

Integrated Impact Assessment

on

Proposals for Improving Stroke Outcomes for Coventry and Warwickshire

Technical Working Document

October 2018

Prepared by: The Strategy Unit, Midlands & Lancashire CSU

For: North Warwickshire, Warwickshire South and
Coventry & Rugby CCGs

Revised in December 2018 following
recommendations an external peer review of the
health and health impact elements of the
Integrated Impact Assessment



LIST OF ABBREVIATIONS

ESD – Early Supported Discharge

GEH – George Eliot Hospital

HIA – Health Impact Assessment

IIA – Integrated Impact Assessment

LoS – Length of Stay

LSH – Leamington Spa Hospital

SWFT – South Warwickshire Foundation Trust (Warwick Hospital)

TIA – Transient Ischemic Attack

UHCW – University Hospital Coventry and Warwickshire

CONTENTS

List of Abbreviations

1.0 Introduction	3
2.0 Improving Stroke Outcomes for Coventry and Warwickshire	12
3.0 Methodology	17
4.0 Assessment of Overarching Changes	28
5.0 Integrated Impact Assessment	32
5.1 Travel and access	32
5.2 Health and Determinants of Health	57
5.3 Equality	66
6.0 Summary of Impact Analysis by Scenario	84
6.1 Mitigations and Recommendations	87
7.0 Appendices	90

.....

1.0 INTRODUCTION

1.1 Background

1.1.1 Purpose of this report

Broadly, the objectives of this Integrated Impact Assessment (IIA) are to evaluate and quantify where possible the potential impacts that could result from each of the proposed stroke service redesign scenarios. Specifically; and as a result of recent revisions to the service change scenarios, this IIA report reviews, refreshes and expands on the original IIA produced in 2015 by Warwickshire public health team¹. An IIA is carried out to inform an enhancement of positive effects and a minimization of detrimental effects within each potential scenario. This IIA has been carried out to assess the impacts for Stroke and TIA patients currently receiving care at one of the three main acute sites across the county and for the geographical areas covered by three Clinical Commissioning Groups (CCGs): Warwickshire North CCG, Coventry and Rugby CCG and South Warwickshire CCG. The information in this report will enable stakeholders to contribute to the consultation process with due regard to the public sector duties around equality and health inequalities. All stakeholders are invited to identify any further impacts or mitigating actions not addressed in the report.

1.1.2 The Integrated Impact Assessment

1.1.2.1 What is an Integrated Impact Assessment?

The term Integrated Impact Assessment (IIA) has been used to describe many different procedures, but essentially any process which attempts to cover more than one type of impact assessment in a single process can be called an IIA. This approach avoids the need to undertake and report on separate assessments, seeks to reduce any duplication of assessment work and benefits from a shared understanding of the policies.

IIA is a method of estimating the possible implications, intended and unintended, of policies, plans, strategies, projects or initiatives². It examines how the proposal may affect communities and how these effects may be distributed amongst different groups within the community. The aim of IIA is to make recommendations to enhance potential positive outcomes and minimise negative impacts of a proposal. IIA is most effective when used as early as possible in the development of policies, plans, strategies, projects and initiatives. However, it can also be used retrospectively to provide historic information or background to work in progress.

1.1.2.2 Scope and objectives of this Integrated Impact Assessment

The objectives of this IIA, as in the previous version are to determine the potential impact of the three proposed scenarios for stroke service redesign on the following:

- Travel and access
- Determinants of Health
- Equality

¹ Public Health Warwickshire. Integrated Impact Assessment on proposals for improving stroke outcomes for Coventry and Warwickshire. April 2015

² Health Development Agency. (2005) Clarifying approaches to: health needs assessment, health impact assessment, integrated impact assessment, health equity audit, and race equality impact assessment. London: HAD.

Within each of these areas are a number of key determinants which assist in examining how fully the proposed scenarios may have an impact on communities and individuals.

An additional requirement of this IIA is to aid the three Coventry and Warwickshire CCGs in meeting their requirements under the Equality Act by considering the needs of nine specific groups. The Equality Act was introduced in 2010 and places certain responsibilities on public sector bodies to ensure that they think about three aims during any decision-making process:

- The elimination of unlawful discrimination;
- Advancement of equality of opportunity between people who share a protected characteristic and those who do not; and
- The fostering of good relations between people who share a protected characteristic and those who do not.

Public bodies are required to have 'due regard' to the Act, which means that equality issues must influence the decisions that they reach; the Act is designed around 'protecting' individuals who share certain types of socio-demographic characteristics:

Protected characteristic	Notes on data availability
Age: taking account of all age groups to understand whether any of them will experience disproportionate impacts.	Data on age are routinely recorded and captured in acute hospital datasets and at small area population level
Disability: including physical, sensory and mental impairments.	Data on disability are not routinely recorded and captured in acute hospital datasets. Some data on self-reported disability is available from the 2011 census and from up-to-date benefit claimant figures
Gender reassignment: understanding any differential impacts for trans-gender people.	There is no routine collection of this data. Prevalence studies may be used to estimate the local number of people who fit this description.
Pregnancy and maternity: understanding any differential impacts for women who are pregnant, new mothers (with babies under six months old), or breastfeeding.	No routine data is collected other than in admission-specific specialty and procedure codes. Underlying population figures for women in child-birth age groups (15-44) are available.
Race or ethnicity: including ethnic or national origins, colour or nationality, particularly differential impacts on Black, Asian and minority ethnic groups. This equality strand also includes refugees and asylum seekers.	Ethnic group category (2001 census definition) is routinely recorded in acute datasets and is available for small-area populations from the 2011 census.
Religion or belief: assessing whether the proposals may impact disproportionately on individuals and families because of their religion or faith, including lack of belief.	No routine data is collected on religion for health care encounters. Underlying population data on religion is available from the 2011 census.
Gender: considering whether there are particular and possibly different impacts on men or women.	Gender is routinely recorded in acute hospital datasets.
Sexual orientation: considering impacts on lesbians, gay men, and bisexual people.	There is no routine collection of this data. Prevalence studies or surveys may be used to estimate the local number of people who fit this description.

Marriage and civil partnership: understanding differential treatment of people who are married or within a civil partnership (only applicable in terms of discrimination).	No routine data is collected on marital status for health care encounters. Underlying population data on marriage or civil partnership is available from the 2011 census.
---	---

Table 1: Socio-demographic characteristics and data availability

Whilst socially deprived communities are not defined as a protected characteristic under the Equality Act, the Social Care Act 2012 states that CCGs must have due regard to the need to reduce inequalities between patients in relation to access to, and outcomes from, health service provision. It is therefore a legal obligation to include consideration of this group within Equality Impact Assessments. There are well evidenced links between socio-economic disadvantage and poorer health outcomes, as highlighted in the 2010 Marmot Review³: “the lower the person’s social position, the worse his or her health”. As this is an integrated impact assessment and is therefore incorporating a health impact assessment (HIA), it will follow DH guidance that recommends HIAs include an assessment of impacts on socio- economically disadvantaged groups and health inequalities to aid the Coventry and Warwickshire CCGs in meeting their requirements under the Health and Social Care Act 2012 which introduced for the first time legal duties to reduce health inequalities, with specific duties on CCGs and NHS England “ *The CCG have a duty to have due regard to the need to reduce inequalities between patients in access to health services and outcomes achieved*”.

Whilst this IIA focuses on potential changes to stroke and TIA pathways in Coventry and Warwickshire, and as such will impact on stroke patients, a significant impact will also be felt on the visitors, families and/or carers of such patients. Therefore, this IIA will focus heavily on the potential impact of proposed changes on visitors, relatives and carers of stroke patients.

Although each of the proposed scenarios differs from each other, each of the scenarios suggests a change for current stroke patients (throughout both the hyper-acute and acute phases of treatment), as follows:

- Each of the suggested alternative scenarios will have an implication on where current stroke patients presenting at South Warwickshire Foundation Trust (SWFT) or George Eliot Hospital (GEH) are treated. If a suspected stroke patient (including hemorrhagic stroke) presents at SWFT or GEH, instead of being assessed at SWFT or GEH, they will be transported to University Hospital Coventry and Warwickshire (UHCW) for assessment.

Additionally, each of the suggested alternative scenarios mean that there are some patients who would previously have been treated at their local hospital, i.e. SWFT or GEH for the acute phase, but under any of the suggested scenarios may be treated at UHCW for this phase, as follows:

Scenario 2a proposed model Proposed Model: all stroke patients in Warwickshire will be treated at UHCW throughout both the hyper-acute and acute phases. When appropriate for discharge, the patient will be sent home for supported rehabilitation or, in the case of bedded rehab requirements (around 30% of patients), will have the choice of either GEH or Leamington Spa Hospital (LSH) dependent on proximity to usual residence and/or bed availability.

3. Marmot, M (2010): ‘Fair Society, Health Lives, Strategic Review of Health Inequalities in England post 2010.

- Scenario 2b proposed model plus Proposed Model Plus: all stroke patients in Warwickshire will be treated at UHCW throughout both the hyper-acute and acute phases. When appropriate for discharge, the patient will be sent home for supported rehabilitation or, in the case of inpatient bedded rehab requirements (around 30% of patients), will be transferred to either GEH or LSH with the remainder of patients in Coventry and Rugby (10%) being commissioned a suitable care home bed in Coventry, with access to a specialist in-reach stroke rehabilitation team.

Unlike the original IIA, this report is not considering the impacts of scenario 4 and 5. These options, as a result of further pre-consultation, engagement and appraisal are no longer considered feasible for consideration. The options being considered for this IIA update are derivatives of the original option 2 - 2a and 2b - as these have been agreed as the only options clinically viable for the patient in accordance with the service specification⁴.

Whilst the revised proposals are similar to each other, they have differences in relation to how locally they propose stroke rehab will be treated. Therefore, rather than carrying out individual IIAs on each of the scenarios, this IIA will focus on each of the proposed changes, as outlined above, and that can be applied across the different scenarios.

Whilst stroke patients from Coventry and Rugby will largely be unaffected by the hyper-acute and acute pathways, the changes to bedded rehabilitation services will impact upon them and their family and carers. Therefore, this IIA will focus on the potential and variable impact on all South and North Warwickshire and Coventry and Rugby patients.

1.2 Stroke and Transient Ischemic Attack

1.2.1 Stroke

A stroke is a serious, life-threatening medical condition that occurs when the blood supply to part of the brain is cut off. Strokes are medical emergencies and urgent treatment is essential because the sooner a person receives effective treatment for a stroke, the less damage is likely to occur⁵. Like all organs, the brain needs the oxygen and nutrients provided by blood to function properly. If the supply of blood is restricted or stopped, brain cells begin to die. This can lead to brain injury, disability and possibly death⁶.

There are two main causes of strokes:

- Ischemic or cerebral infarction – where the blood supply is stopped due to a blood clot (this accounts for approximately 70% of all cases across Coventry and Warwickshire – ICD-10 codes I63x)

4 NHS Midlands & East. Stroke services specification v5. (2015)

5 Jeffrey L et al. *Time to treatment with endovascular thrombectomy and outcomes from ischemic stroke: a meta-analysis*. JAMA 2016;316 (120): 1279-1289.

6 NHS Choices. 2013. Stroke. [online] Available at: <http://www.nhs.uk/conditions/stroke/Pages/Introduction.aspx> [Accessed: March 2015]

- Hemorrhagic – where a weakened blood vessel supplying the brain bursts (this accounts for 19% of all cases across Coventry and Warwickshire – ICD-10 codes I60x and I61x)
- According to primary and secondary diagnosis codes for Coventry and Warwickshire patients, a further 11% were strokes not specifically hemorrhagic or infarction.

Strokes can be fatal or cause damage that can in the worst cases leave people disabled, affecting their ability to communicate, as well as physical and mental damage. This can have a huge effect on not only people who have had them, but also on families and carers; hence the focus of this IIA on the impact of stroke service redesign on the families and carers of stroke patients throughout the pathway. Length of stay in stroke units varies substantially. Patients are discharged when medically stable, and when they have been assessed as being sufficiently independent to be at home⁷. As a result, the timing of discharge from hospital is often determined by the level of support available at the patient's home for any functional disabilities.

The average length of stay in local stroke units is shown in table 2. Lengths of stay have been reducing over time for both TIA and stroke. The variation between providers could be attributed in part to differences in the presenting case-mix and to existing service configurations whereby hyperacute patients are transferred and different discharge process are in place for some providers.

	GEH	SWFT	UHCW	Provider Average
Average length of stay – stroke	18	27	15	18
Average length of stay – TIA	4	2	3	3

Table 2: Average length of stay for stroke and TIA, 2015/16, by provider. Source HES Inpatient Tables

There is no standard framework or guidance around how long each phase of stroke or stroke care lasts for. The length of each phase varies on a case-by-case basis, but typically the hyper-acute phase lasts for up to 3 days and the acute phase up to one week. The average length of inpatient stay for a stroke patient in Coventry and Warwickshire is 18 days.

1.2.2 Transient Ischemic Attack (TIA)

There is also a related condition known as a transient ischemic attack (TIA), where the supply of blood to the brain is temporarily interrupted, causing a 'mini-stroke' often lasting between 30 minutes and several hours. TIAs should be treated seriously as they are often a warning sign that a patient is at risk of having a full stroke in the near future. However, the effects of TIA can pass quickly and tend to leave no lasting damage.

1.2.3 Other Clinical risk factors for Stroke

There are several other pre-existing long-term conditions that can increase an individual's risk of having a stroke. These include atrial fibrillation, congestive heart failure, hypertension, diabetes and previous incidence of stroke. Primary and secondary prevention of these

⁷ Stroke Strategy for London. 2008. [online] Available at: www.londonhnp.nhs.uk/wp-content/.../03/London-Stroke-Strategy.pdf [Accessed: March 2015]

conditions is likely to reduce the overall incidence and therefore prevalence of stroke patients across the area.

1.3 Stroke Prevalence and Incidence

Risk of stroke increases with age, but other key risk factors are high blood pressure and obesity. Nearly 40% of men and more than 30% of women in England have high blood pressure, and the prevalence of obesity is expected to rise in the future⁸.

Nationally, the number of deaths from cardiovascular disease (which includes stroke), is higher amongst women than men^{9,10}. However, rates of stroke are higher amongst men¹¹. This indicates that women are more likely to die following a stroke than men.

Older people are most at risk of stroke; in Warwickshire (in 2015/16) 75% of strokes occur in people aged 65+ and nationally 78% of all stroke deaths occur in people aged 75+. The incidence of stroke doubles every decade after 55 years of age so that most strokes occur in older people¹².

Research suggests an inequality amongst different ethnicities in relation to their risk of stroke. There is a 60% greater incidence of stroke within the black African and black Caribbean populations than in the white population as a whole¹³. The prevalence of stroke among African, Caribbean and South Asian men is 40% to 70% higher than for the general population. Men with a Pakistan and Bangladesh origin are reported to have the highest cardiovascular disease death rates¹⁴.

Amongst people with disabilities, there is a higher prevalence of stroke amongst people with learning disabilities and mental health problems, when compared to the population as a whole¹⁵.

Socio-economic factors are known to be determinants of health across a range of different conditions. People living in more deprived areas are most at risk of cardiovascular disease and therefore stroke; the survival rate of stroke is also lower amongst people from lower socio-economic groups - there is an increased risk of mortality from stroke in the under 65

8 The King's Fund: Non-communicable diseases. N.d. [online] Available at: <http://www.kingsfund.org.uk/time-to-think-differently/trends/disease-and-disability/non-communicable-diseases> [Accessed: March 2015]

9 Department of Health (2008): 'Gender & Access to Health Services Study'

10 Office for National Statistics (2006): 'Mortality Statistics Cause: Review of the Registrar General on deaths by cause, sex and age, in England and Wales, 2005'. Series DH2, no. 32.

11 Department of Health (2008): Op. cit.

12 Elderly drivers increasingly more likely to die in accidents. 2007. <http://seniorjournal.com/NEWS/Aging/2007/7-01-05-ElderlyDrivers.htm>

13 Healthcare for London (2008): Op.cit.

14 Ethnicity. LHO. [online] Available at:

http://www.lho.org.uk/Download/Public/10291/1/Ethnicity_presentation_for_mens_health_meeting.ppt [Accessed: March 2015]

15 Disability Rights Commission (2006): Op. cit.

population with increasing deprivation¹⁶. People living in more deprived areas are also less likely to have good access to health care services.

Figure 1 displays the Standardised Admissions Ratio (SAR) for stroke in Warwickshire and Coventry Wards. The SAR is a summary estimate of admission rates relative to the national pattern of admissions and accounts for differences in a population's age and sex, therefore describes the difference between the expected number of admissions and the actual admissions. As identified in figure 1, there is no clear geographical pattern, but the highest SARs are seen generally in the most Northerly and Southern parts of Warwickshire, with Coleshill South and Curdworth (North Warwickshire) being the highest for females and males respectively. For Coventry, the Bablake ward has the highest SAR for men and women.

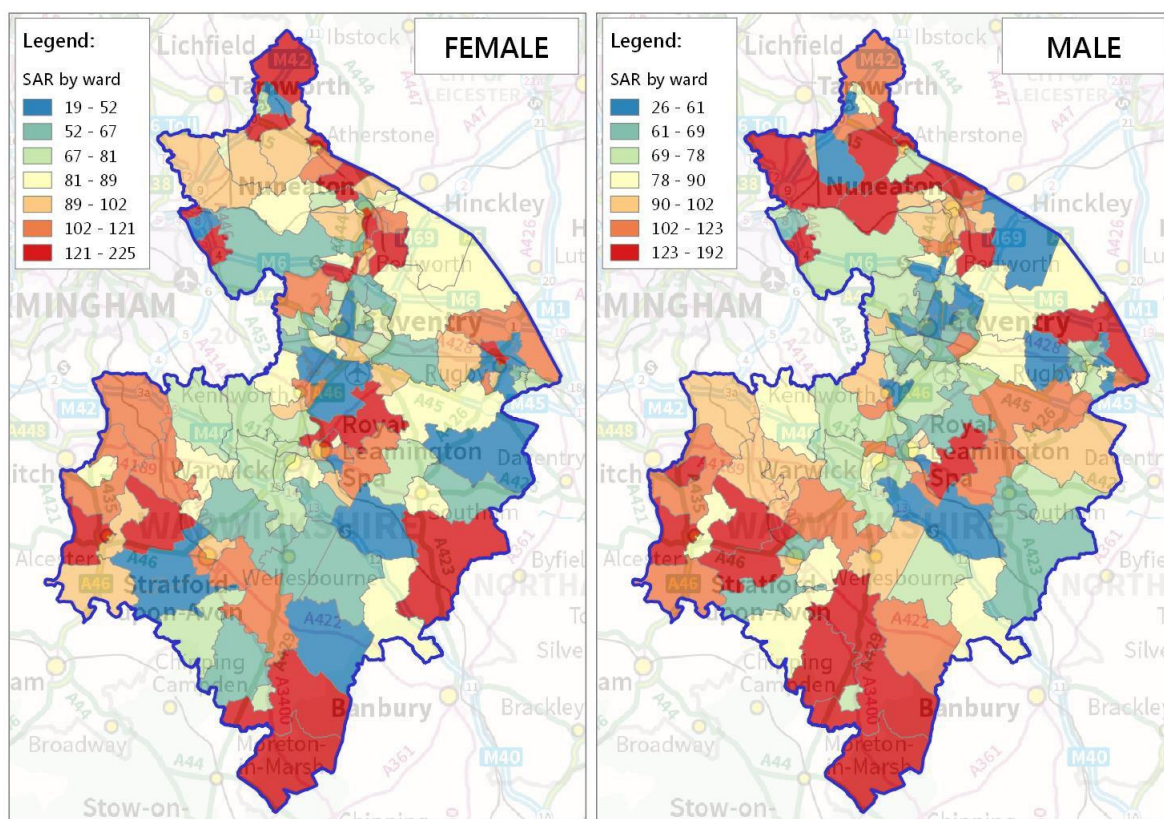


Figure 1: Emergency Stroke Hospital Admissions SAR, 2011/12 – 2015/16, Coventry and Warwickshire Wards. Source: Strategy Unit, HES inpatient tables and ONS mid-year population estimates.

16 Healthcare for London: Phase One Report Health and Equalities Scoping Paper. 2009. [online]. Available at <http://www.londonhp.nhs.uk/wp-content/uploads/2011/03/Integrated-impact-assessment-for-pan-London-major-trauma-and-acute-stroke-services.pdf> (accessed 23 Nov 2017)

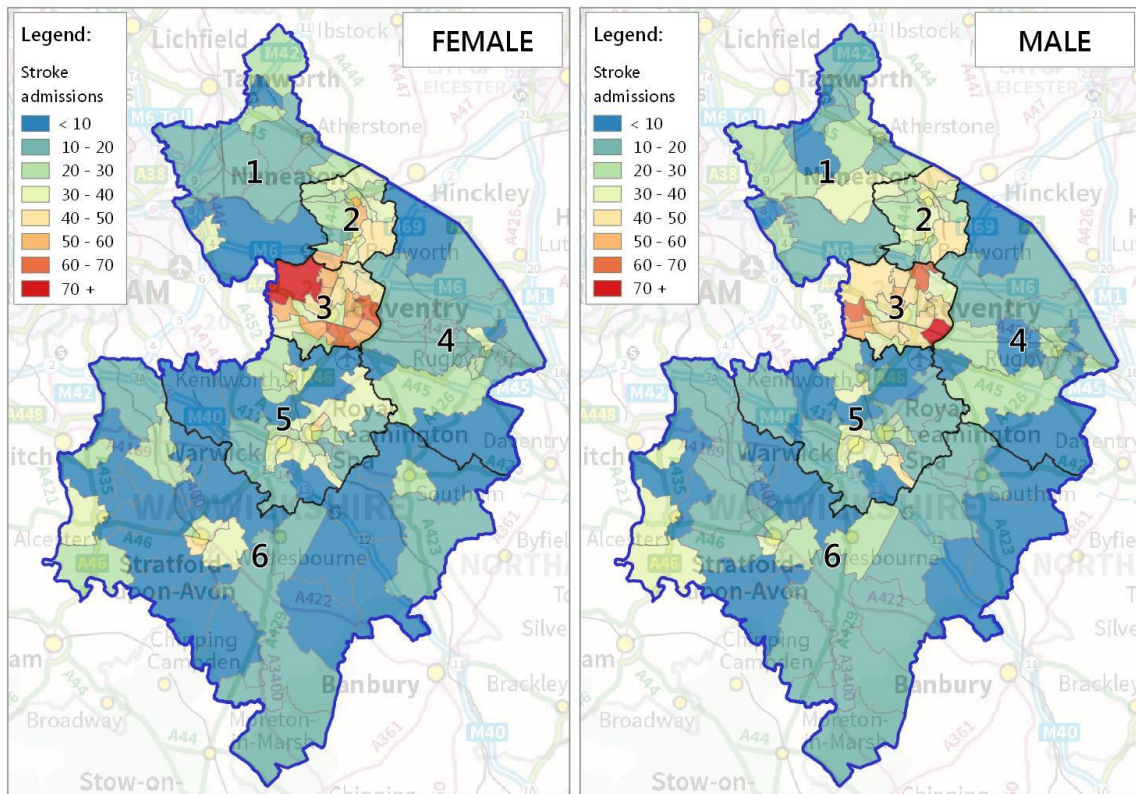


Figure 2: Emergency Stroke Hospital Admissions (counts), 2011/12 – 2015/16, Coventry and Warwickshire Wards. Source: Strategy Unit, HES inpatient tables

Of the 12 wards (out of 123 in total) with the highest SARs, 3 are in Coventry, 2 in North Warwickshire Borough, 5 in Rugby Borough and 2 in Warwick. Of the 12 wards with the lowest SARs 4 are in North Warwickshire, 3 in Nuneaton & Bedworth, 4 in Stratford and 1 in Warwick.

In absolute terms (Figure 2) it is clear the highest number of stroke patients live in the Coventry and Nuneaton areas, likely as a direct result of population density.

As previously mentioned, stroke occurs disproportionately in older people. Therefore, more strokes will occur in areas with an older age profile. A similar trend will be seen for areas with a high proportion of BME residents, and areas of higher socio-economic disadvantage, although age is the strongest determinant of stroke. Therefore, consideration should be given to geography in ensuring that services are accessible to the area of highest demand.

The prevalence described above suggests that based on the evidence, the protected groups that require the most consideration in relation to the impact of stroke service redesign are older people, BME groups and those from socio-economically disadvantaged areas.

1.4 Projections

Between 1990 and 2010, stroke incidence fell by 20% and mortality by almost 50%¹⁷, whilst the prevalence has increased over that time as survival has increased. Improved drug treatment in primary care is thought to be a major contributor, along with better control of risk factors both before and after incident stroke^{18, 16}.

Despite this, it is projected that nationally there will be an extra 31,000 first time strokes per year by 2025 because of expected increases in population size, lifespan and the prevalence of lifestyle choices and other chronic or long-term conditions that increase the risk of a stroke¹⁴. Therefore, ensuring effective provision of stroke services is important now and for future cohorts.

1.5 Joint Strategic Needs Assessment

The purpose of the JSNA is to analyse the current and future health and well-being needs of the local population ('hard' data i.e. statistics, 'soft data' i.e. the views of local people and service data), to inform the commissioning of health, wellbeing and social care services. The JSNA aims to establish a shared, evidence based consensus on the key local priorities across health and social care. Both Coventry and Warwickshire have a statutory duty to produce a JSNA.

The JSNA in turn will be used to develop the local Health and Wellbeing Strategy, Commissioning Plans for the Clinical Commissioning Groups (CCGs) and Transformation Plans for the local Health Economy. The Health & Well Being Board (HWB) is statutorily responsible for developing joint Health and Well Being Strategies based on the assessment of need outlined in Warwickshire's and Coventry's JSNAs.

Both the Coventry and Warwickshire JSNAs identify cardiovascular disease and stroke as priority areas, this is due to the opportunities for improvement, the scale of the impact on the population, poorer outcomes compared with national data for a number of indicators and the inequalities in the population. The Warwickshire JSNA highlights "There is considerable geographic variation across Warwickshire and by age and gender, in terms of CVD mortality. The 2011-13, under-75 mortality rate from CVD ranged from 58 per 100,000 population in Stratford-on-Avon District to 95 per 100,000 population in North Warwickshire Borough. Trends suggest a recent increase in the under-75 mortality rate for women in North Warwickshire Borough, although still similar to the England rate. There is also notable variation across the County at GP practice level in terms of diagnosis and treatment".¹⁹ In Warwickshire North there has been a programme of work since 2014 to address higher mortality in the younger population, particularly women from CVD. Stroke service redesign was seen as key part of the programme to improve outcomes.²⁰

Fuller data is presented in appendix 7.7 from the JSNA's and Public Health Outcomes Framework.

17 Patel A et al. Current, future and avoidable costs of stroke in the UK. Stroke association. September 2017

18 Lee, S. et al. 2011. UK stroke incidence, mortality and cardiovascular risk management 1999–2008: time-trend analysis from the General Practice Research Database [online] Available at: <http://bmjopen.bmj.com/content/1/2/e000269.full#citeby> [Accessed: March 2015]

19 Warwickshire JSNA <http://hwb.warwickshire.gov.uk/cardiovascular-disease-cvd/>

20 Warwickshire North CCG, Annual Report 2015/16.

2.0 IMPROVING STROKE OUTCOMES FOR COVENTRY AND WARWICKSHIRE

2.1 Case for Change

As part of the *Improving Stroke Outcomes for Coventry and Warwickshire* project, the Coventry and Warwickshire local health economy is seeking to improve the health outcomes of patients who have a stroke, by commissioning stroke services that are compliant with the Midlands and East Stroke pathway and specification, and the National Institute for Health and Care Excellence (NICE) quality standards.

Evidence shows that patients are 25% more likely to survive or recover from a stroke if treated in a specialist Centre. Patients need fast access to high-quality scanning facilities and thrombolytic therapy. Being within 30 minutes (by ambulance) from a specialist hyper-acute stroke unit will permit a more expert assessment and quicker treatment, with far higher chances of full rehabilitation¹⁹.

Current clinical pathways for Coventry and Warwickshire state that only stroke victims who present at GEH or SWFT within 4 hours of developing symptoms are transferred to the HASU at UHCW. As the speed in which specialist treatment is received is vital to patient recovery with stroke, patients who self-present at these hospitals may currently experience a longer wait for the necessary treatment than if they are taken directly to the HASU at UHCW with a suspected stroke. Decisions regarding thrombolysis typically require a CT scan that can take up to 60 minutes²⁰. The most recent clinical guidelines state that 'patients with suspected acute stroke should be admitted directly to a hyperacute stroke unit...' ²¹

The *Improving Stroke Outcomes* Business Case describes the strong and growing evidence base, that the organisation and timeliness of stroke specialist assessment and treatment significantly affects outcomes. The following key issues have been identified with the current service organisation and provision which results in increased mortality and morbidity following a stroke:

- The current service provision across Coventry and Warwickshire does not meet the requirements of the NHS Midlands and East regional Stroke Services Specification, particularly in ensuring that all patients suffering a stroke receive appropriate hyper acute care within the first 72 hours. Currently, on average 4 patients per day do not receive hyper acute assessment;
- The HASU/ASU beds and rehabilitation services for Coventry and Warwickshire patients do not universally meet national best practice care standards. Indeed, the latest published data in the NHS Atlas of Variation (2015) showed that the number of patients in Coventry and Warwickshire directly admitted to an acute stroke unit within 4 hours of onset of a stroke was amongst the lowest in the country;
- There is a lack of comprehensive access to ESD services and specialist community stroke rehabilitation, with cohorts of patients in Warwickshire North and South Warwickshire who currently have no access to these services;
- There is variable service provision and inequality of access to key services for Coventry and Warwickshire patients which must be corrected; particularly to HASU beds, inpatient rehabilitation, specialist community rehabilitation and ESD;
- Inadequate provision exists in primary prevention, in the form of gaps in anticoagulation therapy for those with atrial fibrillation to reduce the risk of stroke, with evidence that we could avoid c230 strokes over 3 years by bridging this gap
- The Sentinel Stroke National Audit Programme (SSNAP) results between Dec 2017- Mar 2018 show that Coventry and Warwickshire services are poor when compared to national

average performance in delivering rapid access to appropriate services. The most significant issues arising from the SSNAP audits in support of the case for improvement are:

- The proportion of patients scanned within 1 hour – in one of the local units 13% of patients are scanned within an hour, in comparison to a national average of 52.4%;
 - The median time taken for patients to be scanned – most recent results show it takes just over 2 hours and 43 minutes for some patients to be scanned, against a national average of just under an hour;
 - The time taken for patients to be admitted to a Stroke Unit – whilst the national average time for patients to be admitted to a Stroke Unit is just over 3.5 hours, it takes between 6 and 11 hours for patients in Coventry and Warwickshire; and
 - The proportion of patients assessed by a Stroke Specialist Consultant Physician within 24 hours is below the national average for two of the three acute providers in Coventry and Warwickshire.
- There is considerable variation in the acute care provided across the three sites, particularly in relation to lengths of stay. It is clear from review work undertaken that, due to a lack of specialist stroke ESD and community stroke rehabilitation services, patients are currently staying longer in the available acute stroke beds than is in their best interest;
 - Critically, there are insufficient Stroke Specialist Consultants to operate an improved and effective service within the current configuration of services, given the requirement to staff services on each of the three acute sites. At the outset of this work, there were only four permanent Stroke Specialist Consultants working across the three acute providers. There are known national shortages of these specialists and recruitment to vacant posts has been challenging for all providers.

These issues summarize the need to improve local stroke care across Warwickshire and Coventry shire so that more patients can survive their stroke and achieve the optimum recovery.

2.2 Current Provision

2.2.1 Background

In January 2012, the Midlands and East Strategic Health Authority presented a paper proposing a ‘fundamental review of the nature of stroke services’ across the whole of the Midlands and East region. The report, based on the national stroke specification, emphasised the emerging benefits arising from changes to stroke services implemented in London. This review resulted in a reduction from 34 hospitals receiving stroke patients to 8 hyper-acute stroke units.

Improving stroke outcomes for Coventry & Warwickshire: Pre-consultation business case v2.3. August 2017

Healthcare for London (2009); ‘The Shape of Things to Come’. Many of the figures used in Healthcare for London’s report are taken from research undertaken by Charles Wolf, Kings College London.

19 *National Stroke Strategy*. 2007. Department of Health. P. 29

20 Stroke Working Party, *National clinical guidelines for stroke*. 2016. RCP. P. 39

Locally, Coventry and Warwickshire have moved towards the specification with the centralisation

of all hyper-acute stroke care to UHCW; Hyper-acute stroke services for Coventry and Warwickshire are provided by UHCW as a tertiary service. Networked pathways of care have been in place since around 2007 to ensure that all patients potentially eligible for thrombolysis and hyper-acute management are taken directly to UHCW for their care.

2.2.2 Stroke Services in Warwickshire

The existing bed configuration within local acute hospital provider organisations is as per table 3; a total of 93 stroke-related beds:

UHCW				GEH				SWFT			
HASU	ASU	Stroke Rehab	Total	HASU	ASU	Stroke Rehab	Total	HASU	ASU	Stroke Rehab	Total
6	30	6	42	0	19	0	19	0	12	20	32

Table 3: Current stroke bed configuration, by provider. Source: SSNAP and trust websites

Hyper-acute Services

Hyper-acute services provide expert specialist clinical assessment within the first 3 days of a stroke presenting, with access to rapid imaging and the ability to deliver intravenous thrombolysis 24/7. Hyper-acute stroke care typically lasts for no longer than 72 hours after admission. These services may be in a specialist hyper-acute stroke unit (HASU) or as a dedicated area in a stroke unit. Typically, at least 600 stroke patient admissions per year are required to provide sufficient patient volumes to make a HASU clinically sustainable, to maintain expertise and to ensure good clinical outcomes. In 2015/16, there were < 300 admissions of stroke patients to both GEH and SWFT hospitals. 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.

Currently, there are 6 HASU beds at UHCW, with no HASU provision at GEH or SWFT.

Acute Stroke Care

Acute stroke care immediately follows the hyper-acute phase, usually after first 72 hours following 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.

Currently, there are 30 ASU beds at UHCW, 19 beds at GEH and 12 beds at SWFT.

Bedded rehabilitation

Some victims of more severe strokes or those with complex healthcare dependencies may require more intensive rehabilitation after their acute phase in inpatient settings for up to 3 months, thereby reducing the risk of re-admission into hospital for stroke-related problems and increasing long-term independence and quality of life with the support of the carer and family.

Currently LSH (as part of the Central England Rehabilitation Unit) provides 20 Rehabilitation beds offering 24/7 support. The Hospital of St. Cross in Rugby also currently offers 6 beds that can be used for stroke rehabilitation.

Early Supported Discharge

Early supported discharge (ESD) enables appropriate stroke survivors to leave hospital 'early' through the provision of intense rehabilitation in the community, at a similar level to the care provided in hospital. An ESD team of nurses, therapists, doctors and social care staff work collaboratively as a team and with patient and families. They provide intense rehabilitation at home for up to 6 weeks, thereby reducing the risk of re-admission into hospital for stroke-related problems and increasing independence and quality of life with the support of the carer and family. Currently, this service is only available to patients from the Coventry and Rugby areas.

Transient Ischemic Attack services

The risk of a stroke is high following a transient ischemic attack (TIA); approximately 10 – 20% of patients who have a TIA will go on to have a stroke within seven days. Specific TIA services provide rapid diagnostic assessment and access to specialist care for high risk patients, thereby lowering the risk of a subsequent stroke.

2.3 Future Service Model

2.3.1 Scenario 1: Do nothing

This scenario reflects the current configuration of services, and patient pathways. Currently, all stroke patients who are assessed by a paramedic to be Face, Arm, Speech Time Test (FAST)-positive,²² are taken directly to the hyper-acute Stroke Unit (HASU) at the University Hospital Coventry and Warwickshire (UHCW), where they will be assessed for diagnosis and treatment, including suitability for thrombolysis and brain scanning.

Those stroke patients who self-present at George Eliot Hospital (GEH) or South Warwickshire NHS Foundation Trust (SWFT) who are not deemed suitable for thrombolysis are managed within the Trust where they present. If a patient is deemed to be suitable for thrombolysis, then they are transferred to the HASU at UHCW.

Stroke patients from South and North Warwickshire who are treated in the HASU at UHCW are repatriated to their local provider once their condition is stable and an acute bed becomes available in the receiving Trust.

An Early Supported Discharge (ESD) service is being piloted in Coventry and Rugby, and there is a stroke outreach rehabilitation services at GEH and SWFT who support stroke patients in their own homes.

22 NHS Choices. N.d. Stroke – Act F.A.S.T. [online] Available at: <http://www.nhs.uk/actfast/Pages/stroke.aspx> [Accessed: March 2015]

With regard to the TIA services, all sites operate a 24/7 service as follows:

- UHCW – full 24/7 service;
- GEH – 24/7 service, with patients needing carotid imaging being sent to UHCW;
- SWFT – Monday to Friday service at SWFT, with weekend cover from UHCW.

See Appendix 7.1 for a flowchart depiction of this pathway.

2.3.2 Scenario 2a proposed model Proposed Model: Centralisation of Acute Care at UHCW and local bedded-rehab

All patients with a suspected stroke will attend UHCW HASU; once their hyper-acute phase is complete (up to 3 days), some patients may be fit to go home with early supported discharge, others who need longer stroke rehabilitation will move to the ASU at UHCW, and remain there until they can be discharged home with support, or to another appropriate care setting. For those patients requiring bedded rehabilitation (approx. 30% of stroke patients) specialist stroke rehabilitation beds will be available at both GEH and LSH depending on proximity and/or availability. Generally speaking, patients will be moved to the site that is closest to them, however during times of peak demand, in some cases they may have to temporarily move to a further destination.

With regard to TIAs, under all scenarios (excluding Do Nothing), TIA patients will be seen in a centralised service along with high acuity strokes. Therefore, all high acuity TIA patients will be seen at UHCW. Patients presenting to GEH or SWFT will be assessed by a Consultant with rapid telephone access to the HASU Stroke Consultant who will advise on the patient's management. See Appendix 7.2 for a flowchart depiction and see appendix 7.4 for the activity analysis underpinning this scenario.

2.3.3 Scenario 2b proposed model plus Proposed Model Plus: Centralisation of Acute Care at UHCW and further localised bedded- rehab model

All patients with a suspected stroke will attend UHCW HASU; once their hyper-acute phase is complete (up to 3 days), some patients may be fit to go home with early supported discharge, others who need longer stroke rehabilitation will move to the ASU at UHCW, and remain there until they can be discharged home with support, or to another appropriate care setting. For those patients requiring bedded rehabilitation specialist stroke rehabilitation beds will be available at LSH and GEH for South and North Warwickshire patients respectively. The remaining bedded rehab patients from Coventry and Rugby will be commissioned beds in suitable care homes in Coventry, where a team will provide stroke specialist in-reach service that equates to the bedded rehab at GEH and LSH. The TIA pathway is as under Scenario 2a proposed model .

See Appendix 7.3 for a flowchart depiction and see appendix 7.4 for the activity analysis underpinning this scenario.

Full details of the business case for the options and the detailed clinical service reviews are provided in the Improving Stroke Outcomes suite of documents including appendices.

3.0 METHODOLOGY

3.1 Defining the study area and current services

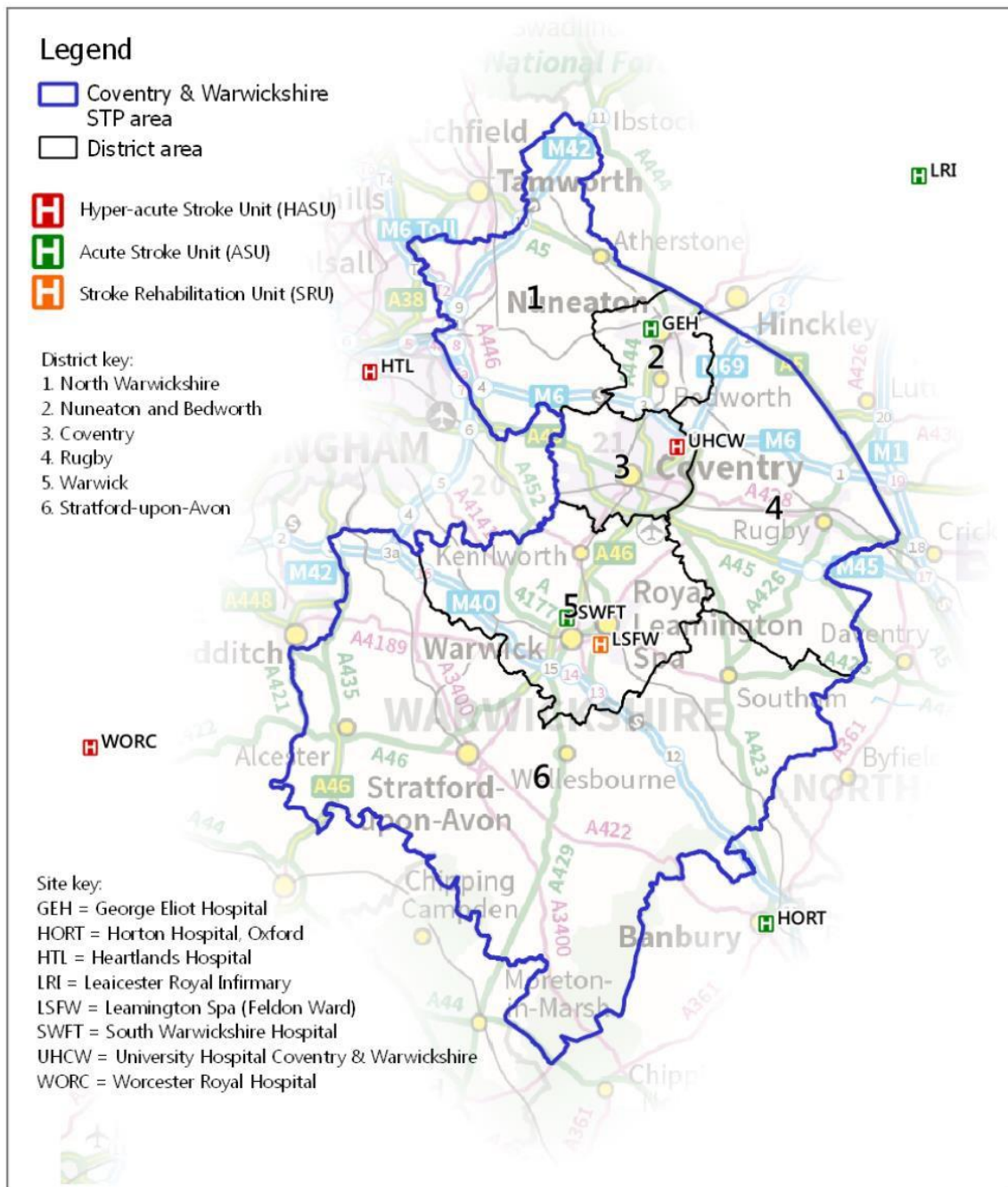


Figure 3: Study area (Warwickshire and Coventry, with major road networks and location of all nearby Stroke Units)

The study area incorporates the county of Warwickshire and the City of Coventry; an area of 2073.64 km² (Warwickshire area size: 1,975 km²; Coventry area size: 98.64 km²) and a resident population of 909,661 (MYE 2015; Warwickshire population: 556,750; Coventry population: 352,911).

3.2 Scoping

The main areas of focus for this IIA as with the previous IIA are as follows:

- Health
- Travel and access
- Equality

Following this, further work was carried out to understand the impact of potential changes to stroke services on the equality groups. This is a desktop IIA, drawing in patient engagement and making recommendations to inform future consultation. Each assessment was led by an expert in the relevant field and reviewed by another professional from the relevant specialty to validate the responses.

Stakeholder engagement is recognized as fundamental to high quality impact assessments. This review was commissioned as a desktop exercise to identify and outline key issues and takes into account previous engagement work. This IIA would enable wider stakeholder consultation and more detailed subsequent assessment. Following the production of the IIA, it is recognized that this then requires that public consultation is carried out to engage on potential equality and health inequality issues raised here and appropriate mitigations put in place as appropriate.

As part of the improving Stroke Outcomes process more detailed consideration and modelling is underway regarding implications for workforce and activity. These assessments will provide vital information but the results were not yet available to inform this IIA.

For the purposes of this scoping exercise, people with mental health conditions and/or learning disabilities are considered amongst the equality groups. This consisted of:

- **Literature review**
A review of recent literature, to ascertain whether there are any new trends associated with the equality groups and stroke services or stroke incidence. This aimed to determine whether any of the equality groups are more likely to experience stroke and thus be disproportionately affected by any changes to services.
- **Screening of equality groups**
Based on the available evidence and initial scoping, the equality groups are either 'screened-in' or 'screened-out', to ensure that the IIA continues to focus on the groups that are more likely to experience disproportionate impacts from any potential change to stroke services (see Table 1).
- **Socio-demographic analysis**
Density mapping of relevant population characteristics was undertaken to determine the distribution of some the equality groups across the areas; age, deprivation and ethnicity. Some populations are too small in number to map or no data are available at sub-national or sub-regional level (see Appendix 7.5).

This initial scoping exercise identified that several of the protected groups may be disproportionately impacted by the proposed changes to the stroke pathway. As previously mentioned, the individual that is impacted disproportionately may be the

stroke patient, or the carer/family member/visitor. This is illustrated in Table 4. Through the evidence review, some of the protected groups were not identified as having the potential to be disproportionately impacted and were therefore 'screened-out' and greyed out in Table 4.

	Impacted by redesigning services
Age: children	<input type="checkbox"/> Children of stroke patients
Age: young people	<input type="checkbox"/> Children of stroke patients
Age: older people	<input type="checkbox"/> Stroke incidence is higher in older people. The incidence of stroke doubles every decade after 55 years of age so that most strokes occur in older people.
Disability and people with mental health conditions	<input type="checkbox"/> Amongst people with disabilities, there is a higher prevalence of stroke amongst those with learning difficulties and mental health problems.
Gender reassignment	<input type="checkbox"/> Some evidence to suggest hormone replacement therapy, that can form part of gender transition process, can increase risk of stroke.
Pregnancy and maternity	<input type="checkbox"/> There is evidence to suggest that risk of stroke is higher for pregnant and postpartum women.
Ethnicity	<input type="checkbox"/> Incidence of stroke is higher amongst certain BME ethnicities.
Religion or belief	-
Gender	<input type="checkbox"/> The mortality rate from stroke, for all ages, is higher amongst men than women; for those under 75, the mortality rate for men is higher and there is a bigger gap between men and women. Prevalence of stroke is also higher amongst men, although in terms of numbers, more women than men suffer from a stroke ²³ .
Sexual orientation	-
Marriage & civil	-
Deprived communities	<input type="checkbox"/> Stroke occurs more commonly amongst those living in socio-economically disadvantaged areas; mortality from stroke also increases with increasing levels of deprivation.

Table 5: Screening of equality groups

3.2.1 Assessment of health and wellbeing impacts

For the purposes of this report, the HIA section will take both a health and social determinants approach. This means a focus on the indirect, wider determinants of health²⁴; that is to say: the changes in the social, cultural and economic conditions of the Coventry and Warwickshire population that could potentially result from any of the suggested scenarios being implemented. Additionally, and where possible the HIA will seek to describe and assess the likely direct health impacts of the proposed service changes.

To assess the direct health impacts of the scenarios, evidence has been collated from national pathway reviews and stroke specifications^{25,26}, comparable Health Impact Assessments (HIAs) on Stroke services and from local assessments of the clinical model undertaken through the West Midlands Clinical Senate and Coventry and Warwickshire Clinical Reference Group. Relevant national guidelines including NICE Guidelines were considered including the Cardiovascular disease prevention (PH25) and Stroke

Rehabilitation in Adults (CG162).^{27,28} In addition, the report reviewed the Improving Stroke Outcomes Business Case. Full details of the business case for the Options and the detailed clinical service reviews are provided in the Improving Stroke Outcomes suite of documents including appendices²⁹.

For the purposes of this IIA, these will be as follows²⁵:

- Employment
- Family cohesion
- Housing
- Income
- Social cohesion
- Parenting and Caring
- Health outcomes
- Impacts Relating to Access to High Quality Health Care

23 British Heart Foundation. 2014. Cardiovascular disease statistics. [online] Available at: https://www.bhf.org.uk/~media/files/publications/research/bhf_cvd_statistics-2014_new1.pdf [Accessed: March 2015]

24 World Health Organization. 2003. Health impact assessment: the wider context. [online] Available at: <http://www.who.int/bulletin/volumes/81/6/morgan.pdf> [Accessed: March 2015]

25 Path to Excellence: An Independent Integrated Equality, Health and Health Inequalities Impact Assessment. Proposals to change and improve Acute Stroke Services in South Tyneside and Sunderland [assessed 2018]

26 Appendix 15 Available at: <https://www.england.nhs.uk/mids-east/wp-content/uploads/sites/7/2017/07/configuration-decision-support-guide-appendices-2.pdf> (Accessed January 2018)

27 Cardiovascular disease prevention NICE Public Health Guideline <https://www.nice.org.uk/guidance/ph25/resources/cardiovascular-disease-prevention-pdf-1996238687173>

28 Stroke Rehabilitation NICE Clinical Guideline 2013 <https://www.nice.org.uk/guidance/cg162/resources/stroke-rehabilitation-in-adults-pdf-35109688408261>

29 NHS Executive. West Midlands Directors of Public Health Group: Using Health Impact Assessment to make Better Decisions. A simple guide. [online] Available at: www.apho.org.uk/resource/view.aspx?RID=44797 [Accessed: March 2015]

3.2.2 Assessment of travel and access impacts

The assessment of transport and access impacts in this IIA will evaluate the direct impacts on patients, particularly those self-presenting to non-Stroke Units, and the potential impact on those who would visit them during their stay in hospital. We will assess changes in journey times by both private and public transport and review the current accessibility to each site of interest based on publicly available information.

Postcode-level access contours for different times of day and modes of travel will provide a high-level perspective on potential impacts for the equality groups.

Using the lowest-level resident geography in the activity datasets (lower super output area) we will evaluate the likely changes in journey times under each scenario for the patient and visitors/carers to inform the HIA and the travel and access impact assessment. In order to do this, we are assuming that visitors or carers reside in the same location as the patient. There is no data to support analysis of visitor journeys, so these impacts should be seen as indicative rather than authoritative.

3.2.2.1 Breakdown of Scenario implications

Each of the suggested alternative scenarios means that there are some patients who would under the current configuration of services have been treated at their local hospital, i.e. SWFT or GEH for the acute phase, but under any of the suggested scenarios will be treated at UHCW for this phase, as follows:

- Scenario 2a proposed model Proposed Model: all stroke patients in Warwickshire will be treated at UHCW throughout both the hyper-acute and acute phases. This will include the transfer to UHCW of patients who self-present with stroke symptoms at either GEH or SWFT. All paramedic assessed stroke patients in the area will be conveyed directly to UHCW.

Whilst most patients treated at UHCW will be deemed suitable for early supported discharge (ESD) or rehabilitation in the community, around 30% will require bedded inpatient rehabilitation. Under this scenario, the patient may choose to receive this at either GEH or LSH depending on proximity to their usual residence and bed availability.

- Scenario 2b proposed model plus Proposed Model Plus: as in Scenario 2a proposed model , all stroke patients in Warwickshire will be treated at UHCW throughout both the hyper-acute and acute phases. This will include the transfer to UHCW of patients who self-present with stroke symptoms at either GEH or SWFT. All paramedic assessed stroke patients in the area will be conveyed directly to UHCW.

In contrast to Scenario 2a proposed model , this scenario states that in addition to bedded rehabilitation (approximately 20% of stroke patients) being provided in an inpatient setting (LSH and GEH), suitable care home beds will be commissioned on a case-by-case basis near to Coventry and Rugby patients' usual residence who will have to leave UHCW for that aspect of their care.

Whilst UHCW, as the specialist Centre for the hyper-acute phase, should be accessible within 30 minutes by ambulance, for a stroke. For relatives and carers, the trip to visit patients will be considerably longer, especially if public transport is required. This is particularly relevant to groups which are more likely to use public transport; older people, women, BAME groups and those from socially deprived communities

Whilst the majority of patients admitted to a HASU or ASU in Coventry and Warwickshire are from the immediate area, there are some patients, likely by virtue of their proximity at the time of symptom onset that reside outside the county area and may want to return to their local provider for ongoing care. Similarly, there are other HASU and ASU units in surrounding authorities that may, for some residents of the area, provide a closer care setting for acute care or rehabilitation. Most notably this could affect stroke patients to the West of North Warwickshire (nearer Heartlands hospital, HASU) and the South East of Warwickshire (nearer Horton hospital, ASU) (see figure 4).

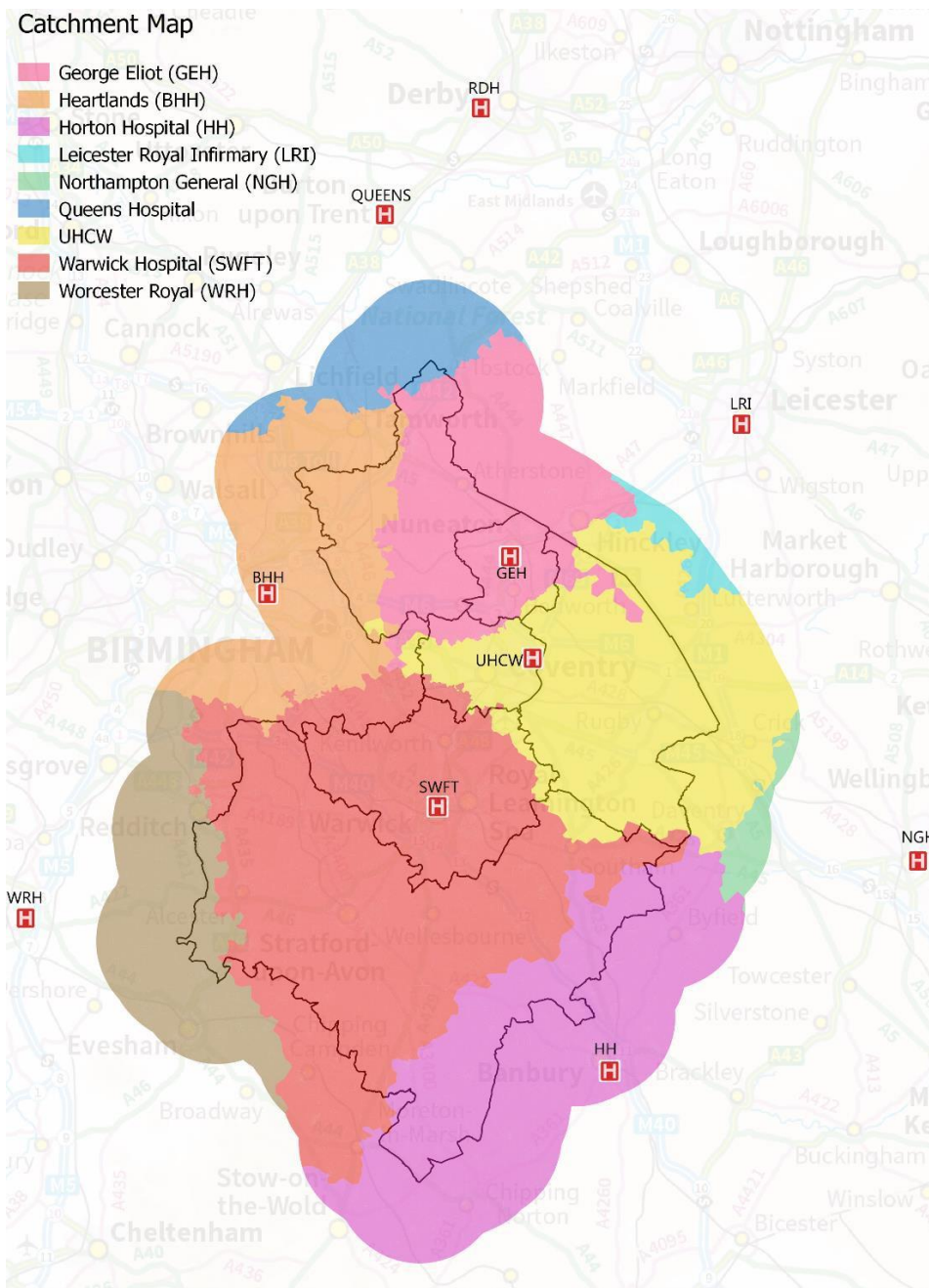


Figure4. Nearest HASU/ ASU by postcode unit, based on average car off peak drive times.

3.2.2.2 Travel times

There is a driving distance of 8.6 miles between GEH and UHCW. This equates to an additional travel time of approximately 15 minutes for a single journey for individuals travelling by private transport, who would previously have been treated locally at GEH but under some of the proposed scenarios may be treated at UHCW.

There is a driving distance of 12.4 miles between SWFT and UHCW. This equates to an additional travel time of approximately 23 minutes for a single journey for individuals travelling by private transport, who would previously have been treated locally at SWFT but under some of the proposed scenarios may be treated at UHCW.

The following table and maps figures demonstrate the access picture across the area and sub-districts and the proportion of the journeys from the patient location that are within 15 and 30 minutes according to actual strokes or TIA that occurred in 2015/16.

	Coventry & Rugby	North Warwickshire	Nuneaton & Bedworth	Rugby	Stratford-upon-Avon	Warwick	All districts (incl out-of-area)
Number	536	130	325	182	193	251	1,770
Avg time	11.7	21.4	11.3	17.0	24.9	12.5	15.5
Median time	11.8	21.6	10.6	18.8	23.9	11.0	13.2
% < 15 mins	75.6%	17.7%	75.1%	29.1%	0.5%	72.5%	51.9
% < 30 mins	99.6%	95.4%	100.0%	100.0%	74.1%	100.0%	95.3

Table 5. Travel by private transport assuming off peak travel speeds

Patients from Stratford currently experience the longest journeys to hospital when presenting with stroke symptoms and patients from Nuneaton the shortest.

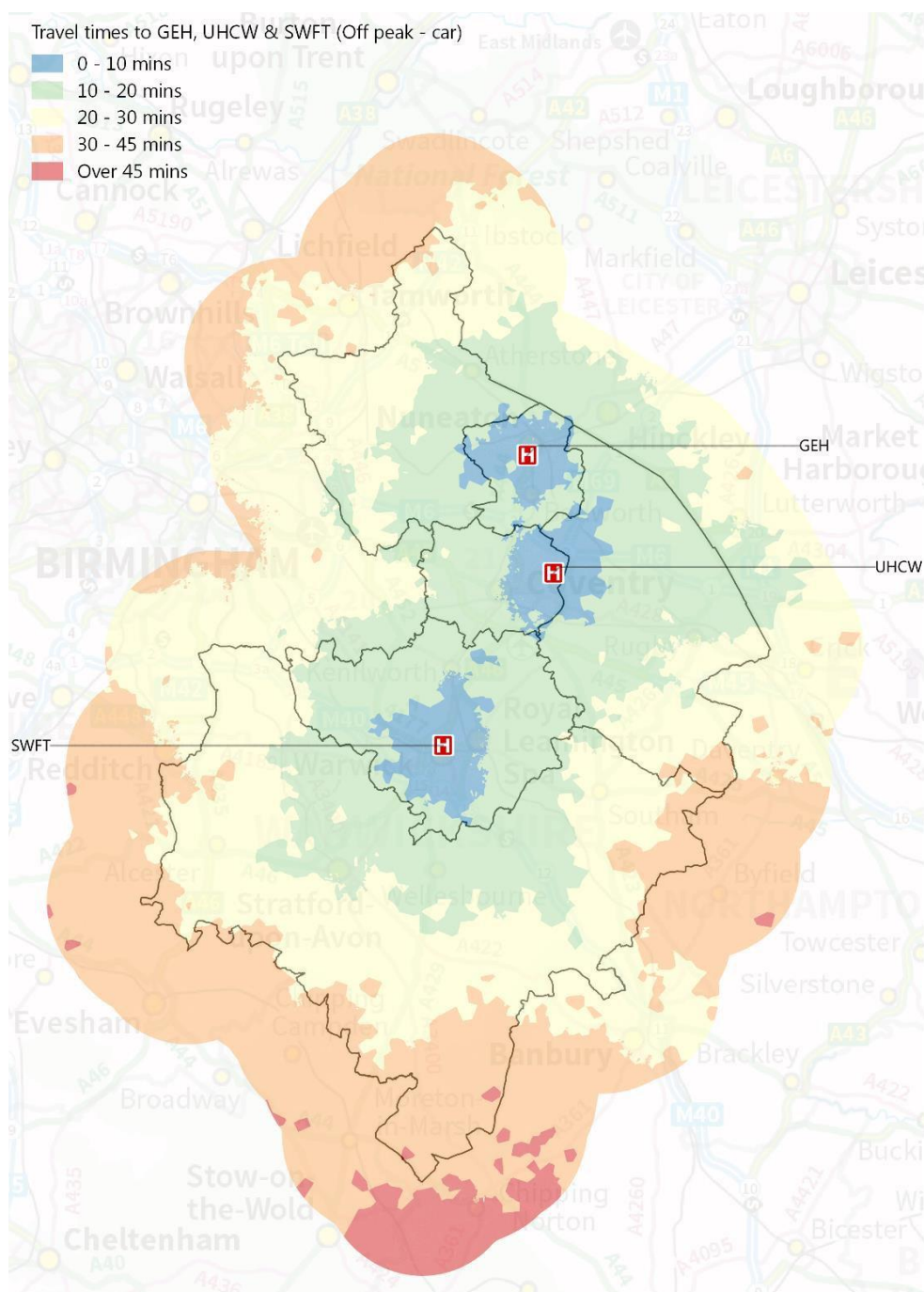


Figure 5. Travel times for scenario 1, visitors travelling to GEH, UHCW & SWFT. Travel times are based on average car off peak drive times.

The majority of patients and visitors could travel to GEH, UHCW or SWFT within 30 minutes. Visitors travelling from rural areas of Stratford upon Avon district may encounter journeys of 30 to 45 minutes. Visitors travelling from outside Warwickshire may encounter journey times beyond 45 minutes.

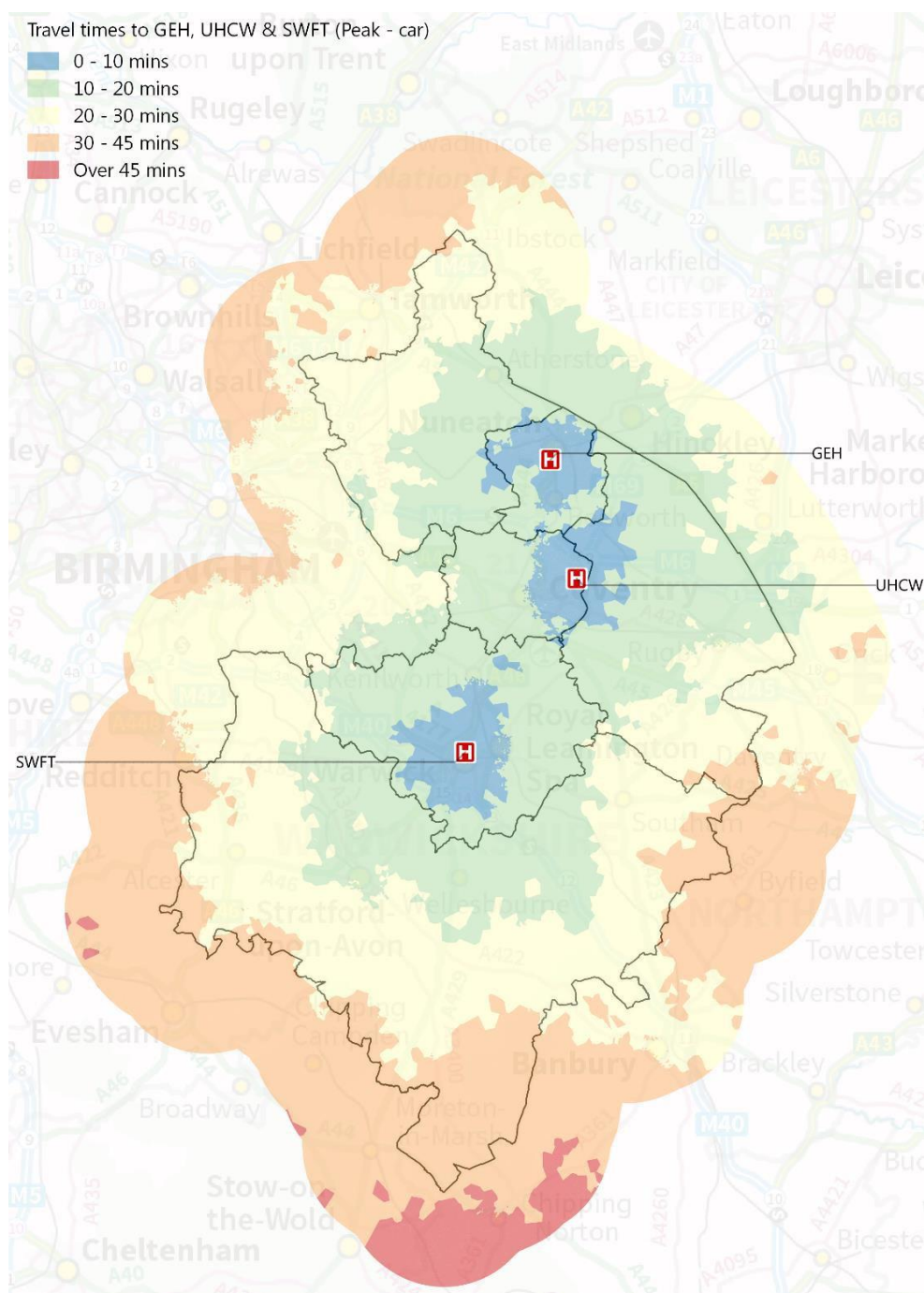


Figure 6. Travel times for scenario 1, visitors travelling to GEH, UHCW & SWFT. Travel times are based on average peak car drive times.

The majority of visitors from all districts within Warwickshire can expect journey times of 20 to 30 minutes at peak times, when travelling to GEH, UHCW or SWFT. Travelling from some areas of Stratford upon Avon and outside of the area could have travel times of between 30 and 45 minutes.

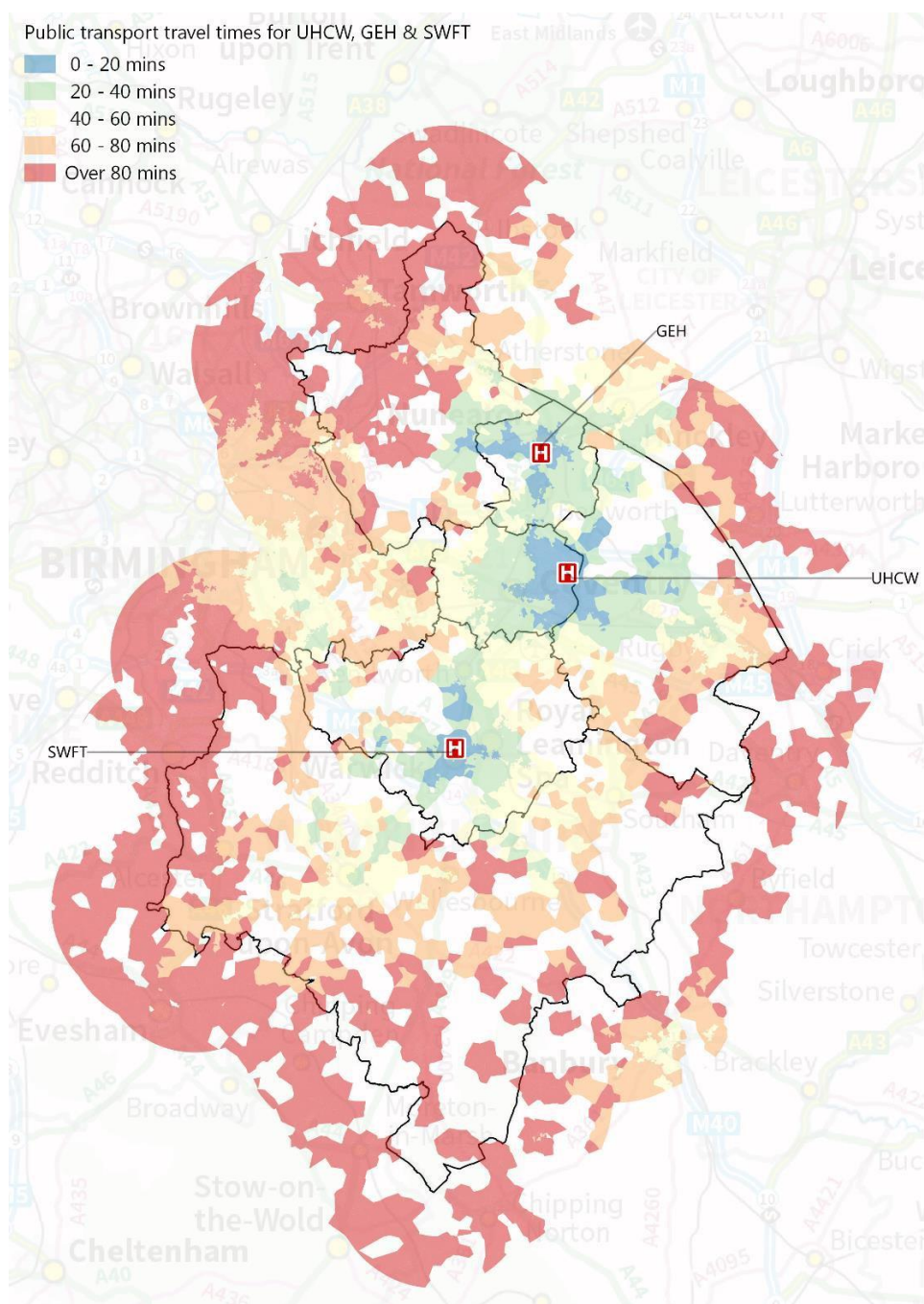


Figure 7. Travel times for scenario 1, visitors travelling to GEH, UHCW and SWFT via public transport.

Travel times are based upon visitors travelling at 2pm on a Tuesday. There is variation within districts for travel times to GEH, UHCW and SWFT when using public transport. Rural areas are affected the most; with journey times often taking between 60 and 80 minutes. GEH, UHCW and SWFT are inaccessible from numerous areas of Warwickshire as indicated by the blank spaces on the map.

3.2.2.3 Length of stay in stroke units and visitor assumptions

The average length of stay for stroke patients is 18 days. In 2015/16, there were 799 admissions for stroke to UHCW, 240 to GEH and 257 to SWFT; this is a combined total of 1,296, although 166 of this total are of patients living outside the county area.

Typically, TIA patients stay in hospital for 3 days. In 2015/16, there were 344 admissions for TIA to UHCW, 87 to GEH and 76 to SWFT; this is a combined total of 507, although 81 are of patients living outside the county area.

Therefore, changes to stroke and TIA treatment location could impact on 1,803 individuals per year, over a period of (on average) between 3 and 18 days for each individual visitor.

Close family members or the primary carer are more likely to visit the patient at each visiting interval allowed by the hospital throughout the stay. Other friends and relatives would visit less often. For the purposes of estimation, we would assume that the 'average' patient will receive 2 visits per day from their primary contact who will make return journeys to the relevant inpatient ward on both occasions. Impact on occasional visitors is likely to be minimal as a result of any changes proposed.

Research has shown that family function appears to influence stroke outcomes; it is suggested that high levels of family support are associated with improved recovery status^{26, 27}, thus highlighting the importance of stroke patients receiving visitors. Therefore, any stroke pathway scenario that could result in a potential reduction in visitors could negatively impact on stroke recovery outcomes.

3.2.3 Assessment of equality impacts

In undertaking an assessment of potential impacts of the proposed scenarios in relation to equality, this IIA follows the Warwickshire County Council Equality Impact Assessment guidelines²⁸. This requires that further public consultation is carried out to engage on potential equality issues raised here and appropriate mitigations put in place as appropriate.

30 Family Function and Stroke Recovery: A Review. Palmer, Sara; Glass, Thomas A. *Rehabilitation Psychology*, Vol 48(4), Nov 2003, 255-265. <http://dx.doi.org/10.1037/0090-5550.48.4.255> [Accessed: March 2015]

31 Tsouna-Hadjis, Evie. et al. 1999. *Physical Medicine and Rehabilitation*. First-stroke recovery process: The role of family social support [online] Available at: <http://dx.doi.org/10.1053/apmr.2000.4435> [Accessed: 2March 2015]

32 Warwickshire County Council. 2015. Equality Impact Assessments. [online] Available at: <http://apps.warwickshire.gov.uk/api/documents/WCCC-575-761> [Accessed: March 2015]

4.0 ASSESSMENT OF OVERARCHING CHANGES

4.1 There are three fundamental differences between the current configuration of services and the proposed changes being assessed under this IIA.

- A. The assessment and treatment of all Stroke patients for the entirety of their hyper-acute and acute phase at UHCW instead of some or all inpatient care being at the patient's more local unit.
- B. In future all patients who have a stroke, will receive a specialist ESD and/or community stroke rehabilitation service at home, whereas currently there is no service in some areas.
- C. The provision of bedded rehabilitation for a subset of more complex patients at a selection of sites across the County area (but not at UHCW).

Change A

The impact of all stroke and hemorrhagic stroke patients being assessed and treated at UHCW for the entirety of their inpatient care instead of being treated at SWFT or GEH respectively; this can be applied to both alternative scenarios.

Background:

Approximately 15%²⁹ of all strokes are thought to be hemorrhagic strokes. According to spell Health Resource Group (HRG) and diagnosis codes (primary or secondary) for patients admitted to the 3 sites in question, the local figure is 19%. The current incidence of strokes by type and provider is as follows:

	UHCW		GEH		SWFT	
	N	%	N	%	N	%
Hemorrhagic Stroke	185	23.2	27	11.3	36	14.0
Cerebral Infarction	576	72.2	151	62.9	172	66.9
Other Stroke	37	4.6	62	25.8	49	19.1
All Strokes	798		240		257	

Table 6: Baseline stroke admission activity, 2015/16, Source: The Strategy Unit, HES inpatient tables

This suggests that the change to assessing all stroke patients at UHCW instead of UHCW, SWFT or GEH would impact on 497 people (i.e. the sum of SWFT and GEH stroke patients). The impact will be felt largely by North Warwickshire patients who would previously have been treated locally at GEH and South Warwickshire patients who would previously have been treated locally at SWFT.

29 Stroke Association. N.d. Hemorrhagic stroke - Bleeding in the brain. [online] Available at: <http://www.stroke.org.uk/factsheet/haemorrhagic-stroke> [Accessed: March 2015]

193 of the strokes treated at these 3 sites across Coventry and Warwickshire were to residents completely outside the area. 142 of these were admitted to UHCW. Given that UHCW is the closest HASU to both GEH and SWFT, these patients should all be transferred to UHCW for quick treatment. Depending on the arrangements within their area, some of these patients may be repatriated to their nearest ASU after the hyper-acute phase or for ongoing rehabilitation which could be outside of the Coventry and Warwickshire area.

	Geographical Area						AREA TOTAL	Out-of-area
	Coventry	North Warwicks hire	Nuneaton & Bedworth	Rugby	Stratford-on-Avon	Warwick		
Hemorrhagic Stroke	72	16	35	24	35	24	206	57
Cerebral infarction	275	62	178	99	89	144	847	93
Other Stroke	19	19	35	9	27	27	136	21
All Strokes*	366	97	248	132	151	195	1189	171
% at UHCW	98.3%	37.1%	42.7%	96.3%	30.5%	24.6%	60.3%	71.1%
% at GEH	0.6%	62.9%	56.9%	1.9%	0.0%	0.0%	18.2%	20.5%
% at SWFT	1.1%	0.0%	0.4%	1.9%	69.5%	75.4%	21.5%	8.4%
<i>Multiple stroke patients (%)</i>	<i>24 (6.6%)</i>	<i>17 (17.5%)</i>	<i>44 (17.7%)</i>	<i>9 (6.8%)</i>	<i>15 (9.9%)</i>	<i>25 (12.8%)</i>	<i>134 (11.3%)</i>	<i>35 (20.5%)</i>

Table 7. Baseline stroke admission activity by district area in Coventry and Warwickshire.

*Source: The Strategy Unit, HES inpatient tables. * The activity here reflects the number of completed stroke spells rather than the number of patients. In 2015/16 there were 155 patients with multiple stroke spells (134 from within Coventry and Warwickshire) accounting for 334 stroke incidents.*

Virtually all stroke patients from Coventry and Rugby admit to UHCW, so negligible impact will be felt in relation to them for this aspect of the proposed service change.

Therefore, whilst there are likely to be negative travel and access impacts of the proposed changes, there should be significant health improvements in terms of reduced mortality, reduced disability and improved recovery as well as the equality of service provision for all.

Change B

The impact of expanding early supported discharge and community rehabilitation at home to reduce length of stay for the whole of the Coventry and Warwickshire area. The service is only currently available to Coventry and Rugby patients. The change would apply equally in both Scenario 2a proposed model and 2b, and will equate to around 968 patients according to commissioner modelling.

Background:

The clinical business case proposes that the improved / extended ESD and rehabilitation support services will reduce the length of stay (for hyper-acute and acute phases combined) down to 11 days initially and to 7 days after 2 years of operation. The shortened length of time in hospital will therefore mitigate, to some extent, the further travel for some carers and visitors.

Change C

The impact of bedded rehabilitation for a minority of complex patients being provided at a selection of local sites but not at UHCW; this can be applied differentially to scenarios 2a and 2b.

Background:

It is estimated that 30% of all stroke patients will require some form of bedded inpatient rehabilitation after their acute phase of care – equivalent to 390 patients according to commissioner modelling. The average duration of inpatient rehabilitation episodes (assuming all spell length of stays > 7 days) for local patients is 56 days (range 7 to 200 days).

	UHCW	GEH	SWFT
'Step-down' to inpatient rehab	240	72	77

Table 8. Baseline number of patients (estimated) concluding their spell with bedded rehab by site. Source: Coventry and Warwickshire CCGs, The Strategy Unit

The provision of bedded rehab at GEH and LSH will generally only impact Coventry and Rugby patients adversely, who would previously have received inpatient bedded rehabilitation at UHCW and a smaller number and to a lesser extent for patients previously receiving that care at SWFT. Scenario 2b proposed model plus (proposed model plus) will mitigate some of the effects of this with more localised provision in suitable care home beds with extensive in-reach support.

4.2 Summary of scales of impact

The following table summarises the potential scale of impact in patient numbers for each of the above change areas and estimated numbers of those by district and in the quantifiable equality population groups;

Change	Description	Estimated numbers impacted	By District	By Equality group
A. Centralisation	All Stroke and TIA patients not currently treated at UHCW.	726	Coventry - 19	Age (over 65s) - 582
			North Warwickshire - 84	BAME - 89
			Nuneaton & Bedworth - 186	Males - 346
			Rugby - 32	Female - 380
			Stratford - 133	Deprived areas - 58
			Warwick - 191	Pregnant/maternity - 13
			Out-of-Area - 81	
B. ESD and community rehabilitation	All stroke patients suitable for ESD and community recovery and rehabilitation post-acute stage (70%)	952	Coventry - 245	Age (over 65s) - 683
			North Warwickshire - 76	BAME - 137
			Nuneaton & Bedworth - 199	Males - 510
			Rugby - 86	Female - 442
			Stratford - 99	Deprived areas - 131
			Warwick - 123	Pregnant/maternity - 21
			Out-of-Area - 123	
Change	Description	Estimated numbers impacted	By District	By Equality group
C. Complex and bedded rehabilitation	All stroke patients requiring inpatient rehabilitation post-acute stage (30%)	408	Coventry - 105	Age (over 65s) - 323
			North Warwickshire - 33	BAME - 65
			Nuneaton & Bedworth - 85	Males - 190
			Rugby - 37	Female - 218
			Stratford - 42	Deprived areas - 45
			Warwick - 53	Pregnant/maternity - 5
			Out-of-Area - 53	

Table 9. Estimates of impacts for the proposed changes by district and assorted equality groups, based on 2015/16 data. Source: The Strategy Unit.

The above figures are based on 2015/16 HES activity data, therefore do not reconcile exactly with the commissioner modelling (appendix 7.4) and are considered a broad estimate of impacts for consideration alongside the following impact assessments. The impact on carers and visitors can be assumed to follow a similar distribution in the absence of additional information to the contrary.

5.0 INTEGRATED IMPACT ASSESSMENT

5.1 Travel and Access Impact Assessment

5.1.0 Findings from Stakeholder Engagement: July 2017

An engagement exercise with service stakeholders was carried out in July 2017 that recorded responses to proposed stroke service changes in Coventry and Warwickshire³⁰.

According to staff, representative organisations, patients and carers, there was a general acceptance of the clinical benefits and improved outcomes that a centralised and specialised service may bring. However, the following points raised during this engagement were specific to the potential travel and access impacts;

Engagement setting	Stakeholder	Comments
Survey responses from organisations and other correspondence	Nuneaton & Bedworth OSC	a) The current public service transport to UHCW is infrequent and not accessible to residents in the north of the County b) The current parking capacity at UHCW is poor and the cost of this would be prohibitive for some relatives c) Rehabilitation proposals may result in a possibility for travel to LSH if GEH is full and vice versa Distributing a leaflet is not an adequate mitigation
	Warwickshire HWB	a) Concerns about travel times to UHCW from some parts of the county, given the target for treatment within 30 minutes of the stroke occurring
	Keep our NHS public	General concern about transport difficulties if services are centralised at UHCW
	Healthwatch Coventry	a) Concerned about the congestion on the UHCW site b) Does not feel that the suggestion of unit based rehabilitation services at either GEH or LSH is sufficient, because of transport issues for Coventry patients. They request that thought is given to providing an accessible transport service
	Members of public	a) Strong objections to the proposals because they increase time taken to arrive a central stroke unit and place the central stroke unit in 'what is possibly the most difficult hospital to attend and at which to park' b) Objections to UHCW because of the time taken to travel there and difficulty parking c) Concern about the difficulty of getting to hospital in Coventry if someone cannot drive

Table 10. Survey responses from stakeholder engagement regarding travel and access

30 Arden & GEM CSU, 'Engagement Report: Improving Stroke Services in Coventry and Warwickshire'. Unpublished.

Engagement setting	Stakeholder	Comments
Outreach and engagement meetings	Members of public	a) Transport – people who lived outside Coventry were anxious about difficulties getting to Coventry, the cost and the length of time taken, including ambulance time if someone suffered a stroke. Solutions such as community transport (which existed but has been withdrawn) b) Opposition to the loss of stroke beds in Rugby, mainly because of transport and access issues
	Staff	a) Transport and the difficulties the model would raise, the fact that rural bus services have been cut, travel times for relatives and carers b) Concern that stroke therapists would be stretched, particularly in rural areas
	Warwickshire North CCG AGM	a) Difficulty with transport b) Concern about parking at UHCW as it is really difficult.
	Community Groups various	Lack of availability of public transport, costs and difficulty parking at UHCW. A shuttle bus was suggested as a solution

Table 11. Outreach and engagement meetings findings regarding travel and access

Engagement setting	Stakeholder	Comments
Questionnaire responses	All responses (Q2)	a) As treatment required within an hour, moving services further away from patients cannot be the solution - issues at UHCW in access and waiting times. b) Need to increase service provision at SWFT instead c) Patient demographics in this area and the large catchment could create significant difficulties d) Travelling so far may put some people off seeking treatment e) moving all acute beds to Coventry is terrible news for families and carers who want to actually see their loved ones in hospital f) If they do drive the usual horrendous, extortionate parking issues g) The length of time to transfer patients from scene of incident to university by road at certain parts of the day would severely be prolonged, and could possibly cost a patient urgent medical intervention h) Rugby is the fastest growing town around the area and as such we should be increasing services
	All responses (Q3)	a) Not everyone drives and public transport between Warwick and UHCW is unreliable b) Why not more facilities at St Cross. It would be difficult for me to have any visitors in Leamington or Nuneaton c) There is no provision for Rugby residents...travel will add to people's distress and cost. d) Rugby will soon be the largest town in Warwickshire, why send people to Leamington or Nuneaton, this is very difficult for the patients and their carers and visitors
	All responses (Q4)	Further distances to travel - extra pressures on families and carers

Table 12. Questionnaire responses regarding travel and access

The common themes around travel and access that emerged throughout the engagement are those concerns of:

- Increased journey times for visitors and carers, particularly from South and North Warwickshire
- Poor access to UHCW by public transport from many areas
- Congestion around and parking in the UHCW site
- People in Rugby losing out in terms of local rehabilitation provision

Respondents to the engagement suggested the following as potential mitigation for some of their concerns:

- Provision of shuttle buses in-between the 3 main sites
- This should be for both patients and carers
- Improved public transport links to Coventry from remote areas.
- Subsidised local accommodation for carers
- Improved parking provision and/or system at UHCW

5.1.1 Private transport

Car ownership varies between and within the districts/boroughs in Warwickshire and Coventry, against an average ownership of 76% for Warwickshire and Coventry as a whole – see table 13. Different aspects of the care pathway will affect different geographical areas of the study population.

District/Borough	Car ownership
North Warwickshire	84%
Nuneaton and Bedworth	78%
Rugby	82%
Stratford-on-Avon	87%
Warwick	82%
Warwickshire	83%
Coventry	69%

Table 13: Car ownership, percentage of population, Coventry and Warwickshire. Source: ONS

Within Rugby district, the ability to use a private vehicle is generally quite high with the exception of the Rugby Town area itself where a greater proportion relies on public transport.

Therefore, having to travel further, particularly for the rehabilitation phase of care is likely to have a disproportionate impact on individuals and carers/visitors from Rugby itself.

South Warwickshire

Car ownership in Warwickshire is highest in Stratford-on-Avon District (87%). The slightly lower value for Warwick District (82%) is again representative of the relatively urban nature and demographic composition of the district, rather than issues around affordability. The variation in car ownership indicates that having to travel further is likely to have a greater impact on convenience for some residents who live in the center of Warwick, Leamington or Stratford-upon-Avon towns.

Impact on patient

Patients who have had a stroke are unlikely to be well enough to use private transport alone and the majority are conveyed to A&E departments or directly to Stroke Units by ambulance. If not travelling in an ambulance, they would be reliant on a friend or family member, or possibly a taxi, to drive them to hospital in the first instance.

In relation to recovery, as previously stated, family support can improve stroke outcomes. Therefore, any reduction in visitor frequency/length caused by increased travel times and barriers to access, could impact on the stroke patient's long-term recovery.

Impact on visitors/carers

Visitors and carers would be heavily reliant on having access to a private vehicle and being able to drive. An increase in travel times caused by patients being treated at UHCW instead of either GEH or SWFT or in a rehab facility could reduce visitor/carer perceptions of accessibility. This in turn could negatively impact on the mental health of the visitor/carer through feelings of stress and anxiety. Though there may be some mitigation of the impact due to reductions in length of stay and increased availability of ESD and community rehab.

5.1.2 Public transport

Inequalities in the reliance on public transport exist within the population:

- 55% of Asian, black and minority ethnic people use the bus at least three times a week (compared to 47% of white people), whereas only 32% have a full driving license (compared to 48% of white people)³¹.
- 44% of those living in the lowest income households frequently travel by bus³².
- A high proportion of the older population is dependent on public transport; as people get older, declining driving ability and financial constraints mean that many motorists have to adjust their driving practices (i.e. not using the car for non-local trips) and ultimately give up their car³³.

31 DfT (2004): 'Fact Sheet - 'Black and minority ethnic communities, experiences and perception'

32 DCLG (2009) Local Index of Child Well-Being

33 DfT: 'Older people: Their transport needs and requirements. Summary Report'

- Women are the majority of the public transport using market, particularly buses³⁴.

It is more difficult for the majority of Warwickshire residents to access UHCW than it is to access their local hospital (i.e. SWFT or GEH) via public transport. See Appendix 7.6 for both Warwickshire and Coventry public transport maps. It must be recognised, however, that for residents living in certain parts of the County, particularly rural Warwickshire, access to any hospital using public transport would be relatively difficult. It should also be acknowledged that different services may run throughout the week and over the weekend

Access to UHCW

There are multiple bus services that stop at UHCW.

9 - Green Lane to University Hospital via City centre (National Express Coventry)

60 – Arena to University of Warwick via UHCW

78 - Nuneaton to University Hospital via George Elliot Hospital

585 - Coventry Train Station to Hospital of St Cross via UHCW

Visitors living in surrounding Warwickshire villages would need to travel to their nearest town and then travel to Coventry. There are direct trains to Coventry from Nuneaton, Leamington and Rugby, from the station visitors would need to use the bus to travel onwards to UHCW. Two bus services that stop at the train station travel onto UHCW, which are the 9 and 9A services.

Access to GEH

Patients from South Warwickshire would need to travel to Coventry and then use the 48 bus which stops at GEH. From north Warwickshire, direct services (48/60) to GEH depart from Nuneaton. From Rugby visitors would travel via the 86 bus to Coventry and then the 48 to Nuneaton, with GEH being a stop on the journey.

Access to LSH

Travelling to LSH from north Warwickshire via bus requires visitors to travel on the number 48 bus to Coventry (Leicester to Coventry bus via Nuneaton) and then travel on the X18 (Coventry to Stratford Upon Avon) to Leamington Spa. Visitors travelling from Rugby or Southam would use the 63 bus service to Leamington. LSH is two miles away from Leamington town center. The U1 bus service can be used to travel onwards to the hospital. Visitors travelling from Warwick would use the X68 or 68 (Cublington to Coventry) bus which travels directly to LSH. Visitors travelling from Stratford upon Avon would travel on the X18 bus to Warwick and then use the X68/68 bus to LSH.

It should be noted that the NHS has a Healthcare travel costs scheme (HTCS) and a low-income scheme³⁵ that allows those on low income or in receipt of certain benefits to claim back some travel costs³⁶.

³⁴ DfT: 'Public transport gender audit evidence base'

³⁵ <https://www.nhs.uk/nhs-low-income-scheme> [accessed Nov 2017]

³⁶ NHS Choices. 2014. Help with health costs. [online] Available at:

<http://www.nhs.uk/NHSEngland/Healthcosts/Pages/Travelcosts.aspx> [Accessed: NOV 2017]

Impact on patient

As previously stated, family support can improve stroke outcomes. Therefore, any reduction in visitor frequency/length caused by increased travel times, cost and other barriers to access, could impact on the stroke patient's recovery.

Impact on visitors/carers

Changes to utilisation of public transport resulting from travelling to a non-local hospital could deter some from using public transport. This is explored further in section 5.3. Transport barriers to visiting patients in hospital could impact on the mental health of the visitor/carer through feelings of stress and anxiety, in what could already be a time of emotional distress.

5.1.3 Quantifying the impacts on Stroke patients and their visitors

By using the TRACC³⁷ software, road networks and public transport schedules we can calculate the original journey times for patients and visitors (by using patient location as proxy for theirs) and then journeys to the sites they would have to use in the alternative scenarios. As such, we can assess the potential changes to transport times via either private vehicle or public transport compared to the 'do-nothing' or current service configuration for the baseline patient cohort which is assumed to be representative of stroke patients across the area.

5.1.3.1 Baseline travel assessment

There were 1,296 admissions for stroke in the baseline period and 507 for TIA. 247 of the total were patients from outside the Coventry & Warwickshire area and 120 of the total were in receipt of bedded rehabilitation in the area after their acute treatment phase (defined by primary procedure code U.543 or with an episode at LSH or Hospital of St Cross).

The average journey times by private vehicle (assuming everyone self-conveying travelled by car during off-peak hours) was 15.6 minutes ranging from 11.3 in Nuneaton & Bedworth to 25.1 in Stratford-upon-Avon.

The average journey times by public transport (assuming everyone self-conveying travelled by bus or train) was 45.8 minutes ranging from 28 in Coventry to 80 in Stratford-upon-Avon.

The breakdown of median and range of journey times by each district area to original hospital site are provided below.

	Coventry	North Warwicks hire	Nuneaton & Bedworth	Rugby	Stratford- upon- Avon	Warwick	Out of Area	All areas
Car average (mins)	11.7	21.4	11.3	17.0	24.9	12.5	23.9	15.5
Car median (mins)	11.8	21.6	10.6	18.8	23.9	11.0	22.8	13.2

37 TRACC software, supplied under license by Basemap. <http://www.basemap.co.uk/tracc/> (accessed Nov 2017)

Car min to max range	2 – 32	11 – 36	3 – 26	3 – 29	10 – 50	2 – 30	12 – 63	
PT average (mins)	28.0	74.1	37.1	48.8	79.7	36.9	74.6	45.8
PT median (mins)	27.8	73.5	31.4	55.0	70.4	34.9	66.1	35.6
PT min to max range	4 - 58	53 - 154	20 - 87	16 – 77	80 – 175	40 – 112	25 - 218	

Table 14. Median and min-max travel times for baseline patients by district area. Source: HES data extracts, Strategy Unit analysis

5.1.3.2 Scoring method for relative impact by Scenario

Having described the potential nature of the impact of changes to stroke services in Warwickshire and Coventry, the following sections summarise those travel and access impacts for the scenarios (or phases within them) as described in Section 2.4.

The impact is from the perspectives of carers and visitors, given the non-direct impact of site transfers on access for the stroke or TIA patient.

A score for each of these has been allocated based on relative positive or negative impact to provide an overall impact score for each scenario, notwithstanding any mitigating actions. Given the geographical focus of the impacts for this section, the scores for each of the 6 districts within the area of interest have been allocated based on the following system:

Nature of impact	Shift in median travel by car (mins)	Shift in median travel by Public transport (mins)
High positive impact: +2	< -10	< -30
Low positive impact: +1	-2 to -10	-10 to -30
Neutral Impact: 0	-2 to +2	-10 to +10
Low negative impact: -1	+2 to +10	+1- to +30
High negative impact: -2	> +10	> +30

Table 15 Scoring system for overall impact score

Each district therefore, may receive a total impact of between -4 and +4 for each component of the proposed service change that may affect patients living in them.

5.1.3.3 Scenario 2a proposed model /2B travel assessment

Description of impacts for HASU and ASU (patient and visitor perspective)

Compared to the current scenario, 100% of patients attending GEH or SWFT with suspected stroke will be transferred to UHCW for assessment, where they will stay for the entirety of their hyper and acute phase. Visitors will therefore have to travel to Coventry each time and for a longer period (for approx. 660 patients in total) rather than their local hospital. If suitable for ESD (40% planning assumption) or community rehabilitation (30% planning assumption) the patients will be discharged to their usual residence, but for the remaining patients requiring inpatient bedded rehabilitation (30% planning assumption) they will have to choose to relocate to GEH or to LSH until ready to return home.

	Coventry	North Warwicks hire	Nuneaton & Bedworth	Rugby	Stratford- upon- Avon	Warwick	Out of Area	All areas
Car average (mins)	11.4	26.5	15.5	18.5	33.1	21.7	25.6	19.1
Car median (mins)	11.8	27.6	15.2	19.7	32.2	21.2	24.2	17.5
Difference from baseline	0.0	+6.1	+4.6	+0.9	+8.2	+10.2	+1.4	+4.3
PT average (mins)	26.76	101.56	55.83	51.79	123.44	68.42	82.87	19.06
PT median (mins)	27.15	105.3	54.66	58.91	117.81	68.69	75.97	17.52
Difference from baseline	-0.6	+31.8	+23.3	+3.9	+47.4	+33.8	+9.9	+15.4

Table16. Access summary for all Stroke / TIA patients under 2A or 2B – travel directly to UHCW

Overall, this change will extend the travel times of patients by 4.3 minutes (using private transport) or 15.4 minutes (using public transport) throughout the entirety of Hyper-Acute and Acute treatment stages (generally up to 7 days). Geographically, there is little/no impact for patients and visitors from Coventry and Rugby. The greatest negative impact is likely to be felt in Warwick, Stratford and some of North Warwickshire (see table 16).

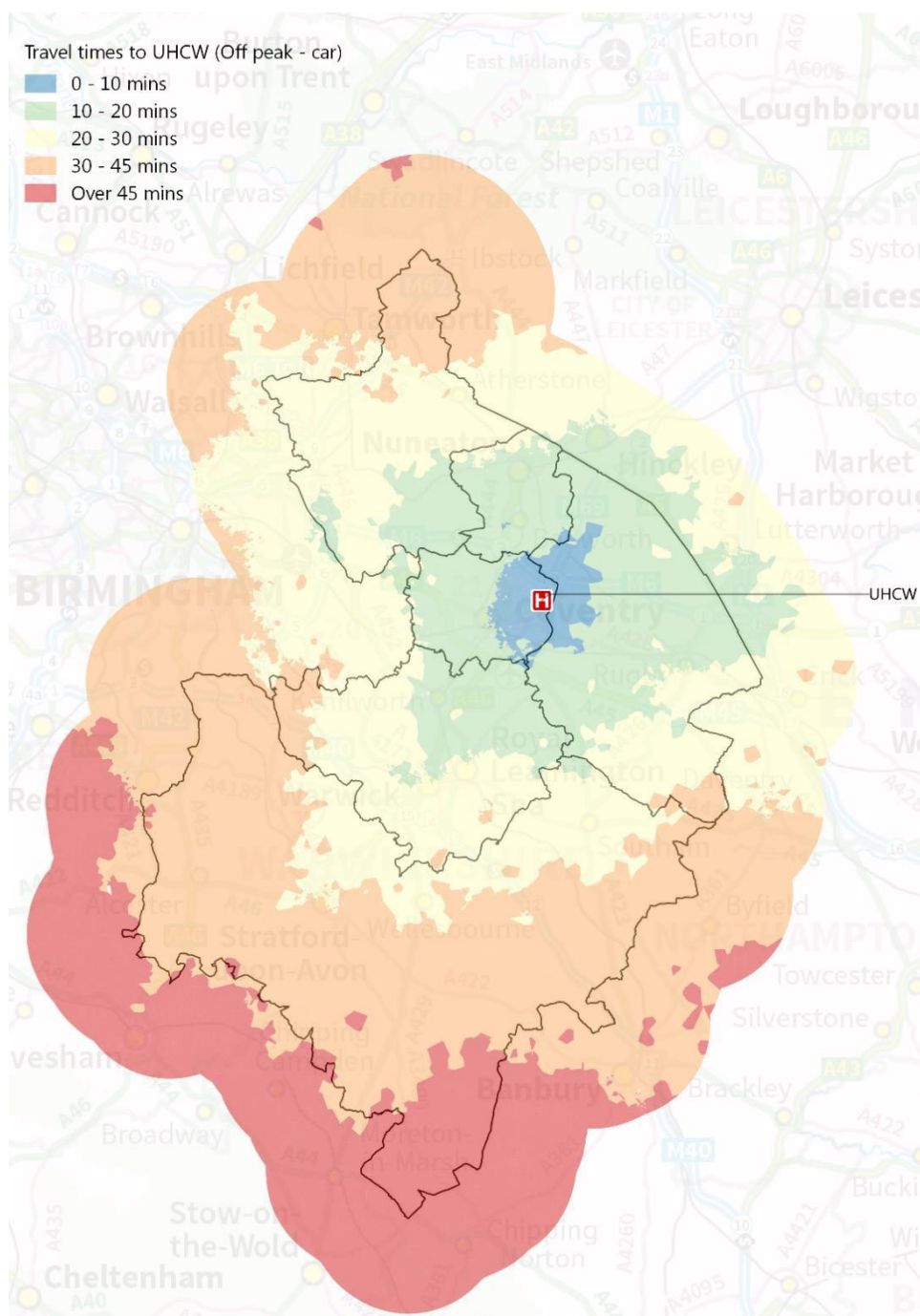


Figure 9. Travel times for Scenario 2a proposed model /2b, visitors travelling to UHCW. Travel times are based on average car off peak drive times.

Visitors travelling from Coventry, North Warwickshire, Nuneaton & Bedworth and Rugby could expect travel time to UHCW to take up to 20 minutes. Journey times from some areas in North Warwickshire, Rugby and Warwick could take up to 30 minutes. Longest travel times are for visitors travelling from Stratford upon Avon district and outside of Warwickshire.

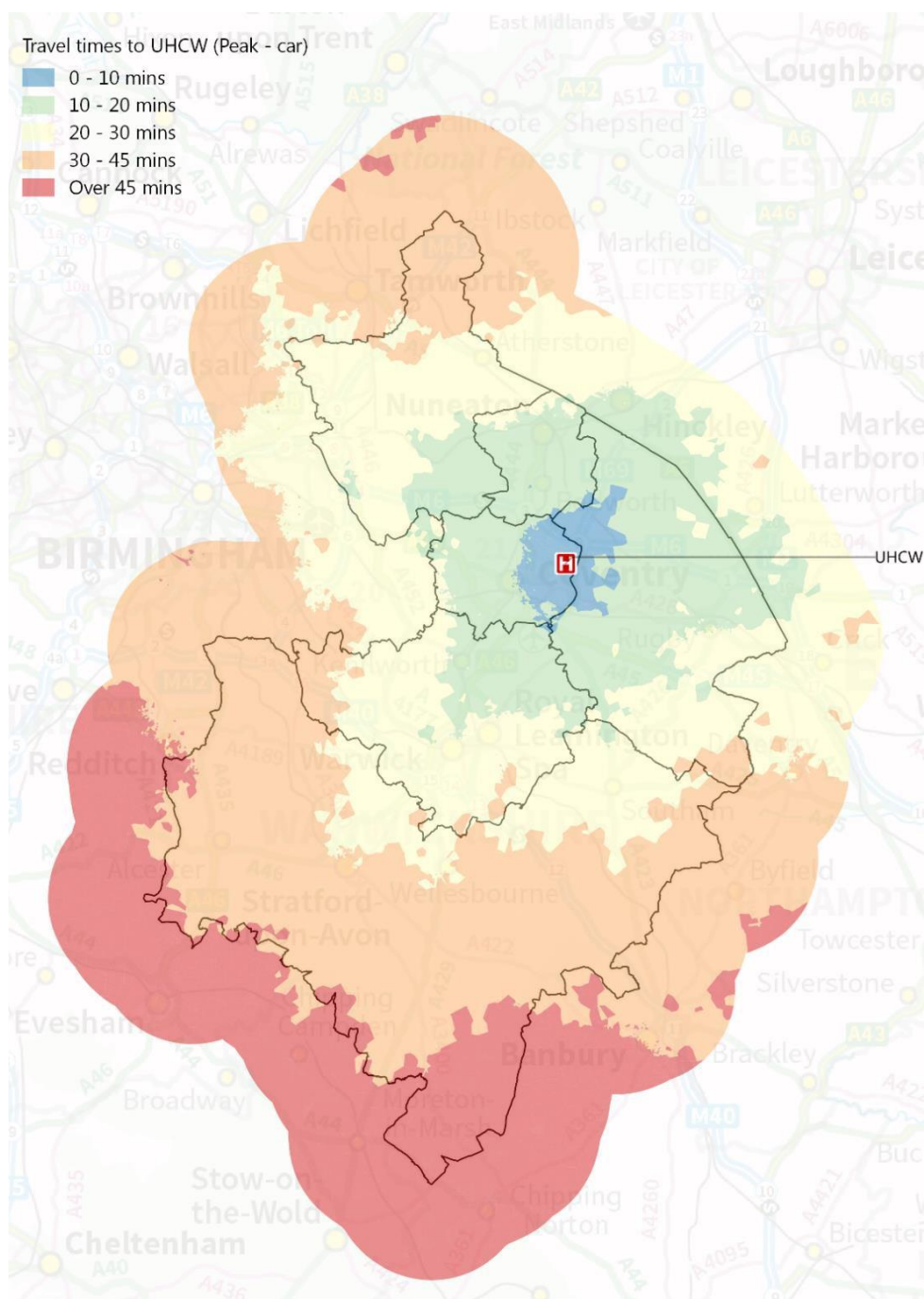


Figure 10. Travel times for Scenario 2a proposed model /2b, patients or visitors travelling to UHCW. Travel times are based on average peak car drive times.

Visitors travelling to UHCW can expect journey times of up to 20 minutes when travelling from Coventry, North Warwickshire, Nuneaton & Bedworth, Rugby and Warwick. More rural areas in North Warwickshire and some areas within Warwick, Rugby and Stratford upon Avon districts will have travel times of 20 to 30 minutes. However, the majority of South Warwickshire will have travel times of between 30 and 45 minutes and in some instances over 45 minutes.

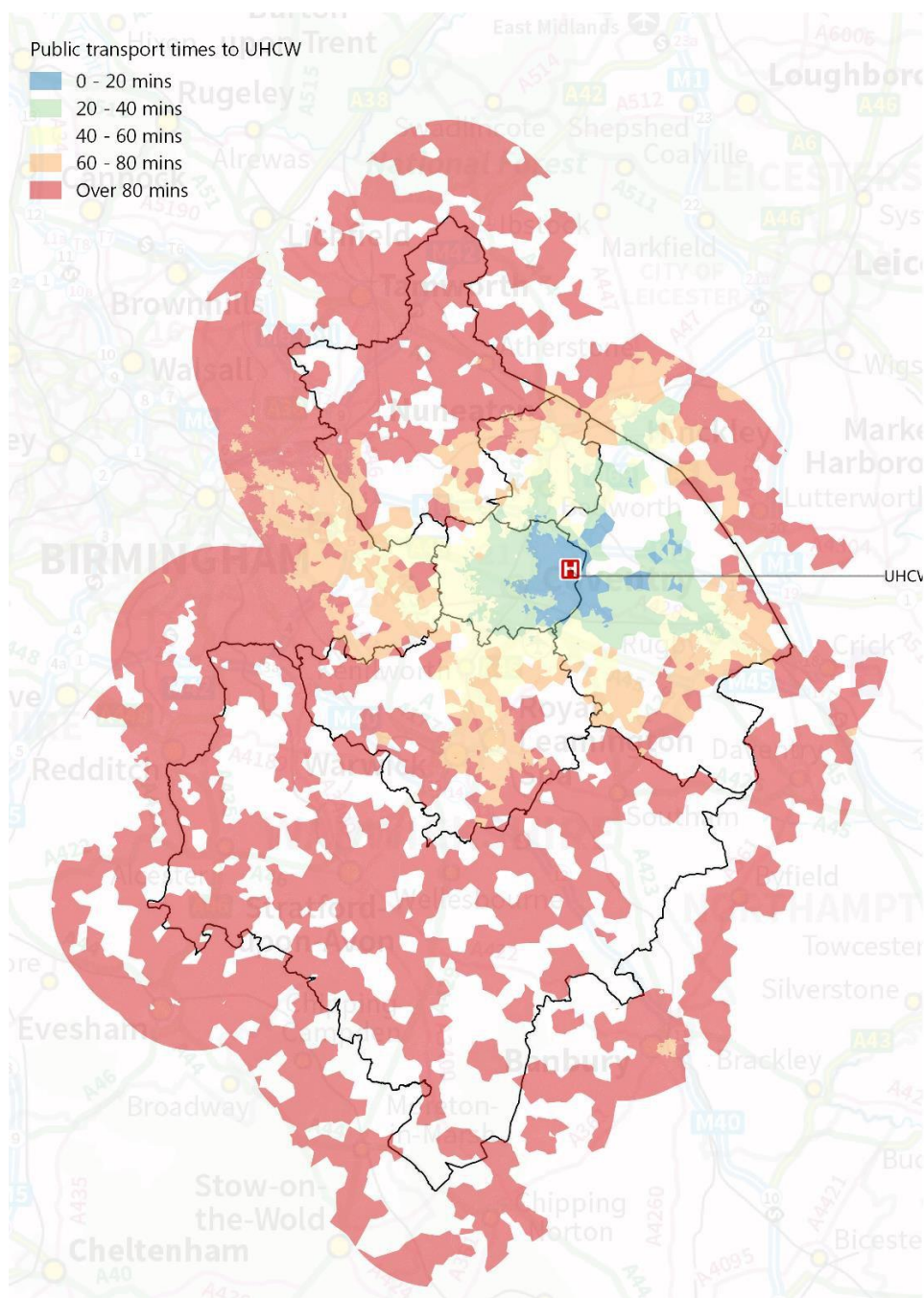


Figure11. Travel times for Scenario 2a proposed model /2b, visitors and patients travelling to UHCW via public transport. Travel times are based on visitors travelling at 2pm on a Tuesday.

Visitors travelling from Coventry, Nuneaton & Bedworth and some areas of Rugby have the shortest travel times to UHCW, journeys typically taking up to 40 minutes. Visitors travelling from North Warwickshire, Stratford upon Avon and Warwick districts can expect journeys of over 80 minutes. UHCW is inaccessible from numerous areas of Warwickshire as indicated by the blank spaces on the map.

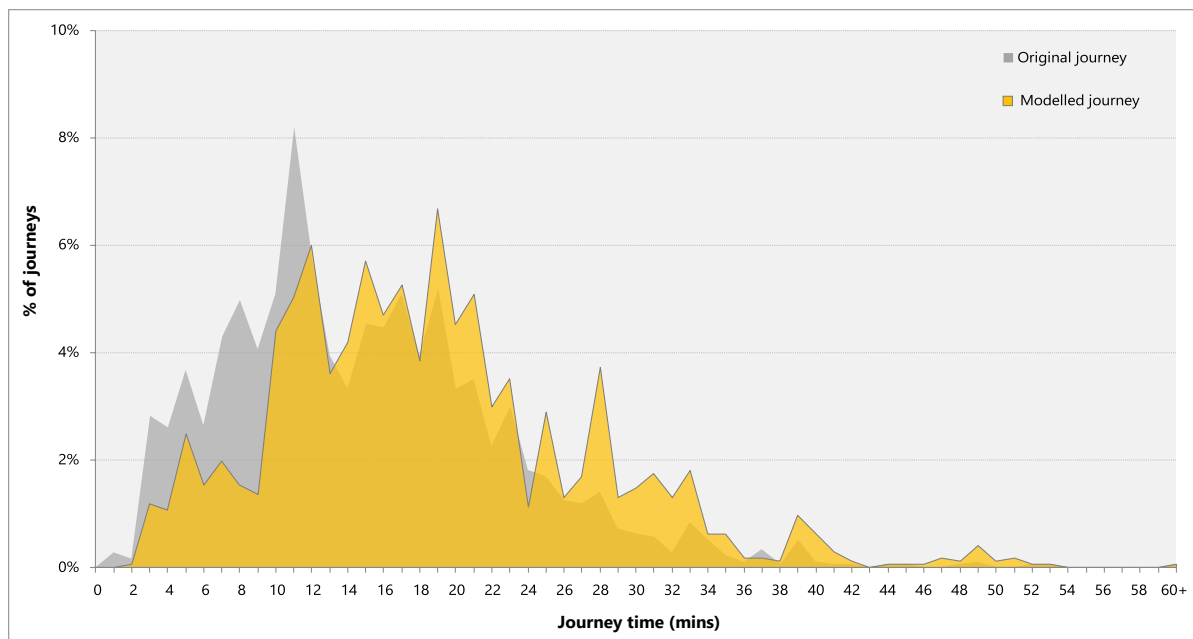


Figure12. Current and Modelled journey times by car for Hyper-acute and Acute phase, as per 2015/16 stroke patients

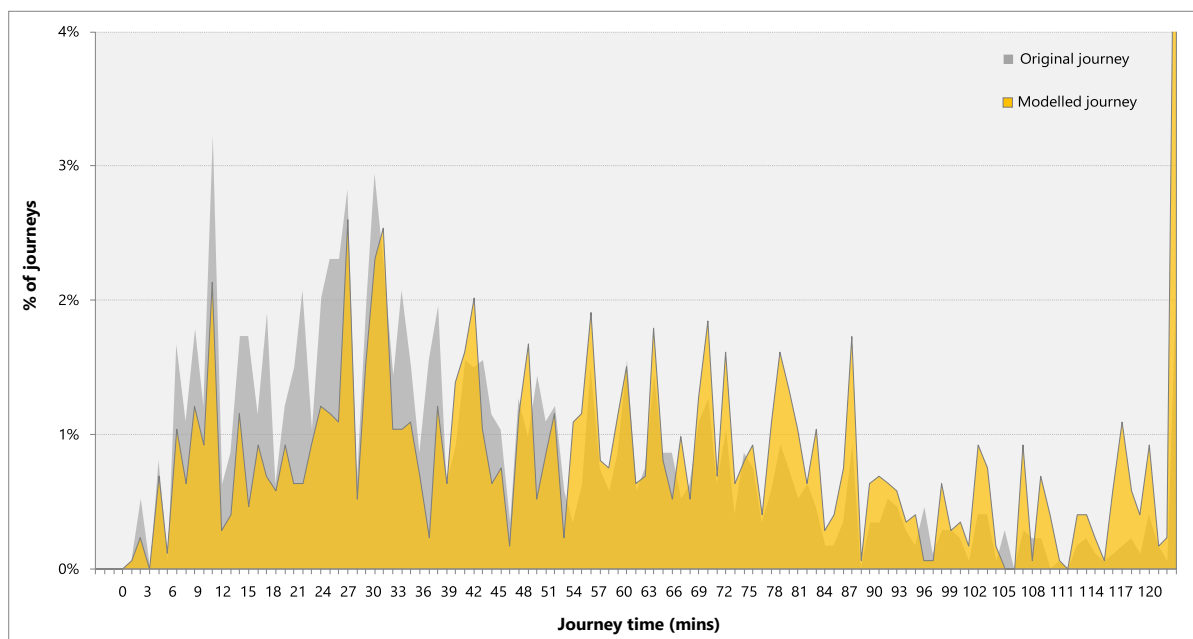


Figure13. Current and Modelled journey times by Public Transport for Hyper -Acute and Acute phase, as per 2015/16 stroke patients.

Impact on patients

There are not likely to be significant direct travel impacts on patients as a result of the proposed changes. They will still likely access their local A&E if unwell where, if stroke is suspected, they will be transferred by ambulance or hospital service to UHCW. CCG modelling has anticipated West Midlands Ambulance service will be required for 142 additional hospital transfers to UHCW on top of 174 already commissioned. This may be short of the actual requirement based on 15/16 inpatient spell data for GEH and SWFT.

Similarly, those require intensive rehabilitation support will be transferred by ambulance or hospital service to the relevant site in North or South Warwickshire. Stroke patients from Coventry or Rugby will be most disadvantaged by this as will have to travel further afield. CCG modelling³⁸ has anticipated West Midlands Ambulance service will undertake 238 transfers of rehabilitation patients to alternative sites. This may be short of the actual requirement based on 30% of all 15/16 inpatient spell data.

Some patients, as awareness spreads of the changes to stroke services, may choose to self-convey directly to UHCW knowing that is where they may end up. If 100% of these patients did so the overall change in average journey times would be +3.5 minutes, ranging from -0.4 minutes for Coventry patients to +9.2 minutes for Warwick patients.

Clearly, with the potential for 2 transfers during the care pathway there could be significant disruption to the patient and anxiety about changing environments whilst in a vulnerable physical and mental state of health - continuity of care is important.

Impact on carers/visitors

Any people accompanying the stroke patient to non UHCW site will have to transfer with the patient after stroke symptoms are recognised. This may be disruptive and could increase levels of anxiety for them.

Similarly, for the length of stay (LoS) of the patient at UHCW, people travelling from North or South Warwickshire to visit patients will have the additional time, expense and disruption driving into central Coventry. Likewise, for those visiting UHCW from the local area for the rehabilitation phase they would have to travel further and potentially for a long period of time (LoS for rehab episodes = average of 50 days) to either Nuneaton or Leamington.

Scenario	Coventry	North Warwickshire	Nuneaton & Bedworth	Rugby	Stratford-upon-Avon	Warwick
1	0	0	0	0	0	0
2/2b Car	0	-1	-1	0	-1	-2
2a/2b Public Transport	0	-2	-1	0	-2	-2

Table 17. Summary of Summary of Hyperacute and acute phase impacts

38 'Ambulance workings for Stroke v4.1.16'. Warwickshire North CCG and West Midlands Ambulance Service.

5.1.3.4 Scenario 2a proposed model / 2B Proposed Model and Proposed Model Plus travel assessment

Description of impacts for bedded rehabilitation (patient and visitor perspective)

This section describes the potential impact of the bedded rehabilitation portion of the proposed pathway on travel and access. The changes specify that around 30% of patients (n = 390 patients) requiring bedded rehabilitation will be transferred to receive that care at either GEH or LSH. This is designed to offer more local rehabilitation for the majority of patients who cannot stay in UHCW. Stroke patients and their carers/visitors who live in Coventry and Rugby may have to travel further for the duration of this treatment phase.

	Coventry	North Warwicks hire	Nuneaton & Bedworth	Rugby	Stratford- upon- Avon	Warwick	Out of Area	All areas
Car average (mins)	17.05	18.83	8.32	24.99	21.17	10.02	23.16	16.23
Car median (mins)	17.15	19.95	8.83	26.12	19.74	8.78	23.21	16.04
Difference from baseline	+5.60	-2.15	-1.78	+7.89	-4.17	-2.22	+0.10	+2.86
PT average (mins)	55.47	60.40	24.10	74.14	71.66	30.95	72.39	51.17
PT median (mins)	55.02	59.21	24.40	74.72	72.18	27.59	69.09	50.2
Difference from baseline	+27.5	-14.0	-7.0	+27.9	+2.0	-7.3	+5.1	+14.6

Table 18. Access summary for all Stroke patients under 2A or 2B – travel to the nearest of GEH or LSH

Overall for Coventry and Warwickshire, this change will extend the travel times of patients by 2.9 minutes (using private transport) or 14.6 minutes (using public transport) throughout the entirety of rehabilitation stages (average episode length = 50 days). Geographically, the negative impact will be felt by patients and visitors from Coventry and Rugby. Most patients and visitors from Warwick, Stratford, Nuneaton & Bedworth and some of North Warwickshire will have improved access in terms of journey times to rehabilitation sites by either car or public transport compared to current arrangements.

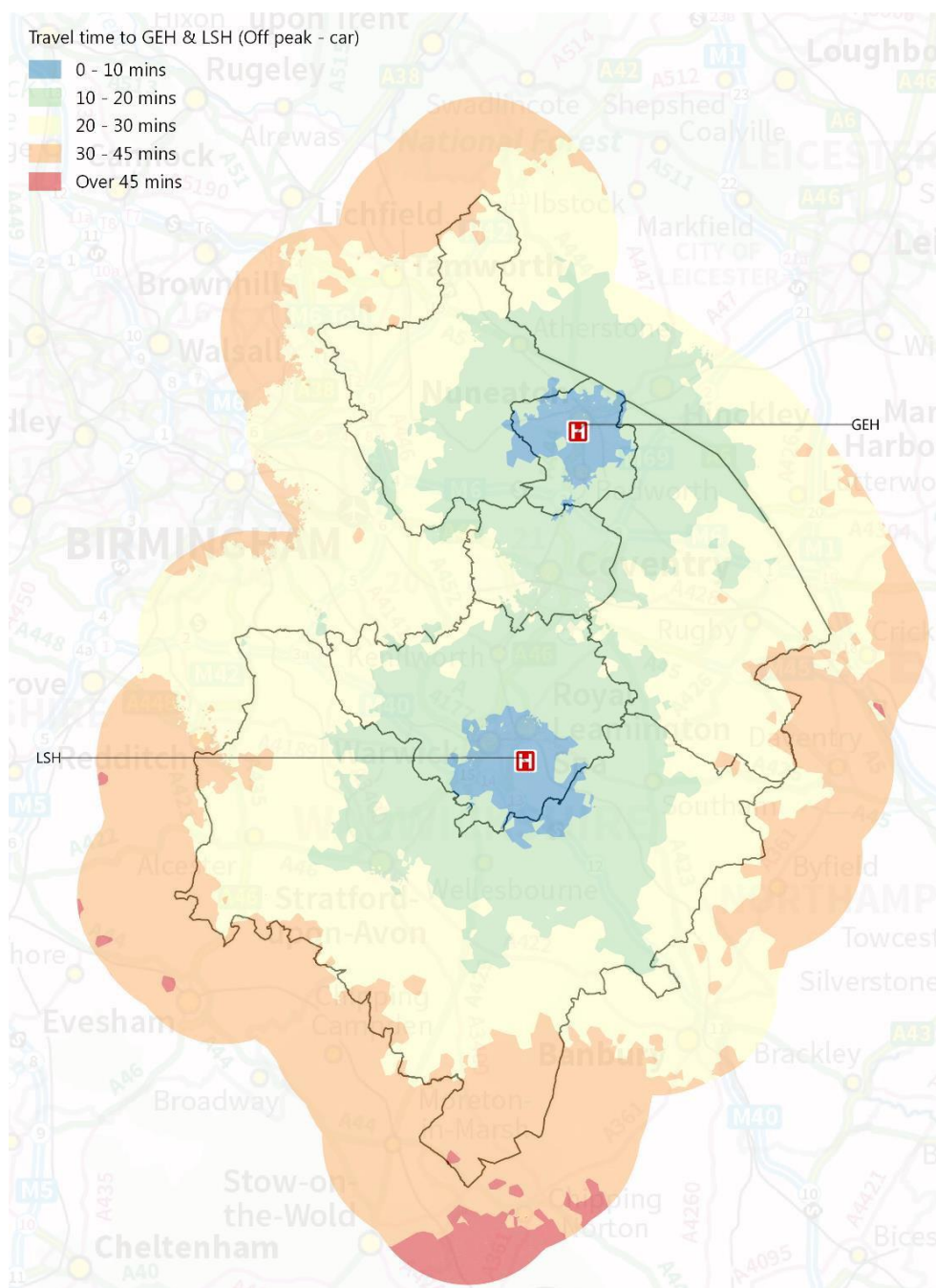


Figure14. Travel times for Scenario 2b proposed model plus proposed model plus, visitors travelling to GEH & LSH. Travel times are based on average car off peak drive times.

The majority of visitors could travel to GEH or LSH within 30 minutes. Visitors travelling from some areas in Stratford upon Avon district and outside of Warwickshire can expect journeys to take between 30 and 45 minutes.

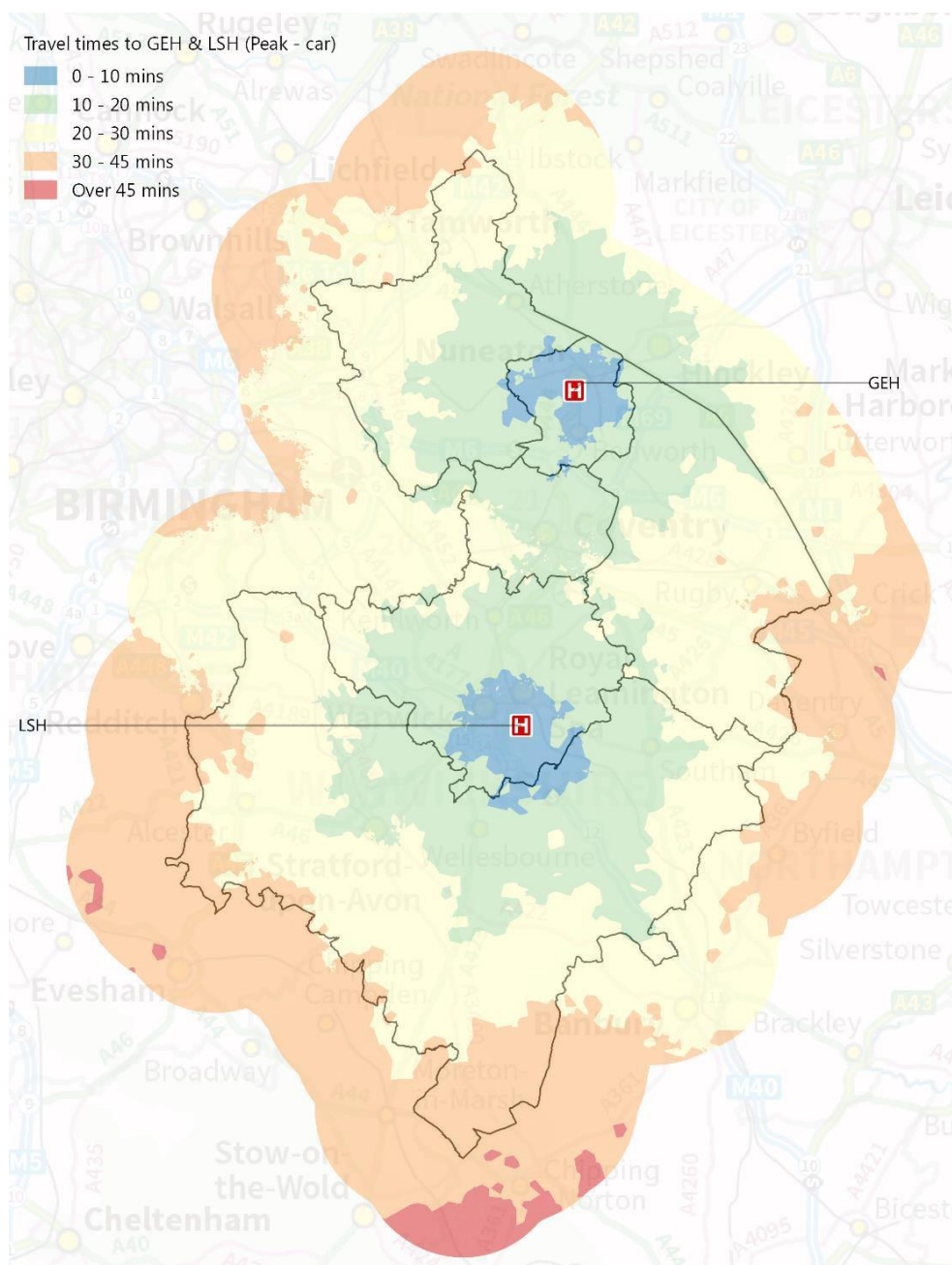


Figure15. Travel times for Scenario 2b proposed model plus proposed model plus, visitors travelling to GEH & LSH. Travel times are based on average peak car drive times.

The majority of visitors travelling from North Warwickshire, Nuneaton & Bedworth, Warwick and Coventry will have travel times of up to 20 minutes when travelling to GEH or LSH during peak times. Visitors travelling from Rugby and Stratford upon Avon districts will have journey times of up to 30 minutes. Visitors travelling from outside Warwickshire and from some areas of the Stratford upon Avon district may have travel times of between 30 and 45 minutes.

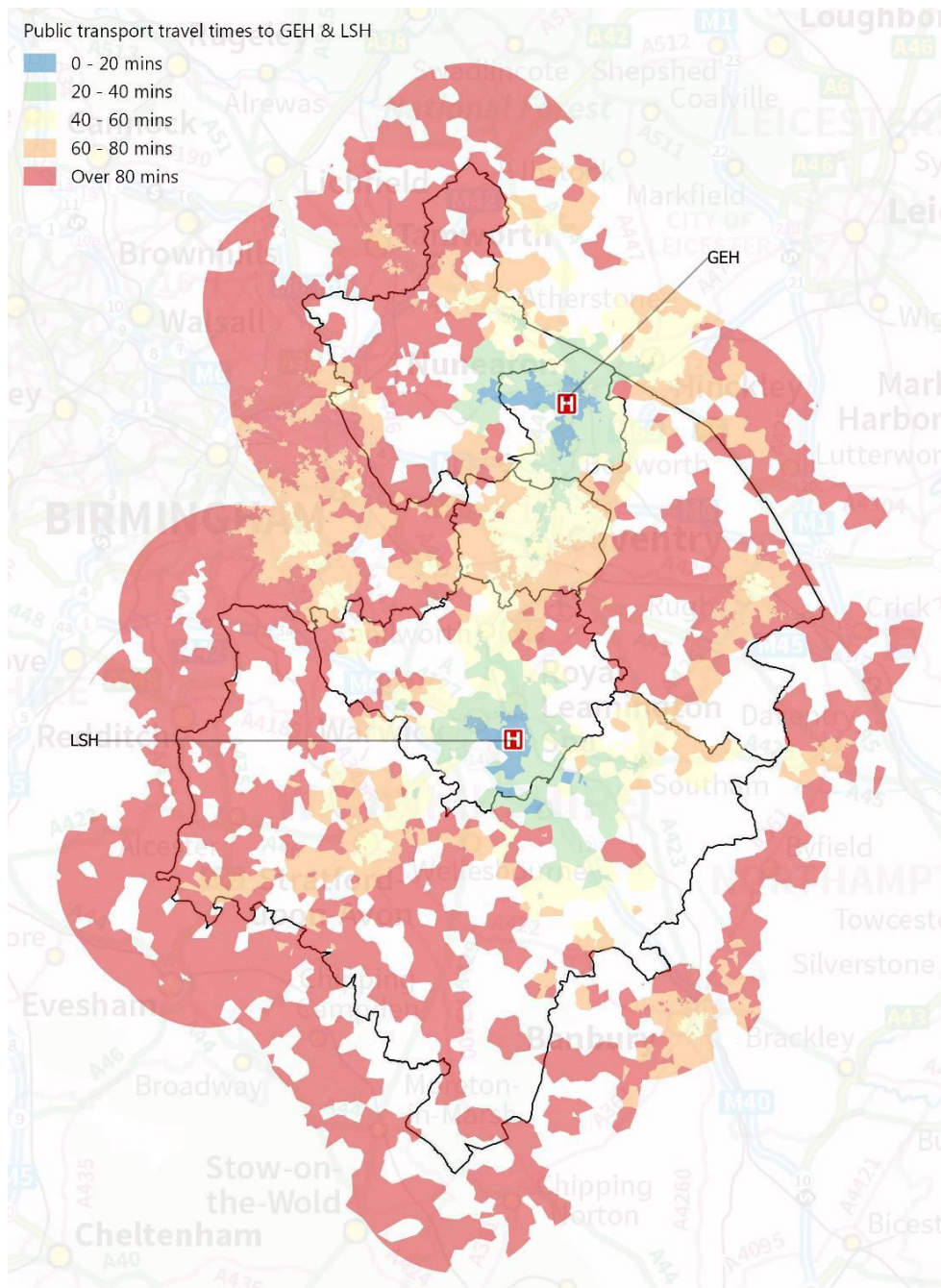


Figure16. Travel times for Scenario 2b proposed model plus proposed model plus, visitors travelling to GEH and LSH via public transport.

Travel times are based upon visitors travelling at 2pm on a Tuesday. Visitors travelling from Nuneaton & Bedworth and Warwick can expect journeys of up to 40 minutes. The majority of Coventry can expect journey times of up to 60 minutes, and in some instances up to 80 minutes. Rugby, North Warwickshire and Stratford upon Avon are the districts affected the most as they can expect journey times of over 80 minutes, when using public transport. GEH and LSH is inaccessible from numerous areas of Warwickshire as indicated by the blank spaces on the map.

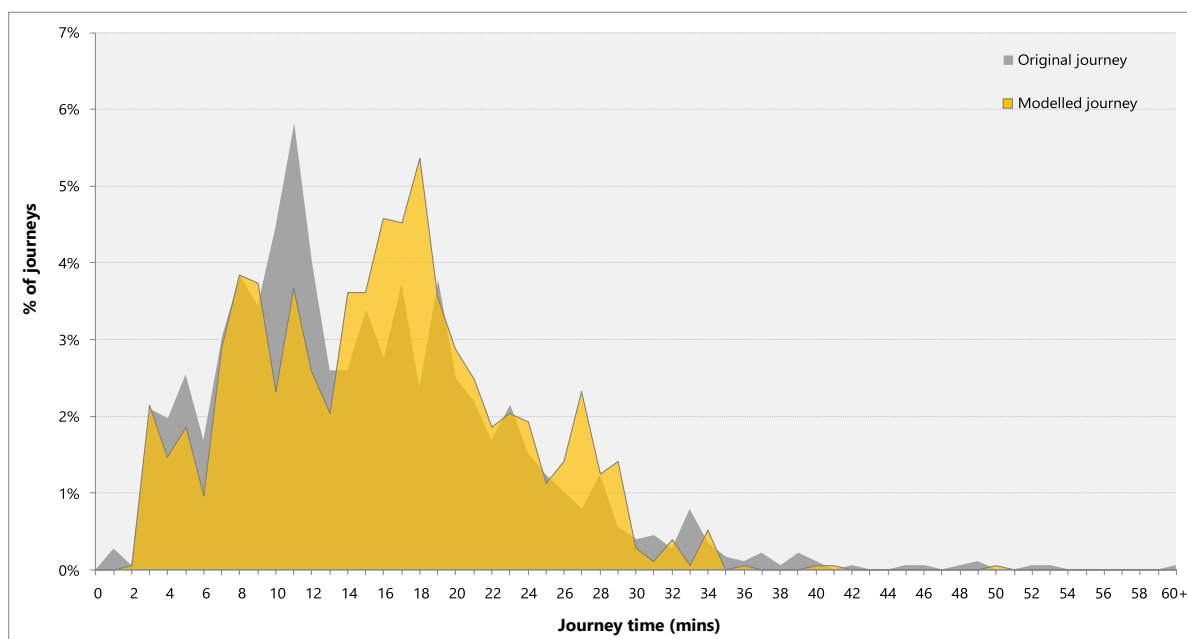


Figure17. Current and Modelled journey times by car for rehabilitation phase, as per 2015/16 stroke patients

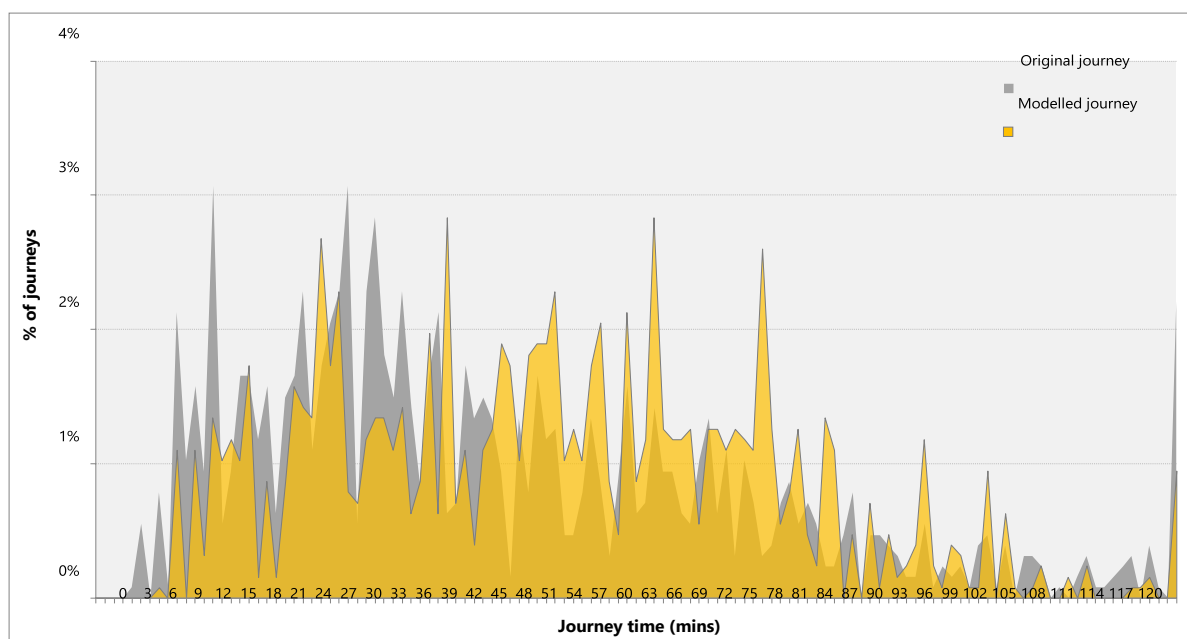


Figure18. Current and Modelled journey times by public transport for rehabilitation phase, as per 2015/16 stroke patients

Impact on patients

There are not likely to be significant direct travel impacts on patients as a result of the proposed changes. They will be transferred by ambulance or hospital transport service to the relevant rehabilitation site after their condition is stable. The process of transferring to a different location may cause some increased anxiety or disruption to continuity of care.

Impact on carers/visitors

Having rehabilitation beds in Nuneaton and Leamington would mean that those patients in both North and South Warwickshire should now be closer to home, and in principle their carers or visitors, for the remainder of their care. Patients in both Coventry and Rugby are likely to be travelling further throughout this phase of treatment and recovery, however have benefited from the centralised acute services in Coventry. Any visitors reliant on public transport could have more complicated (multiple service changes or modes of transport), longer and potentially more costly journeys to Nuneaton or Leamington depending on where they live.

The choice of rehabilitation site may need to be a decision that takes account of both the patient and family/carers locations or may be determined by bed availability which could mean further travel for some until local beds are available.

Scenario	Coventry	North Warwickshire	Nuneaton & Bedworth	Rugby	Stratford-upon-Avon	Warwick
1	0	0	0	0	0	0
2a Car	-1	+1	0	-1	+1	0
2aPublic Transport	-1	+1	0	-1	0	0
District total	-2	+2	0	-2	+1	0

Table 19: Summary of rehabilitation phase impacts, Scenario 2a proposed model

5.1.3.5 Scenario 2b proposed model plus Proposed Model Plus travel assessment

Description of impacts for care home bedded rehabilitation (patient and visitor perspective)

This section describes the potential impact of the localised bedded rehabilitation portion of the proposed pathway on travel and access. The changes specify that around 10% of qualifying patients (n = 130 patients) from Coventry (and Rugby?) requiring bedded rehabilitation will be offered a bed at a suitable local care home in Coventry. This is designed to offset some of the impacts that would occur were only beds at Nuneaton or Leamington available.

It is not possible to isolate confidently the cohort of bedded rehabilitation patients from the routine data at this time nor are a list of potential care home candidate locations available, therefore detailed travel and access analysis is not possible. It can be assumed however that the impacts will positively affect patients and visitors access from Coventry and Rugby in this variation of proposal 2A compared to the scenario where only beds were available at GEH or LSH.

There may be issues of equality and potentially health as a result of the provision of bedded rehabilitation in care homes as opposed to an inpatient setting. They are covered under the other relevant sections of this IIA.

Scenario	Coventry	North Warwickshire	Nuneaton & Bedworth	Rugby	Stratford-upon-Avon	Warwick
1	0	0	0	0	0	0
2b Car	-1	0	0	-2	0	0
2b Public Transport	-1	0	0	-2	0	0
District total	-2	0	0	-4	0	0

Table 20: Summary of rehabilitation phase impacts, Scenario 2b proposed model plus Proposed Model Plus

Patients and visitors from Coventry still have 2 choices for bedded rehabilitation that would require moderate additional travel. On the assumption that the Hospital of St Cross rehabilitation beds are removed in the new system, the impact would be more severe for residents of Rugby, particularly those nearer the Leicestershire border.

5.1.4 Voluntary transport schemes

Some voluntary transport is provided across Coventry and Warwickshire to support travel to and from hospital appointments. The provision appears to cover all areas, although accessibility to these services for Stroke patients and their carers or satisfaction with them has not been fully tested.

District / Area	Service
North Warwickshire	Beeline
Nuneaton & Bedworth	Volunteer Centre
Rugby	Warwickshire Community and Voluntary Action (WCAVA)
Stratford-upon-Avon and Warwick	Voluntary Action (SOA)
Coventry	Active car scheme (Stroke specific)

Table 21. Services offering support with transport to healthcare appointments. Sources: Warwickshire county council and Coventry city council websites.

Voluntary transport usage varies as follows:

- ☐ 73% are female
- ☐ 91% are aged over 65 years
- ☐ 75% are aged over 75 years³⁹

Research carried out in 2014 by Healthwatch Warwickshire indicated that there was a general recognition amongst the CCGs that the voluntary car scheme service is both

39 Healthwatch Warwickshire, 2014. Community Transport Report. [online] Available at: http://www.healthwatchwarwickshire.co.uk/wp-content/uploads/HWW_Community_Transport_Report_Final_3032014.pdf [Accessed: March 2015]

necessary and valued by the people who use it, particularly those in rural areas for whom the alternative is likely to be a tortuous public transport journey.

5.1.5 Hospital site assessments

Parking charges

As shown in table 22, parking costs are highest at SWFT and UHCW. Higher parking costs will have a disproportionate impact on those from socio-economically disadvantaged backgrounds as they are more likely to be individuals with less disposable income.

The lower costs at GEH mean that visitors to GEH patients who would previously have been treated locally at GEH, but under some scenarios would be treated at UHCW, would be disproportionately impacted upon if any of those scenarios were to be implemented, as they would experience an increase in parking expenditure in real terms. It should be noted that the NHS has a travel costs scheme and a low-income scheme that allows those on low incomes and some benefits to claim back parking charges.

SWFT ⁴⁰		GEH ⁴¹		UHCW ⁴²		LSH ⁴⁰	
Length of Stay	Charges	Length of Stay	Charges	Length of Stay	Charges	Length of Stay	Charges
<30 mins	Free	Up to 15 mins	Free	0-10 mins	Free	30 mins – 1 hour	£2.60
30 mins - 1 hour	£2.60	15 - 45 mins	50p	1 hour	£2.30	1 – 2 hours	£3.10
1 - 2 hours	£3.10	45-90 mins	£2	2 hours	£3.10	2 – 4 hours	£4.70
2 - 4 hours	£4.70	90 mins - 4 hours	£3	3 hours	£3.80	4 – 6 hours	£5.20
4 - 6 hours	£7.30	4 - 6 hours	£4.50	4 hours	£4.50	6 – 24 hours	£6.20
6 - 24 hours	£9.40	Over 6 hours	£6	5 hours	£5.90		
Weekly Ticket	£15.60	Weekly ticket	£7	6 hours	£7.30	Weekly Ticket	£7.30
		Monthly ticket	£15	7 - 24 hours (maximum available)	£8.50		

Table 22: Parking charges at SWFT, GEH and UHCW. Source: Hospital websites.

40 SWFT. N.d. Car parking charges. [online] Available at: <http://www.swft.nhs.uk/patients-and-visitors/how-to-get-here/car-park-charges.aspx> [Accessed: December 2017]

41 GEH. N.d. Car parking charges. [online] Available at: <http://www.geh.nhs.uk/patients/car-parking/> [Accessed: December 2017]

42 UHCW. N.d. [online] Available at: <http://www.uhcw.nhs.uk/for-patients-and-visitors/getting-here#parking> [Accessed: December 2017]

Parking spaces

As identified in table 22, UHCW has the most parking spaces available. The number of disabled parking spaces as a proportion of all spaces is similar across each location.

	UHCW ⁴³	GEH ⁴³	SWFT ⁴³	LSH ⁴³
Number of parking spaces	2,955	325	1,486	279
Number of disabled parking spaces	105	64	49	11

Table23: Number of parking spaces by hospital. Source: NHS digital (as at 2016).

Public transport access

Each of the hospital websites provides varying degree of information about access to the site by public transport. UHCW has a comprehensive list of bus and train information and links to public transport provider services. George Eliot has very limited information on which services run from where. LSH website (via SWFT website) provides no information at all on directions or access to the site by Public Transport.

Access to information for each site is reliant on an internet connection, being able to read small print and have the cognition to be able to work out the legs of journeys that would be required to reach the sites from their own location. However; all websites do offer translation service (google translate) so patients and visitors using different languages can all access the same information,

Hospitals should have a public transport link no more than 500 metres⁴⁴ away from the main entrance, to ensure accessibility. All hospital sites included in the current and future scenarios have bus or train stops within 500m (of the hospital postcode).

Visiting hours

Visiting hours vary between each of the locations, as shown in table 24. SWFT and GEH have the longest visiting hours throughout the week. UHCW has comparatively short visiting hours during the week when compared against UHCW or SWFT. This means that visitors to patients who may have previously been treated at GEH or SWFT would be disproportionately impacted on in terms of reduced opportunity to visit patients.

	SWFT ⁴⁵	GEH ⁴⁶	UHCW ⁴⁷	LSH ⁴⁵
Visiting hours	12pm – 7.30pm	11.00am – 8.00pm	2pm – 4pm & 6.30pm – 8pm	2pm – 5pm & 6pm – 8pm

Table24: Visiting hours by hospital. Source: Hospital websites

43 NHS Digital. Site Parking Data. Available at: <http://digital.nhs.net> [Accessed December 2017]

44 Public Health Warwickshire. 2015. Building for Life Principles/Public Health Evidence for Planning. [draft guidance]

45 SWFT. N.d. Visiting times. [online] Available at: <http://www.swft.nhs.uk/patients-and-visitors/visiting-a-patient/visiting-times.aspx> [Accessed: March 2015]

46 GEH. 2015. Visiting times. [online] Available at: <http://www.geh.nhs.uk/visitors/visiting-times/> [Accessed: March 2015]

47 UHCW. N.d. Visiting times. [online] Available at: <http://www.uhcw.nhs.uk/for-patients-and-visitors> [Accessed: December 2017]

5.1.6 Congestion

Whilst environmental impacts are beyond the scope of this IIA, there are likely to be some minor congestion impacts (increased vehicle volumes) as a result of the proposed changes, notably around the UHCW site. According to engagement feedback, the UHCW site already suffers from poor parking and busy roads and whilst the likely increase in patients (thus carers and visitors accessing the site) will only be 1-2 per day – patients previously treated at GEH or SWFT - this will only serve to compound any frustration and anxiety over visiting.

5.1.7 Summary of key travel and access impacts

The impact of proposed changes can be summarised, in terms of travel and access at least, as per the stages of stroke care;

- Hyper-acute / acute and TIA (all patients to UHCW)
- Rehabilitation (patients supported at home or in bedded care – various sites)

With the transfer of all hyper-acute and acute stroke services at GEH and SWFT to UHCW, therefore the transfer of all patients who may attend there, visitors and carers that live in North Warwickshire, Warwick and Stratford-upon-Avon district will be particularly disadvantaged in terms of longer and further journeys for on average up to a week. Whilst most in rural areas do have access to private vehicles, those who do not will experience very long journeys to visit.

The discharge home with or without support, or in more complex cases for bedded rehabilitation in Nuneaton or Leamington Spa will mean that after the acute phase, patients will generally be moving nearer home, thus reducing any long-term impacts on access for those living in North Warwickshire, Warwick and Stratford-upon-Avon.

Carers and visitors from Coventry may have to travel slightly further afield if visiting a patient in bedded rehabilitation in Nuneaton or Leamington, however the most disadvantaged throughout the rehabilitation stage would be those coming from Rugby.

There is significant concern that the UHCW site suffers from congestion and has issues with parking without the additional flow of vehicles and patients resulting from this change. It is however, of the 3 main sites, relatively cheap in terms of parking charges and has the most bus/rail connections to other areas of the city and wider county area. Given the care model is anticipated to reduce length of stay, the impacts in most cases would be short and temporary.

5.1.8 Potential mitigation for travel and access impacts

Whilst there would be clear negative travel impacts for residents of certain geographical areas as a result of the proposed changes, the key driver for the change as outlined in the case for change are the improved outcomes in terms of survival, recovery and reduced length of stay in hospital for stroke patients that are expected as a result of specialisation and centralisation of acute care. The clinical benefits therefore may outweigh the increased inconvenience of lengthier travel for some into Coventry.

That aside, and in order to ameliorate against some of the specific impacts of the proposals commissioners and service providers could:

- ☐ Provide shuttle services for patients and their carers between hospitals in Nuneaton and Warwick so they only need to worry about travel to their nearest site. This, dependent on scale, could have benefits to people suffering from a range of conditions, not just stroke.
- ☐ Consider the continued provision of rehabilitation beds in Rugby (Hospital of St Cross) in addition to GEH and LSH given the adverse impacts on travel for carers and visitors of complex patients from Rugby and further East of the county.
- ☐ Review the parking provision and/or system at UHCW site, particularly in relation to primary carers of stroke victims. Subsidy of parking at other car parks nearby the UHCW site may be an option for some.
- ☐ Ensure that anyone travelling to visit patients throughout the stroke and TIA pathway or for follow-up appointments, are aware of any subsidisation or financial support they may be entitled to, and support them, where possible, in their application for it.
- ☐ Similarly and wherever possible, up-to-date information on local voluntary or local authority managed travel schemes should be provided to carers as part of the admissions process.

Mitigations identified in the previous IIA are still valid;

- ☐ Due to the potential increase in travel times, existing public transport routes should be easily accessible, well-lit and subsidised.
- ☐ Awareness of existing direct and non-direct public transport services should be promoted to all patients and visitors.
- ☐ Voluntary transport options should be discussed with patients and visitors. Multiple commissioners currently support voluntary transport schemes, which are currently under review with a Department for Transport grant. Commissioners should ensure that the chosen pathway for stroke care is fed into any review of voluntary transport schemes.

Additional actions being proposed for consideration⁴⁸ are;

- Explore the support Active Car for Stroke Survivors and Carers will give to travel to rehab services for Coventry residents.
- Consider in more detail the options for transport for Rugby and rural patients in the north and south of Warwickshire.
- Raise awareness of the NHS travel cost scheme
- Promote public transport options to Stroke patients at discharge to bedded rehab
- Develop a pack for stroke patients and carers across Coventry & Warwickshire with information on public and community transport included

37. Public health Warwickshire. Proposals for improving stroke outcomes for Coventry and Warwickshire. Mitigations and recommendations update: supplementary document v2.2. September 2017

5.2 Health Impact Assessment

5.2.1 Findings from Stakeholder Engagement: July 2017

An engagement exercise with service stakeholders was carried out in July 2017 that recorded responses to proposed stroke service changes in Coventry and Warwickshire²⁹.

According to staff, representative organisations, patients and carers, there was a general acceptance of the clinical benefits and improved outcomes that a centralised and specialised service may bring. However, the following points raised during this engagement were specific to the potential health impacts either positive or negative:

Engagement setting	Stakeholder	Comments
Survey responses from organisations and other correspondence	Warwickshire HWB	a) Concerns about travel times to UHCW from some parts of the county, given the target for treatment within 30 minutes of the stroke occurring
	Healthwatch Coventry	Recognise benefits of supported rehabilitation in the home

Table25. Survey responses from Stakeholders regarding health impacts

Engagement setting	Stakeholder	Comments
Outreach and engagement meetings	Members of public	Support for early discharge and support at home as long as there is good support in the community - Concern about the logistics of care at home
	Warwickshire North CCG AGM	Concern around how long will specialist teams be able to attend those discharged home early and whether there is enough funding for specialist community teams to be sustainable and enough specialist staff to look after patients in their own homes
	Community Groups various	Importance of good discharge process with carer support

Table26. Outreach and engagement meeting findings regarding health impacts

Engagement setting	Stakeholder	Comments
Questionnaire responses	All responses (Q2)	51% agree with the clinical benefits; - Reducing risk and prevention always a good thing. - Specialist staff utilised more effectively - Early treatment e.g. thrombolysis is vital - I feel that initially people don't have a full grasp of the seriousness of a TIA and as a result would be better to be seen locally to have this process started - Stress for family having to travel so far away - By moving services to Coventry we remove ambulances from south Warwickshire as they will be transporting patient out of area in non-emergency transfers (not blue lights) and so leaving south Warwickshire without emergency cover
	All responses (Q3)	< 50% agree with proposals for rehabilitation although general support for the idea that home recovery can be best for patients. Concerns about community staffing and health of patients not fitting criteria for GEH / LSH but still very ill - risks of readmission.
	All responses (Q4)	To aid recovery in familiar surroundings and be with loved ones.

Table 27. Stakeholder responses to questionnaire regarding health impacts

The common themes around health that emerged throughout the engagement are those concerns of:

- ☐ Recognition of the benefits of centralised treatment and local provision of rehabilitation.
- ☐ Concerns over capacity in the new system for effective community rehabilitation
- ☐ The importance of family and carers in recovery so concerns that increased travel will add to their stress.

Scoring for nature of the impact in the health section:

- High positive impact: 2
- Low positive impact: 1
- Neutral Impact: 0
- Low negative impact: -1
- High negative impact: -2

Scoring takes account of both the scale of the impact in relations to numbers of people impacted and the severity of impact.

5.2.2 Direct health impacts for patients

To assess the direct health impacts of the scenarios, evidence has been collated from national pathway reviews and stroke specifications, comparable stroke Health Impact Assessments (HIAs) and from local assessments of the clinical model undertaken through the West Midlands Clinical Senate and Coventry and Warwickshire Clinical Reference Group. A fuller explanation is given in appendix 7.7 to 7.10.

Overall Summary of Impacts on patient - positive

As described in the case for change (section 2.1) and based on the NHS Midlands and East service specification⁴⁹, there are strong clinical benefits and improved outcomes expected for stroke patients treated in a specialist Centre that are appropriate to the proposals for Coventry and Warwickshire. These proposals have been assessed as having the following benefits namely that;

- Everyone within 72 hours of the onset of stroke to have the benefit of assessment in a Hyperacute Stroke Unit ('HASU');
- All stroke patients in Coventry and Warwickshire to have timely and equitable access to hyperacute, acute and rehabilitative phases of care – currently comprehensive HASU services and ESD are not equally available to most patients in North and South Warwickshire;
- Enhanced rehabilitation and supported discharge services where appropriate resulting in more care at home and less time in hospital;
- Reduced levels of mortality for people who have suffered a Stroke – for casemix adjusted mortality rates for Coventry and Warwickshire to meet those of comparable population areas;
- Reduce levels of dependency for people after suffering a stroke – to at least be comparable with similar populations;
- An improvement in cognitive function for people after suffering a stroke – to at least be comparable with similar populations

Furthermore, recent reviews of improvements in service reconfigurations in London and Manchester⁵⁰ conclude that fully centralised models of stroke care that combine hyper-acute and acute treatment for all patients in an area are more likely to realise clinical and efficiency benefits than hub-type models.

Proposals for the area also include primary prevention for currently undetected atrial fibrillation patients that aim to reduce the incidence of stroke in the area by an estimated 97 cases per year ('The Size of the Prize on CVD prevention', Public Health England and NHS England)⁵¹. This aspect will be delivered universally in primary care and regardless of the acute reconfiguration but there is an assumption that it will be delivered within the change proposals as the current scenario reflects the inequalities in outcomes and service provision for AF. This evidence indicates that there is significant clinical benefit potentially from this intervention.

Impact on patient - negative

No negative health impacts have been identified; however there are a small number of access and communication related impacts which have been identified through the travel impact assessment and the equality impact assessment to be considered.

A number of patients with TIA or Stroke still present at George Eliot or South Warwickshire Trust A&E departments in the first instance and are likely continue to do so in the future as A&E services remain unchanged. Under a centralised model, they will still have to be triaged or assessed in those A&Es and, if suspected Stroke or TIA, be transferred directly to the UHCW HASU via emergency ambulance. Whilst the transfer time to UHCW will add around 15 minutes (GEH to UHCW) to 20 minutes (SWFT to UHCW) the time to treatment of the whole process of the transfer will likely be longer.

HS Midlands & East. Stroke services specification version 5, October 2015

37 Clinical Reference Group – Option Appraisal January 2018

51 http://www.wmscnsenate.nhs.uk/files/7114/6366/4877/Final_WMCS_v1.0_CW_SS_6.5.16.pdf

In a small number of cases, particularly where for a variety of reasons the presenting stroke patient is already delayed, the extended time to thrombolysis could potentially reduce the effectiveness of the treatment². In 2015/16, there were 108 admissions via A&E at GEH (68) and SWFT (40) where the patient self-conveyed – these are likely to be the patients affected.

In the patient safety literature, communication and handovers between teams are recognised as key risk factors. This suggests that – in theory – any extra steps in the patient pathway for Coventry and Warwickshire residents may lead to them experiencing a greater risk to patient safety arising from greater demands for effective communication and handovers between teams if they move between sites.

There is insufficient evidence to assess relevance to future projected need. This is relevant to both acute hospital services and ambulance services. There is a theoretical possibility of negative impact for both population groups

According to the SSNAP audit⁵² for April 2016 to March 2017 (team-centered 72-hour results):

	UHCW	GEH	SWFT
Patients covered by audit results	823	164	255
% of patients scanned < 12 hours	93	96.3	85.5
Median time to first scan (minutes)	33	76	174
Number (and %) estimated onset to arrival > 4 hours*	103 (21.6)	39 (69.7)	88 (74.6)

*Table28. Percentage scanned within 12 hours, median time between clock start and first scans and arrivals within 4 hours of by team of first treatment. * Where onset time is known/can be estimated.*

This data suggests those self-attending to SWFT in the first instance are already further along the time-critical pathway and would be most susceptible to any delays in treatment as a result of transfer to UHCW.

Stroke patients can experience communication challenges, and this could be compounded when there are an increased number of handovers between care providers in their treatment pathway⁵³.

As the changes to service locations are essentially geographic, the assessment of impacts on health has also been assessed across the districts differentially – patients from Coventry and Rugby almost exclusively already use the HASU, ASU and supported discharge services at UHCW as described in the future model and around half of Nuneaton & Bedworth (see table 10 for use of the 3 sites by stroke patients in each district) therefore patients from those areas are already benefiting from access to the specialist centre and as such have less to gain from the changes than those elsewhere in Warwickshire .

50 Ramsay A.I.G, Morris S et al. Effects of Centralizing Acute Stroke Services on Stroke Care Provision in Two Large Metropolitan Areas in England. Stroke. 2015;46:2244-2251. June 2015

51 Improving stroke outcomes for Coventry & Warwickshire: Pre-consultation business case v2.3. August 2017

The positive health impacts for Stratford and Warwick have been offset in this assessment due to the slightly higher risk of potential for delayed treatment due to further travel/transfer to UHCW of those self-attending at Warwick hospital.

Additionally, the scores here reflect the assumption made by the business case that community supported discharge services, community rehabilitation and social care reablement teams will have sufficient capacity going forward to manage all stroke patients' rehabilitation and recovery needs across Coventry and Warwickshire.

Impact on visitors/carers

In the immediate aftermath of suspected diagnosis of a TIA or stroke, the need for transfer to another hospital site is likely to increase the anxiety of those who attended A&E with the patient, whether they travel in the ambulance or follow using their own means of transport. Again, whilst for a very small number of people, the effects on carers whom have existing health or mobility problems could lead to temporary exacerbations or acute episodes themselves.

The tables below summarise the potential gains that could be achieved through the centralised service with the two rehab options, based on evidence of health benefit and improved access that has been demonstrated through the evaluation of other similar models and the clinical appraisals undertaken locally.

Scenario	Health Outcomes											
	Death and Premature Death		Disease		Health Related QoL		Stroke Risk Factors (Biological)		Stroke Risk Factors (Lifestyle)		Total health impact	
	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact
1	0	0	0	0	0	0	0	0	0	0	0	0
2a	+2	+1	+2	+1	+2	+1	+2	+1	+2	+2	+10	+6
2b	+2	+1	+1	-2	+1	-2	+2	+1	+2	+2	+8	0

Scenario	Impacts Relating to Access to High Quality Health Care ⁵⁰													
	Clinical Quality/ Effective Care		Availability		Evidence Based		Workforce		Cost Effective Health Care		Relevance to Population Need		Total health impact	
	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2a	+2	+1	+2	+2	+2	+2	+1	+1	+2	+2	+1	+1	+10	+9
2b	-2	-2	-1	-1	-1	-1	-1	-2	-1	-2	+1	+1	-5	-7

Based on the expected direct health impacts described above and the scale of the impact outlined in Table 12 across Coventry and Warwickshire the greatest health gains will be felt in North Warwickshire and the South due to standard, equitable access to a stroke service that maximises the clinical outcomes for patients across Coventry and Warwickshire leading to improved quality of life and experience.

5.2.3 Employment

Impact on patients

Given the improved long-term outcomes attributed to centralisation and specialist treatment for Stroke, those patients of working-age are more likely to return to full or partial function that allows them to continue working. In 2015/16, there were 71 patients treated at GEH or SWFT aged under 60 years who might to varying extents have benefited in this respect.

Impact on visitors/carers

Having to make longer journeys to visit stroke patients could impact on visitor employment if it is necessary for them to take time out of work to allow for longer journey times. On the flip side, the proposed clinical model and centralisation is predicted to reduce the length of stay for some patients who may mitigate this for their carers/visitors. Given the average age of stroke patients, the impact on employment is most likely to be felt by their children who are carers rather than the spouse/partner.

5.2.4 Mental Health

Impact on patient

Research has shown that family function appears to influence stroke outcomes; it is suggested that high levels of family support are associated with improved recovery status⁵⁴, thus highlighting the importance of stroke patients receiving visitors. Therefore, any stroke pathway scenario that could result in a potential reduction in visitors could negatively impact on stroke recovery outcomes.

50 <https://www.strokeaudit.org/results/Clinical-audit/National-Results.aspx> (accessed Dec 2017)

53 Stroke Association. *Feeling overwhelmed. The emotional impact of stroke*. 2013.

54 Family Function and Stroke Recovery: A Review. Palmer, Sara; Glass, Thomas A. *Rehabilitation Psychology*, Vol 48(4), Nov 2003, 255-265. <http://dx.doi.org/10.1037/0090-5550.48.4.255>

Impact on visitors/carers

If family members or carers feel that their ability to visit stroke patients is reduced due to longer travel times, this could lead to feelings of stress and anxiety, due to the potential negative impact on stroke recovery that a reduction of family support can lead to.

If increased journey times to visit patients are impacting on other areas of a person's life, for example their employment, this could also negatively impact on an individual's mental health through increased feelings of stress and anxiety⁵⁵. Mental health issues can impact on the individual by escalating or leading to physical health issues⁵⁶, and can also impact on family members⁵⁷.

5.2.5 Income

Impact on visitors/carers

Having disposal income is essential for health⁵⁸ in relation requisites of healthy living. A reduction in disposable income resulting from increased travel costs will impact disproportionately on those from socio-economically deprived backgrounds who tend to have lower incomes, therefore increasing health inequalities.

As outlined in section 5.1, some of the scenarios will lead to increased costs associated with visitor travel. Increased travel costs (including petrol, parking or increased usage of public transport as well as potential loss of earnings) could lead to a reduction in disposable income. The Department for Transport WebTag Databook outlines the value of a person's time according to their employment status (see table 29).

Mode of Travel	£/hour (based on 2010 prices, 2017 forecast)
Car Driver (working person)	£19.25
Car Driver (non-working)	£4.94
Public Transport Passenger (working person *no measure for non-working)	£10.91

Table29: WebTag Databook; value of person's time by mode of transport.

The actual cost of travel for an average car for a non-work related journey equates to £0.58 per mile travelled; this includes all costs associated with a journey including car ownership, insurance, tax, maintenance and petrol etc⁵⁹. It should be recognised that even if no

55 UK Government. 2013. Mental Health and Work. [online] Available at: <https://www.gov.uk/government/publications/mental-health-and-work> [Accessed: March 2015]

56 Mental Health Foundation. N.d. Physical Health and Mental Health. [online] Available at: <http://www.mentalhealth.org.uk/help-information/mental-health-a-z/P/physical-health-mental-health/> [Accessed: March 2015]

57 Mental Health Foundation. N.d. Mental health and parents. [online] Available at: <http://www.mentalhealth.org.uk/help-information/mental-health-a-z/P/parents/> [Accessed: March 2015]

58 Morris, J. et al. 2000. A minimum income for healthy living. [online] Available at: <http://jech.bmj.com/content/54/12/885.full> [Accessed: March 2015]

59 Automobile Association, cost of travel by car 2014. Car running costs 2014/15 (adjusted for Dec 2017 fuel prices). Accessed December 2017

changes are made to the stroke pathway, visitors will incur some costs travelling to SWFT or GEH anyway. These costs will be increased for travel to UHCW.

Residents required to pay to use public transport or taxis will also face an additional cost. This will vary depending on the service/provider used and the distance travelled. It is therefore likely that residents travelling from both South and North Warwickshire will face a greater cost to access UHCW for the acute stroke phase than those living in Coventry and Rugby and then residents from Coventry and Rugby will face increased costs during the bedded rehabilitation phase of care if relevant.

Residents aged over 65 are entitled to a concessionary bus pass which entitles them to free bus travel after 9.30am, therefore lessening the economic impact of reliance on public transport.

5.2.6 Social Cohesion

Transporting patients to specialist Centre's increases the likelihood that they will be taken to hospital with which they are unfamiliar. This could be particularly disorientating for older people, BME groups, those with pre-existing mental health disorders/learning disabilities and people with physical or sensory impairments and could impact on their patient experience..

Customer engagement carried out by Warwickshire North CCG suggests that whilst patients and voluntary sector recognise the need to go to the right place for more specialist treatment, they wanted to return closer to home as soon as possible with locally provided services⁶⁰. Centralisation of services can negatively impact on social and community cohesion.

Additional engagement feedback suggests it may be likely that ambulances will be out of circulation for longer which is possible to impact upon non-stroke patients in the North or South of the area.

Based on the expected social impacts described in each section above, the summary of scored impacts by scenario are;

	Employment		Mental Health		Income		Social Cohesion	
Scenario	Patient	Carer / Visitors	Patient	Carer / Visitors	Patient	Carer / Visitors	Patient	Carer / Visitors
1	0	0	0	0	0	0	0	0
2a	+1	+1	0	-1	0	-1	0	-1
2b	+1	+1	0	-1	0	0	0	0

Table30. Overall health impact scoring for each scenario

60 Warwickshire North CCG. 2013. Vision for quality: A framework for action- technical document. [online] Available at: <http://www.warwickshirenorthccg.nhs.uk/mf.ashx?ID=d0b638db-6496-46f7-a6e2-8c16c1551cd3> [Accessed: March 2015]

5.2.7 Summary of key health impacts:

Overall, the proposed changes are designed to improve outcomes for the patients involved – more likely to survive, recover quickly with lower risk of permanent disability and spend more time at home with support. As part of the proposals other preventive programmes are intended to reduce the incidence of stroke and TIA across the area.

For patients self-conveying to GEH or SWFT A&E departments there may, in a small number of cases, be potential for delays to scanning or treatment that might reduce its' overall effectiveness as a result of having to transfer to UHCW. Thrombolysis is generally recommended < 4.5 hours and 70+% of patients admitted to GEH and SWFT do so over 4 hours after symptom onset (estimated) however; the most serious cases will likely have already travelled by ambulance directly to UHCW.

In the short-term, negative impacts may be felt by some carers / regular visitors in relation to increased and unfamiliar travel – reduction in income, challenges to employment and affected mental wellbeing related to several changes in treatment locations. This should however, in theory, be minimised or offset by the reductions in length of stay and improved supported discharge offering proposed by the changes. Some support with travel arrangements may also already be available for those on low incomes or unemployed.

5.2.8 Potential mitigations for health impacts

- ☐ To reduce the potential risk (albeit small) for delays in scanning or treatment, a comprehensive and timely communication campaign, focusing on North and South Warwickshire, should be implemented to encourage anyone experiencing stroke-like symptoms to call an ambulance or take themselves directly to UHCW for assessment.

The mitigations identified in the previous IIA are still relevant and some progress may have been taken in addressing them since 2015;

- ☐ Engagement with all groups, especially equality groups, to improve treatment, access to services in regular and non-acute settings and appointment compliance; this will mitigate against the incidence of stroke in the population, particularly the equality groups.
- ☐ Many strokes are preventable. Therefore, commissioners of primary care should review their engagement with public health and the NHS Health Check Programme to identify at risk patients earlier, commence treatment and prevent stroke. This will mitigate against the increased older population having more episodes requiring care and the knock-on impacts for their family, friends and carers.

5.3 Equality Impact Assessment

This section responds to the Equality Act 2010⁶¹ and the Social Care Act 2012⁶² which require a commissioner ensure due regard to ensuring that people or groups with certain characteristics are not disproportionately affected by changes to public services and reduce inequalities with respect to accessing health services and outcomes achieved from the provision of these services. The comments below have been applied to each proposed scenario under consideration in Appendix 7.10 which account for the EIA scores for each scenario found in section 5.4. This can be used to identify the appropriate mitigation to minimise the described equalities impact as part of the final decision-making process as required by the relevant local guidance⁶³.

Not all groups protected under this legislation have been considered in scope for this service change as highlighted in section 2.2.

5.3.1 Findings from Stakeholder Engagement: July 2017

An engagement exercise with service stakeholders was carried out in July 2017 that recorded responses to proposed stroke service changes in Coventry and Warwickshire⁶⁴. The following points raised during this engagement have informed the EIA narrative below:

- a) The current public service transport to UHCW is infrequent and not accessible to residents in the north of the region;
- b) The current parking capacity at UHCW is poor and the cost of parking would be prohibitive for some relatives;
- c) Public transport between Coventry and proposed rehab sites is not adequate
- d) The loss of acute and specialist services from GEH and SWFT will result in a de-skilling of remaining staff and make services more vulnerable as has happened previously;

This report also acknowledged that there was not currently adequate specialist staff to support the proposed service change and that recruitment would be required. The findings below assume that the required additional specialist staff have been recruited but this assumption should be considered a 'risk'.

These findings also assume, in the absence of evidence to the contrary, that care home beds commissioned locally under Scenario 2b proposed model plus the proposed model plus will provide the same level of support and expertise i.e. quality in care provision for stroke patients as in the hospital settings detailed in Scenarios 1 and 2a. This assumption should also be considered a 'risk' until the care homes that will be used for bedded rehab patients from Coventry and Rugby have been identified and confirmed so that they can be included in the critical appraisal of this service change proposal, alongside LSH and GEH rehabilitation services.

61 <https://www.legislation.gov.uk/ukpga/2010/15/introduction>

62 <http://www.legislation.gov.uk/ukpga/2012/7/contents/enacted>

63 Warwickshire County Council. 2015. Equality Impact Assessments. [online] Available at: <http://apps.warwickshire.gov.uk/api/documents/WCCC-575-761> [Accessed: March 2015]

64 Arden & GEM CSU, 'Engagement Report: Improving Stroke Services in Coventry and Warwickshire'. Unpublished.

5.3.2 Age

Impact on patient

Older people are at higher risk of stroke with 80 per cent of stroke events occurring in people over the age of 65. The following data is therefore relevant when considering the impact of service changes on older people:

Number of people over age of 65 by hospital locality:

- 69,382 (UHCW)
- 57,021 (SWFT)
- 37,629 (GEH)

Source: Office for National Statistics 2011 Census, (www.statistics.gov.uk)

In 2015/16 the number of patients over the age of 65 treated for stroke (including TIA) at these hospitals:

- 803 (UHCW)
- 293 (SWFT)
- 259 (GEH)

Source: NHS Hospital Episode Statistics

The number of HASUs is not subject to change under any of the new scenarios and thus access for older people would be unchanged for those patients who are assessed in need of HASU care. Scenarios 2a and 2b however, will provide a greater level of consistency and access for patients who self-present at GEH and SWFT and, under the current system, are confirmed as suffering stroke following assessment but do not fulfil the criteria for transfer to the HASU.

All change scenarios will result in a greater number of patients being transported away from their local hospital during the acute care and rehabilitation phases than is currently the case. As older people suffer a disproportionate number of strokes compared with the rest of the population, they will be more affected by this. Transporting patients away from a hospital they may be more familiar with may be disorientating for older people and could impact on their patient experience. Additionally, scenarios that involve multiple care settings may negatively impact this group. Stroke patients can experience communication challenges and this can be compounded when there are an increased number of handovers between care providers in their treatment⁶⁵.

The current population spread over the age of 65 in Coventry and Warwickshire demonstrated above and in appendix 7.5.1 suggests that a greater number of older patients will be affected by the removal of some stroke services from SWFT than from GEH. The high number of older people in south Warwickshire also means a relatively high probability that an older person may self-present at SWFT with suspected stroke if they are not aware of the availability of stroke services in the region. The process of being assessed and then transferred to UHCW will mean a longer period of time before treatment can begin for these patients under scenarios 2a and 2b. 17 per cent of stroke or TIA patients are presently admitted to the ASU at SWFT and 35 per cent at GEH. It is important that potential stroke

⁶⁵ Stroke Association. *Feeling overwhelmed. The emotional impact of stroke*. 2013

patients can access rapid assessment and care with the 'Silver Book' recommendation to ensure 'a distinct area in Emergency Departments which is visually and audibly distinct that can facilitate multidisciplinary assessments'⁶⁶. If stroke care is removed from SWFT and GEH, rapid assessment of symptoms will still be required for these patients who self-present at these locations and where to go for this should be distinct to avoid any delay.

The high number of older people in the UHCW locality also means that moving rehabilitation services away from UHCW will mean more time away from their locality for patients from this area who require bedded rehab.

Finally, as the population and treatment figures on the previous page show, the number of stroke patients who are currently treated at SWFT is not proportionate to the greater number of older people in the locality compared with that around GEH; 35 per cent of region's older population live around SWFT which treated 22 per cent of stroke patients. 23 per cent of the older population lives around GEH which treated 20 per cent of older stroke patients. This is likely down to higher rates of other risk factors such as deprivation around GEH (see section 5.3.6 and appendix 7.5.5).

Impact on visitors/carers

Carers

There are 1.1 million informal carers over the age of 65 in the UK; 21 per cent of the UK population over the age of 65 provide informal care⁶⁷. This compares to 7 per cent of the rest of the population who act as informal carers. It is more likely, therefore, that if a stroke patient requires informal care this will be provided by an older person, or that the stroke patient themselves provide care for another. This should be considered when redesigning support services for stroke patients.

Evidence has also shown that carers who provide more than 20 hours care per week are more likely to live in poverty⁶⁸. Carers of older stroke patients, or older carers themselves, may be more greatly affected by increased travel costs caused by services being moved away from their locality.

The impact on the carer of ESD should be considered when clinicians are deciding on the appropriate care package for a stroke patient. Evidence suggests that carers of stroke patients do not receive information advice or support to help them with anxiety or depression related to their responsibility⁶⁹. Appropriate support for carers should be available where they might be expected to provide enhanced support to patients under ESD arrangements to avoid these outcomes.

66 Banerjee, J. et al. *Quality care for older people with urgent and emergency care needs*. Undated. Available at http://www.bgs.org.uk/campaigns/silverb/silver_book_complete.pdf [accessed 24 Nov 2017].

67 Aldridge, H. and Hughes, C. *Informal carers and poverty in the UK: An analysis of the Family Resources survey*. New Policy Institute. 2016. P. 3.

68 Aldridge, H. and Hughes, C. *Informal carers and poverty in the UK: An analysis of the Family Resources survey*. New Policy Institute. 2016. P. 14.

Travel and access

Centralising or moving stroke services away from certain geographies, as the scenarios propose, may make it more difficult for friends and family of older stroke patients to visit them. As older stroke patients are also more likely to have an older spouse or partner, service changes could adversely affect visitors themselves who have protected characteristics. Visiting hours are much more restricted at UHCW than GEH or SWFT and provide less flexibility. This may make it more difficult for visitors to attend, particularly if they rely upon public transport. It should be noted however, that the average length of time presently spent in the ASU at SWFT is 27 days, compared with 18 at GEH and 15 at UHCW. This means that although visitors from the SWFT locality will have further to travel if all acute care is centralised, they may not need to visit for such a long period of time, limiting the impact. Section 5.1 provides comprehensive analysis of possible travel arrangements by scenario. The two tables below show the public and private transport travel times under the circumstances of full centralisation and moving rehabilitation services to LSH and GEH only. The specifics and implications of this for older people should be considered in more detail.

Values	Coventry	North Warwicks hire	Nuneaton & Bedworth	Rugby	Stratford- on-Avon	Warwick	Grand Total
Actual avg. (mins)	28.0	74.1	37.1	48.8	79.5	36.9	43.2
All UHCW avg. (mins)	26.8	101.6	55.8	51.8	123.4	68.4	59.0
All nearest of LSH/GEH (mins)	55.6	60.8	23.8	75.4	68.7	30.7	49.5

Table31. Public transport travel time relative to scenarios 1 and 2A

Values	Coventry	North Warwicks hire	Nuneaton & Bedworth	Rugby	Stratford- on-Avon	Warwick	Grand Total
Actual avg. (mins)	11.7	21.4	11.3	17.0	24.9	12.5	14.7
All UHCW avg. (mins)	11.4	26.5	15.5	18.5	33.1	21.7	18.4
All nearest of LSH/GEH (mins)	17.2	18.8	8.2	25.1	20.7	10.1	15.7

Table32. Private transport travel time relative to scenarios 1 and 2A

Private transport

85 per cent of the households closest to SWFT have access to a vehicle compared with 81 per cent around GEH⁷⁰. SWFT services a greater geographic area with a higher rural population⁷¹ which is older than around GEH, but also more likely to have a car as the primary means of transport. Although they will likely have further to travel, removal of stroke services in SWFT will arguably have less of an impact in terms of ease of visitation of older people who have friends or family from south Warwickshire as they will more likely have access to private transport. Concerns have been raised regarding parking facilities at UHCW and these will need to be addressed to achieve the full benefit from having more car users in south Warwickshire. The GEH locality also has significantly more older people who are reliant on state support than around SWFT and therefore the inherent travel costs to visit a stroke survivor will have a more significant impact on this population⁷².

It should also be considered however, that heavier reliance on private transport in older people could have a negative impact. Aging tends to result in a reduction of strength, coordination, and flexibility, which can have a major impact on ability to safely control a car⁷³. Older adults are more likely to conduct traffic offences and are more likely get into accidents than younger drivers.

Public transport

Individuals aged 70+ make the most journeys by public transport a year proportionately. 61% of older people use public transport; it is the most popular mode of transport for older people. This figure is lower for those aged 85+, where proportionately fewer people use public transport⁷⁴.

Older people make the most usage of public transport, it is therefore important that there are appropriate transport links to hospitals. Increasing age however, leads to less usage of public transport. Taking into account both the increased and then decreased usage of public transport, it can be concluded that heavier reliance on public transport to travel further to visit relatives in hospital would impact disproportionately on older people.

As is shown in Figure 16 in section 5.1.3.4, there are many parts of the North Warwickshire, Stratford, Warwick and Rugby localities that cannot access the two rehabilitation sites

70 ONS. '2011 Census: Key statistics for England and Wales, March 2011. 2012 Available at <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/2011censuskeystatisticsforenglandandwales/2012-12-11> [accessed 23 Nov 2017].

71 'Quality of Life Report'. Warwickshire Observatory. 2014. P. 1. Available at <https://apps.warwickshire.gov.uk/api/documents/WCCC-1014-120> [accessed 24 Nov 2017].

72 'Quality of Life Report'. Warwickshire Observatory. 2014. P. 8. Available at <https://apps.warwickshire.gov.uk/api/documents/WCCC-1014-120> [accessed 24 Nov 2017].

73 Helpguide. 2015. Age and driving. [online] Available at: <http://www.helpguide.org/articles/aging-well/age-and-driving-safety-tips.htm> [Accessed: March 2015]

74 Royal Voluntary Service. 2015. Going nowhere fast: Impact of inaccessible public transport on wellbeing and social connectedness of older people in Great Britain [online] Available at: http://www.royalvoluntaryservice.org.uk/Uploads/Documents/Reports%20and%20Reviews/Trans%20report_GB_web_v1.pdf [Accessed: March 2015]

proposed in Scenario 2a proposed model by public transport. The high number of older people in Stratford and Warwick mean that they may be disproportionately affected by this service change.

Access to private transport in Coventry is comparatively low (69 percent) but the city is home to 30 percent of the older population for the affected region. Requiring older people from Coventry to travel greater distance to visit patients, which is likely during the rehabilitation phase under scenarios 2a, will mean longer travel times. As table 31 (above) demonstrates, although travel times by public transport for people from Coventry are significantly increased under Scenario 2a proposed model, they are consistent with average travel times from other localities thus disproportionate impact may not be adjudged.

The cost of public transport is already mitigated against as residents aged over 65 are entitled to a concessionary bus pass which entitles them to free bus travel after 9.30am, therefore lessening the economic impact of reliance on public transport.

Relative overall impact

It has been established that older people are a high risk stroke group and could, therefore, be significantly affected by these proposed service changes as patients, carers and visitors. UHCW has the highest number of older people in its locality (69,382) followed by SWFT (57,021) and GEH (37,629). Removing acute stroke services entirely from SWFT and GEH would negatively impact the greatest number of older people in terms of proximity to care, especially at GEH where a relatively high proportion of stroke presenters are admitted, followed by removal of rehab services from UHCW. Not all patients with a suspected stroke are being seen in a specialist hyperacute stroke unit and therefore some may be missing the opportunity provided by a hyper-acute assessment and/or unit. Centralising acute care therefore provides the opportunity for more consistent specialist treatment for older people.

Older people (under 85) make most use of public transport so older visitors and carers would require adequate public transport links between geographies if local services are removed if they are not to face prohibitively difficult or impossible journeys. Access to a private vehicle is higher in rural south Warwickshire so family and friends of a patient in this region are more likely to be able to use private transport for visitation, arguably providing more flexibility in terms of ability to travel further, although the potential impact on driver safety should be considered. Moving patients from the ASU at SWFT to UHCW could also reduce the length of time they stay in hospital, limiting the impact of increased travel times for visitors. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

The likelihood of a carer being an older person should be considered when making decisions around ESD to avoid disproportionate impact on this group i.e. stroke patients are more likely to be cared for by an older person. ESD potentially puts more strain on a carer and appropriate support will be required to mitigate against this.

Finally, scenarios that involve multiple care settings may negatively impact this group. Stroke patients can experience communication challenges, and this can be compounded when there are an increased number of handovers between care providers in their treatment. This is most relevant for UHCW locality patients who under the current service receive all their treatment in one location but may be moved between multiple providers under the proposed scenarios dependent on their need.

5.3.3 Disability and people with mental health conditions and/or learning difficulties

Impact on patient

There is a higher prevalence of stroke amongst people with learning disabilities and mental health problems compared with the population as a whole, therefore any changes to services will disproportionately affect this group. Population data are available for those with 'activity limiting health problems or disabilities'. The number of people who self-classify as being 'limited a lot' under this category by hospital locality are:

- 34,615 (UHCW)
- 17,641 (GEH)
- 17,268 (SWFT)

Transporting patients increases the likelihood that they will be taken to an unfamiliar hospital; this can be disorientating for people with disabilities and could well affect their patient experience, especially if they have challenges with communication, both prior to and/or subsequent to their stroke⁷⁵. It can be argued that centralising services at UHCW will have the greatest potential impact on individuals with this protected characteristic in terms of proximity to the range of stroke treatments from hyper- acute to rehabilitation as a greater number of affected individuals live outside of the UHCW locality. The number of effected individuals within the UHCW locality however, is only slightly lower than for those outside and moving stroke rehabilitation services away from UHCW will also have a significant impact in terms of access for these stroke patients. Not all patients with a suspected stroke are being seen in a specialist hyperacute stroke unit and therefore some may be missing the opportunity provided by a hyper-acute assessment and/or unit.

Centralising acute care therefore provides the opportunity for more consistent specialist treatment for people with mental health conditions or learning difficulties.

The Disability Rights Commission asserts that, in responding to the Disability Discrimination Act, health providers too often focus on making improvements to physical access rather than considering wider changes to how services are delivered⁷⁶. Therefore, it is important that the needs of disabled people are fully considered when implementing service changes. For example, Scenario 2b proposed model plus proposed model plus which may involve a stroke survivor being re-located to a care home for rehabilitation will need to ensure that there are appropriate processes in place to ensure that a patient with a learning disability's needs are understood and communicated between settings. Having the resources to involve these patients and their carer in decision making is important⁷⁷. This is relevant to all scenarios, especially where multiple care settings may be used during treatment.

75 Stroke Association. *Feeling overwhelmed. The emotional impact of stroke*. 2013

76 Disability Rights Commission and Department of Health (2005): 'Evaluation of You can make a difference'

77 Hardy, S. *Dignity in health care for people with learning disabilities*. RCN. 2013.

Impact on visitors/carers

Carers

Half of all stroke patients are left with long term disability and are dependent on others for everyday activities therefore stroke can both create situations where informal care is required due to resulting disability as well as complicating existing care⁷⁹.

Advice from the Stroke Association states that it is important to support carers and stroke patients through having staff who understand stroke at all points of the patient pathway. Centralising stroke care around a specialist unit could benefit carers who will have access to trained stroke experts. Scenario 2b proposed model plus where patients from the UHCW locality are moved to local non-hospital settings for rehab provides arguably the least certainty that carers will have the support of stroke professionals at this stage. Workforce data relating to stroke care should be collected for each site to ensure consistent care quality.

Evidence has also shown that carers who provide more than 20 hours care per week are more likely to live in poverty⁸⁰. Carers of stroke patients with complex disabilities or mental health issues may be more greatly affected by increased travel costs caused by services being moved away from their locality.

The impact on the carer of ESD should be considered when clinicians are deciding on the appropriate care package for a stroke patient. Evidence suggests that carers of stroke patients do not receive information advice or support to help them with anxiety or depression related to their responsibility⁸¹. Appropriate support for carers should be available where they might be expected to provide enhanced support to patients under ESD arrangements to avoid these outcomes.

Travel and access

The same issues around where stroke service provision is provided in the region that may of an adverse effect on older patients are relevant for those with a limiting disability or mental health issue. These patients will be disproportionately affected if it is made more difficult for them to receive visitors by centralising stroke care or reducing the number of settings in which it takes place. Lower rates of access to private transport in north Warwickshire and Coventry will have a more significant impact on ability to visit stroke patients where services are moved from these localities. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Relative overall impact

People with a limiting disability or mental health issue are at greater risk of stroke than the population as a whole. Improving access to specialist stroke care through centralising acute treatment for people with this protected characteristic would therefore have a positive outcome. Increasing the number of settings involved in care could risk providing a lower level of expertise available to patients and carers in terms of stroke treatment across their period of care. Disability and mental health issues may limit communication which can be

NHS, *Stroke Services: Configuration Decision Support Guide Appendices*. 2015

79 Aldridge, H. and Hughes, C. *Informal carers and poverty in the UK: An analysis of the Family Resources survey*. New Policy Institute. 2016. P. 14.

compounded when multiple treatment settings are involved as a possible outcome in the proposed scenarios.

5.3.4 Ethnicity

Impact on patient

It has been stated that men of African, Caribbean and South Asian heritage are more likely to suffer stroke than the population as a whole. Changes to stroke services therefore, could disproportionately affect these groups.

The relevant minority ethnic population served by each of the three main hospitals, also described in appendices 7.5.2, 7.5.3 and 7.5.4, affected by the proposed service changes is:

Population characteristic	GEH	UHCW	SWFT
Asian/Asian British	8,460	56,823	11,411
Black/African/Caribbean/Black British	1,219	19,751	1,237
Total	9,679	76,574	12,648

Table33. Minority ethnic population affected by the proposed service changes. Source: Office for National Statistics 2011 Census, (www.statistics.gov.uk)

In 2015/16 the number of patients from these groups treated for stroke (including TIA) at these hospitals was:

Population characteristic	GEH	UHCW	SWFT
Asian/Asian British	7	52	13
Black/African/Caribbean/Black British	1	25	0
Total	8	77	13

Table34. Number of patients from these groups treated to Stroke (including TIA). Source: NHS Hospital Episode Statistics

These data suggest that changes involving shifting part of service provision away from UHCW will have the most significant impact on patients from relevant BAME communities as a greater number are likely to be re-located outside of their immediate locality.

It has also been argued that consideration in the design of a stroke service should take into account language barriers that are more likely to affect BAME groups. Information should be provided to patients and carers in relevant community languages across all phases of treatment⁸².

Hospital Locality	South Asian over 65 English not main language	African over 65 English not main language
UHCW	3,277	45
SWFT	636	5
GEH	405	2

Table35. Number of people for whom English is not their main language and who are considered most 'at risk' of stroke. Source: Office for National Statistics 2011 Census, (www.statistics.gov.uk)

80 Institute. 2016. P. 3

82 NHS, *Stroke Services: Configuration Decision Support Guide Appendices*. 2015

Figures for those over the age of 65 have been provided as this brings together two risk categories of age and ethnicity. This evidence suggests that service changes should ensure that patients from the UHCW area are able to access translation services at all phases of treatment so as not to be adversely affected by service changes. Transporting patients increases the likelihood that they will be taken to unfamiliar hospital; this may be disorientating for BAME groups and could impact on their patient experience if they are not able to communicate effectively with staff. Providing specialist services in fewer locations could increase the accessibility of specialist support such as translation services, in addition to the ability to provide consistency of early-stage specialist treatment for stroke patients which can lead to positive outcomes and reduce health inequalities associated with these groups. Desktop research into the translation/interpretation services currently available at each location was carried out using the websites of each of the hospitals (see table 36):

	Translation service	Additional information
UHCW ⁸³	Yes	<ul style="list-style-type: none"> • Face to face, written and telephone service • Includes British Sign Language (BSL) and Braille
GEH ⁸⁴	Yes	<ul style="list-style-type: none"> • Multi-lingual co-workers employed (Urdu, Hindi, Punjabi)
SWFT ⁸⁵	Yes	

Table 36: Translation/interpretation services currently available at each Hospital

Impact on visitors/carers

Carers

No detailed breakdown of the ethnic composition of carers is available but it has been reported that the provision of informal care is common across all ethnic groups suggesting that if certain ethnic groups are disproportionately affected, so too will their carers, the majority of who are immediate family members⁸⁶. Ensuring that the appropriate support is in place for carers of stroke patients therefore, will mitigate against any negative impact on this group. This includes clear patient pathways and access to healthcare professionals who are familiar with the needs of stroke patients.

The impact on the carer of ESD should be considered when clinicians are deciding on the appropriate care package for a stroke patient. Evidence suggests that carers of stroke patients do not receive information advice or support to help them with anxiety or depression

82 UHCW. N.d. Inpatient stay. [online] Available at: <http://www.uhcw.nhs.uk/for-patients-and-visitors/your-inpatient-stay> [Accessed: March 2015]

83 GEH. N.d. Interpretation services. [online] Available at: <http://www.geh.nhs.uk/patients/interpretation-services/> [Accessed: March 2015]

84 SWFT. N.d. Interpreter services. [online] Available at: <https://www.swft.nhs.uk/patients-and-visitors/patient-and-visitor-facilities/interpreter-services.aspx> [Accessed: March 2015]

85 Aldridge, H. and Hughes, C. *Informal carers and poverty in the UK: An analysis of the Family Resources survey*. New Policy

related to their responsibility⁸⁷. Appropriate support for carers should be available where they might be expected to provide enhanced support to patients under ESD arrangements to avoid these outcomes.

Travel and access

Marriages between individuals of different ethnicities form a very small proportion of all marriages in England and Wales of 2%⁸⁸. It can be assumed therefore, that along with stroke being more prevalent in certain BAME communities, the wider impacts of this (in relation to visiting spouses) will be felt more disproportionately within these families and communities. Given the low rate of marriage between ethnicities it may be assumed that the majority of visitors from the wider family will be from a BAME group.

BAME groups' access to healthcare can be restricted by language, communication and cultural barriers. Where BAME patients have limited English, they may have to rely on translation by family and friends when receiving medical care.. The role of the visitor therefore, is important, not only in terms of the previously mentioned benefits to recovery, but also in relation to the patient experience and involvement in decision-making. Of particular focus in this group are refugees and asylum seekers, who are also particularly vulnerable to poor health, although no official data is available for the geographical spread of such individuals in the region.

The varying experiences of healthcare in relation to barriers caused by language, communication and culture can also apply to other situations, including accessibility of public transport. This is particularly relevant to those older members of BAME communities who have limited English. This may deter or even prohibit these individuals from accessing the relevant site, thus impacting on visitor numbers. As stated above, the use of public transport amongst all BAME groups is higher than with the white population and the vast majority of BAME communities live around UHCW where access to private transport is lowest. As a result, Scenario 2a proposed model that shift rehabilitation services away from the UHCW locality will have a high impact on visitors from this area in terms of public transport travel times, although they remain consistent with travel times from other localities. There are also variations within BAME groups in relation to their usage of public transport. Females of Asian origin are more reluctant to use public transport and could visit a patient less⁸⁹.

The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Relative overall impact

Certain BAME groups are more likely to suffer stroke than the rest of the population and the vast majority of these are situated in the locality around UHCW. All patients will benefit from

86 <http://www.ons.gov.uk/ons/rel/ethnicity/focus-on-ethnicity-and-identity/focus-on-ethnicity-and-identity-summary-report/focus-on-ethnicity-and-identity-summary-report.pdf> [Accessed: November 2017]

87 NHS. 2004. 'Race for Health: New from the frontline' [online] Available at: www.apho.org.uk/resource/view.aspx?RID=116517 [Accessed: March 2015]

89 Sporting Equals. 2010. Muslim women in sport. [online] Available at: <http://www.sportscoachuk.org/sites/default/files/Muslim%20women%20in%20sport%20-%20WSFF%20&%20sporting%20equals.pdf> [Accessed: March 2015]

consistent access to specialist stroke treatment via the HASU but those from BAME groups may be disproportionately affected by shifting some stroke services out of the UHCW locality, or to a setting which is more difficult to access or does not have appropriate translation services. Public transport links from Coventry are numerous compared with elsewhere in the region and so travel times from the area to relevant sites are not expected to be disproportionately prohibitive under any of the proposed scenarios.

5.3.5 Gender

Impact on patients

As has been stated, nationally, although rates of stroke are higher amongst men, the number of incidences of stroke are higher amongst women as they tend to live longer. This trend, however, is not replicated in the affected region as the data below demonstrates:

Gender	GEH	UHCW	SWFT	Grand Total
Female	187	516	175	878
Male	159	596	171	926
Grand Total	346	1,112	346	1,804

Table37. Number of male and female patients treated for stroke (including TIA) at these hospitals.

Source: NHS Hospital Episode Statistics

Historical Hospital Episode Statistics (HES) from the NHS has not suggested a common trend – 2013/14, 51 per cent female; 2014/15 50.2 per cent male - therefore it cannot be argued that changes to stroke services will affect one gender disproportionately more than another in the Coventry and Warwickshire region. It is of note that there have been a higher number of women who have been treated at GEH (54 per cent), and higher number of men at UHCW (54 per cent).

There is no significant variation in the ratio of male to female population in the relevant hospital localities, therefore it is not expected that altering the location of services will have a disproportionate effect on any particular gender. Not all patients with a suspected stroke are being seen in a specialist hyperacute stroke unit and therefore some may be missing the opportunity provided by a hyper-acute assessment and/or unit. Centralising acute care therefore provides the opportunity for more consistent specialist treatment for all stroke patients.

Generally, as women tend to live longer than men, and they have a higher rate of stroke over the age of 85, it is more likely that women over this age will not have partner support when they return home following stroke which could affect their health outcomes⁹⁰. Partner support represents 18 per cent of care provision nationally⁹¹.

90 Turtzo, L. Christine, and Louise D. McCullough. "Sex Differences in Stroke." *Cerebrovascular Diseases (Basel, Switzerland)* 26.5 (2008): 462–474. *PMC*. Web. 27 Nov. 2017.

91 Aldridge, H. and Hughes, C. *Informal carers and poverty in the UK: An analysis of the Family Resources survey*. New Policy Institute. 2016. P. 3.

Impact on visitors/carers

Carers

60 per cent of informal carers are women⁹². As half of stroke patients require some level of care women are more likely to require system support and this should be considered when designing services. Carers generally are more likely to be in poverty and so may find it difficult to visit stroke patients in community and hospital settings if this requires public or private transport. As more carers are women, they will be disproportionately affected by their deprivation.

The impact on the carer of ESD should be considered when clinicians are deciding on the appropriate care package for a stroke patient. Evidence suggests that carers of stroke patients do not receive information advice or support to help them with anxiety or depression related to their responsibility⁹³. Appropriate support for carers should be available where they might be expected to provide enhanced support to patients under ESD arrangements to avoid these outcomes.

Travel and access

Women are likely to suffer a more severe stroke than men and therefore require longer in a hospital or other care setting. This can have a greater impact on potential visitors of female stroke patients who will be required to travel further and for longer if services are moved from their locality.

More generally, some surveys suggest that women are more likely to report feeling unsafe when using public transport⁹⁴, with a large proportion of women reporting that they felt unsafe when waiting for a bus after dark.

The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Relative overall impact

There is some variation in male and female stroke by hospital where they are admitted that may impact on distribution of male/female stroke beds. Rehab and follow-up care should allow for the fact that women over the age of 85 have a higher rate of stroke and are also less likely to have partner support at home.

92 Aldridge, H. and Hughes, C. *Informal carers and poverty in the UK: An analysis of the Family Resources survey*. New Policy Institute. 2016. P. 7.

93 Stroke Association. *Feeling overwhelmed. The emotional impact of stroke*. 2013

94 USDaw. 2010. Women Workers and Safe Journeys to and from Work. [online] Available at: <http://www.usdaw.org.uk/CMSPages/GetFile.aspx?guid=cc9f9284-7239-4806-8dd3-e6cbb8f6ec44> [Accessed: March 2015]

5.3.6 Deprived communities

Impact on patient

Whilst people from socio-economically disadvantaged areas tend to make higher usage of primary care and emergency services, they make lower use of preventative services. This may be a key cause of their overrepresentation in the use of acute care⁹⁵.

Social deprivation is linked to a greater risk of stroke. People from the most economically deprived areas of the UK are around twice as likely to have a stroke as those from the least deprived areas⁹⁶. Appendix 7.5.5 shows that the UHCW and GEH localities have significantly higher levels of deprivation than around SWFT. In relation to instances of stroke, this equates to:

- 1.5 stroke instances per 1,000 population (UHCW)
- 2.4 stroke instance per 1,000 population (GEH)
- 1.6 stroke instances per 1,000 population (SWFT)

Source: NHS Hospital Episode Statistics

If you take into account the relative ages of the populations this can explain the apparent low relative rate of stroke in the UHCW area:

- 85 per cent under the age of 65 (UHCW)
- 80 per cent under the age of 65 (GEH)
- 78 per cent under the age of 65 (SWFT)

Source: Office for National Statistics 2011 Census, (www.statistics.gov.uk)

This suggests that centralising hyper-acute and acute stroke services at UHCW will have a positive access impact for deprived populations in the immediate area but negative for areas of deprivation in north Warwickshire in terms of proximity to care. The high incidence of stroke in north Warwickshire may also increase the likelihood of stroke patients from deprived communities self-presenting at GEH; the process of assessment and transfer to UHCW under scenarios 2a and 2b may delay treatment. Currently, however, not all patients with a suspected stroke are being seen in a specialist hyperacute stroke unit and therefore some may be missing the opportunity provided by a hyper-acute assessment and/or unit. Centralising acute care provides the opportunity for more consistent specialist treatment for people from deprived communities.

Scenarios that require stroke patients from the GEH locality to spend additional time further from their home could disproportionately impact this group as this may raise the cost of travel, leading to a reduction in visitor numbers resulting from economic barriers to accessing public and private transport, negatively impacting on stroke recovery.

95 Shipman, C.; Payne, F.; Dale, J.; and Jessop, L (2001) for Family Practice: 'Patient perceived benefits of and barriers to using out-of-hours primary care Centres'

96 *Stroke Statistics*, Stroke Association. 2016. Available at https://www.stroke.org.uk/sites/default/files/stroke_statistics_2015.pdf [accessed 5 Dec 2017].

Impact on visitors/carers

Carers

The poverty rate for carers is slightly higher than that for non-carers, although the poverty rate for pension-age carers is lower than the national rate, reflective of the fact they are more likely to care for a partner and have a collective income⁹⁷.

The impact on the carer of ESD should be considered when clinicians are deciding on the appropriate care package for a stroke patient. Evidence suggests that carers of stroke patients do not receive information advice or support to help them with anxiety or depression related to their responsibility⁹⁸. Appropriate support for carers should be available where they might be expected to provide enhanced support to patients under ESD arrangements to avoid these outcomes.

Travel and access

Access to sites of care for stroke patients will be important for this group who are more likely to make use of public transport and less likely to have access to a private vehicle, or be affected by arguably prohibitively high car parks costs at UHCW. As stated in section 5.2.3, having disposable income is essential for health in relation to requisites of healthy living⁹⁹. A reduction in disposable income resulting from increased travel costs will impact disproportionately on those from socio-economically deprived backgrounds who tend to have lower incomes, therefore increasing health inequalities.

Deprivation is highest around UHCW and GEH so where treatment is moved away from these sites, deprived communities will be disproportionately affected if there are not appropriate public transport links. As the tables (table 31 and 32) in section 5.3.2 shows, moving rehabilitation services to GEH will significantly reduce public transport travel times for those in north Warwickshire and around Nuneaton although without rehab services in Coventry travel times for visitors from this locality will more than double (although will remain consistent with other localities). As shown in Figure 16 in section 5.1.3.4, North Warwickshire and Rugby have many areas where visitation to one of the proposed sites of care is impossible by Public transport and so deprived populations here will be adversely affected by service changes. The travel section of this IIA (section 5.1) provides more detail as to the transport options available relevant to the various scenarios. Stakeholder engagement has already raised concerns regarding the lack of public transport links between Coventry and proposed rehab sites.

Out-of-hours primary care Centres, which require travel to a specific location outside of normal surgery hours, appear to deter some people in deprived social groups, which may be due to a lack of available transport¹⁰⁰. Similar assumptions can be applied to utilisation of, and visits to other health services including inpatient care.

97 Aldridge, H. and Hughes, C. *Informal carers and poverty in the UK: An analysis of the Family Resources survey*. New Policy Institute. 2016. P. 13, 17.

98 Stroke Association. *Feeling overwhelmed. The emotional impact of stroke*. 2013

99 Morris, J. et al. 2000. A minimum income for healthy living. [online] Available at: <http://jech.bmj.com/content/54/12/885.full> [Accessed: March 2015]

100 Shipman, C.; Payne, F.; Dale, J.; and Jessop, L (2001) for Family Practice: 'Patient perceived benefits of and barriers to using out-of-hours primary care Centres'

The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Relative Overall Impact

Affordability and access to, public and private transport will have a disproportionate impact on socio-economically deprived groups, which could lead to them being limited in relation to how often they are able to visit relatives in hospitals, particularly if the changes mean that they have further to travel¹⁰¹. This is especially relevant in the GEH and UHCW localities where deprivation is concentrated. Centralising services provides an opportunity for all people to receive the same level of specialist care during the acute phase.

5.3.7 Pregnancy and Maternity

There is some evidence to suggest that being pregnant or in the postpartum period increases the likelihood of stroke¹⁰². Providing due regard to access to maternity services for stroke patients will ensure that this group are not negatively impacted by any service change. This becomes more difficult if a mother with a new baby is required to move to a local care setting without appropriate facilities.

5.3.8 Transgender or gender reassignment

There is some evidence to suggest that hormone replacement therapy that can form part of the transition process may increase the risk of stroke, especially with transgender women¹⁰³. There is no data relating to the number of transgender people in the region and so it is not possible to consider equality issues of stroke service change at this time. Relevant data may be collected by the health sector in the future and further evidence of stroke prevalence amongst this group is required.

5.3.9 Other protected characteristics

There is no evidence to suggest that belonging to a particular religion or belief, sexual orientation or being married or in a civil partnership has any effect on stroke prevalence and they have not therefore, been considered here.

5.3.10 Summary

Providing a consistent access to specialist care at the early stage of treatment and a clear pathway for people who suffer from stroke will have a positive impact on patient outcomes. All scenarios provide a common first point of care (the HASU at UHCW) for the first stages of their treatment. Subsequently, scenarios diverge as to what type of care is provided and where. When selecting the preferred scenario, the potential issues highlighted above with regards to visitor access, appropriate facilities, communication, transparent patient pathways, impact on carers and consistent delivery should be considered, to ensure that protected groups are not adversely affected by service changes or, where they are, that appropriate mitigations are developed.

101 Automobile Association (AA). Guide to car running costs, 2014 (adjusted to Nov 2017 fuel prices). http://www.theaa.com/motoring_advice/running_costs/advice_rcosts_guide.html accessed Nov 2017

102 Turtzo, L. Christine, and Louise D. McCullough. "Sex Differences in Stroke." *Cerebrovascular Diseases (Basel, Switzerland)* 26.5 (2008): 462–474. *PMC*. Web. 27 Nov. 2017.

103 Center of Excellence for Transgender Health, Department of Family and Community Medicine, University of California San Francisco. Guidelines for the Primary and Gender-Affirming Care of Transgender and Gender Nonbinary People; 2nd edition. Deutsch MB, ed. June 2016. Available at www.transhealth.ucsf.edu/guidelines

5.4 Summary of EIA findings and relative impact by Scenario

Having described the potential equality impact of changes to stroke services in Warwickshire and Coventry, this section summarises those impacts against the scenarios as described in Section 2.4. As impact has been described from the perspectives of patients, carers and visitors, a score for each of these has been allocated based on relative positive or negative impact to provide an overall equality impact score for each scenario, notwithstanding any mitigating actions. An explanation for these scores can be found in Appendix 7.8. The scores for each grouping within a protected characteristic have been allocated based on the following system:

- High positive impact: 2
- Low positive impact: 1
- Neutral Impact: 0
- Low negative impact: -1
- High negative impact: -2

Maximum Score for each characteristic: 6

Minimum Score for each characteristic: -6

Scenario	Age	Disability/Mental Health	Ethnicity	Gender	Deprived Communities	Pregnancy/Maternity	Religious Belief	Sexual Orientation	Transgender/gender reassignment	Married/Civil Partnership	Total Score
1	0	0	0	0	0	0	N/A	N/A	N/A	N/A	0
2a	+3	+3	+3	+3	+2	+4	N/A	N/A	N/A	N/A	+18
2b	+4	+2	+5	+4	+3	+4	N/A	N/A	N/A	N/A	+22

6.0 SUMMARY OF IMPACT ANALYSIS BY SCENARIO

The tables below summarise the high-level impact scores associated with each of the scenarios, based on each of the integrated impact assessment analysis.

Travel and access:

Aspect of impact / change	Scenario	Coventry	North Warwickshire	Nuneaton & Bedworth	Rugby	Stratford-upon-Avon	Warwick
Centralisation to UHCW	1	0	0	0	0	0	0
	2a/2b Car	0	-1	-1	0	-1	-2
	2a/2b Public Transport	0	-2	-1	0	-2	-2
	2a/2b average	0	-1.5	-1	0	-1.5	-2
Bedded rehabilitation 2A	1	0	0	0	0	0	0
	2a Car	-1	+1	0	-1	+1	0
	2a Public Transport	-1	+1	0	-1	0	0
	2a average	-1	+1	0	-1	+0.5	0
Bedded rehabilitation 2B	1	0	0	0	0	0	0
	2b Car	0	+1	0	-1	+1	0
	2b Public Transport	0	+1	0	-1	0	0
	2b average	0	+1	0	-1	+0.5	0

Using the average scores across both travel modes (private or public transport) to avoid compounding effects the overall travel and access impact scores are:

Scenario	Total score
1	0
2a	-6.5
2b	-5.5

Health and social impacts

Scenario	Health Outcomes											
	Death and Premature Death		Disease		Health Related QoL		Stroke Risk Factors (Biological)		Stroke Risk Factors (Lifestyle)		Total health gains	
	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact
1	0	0	0	0	0	0	0	0	0	0	0	0
2a	+2	+1	+2	+1	+2	+1	+2	+1	+2	+2	+10	+6
2b	+2	+1	+1	-2	+1	-2	+2	+1	+2	+2	+8	0

Scenario	Impacts Relating to Access to High Quality Health Care ⁵⁰													
	Clinical Quality/ Effective Care		Availability		Evidence Based		Workforce		Cost Effective Health Care		Relevance to Population Need		Total health gains	
	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact	Total Health Impact	Total Health Inequalities Impact
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2a	+2	+1	+2	+2	+2	+2	+1	+1	+2	+2	+1	+1	+10	+9
2b	-2	-2	-1	-1	-1	-1	-1	-2	-1	-2	+1	+1	-5	-7

Using scores across both health and social impacts the overall scores are:

Scenario	Health Impact	Health inequalities Impact	Total Health & Health Inequalities Impact
1	0	0	0
2a	+20	+15	+35
2b	+3	-7	-4

Social and wider	Scenario	Employment		Mental Health		Income		Social Cohesion		Determinants of Health
		Patient	Carer / Visitors	Patient	Carer / Visitors	Patient	Carer / Visitors	Patient	Carer / Visitors	Total
	1	0	0	0	0	0	0	0	0	0
	2a	+1	+1	0	-1	0	-1	0	-1	-1
	2b	+1	+1	0	-1	0	0	0	0	+1

Equality impacts

Equality impacts various	Scenario	Age	Disability / Mental Health	Ethnicity	Gender	Deprived Communities	Pregnancy / Maternity	Religious Belief	Sexual Orientation	Transgender / gender reassignment	Married / Civil Partnership
	1	0	0	0	0	0	0	N/A	N/A	N/A	N/A
	2	+3	+3	+3	+3	+2	+4	N/A	N/A	N/A	N/A
	2b	+4	+2	+5	+4	+3	+4	N/A	N/A	N/A	N/A

Using scores across all relevant equality domains the overall scores are:

Scenario	Total score
1	0
2	+18
2	+22

Summary of overall impacts and conclusions

The comparable scores across all the impact domains are such:

Scenario	Travel & Access	Health			Equalities
		Health Impact	Health Inequalities Impact	Determinants of Health	
1	0	0	0	0	0
2a	-6.5	+20	+15	-1	+18
2b	-5.5	+3	-7	+1	+22

Our assessment scoring suggests that both proposals for centralisation and rehabilitation would have an overall positive impact on the study population compared to the do-nothing scenario. Whilst the centralisation will invariably negatively impact on patients and visitors travel and access, particularly from the north and south of Warwickshire, the expected health benefits, greater proportion of time recovering at home and a greater equity of exemplar service provision across the area in the proposals more than offset them.

Scenario 2b proposed model plus that offers the most flexible rehabilitation pathway for the combined area appears to provide the greatest extent of positive impacts, particularly in respect of those in the population with protected characteristics.

It should be noted that some of the equality groups would constitute a relatively small volume of stroke patients (e.g. pregnant/maternal women and those from BAME groups), thus additionally their carers and visitors. Unless stated, we have not explicitly accounted for scale in the scoring assessment and as such, those responding to the IIA for mitigation and action planning purposes should draw on suggestions of patient numbers from the detailed sections of this report, section 4.0 and appendix 7.4 to inform the scale of their response.

6.1 MITIGATIONS AND RECOMMENDATIONS

This IIA has highlighted the potential impact of redesigning stroke services on visitors to stroke patients, particularly those from groups with protected characteristics or those who have no or limited access to private transport. This section sets out a number of actions that could be considered by commissioners in order to mitigate adverse impacts and/or maximise beneficial impacts.

Additionally, the clinical design of the stroke services model is intended to prevent more strokes in the future and decrease the levels of post-stroke morbidity and mortality.

6.1.1 General

- At the earliest opportunity, patients and their carers should have their stroke pathway explained to them. This should outline their future transfer arrangements regarding their ongoing care and rehabilitation arrangements so that they can prepare and plan for different or additional travel.
- Changes to stroke services should be widely communicated amongst 'at-risk' groups, especially with regards to centralising hyper-acute and acute care to UHCW to limit the number of patients self-presenting at GEH or SWFT and potentially delaying treatment.

6.1.2 Health and Wellbeing

6.1.2.1 Stroke prevention

- Engagement with all groups throughout the decision and design process, especially services user groups with protected characteristics, to improve treatment, access to services in regular and non-acute settings and appointment compliance; this will mitigate against the incidence of stroke in the population, particularly the equality groups.
- Many strokes are preventable. Therefore, commissioners of primary care should review their engagement with public health and the NHS Health Check Programme to identify at risk patients earlier, commence treatment and prevent stroke. This will mitigate against the increased older population having more episodes requiring care.
- Secondary prevention for patients with TIA – very high risk for subsequent stroke.

6.1.2.2 Quality of care

- The quality and equivalence (to LSH / GEH wards) of the provision of intensive rehabilitation in all care homes should be ensured before any patients are discharged there. This should also be re-evaluated on at least an annual basis in parallel to or separately from CQC processes if not neither specific nor robust enough for this purpose.
- To reduce the potential risk (albeit very small) for delays in scanning or treatment, a comprehensive and timely communication campaign, focusing on north and south Warwickshire, should be implemented to encourage anyone experiencing stroke-like symptoms to call an ambulance or take themselves directly to UHCW for assessment.

6.1.3 Travel and Access

6.1.3.1 Hospital Sites

- In the time of immediate crisis/uncertainty, commissioners should explore, with the providers, the possibility of providing accommodation at the specialist site, or subsidising local accommodation.
- Review the parking provision and/or system at UHCW site, particularly in relation to primary carers of stroke victims. Subsidy of parking at other car parks nearby the UHCW site for the hyper-acute and acute stage may be an option for some.
- Ensure sufficient parking at and public transport provision to LSH for family/carers of those with most complex rehabilitation needs.
- Consider the viability of retaining rehabilitation beds at Hospital of St Cross to prevent much longer travel for patients and visitors in Rugby.
- Evaluate the car and public transport access to care homes as well as physical environments for any potential disadvantage to those with physical or sensory impairments who may visit patients frequently and for a sustained period in the care home.

6.1.3.2 Transportation

- Transport options should be fully and explicitly discussed with visitors on first attendance – advise well in advance if transfer of patients and travel will be required to rehabilitation sites (GEH/LSH or LSH/Care home).
- Due to the potential increase in travel times, existing public transport routes should be easily accessible, well-lit and subsidised where possible.
- The use of shuttle services between the non-stroke units and UHCW could be considered. This would of course apply to and benefit patients and carers beyond the stroke and TIA pathways.
- Awareness of existing direct and non-direct public transport services should be promoted to all patients and visitors in range of languages and accessible forms (e.g. braille).
- Voluntary transport options as well as income-related support with travel costs should be discussed with patients and visitors. Multiple commissioners currently support voluntary transport schemes, which are currently under review with a Department for Transport grant. Commissioners should ensure that the chosen pathway for stroke care is fed into the review of voluntary transport schemes.

6.1.4 Equality

- Commissioners should assure themselves that translation services are available on request. This will mitigate against accessibility issues caused by language barriers that can be experienced by some equality groups. Selection of rehab care settings in Coventry should take this into consideration.
- Improvements to staff training on equality and diversity should be considered, to improve the experiences of individuals from each of the equality groups.
- Commissioners should consider implementing 'reasonable adjustments' in order to ensure that the experience of disabled individuals is enhanced, and equality of outcomes is maximised for all groups.

- Barriers to services are experienced by all of the equality groups. Commissioners should ensure that individuals from such communities are fully engaged with redesign proposals, in order to maximise opportunities for improvement.
- The largest geographical disadvantage will be felt around UHCW and GEH as these areas have disproportionately high populations with socio-economic barriers, as well as cultural and language diversity – specific effort should be made to engage with these populations prior to any service changes to identify and mitigate any problems that the changes may cause.
- In order to mitigate against the impact of having a disproportionate number of suspected stroke patients present at hospital who have a learning disability or mental health condition, emergency departments should have staff available who 'understand and can address their condition...(with) access to appropriate specialist services...' ¹⁰⁴.
- Workforce data relating to stroke care at each site involved in the preferred scenario should be collected to ensure consistent care quality and access to specialists across the region.
- Diversity monitoring should be in place as well of monitoring of interpreter needs to support evidence-based service provision.
- The breakdown by gender of patients from the relevant localities will need to be monitored as this may inform the number of male and female beds that will be required during rehabilitation under scenarios 2a and 2b.
- Consider visiting hours, especially during winter, to reduce amount of time visitors spend traveling in the dark.
- Commissioners should ensure that, where possible, public transport links provide equitable access to sites of care and are able to support the visiting hours of sites.
- Carers would benefit from specialist support closer to home; ensuring that the appropriate support is in place for carers of stroke patients will mitigate against any negative impact on this group of removing local acute stroke services. This includes clear patient pathways and access to healthcare professionals who are familiar with the needs of stroke patients. Clarifying the support carers will receive as part of community rehabilitation would be useful here.

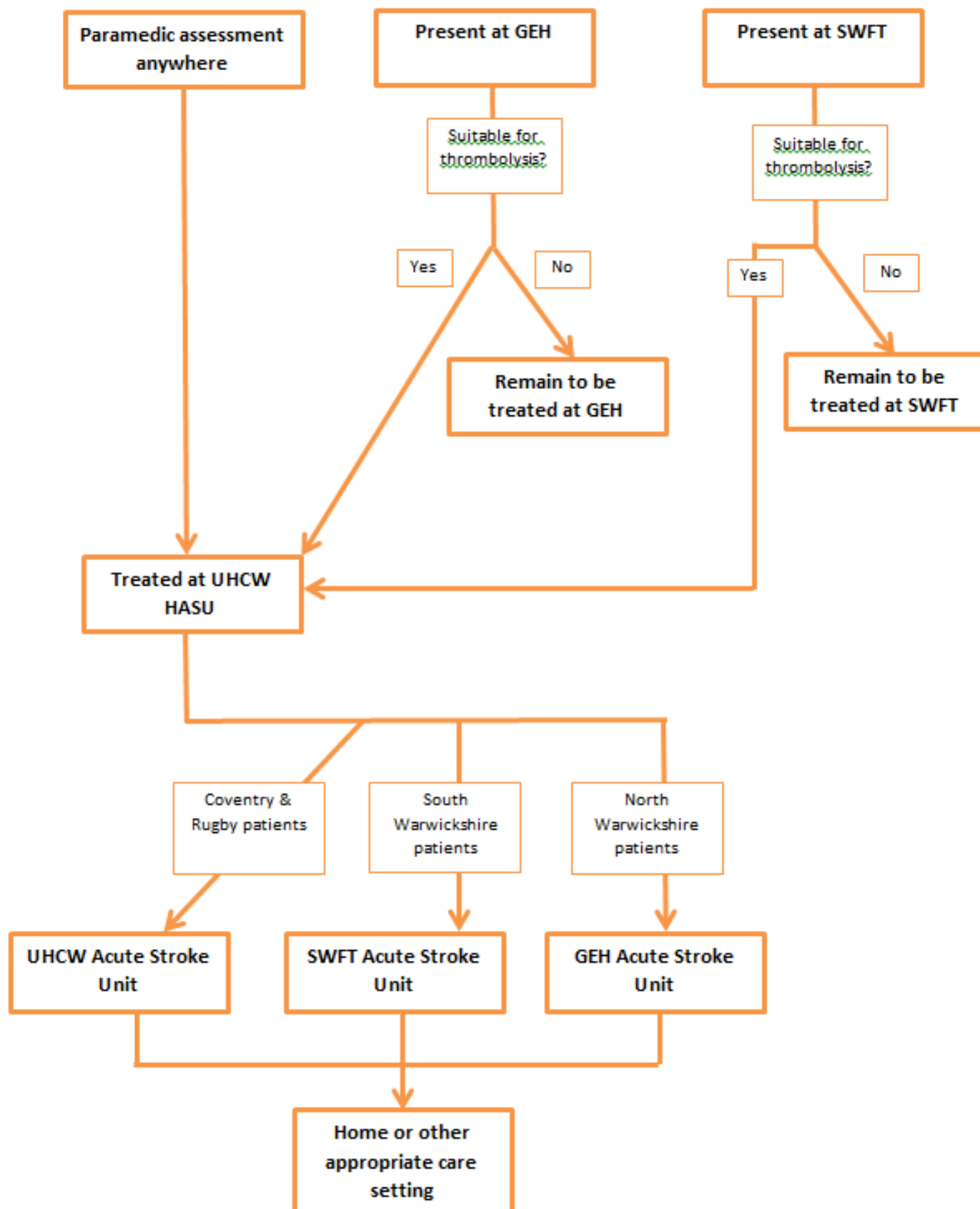
104 College of Emergency Medicine (Feb 2013); 'Mental Health in Emergency Departments – A toolkit for improving care' [College of Emergency Medicine, London], p. 2.

7.0 APPENDICES

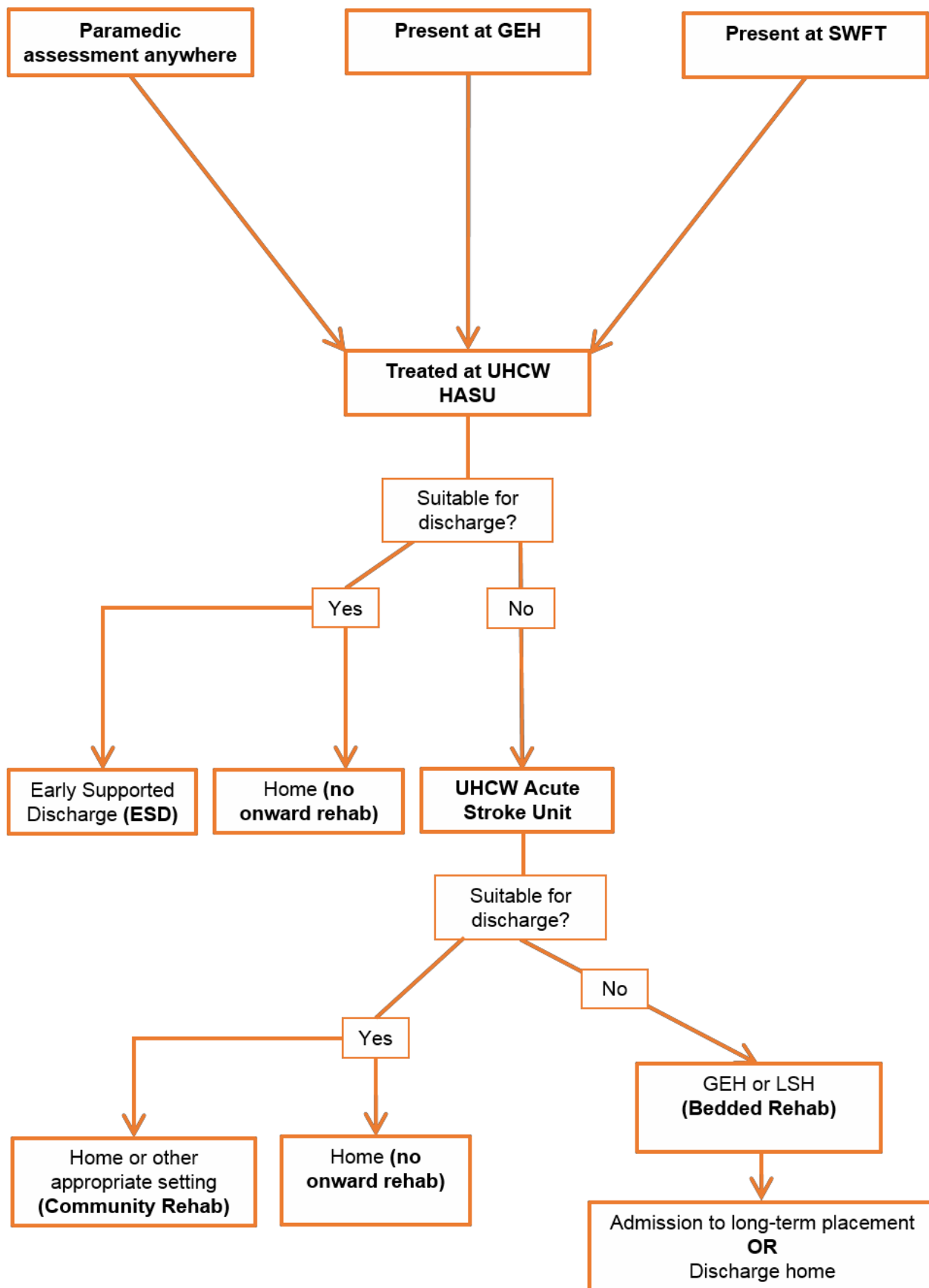
List of appendices:

- 7.1 – Flowchart of scenario 1 (do-nothing)
- 7.2 – Flowchart of Scenario 2a proposed model
- 7.3 – Flowchart of Scenario 2b proposed model plus
- 7.4 – Activity analysis underpinning scenarios 2A/2B
- 7.5 - Population density mapping:
 - 7.5.1 – Population at statutory pension age or older, LSOA, 2016 MYE
 - 7.5.2 – BAME population, all groups, LSOA, 2011 census
 - 7.5.3 – BAME population, Asian, LSOA, 2011 census
 - 7.5.4 – BAME population, African/Caribbean, LSOA, 2011 census
 - 7.5.5 – Population by IMD decile, LSOA, 2015
 - 7.5.6 – Number of deprived domains by lower super output area
- 7.6 – Public Transport Maps
 - 7.6.1 – Coventry City Council, Jul 17
 - 7.6.2 – Warwickshire County Council, Oct 2017
- 7.7 – Travel-time distributions by district area
- 7.8 - Detailed summary of EqIA findings by scenario

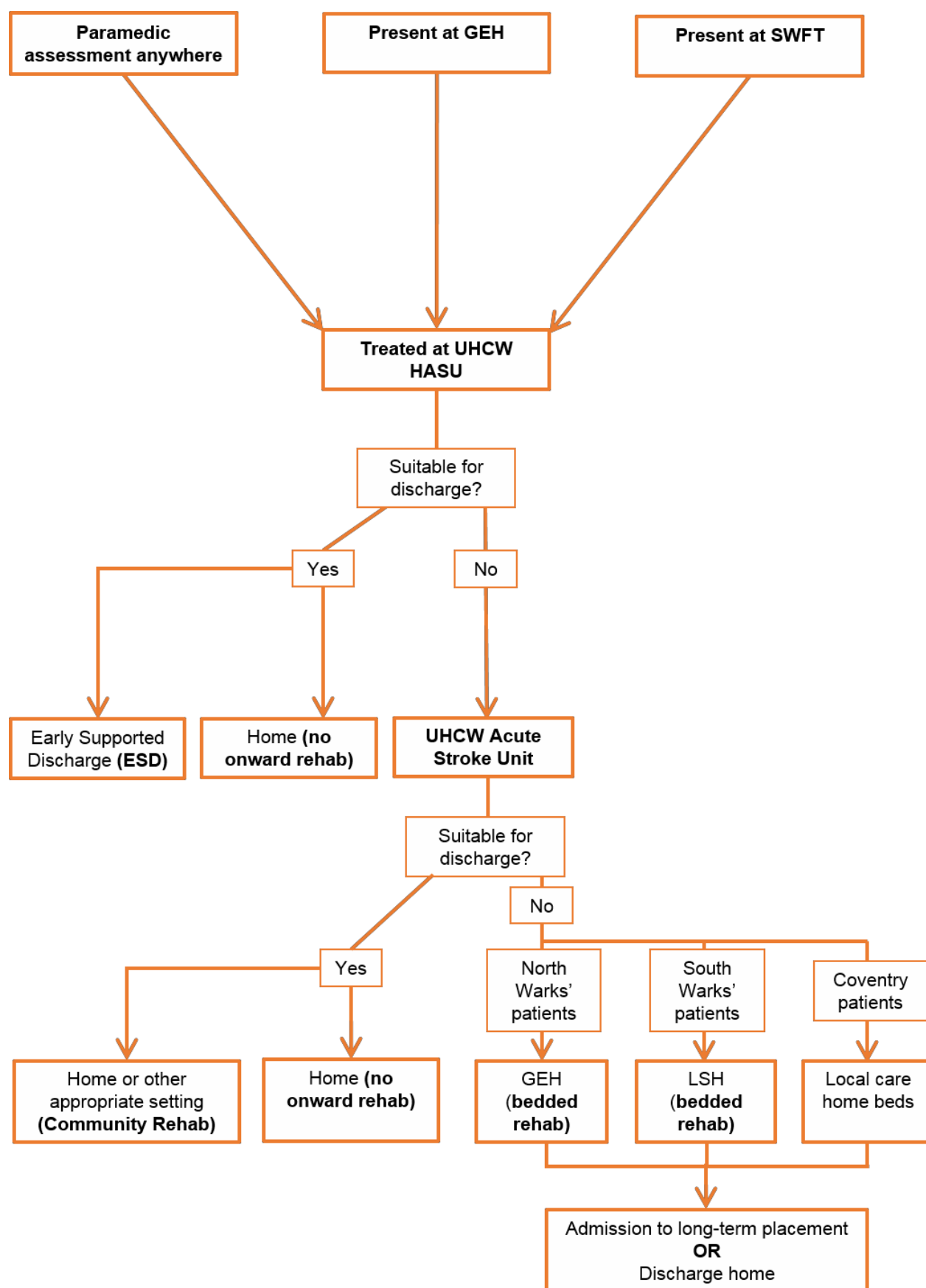
Appendix 7.1: Flowchart of Scenario 1



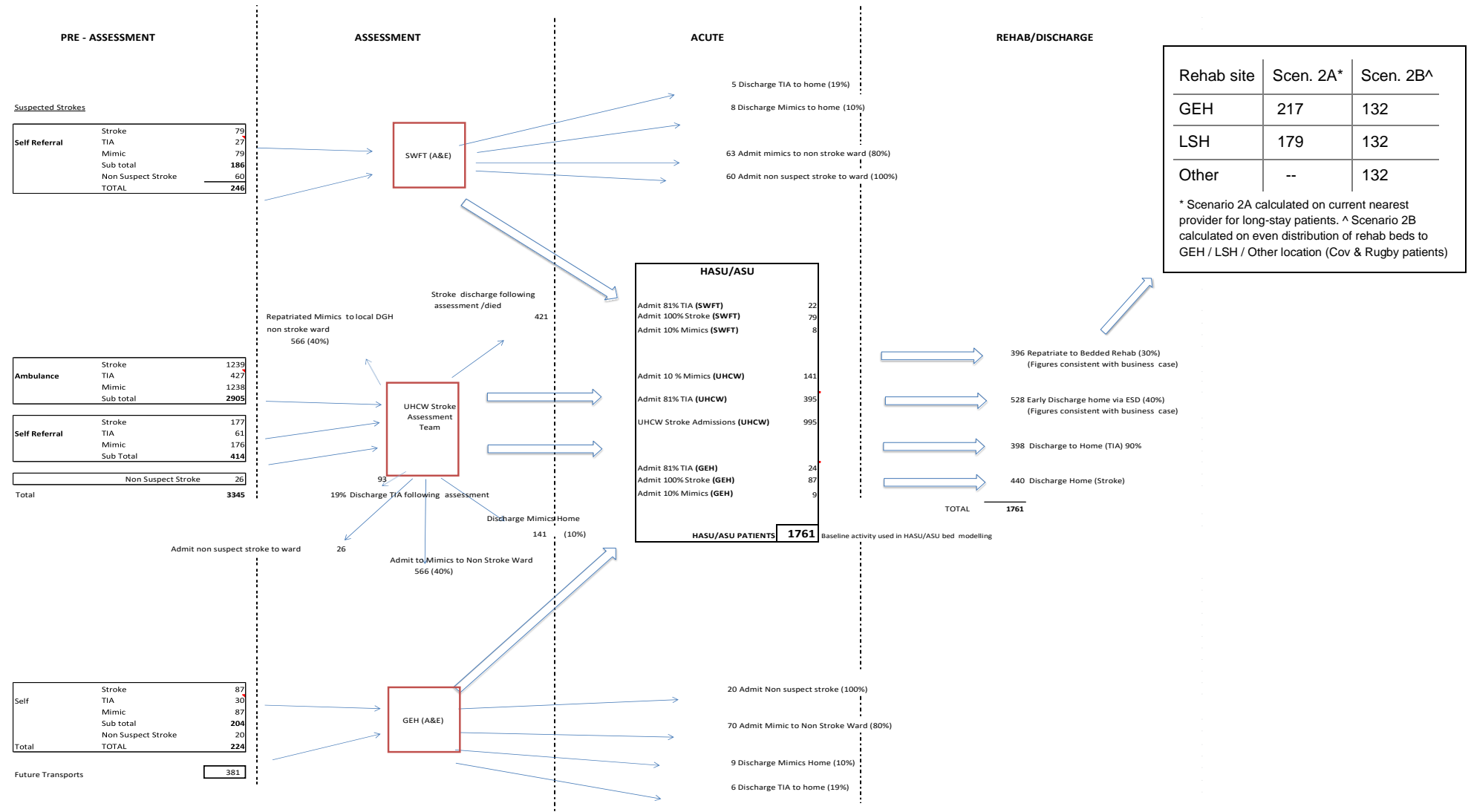
Appendix 7.2: Flowchart of Scenario 2a proposed model



Appendix 7.3: Flowchart of Scenario 2b proposed model plus

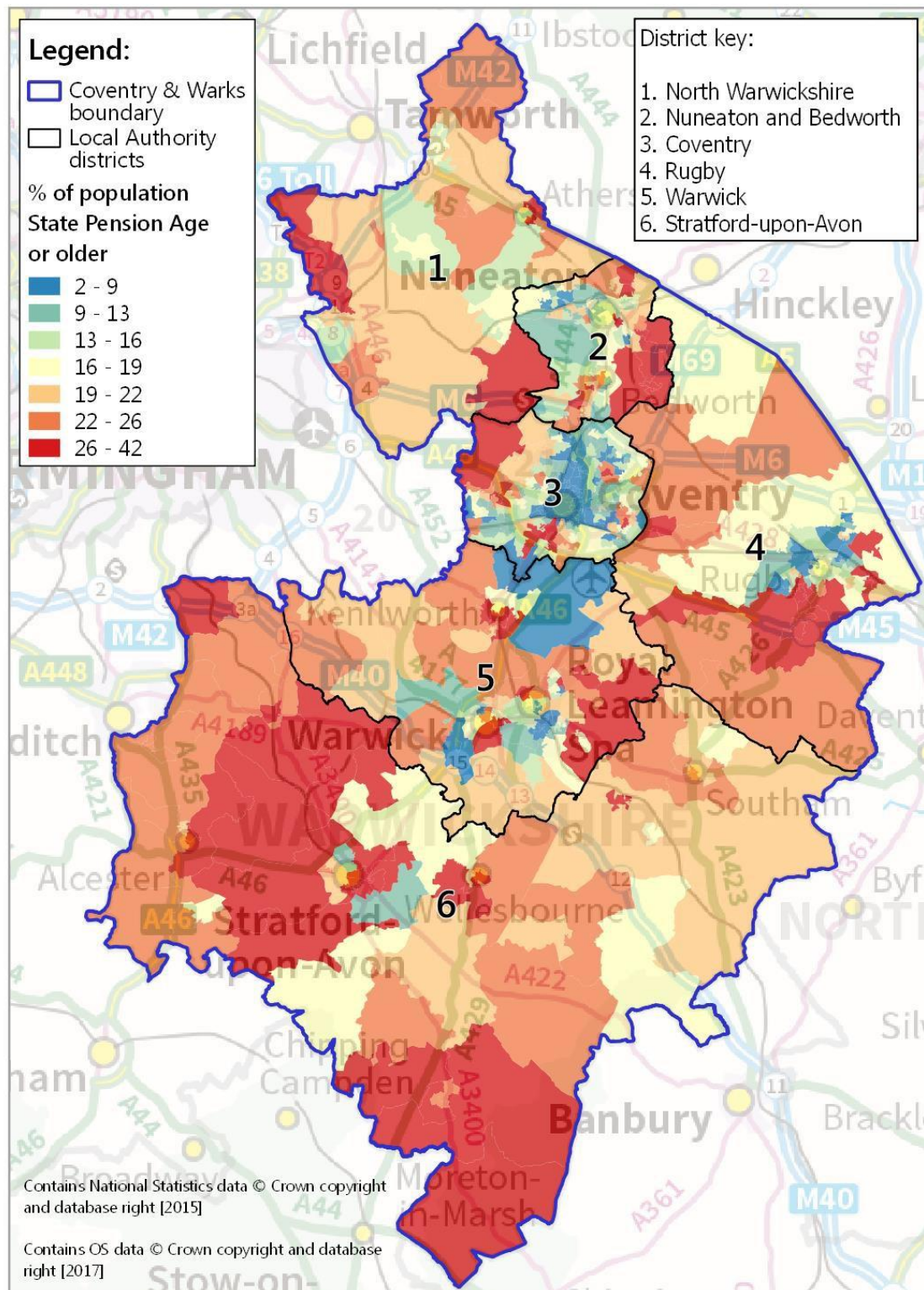


Appendix 7.4: Activity analysis underpinning scenarios 2A/2B

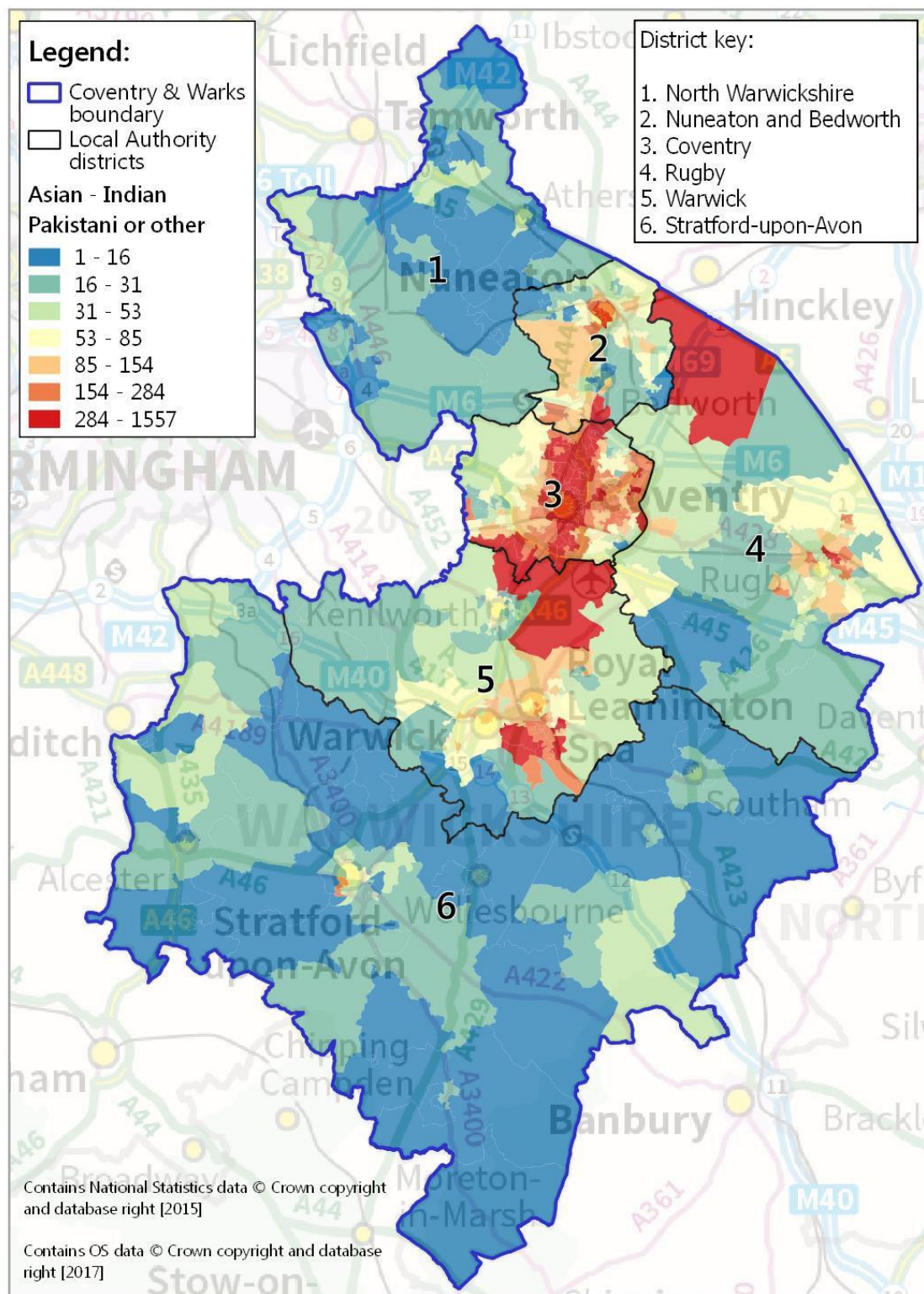


Appendix 7.5: Equality Group Density Mapping

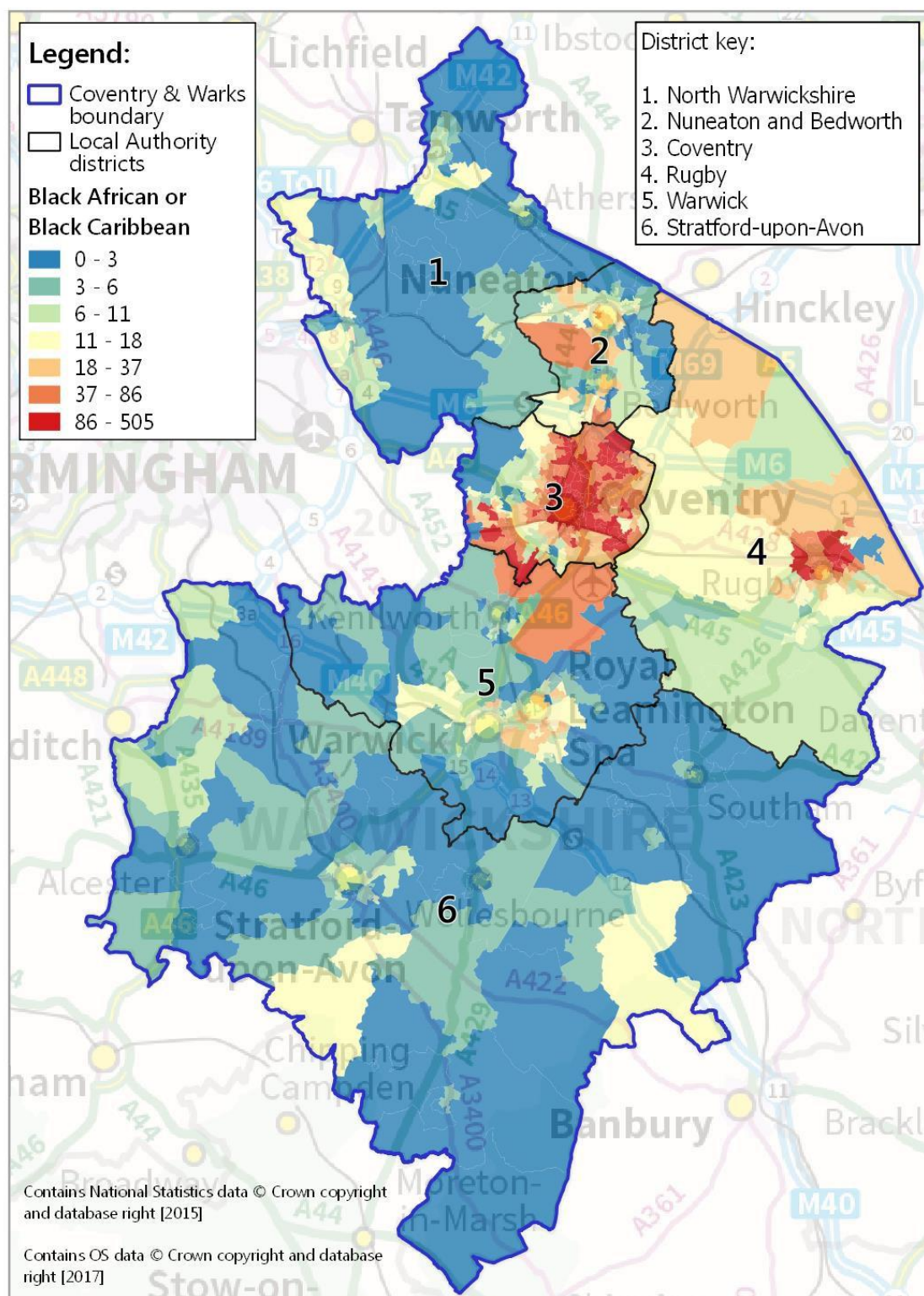
Appendix 7.5.1 - Population state pension age or older by lower super output area, 2016 MYE



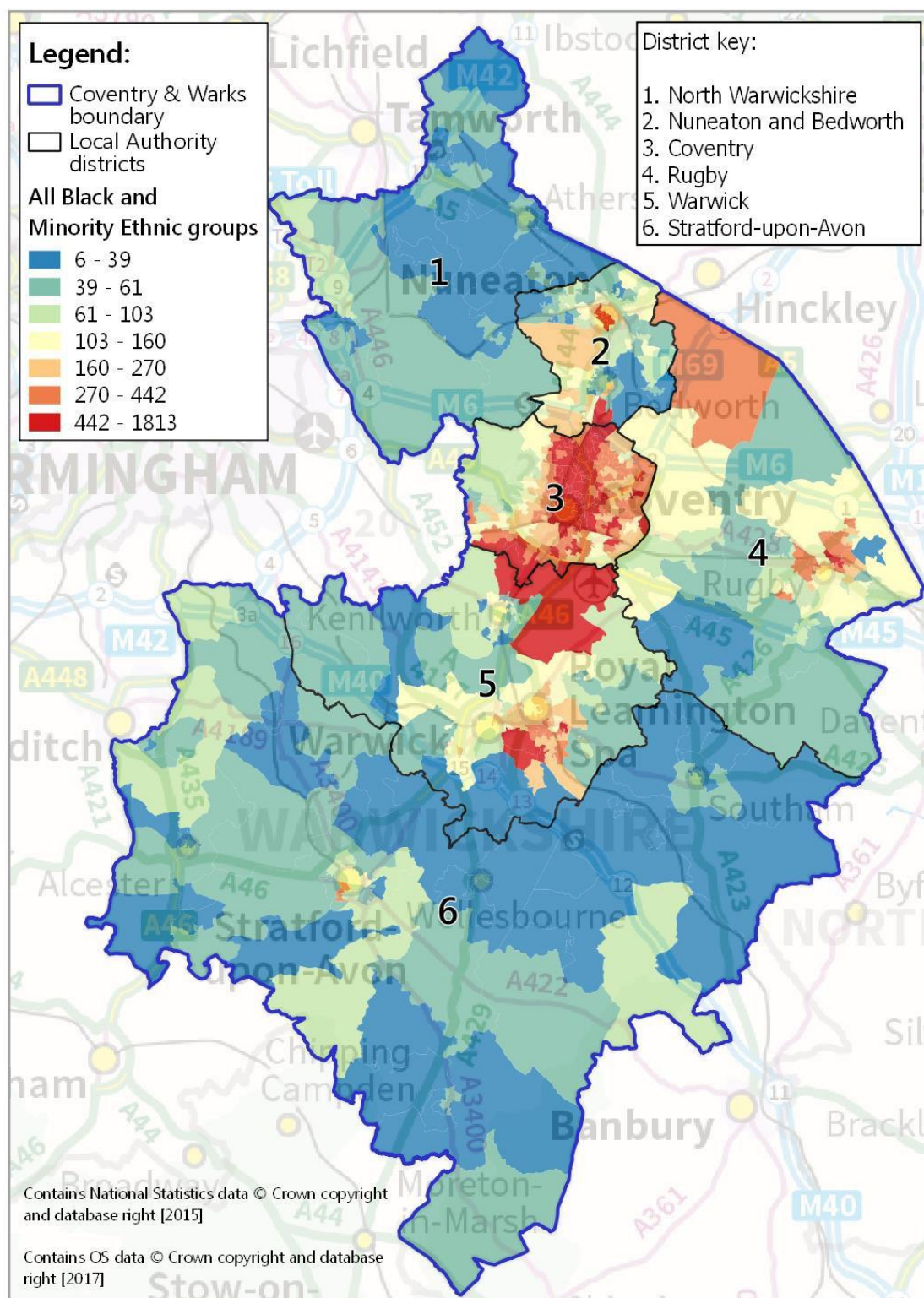
Appendix 7.5.2 - Population from Asian ethnic groups by lower super output area as at census 2011



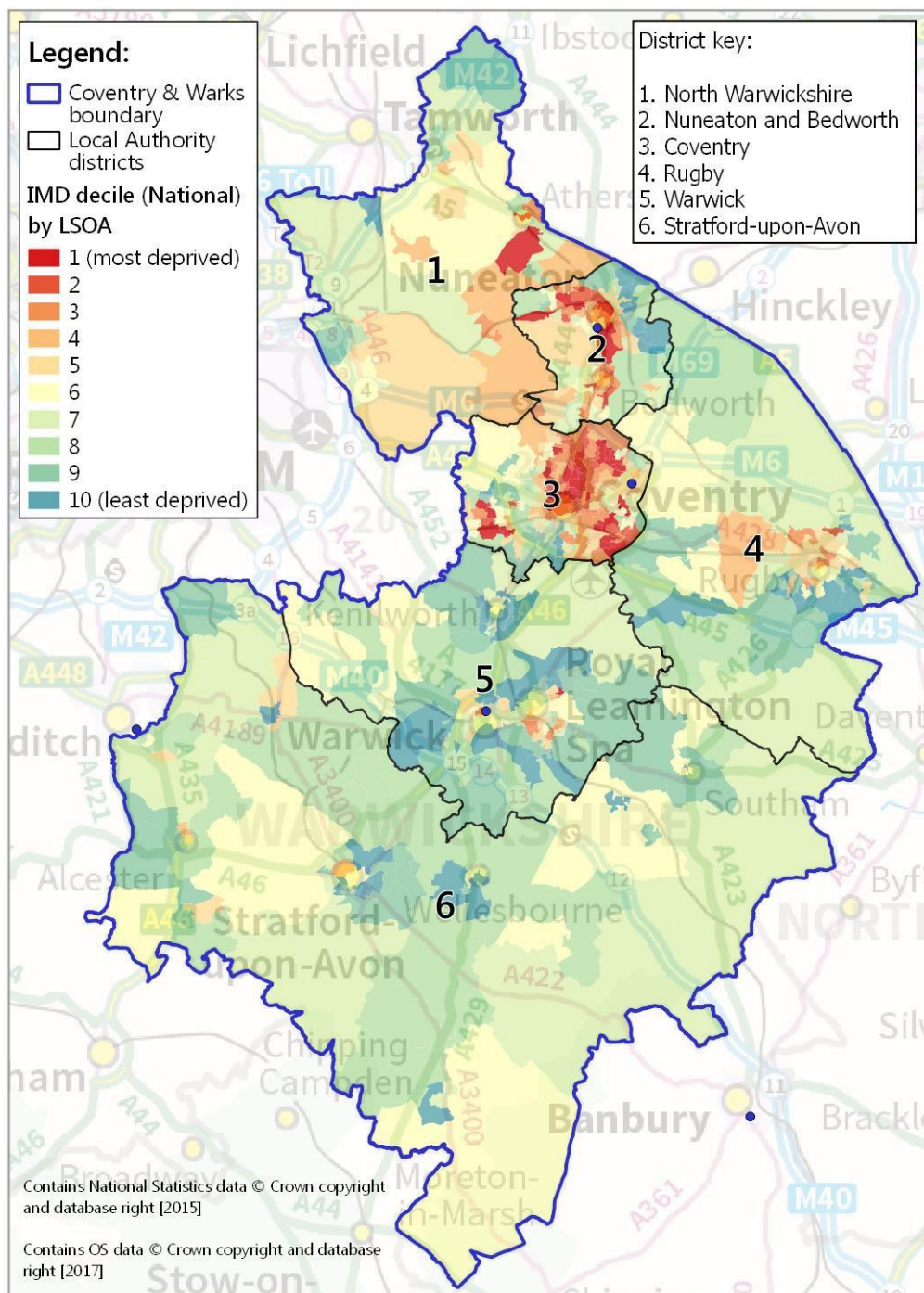
Appendix 7.5.3 - Population from Black African or Caribbean ethnic groups by lower super output area as at census 2011



Appendix 7.5.4 - Population from all Black and Minority ethnic (BAME) groups by lower super output area as at census 2011

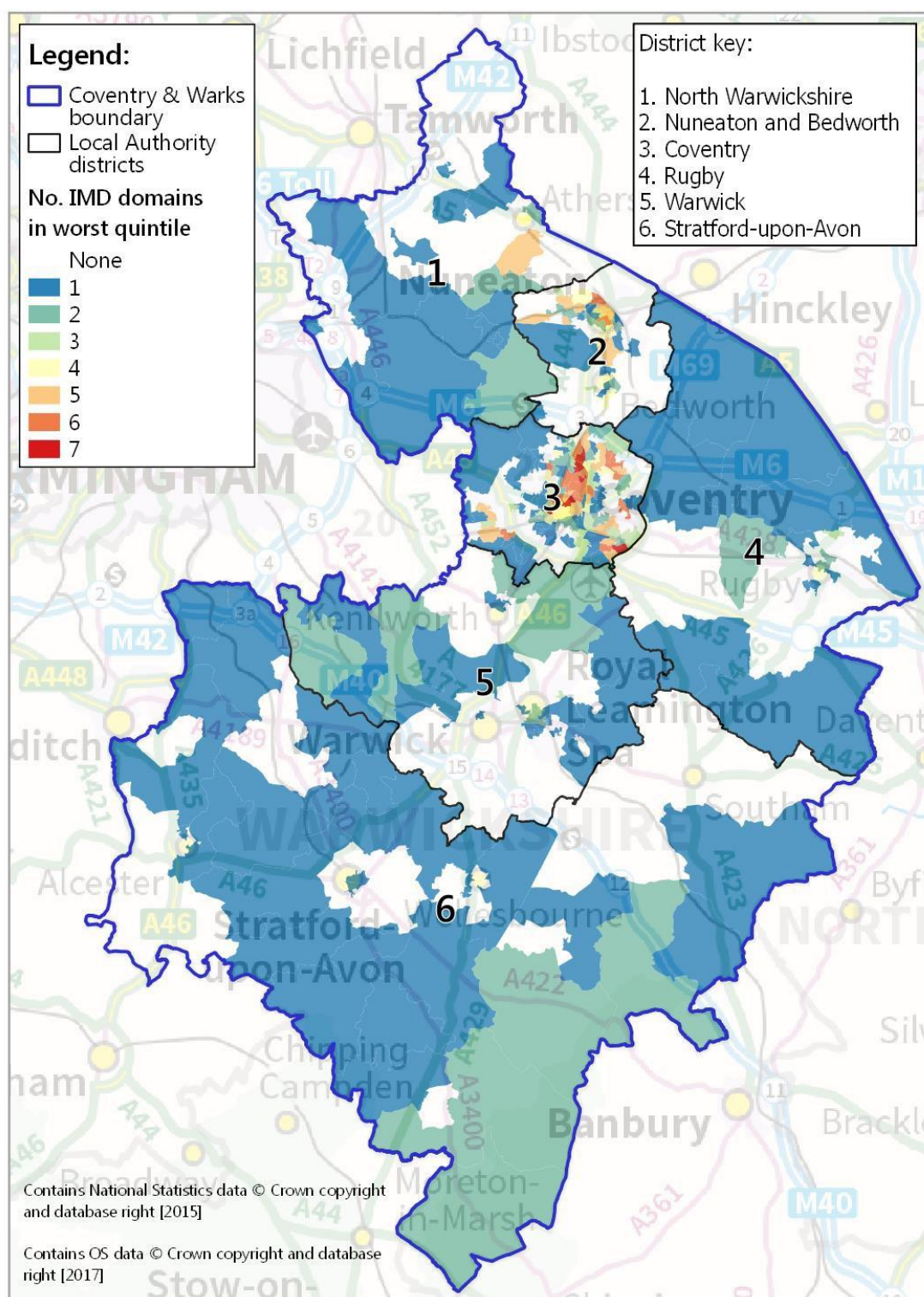


Appendix 7.5.5 - Deprivation decile¹⁰⁵ by lower super output area, IMD 2015

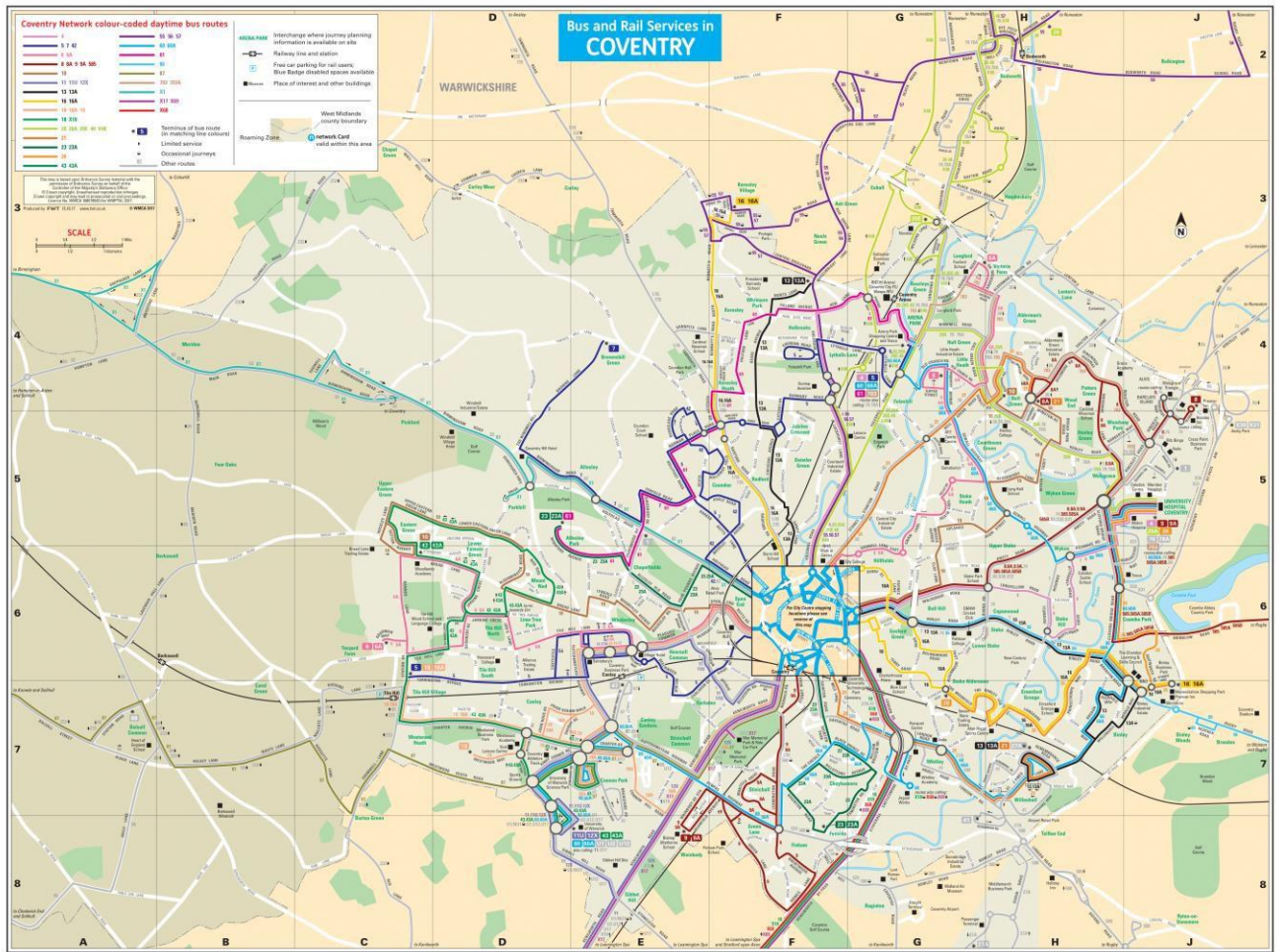


¹⁰⁵ The index of multiple deprivation (IMD) 2015 is a composite measure of an areas' relative geo-socio-economic status compared to all other small areas (32,482 lower super output areas) across England at that time. The index is made up of indicators across 7 domains – income, employment, education & skills & training, health & disability, crime, barriers to housing & services and living environment.

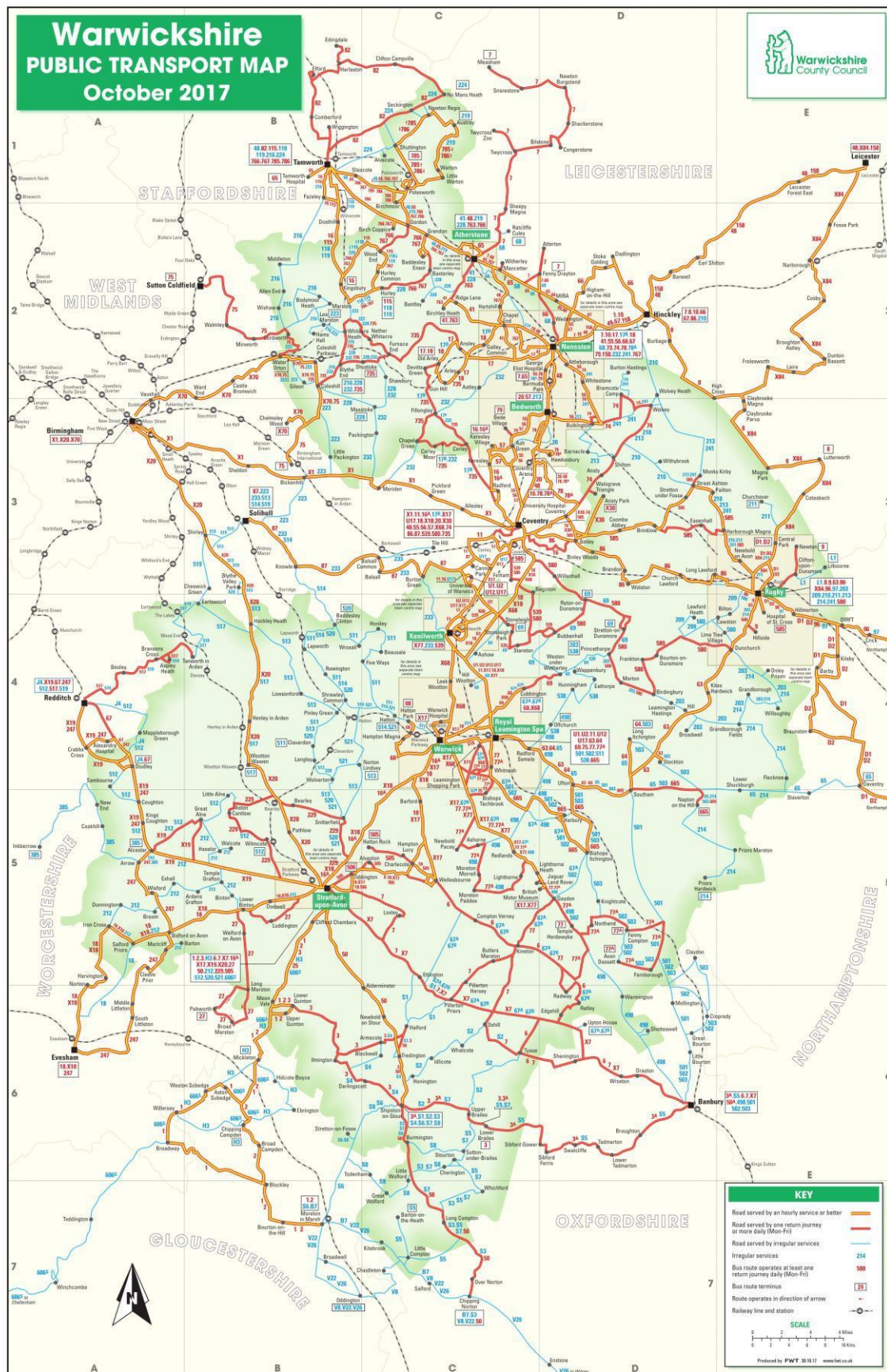
Appendix 7.5.6 - Number of deprived domains by lower super output area, IMD 2015



Appendix 7.6.1: Public Transport Map (Coventry)



Appendix 7.6.2: Public Transport Map (Warwickshire)



Appendix 7.7: Travel-time distributions by district area – car and public transport, current and modelled

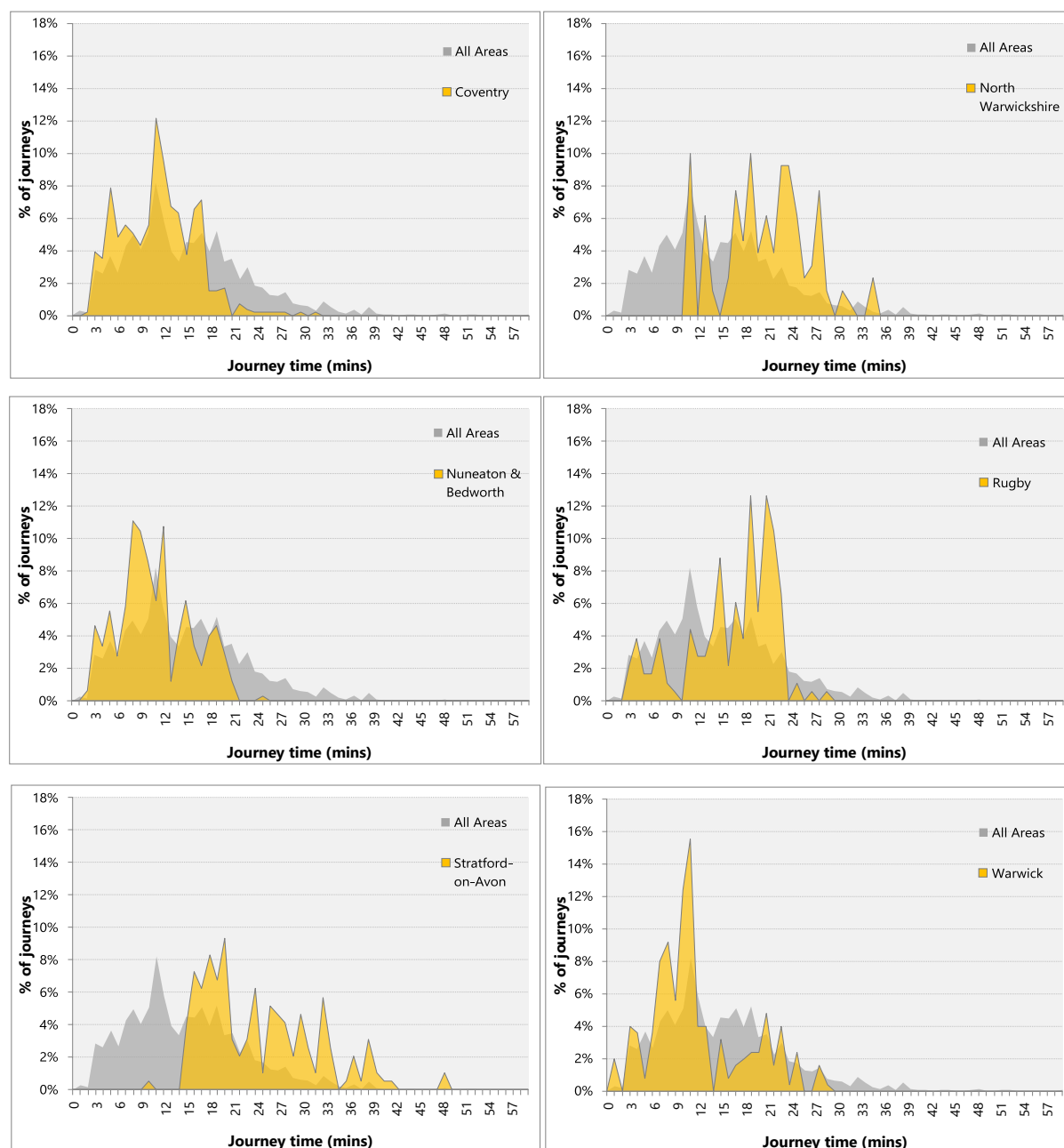


Figure19. Distribution of CURRENT journey times by CAR for each district area. All Stroke & TIA patients, 2015/16

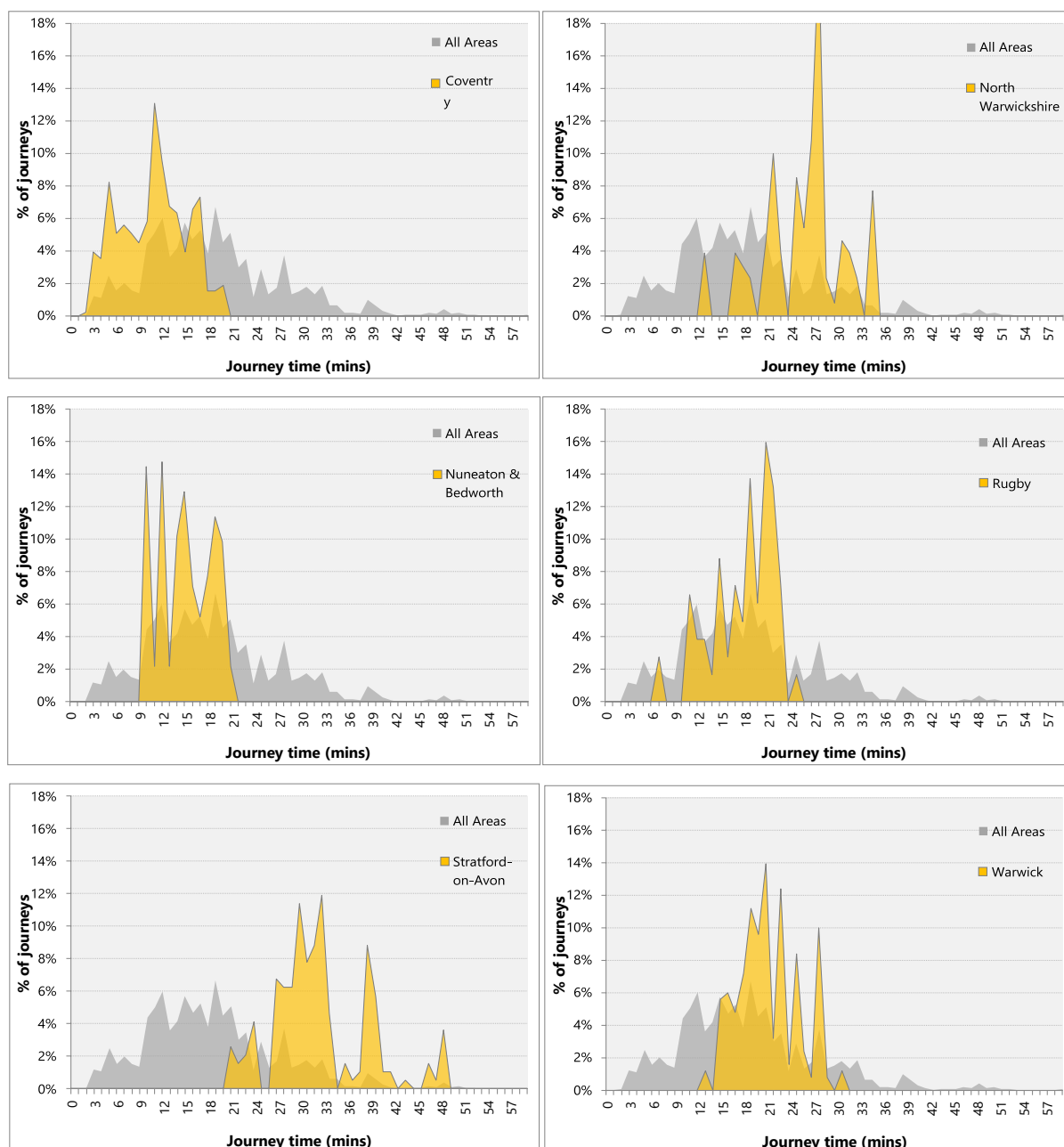


Figure 20. Distribution of MODELLED journey times by CAR to UHCW for each district area. All Stroke & TIA patients, 2015/16

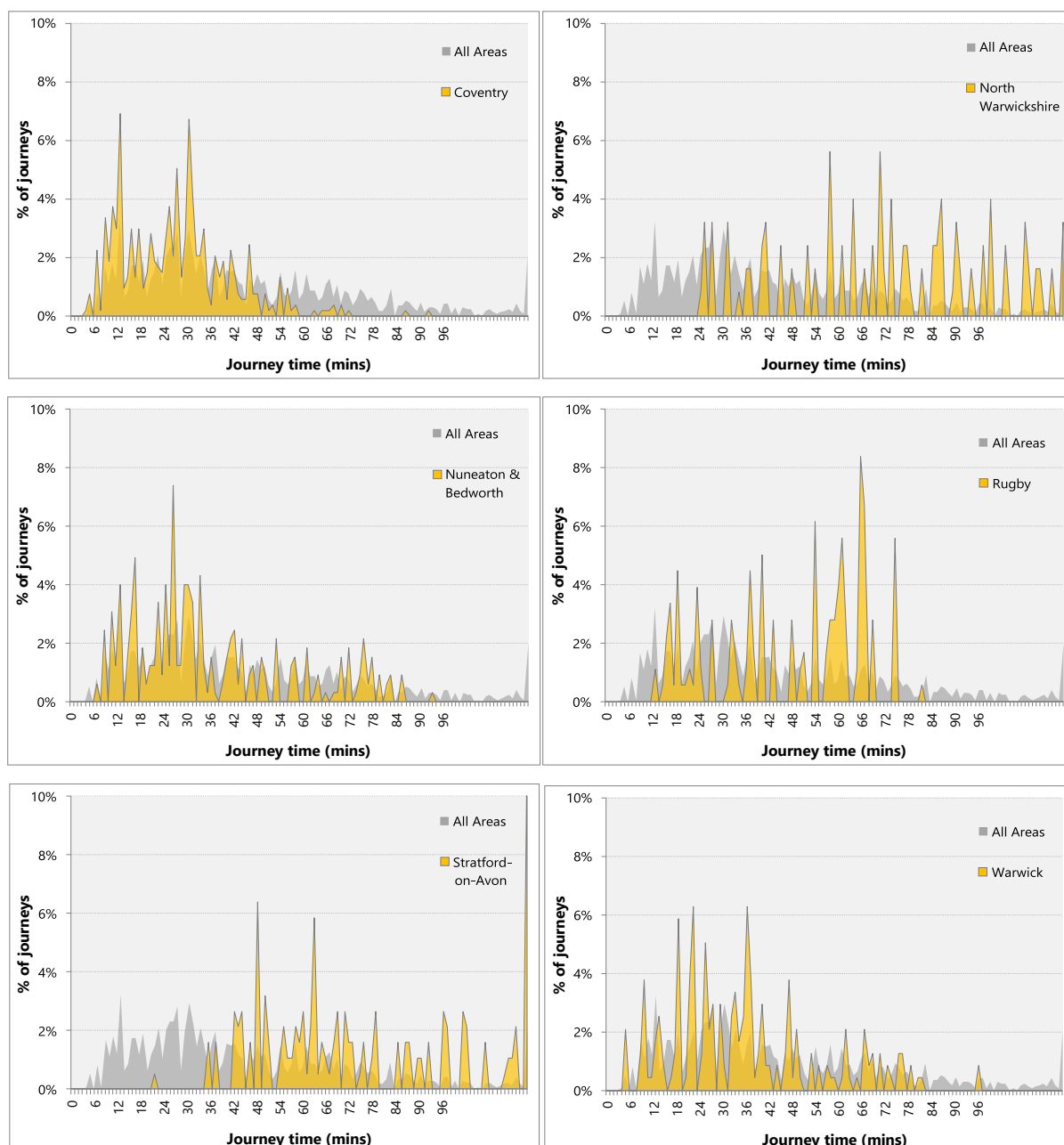


Figure21. Distribution of CURRENT journey times by PUBLIC TRANSPORT for each district area. All Stroke & TIA patients, 2015/16

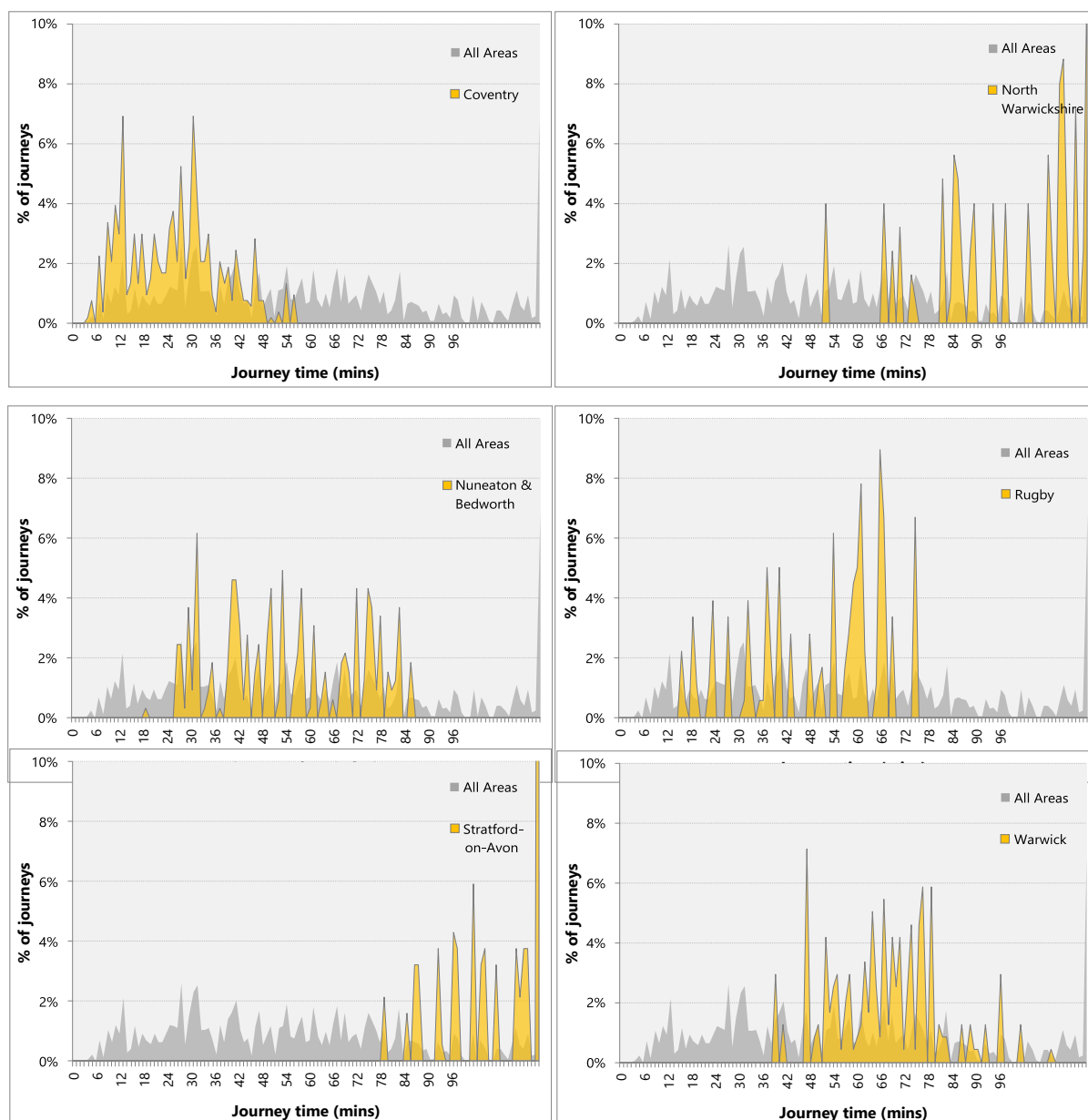


Figure22. Distribution of MODELLED journey times by PUBLIC TRANSPORT to UHCW for each district area. All Stroke & TIA patients, 2015/16

Appendix 7.8: Health and Health Inequalities Data

The Sentinel Stroke National Audit Programme (SSNAP) results between Dec 2017- Mar 2018 show that Coventry and Warwickshire services are poor when compared to national average performance in delivering rapid access to appropriate services. <https://www.strokeaudit.org/results/Clinical-audit/National-Results.aspx>

Team	George Eliot Hospital	Warwick Hospital	University Hospital Coventry and Warwickshire
SSNAP level	D	C	B
SSNAP score	46.8	63	71
Case ascertainment band	A	A	A
Audit compliance band	C	A	A
Combined Total Key Indicator level	D	C	B
Combined Total Key Indicator score	52	63	71
Team-centred post-72h all teams cohort	80	108	284
Patient-centred KI levels:			
1) Scanning	C	D	A
2) Stroke unit	E	E	E
3) Thrombolysis	D	B	B
4) Specialist Assessments	B	D	D
5) Occupational therapy	E	A	A
6) Physiotherapy	D	B	B
7) Speech and Language therapy	C	C	D
8) MDT working	B	B	C
9) Standards by discharge	B	A	B
10) Discharge processes	D	C	A
Patient-centred Total KI level	D	C	B
Patient-centred Total KI score	52	66	70
Patient-centred SSNAP level (after adjustments)	D	C	B
Patient-centred SSNAP score	46.8	66	70
Team-centred KI levels:			
1) Scanning	C	E	A
2) Stroke unit	E	E	E
3) Thrombolysis	E	.	B
4) Specialist Assessments	B	D	D
5) Occupational therapy	E	B	A
6) Physiotherapy	D	B	B
7) Speech and Language therapy	C	B	D
8) MDT working	A	B	B
9) Standards by discharge	B	A	B
10) Discharge processes	D	D	A
Team-centred Total KI level	D	C	B
Team-centred Total KI score	52	60	72
Team-centred SSNAP level (after adjustments)	D	C	B
Team-centred SSNAP score	46.8	60	72

The purpose of this report is to identify the Sentinel Stroke National Audit Programme's results for the three local providers of hyper and/or acute Stroke services in Coventry & Warwickshire (i.e. George Eliot Hospital NHS Trust – 'GEH'; South Warwickshire NHS Foundation Trust – 'SWFT'; and University Hospitals Coventry and Warwickshire NHS Trust 'UHCW'), for quarterly periods between December 2017 – March 2018. The matrices below also compare sample of the results of these local providers with the national average scores achieved across all providers who participated in the audit, where available.

	Time Period	George Eliot Hospital	Warwick Hospital	University Hospital Coventry
SSNAP level	Dec 17 – Mar 18	D	C	B
SSNAP score		46.8		71

Domain 1: Scanning

	Time Period	National Ave	George Eliot Hospital	Warwick Hospital	University Hospital Coventry
Overall Domain Level	Dec 17 – Mar 18		C	E	A
Proportion of patients scanned within 1 hour of clock start	Dec 17 – Mar 18	52.4	36.1	13.1	57.3
Median time between clock start and scan	Dec 17 – Mar 18	0:55	1:29	2:43	0:41

Domain 2: Stroke Unit

	Time Period	National Ave	George Eliot Hospital	Warwick Hospital	University Hospital Coventry
Overall Domain Level	Dec 17 – Mar 18		E	E	E
Proportion of patients directly admitted to a Stroke Unit within 4 hours of clock start	Dec 17 – Mar 18	52.8	19.7	30.9	41.5
Median time between clock start and arrival on Stroke Unit	Dec 17 – Mar 18	3:52	11:10	9:45	6:09

Domain 3: Thrombolysis

	Time Period	National Ave	George Eliot Hospital	Warwick Hospital	University Hospital Coventry
Overall Domain Level	Dec 17 – Mar 18		E		B
Proportion of eligible patients (according to the RCP guideline minimum threshold) given thrombolysis	Dec 17 – Mar 18	87.9	0	.	92.1
Median time between clock start and thrombolysis (hours:mins)	Dec 17 – Mar 18	0:51			0:39

Domain 4: Specialist Assessment

	Time Period	National Ave	George Eliot Hospital	Warwick Hospital	University Hospital Coventry
Overall Domain Level	Dec 17 – Mar 18		B	D	D
Proportion of patients assessed by a stroke specialist consultant physician within 24h of clock start	Dec 17 – Mar 18	82.9	94.4	59.5	67.4
Median time between clock start and being assessed by stroke consultant (hours:mins)	Dec 17 – Mar 18	10:45	13:12	16:14	16:23

Domain 5: Occupational Therapy

	Time Period	National Ave	George Eliot Hospital	Warwick Hospital	University Hospital Coventry
Overall Domain Level	Dec 17 – Mar 18		E	B	A
Proportion of patients reported as requiring occupational therapy	Dec 17 – Mar 18	84.2	33.8	75	79.9
Compliance (%) against the therapy target of an average of 25.7 minutes of occupational therapy across all patients (Target = 45 minutes x (5/7) x 0.8 which is 45 minutes of occupational therapy x 5 out of 7 days per week x 80% of patients)	Dec 17 – Mar 18	85.9	20.6	82.6	87

Domain 6: Physiotherapy

	Time Period	National Ave	George Eliot Hospital	Warwick Hospital	University Hospital Coventry
Overall Domain Level	Dec 17 – Mar 18		D	B	B
Proportion of patients reported as requiring physiotherapy	Dec 17 – Mar 18	85.3	50	75	78.2
Compliance (%) against the therapy target of an average of 27.1 minutes of physiotherapy across all patients (Target = 45 minutes x (5/7) x 0.85 which is 45 minutes of physiotherapy x 5 out of 7 days per week x 85% of patients)	Dec 17 – Mar 18	80.3	53.6	89.7	80.8

Domain 7: Speech and language

	Time Period	National Ave	George Eliot Hospital	Warwick Hospital	University Hospital Coventry
Overall Domain Level			C	B	D
Proportion of patients reported as requiring speech and language therapy	Dec 17 – Mar 18	51.4	42.5	45.4	46.5
Compliance (%) against the therapy target of an average of 16.1 minutes of speech and language therapy across all patients (Target = 45 minutes x (5/7) x 0.5 which is 45 minutes of speech and language therapy x 5 out of 7 days per week x 50% of patients)	Dec 17 – Mar 18	53	46.9	64.8	41.3

Domain 8: MDT Working

	Time Period	National Ave	George Eliot Hospital	Warwick Hospital	University Hospital Coventry
Overall Domain Level	Dec 17 – Mar 18		A	B	B
Proportion of applicable patients who were assessed by an occupational therapist within 72h of clock start	Dec 17 – Mar 18	92.4	100	97.1	96.9
Median time between clock start and being assessed by occupational therapist (hours:mins)	Dec 17 – Mar 18	21:32	11:14	23:53	21:05
Proportion of applicable patients who were assessed by a physiotherapist within 72h of clock start	Dec 17 – Mar 18	94.9	100	98.6	96.9
Median time between clock start and being assessed by physiotherapist (hours:mins)	Dec 17 – Mar 18	20:56	12:04	17:54	21:02
Proportion of applicable patients who were assessed by a speech and language therapist within 72h of clock start	Dec 17 – Mar 18	88	84	93.8	96
Median time between clock start and being assessed by speech and language therapist (hours:mins)	Dec 17 – Mar 18	23:15	19:37	21:26	24:37

Domain 9: Standards for Discharge

	Time Period	National Ave	George Eliot Hospital	Warwick Hospital	University Hospital Coventry
Overall Domain Level					
	Dec 17 – Mar 18		B	A	B
Proportion of applicable patients screened for nutrition and seen by a dietitian by discharge (excluding patients on palliative care)					
	Dec 17 – Mar 18	81.1	100	100	84.2
Proportion of applicable patients who have a continence plan drawn up within 3 weeks of clock start					
	Dec 17 – Mar 18	94.1	93.5	100	98.9
Proportion of applicable patients who have mood and cognition screening by discharge					
	Dec 17 – Mar 18	92.1	88.9	100	95.6




Domain 10: Discharge Process

	Time Period	National Ave	George Eliot Hospital	Warwick Hospital	University Hospital Coventry
Overall Domain Level	Dec 17 – Mar 18		D	D	A
Proportion of applicable patients receiving a joint health and social care plan on discharge	Dec 17 – Mar 18	94.3	100	100	100
Proportion of patients treated by a stroke skilled Early Supported Discharge team	Dec 17 – Mar 18	37.4	0	0	42.6
Proportion of applicable patients in atrial fibrillation on discharge who are discharged on anticoagulants or with a plan to start anticoagulation	Dec 17 – Mar 18	97.8	100	100	100
Proportion of those patients who are discharged alive who are given a named person to contact after discharge	Dec 17 – Mar 18	96.6	98.5	96	100

The Size of the Prize in Cardiovascular Disease (CVD) Prevention

Coventry and Warwickshire

1. The diagnosis and treatment gap, 2015/16

	Estimated adult population with hypertension	230,500
	Estimated adult population with undiagnosed hypertension	92,800
	GP registered hypertensives not treated to 150/90 mmHg target	25,700
 Atrial Fibrillation (AF)	GP registered population with Atrial Fibrillation (AF)	15,900
	Estimated GP registered population with undiagnosed AF	8,000
	GP registered high risk AF patients (CHA2DS2VASc ≥2) not anticoagulated	3,200
 CVD risk	Estimated adult population 30 to 85 years with 10 year CVD risk >20%	63,500
	Estimated percentage of people with CVD risk ≥20% treated with statins	49%

2. The burden: first ever CVD events, 2015/16

Coronary Heart Disease	1,650
Stroke	1,000
Heart Failure	900

3. The opportunity: potential events averted and savings over 3 years by optimising treatment in AF and hypertension, 2015/16

Optimal anti-hypertensive treatment of diagnosed hypertensives averts within 3 years:	150 heart attacks	Up to £1.10 million saved ²
	230 strokes	Up to £3.40 million saved ¹
Optimally treating high risk AF patients averts within 3 years:	260 strokes	Up to £4.60 million saved ¹



What the evidence tells us

- Reducing blood pressure in all adults with diagnosed and undiagnosed hypertension by 5 mmHg: **reduces risk of CVD events by 10%**
- Statin therapy to reduce cholesterol by 1 mmol in people with a 10 year risk of CVD risk greater than 10%: **reduces risk of CVD events by 20-24%**
- Anti-coagulation of high risk AF patients: **averts one stroke in every 25 treated**



CVD: high risk conditions

High risk conditions like high blood pressure, atrial fibrillation and high cholesterol are major causes of heart attack and stroke (CVD events). In the high risk conditions preventive treatment is very effective, but late diagnosis and under-treatment is common.



Improving outcomes in CVD: case study

In Bradford Districts Clinical Commissioning Group: Over 24 months, more than 21,000 people had an intervention in lipid management, anti-coagulation or antihypertensive treatment to improve their health. Resulting in 137 fewer heart attacks and 74 fewer strokes compared to baseline.

Footnotes:

¹ Royal College of Physicians (2016). Sentinel Stroke National Audit Programme. Cost and Cost-effectiveness analysis. Technical report

² Kerr, M (2012). Chronic Kidney disease in England: The human and financial cost

Potential events calculated with NNT (theNNT.com). For blood pressure, anti-hypertensive medicines for 5 years to prevent death, heart attacks, and strokes:

1 in 100 for heart attack, 1 in 67 for stroke. For AF, warfarin over 1.5 years : 1 in 25 for stroke. Numbers may be lower, as some patients may be on prior treatment.

References:

Hypertension and AF populations and treatment estimates: QOF 2015/16.

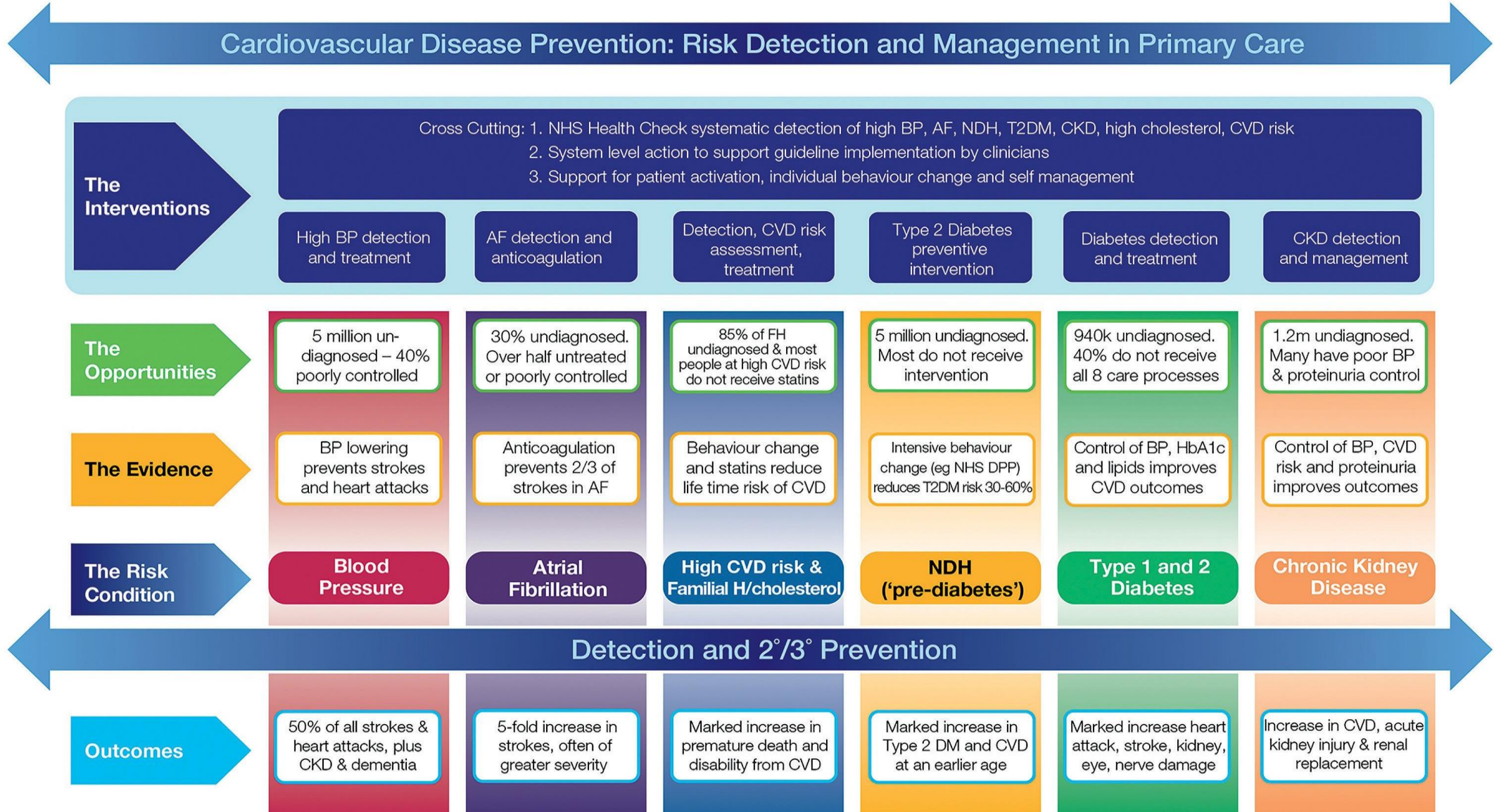
CVD high risk estimate numbers: <http://www.bmj.com/content/344/bmj.e4181>.

CVD high risk statin treatment: <http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002169>

The graphic overleaf shows the size of the prize for CVD prevention in Coventry and Warwickshire.

The estimates of impact are indicative but they show the scale of the opportunity to prevent heart attacks and strokes by improving the detection and management of high risk conditions like atrial fi high blood pressure and high cholesterol. Achieving this at scale would deliver substantial savings in health and social care spend.

The NHS RightCare programme is now rolling out the CVD Prevention Pathway with a series of high impact interventions that will support your CCGs to deliver this improvement. And increasing uptake of the NHS Health Check offers a systematic approach to detecting people with undiagnosed high risk conditions.



Summary of Health and Health Inequalities Data

Public Health Outcomes - Life Expectancy and Cause of Death

Compared with benchmark: Better Similar Worse Not Compared

Quintiles: Low High

* a note is attached to the value, hover over to see more details

Indicator	Period	England	West Midlands region	Birmingham	Coventry	Dudley	Herefordshire	Sandwell	Shropshire	Solihull	Staffordshire	Stoke-on-Trent	Telford and Wrekin	Walsall	Warwickshire	Wolverhampton	Worcestershire
Life expectancy at birth (Male)	2014 - 16	79.5	78.8	77.2	78.5	78.6	80.1	77.0	80.5	80.4	79.7	76.4	78.6	77.2	79.9	77.2	80.0
Life expectancy at birth (Female)	2014 - 16	83.1	82.7	81.9	82.4	82.9	83.6	81.4	83.7	84.2	82.9	81.2	82.4	82.0	83.6	81.3	83.8
Under 75 mortality rate: all causes	2015 - 17	332	352	406	387	347	306	429	297	295	322	435	371	407	312	432	303
Under 75 mortality rate: cardiovascular	2015 - 17	72.5	77.5	96.2	87.8	70.5	65.4	100.1	61.5	61.4	67.5	90.7	84.3	99.1	66.8	104.7	64.0
Under 75 mortality rate: cancer	2015 - 17	134.6	139.0	148.2	140.7	149.4	126.4	154.4	127.0	124.2	133.8	166.9	149.9	156.9	127.6	157.5	124.6
Suicide rate	2015 - 17	9.6	9.5	7.6	8.8	9.4	11.7	10.4	8.0	9.5	9.7	9.1	11.4	9.1	11.3	9.9	10.8

Indicator	Period	England	West Midlands region	Local authorities													
				Birmingham	Coventry	Dudley	Herefordshire	Sandwell	Shropshire	Solihull	Staffordshire	Stoke-on-Trent	Telford and Wrekin	Walsall	Warwickshire	Wolverhampton	Worcestershire
Life expectancy at birth (Male)	2014 - 16	79.5	78.8	77.2	78.5	78.6	80.1	77.0	80.5	80.4	79.7	76.4	78.6	77.2	79.9	77.2	80.1
Life expectancy at birth (Female)	2014 - 16	83.1	82.7	81.9	82.4	82.9	83.6	81.4	83.7	84.2	82.9	81.2	82.4	82.0	83.6	81.3	83.8
Under 75 mortality rate: all causes	2015 - 17	332	352	406	387	347	306	429	297	295	322	435	371	407	312	432	303
Under 75 mortality rate: cardiovascular	2015 - 17	72.5	77.5	96.2	87.8	70.5	65.4	100.1	61.5	61.4	67.5	90.7	84.3	99.1	66.8	104.7	64.0
Under 75 mortality rate: cancer	2015 - 17	134.6	139.0	148.2	140.7	149.4	126.4	154.4	127.0	124.2	133.8	166.9	149.9	156.9	127.6	157.5	124.6
Suicide rate	2015 - 17	9.6	9.5	7.6	8.8	9.4	11.7	10.4	8.0	9.5	9.7	9.1	11.4	9.1	11.3	9.9	10.8
Killed and seriously injured on roads	2014 - 16	39.7	37.1	39.5	34.2	31.3	49.8	38.5	49.2	24.1	28.1	23.4	24.5	33.6	60.9	30.9	35.0
Hospital stays for self-harm	2016/17	185.3	189.0	178.8	202.2	246.6	145.6	186.8	143.0	211.1	198.8	348.4	174.3	180.5	161.2	205.3	159.7
Hip fractures in older people (aged 65+)	2016/17	575	588	596	560	619	541	612	550	573	591	644	718	651	556	612	558
Cancer diagnosed at early stage	2016	52.6	52.3	54.5	49.7	53.9	53.9	51.4	50.6	57.4	54.0	51.0	48.4	49.7	46.6	53.0	53.2
Diabetes diagnoses (aged 17+)	2017	77.1	-	79.8	76.6	75.1	70.0	83.6	71.3	80.5	82.5	87.0	84.5	86.6	74.0	73.8	79.1
Dementia diagnoses (aged 65+)	2018	67.5	65.1	67.1	58.5	65.4	56.7	61.9	70.6	61.6	66.1	83.8	62.7	70.1	60.0	73.3	59.7
Alcohol-specific hospital stays (under 18s)	2014/15 - 16/17	34.2	28.5	15.1	35.5	38.7	40.7	32.2	26.9	31.4	31.5	32.0	25.5	20.4	43.8	26.3	29.1
Alcohol-related harm hospital stays	2016/17	636	708	702	727	765	529	758	656	686	738	929	673	808	590	863	634
Smoking prevalence in adults (aged 18+)	2017	14.9	14.2	13.7	15.9	13.7	12.2	17.4	14.0	10.5	13.5	18.9	16.5	14.5	12.6	14.4	14.7
Physically active adults (aged 19+)	2016/17	66.0	62.6	62.4	59.3	59.9	71.1	54.2	68.2	64.0	64.9	54.1	55.4	59.0	65.9	55.9	67.2
Excess weight in adults (aged 18+)	2016/17	61.3	63.6	61.2	64.3	67.4	62.8	70.1	70.3	63.4	65.0	66.0	65.6	66.8	58.6	65.8	62.0
Under 18 conceptions	2016	18.8	21.4	21.4	26.6	20.2	14.5	27.4	15.2	14.6	22.4	28.6	19.5	30.0	18.7	25.8	16.1
Smoking status at time of delivery	2017/18	10.8	11.9	8.2	11.8	14.4	14.1	9.8	13.1	10.7	13.0	18.2	17.2	13.2*	10.1	17.7	12.5
Breastfeeding initiation	2016/17	74.5	68.9	71.1	78.3	55.3	74.8	62.0	78.4	70.4	*	60.1	71.0	65.5	*	66.8	66.7
Infant mortality rate	2015 - 17	3.9	5.9	7.8	5.1	5.4	4.8	6.5	4.1	5.2	5.5	8.1	4.8	6.2	4.2	5.8	4.1
Obese children (aged 10-11)	2016/17	20.0	22.4	25.2	24.2	23.2	19.2	27.8	16.9	17.2	19.2	24.5	20.8	25.2	17.0	26.7	19.6
Deprivation score (IMD 2015)	2015	21.8	-	37.8	28.1	23.0	19.7	34.6	16.7	17.2	16.4	34.4	24.9	30.4	15.0	33.2	17.7
Smoking prevalence: routine and manual occupations	2017	25.7	25.5	24.0	26.1	26.0	24.3	29.2	23.2	21.4	25.4	27.1	25.9	21.2	26.0	21.1	31.5
Children in low income families (under 16s)	2015	16.8	19.8	26.8	21.3	20.2	12.2	25.1	12.1	15.0	12.9	23.8	20.4	25.1	11.8	26.1	13.7
GCSEs achieved	2015/16	57.8	54.8	52.3	54.3	50.0	57.7	48.5	57.3	64.6	56.1	48.4	50.6	50.2	61.9	52.1	60.9
Employment rate (aged 16-64)	2017/18	75.2	72.7	64.4	70.2	70.3	79.6	64.2	77.7	76.2	79.7	71.6	72.5	70.6	81.2	65.0	78.0
Statutory homelessness	2017/18	0.8	1.1	0.9	0.6	3.6	0.1	0.5	2.8	1.4	0.3	1.8	*	0.1	1.2	2.2	0.9
Violent crime (violence offences)	2017/18	23.7	21.9	22.6	16.6	16.6	19.4	20.9	18.0	13.7	21.6	42.7	32.6	19.4	21.4	23.6	22.7
Excess winter deaths	Aug 2014 - Jul 2017	21.1	20.8	17.2	18.3	21.0	25.9	23.3	24.0	25.1	23.1	17.8	18.1	23.2	18.3	19.3	21.3
New sexually transmitted infections	2017	794	645	965	882	432	471	701	329	645	492	575	503	730	613	555	478
New cases of tuberculosis	2015 - 17	9.9	11.9	22.8	23.6	7.8	2.3	27.2	1.6	5.3	4.2	10.8	3.6	15.5	5.5	22.2	3.1

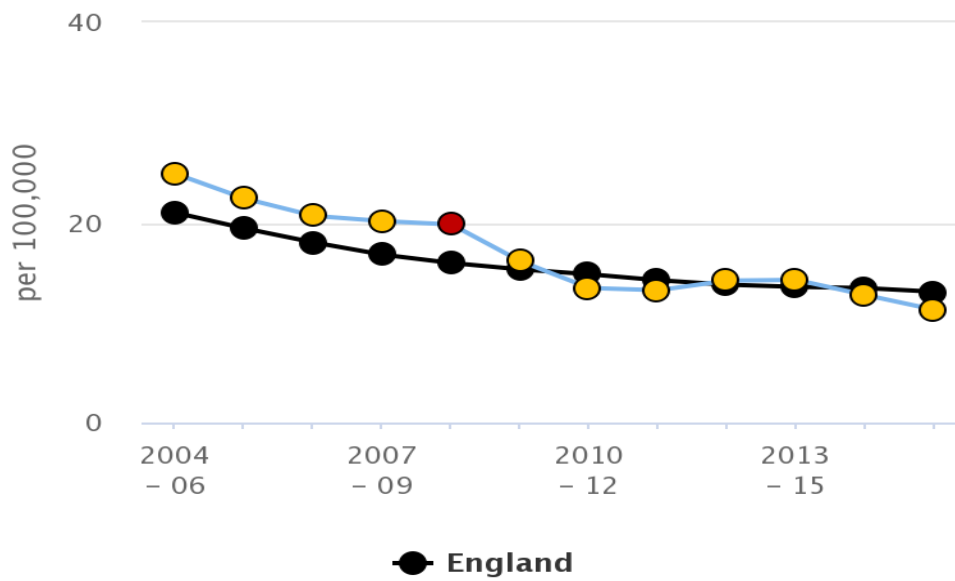
Compared with benchmark Better Similar Worse Lower Similar Higher Not Compared

Quintiles Low High

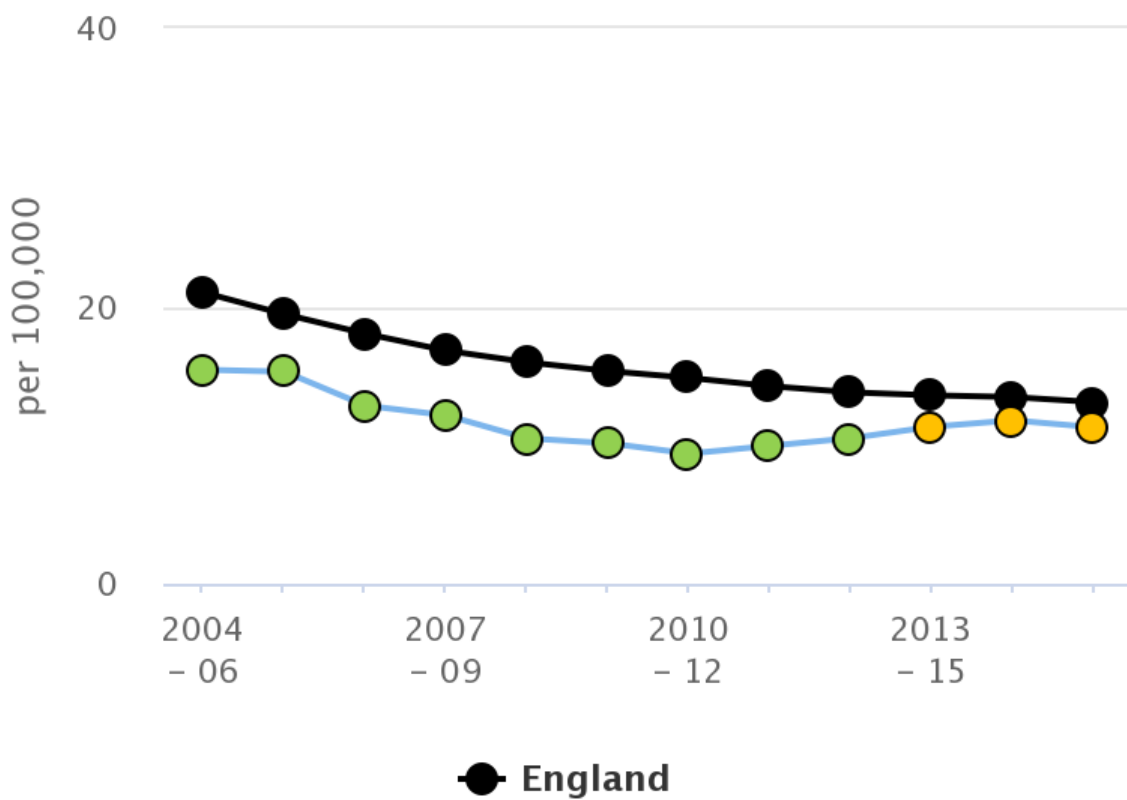
* a note is attached to the value, hover over to see more details

Indicator	Period	England	West Midlands NHS region	NHS Birmingham Crosscity CCG	NHS Birmingham South And Central...	NHS Coventry And Rugby CCG	NHS Dudley CCG	NHS Herefordshire CCG	NHS Redditch And Bromsgrove CCG	NHS Sandwell And West Birmingham...	NHS Solihull CCG	NHS South Warwickshire CCG	NHS South Worcestershire CCG	NHS Walsall CCG	NHS Warwickshire North CCG	NHS Wolverhampton CCG	NHS Wyre Forest CCG
Stroke: QOF prevalence (all ages)	2017/18	1.8	1.7	1.6*	1.3*	1.5	2.1	2.3	2.0	1.4	1.9*	2.1	2.1	1.8	1.8	1.7	2.7
Atrial fibrillation: QOF prevalence	2017/18	1.9	1.8	1.6*	1.1*	1.5	2.5	2.5	2.1	1.3	2.1*	2.3	2.5	2.0	2.0	1.7	2.5
Estimated prevalence of atrial fibrillation	2015/16	2.4	2.4*	2.1	1.7	2.2	2.8	3.3	2.6	1.9	2.8	2.9	3.0	2.4	2.7	2.4	3.2
Stroke admissions (Sentinel Stroke National Audit Programme)	2017/18	78283	-	852	234	613	429	394	284	590	266	398	502	366	325	308	173
STIA003: Last BP reading is <=150/90 (den. incl. exc.)	2017/18	83.5	84.4	83.2*	84.9*	84.5	82.5	83.5	87.0	82.8	82.3*	85.5	87.9	86.4	84.6	81.8	87.4
STIA007: Record that an anti-platelet agent or an anti-coagulant is taken (den. incl. exc.)	2017/18	91.7	91.9	92.3*	92.4*	91.9	88.8	91.5	93.2	92.1	93.1*	91.5	92.7	93.7	91.9	90.5	92.9
AF007: treated w anti-coag. therapy (CHADS2DS2-VASc >=2) (den.incl.exc.)	2017/18	84.0	83.5	80.0*	80.4*	80.9	85.8	83.9	83.9	86.0	84.6*	82.6	86.0	86.4	82.8	81.4	85.0
Stroke outcomes on discharge for patients with AF and not on anticoagulation (mRs = 0)	2016/17	5.9	-	2.6	0.0	2.0	5.3	4.3	5.9	4.2	0.0	11.4	9.5	10.0	5.9	3.6	33.3
Stroke outcomes on discharge for patients with AF and not on anticoagulation (mRs = 1)	2016/17	10.8	-	14.5	13.6	3.9	10.5	4.3	23.5	10.4	11.5	9.1	19.0	6.7	8.8	21.4	8.3
Stroke outcomes on discharge for patients with AF and not on anticoagulation (mRs = 2)	2016/17	11.4	8.8*	11.8	13.6	11.8	13.2	0.0	0.0	10.4	15.4	6.8	2.4	0.0	5.9	21.4	8.3
Stroke outcomes on discharge for patients with AF and not on anticoagulation (mRs = 3)	2016/17	17.2	18.3*	25.0	36.4	23.5	5.3	28.3	23.5	12.5	15.4	9.1	11.9	16.7	23.5	7.1	16.7
Stroke outcomes on discharge for patients with AF and not on anticoagulation (mRs = 4)	2016/17	17.1	16.7*	17.1	13.6	15.7	18.4	28.3	5.9	18.8	15.4	15.9	7.1	26.7	17.6	3.6	25.0
Stroke outcomes on discharge for patients with AF and not on anticoagulation (mRs = 5)	2016/17	11.5	15.8*	13.2	9.1	7.8	23.7	13.0	23.5	25.0	30.8	13.6	9.5	23.3	23.5	3.6	0.0
Stroke outcomes on discharge for patients with AF and not on anticoagulation (mRs = 6)	2016/17	26.1	23.5*	15.8	13.6	35.3	23.7	21.7	17.6	18.8	11.5	34.1	40.5	16.7	14.7	39.3	8.3
Stroke all age admission trends	2016/17	169.2	-	157.8	161.1	142.4	146.2	179.0	169.0	176.7	124.6	129.2	158.5	150.7	177.5	206.0	159.6
Stroke admissions with history of atrial fibrillation not prescribed anticoagulation prior to stroke	2016/17	47.5	-	48.4	55.0	48.1	46.9	45.1	48.6	52.2	41.9	43.1	52.5	50.8	55.7	57.1	66.7
Stroke patients who are assessed at 6 months	2017/18	29.5	-	9.6	23.9	23.6	54.3	3.4	29.1	17.8	1.9	0.9	18.3	46.3	13.6	58.0	8.8
Stroke mortality rates, under 75 years (age standardised)	2015 - 17	13.1	-	-	-	13.9	13.0	12.3	11.0	16.3	-	11.3	11.7	18.6	11.3	19.1	16.0
Stroke mortality rates, over 75 years (age standardised)	2015 - 17	540.5	-	-	-	522.5	552.8	612.3	540.3	486.0	-	503.8	620.0	538.1	581.6	571.1	654.3

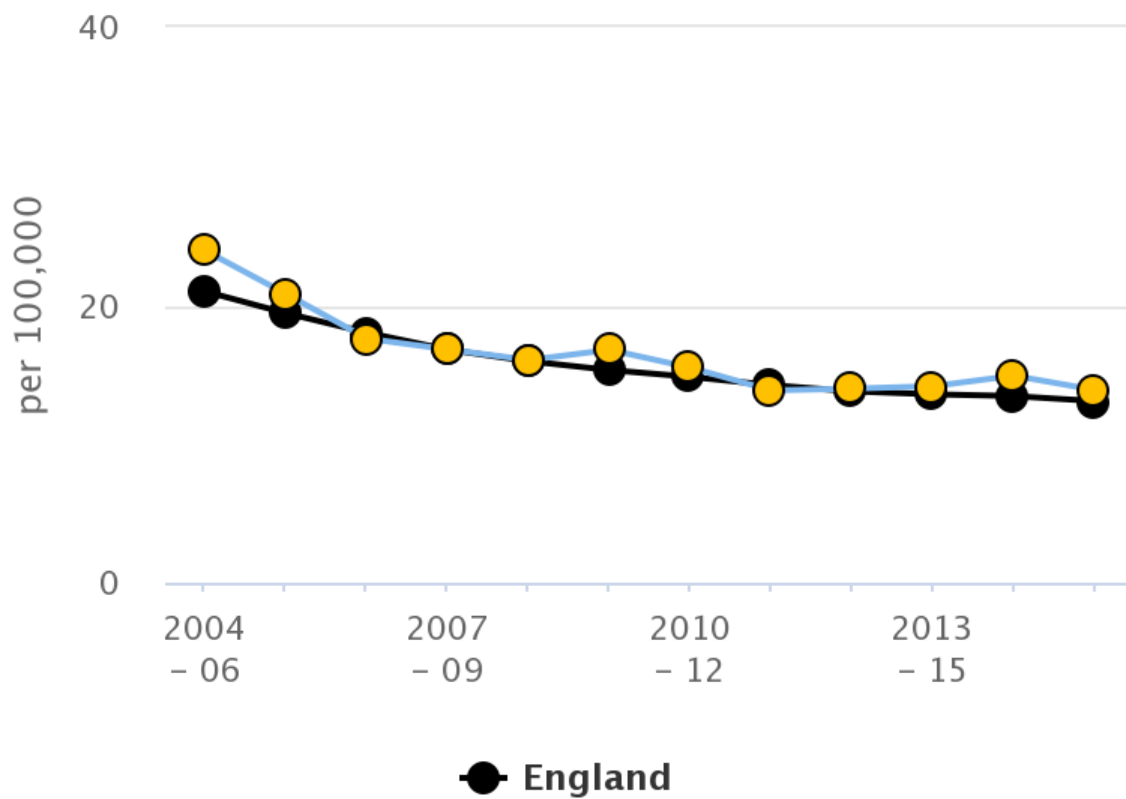
Stroke mortality rates, under 75 years (age standardised) – NHS
Warwickshire North CCG



Stroke mortality rates, under 75 years (age standardised) – NHS
South Warwickshire CCG



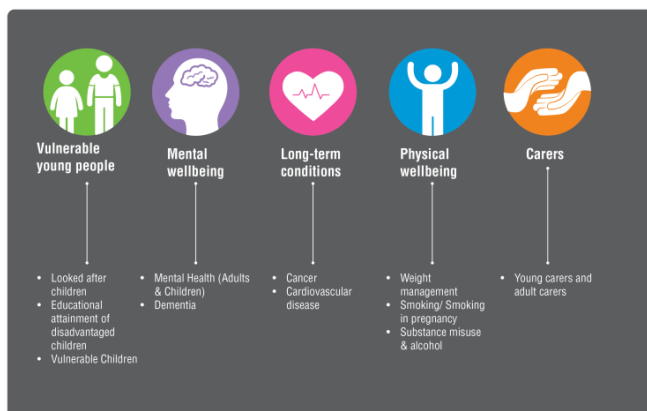
Stroke mortality rates, under 75 years (age standardised) – NHS Coventry And Rugby CCG



Ambulance Times

Joint Strategic Needs Assessments (JSNA)

Warwickshire JSNA



Cardiovascular disease

Cardiovascular disease (CVD) is a general term that encompasses a disease of the heart or blood vessels.^[xi] It is the cause of more than a quarter of all deaths in the UK, with annual costs to the NHS and the economy estimated at over £15 billion.^[xii] Many modifiable risk factors exist for this condition, including hypertension, high cholesterol, obesity and diabetes.^[xiii]

In Coventry, the **mortality rate from cardiovascular disease in the under-75s is 88.5 per 100,000 per year** according to 2014-16 data (compared to 78 per 100,000 in West Midlands and 73.5 in 100,000 in England), although cardiovascular mortality has generally been decreasing over the previous decade, both locally and nationally. Across Coventry, there is also a difference between the mortality rates for males and females with a rate of 127.9 deaths per 100,000 within the male population and 50.7 per 100,000 within the female population.^[xiv]

In addition, within the UK, CVD mortality is 50% higher in the most deprived communities compared to the least deprived.^[xv] This inequality is apparent within Coventry. For example, there are more than twice the number of emergency admissions for heart attacks in Foleshill (192.3 per 100,000) compared to Earlsdon (83.3 per 100,000).^[xvi] When looking at levels of deaths from coronary heart disease in those aged under 75 across the city, it can be seen that St. Michael's ward has the highest rate at 216.8 deaths per 100,000 of the population, with Earlsdon having the lowest rate at 74 deaths.

Many cardiovascular deaths can be prevented or delayed by simple lifestyle interventions. The **preventable mortality rate in under-75s from CVD in the city is 57.8 per 100,000** of the population per year – significantly worse than the regional rate of 49.7 and national rate of 46.7 per 100,000 of the population per year. Again, there is a difference between preventable mortality rates in Coventry between males and females, with a rate of 91.1 per 100,000 of the population for males and 25.9 for females.^[xvii]

http://www.coventry.gov.uk/info/190/health_and_wellbeing/1878/joint_strategic_needs_assessment_jsna

Appendix 7.8: Extracts from the Improving Stroke Outcomes: Pre-Consultation Business Case

The following extracts have been taken from the *Improving Stroke Outcomes: The case for Change Business Case and Appendices* documents. These relate specifically to the evidence base for the current quality, clinical effectiveness and safety of services, sustainability and safety modelling and a fuller description of the case for change based on the evidence base.

Improving Stroke Outcomes: Pre- Consultation Business Case

1.4 The Case for Change (summary of current provision)

There is a strong and growing evidence base, that the organisation and timeliness of stroke specialist assessment and treatment significantly affects outcomes. The following key issues have been identified with the current service organisation and provision which results in increased mortality and morbidity following a stroke:

- The current service provision across Coventry and Warwickshire does not meet the requirements of the NHS Midlands and East regional Stroke Services Specification, particularly in ensuring that all patients suffering a stroke receive appropriate hyper acute care within the first 72 hours. Currently, on average 4 patients per day do not receive hyper acute assessment;
- The HASU/ASU beds and rehabilitation services for Coventry and Warwickshire patients do not universally meet national best practice care standards. Indeed, the latest published data in the NHS Atlas of Variation (2015) showed that the number of patients in Coventry and Warwickshire directly admitted to an acute stroke unit within 4 hours of onset of a stroke was amongst the lowest in the country;
- There is a lack of comprehensive access to ESD services and specialist community stroke rehabilitation, with cohorts of patients in Warwickshire North and South Warwickshire who currently have no access to these services;
- There is variable service provision and inequality of access to key services for Coventry and Warwickshire patients which must be corrected; particularly to HASU beds, inpatient rehabilitation, specialist community rehabilitation and ESD;
- Inadequate provision exists in primary prevention, in the form of gaps in anticoagulation therapy for those with atrial fibrillation to reduce the risk of stroke, with evidence that we could avoid c230 strokes over 3 years by bridging this gap
- The Sentinel Stroke National Audit Programme (SSNAP) results between Dec 2017- Mar 2018 show that Coventry and Warwickshire services are poor when compared to national average performance in delivering rapid access to appropriate services. The most significant issues arising from the SSNAP audits in support of the case for improvement are:
 - The proportion of patients scanned within 1 hour – in one of the local units 13% of patients are scanned within an hour, in comparison to a national average of 52.4%;
 - The median time taken for patients to be scanned – most recent results show it takes just over 2 hours and 43 minutes for some patients to be scanned, against a national average of just under an hour;
 - The time taken for patients to be admitted to a Stroke Unit – whilst the national average time for patients to be admitted to a Stroke Unit is just over 3.5 hours, it takes between 6 and 11 hours for patients in Coventry and Warwickshire; and
 - The proportion of patients assessed by a Stroke Specialist Consultant Physician within 24 hours is below the national average for two of the three acute providers in Coventry and Warwickshire.
- There is considerable variation in the acute care provided across the three sites, particularly in relation to lengths of stay. It is clear from review work undertaken that, due to a lack of specialist stroke ESD and community stroke rehabilitation services, patients are currently staying longer in the available acute stroke beds than is in their best interest;
- Critically, there are insufficient Stroke Specialist Consultants to operate an improved and effective service within the current configuration of services, given the requirement to staff services on each of the three acute sites. At the outset of this work, there were only four permanent Stroke Specialist Consultants working across the three acute providers. There are known national shortages of these specialists and recruitment to vacant posts has been challenging for all providers.

Given these issues, work is clearly required to improve local stroke care across Coventry and Warwickshire so that more patients can survive their stroke and achieve their optimum level of recovery.

1.4.1 Clinical best practice

The assessment of current services and design of the future clinical model and pathway has taken into consideration published evidence, guidance and observations of best clinical practice at other organisations in England.

NHS Midlands and East Regional Stroke Services Specification

The NHS Midlands and East Stroke Specification sets out the criteria, as recommended by the External Expert Advisory Group, that different parts of the stroke pathway need to meet to deliver high quality care to patients. These are the expected standards that commissioners should adopt when commissioning stroke care services. The proposed clinical model has been developed with the NHS Midlands and East Regional Stroke Services Specification at the forefront of thinking.

In particular:

- All patients suffering from a stroke will receive appropriate hyper acute care within the first 72 hours,
- There will be comprehensive access to ESD services and specialist community stroke rehab, and
- There will be greater focus on primary prevention in the form of identifying atrial fibrillation and reducing the risk of stroke, potentially averting 230 strokes over 3 years.

London Stroke Model

Evidence is clear that centralising stroke treatment at a much smaller number of hospitals with specialist stroke care has considerable benefits. The London Stroke Model was implemented in July 2010 and in their November 2010 stroke newsletter, from the stroke Clinical Director Dr Tony Rudd, the London Cardiac and Stroke Networks reported that:

- The average length of stay for Stroke patients decreased from 15 days in 2009/10 to 11.5 days year-to-date at August 2010;
- The 2010 National Sentinel Stroke Audit evidenced that 84% of London patients were spending 90% of their time on a dedicated stroke unit against a national average of 68% for periods Q1 2009/10 – Q1 2010/11; and
- The 2010 National Sentinel Stroke Audit evidenced that 85% of high-risk TIA patients were being treated within 24 hours, against a national average of 56% for periods Q1 2009/10 – Q1 2010/11.

The reconfiguration has been shown to have delivered an absolute reduction in mortality of 3% and enabled an additional 6% of people to achieve independent life at home after a stroke. More than 95 extra lives are saved every year in London alone as a result of concentrating specialist stroke care in eight HASUs.

The London HASU model, which operates 24 hours a day, seven days a week, saves £5.2 million each year.

Learning from other stroke service models in England

Members of the Coventry and Warwickshire Stroke Clinical Review Group have learned from a number of other stroke units in the country which had been identified as demonstrating clinical best practice. These included the Nottingham stroke service, Stoke on Trent stroke service and North Essex ESD service.

The Coventry and Warwickshire model proposed has been designed taking into account learning from the operation of each of these sites as well as wider documented evidence. This has included testing the capacity planning for the proposed new service provision; the capacity we have planned is broadly in line with the findings from research into stroke services at other best practice regions with similar demographics.

Early Supported Discharge (ESD)

There is strong evidence that a new and comprehensive ESD service will be able to reduce patient's length of stay in hospital. The proposed ESD model was piloted from December 2014 to May 2015 in Coventry. Following the success of the pilot, standard ESD has since been substantively commissioned in Coventry and has been operating since September 2015. The pilot and data from the current service therefore provide strong evidence of the success of the proposed model. The length of stay for Coventry patients has reduced overall on average by 11 days. This is despite there being no increased resource in the Community Stroke Therapy element which supports 30% of the patients to leave the hospital.

Analysis of the percentage of patients suitable for ESD from SSNAP has shown that on average 53% of patients were found to be suitable over the last year. The results are shown below:

- Dec – Mar 2017 = 62.8%
- Apr – Jul 2017 = 61.9%
- Aug – Nov 2017 = 47.5%
- Dec – March 2018 = 42%

The numbers of patients during the last two financial years who have been discharged out of hospital supported by the Coventry ESD service are as follows:

- Apr 2016 - Mar 2017 = 281
- Apr 2017 – Mar 2018 = 274

Atrial Fibrillation (AF)

There is evidence that optimally treating high risk AF patients has the potential to avert 230 strokes over three years in Coventry and Warwickshire ('The Size of the Prize on CVD prevention', Public Health England and NHS England). This evidence indicates that there is significant clinical and financial benefit potentially from this intervention and it has been factored into the activity and financial modelling for the proposed service.

Local and national strategy

The proposed new service model is in line with the following local and national strategy documents:

- The National Stroke Strategy (2007), which advocated provision of specialist stroke units, rapid access for TIA patients, immediate access to diagnostic scans and thrombolysis (for those who need it) and Early Supported Discharge.
- The NHS England Five Year Forward View (2014), which cited the centralisation of 32 stroke units in London to 8 units and the reduction in mortality rates and lengths of stay in hospital that resulted from this service change.
- Coventry and Rugby CCG's Commissioning Intentions (2017 – 2019)
- South Warwickshire CCG's Strategic Plan (2016 – 2020)
- Warwickshire North CCG's Vision for Quality Clinical Vision
- The Coventry and Warwickshire Sustainability and Transformation Plan

1.5 Proposed Future Clinical Model

A significant amount of work has been undertaken by clinicians from across the health economy to design a new model for stroke services in Coventry and Warwickshire that meets the clinical best practice outlined in the Stroke Services Specification developed by NHS Midlands and East (Appendix C).

As a result of the patient and public engagement completed between 2014 and 2017 we redesigned and extended the original model to:

- Include a comprehensive and equitable stroke rehabilitation offer and action to further improve anticoagulation therapy for people with Atrial Fibrillation;
- shape the implementation by planning for community rehabilitation services to be in place prior to any changes to acute services;
- provide greater detail in the proposals for how travel for carers and car parking at UHCW is to be improved to accommodate the proposals.

Further engagement in 2018 helped to shape the process for appraising the options for bedded rehabilitation; coproducing the desirable criteria to be used for the non-financial appraisal and culminating in stakeholder participation in the non-financial option appraisal.

We believe that the resulting proposed new pathway of excellence will be the best possible clinical model for stroke services in Coventry and Warwickshire for the following reasons:

- It has been designed taking into account the requirements of the NHS Midlands and East Stroke Services Specification and the latest clinical best practice evidence;
- It improves equity of access to stroke services across Coventry and Warwickshire;
- It fits with local and national strategy;
- It will create workforce development opportunities and improve recruitment and retention of stroke specialist staff;
- It has been tested through a range of clinical quality assurance processes, including the West Midlands Clinical Senate and
- Significant stakeholder engagement and co-production of the proposals through the engagement activities undertaken has provided support to proceed with this option.

•

The pathway has the following key features:

- Provision of a single centralised hyper acute stroke unit (HASU) and an acute stroke unit (ASU) at UHCW, with the necessary infrastructure, support and workforce to assess and diagnose all patients suspected of having had a stroke from across Coventry and Warwickshire, within 72 hours of onset;
- A home-based stroke specialist Early Supported Discharge service across the whole of Coventry and Warwickshire;
- A home-based Community Stroke Rehabilitation service across the whole of Coventry and Warwickshire; Bedded stroke rehabilitation services for those patients that require more intensive support after discharge from the ASU and a systematic focus on preventing stroke in the form of an integrated anticoagulation pathway that acts to reduce the risk of stroke.

The CCGs are clear on the improved outcomes they wish to see delivered through this change. By ensuring a consistent, high quality service offer, improvement will be made against the following three key clinical outcomes:

1. Reduced levels of mortality for people who have suffered a stroke: case adjusted mortality rates for Coventry and Warwickshire will meet those of comparable population areas;
2. Reduced levels of dependency for those who have suffered a stroke: outcomes will be at least comparable with similar populations by improving and increasing access to the specialist stroke ESD and community rehabilitation services at home, and specialist bedded stroke rehabilitation, and
3. An improvement in cognitive function for people after suffering a stroke: outcomes will be at least comparable with similar population areas.

1.5.1 Equity of access to services

Put simply, under the new model, all patients across Coventry and Warwickshire will be seen more promptly and in the right place by specialist skilled professionals, where they will receive the highest quality care.

There will be no inequality of access to the appropriate specialist care. Centralisation of acute care and standardised bedded rehabilitation will ensure a body of suitably qualified and experienced staff is available to see and treat all patients. The home based rehabilitation will provide an extra 620 packages of care, and the anticoagulation therapy will prevent 230 strokes over three years.

A consistent stroke service will be in place across all of Coventry and Warwickshire, removing the current inequity of access to services. This applies to all elements of the pathway, including HASU and ASU beds and stroke specialist rehabilitation services.

1.5.2 Quality assurance

In order to ensure that the new model is appropriate clinically, the following quality assurance reviews and processes have been undertaken:

- Health Gateway Review 0;
- National Clinical Advisory Team Review;
- West Midlands Strategic Clinical Network Assurance;
- West Midlands Clinical Senate Review;
- Assessment of the fit against the “Five Tests” for Reconfiguration;
- Two Integrated Impact Assessments (IIA); and
- A Privacy Impact Assessment (PIA).

The outcome from all of these tests has been supportive of the new model. In particular, external clinical advice has agreed that our preferred model is appropriate and based on best practice.

1.5.3 Public engagement

Over the last four years, the model of care has been co-designed through public and patient representative engagement. The rationale behind the proposed model has been shared extensively, including with:

- Local commissioners;
- Health, social care and other key partners including the Stroke Association;
- The Warwickshire and Coventry Adult Social Care and Health Overview and Scrutiny Committees and District and Borough Council Scrutiny Committees
- The Public and Patient Advisory Group specifically established to advise on the development of proposals since the project started in 2014;
- Stroke survivors in stroke clubs and
- Health professionals and other key stakeholder groups (i.e. Local Authorities, Councillors).

All of these parties have helped to shape and inform the development of the proposed stroke service model. During the engagement in 2017 they have been supportive of this proposed model assuming that a number of key access factors, particularly for carers and relatives, can be mitigated. We have taken this feedback on board and reshaped the proposals during 2018, to reach this final case. The engagement activities carried out are described in detail in appendices F to F3.

Appendix B: The Stroke Clinical Review Group Recommendations to the Programme Board

Background & Purpose to the Report

In seeking to improve the health outcomes of patients who have suffered a stroke or TIA, the Coventry & Warwickshire Stroke Project is seeking to appraise a number of scenarios to help identify an optimal local Stroke & TIA pathway, that is both clinically and financially sustainable, and in line with the Midlands and East Stroke specification (2012). As part of this process, a long list of scenarios was considered by the Clinical Review Group (CRG) and an External Clinical Advisory Group in August 2014. The exercise concluded however, that there was insufficient detail around the post-acute stroke care element of the pathway in order to support a comprehensive review of the options, and as such, the Clinical Review Group were asked to help put forward their recommendations for a model of post-acute stroke care, including more detail around models for Early Supported Discharge and rehabilitation, including stroke inpatient bedded rehabilitation.

Approach to development of recommendations

The CRG has been requested to develop a number evidenced-based recommendations for consideration by the Coventry and Warwickshire Stroke Programme Board in relation to the complete pathway, including rehabilitation, for patients who have suffered a stroke. The CRG has been requested to consider what services would be required at each point of the care pathway, and how these recommendations compare in relation to the current service provision across Coventry and Warwickshire. As part of the approach to the development of their recommendations, the CRG has considered the guidance on the implementation of the regional stroke policy, evidence from a number of stroke services across the country who have implemented new service models, and the local service demand and provision of stroke services across Coventry and Warwickshire. Members of the CRG have then discussed at length their findings and observations, considering the elements of best and preferred practice, and the examples of practice that they would like to avoid in the future service model. The CRG has been asked to offer their clinical views and opinions as to what the optimum stroke pathway for Coventry and Warwickshire should consist of and offer to the local population, and has not been asked to consider the financial impact and considerations of services or a model of care

CRG's Recommendations

- Number of HASU beds to be increased commensurate with the number of stroke cases reflected in the new model
- Number of ASU beds to be reviewed and reduced in reflection of the findings of the point prevalence audit and the supporting clinical appreciation of the current use of ASU beds.
- Increase number of bedded rehab beds to compliment the reduction in ASU beds and the identified need for further bedded rehab provision
- ESD service that offers an integrated Coventry & Warwickshire model of provision with locality-focused teams ESD to in-reach to improve flow
- ESD should include a social worker in the team
- ESD should be part of the MDT with stroke physicians
- Community rehab provision that reflects the clinical evidence of individuals requiring longer term rehab provision
- Potential of stroke discharge to assess bed provision with ESD in reach as a means of discharging individuals from hospital in a more timely manner

In addition, the CRG members have also requested that further consideration is given to:

- The potential inclusion of telemedicine arrangements that could support the delivery of the stroke pathway across Coventry and Warwickshire.
- Centralisation and co-location of the TIA service with HASU, using a triage system that allows patients with strong suspicion of TIA to be seen asap (probably on the HASU) and patients with low suspicion to be seen locally but less urgently. This would negate the need to have high and low risk clinics across all of the units in Coventry and Warwickshire.

Appendix E1: Modelling Assumptions Underpinning Scenarios

The key assumptions underpinning the Stroke Modelling are as follows:

Early Supported Discharge (ESD)	<p>Commissioners aim to achieve more timely discharges and positive rehabilitation outcomes for patients who meet the ESD criteria by providing intensive rehabilitation from a stroke specialist multi-disciplinary team within the patient's home environment. The ESD team will take over seamlessly and immediately from the intensive rehabilitation received within the ASU. The ESD pilot in Coventry has provided evidence that 40% of patients would benefit from ESD.</p> <p>The following assumptions underpin the ESD modelling:</p> <table><tr><th>Early supported discharge assumptions</th><th>UHCW</th><th>GEH</th><th>SWFT</th></tr><tr><td>ESD - % of spells suitable for ESD</td><td>0%</td><td>40%</td><td>40%</td></tr><tr><td>ESD commences at day</td><td>7</td><td>7</td><td>7</td></tr><tr><td>ESDs - number of ESD days per episode</td><td>30</td><td>30</td><td>30</td></tr><tr><td>ESD cost per day</td><td>£82</td><td>£82</td><td>£82</td></tr><tr><td>ESD cost per episode</td><td>£2,460</td><td>£2,460</td><td>£2,460</td></tr></table> <p>The assumptions at UHCW take into account the fact that the ESD pilot was operating from December 2014 and its impact is already reflected in the average length of stay.</p>	Early supported discharge assumptions	UHCW	GEH	SWFT	ESD - % of spells suitable for ESD	0%	40%	40%	ESD commences at day	7	7	7	ESDs - number of ESD days per episode	30	30	30	ESD cost per day	£82	£82	£82	ESD cost per episode	£2,460	£2,460	£2,460
Early supported discharge assumptions	UHCW	GEH	SWFT																						
ESD - % of spells suitable for ESD	0%	40%	40%																						
ESD commences at day	7	7	7																						
ESDs - number of ESD days per episode	30	30	30																						
ESD cost per day	£82	£82	£82																						
ESD cost per episode	£2,460	£2,460	£2,460																						
Community Bedded Rehabilitation	<p>Following their stay in a stroke unit, a small proportion of stroke survivors may need continuing specialist inpatient rehabilitation in the medium term. CCGs wish to provide access to non-acute inpatient rehabilitation for those survivors with a high level of dependency, who would not benefit from further acute inpatient input but for whom discharge into the community at that stage is not appropriate.</p> <p>This care needs to be delivered in dedicated non-acute inpatient facilities that meet the inpatient rehabilitation performance standards. Generic settings such as intermediate care beds are therefore not appropriate for this continuing specialist rehabilitation.</p> <p>The Coventry and Warwickshire CCGs are committed to providing care in an appropriate setting for their patients close to home. To this end, the CCGs intend to provide community based bedded rehabilitation. Indications are that 30% of patients would benefit from community bedded rehabilitation. The ESD pilot also indicated that 30% of patients would benefit from community bedded rehabilitation.</p>																								

Appendix 7.9: Detailed Results of the Health and Health Inequalities Impact Assessment by Scenario (Summary page 65)

Scoring for nature of the impact in the health section is as follows. The scoring takes account of both the scale of the impact in relations to numbers of people impacted and the severity of impact. The estimates provide a conservative estimate of the impact to ensure that any benefits are not

- High positive impact: +2
- Low positive impact: +1
- Neutral Impact: 0
- Low negative impact: -1
- High negative impact: -2

Option 1: As this scenario does not alter stroke services and maintains the current provision a neutral impact for all groups has been scored.

The following limitations of this system however, have been noted within this IIA and will be taken into account when scoring alternative scenarios below:

- Not all patients with a suspected stroke are being seen in a specialist hyperacute stroke unit and therefore some may be missing the opportunity provided by a hyper- acute assessment and/or unit.
- Local services are not configured optimally to support or sustain the improvements that other areas who are configured optimally have achieved as demonstrated in the NHS Atlas of Variation and ongoing SSNAP audit results.
- There are insufficient stroke specialist Consultants to operate an improved stroke service as currently configured, and a national shortage of stroke specialist Consultants.
- There is a need to address the inequity of access/provision of services particularly stroke specialist rehabilitation.
- Due to a lack of specialist stroke ESD and community stroke rehabilitation services, patients are currently staying longer in the available acute stroke beds than ideal.
- Many patients are currently in stroke acute beds whilst they are waiting for other community based services, such as care packages.

Option 2a: Proposed Model	Impact Score	Explanatory Notes
Death and Premature Death	+2	<i>Health Positive Impact (patients)</i> - Stroke is a leading cause of mortality in England. There is strong evidence pulled together in clear national and regional guidance, to show that access to high quality stroke services increases survival and reduces mortality. The proposed changes promote wider and more consistent access to high quality stroke services from prevention through to rehabilitation and should reduce stroke related mortality rates (Appendix 7.7) .
	+1	<i>Health Negative Impact (patients)</i> – No negative impacts have been identified <i>Health Inequalities Positive (patients and visitors/carers)</i> - The proposed changes will enable more acute stroke patients to consistently access high quality stroke care which will reduce associated mortality and thus reduce current health inequalities in mortality which is greatest in the most deprived areas of Coventry and Warwickshire.

		<p><i>Health Inequalities Negative (patients and visitors/carers)</i> - In theory, patients self-conveying to GEH or SWFT, may have a potential for delays in a small number of cases, this extra step in the patient pathway may disproportionately affect patients in North Warwickshire and South Warwickshire. Delays may see a small increased risk of mortality from acute stroke and increase health inequalities experienced by the population in these areas.</p>
Disease and Disability	+2	<p><i>Health Positive Impact (patients)</i>- In the medium to longer term, stroke can increase the risk of other illnesses e.g. pneumonia or malnutrition. Evidence shows that specialist stroke teams reduce the incidence of such problems. Stroke is a leading cause of morbidity in England. There is strong evidence pulled together in clear national and regional guidance, to show that access to high quality stroke services reduces morbidity from stroke. The proposed changes promote wider and more consistent access to high quality stroke services from prevention through to rehabilitation and should reduce stroke related morbidity.</p> <p><i>Health Negative Impact (patients)</i> – No negative impacts have been identified</p> <p><i>Health Inequalities Positive (patients and visitors/carers)</i> - Socioeconomic differences in stroke mortality exist in most areas. The centralisation of specialist stroke and TIA services in UHCW will ensure the same level of advanced clinical support for all patients and is likely to generate improved outcomes for people who currently do not access the hyperacute assessment and treatment for the first 72 hours. In enhanced community- based rehabilitation services should help support carers, visitors and stroke survivors. Therefore, the proposed changes will enable more stroke patients to consistently access high quality stroke care which will reduce associated mortality and thus reduce the current health inequalities in access and provision of these services (Appendix 7.8). In relation to disability, people with physical impairments might also be disproportionately affected either as stroke patients, because stroke can recur so those suffering a stroke are more likely to have a physical disability¹ or as visitors because physical disabilities are more common in socially disadvantaged groups, therefore the provision of universal access to a high quality services will have a higher benefit to these groups.</p> <p><i>Health Inequalities Negative (patients and visitors/carers)</i> - The equality impact assessment identified that some groups in Coventry and South Warwickshire may find it harder to understand, gain information and adapt to the proposed changes, but that this can be mitigated by good communications with staff, patients and carers. In theory, patients self conveying to GEH or SWFT, there may in a potential for delays in a small number of cases, this extra step in the patient pathway may disproportionately affect patients in North Warwickshire and South Warwickshire. Delays may see a small increased risk of morbidity from acute stroke and increase health inequalities experienced by the population in these areas.</p>
	+1	
Health Related QoL	+2	<p><i>Health Positive Impact (patients)</i>- Stroke is a leading cause of disability and impacts patients and carers mental wellbeing leading to significantly reduced quality of life. There is strong research evidence to show that access to high quality stroke services can improve stroke outcomes such as quality of life. The proposed changes promote wider and more consistent access to high quality stroke services and should improve quality of life post stroke for both patients and their carers.</p> <p><i>Health Negative Impact (patients)</i> – No negative impacts have been identified</p> <p><i>Health Inequalities Positive (patients and visitors/carers)</i> - The proposed changes will enable stroke patients to consistently access high quality stroke care including rehabilitation and preventative care regardless of where they live in Warwickshire and Coventry, which will improve quality of life pre and post stroke and thus reduce health inequalities; as the current service provision for community stroke and rehabilitation is based in the more affluent parts of Warwickshire. In relation to disability, people with physical impairments might also be disproportionately affected either as stroke patients, because stroke can recur so those suffering a stroke are more likely to have a physical disability² or as visitors because physical disabilities are more common in socially disadvantaged groups, therefore the provision of universal access to a high quality services will have a higher benefit to these groups.</p> <p><i>Health Inequalities Negative (patients and visitors/carers)</i>- The equality impact assessment identified that some groups in Coventry and South Warwickshire may find it harder to understand, gain information and adapt to the proposed changes. In theory, patients self-conveying to GEH or SWFT, may have a potential for delays in a small number of cases, this extra step in the patient pathway may disproportionately affect patients in North Warwickshire and South Warwickshire. Delays may see a small impact on quality of life from acute stroke and increase health inequalities experienced by the population in these areas.</p>
	+1	

¹ State of the Nation Stroke Statistics 2018 https://www.stroke.org.uk/system/files/sotn_2018.pdf

Stroke Risk (Biological)	+2	<p><i>Health Positive Impact (patients)</i>- Health - High quality stroke care includes biological risk reduction. Specifically proposals for the area also include a need to improve primary prevention for currently undetected atrial fibrillation patients in the short and longer term. The proposed changes promote wider and more consistent access to high quality stroke services with increased identification and a greater focus on prevention delivered through primary care and good relationships with secondary care. This should reduce stroke related biological risk factors and reduce the risk of stroke recurrence.</p> <p><i>Health Negative Impact (patients)</i> – No negative impacts have been identified</p>
	+1	<p><i>Health Inequalities Positive</i> (patients and visitors/carers) - Biological risk factors are more prevalent in some equality groups as identified in the equality impact assessment, they are also more prevalent within parts of the geography (appendix 7.8) such as Coventry and Warwickshire North. However, the proposed changes will enable more stroke patients to consistently access high quality stroke care, including a best practice AF primary care pathway across the whole of Coventry and Warwickshire which is currently only in place in the South of the County. This should reduce stroke related biological risk factors and reduce the risk of stroke recurrence and thus reduce health inequalities</p> <p><i>Health Inequalities Negative</i> (patients and visitors/carers) - There is a small theoretical risk that, without effective joint working between clinical commissioning groups, primary care services and acute services in parts of the area, biological risk factors will not have a consistent pathway and be consistently managed over time and this might deepen health inequalities in parts of the area.</p>
Stroke Risk (Lifestyle)	+2	<p><i>Health Positive Impact (patients)</i>- The proposed changes include a focus on prevention and more consistent access to high quality stroke services and should reduce lifestyle related stroke risk factors and reduce the risk of stroke recurrence .</p> <p><i>Health Negative Impact (patients)</i> – No negative impacts have been identified</p>
	+2	<p><i>Health inequalities Positive.</i> Lifestyle related stroke risk factors are more prevalent in some equality groups identified in the equality impact assessment. Long term risk reduction of lifestyle risk factors hinges on high quality integrated care. Lifestyle services are universally commissioned across Coventry and Warwickshire. The proposed changes will enable more stroke patients to consistently access high quality stroke care which should reduce lifestyle related stroke risk factors and reduce the risk of stroke recurrence and thus reduce health inequalities</p> <p><i>Health Inequalities (patients and visitors/carers)</i> – There is a small theoretical risk that, without effective joint working between Local Authorities lifestyle services may differ between Coventry and Warwickshire, however effective joint working through the STP work programme (Proactive and Preventative care) is minimising this impact.</p>
Clinical Quality/ Effective Care	+2	<p><i>Health Positive Impact (patients)</i>- The national and regional evidence base and recommendations and specifications provide strong evidence to indicate that the proposed model for reconfiguration of stroke services will create a more effective service. This has been supported by the local review through the West Midlands Clinical Senate. The current service provision across Coventry and Warwickshire does not meet the requirements of the NHS Midlands and East regional Stroke Services Specification, particularly in ensuring that all patients suffering a stroke receive appropriate hyper acute care within the first 72 hours. Currently, on average 4 patients per day do not receive hyper acute assessment. The proposals will promote wider and more consistent access to high quality stroke services and should improve stroke outcomes. (Appendix 7.8 and 7.9)</p> <p><i>Health Negative Impact (patients)</i> – No negative impacts have been identified</p>
	+1	<p><i>Health Inequalities Positive</i> (patients and visitors/carers) – Currently there are inequities in the service offer across Coventry and Warwickshire. The proposed changes will enable more acute stroke patients to consistently access high quality stroke care which will reduce associated mortality and thus reduce health inequalities this includes all stroke patients having timely and equitable access to hyperacute , acute and rehabilitative phase of care. All clinical care would be provided to NICE and standard specification requirements. ESD are currently not equally available to those in the North and South of Warwickshire. Enhanced rehabilitation will mean more care at home and less time in hospital for patients.</p> <p><i>Health Inequalities (patients and visitors/carers)</i> - - The equality impact assessment identified that some groups in Coventry and South Warwickshire may find it harder to understand and adapt to the proposed changes but that this can be mitigated by good communications with staff, patients and carers. In theory, patients self conveying to GEH or SWFT, there may in a potential for delays in a small number of cases, this extra step in the patient pathway may disproportionately affect</p>

		patients in North Warwickshire and South Warwickshire. Delays may see a small increased risk of morbidity from acute stroke and increase health inequalities experienced by the population in these areas.
Availability	+2	<p><i>Health Positive Impact (patients)</i>- This refers to the current and future availability of appropriate settings, which meet the required standards of the NHS Midlands and East Specification and demonstrate at least the minimum standards of quality. In this scenario high quality facilities are available in both acute and rehabilitation settings, meeting the standards to deliver better outcomes for patients.</p> <p><i>Health Negative Impact (patients)</i> – No negative impacts have been identified</p>
	+2	<p><i>Health Inequalities Positive (patients and visitors/carers)</i> – Currently not all patients suspected of having a stroke are immediately taken or directed to the Hyper acute service meaning they have a gap in the current service provision for specialist assessment and diagnostics as outlined in the regional Stroke Services Specification, this affects some population groups more than others. Similarly this option provides rehabilitation, in high quality settings available to all population groups. The proposals will promote wider and more consistent access to high quality stroke services and should improve stroke outcomes these settings would all meet current performance standards to provide equity.</p> <p><i>Health Inequalities Negative (patients and visitors/carers)</i> – No negative impacts have been identified</p>
Evidence Based	+2	<p><i>Health Positive Impact (patients)</i>- Stroke is a leading cause of mortality in England. There is a strong and building evidence base, that the organisation and timeliness of stroke specialist assessment and treatment services significantly affects outcomes. There is also a clear case that the current provision in Warwickshire does not meet the required standards and patients are staying longer in services than required. The proposed changes promote wider and more consistent access to high quality stroke services from prevention through to rehabilitation and should reduce stroke related mortality rates. The evidence base has been quality assured by a number of clinical groups culminating in the West Midland Clinical Senate Review this external clinical advice has agreed that our preferred model is appropriate and based on best practice.</p> <p><i>Health Negative Impact (patients)</i> – No negative impacts have been identified</p>
	+2	<p><i>Health inequalities Positive</i> - The majority of acute stroke patients will access services in the same way as previously and will enable more acute stroke patients to consistently access high quality stroke care which will reduce associated mortality and thus reduce health inequalities. The evidence base (appendix 7.7) shows there is current inequity in access to provision. A consistent stroke service will be in place across all of Coventry and Warwickshire, removing the current inequity of access to services. This applies to all elements of the pathway, including HASU and ASU beds and stroke specialist rehabilitation services. Under the new model, all patients across Coventry and Warwickshire will be seen more promptly and in the right place by specialist skilled professionals, where they will receive the highest quality of evidence based care (appendix 7.8)</p> <p><i>Health Inequalities Negative (patients and visitors/carers)</i> - No negative impacts have been identified</p>
Workforce	+1	<p><i>Health Positive Impact (staff)</i>- The proposal will create workforce development opportunities and improve recruitment and retention of stroke specialist staff. The proposed model offers a solution that will be clinically sustainable; a stroke unit requires a minimum of 10 stroke beds to be operational.</p> <p><i>Health Negative Impact (staff)</i> –It is also acknowledged that there was not currently adequate specialist staff to support the proposed service change and that recruitment would be required. The findings in the HIA assume that the required additional specialist staff have been recruited but this assumption should be considered a 'risk'.</p>
	+1	<p><i>Health Inequalities Positive Impact (staff)</i>- The proposal will create workforce development opportunities and improve recruitment and retention of stroke specialist staff. There will be increased provision of home based stroke Rehabilitation and ESD across Coventry and Warwickshire this could offer increased opportunities to those in therapy services and lower socio economic groups</p> <p><i>Health Inequalities Negative Impact (staff)</i> –For some staff Through the engagement process a need to understand concerns about workforce capacity and skills has been identified. . Staff recruitment of those with the right skills in some of the more deprived areas of Nuneaton maybe a challenge but further workforce assessment has taken place and more information will be available at the consultation stage. In addition some of the changes in staffing may impact on staff travel and accessibility to sites.</p>

Safe Health Care	+2	<p><i>Health Positive Impact (patients)</i>- The national evidence base and recommendations provide strong evidence to indicate that the proposed model for reconfiguration of stroke services will create a safer service. The proposals will promote wider and more consistent access to safer stroke services and reduce lengths of stay, providing a greater offer from home for rehabilitation. This should reduce the incidence of unintended negative consequences of health care.</p> <p><i>Negative health (patients)</i> - In the patient safety literature, communication and handovers between teams are recognised as key risk factors. Any additional handovers for patients self conveying to GEH and SWFT his suggests a small but possible risk in theory. Good communication should mitigate this risk</p> <p><i>Health Inequalities Positive</i> (patients and visitors/carers) – Currently there are inequities in the service offer across Coventry and Warwickshire. The proposed changes will enable more acute stroke patients to consistently access high quality stroke care which will reduce associated mortality and thus reduce health inequalities this includes all stroke patients having timely and equitable access to hyperacute , acute and rehabilitative phase of care. The modelling assumes that all clinical care would be provided to NICE and standard specification requirements.</p> <p><i>Health inequalities Negative</i> The IIA identified that some groups of patients and carers may find it more difficult to access and understand the changes, however the proposed changes will enable more stroke patients to consistently access high quality stroke care which will reduce the incidence of unintended negative consequences of health care and thus reduce health inequalities</p>
Relevance to Population Need	+1	<p><i>Health Positive Impact (patients)</i>- The ageing population is at greater risk of stroke and death from stroke. All population projections indicate that the prevalence of obesity is expected to rise in the future. The current stroke business case gives reassuring evidence that the reconfiguration has capacity for current levels of need but there is insufficient evidence to assess relevance to future projected need. The proposals will promote wider and more consistent access to high quality stroke services and reduced lengths of stay for current levels of need . Care closer to home.</p> <p>Health Negative Impact: No negative impacts have been identified however there is insufficient evidence to assess relevance to future projected need. This is relevant to acute hospital services, community and ambulance services.</p> <p>Health inequalities. Positive inequalities - the proposed changes will enable the needs of more acute stroke patients to be more effectively met and will therefore reduce health inequalities. Modelling in the business case suggests the ambulance service has the capacity to meet the needs of the service reconfiguration.</p>
	+1	<p>Negative inequalities - No negative impacts have been identified however there is insufficient evidence to assess relevance to future projected need especially of the ageing population and how the service quality be maintained / improved, in the face of expanded / growing demand</p>
Employment	+1	<p><i>Health Positive Impact (patients/staff)</i>- Given the improved long-term outcomes attributed to centralisation and specialist treatment for Stroke, those patients of working-age are more likely to return to full or partial function that allows them to continue working</p> <p><i>Health Negative Impact (patients)</i> – No negative impacts have been identified</p> <p><i>Health Inequalities Positive</i> (patients and visitors/carers) - There will be no inequality of access to the appropriate specialist care. Centralisation of acute care and two sites from which to deliver bedded rehab will ensure a body of suitably qualified and experienced staff is available to see and treat all patients.</p> <p><i>Health Inequalities (patients and visitors/carers)</i> – Having to make longer journeys to visit stroke patients could potentially impact on visitor employment if it is necessary for them to take time out of work to allow for longer journey times. However, the proposed clinical model and centralisation is predicted to reduce the length of stay for some patients who may mitigate this for their carers/visitors with 70% of patients having their rehabilitation provided at home. Given the average age of stroke patients, the impact on employment is most likely to be felt by their children who are carers rather than the spouse/partner.</p>
Mental Health	-1	<p><i>Health Positive Impact</i> - Research has shown that family function appears to influence stroke outcomes; it is suggested that high levels of family support are associated with improved recovery status, thus highlighting the importance of stroke patients receiving visitors. Improved outcomes can impact a persons</p>

		<p><i>Health Inequalities (patients and visitors/carers)</i> Therefore, any stroke pathway scenario that could result in a potential reduction in visitors could negatively impact on stroke recovery outcomes. If family members or carers feel that their ability to visit stroke patients is reduced due to longer travel times, this could lead to feelings of stress and anxiety, due to the potential negative impact on stroke recovery that a reduction of family support can lead to.</p>
Income		<p><i>Health Positive Impact</i> - Stroke is a leading cause of social dependency in England. There is strong research evidence to show that access to high quality acute stroke services can improve stroke outcomes such as income. The proposed changes promote wider and more consistent access to high quality stroke services and should reduce levels of dependency post stroke.</p> <p>Negative impact - No negative impacts have been identified</p> <p><i>Health Inequalities Positive (patients and visitors/carers)</i> – Having disposal income is essential for health in relation requisites of healthy living. A reduction in disposable income resulting from increased travel costs will impact disproportionately on those from socio-economically deprived backgrounds who tend to have lower incomes, therefore increasing health inequalities. However, having care closer or at home and shorter lengths of stays will have a positive impact on health outcomes and inequalities disproportionately to those in lower income groups.</p> <p><i>Health Inequalities Negative (patients and visitors/carers)</i> –Some of the scenarios will lead to increased costs associated with visitor travel. Increased travel costs (including petrol, parking or increased usage of public transport as well as potential loss of earnings) could lead to a reduction in disposable income.</p>
Social Cohesion	-1	<p>Health Positive impact - Stroke is a leading cause of social dependency in England. There is strong research evidence to show that access to high quality acute stroke services can improve stroke outcomes such as social dependency. The proposed changes promote wider and more consistent access to high quality stroke services and should reduce levels of dependency post stroke.</p> <p>Negative impact - No negative impacts have been identified</p> <p><i>Health Inequalities Positive(patients and visitors/carers)</i> – The proposed changes will enable more acute stroke patients to consistently access high quality stroke care which will reduce subsequent dependency and thus reduce health inequalities.</p> <p><i>Health Inequalities Negative (patients and visitors/carers)</i> - In theory, patients self conveying to GEH or SWFT, may have a potential for delays in a small number of cases, this extra step in the patient pathway may disproportionately affect patients in North Warwickshire and South Warwickshire. Delays may see a small impact on quality of life from acute stroke and increase health inequalities experienced by the population in these areas.</p>

	-2	<p><i>Health Negative Impact (patients)</i> – The provision in care home settings does not provide the clinical quality of service proposed by option 2a and was later confirmed as clinically unsuitable by a review of the Clinical Review Group.</p> <p><i>Health Inequalities Positive (patients and visitors/carers)</i> – Current there are inequities in the service offer across Coventry and Warwickshire. The proposed changes will enable more acute stroke patients to consistently access high quality stroke care which will reduce associated mortality and thus reduce health inequalities this includes all stroke patients having timely and equitable access to hyperacute, acute and rehabilitative phase of care. ESD are not equally available to those in the North and South of Warwickshire. Enhanced rehabilitation will mean more care at home and less time in hospital for patients. However, the provision in care home settings does not provide the scale of impact proposed by option 2a and has been assessed as clinically unsuitable. As this provision is within the more deprived areas of Coventry, where there is a higher impact on some of the equality groups, this could arguably create more inequalities in service provision and quality to some of the more deprived patients.</p> <p><i>Health Inequalities (patients and visitors/carers)</i> - - The equality impact assessment identified that some groups in Coventry and South Warwickshire may find it harder to understand and adapt to the proposed changes but that this can be mitigated by good communications with staff, patients and carers. In theory, patients self conveying to GEH or SWFT, there may in a potential for delays in a small number of cases, this extra step in the patient pathway may disproportionately affect patients in North Warwickshire and South Warwickshire. Delays may see a small increased risk of morbidity from acute stroke and increase health inequalities experienced by the population in these areas.</p>
Availability	-1	<p><i>Health Positive Impact (patients)</i>- This refers to the current and future availability of appropriate settings, which meet the required standards of the NHS Midlands and East Specification and demonstrate at least the minimum standards of quality. In this scenario high quality facilities are available in both acute settings, meeting the standards to deliver better outcomes for patients.</p> <p><i>Health Negative Impact (patients)</i> – The provision in care home settings does not provide the scale of impact proposed by option 2a and the availability of the provision and availability was assessed as clinical unsuitable.</p>
	-1	<p><i>Health Inequalities Positive (patients and visitors/carers)</i> – Currently not all patients suspected of having a stroke are immediately taken or directed to the Hyper acute service meaning they have a gap in the current service provision for specialist assessment and diagnostics as outlined in the regional Stroke Services Specification, this affects some population groups more than others.</p> <p><i>Health Inequalities Negative (patients and visitors/carers)</i> – Similarly this option provides rehabilitation, in high quality settings available to all population groups. However it is not clear from the modelling if the lack of availability of appropriate settings would meet patients would have longer waits or be required to revert to option 2a.</p>
Evidence Based	-1	<p><i>Health Positive Impact (patients)</i>- Stroke is a leading cause of mortality in England. There is a strong and building evidence base, that the organisation and timeliness of stroke specialist assessment and treatment services significantly affects outcomes. There is also a clear case that the current provision in Warwickshire does not meet the required standards and patients are staying longer in services than required. The proposed changes promote wider and more consistent access to high quality stroke services from prevention through to rehabilitation and should reduce stroke related mortality rates.</p> <p><i>Health Negative Impact (patients)</i> – The clinical assessment of the model was seen as unsuitable.</p>
	-1	<p><i>Health inequalities Positive</i> - The proposed changes will enable more acute stroke patients to consistently access high quality acute and at home stroke care which will reduce associated mortality and thus reduce health inequalities for these service elements. This applies to all elements of the pathway, including HASU and ASU beds and some stroke specialist rehabilitation services.</p> <p><i>Health Inequalities Negative (patients and visitors/carers)</i> – The evidence base for model 2b (proposed model plus) is not robust and therefore will lead to inequalities in provision for those accessing this element of the care within Coventry bedded rehab. The equality impact assessment and transport impact assessments has identified that some groups in Coventry and Warwickshire may find it harder to understand, adapt and access some of the proposed changes. However, the majority of acute stroke patients will access services in the same. In theory, patients self conveying to GEH or SWFT, may have a potential for delays in a small number of cases, this extra step in the patient pathway may disproportionately affect patients in North Warwickshire and South Warwickshire. Delays may see a small impact on quality of life from acute stroke and increase health inequalities experienced by the population in these areas.</p>

Workforce	-1	<p><i>Health Positive Impact (staff)</i>- The proposal will create workforce development opportunities and improve recruitment and retention of stroke specialist staff. The proposed model offers a solution that will be clinically sustainable; a stroke unit requires a minimum of 10 stroke beds to be operational.</p> <p><i>Health Negative Impact (staff)</i> –It is also acknowledged that there was not currently adequate specialist staff to support the proposed service change and that recruitment would be required. The findings in the HIA assume that the required additional specialist staff have been recruited but this assumption should be considered a ‘risk’.</p>
	-2	<p><i>Health Inequalities Positive Impact (staff)</i>- The proposal will create workforce development opportunities and improve recruitment and retention of stroke specialist staff. There will be increased provision of home based stroke Rehabilitation and ESD across Coventry and Warwickshire this could offer increased opportunities to those in therapy services and lower socio economic groups</p> <p><i>Health Inequalities Negative Impact (staff)</i> –For some staff Through the engagement process a need to understand concerns about workforce capacity and skills has been identified. . Staff recruitment of those with the right skills in some of the more deprived areas of Nuneaton and training of care home staff is considered to be a challenge but further workforce assessment has taken place and more information will be available at the consultation stage.</p>
Safe Health Care	-1	<p><i>Health Positive Impact (patients)</i>- The national evidence base and recommendations provide strong evidence to indicate that the proposed model for reconfiguration of stroke services will create a safer service. The proposals will promote wider and more consistent access to safer stroke services and reduce lengths of stay, providing a greater offer from home for rehabilitation. This should reduce the incidence of unintended negative consequences of health care.</p> <p><i>Negative health (patients)</i> - However, the provision in care home settings does not provide the scale of impact proposed by option 2a and has been assessed as clinically unsuitable. In the patient safety literature, communication and handovers between teams are recognised as key risk factors. Any additional handovers for patients self-conveying to GEH and SWFT his suggests a small but possible risk in theory. Good communication should mitigate this risk</p>
	-2	<p><i>Health inequalities</i> The provision in care home settings does not provide the scale of impact proposed by option 2a and has been assessed as clinically unsuitable, this provision would be provided in an area of greater deprivation, in one area of the county and is more likely to effect particular equality groups .The IIA identified that some groups of patients and carers may find it more difficult to access and understand the changes, however the proposed changes will enable more stroke patients to consistently access high quality stroke care which will reduce the incidence of unintended negative consequences of health care and thus reduce health inequalities</p>
Relevance to Population Need	+1	<p><i>Health Positive Impact (patients)</i>- The ageing population is at greater risk of stroke and death from stroke. All population projections indicate that the prevalence of obesity is expected to rise in the future’ The current stroke business case gives reassuring evidence that the reconfiguration has capacity for current levels of need but There is insufficient evidence to assess relevance to future projected need. The proposals will promote wider and more consistent access to high quality stroke services and reduced lengths of stay for current levels of need . Care closer to home.</p> <p>Health Negative Impact No negative impacts have been identified however there is insufficient evidence to assess relevance to future projected need. This is relevant to both acute hospital services and ambulance services. There is a theoretical possibility of negative impact for both population groups</p>
	+1	<p>Health inequalities. Positive inequalities - the proposed changes will enable the needs of more acute stroke patients to be more effectively met and will therefore reduce health inequalities. This scenario was proposed to meet the needs of the needs of equality groups within Coventry, particularly around access and travel</p> <p>Negative inequalities - No negative impacts have been identified however there is insufficient evidence to assess relevance to future projected need especially of the ageing population. It is not clear whether the ambulance service has the capacity to meet the needs of the service reconfiguration. A similar model has also not been proposed in Rugby where in patient rehabilitation has been relocated therefore this could, in theory eventuate some of the inequalities geographically.</p>
Employment	+1	<p><i>Health Positive Impact (patients/staff)</i>- Given the improved long-term outcomes attributed to centralisation and specialist treatment for Stroke, those patients of working-age are more likely to return to full or partial function that allows them to continue working</p> <p><i>Health Negative Impact (patients)</i> – No negative impacts have been identified</p>

		<p><i>Health Inequalities Positive</i> (patients and visitors/carers) - There will be no inequality of access to the appropriate specialist care. Centralisation of acute care and two sites from which to deliver bedded rehab will ensure a body of suitably qualified and experienced staff is available to see and treat all patients.</p> <p><i>Health Inequalities (patients and visitors/carers)</i> – Having to make longer journeys to visit stroke patients could potentially impact on visitor employment if it is necessary for them to take time out of work to allow for longer journey times. However, the proposed clinical model and centralisation is predicted to reduce the length of stay for some patients who may mitigate this for their carers/visitors with 70% of patients having their rehabilitation provided at home. Given the average age of stroke patients, the impact on employment is most likely to be felt by their children who are carers rather than the spouse/partner.</p>
Mental Health	-1	<p><i>Health Positive Impact</i> - Research has shown that family function appears to influence stroke outcomes; it is suggested that high levels of family support are associated with improved recovery status, thus highlighting the importance of stroke patients receiving visitors. Improved outcomes can impact a persons</p> <p><i>Health Inequalities (patients and visitors/carers)</i> Therefore, any stroke pathway scenario that could result in a potential reduction in visitors could negatively impact on stroke recovery outcomes. If family members or carers feel that their ability to visit stroke patients is reduced due to longer travel times, this could lead to feelings of stress and anxiety, due to the potential negative impact on stroke recovery that a reduction of family support can lead to.</p>
Income	0	<p><i>H Health Positive Impact</i> - Stroke is a leading cause of social dependency in England. There is strong research evidence to show that access to high quality acute stroke services can improve stroke outcomes such as income. The proposed changes promote wider and more consistent access to high quality stroke services and should reduce levels of dependency post stroke.</p> <p>Negative impact - No negative impacts have been identified</p> <p><i>Health Inequalities Positive(patients and visitors/carers)</i> – Having disposal income is essential for health in relation requisites of healthy living. A reduction in disposable income resulting from increased travel costs will impact disproportionately on those from socio-economically deprived backgrounds who tend to have lower incomes, therefore increasing health inequalities. However, having care closer or at home and shorter lengths of stays will have a positive impact on health outcomes and inequalities disproportionately to those in lower income groups.</p> <p><i>Health Inequalities Negative(patients and visitors/carers)</i> –Some of the scenarios will lead to increased costs associated with visitor travel. Increased travel costs (including petrol, parking or increased usage of public transport as well as potential loss of earnings) could lead to a reduction in disposable income.</p>
Social Cohesion	-1	<p>Health Positive impact - Stroke is a leading cause of social dependency in England. There is strong research evidence to show that access to high quality acute stroke services can improve stroke outcomes such as social dependency. The proposed changes promote wider and more consistent access to high quality stroke services and should reduce levels of dependency post stroke.</p> <p>Negative impact - No negative impacts have been identified</p> <p><i>Health Inequalities Positive(patients and visitors/carers)</i> – The proposed changes will enable more acute stroke patients to consistently access high quality stroke care which will reduce subsequent dependency and thus reduce health inequalities.</p> <p><i>Health Inequalities Negative (patients and visitors/carers)</i> - In theory, patients self conveying to GEH or SWFT, may have a potential for delays in a small number of cases, this extra step in the patient pathway may disproportionately affect patients in North Warwickshire and South Warwickshire. Delays may see a small impact on quality of life from acute stroke and increase health inequalities experienced by the population in these areas.</p>

Appendix 7.10: Detailed summary of EIA findings by scenario

Scenario 1: No change

As this scenario does not alter stroke services and maintains the current provision a neutral impact for all groups has been scored.

The following limitations of this system however, have been noted within this IIA and will be taken into account when scoring alternative scenarios below:

- Not all patients with a suspected stroke are being seen in a specialist hyperacute stroke unit and therefore some may be missing the opportunity provided by a hyper-acute assessment and/or unit.
- Local services are not configured optimally to support or sustain the improvements that other areas who are configured optimally have achieved as demonstrated in the NHS Atlas of Variation and ongoing SSNAP audit results.
- There are insufficient stroke specialist Consultants to operate an improved stroke service as currently configured, and a national shortage of stroke specialist Consultants.
- There is a need to address the inequity of access/provision of services particularly stroke specialist rehabilitation.
- Due to a lack of specialist stroke ESD and community stroke rehabilitation services, patients are currently staying longer in the available acute stroke beds than ideal.
- Many patients are currently in stroke acute beds whilst they are waiting for other community based services, such as care packages.

Scenario 2a proposed model : Hyper-acute and acute care at UHCW with bedded rehab in north and south Warwickshire

Patients

Age:

Providing the same access for all stroke patients to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on older people who are at risk of stroke in terms of consistency of care, although may result in possible delays in treatment where patients self-present at GEH or SWFT (90 at GEH and 51 at SWFT in total over course of one year). Older patients will spend the entirety of their acute treatment at UHCW (average 15 days) meaning those from outside the locality will spend longer in an unfamiliar hospital. That the average length of stay at UHCW for acute patients is lowest of the three referenced sites goes some way to mitigating against this. For the 30 per cent of patients who will require bedded rehab, patients from the UHCW locality will be required to re-locate. Patients therefore, will receive highly specialist care throughout their hyper-acute and acute treatment, potentially improving outcomes, but this benefit is slightly off-set as the majority of older patients are from the UHCW and SWFT localities and will likely have to spend some period of their care further from home. The implementation of ESD will mean fewer days overall in hospital or rehab for eligible patients irrespective of where they live.

Impact Score: 1

Learning Disability/Mental Health:

Providing the same level of access to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on people within this group who are at risk of stroke in terms of consistency of care, although may result in possible delays in treatment where patients self-present at GEH or SWFT (90 at GEH and 51 at SWFT in total over course of one year). Providing bedded rehab closer to home reduces the length of time a stroke survivor may spend outside of their locality if they live around GEH or SWFT although having additional care settings (for rehabilitation) may provide communication difficulties related to lack of continuity of care, which can be more pronounced within this group. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live.

Impact score: 1

Ethnicity

Providing the same level of access to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on people within this group who are at risk of stroke in terms of consistency of care, although may result in possible delays in treatment where patients self-present at GEH or SWFT (90 at GEH and 51 at SWFT in total over course of one year). Self-presentation at these sites is least likely within this group as the vast majority live around UHCW. This fact however, increases the likelihood they will spend time outside of their locality if bedded rehab is required, negatively impact this group. The low proportion of stroke patients who are likely to require bedded rehab minimises this impact. Having additional care settings may provide communication difficulties for a minority for whom English may not be their first language. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live.

Impact score: 1

Gender

There is no statistically significant variation between male and female instances of stroke in the region under the age of 85. Providing the same level of access to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on people who are at risk of stroke in terms of consistency of care, although may result in possible delays in treatment where patients self-present at GEH or SWFT (90 at GEH and 51 at SWFT in total over course of one year). Providing bedded rehab closer to home reduces the length of time a stroke survivor may spend outside of their locality. The UHCW locality has the highest number of individuals over the age of 85 and they will receive bedded rehab further from home. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live.

Impact score: 1

Deprived Communities

Providing the same level of access to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on people within this group who are at risk of stroke in terms of consistency of care, although may result in possible delays in treatment where patients self-present at GEH or SWFT (90 at GEH and

51 at SWFT in total over course of one year). Providing bedded rehab closer to home reduces the length of time a stroke survivor may spend outside of their locality but the UHCW locality is a relatively high area of deprivation and stroke patients from this area who require bedded rehab will have to travel further from their home for this. The low proportion of stroke patients who are likely to require bedded rehab minimises this negative impact as well as the positive impact of localised services at GEH for deprived communities in that locality. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live.

Impact score: 1

Pregnancy/Maternity

Providing the same level of access to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on people who are at risk of stroke in terms of consistency of care, although may result in possible delays in treatment where patients self-present at GEH or SWFT (90 at GEH and 51 at SWFT in total over course of one year). Providing bedded rehab closer to home reduces the length of time a stroke survivor may spend outside of their locality although this is not true for those from the UHCW locality. As there is no data to suggest where pregnant or postpartum women are located this cannot be judged to disproportionately effect this group. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live.

Impact score: 2

Carers

Age:

A significant proportion of the older population are informal carers. Proposals under this scenario for ESD or community rehab should take into account the impact on the older carer and involve them in decision-making to avoid undue stress. A significant proportion of the region's people with a limiting disability live in UHCW locality so this scenario could adversely impact their carers if they are moved away for bedded rehab. The low proportion of stroke patients who are likely to require bedded rehab minimises this impact. This scenario will see enhanced community-based rehabilitation services which would likely help support carers of stroke survivors.

Impact Score: 1

Learning Disability/Mental Health:

Stroke patients are likely to require informal care, which can be complicated if the individual already has a limiting disability or mental health issue. Proposals under this scenario for ESD should consider the impact on the carer and involve them in decision-making to avoid undue stress. A significant proportion of the region's people with a limiting disability live in UHCW locality so this scenario could adversely impact their carers if they are moved away for bedded rehab. This scenario will see enhanced community-based rehabilitation services which would likely help support carers of stroke survivors.

Impact score: 1

Ethnicity

Proposals under this scenario for ESD should consider the impact on the carer and involve them in decision-making to avoid undue stress. The vast majority of the relevant BAME communities live in UHCW locality so this scenario could adversely impact their carers if they are moved away for bedded rehab. The low proportion of stroke patients who are likely to require bedded rehab minimalises this impact but to a lesser degree due to the higher potential patients involved.

Impact score: 1

Gender

Carers are more likely to be women. Proposals under this scenario for ESD should consider the impact on the carer and involve them in decision-making to avoid undue stress.

Impact score: 1

Deprived Communities

Proposals under this scenario for ESD should consider the impact on the carer and involve them in decision-making to avoid undue stress. The increased likelihood that a carer lives in poverty and the relative high level of deprivation in the UHCW locality, means that moving stroke patients from this locality for bedded rehab might adversely affect this group. The low proportion of stroke patients who are likely to require bedded rehab minimalises this impact.

Impact score: 1

Pregnancy/Maternity

It is unclear how carers linked to this group would be affected by service change as no data is available. Monitoring of care provision for this group should be undertaken in service.

Impact score: 1

Visitors

Age:

Fewer people in the GEH locality have access to a private vehicle than in the SWFT locality and older people generally make more use of public transport than the population as a whole. Centralising stroke services for the hyper-acute and acute stages therefore, will likely have a negative impact on visitors who are older. This is mitigated by the fact that the average length of time spent in acute care is lower at UHCW than the other sites and patients from the SWFT and GEH localities will be moved closer to home should they require bedded rehab. There is also no cost for people over the age of 65 for many local public transport services. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact Score: 1

Learning Disability/Mental Health:

Fewer people in the GEH locality have access to a private vehicle than in the SWFT locality and therefore visitors from this region may find it more difficult if services are centralised for the hyper-acute and acute stages. As the UHCW locality has the highest number of potential stroke patients of the three from this group this issue is somewhat mitigated unless they

require bedded rehab. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact score: 1

Ethnicity

The majority of the BAME population under investigation is in the UHCW locality and would see little change as a result of centralised services during the hyper-acute and acute stages of treatment. Focusing hyper-acute and acute care in one Centre would also allow relevant support services such as translation to be centralised making it easier for the small minority for whom English is not their main language. Higher use of public transport compared to the rest of the population will have a negative impact on those from BAME groups who live outside of the UHCW locality, but this is mitigated against by the fact of lower average time spend in the ASU at UHCW than the other Centres. The high proportion of BAME groups around UHCW mean that visitors will be adversely affected if they require bedded rehab, although this is expected to be a minority of patients. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact score: 1

Gender

Fewer people in the GEH locality have access to a private vehicle than in the SWFT locality and therefore visitors from this region may find it more difficult if services are centralised for the hyper-acute and acute stages. Bedded rehab for these geographies may mitigate against this. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact score: 1

Deprived Communities

Fewer people in the GEH locality have access to a private vehicle than in the SWFT locality and those from deprived communities make more use of public transport than the population as a whole. Centralising stroke services will therefore likely have a negative impact on visitors from deprived communities, particularly in the north of the region. Localising bedded rehab in these geographies will mitigate against this but as there is relative high levels of deprivation around UHCW moving patients from this region for bedded rehab will make it difficult for visitors. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact score: 0

Pregnancy/Maternity

Fewer people in the GEH locality have access to a private vehicle than in the SWFT locality and therefore visitors from this region may find it more difficult if services are centralised. Localisation of bedded rehab offers some mitigation for this but provides travel difficulties for those who require this service from the UHCW region. The implementation of ESD will mean

fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact score: 1

Scenario 2b proposed model plus: Hyper-acute and acute care at UHCW with specialist bedded rehab at LSH and commissioned bedded rehab locally.

Patients

Age:

Providing the same level of access to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on older people who are at risk of stroke in terms of consistency of care although may result in possible delays in treatment where patients self-present at GEH or SWFT (90 at GEH and 51 at SWFT in total over course of one year). Older patients will spend the entirety of their acute treatment at UHCW (average 15 days) meaning those from outside the locality will spend longer in an unfamiliar hospital. That the average length of stay at UHCW for acute patients is lowest of the three referenced sites goes some way to mitigating against this, especially as the average length of stay in the SWFT locality presently is almost twice as long than at UHCW. For the 30 per cent of patients who will require bedded rehab, this will be provided in their locality unless they require complex care. Patients therefore, will receive highly specialist care throughout their hyper-acute and acute treatment, potentially improving outcomes, and then, if required, receive bedded rehab close to home unless they have complex needs. The implementation of ESD will mean fewer days overall in hospital or rehab for eligible patients irrespective of where they live.

Impact Score: 2

Learning Disability/Mental Health:

Providing the same level of access to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on people who are at risk of stroke in terms of consistency of care, although may result in possible delays in treatment where patients self-present at GEH or SWFT (90 at GEH and 51 at SWFT in total over course of one year). Providing bedded rehab closer to home reduces the length of time a stroke survivor may spend outside of their locality if they live around GEH or SWFT although having additional care settings may lead to communication difficulties, especially if care provision is commissioned on an ad hoc basis for Coventry patients, leading to less continuity. The implementation of ESD will mean fewer days overall in hospital or rehab for eligible patients irrespective of where they live.

Impact score: 1

Ethnicity

Providing the same level of access to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on people who are at risk of stroke in terms of consistency of care although may result in possible delays in treatment where patients self-present at GEH or SWFT (90 at GEH and 51 at SWFT in total over course of one year). The vast majority of this population live in the UHCW locality, so reducing the likelihood they will spend time outside of their locality will positively impact this group. Having additional care settings may provide communication difficulties for a minority

for whom English may not be their first language. The implementation of ESD will mean fewer days overall in hospital or rehab for eligible patients irrespective of where they live.

Impact score: 2

Gender

There is no statistically significant variation between male and female instances of stroke in the region under the age of 85. Providing the same level of access to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on people who are at risk of stroke in terms of consistency of care although may result in possible delays in treatment where patients self-present at GEH or SWFT (90 at GEH and 51 at SWFT in total over course of one year). Providing bedded rehab closer to home reduces the length of time a stroke survivor may spend outside of their locality. The implementation of ESD will mean fewer days overall in hospital or rehab for eligible patients irrespective of where they live.

Impact score: 2

Deprived Communities

Providing the same level of access to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on people who are at risk of stroke in terms of consistency of care although may result in possible delays in treatment where patients self-present at GEH or SWFT (90 at GEH and 51 at SWFT in total over course of one year). Providing bedded rehab closer to home reduces the length of time a stroke survivor may spend outside of their locality. The high levels of deprivation in north Warwickshire has produced a low positive score as these communities may be adversely affected during the hyper-acute and acute stages in relation to distance from home and the potential improvement in terms of average time spent in hospital for these patients is negligible. The implementation of ESD will mean fewer days overall in hospital or rehab for eligible patients irrespective of where they live.

Impact score: 1

Pregnancy/Maternity

Providing the same level of access to hyper-acute and acute care and the specialist staff employed in the hyper-acute unit at UHCW will have a positive impact on pregnant/perinatal women who are at greater risk of stroke and eliminate possible delays in treatment where patients self-present at GEH or SWFT. Providing bedded rehab closer to home reduces the length of time a stroke survivor may spend outside of their locality. The implementation of ESD will mean fewer days overall in hospital or rehab for eligible patients irrespective of where they live.

Impact score: 2

Carers

Age:

A significant proportion of the older population are informal carers. Proposals under this scenario for ESD or community rehab should consider the impact on the older carer and involve them in decision-making to avoid undue stress. This scenario will see enhanced

community-based rehabilitation services which would likely help support carers of stroke survivors.

Impact Score: 1

Learning Disability/Mental Health:

Stroke patients are likely to require informal care, which can be complicated if the individual already has a limiting disability or mental health issue. Proposals under this scenario for ESD should consider the impact on the carer and involve them in decision-making to avoid undue stress. Re-locating care may place an extra burden on carers in terms of ensuring that stroke patients are communicated with and understand the change, especially if care providers do not have the appropriate expertise. This scenario will see enhanced community-based rehabilitation services which would likely help support carers of stroke survivors.

Impact score: 0

Ethnicity

Proposals under this scenario for ESD should consider the impact on the carer and involve them in decision-making to avoid undue stress. This scenario will see enhanced community-based rehabilitation services which would likely help support carers of stroke survivors.

Impact score: 1

Gender

Carers are more likely to be women. Proposals under this scenario for ESD should consider the impact on the carer and involve them in decision-making to avoid undue stress. This scenario will see enhanced community-based rehabilitation services which would likely help support carers of stroke survivors.

Impact score: 1

Deprived Communities

Proposals under this scenario for ESD should consider the impact on the carer and involve them in decision-making to avoid undue stress. The increased likelihood that a carer lives in poverty and the relative high level of deprivation in the UHCW locality means offering bedded rehab locally would have a positive impact on this group. This scenario will see enhanced community-based rehabilitation services which would likely help support carers of stroke survivors.

Impact score: 1

Pregnancy/Maternity

It is unclear how carers linked to this group would be affected by service change as no data is available. Monitoring of care provision for this group should be undertaken in service. This scenario will see enhanced community-based rehabilitation services which would likely help support carers of stroke survivors.

Impact score: 1

Visitors

Age:

Fewer people in the GEH locality have access to a private vehicle than in the SWFT locality and older people generally make more use of public transport than the population as a whole. Centralising stroke services for the hyper-acute and acute stages therefore, will likely have a negative impact on visitors who are older. This is mitigated by the fact that the average length of time spent in acute care is lower at UHCW than the other sites and patients from the SWFT and GEH localities will be moved closer to home should they require bedded rehab. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact Score: 1

Learning Disability/Mental Health:

Fewer people in the GEH locality have access to a private vehicle than in the SWFT locality and therefore visitors from this region may find it more difficult if services are centralised for the hyper-acute and acute stages. As the UHCW locality has the highest number of potential stroke patients of the three from this group this issue is somewhat mitigated. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact score: 1

Ethnicity

The majority of the BAME population considered relevant here live in the UHCW locality therefore would see little change as a result of centralised services during the hyper-acute and acute stages of treatment. Focusing hyper-acute and acute care in one Centre would also allow relevant support services such as translation to be centralised making it easier for the small minority for whom English is not their main language. This may become an issue in smaller, less specialised bedded-rehab. Higher use of public transport compared to the rest of the population will have a negative impact on those from BAME groups who live outside of the UHCW locality, but this is mitigated against by the fact of lower average time spend in the ASU at UHCW than the other Centres. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact score: 2

Gender

Fewer people in the GEH locality have access to a private vehicle than in the SWFT locality and therefore visitors from this region may find it more difficult if services are centralised for the hyper-acute and acute stages. Bedded rehab for these geographies may mitigate against this. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact score: 1

Deprived Communities

Fewer people in the GEH locality have access to a private vehicle than in the SWFT locality and those from deprived communities make more use of public transport than the population as a whole. Centralising stroke services will therefore likely have a negative impact on visitors from deprived communities, particularly in the north of the region. Shorter time spent in acute care at UHCW and localising bedded rehab in these geographies will mitigate the impact, in a limited way, against this. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact score: 1

Pregnancy/Maternity

Fewer people in the GEH locality have access to a private vehicle than in the SWFT locality and therefore visitors from this region may find it more difficult if services are centralised. Localisation of bedded rehab offers some mitigation for this. The implementation of ESD will mean fewer days overall in hospital or rehabilitation for eligible patients irrespective of where they live limiting the amount of time visitors will need to travel to an out-of-area care setting.

Impact score: 1