol/mol or less within those with diabetes, Dartford, Gravesham and Swanley, Swanley and West Kent CCG were **lower** than Kent.

[7] Swale and Thanet CCGs

Table 2: Quality and Outcomes Framework clinical achievement: significance in comparison to Kent, 2015 to 2016.

	AF006	BP002	HYP006	CVD PP01	DM007
Ashford	96.6%	93.0%	81.2%	98.1%	70.6%
Canterbury and Coastal	96.9%	91.8%	83.0%	100.0%	73.3%
Dartford, Gravesham and Swanley	97.9%	92.5%	83.1%	87.5%	67.6%
South Kent Coast	97.8%	93.0%	83.3%	98.0%	72.9%
Swale	97.4%	93.5%	84.6%	100.0%	66.7%
Thanet	97.5%	93.6%	80.5%	97.2%	72.2%
West Kent	97.6%	90.5%	82.8%	100.0%	66.6%
Kent	**97.5%**	**92.1%**	**82.7%**	**97.5%**	**69.6%**
National	**96.8%**	**91.1%**	**82.9%**	**96.8%**	**70.2%**

Source: QOF, prepared by KPHO (ZC), December 2016

Stroke patient care

The CCG Outcome Indicator Set (CCG OIS) related to stroke across Kent in September 2016:

- **CCG OIS 3.5**, admitted to stroke unit within four hours of arrival to hospital, only Dartford, Gravesham and Swanley CCG was **lower** than Kent
- **CCG OIS 3.6**, persons with acute stroke receiving thrombolysis, only Dartford, Gravesham and Swanley CCG was **lower** than Kent
- **CCG OIS 3.7**, persons with stroke discharged from hospital with joint health and social care plan, only Thanet CCG was **lower** than Kent
- **CCG OIS 3.8**, follow up assessment four to eight months after initial stroke, Canterbury and Coastal, Dartford, Gravesham and Swanley, Swale and West Kent CCGs were **lower** than Kent
- **CCG OIS 3.9**, persons who have had a stroke spending 90% of stay on a stroke unit, CCGs were generally **similar** to Kent.

Table 3: CCG Outcome Indicator Set: significance in comparison to Kent, September 2016.

	CCG OIS 3.5	CCG OIS 3.6	CCG OIS 3.7	CCG OIS 3.8	CCG OIS 3.9
Ashford	52.7%	14.4%	92.7%	67.3%	82.0%
Canterbury and Coastal	52.4%	12.5%	86.2%	12.7%	88.6%
Dartford, Gravesham and Swanley	41.1%	4.4%	94.4%	0.0%	84.8%
South Kent Coast	55.1%	15.5%	84.5%	52.6%	86.6%
Swale	43.0%	10.5%	90.5%	1.0%	75.6%
Thanet	59.7%	10.7%	58.7%	44.9%	82.1%
West Kent	49.6%	8.3%	80.3%	0.7%	78.4%
Kent	**51.0%**	**10.4%**	**80.0%**	**22.0%**	**82.4%**
National	**60.3%**	**11.2%**	**87.7%**	**29.7**	**84.1%**

Source: NHS Digital, prepared by KPHO (ZC), December 2016

What is being done locally?

TIA clinics

All areas of Kent now have rapid access TIA clinics where high risk patients are able to be seen within 24 hours and all patients are seen within a week. Although the majority of the Trusts across the South East Coast are performing well, there is some variation regarding the timeframes in which both HIGH and LOW risk patients can be seen, investigated and treated for both HIGH and LOW risk TIA.

As a result of new RCP guidelines (reference as below) TIA services are changing and clinics will no longer exist. This guidance recommends that patients with suspected TIA should be given 300mg of aspirin immediately and assessed urgently within 24 hours by a specialist physician in a neurovascular clinic or an acute stroke unit.

Royal College of Physicians. National Clinical Guideline for Stroke. 5th Edition. 2016
https://www.strokeaudit.org/SupportFiles/Documents/Guidelines/2016-National-Clinical-Guideline-for-Stroke-5t-(1).aspx

Acute stroke service

All stroke patients require high-dependency care on an acute stroke unit for the first 24 hours of the illness. Every district general hospital in Kent offers thrombolysis (early clot bursting drugs) and dedicated acute stroke care.

All areas have access to dedicated Stroke Rehabilitation Units (SRU) when in-patient stroke rehabilitation is needed.

Acute stroke care immediately follows the hyper-acute phase, usually after first 72 hours after admission. Acute stroke care services provide continuing specialist day and night care, with daily multidisciplinary care, continued access to stroke trained consultant care, access to physiological monitoring and access to urgent imaging as required. In-hospital rehabilitation should begin immediately after a person has had a stroke. Rehabilitation services should continue for as long as required, to ensure the best recovery and the minimisation of any disabilities though these are likely to extend beyond time in-hospital. Rehabilitation goals should be agreed between the multidisciplinary team and stroke patients and carers.

Hyper acute stroke service

Hyper acute services provide expert specialist clinical assessment, rapid imaging and the ability to deliver intravenous thrombolysis 24/7, typically for no longer than 72 hours after admission. These services must be provided in a specialist Hyper Acute Stroke Unit (HASU). A minimum of 500 confirmed stroke patient admissions per year are required to provide sufficient patient volumes to make a hyper acute stroke service clinically sustainable, to maintain expertise and to ensure good clinical outcomes. People with acute stroke will receive an early multidisciplinary assessment, including swallow screening and, for those that continue to need it, have prompt access to high-quality stroke care.

A review of hyper acute and acute stroke care across Kent and Medway is taking place that is looking to improve the outcomes of patients by consolidating care on to fewer sites which will ensure that the specialist workforce needed to care for patients is available.

Community Services for those who have had a Stroke

Early Supported Discharge Team (ESDT)

These services offer early discharge (typically within 10 days) and rehabilitation in the patient's own home; about 30% of patients are suitable for this model of care. Although there is variation and not all areas have access to these teams, ESD teams operate in Medway and West Kent. A review is looking to standardise provision across Kent and Medway.

Community Stroke Team (CST)

This multi-disciplinary team (physiotherapists, occupational therapists, mental health nurse, speech and language therapist and support workers) provides longer-term community rehabilitation services for stroke survivors. As with ESD teams, there is variation across the South East Coast, and not all stroke patients in Kent and Medway have access to a CST.

Sentinel Stroke National Audit of Stroke Programme (SSNAP)

The Sentinel Stroke National Audit Programme (SSNAP) aims to improve the quality of stroke care by auditing stroke services against evidence based standards, and national and local benchmarks. Building on 15 years of experience delivering the National Sentinel Stroke Audit (NSSA) and the Stroke Improvement National Audit Programme (SINAP), SSNAP is pioneering a new model of healthcare quality improvement through near real time data collection, analysis and reporting on the quality and outcomes of stroke care.

Engagement

The South East (Clinical Network) Stroke Clinical Advisory Group (CAG) is made up of representation from provider and commissioning organisations across Kent, Surrey and Sussex alongside patient, carer and third sector members. It provides a forum for bringing together and agreeing the required standards and specifications across the whole patient pathway in order to achieve SSNAP and deliver the best possible patient outcomes.

Unmet Needs and Service Gaps

A service review of hyper acute and acute stroke care is taking place.

Recommendations for Commissioning

The South East Coast Cardiovascular Strategic Clinical Network (SECN) has recommended:

a. All acute and community providers should be recording, completing and returning the Sentinel Stroke National Audit Programme (SSNAP) data as this is the only national standardised stroke audit system to enable benchmarking and recording of quality of services.
b. The South East Stroke Service Specification, which is based on the national Stroke Services Configuration Decision Support Guide (2016), should be used as the basis for delivering a high quality stroke service.
c. The South East Stroke and TIA Service and Quality Core Standards (revised 2016) summarise the core requirements of an effective stroke service which will improve patient outcomes and reduce unwarranted variation.

Conclusions

Overall, the key risk factors for stroke and transient attack were explored using the Quality and Outcomes Framework. Across Kent, there was higher recorded prevalence of atrial fibrillation and hypertension, however, lower recorded prevalence of diabetes in comparison to England in 2015 to 2016.

Analysis by Clinical Commissioning Groups identified higher recorded prevalence of stroke and transient ischaemic attack, as well as, higher recorded prevalence of risk factors within South Kent Coast and Thanet CCGs in 2015 to 2016. In contrast, Dartford, Gravesham and Swanley, Swale and West Kent CCGs had lower recorded prevalence of stroke and transient ischaemic attack in 2015 to 2016.

There were higher hospital admissions within Canterbury and Coastal, South Kent Coast and Thanet CCGs, whereas, lower hospital admissions within Dartford, Gravesham and Swanley, Swale and Thanet CCGs in 2014 to 2015. In addition, there was higher premature mortality within Dartford, Gravesham and Swanley CCG in 2013 to2015.

Key Contacts

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Appendix A

Table 4: Quality and Outcomes Framework recorded numbers with stroke and transient ischaemic attack, 2010/11 – 2014/15, Kent.

	2011/12	2012/13	2013/14	2014/15	2015/16
Ashford	2,194	2,202	2,258	2,291	2,318
Canterbury and Coastal	3,917	3,990	4,041	4,094	4,139
Dartford, Gravesham and Swanley	3,959	3,890	3,931	3,977	3,981
South Kent Coast	4,183	4,124	4,157	4,148	4,233
Swale	1,552	1,527	1,532	1,563	1,601
Thanet	2,913	2,790	2,880	2,881	3,033
West Kent	8,433	8,263	8,455	8,425	8,392
Kent	27,151	26,786	27,254	27,379	27,697

Source: QOF, prepared by KPHO (ZC), December 2016

Table 5: Numbers of hospital admissions for stroke and transient ischaemic attack, all ages, (ICD 10 I60-I64.9 & G45*) 2011/12 – 2015/16, Kent.

	2011/12	2012/13	2013/14	2014/15	2015/16
Ashford	357	375	394	356	358
Canterbury and Coastal	767	679	766	810	765
Dartford, Gravesham and Swanley	468	471	528	559	573
South Kent Coast	697	718	743	741	756
Swale	301	245	271	200	268
Thanet	486	484	534	514	623
West Kent	1,092	1,092	1,161	1,057	1,204
Kent	4,319	4,196	4,626	4,440	4,547

Source: SUS, prepared by KPHO (ZC), December 2016

Table 6: Numbers of premature stroke mortality, ages under 75 years, (ICD 10 I60-I64.9) 2010 – 2015, Kent.

	2010 - 2012	2011 - 2013	2012 - 2014	2013 - 2015
Ashford	37	38	33	30
Canterbury and Coastal	51	55	57	51
Dartford, Gravesham and Swanley	91	85	103	100
South Kent Coast	62	62	72	74
Swale	34	28	26	28
Thanet	55	53	43	45
West Kent	115	115	117	130
Kent	445	436	451	458

Source: PCIS, prepared by KPHO (ZC), December 2016