MOTT MACDONALD

Oxfordshire Transformation Programme

Integrated Impact Assessment: Post-Consultation report

July 2017

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Executive summary

Introduction to the integrated impact assessment

The aim of an integrated impact assessment (IIA) is to explore the potential positive and negative consequences of Oxfordshire Transformation Programme's proposals to transform healthcare in Oxfordshire. The purpose of impact assessments is not to determine the decision; rather it is to assist decision-makers by giving them better information on how best they can promote and protect the well-being of the local communities that they serve.

The scope of the Oxfordshire Transformation Programme service review and study area for the IIA is the whole of the county of Oxfordshire. A health impact assessment, a travel and access impact assessment, an equality impact assessment (in which the impacts of the proposals on protected characteristic groups[1] and deprived communities are assessed) and a sustainability impact assessment have been conducted as part of this IIA.

An outline of service changes proposed by the Oxfordshire Transformation Programme

The Oxfordshire Transformation Programme is designed to develop plans for integrated GP, community, and hospital services. Its aims are to:

- provide innovative ways of delivering outcomes for a society that lives longer and expects more;
- maximise the value of Oxfordshire's health and social care spend;
- find ways to become better at preventing and managing demand; and
- help people to take greater responsibility for their own health and prevent avoidable disease

Phase One

The first phase of the Oxfordshire Transformation Programme focuses on those services for which the Clinical Commissioning Group (CCG) has the most pressing concerns about workforce, patient safety and healthcare (for example, where temporary changes have been made) or where the proposed changes have already been piloted. The services include:

- Ambulatory care
- Critical care facilities at the Horton General Hospital (HGH)
- Maternity services: including obstetrics, special care baby unit (SCBU) and emergency gynaecology.
- Planned care services at the HGH
- Stroke services

[1] These are set out as age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex and sexual orientation in the Equality Act 2010.

Phase Two

The second phase of the Oxfordshire Transformation Programme will focus on proposed options for the reconfiguration of the following services:

- Urgent and emergency services:
  - Current accident and emergency (A&E) centres
  - Minor injuries units and first aid units
  - Urgent treatment centres
  - Non-elective inpatient services
- Rehabilitation beds for stroke patients
- Paediatric services
  - Paediatric inpatient services
  - Current processes for assessment, including a short stay paediatric assessment unit or clinical decision unit
  - Paediatric elective day case care
  - Provision of paediatric outpatient clinics
- Planned care services across the county
- Community hospital services
- Maternity services
  - Configuration of maternity led units (MLU) across Oxfordshire
  - Increase in maternity clinics (antenatal, postnatal and breastfeeding)
  - Establishing a comprehensive perinatal mental health pathway
- Primary Care

The work of the Oxfordshire Transformation Programme will feed into the over-arching five-year Sustainability and Transformation Plan (STP) across Buckinghamshire, Oxfordshire and Berkshire West. For more information on the detail of the programme please see chapter two.

This IIA report focuses on the services changes in Phase One of the programme only. A separate IIA report will be prepared to for Phase Two of the programme.

Impact assessment of proposed changes

The following sections summarise the likely positive and negative impacts identified through this IIA, under the four impact topic headings.

Health impacts

Positive impacts

- **Improved outcomes for patients** will be achieved as a result of concentrating specific services on certain hospital sites, or creating new specialist centres such as a HASU or a diagnostic centre.
- **Patient experience will be improved** through access to joined up care provided through redesigned hospital services where a one stop shop for diagnostic and outpatient services will be available.
- The concentration of expertise on certain sites, such as obstetric care at JRH, will allow **clinical resources to be pooled, supporting the achievement of workforce standards**.

- Through the creation of larger, more coordinated and resilient teams, with stability and job security, **staff satisfaction may be positively impacted**.

Negative impacts

- **Staff may experience negative impacts if they are required to change their permanent place of employment.** Associated impacts may include some staff having to travel further to their place of work, which is likely to have an impact in terms of personal costs of travel and the inconvenience associated with additional journey times. Ultimately, this may have an impact on the **retention of staff.**
- **Capacity at JRH and the ambulance service** is likely to be impacted by proposed changes around critical care, stroke and maternity services.
- A reduction in the number of hospitals providing some services could potentially have a **negative impact the resilience of services**.
- **Potential transitional negative impacts** could be experienced **during the implementation of planned service changes**. Historical experience has shown that this can impact capacity, operational effectiveness, and patient experience, unless this can be appropriately managed.

Travel and access impacts

Negative impacts

- Should obstetric-led maternity services not be provided at the HGH in future, 52 per cent of patients would be able to able to access obstetric-led maternity services within 30 minutes by blue light, in comparison to 73 per cent of maternity patients currently.[2]
- Should stroke services not be provided at the HGH in future, 55 per cent of patients would be able to able to access stroke services within 30 minutes by blue light, in comparison to 71 per cent of stroke patients currently.
- There are concerns about the capacity of car parking, particularly at the JRH currently but at the HGH in the future. Both hospitals will see a change or rise in patient activity as Phase One plans are implemented.

Equality impacts

For the services proposed for reconfiguration, evidence was reviewed to identify those equality groups with protected characteristics who may have a disproportionate need[3] for these services. The output from this is presented below; the ticks indicate where people from the identified group are more likely to need access to each, as compared to the general population.[4]

[2] It should be noted that not all maternity patients will require obstetric-led maternity care; some patients will be able to continue to give birth at the HGH at the MLU. Impacts associated with MLU proposals will be analysed further in the IIA of phase two of the Oxfordshire Transformation Programme.

[3] Disproportionate need for services = having a greater than average need for a service i.e. a which is over and above the level of need that is typical of the general population.

[4] Where there is not a tick in a particular cell, this is not to say that other groups will not need these services; rather it suggests that there does not presently exist a body of strong clinical evidence indicating this group's need is disproportionate.

Table 1: Summary of scoped in groups

Group	Ambulatory care	Maternity	Planned care services	Stroke
Age (children under 16)			✓	
Age (older people aged 65 and over)	✓		✓	✓
Deprived communities		✓	✓	✓
Disability			✓	✓
Gender reassignment	✓		✓	
Marriage and civil partnership				
Pregnancy and maternity	✓	✓		
Race and ethnicity: BAME communities		✓	✓	✓
Religion and belief[5]				
Sex: Female		✓		
Sex: Male				
Sexual orientation				

Source: Mott MacDonald scoping report

Positive impacts

- **Improved health outcomes**: patients identified as having a disproportionate need for the services under the phase one review are likely to use these services more and, therefore, experience the benefits of improved health outcomes to a greater extent.

Negative impacts

- **Increased stress and anxiety**: increased journey times or the need to make different and/or unfamiliar journeys to access care, is likely to affect some equality groups more than the general population.
- **Increased costs associated with travel**: some patients and visitors will experience increased travel costs, which are likely to disproportionately impact upon those on lower incomes.
- **Lack of viable alternative transport methods**: the high financial cost of certain transport methods could act as a barrier to utilising alternative transport modes to cars.
- **Access difficulties for visitors and carers**: increased journey times for visitors and carers may limit or prohibit regular visits. This could affect patient experience in hospital, and could disproportionately impact those who are more reliant on assistance and support.
- **Unfamiliarity of hospital**: some patients and visitors can become confused or disorientated when they are at an unfamiliar hospital. This can particularly affect older people and disabled people.

Sustainability impacts

Total emissions from patient travel in the ‘do -something’ scenario are predicted to be 4,313tCO_2e per annum, and emissions associated with patient travel without the changes are estimated to be 4,293tCO_2e. Within the context of the total travel emissions from the NHS,

[5] Please note that for religion and belief a differential need was identified for planned care. This is due to a differential need for diabetes services by certain religious groups that adhere to fasting practices. This evidence is further explained and captured in appendix D.

which are 3.2MtCO_2e, **the increase in emissions due to the changes to services is considered to be negligible.**

Enhancements and mitigations

The following table provides a summary of the key enhancement and mitigation measures that have been identified through this IIA.

Table 2: Enhancements and mitigations summary table

Impact assessment area	Summary of mitigations and enhancements
Health	• **Programme level** to effectively manage implementation concerns through active change management and engagement with stakeholders • **Service level** to ensure that clinical interdependencies are monitored and reviewed • **Workforce plan and engagement** to understand further the consequences of the potential impacts and recruitment
Travel	• **Promotion of public transport** so that the level of traffic accessing the sites does not increase beyond necessity • **Car park review and management strategy** to mitigate the parking issues that have been identified • **Encouraging greater use of active travel modes** so that the level of traffic accessing the sites does not increase beyond necessity and to promote overall health benefits • **Communication and marketing** to ensure effective adoption of any travel plan
Equality	• **Collaboration with others** to mitigate increased journey times for patients and their families • **Communication and information** to ensure that local communities understand how to access and use services if the proposed changes are made.
Sustainability	• N/A: impacts are negligible

Source: Mott MacDonald

1 Scope and approach

1.1 The Oxfordshire Transformation Programme

The Oxfordshire Transformation Programme is designed to develop plans for integrated GP, community, and hospital services. Its aims are to:

- provide innovative ways of delivering outcomes for a society that lives longer and expects more;
- maximise the value of Oxfordshire's health and social care spend;
- find ways to become better at preventing and managing demand; and
- help people to take greater responsibility for their own health and prevent avoidable disease.

1.1.1 The study area

The impact assessment considers the impacts on patients that use hospitals within Oxfordshire. Primarily the patients that use hospitals within Oxfordshire are residents of the county and this is where most impacts are experienced. It is acknowledged that some patients will come from outside Oxfordshire to use the services provided in Oxfordshire hospitals, for example patients resident in south Northamptonshire or Stratford upon Avon. Where possible analysis has been undertaken to consider the impacts on these patients and particularly the journey time impacts which may be experienced. For further information please see section 1.5.

The Oxfordshire Transformation Programme is split into two phases as describe below.

1.1.2 Phase One

Phase One of the programme focusses on those services for which the Oxfordshire CCG has the most pressing concerns about patient safety, workforce and healthcare. For example, these may be areas where temporary changes have been made or where the proposed changes have already been piloted. The services include:

- Ambulatory care
- Critical care facilities at the HGH
- Maternity services: including obstetrics, SCBU and emergency gynaecology
- Planned care services at the HGH
- Stroke services

1.1.3 Phase Two

The second phase will focus on proposed options for the reconfiguration of the following services:

- Urgent and emergency services:
  - Current A&E centres
  - Minor injuries units and first aid units
  - Urgent treatment centres
  - Non-elective inpatient services
- Rehabilitation beds for stroke patients
- Paediatric services

  - Paediatric inpatient services
  - Current processes for assessment, including a short stay paediatric assessment unit or clinical decision unit
  - Paediatric elective day case care
  - Provision of paediatric outpatient clinics
- Planned care services across the county
- Community hospital services
- Maternity services
  - Configuration of MLU across Oxfordshire
  - Increase in maternity clinics (antenatal, postnatal and breastfeeding)
  - Establishing a comprehensive perinatal mental health pathway
- Primary Care

The work of the Oxfordshire Transformation Programme will feed into the over-arching five-year STP plan across Buckinghamshire, Oxfordshire and Berkshire West. For more information on the detail of the programme please see chapter two.

This IIA report focuses on the proposed services changes in Phase One of the programme only. A separate IIA report will be prepared for Phase Two of the programme.

1.2 The integrated impact assessment

In February 2017, the Oxfordshire Transformation Programme team commissioned Mott MacDonald to undertake an IIA of its proposals. The purpose of the IIA is help those involved in making decisions on future services configuration understand the impacts that could be experienced by the local population and, in particular, identify those groups and communities who may be most sensitive to changes.

Impact assessments are a key component of policy-making and act to guide and evaluate investment.

They have long been identified as a mechanism by which potential effects on health outcomes and health inequalities can be identified and redressed prior to implementation. They provide:

"…a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population".[6]

The aim is to explore the positive and negative consequences of different options and produce a set of evidence-based, practical recommendations, which can then be used by decision-makers to maximise the positive impacts and minimise any negative impacts of proposed policies or projects.[7]

It is best practice within impact assessments to undertake analysis for the whole population, but also to highlight if, and where, certain sections of the population will experience greater effects (either positive or negative). Assessment of impacts and recommendations for opportunities and mitigations are based on the participation of relevant and informed stakeholders, thereby giving the impact assessments independence and democratic legitimacy.

[6] European Centre for Health Policy (1999): 'Health Impact Assessment: main concepts and suggested approach' (Gothenburg Consensus Paper), Brussels. Available at: www.who.dk/document/PAEGothenburgpaper.pdf,

[7] Taylor, L. and Quigley, R. (2002): 'Health Impact Assessment: A review of reviews'

1.3 The objectives of the IIA

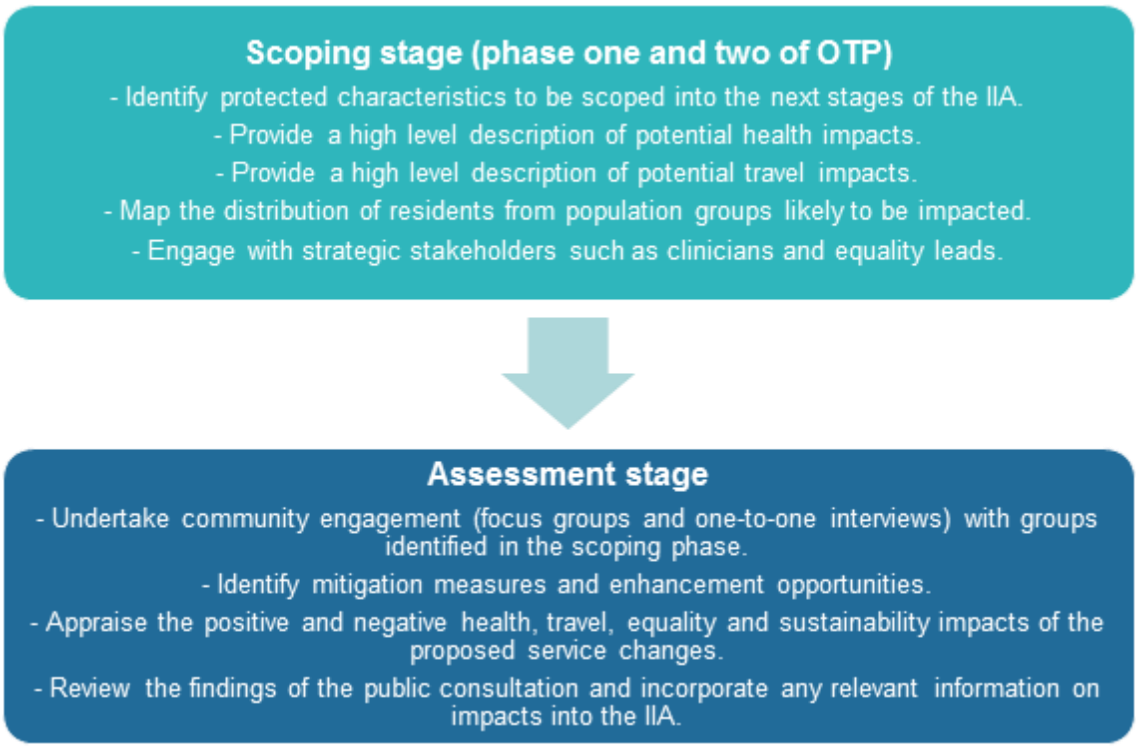
The objectives of this IIA are to:

- Identify the health impacts for the population of Oxfordshire as a result of the proposed Oxfordshire Transformation Programme, Phase One service proposals.
- Identify travel and access impacts.
- Identify which (if any) of the protected characteristics groups[8] are more likely to be affected by the proposals. This is critical in order to support the Oxfordshire Transformation Programme in meeting its obligations under the Equality Act 2010.[9]
- Provide recommendations on ways in which positive impacts can be maximised and adverse effects can be mitigated or minimised.

1.4 Methodology

The diagram below sets out the methodology of the IIA.

Figure 1: Methodology of the IIA



Source: Mott MacDonald

[8] Protected characteristic groups are defined in the Equality Act (2010). They are: age; disability; gender reassignment; marriage and civil partnership; pregnancy and maternity; race; religion or belief; sex; sexual orientation. In line with industry good practice, we also consider the impact of changes on those from deprived communities.

[9] Equality Act 2010 (Commencement No.3) Order 2010.

1.4.1 Scoping

A scoping report was issued at the end of the first stage of this IIA. This was based on analysis of available secondary data pertaining to the population and health conditions, as well as the service needs of the Oxfordshire population.

The scoping report presented preliminary observations on which groups with protected characteristics were considered to have disproportionate need for the hospital services under review. It also mapped the density and distribution of these groups across Oxfordshire, in order to illustrate where there are high numbers of these groups locally. The purpose of this was to ensure that the assessment focusses on those groups that are most likely to be affected by the Oxfordshire Transformation Programme proposals. Please review appendix A for a comprehensive bibliography of the sources used to inform this IIA.

1.4.2 Assessment of health and equality impacts

In undertaking this assessment of the health and equality impacts, the study has:

- Sought the views of the representatives from patients and protected characteristic groups in Oxfordshire through one-to-one telephone interviews and focus groups, with a focus on the north of the county and on those patient groups which were considered most likely to be affected by service changes.
  - 21 representatives from patient and protected characteristic groups were invited to take part in one-to-one telephone interviews
    - Oxfordshire CCG supplied nine representatives, Mott MacDonald identified a further 12 representatives via a stakeholder mapping exercise
    - Nine interviews were completed
  - Two focus groups were conducted with residents in Banbury
    - Group one comprised 10 members of the public from in or around Banbury aged 65 years or more
    - Group two comprised seven members of the public from the most deprived postcodes in Banbury[10]
- Sought the views of clinicians in Oxfordshire through one-to-one interviews
  - Four clinicians were invited to take part in one-to-one telephone interviews. Access to clinicians was facilitated by Oxfordshire CCG. Four interviews were completed
- Refreshed and updated evidence presented in the scoping report which used clinical and other published evidence to identify those equality groups most likely to experience certain health conditions and, therefore, most likely to be affected by the proposed service changes.

1.4.3 Assessment of the travel and access impacts

In undertaking an assessment of the potential travel impacts, transport isochrones (areas of equal travel time) and patient data provided from the Commissioning Support Unit (CSU) were analysed. Where the travel and access assessment aligns with the proposals, analysis has been carried out linking patient's home locations, characteristics and travel times in order to determine the impacts on journey times to services should the Oxfordshire Transformation Programme changes be introduced. Analysis provides an estimation of the number of patients impacted. Lower Super Output Areas (LSOAs) with less than six patients were supressed to ensure patient confidentiality.

[10] Please note that 10 participants were invited to the group, but only seven attended on the day

Impacts for blue light ambulance journey time have been presented in the assessment of travel and access as the journeys by patients for the services assessed would typically be made by this mode of transport, impacts for private car and public transport are included in appendix F.

The blue light ambulance journeys have been measured on the basis of 'pick up to destination' both at non-peak and peak times.

1.4.4 Assessment of the sustainability impacts

In undertaking an assessment of the sustainability impacts, this assessment only considered greenhouse gas emissions (GHG)[11]. In doing so, it considered:

- Patient travel data available between October 2015 and October 2016 (1 year). The data is broken down into service areas (e.g. maternity, planned care etc.), and details the numbers of patients visiting all local hospitals by journey time. Travel with and without the proposed changes has been compared.

For more detailed information on the methodology for the sustainability impacts, please refer to appendix E.

1.5 Methodological assumptions and limitations

It is important to set out the following principles on which this IIA is based:

- It is not the purpose of the IIA to justify, defend or challenge the rationale or principles behind proposed reforms put forward by Oxfordshire CCG.
- The purpose of the IIA is to inform rather than decide. The objective is not to determine the decision, but to assist decision makers by providing better information.
- Socio-demographic analysis (see appendix D) has been undertaken to provide an insight into the geographical distribution of certain key populations. This profiling concentrates on the population groups most sensitive to the proposed changes i.e. those who have been identified as having a 'disproportionate need' for the services under review.
- Socio-demographic analysis has been conducted on the basis of the clinical service domains in Phase One of the programme.
- With respect to the engagement that has been undertake to support this IIA:
  - Four interviews were undertaken with clinicians. Access to additional clinicians involved in the programme was requested but further contacts were not made available by the CCG.
  - Community groups were invited via email to participate in this report through one-to-one interviews. They were sent two reminder emails to take part in an interview.
  - Two focus groups were undertaken in Banbury (with older people and those from deprived communities).[12]
- All hospitals in the transport analysis provided to Mott MacDonald by the CSU are aligned against the service provision.
- The travel modelling parameters are set to provide an indication of typical journeys. They will not exactly match each individual patient experience.
- The transport and access impact analysis has been conducted at two levels:
  - all Oxfordshire CCG registered patients irrespective of residence who were accessing hospitals provided in the analysis from the CSU; and

[11] Please see chapter six for further information as to the rationale behind this assessment.

[12] Please note that Mott MacDonald suggested that two additional focus groups should take place to enable a wider selection of participants. However, the CCG did not agree to this.

  - all Oxfordshire CCG registered patients, who are resident in Oxfordshire and only accessing hospitals located in Oxfordshire.
- To obtain an understanding of the car parking at the HGH and JRH sites, video surveys were conducted in June 2017 with cameras set up across each of the car parks at two hospital sites – the HGH and the JRH. The cameras captured the area around entry barriers and observed any queues forming on surrounding roads leading into the sites. For further information, please refer to the hospital car parking survey, which was submitted to the CCG in addition to this IIA.
- The proposed changes to NHS services have the potential to change the level of GHG (green-house gas) emissions in three principle areas: travel, building energy use, and procurement. At this stage, it is unclear how the changes will alter the energy consumption of NHS buildings, and how consumption of consumables (procurement) will be affected.
- The new planned care services to be located at the HGH could result in higher levels of energy use and consumption, and therefore emissions. However, it is not possible to quantify these emissions at present. As such, the assessment presented here only examines the GHG emissions from travel. Travel includes journeys undertaken by NHS staff, visitors, patients, and contractors. The travel data made available for this assessment was patient data. As such, a quantitative analysis has only been undertaken on patient travel. However, it is likely that the changes will affect the travel of NHS staff, visitors, and contractors in a similar manner.
- The impact on patients living outside Oxfordshire has been quantitively considered in chapter four (travel and access) and section 5.2.2 (travel and access equality impacts). The remaining health, equality and sustainability impacts will be realised regardless of a patient's address.
- Level 3 critical care has not been included in the travel and access analysis due to the low volumes of patients accessing the service.
- Level 3 critical care has not been included in the analysis of the equality impacts. This is because of the dependency of other clinical services currently being delivered at the HGH which will require access to Level 3 critical care. These clinical specialities (such as complex theatre) are not included in Phase One of the Oxfordshire Transformation Programme and will be considered in the IIA of Phase Two.

- The GHG has used the following parameters:
  - To estimate journey distances for the GHG assessment, the medium journey time has been used alongside the average speed of local A roads. To estimate GHG emissions from distances, the mode of transport has been assumed to be in line with the national breakdown of distance travelled by each mode, excluding air, motorcycle and peddle cycle.

1.6 Structure of the report

The remainder of the report is structured as follows:

- Chapter two: detail on the Oxfordshire Transformation Programme
- Chapter three: assessment of health impacts
- Chapter four: assessment of travel and access impacts
- Chapter five: assessment of equality impacts
- Chapter six: assessment of sustainability impacts
- Chapter seven: conclusions including opportunities for enhancement and mitigation measures

2 Oxfordshire Transformation Programme

Since early 2015, the Oxfordshire Transformation Programme Board has been looking at how healthcare across acute hospital services and in the community can be improved. The Programme was established to bring partners together to address the challenges that the health and social system faces, including the rising demand for services and budgetary pressures. The agreed vision statement for Oxfordshire is: 'Best care, best outcomes, best value for all the people of Oxfordshire'.[13]

2.1 The need for review

A number of lifestyle factors impact on current and future health care needs in Oxfordshire. In general, the county's residents are healthier and live longer than elsewhere in England. However, there is a concern that health outcomes are inconsistent across the county. People living in deprived areas are not living as long as those in more affluent areas and those who are more deprived also experience more years of disability. The life expectancy gap within Oxfordshire is as much as nine years, and the disability-free life expectancy gap can rise as high as 12 years[14].

In addition, there is increasing demand for services:

- The number of people aged over 85 in Oxfordshire is anticipated to rise from around 15,000 to around 24,000 between 2011 and 2026.
- In 2014/15 there were around 28,100 GP-registered patients aged 17 and over in the OCCG area with a diagnosis of diabetes, an increase of 1,000 (or 3.7%) since 2013/14.
- There are increasing numbers of people who have several long term conditions, which increases the complexity of their care. In 2014/15 there were around 5,000 Oxfordshire GP-registered patients who had a diagnosis of dementia, an increase of 1,000 (or 25.3%) since 2013/14.
- Demand for both children's and adult social care is growing, adding pressure to a health and care system that historically has a poor performance in relation to delayed transfers of care (DTOC).

There is going to be growth across all service areas included in Phase One. The forecasted growth for 2016-2021 can be summarised as:

- Increase in need for level three critical care of approximately 5%
- Increase in need for obstetric services of approximately 5%
- Increase in need for diagnostics services of approximately 16%
- Increase in non-elective admissions (including stroke) of approximately 10%[15]

Overall, the health and social care system in Oxfordshire, as in other localities around England, is increasingly struggling to deliver good access to services for the whole population when they require them. The situation is further intensified by financial constraints and workforce shortages across the public sector.

[13] http://www.oxonhealthcaretransformation.nhs.uk/what-is-the-vision/consultation-documents/160-pcbc-appendix-3-8-draft-oxfordshire-storyboard-v3-6-wip/file

[14] ONS 2011 Mid-Year Population Estimates, ONS death data, and ONS mortality assumptions for future years (taken from 2011 SNPPs)

[15] Mott MacDonald (derived from Oxfordshire Transformation OTP PCBC for Acute Hospital Services: Phase One)

2.2 The future of hospital services in Oxfordshire: the options for Phase One

Over 50 clinicians from the Oxford University Hospitals Foundation Trust (OUHFT) were involved in generating a range of options for clinical models, these were then assessed against criteria. This process resulted in the emergence of options relating to clinical services specifically located at the HGH.

2.3 Strategic context and the case for change

The overarching 'case for change' developed by the Oxfordshire Transformation Programme demonstrates that 'doing nothing' is not an option if the county's population is to continue to enjoy good health. It is also critical that accessibility and quality issues are addressed to ensure that everyone has access to high quality care when required. The Programme has recognised the 'whole system' linkages between general practice, community, and hospital services, with changes to models of care in one service area likely to impact on models of care delivered by others[16]. The table below details the options for Phase One.

Table 3: Options for Phase One

Clinical area	Current provision	Option 1 – "Do nothing"	Option 2 – "Do something"
Ambulatory care	Currently the 'Rebalancing the System' is in place and features: • Single point of access to medical review, specialist opinion and diagnostics. • Reducing long waits for medical and 'frailty' patients in A&E departments. • Access to senior, expert decision makers seven days a week between 08:00 - 22:00. • Ambulatory care pathway managed by a single MDT and supported by psychological medicine. • Patient and carer involvement in decision making. • Prompt discharge planning within 24hrs unless hospital treatment is necessary. • Post discharge support. • Effective and appropriate rehabilitation and re-ablement after acute illness.	Reopening acute hospital beds, and removing the Liaison Hub, Hospital at Home service, and ambulatory assessment units	Make permanent the current pilot arrangements
Critical care	Level 2 and level 3 critical care is currently delivered at HGH and the John Radcliffe Hospital (JRH) though its adult intensive care unit and the Churchill intensive care unit.	Maintain 6-bedded Level 3 critical care unit (CCU) at HGH.[17]	Create a single Level 3 CCU within Oxfordshire, located at the JRH in Oxford. CCU at the HGH would function at Level 2, working in conjunction with the major centre.[18]

[16] Oxfordshire Transformation Programme: Pre-Consultation Business Case (Acute Hospital Services: Phase One)

[17] Level 3 CCU is defined as patients requiring two or more organ support (or needing mechanical ventilation alone). This level of care is staffed with one nurse per patient and usually with a doctor present in the unit 24 hours per day.

[18] Level 2 CCU is defined as patients needing single organ support (excluding mechanical ventilation) such as renal haemofiltration or ionotropes and invasive BP monitoring. It is staffed with one nurse to two patients

Clinical area	Current provision	Option 1 – "Do nothing"	Option 2 – "Do something"
Stroke	There is a Hyper Acute Stroke Unit (HASU) at the JRH. An acute/Rehabilitation Stroke Unit at the HGH and a transient ischaemic attack (TIA / 'mini stroke') outpatient clinics at the JRH and HGH	Maintain acute/rehabilitation stroke unit at HGH	Centralise stroke services by enabling direct conveyance of all appropriate Oxfordshire patients to a HASU at the JRH in Oxford - supported by the roll out of countywide Early Supported Discharge to improve rehabilitation and outcomes.
Planned care services	Planned care services are offered at both the HGH and at the Oxford Hospitals (incorporating JRH, the Churchill and the Nuffield Orthopaedic Centre).	Maintain current level of planned care activity at HGH	Separation of elective from emergency interventions. Develop a new modern diagnostic facility at HGH to deliver diagnostic procedures (MRI, CT scanners and ultrasound etc.), rapid assessment and reduced travel to Oxford for routine diagnostic imaging. Develop a new outpatient facility at HGH with capacity for significant transfer of outpatient activity from Oxford in order to make local services more accessible to north Oxfordshire's population. This includes 'one stop clinics' which should also reduce multiple journeys. Introduce an advanced pre-operative assessment unit at HGH to enable smooth running of elective interventional services Develop a coordinated theatre complex at HGH to improve surgical throughput and complement an enhanced elective care centre.
Maternity	OUHFT provides maternity services for women in Oxfordshire and for up to 1,000 women from surrounding counties. Services are delivered in two separate obstetric units (at JRH and HGH), one alongside MLU and three freestanding MLUs. The MLUs are in Wallingford, Wantage, Cotswold and Spires.	Maintain an obstetric unit, SCBU and emergency gynaecology service	Create a single specialist obstetric unit for Oxfordshire at the JRH, supported by midwife led units in both the north and the south of the county: Necessary consequential changes arising from the consolidation of obstetric services at the JRH: • Transfer of SCBU services from HGH to JRH • Centralisation of emergency gynaecology services at JRH. Make permanent the midwife led unit at HGH

Source: Oxfordshire Transformation Programme, Pre-Consultation Business Case

Appendix B sets out the baseline for each service area, detailing the current providers and the future proposed provision.

3 Health impacts

The following chapter sets out the likely positive and negative health impacts of the proposed phase one service changes.

3.1 Ambulatory care services and acute bed closures

Proposals to develop ambulatory care services are being considered in both phases of the transformation programme. Within this phase, proposals are focused on making permanent the current pilot on 'rebalancing the system' delayed transfer project and ambulatory care developments which have delivered:

- A multi-agency Liaison Hub to manage complex delayed discharge patients by transfer to nursing home beds managed by the hub. This includes 134 intermediate care beds commissioned by the system in local nursing homes. This is further supported by an extended Supported Hospital Discharge Service (SHDS) and Discharge Liaison Team, to co-ordinate delayed discharges across the four OUHFT sites to streamline the discharge process.
- An ambulatory care pathway for medical patients which incorporates acute ambulatory units (AAUs) at both JRH and HGH. These are able to assess, diagnose and treat patients who are referred by the GP or A&E, discharging them home with a follow up if required, or transferring them to an inpatient ward. The ambulatory pathway also includes providing care in-reach to people's homes (to deliver acute care for a set period of time).

Proposals seek to make permanent the decommissioning of 110 acute hospital beds and the remaining 36 subject to NHSE assurance, should these developments be adopted. This reduction in beds is associated to the reduction in hospital activity resulting from the movement of activity into the ambulatory care model and the avoided delayed discharges and transfers.

3.1.1 Potential positive impacts

The negative effects of delayed transfers of care are well established. They include:

- The effects on the patient as longer stays in hospital are associated with increased risk of infection, low mood and reduced motivation, which can affect a patient's health after they've been discharged and increase their odds of re-admission. The National Audit of Intermediate Care shows that, for older patients, 'a wait of more than two days negates the additional benefit of intermediate care, and seven days is associated with a 10 per cent decline in muscle strength'.[19]
- Preventing staff from treating other patients with greater urgent needs.
- A financial consequence as delayed patients incur the cost the hospital staff time and space, when this could be more effectively used.
- Indirect effects in the flow of patients through a hospital and the wider impact on the pool of hospital beds is used.[20]

[19] NHS Benchmarking Network (2014) National Audit of Intermediate Care 2014 summary report4

[20] The Kings Fund (2015) Delayed transfers of care

This is also supported by a national Healthwatch enquiry which highlighted the negative experiences of patients as a result of delayed or untimely discharge.[21] **Reducing these delayed transfers of care and their associated negative effects, therefore has the potential to improve the quality care for patients and enhance their experience of care.**

The multi-agency Liaison Hub was established in December 2015, designed to enable patients who no longer needed acute medical care to move from the hospital setting into a nursing home; thereby removing a delayed transfer in care. Local evaluation of the Liaison Hub (from December 2015 to August 2016) has demonstrated the potential scope of this improvement, identifying that:

- During this period, 483 patients were transferred from a hospital bed to a nursing home, with support.
- In June 2016, the lowest number of patients (68) delayed in OUHFT beds in the previous five years was recorded. The number of patients delayed in community hospital beds did not show a rise.
- A survey was undertaken of patients (and their relatives) discharged through the Liaison Hub. Of those who responded:
  - 77.5% strongly agreed or agreed that they were involved in the decision to be moved to a nursing home, and that they had sufficient information about their transfer and the support they would receive once in the nursing home;
  - 77.5% agreed that the nursing home was a better environment for them while they awaited further care; and
  - 92.5% of respondents agreed they had been treated with dignity and respect in the move to the nursing home.

This local evidence is also supported by national best practice. This highlights that integrated hubs, a single point of contact and Discharge Liaison Teams which include all relevant professionals are practical solutions to resolving these delayed transfers and discharges.[22]

Making permanent the Liaison Hub and supporting discharge services therefore provides an opportunity to reduce these delayed transfers of care further and on a permanent basis.

This will in turn reduce the negative effects these create on patients and health system, and instead providing supportive and personalised care for patients.[23] Should these developments be withdrawn, it is likely that delayed transfers of care and delayed discharges would increase.

There is also an established evidence base which makes the case for ambulatory emergency care (AEC) and the positive impacts associated with this model of care. The Royal College of Physicians reports that “implementing AEC ensures that, where appropriate, emergency patients presenting to hospital for admission are rapidly assessed and streamed to AEC, to be diagnosed and treated on the same day with ongoing clinical care. Processes are streamlined, including review by a consultant, timely access to diagnostics and treatments all being delivered within one working day. **This has improved both clinical outcomes and patient experience, while reducing costs**”.[24] More specifically, in terms of positive impacts they highlight that “a wide range of acute hospitals have now developed AEC processes and pathways, although there is a wide variation in models and the stages of implementation.

[21] Healthwatch England (2015) Safely home: What happens when people leave hospital and care settings?
[22] NHS England (n.d) Quick guide: Improving hospital discharge into the care sector
[23] Healthwatch England (2015) Special Inquiry: Safely Home, Findings
[24] Royal College of Physicians (2014) Acute care toolkit 10: Ambulatory Emergency Care

Several sites have demonstrated considerable progress in a variety of process and system metrics, for example:

- Over 30% of emergency referrals managed through AEC in some units.
- Reductions in medical outliers.
- Improvement in the 4-hour standard.
- Closure of escalation beds.
- Improved patient experience.[25]

The Royal College of Physicians advocates rapid access to an ambulatory emergency care unit, as well as ongoing ambulatory care may be provided either directly through the AEC unit or by community services, primary care or hospital-at-home, and this is supported by other national bodies. For example, NHS England recommends that each acute site should consider establishing an AEC facility that is resourced to offer emergency care to patients in a non-bedded setting, although the precise model may vary. They note that **ambulatory emergency care is clinically safe, reduces unnecessary overnight hospital stays and hospital inpatient bed days.**[26]

The model being set out in Oxfordshire is in line with this guidance, through the implementation of the ambulatory pathway which comprises both AAUs and in-reach into people's homes. Under the proposed service changes the new ambulatory care model will result in 2,596 inpatient medical non-elective admissions being replaced with a zero-day attendance at HGH, as these patients would receive ambulatory care.

It is apparent that **a reduction in bed days is an anticipated benefit** of both implementing AEC[27] as well as delayed transfers of care on a permanent basis. Providing that a sufficient level of bed capacity is already available within the local system, this will enable a shift in resources to be made from hospital based care to this new model of care. One stakeholder[28] commented on the positive impact that the ambulatory service model and hospital at home has already had in terms of delivering **same day care for patients,** facilitating a management plan to be developed, as well as supporting increased care to be provided in a patient's home. They consider that this has had a **positive impact in reducing hospital admissions** (which can result in a DTOC), as well as on primary care capacity. Another stakeholder commented that by receiving **care closer to home, family and friends will be better able to visit patients and support their recovery**. It has been highlighted however that for those who may be isolated in their homes, it is essential that the care provided is comprehensive. This reflects views expressed within the public consultation; there is support for efforts to prevent people being admitted to an acute hospital unnecessarily and for discharged patients to be supported more effectively, provided that appropriate home or community based care is available.[29]

Through increased collaboration between all parties involved in discharge planning and the Liaison Hub, as well as delivery of the ambulatory care model, a further positive impact is that **care has the potential to become better coordinated, reducing unnecessary duplication and enabling resources being used more effectively.**

[25] Royal College of Physicians (2014) Acute care toolkit 10: Ambulatory Emergency Care
[26] NHS England (2015) Transforming urgent and emergency care services in England
[27] Royal College of Physicians (2014) Acute care toolkit 10: Ambulatory Emergency Care
[28] Engaged with as part of this IIA
[29] QA Research (May 2017) Big Health and Care Consultation

3.1.2 Potential negative impacts

One stakeholder[30] commented that extending these services to a county wide basis can **stretch current workforce resources, resulting in increased travel time for staff and decreased patient facing time**. In terms of resources more widely, stakeholders through the public consultation expressed concern that **the social care infrastructure is not currently sufficiently developed to support the roll out of this model of care**, and this could constrain the potential impact of the initiative.

This reduction in acute beds, does have the **potential to create pressures on the wider bed pool, particularly at times of the year when there is a high volume of patients**. Through the public consultation, stakeholders expressed a concern regarding the **feasibility of removing hospital capacity** (despite the implementation of the ambulatory model of care), highlighting the potential negative impact this would have on hospital services if a corresponding shift in activity does not become evident.

3.2 Critical care services

It is proposed that level 3 critical care activity will be transferred from HGH to the JRH or to neighbouring sites outside of Oxfordshire. High dependency services (level 2 critical care) will continue to be provided from the HGH.

3.2.1 Potential positive impacts

These proposals are built on a definitive case for change. The HGH strategic review has highlighted that the current activity levels at the CCU have reduced over time, as a result of changes to other services such as major trauma and emergency general surgery. This activity is now at a level at which it is having an impact on the ability of clinicians to be able to maintain their skill set for level 3 critical care patients.

As highlighted within the Pre-Consultation Business Case (PCBC), data provided by the Intensive Care National Audit and Research Centre (ICNARC) for 2013/14 demonstrates that patients remain on the HGH CCU relatively longer in relation to peer units in the Thames Valley and Wessex. ICNARC data also demonstrates that the unit has the lowest number of ventilated patients in this region, but that its mortality for ventilated patients is the highest amongst peers.[31] In addition, the Horton CCU is consistently failing to meet the Guidelines for Provision of Intensive Care Services (GPICS).

Therefore, under the proposals, **there is the potential for an improvement in health outcomes for those patients requiring level 3 critical care as they will be able to benefit from the improved outcomes demonstrated at the JRH**. **These benefits may include reductions in length of stay, reductions in mortality rates and greater compliance with the GPICS**. The achievement of better outcomes for level 3 critical care at JRH has also been reflected by stakeholders, including reduced mortality and serious complications. During the public consultation, some stakeholders expressed concerns around the potential increased risks arising from transferring patients requiring level 3 critical care to at the JRH. However, it is considered that these risks will be offset by the receipt of specialist care on arrival.

[30] Engaged with as part of this IIA

[31] ICNARC data, 2013/14

This proposal will also ensure that **the workforce providing care to level 3 patients will see a sufficient critical mass of patients to be able to maintain their skill set**, thereby delivering a higher quality service. One stakeholder highlighted that the rotation of staff across sites may also be important in ensuring that critical care staff providing level 2 support at HGH are also able to maintain their levels of competency.

3.2.2 Potential negative impacts

Critical care nursing and support **staff may experience negative impacts if they are required to change their permanent place of employment**; this could have an impact in terms of the personal costs of travel and the inconvenience associated with additional journey times. Ultimately, this may have a negative impact on the retention of staff. This is also relevant to other services areas described below.

Two stakeholders[32] have highlighted that proposals will mean that **some families will experience increased travel time to visit patients receiving level 3 critical care,** although it is acknowledged that this impact must be balanced against the increased quality of care the patient is likely to experience and the numbers of families impacted by this is likely to be low. Through the public consultation, stakeholders have highlighted that where services are being consolidated on one site, this **may also negatively impact on the ability of carers to provide appropriate support to patients**. These potential impacts regarding the accessibility of visitors and carers can arguably have an **impact on patient recovery and wellbeing** and are also relevant to sections Stakeholders have suggested that moving patients back to their local hospital as soon as patients are clinically fit will reduce these potential negative impacts.

Capacity at JRH and the ambulance service is likely to be impacted by the proposed change, with one stakeholder[33] expressing concern about the capacity of JRH to accommodate these additional patients. There is also the potential that a reduction in the number of hospitals providing level 3 critical care could **potentially have a negative impact on the resilience of services**, if for example, there were to be an unanticipated large number of patients requiring emergency general surgery or acute medical care which requires level 3 critical care support. However, it is recognised that given the small number of beds at the HGH, and the low probability of a spike in patients requiring level 3 critical care beds, this scenario is relatively unlikely.

3.3 Maternity

The proposed service changes under the ‘do something’ option necessitate that most births move away from the HGH to JRH, or alternative acute hospitals such as Northampton or Warwick (depending upon travel times). Presently, HGH delivers 18% of all OUHFT’s births (1,508) and under the proposed reconfiguration this may fall to 6% (496 low risk births) which would take place at the Horton midwifery led unit (MLU).[34] Given the interdependencies between services and shared workforce, the SCBU will also transfer to the JRH and emergency gynaecology services will also be centralised there. Evidence regarding the impact of the MLU at HGH will be considered as part of Phase 2.

3.3.1 Potential positive impacts

The Royal College of Obstetricians & Gynaecologists (RCOG) recognises that for maternity services to improve, obstetric care must be concentrated to deal with the increasing numbers of

[32] Engaged with as part of this IIA

[33] Engaged with as part of this IIA

[34] The proposals for MLUs are to be considered in more detail in phase two of the Transformation Programme.

complex pregnancies and women being transferred from other birth locations. Such obstetric units should provide continuous senior medical staff presence on the labour ward.[35] This is also in the context of an increase in the complexity of cases nationally, caused by changing demographic factors including women giving birth later in life, obesity, multiple pregnancies and existing co-morbidities.

Currently, both sites do not meet the minimum medical staffing levels for obstetric care and it is reported in the Pre-Consultation Business Case that the low numbers of births at HGH makes it challenging for the general obstetricians to maintain their clinical skill set. The number of deliveries at JRH means there should be 168 hours of consultant cover for the obstetric unit but, as of August 2016, there was 106 hours of cover. **Through the consolidation of obstetric services into one unit, it is understood that the service could be staffed at RCOG standards of 24/7 consultant cover by 2020/21.**[36]

Stakeholders have commented that this consolidation of obstetric services will enable an **increased quality of care as patients will be able to access specialist staff that have experience of dealing with a critical mass of births**. Another commented that this higher quality maternal care will **reduce the likelihood of complications**. One stakeholder highlighted the positive patient stories that have been anecdotally shared since obstetric services were temporarily consolidated at JRH.

3.3.2 Potential negative impacts

Four stakeholders[37] stated that proposals **may mean increased travel time to an obstetric unit for patients and their families**, although it has been noted that many 'high risk' women already travel to JRH. Through the public consultation, stakeholders raised significant concerns that the proposals would negatively affect the safety of women and babies, as a result of the longer journey for some to JRH.

As with other service proposals, **there will be some staff who will be required to change their place of employment and this is likely to present some negative implications**. However many of the impacts for staff have been worked through as part of the implementation of the temporary transfer of obstetrics from HGH to JRH in October 2016. The creation of a larger and therefore more resilient workforce, may create opportunities for increased training and development opportunities. One stakeholder has also commented on the need to ensure that midwives have the opportunity to rotate across obstetric and midwifery led services to ensure that they have the opportunity to maintain their skill set.

There is likely to be an **impact on the capacity of neighbouring providers, which if not sufficiently resourced, has the potential to negatively impact on the quality of care.** It is understood that Oxfordshire CCG is in discussions with Northampton General Hospital NHS Trust and South Warwickshire NHS Foundation Trust to ensure that the obstetric activity moved to these providers can safely be absorbed into their current capacity. There **may also be some impact on the ambulance service in terms of longer journeys to JRH or increased number of transfers** the ambulance service may be required to support.

There is also the potential that **a reduction in the number of hospitals providing obstetric maternity care could potentially have a negative impact on the resilience of services**, if for example, there were to be an unanticipated event which meant that the obstetric service at JRH

[35] Royal College of Obstetricians and Gynaecologists, Royal College of Midwives (2007) Towards Safer Childbirth: Minimum Standards for the Organisation of Labour Wards.2007 London: RCOG

[36] Oxfordshire Transformation Programme (2017) PCBC for Acute Hospital Services: Phase One

[37] Engaged with as part of this IIA

was not able to provide services or was at full capacity. For example, an outbreak of infection may reduce the ward space available for maternity cases, however the likelihood of this significantly impacting on the substantial closure of the ward is relatively low.

3.4 Planned care at the HGH

The centralisation of specialist services for urgent, emergency and critical care at the JRH offers an opportunity for the HGH to deliver more elective work and more care closer to residents in the north of the county.

Under the proposed service changes, HGH will provide an increased proportion of OUHFT's day case activity, across both medical and surgical specialties.[38] In parallel, all elective inpatient surgery would move from the HGH and Ramsay treatment centre (at HGH) to the JRH. There is an anticipated investment under option 2 to improve diagnostic capacity and reconfiguration of outpatient facilities at the Horton site of between £12.6m and £18.9m.

3.4.1 Potential positive impacts

The consolidation of day case activity at HGH and elective inpatient medicine and surgery at JRH, is in line with national guidance which outlines that providers should work to make sure that robust networks are set up to ensure appropriate critical mass in complex and low volume cases to achieve excellent outcomes for patients, with low complication rates. [39]

Evidence supports the drive to separate elective and non-elective surgery pathways, with guidance from the Royal College of Surgeons, National Institute for Care and Health Excellence (NICE), the British Orthopaedics Association (BOA) and other advisory bodies recommending this direction of travel, and outlining the link between volume and outcomes. It is suggested that this separation can result in positive outcomes for patients including **earlier investigation, definitive treatment and better continuity of care, as well as reducing hospital-acquired infections and length of stay**.[40] [41]Other linked outcomes have included: reduced cancellations; **a more predictable workflow; increased senior supervision of complex/ emergency cases; and provision of training opportunities.**[42]

The PCBC identifies that a potential benefit of increased elective throughput and improved planning of these services will be for **the trust to improve its performance with Referral to Treatment (RTT) and cancer waiting times targets**. A Monitor study on elective orthopaedic and ophthalmic surgery explored opportunities for improving operational performance, which resulted in improved care and the release of resources for the delivery of further healthcare, where needed.[43] One centre which participated in this study, South West London Elective Orthopaedic Centre, reported not only improved operational performance but also a reduction in cancellations, consistent delivery of 18 week targets and 95% theatre utilisation, reductions in length of stay (LOS) and a reduction in infections.[44]

Under the proposed service changes, HGH will also look to provide an increased proportion of OUHFT's outpatient activity, across both medical and surgical specialties and diagnostic activity

[38] At the time of this report, a breakdown of specialities impacted was not available.

[39] Briggs T (2013) A national review of adult elective orthopaedic service in England, Getting it Right First Time, British Orthopaedic Association

[40] The Kings Fund (2014). The reconfiguration of clinical services

[41] Imison, C., Sonola, L., Honeyman, M., & Ross, S. (2014). The reconfiguration of clinical services. What is the evidence.

[42] The Royal College of Surgeons of England (2003): 'Separating emergency and elective surgical care: Recommendations for practice'

[43] Monitor (2015) Helping NHS providers improve productivity in elective care

[44] NHS Providers (n.d) South West London Elective Orthopaedic Centre: A Centre Of Excellence In Patient-Focused Elective Orthopaedic Care https://www.nhsproviders.org/media/1823/swleoc-final-m.pdf

is assumed to increase in line with outpatients. There is also an assumed significant increase in oncology day case care such as chemotherapy and renal dialysis spells will be consolidated at the HGH. It is also important to note that under the 'do something' option, activity across the full range of diagnostic assessments increases substantially, as a result of the creation of a 21st century diagnostic facility at HGH. These activity assumptions are highlighted in Table 4.

Table 4: Change in outpatient, diagnostic and other care at HGH

		2016/17 baseline	Impact of new models of care (regardless)	"Do nothing" option	"Do something" option	Change
Outpatient appointments	Medicine	50,752	1,522	49,320	81,229	+31,999
	Surgery	35,529	1,066	34,483	97,875	+63,412
Outpatient and direct access diagnostics	X-ray	12,378	0	12,378	12,378	0
	Ultrasound	11,254	0	11,254	12,942	+1,688
	CT	3,928	0	3,928	5,892	+1,964
	MRI	953	0	953	6,195	+5,242
	Other	1,850	0	1,850	6,104	+4,254
Other, spells	Oncology – day case chemotherapy	3,550	0	3,550	9,103	+5,553
	Renal dialysis	2,838	0	2,838	4,057	1,159

Source: Mott MacDonald (derived from Oxfordshire Transformation Programme PCBC for Acute Hospital Services: Phase One)

Through the creation of planned care facilities, **there is the potential to streamline care for patients at certain parts of their pathway of care; through the creation of one stop clinics and more coordinated appointments. This is likely to have a positive impact on patients** as it will reduce the number of appointments they are required to attend, reducing multiple journeys to hospital sites and the associated use of their time. This potential impact was highlighted by four stakeholders[45], who commented that patients in the north of the county will benefit by having these services available more locally. For outpatients, it is understood that, where appropriate, nearly all clinical services have committed to transfer their relevant outpatient activity to HGH. As existing staff will deliver these services, it is anticipated that patients should not experience any disruption in their care as they will continue to be seen by the same set of professionals.

One stakeholder has also commented on the 'bottleneck' that diagnostic services currently present. The **development of the diagnostic centre provides an opportunity to organise services and integrate diagnostic services into care pathways**, in such a way as to address this current system constraint and support the achievement of waiting time targets.

3.4.2 Potential negative impacts

These proposals are likely to result in some changes in the workforce profile of services. **If appropriate staffing levels at HGH for outpatient activity and at JRH for inpatient activity are not achieved, then there is a potential for patients to experience a negative impact in their quality of their care**. For example, the significant increase in direct access diagnostics such as MRI and CT will have an impact on workforce required on site at the new Diagnostic Facility at HGH, particularly to ensure that key standards such as reporting times can still be achieved. Staffing implications should be assessed as plans develop in greater detail, and the

[45] Engaged with as part of this IIA

potential implications for staff should also be explored, including the impact of them being prepared to work across sites or from a different site. Existing challenges in recruiting some staff groups, such as radiographers and other clinical scientists to operate an expanded diagnostic facility may impact on the ability to provide this increased workforce needed to deliver these services safely. One stakeholder has also commented on the need to ensure that IT can enable these services to access specialist second opinion (at JRH).

One stakeholder has also highlighted that **by changing the location of care, some patients may experience some 'discontinuity' to their care**.

3.5 Stroke services and non-elective medical inpatients

Under proposals, all appropriate stroke patients in Oxfordshire should be conveyed directly to the HASU at JRH. The HGH presently sees roughly 10% of the stroke patients in the county at its acute stoke unit[46]. Phase Two of the Oxfordshire Transformation Programme will consider the configuration of stroke rehabilitation services.

3.5.1 Potential positive impacts

Stroke patients require specialist multidisciplinary care and rehabilitation. Clinical evidence[47] and stakeholders have highlighted that the best outcomes for patients are delivered within specialist units like HASUs that have adopted measures such as:

- rapid access to advanced tests such as CT and MRI scanning;
- treatments such as thrombolysis and thrombectomy; and
- the 24-hour presence of specialist stroke doctors and nurses along with other complementary specialist teams.
- It can therefore be concluded that a centralised model of acute stroke care can improve patient outcomes in terms of reduced mortality and length of stay.[48]

It can therefore be concluded that a centralised model of acute stroke care can improve patient outcomes in terms of reduced mortality and length of stay.[49]

Once the hyper-acute phase is over, care will be subsequently transferred to a specialist team providing rehabilitation in a stroke rehabilitation ward, or when possible at home (Early Supported Discharge), where patient satisfaction and outcomes are better than for rehabilitation in hospital.[50] [51] The Transformation Programme aims to roll out a consistent model for early supported discharge across the county, which will create **equity of stroke rehabilitation provision**.

3.5.2 Potential negative impacts

Through the public consultation, some stakeholders expressed **concern about the estimated travel time to JRH for patients with a suspected stroke and the negative impact that this could have on their outcomes**. National guidance states that people with suspected acute stroke should be admitted directly to a HASU and be assessed for emergency stroke treatments

[46], Oxfordshire Transformation Programme (2017) PCBC for Acute Hospital Services: Phase One

[47] The King's Fund (2014) The reconfiguration of clinical services

[48] Imison, C., Sonola, L., Honeyman, M., & Ross, S. (2014). The reconfiguration of clinical services. What is the evidence.

[49] Imison, C., Sonola, L., Honeyman, M., & Ross, S. (2014). The reconfiguration of clinical services. What is the evidence.

[50] Ramsay AI, Morris S, Hoffman A, et al. (2015) Effects of centralizing acute stroke services on stroke care provision in two large metropolitan areas in England. Stroke 46: 2244–2251

[51] Fearon P, Langhorne P (2012) Early Supported Discharge Services for reducing duration of hospital care for acute stroke patients. Cochrane Database of Systematic Reviews Issue 9

by a specialist physician without delay.[52] It recognises the balance between location and critical mass: "*stroke services should be organised to treat a sufficient number of patients to ensure that the specialist skills of the workforce are maintained. At the same time, the closer a rehabilitation service is to the person's home the more that family/carers can be engaged and the more targeted the rehabilitation can be.*"

In the public consultation, stakeholders raised concerns about the ability of the JRH to manage the additional flow of stroke patients; meaning that **without sufficient capacity and resources, there could be negative impacts on the quality of patient care.** It is noted by the Horton Strategic Review that there is a consideration to review staffing numbers for nurses and allied health care professionals (AHPs), and also for the review of job plans for some medical staff in order to ensure full cover at the HASU unit. In response to this, it has been stated by Oxfordshire CCG that, provided the early supported discharge service (outlined in the ambulatory care proposals) is available across Oxfordshire, there is adequate capacity to care for the additional patients received at the JRH[53].

With the ambulance service diverting patients to the HASU at JRH, this may result in longer journeys, creating a **potential negative impact on the capacity of the ambulance service**. The impact on ambulance service resources and logistics, due to the modified transfers of patients, has previously been a key factor in decision-making around configuring stroke services in the UK[54]. These changes might implicate additional capital and revenue costs associated with increased ambulance provision. However many potential acute stroke patients are currently being conveyed directly to JRH and SCAS have confirmed that they support the change to this pathway.

The Transformation Programme, in Phase Two, is undertaking a review of community hospitals to further consider options for bed-based rehabilitation for stroke patients. These service changes across the whole stroke pathway may involve the movement of some workforce resources to the JRH or community sites. As the programme progresses, it will be important to understand the number of potential staff who may be required to change their permanent place of employment and the impacts arising from this. This may include some **staff having to travel further to their place of work, which is likely to have an impact in terms of the personal costs of travel and the inconvenience associated with additional journey times**.

In the implementation of any planned changes, one stakeholder has highlighted the potential **transitional negative impacts** that this can present. From their experience of being involved in service change, this had the potential to result in short-medium term capacity, operational effectiveness, and patient experience issues, unless this can be appropriately managed. This is relevant to the other services areas discussed within this report.

3.6 Impacts summary

Across the clinical areas considered within this phase one report, there are a number of potential health impacts which need to be considered:

3.6.1 Positive impacts

- **Improved outcomes for patients** will be achieved as a result of concentrating specific services on certain hospital sites, or creating new specialist centres such as a HASU or a

[52] RCP (2016) National clinical guideline for stroke

[53] Oxfordshire Transformation Programme (2017) PCBC for Acute Hospital Services: Phase One S01.3 Achieving the Single Portal of Entry to OUHFT

[54] NHS England (2015) Stroke Services: Configurations Decision Support Guide

diagnostic centre. Whilst this may result in increased journey times for some patients and their visitors and carers, this will allow all patients from across Oxfordshire to benefit from the improved outcomes demonstrated at some hospitals. It will also provide the critical mass of activity that allows the workforce to maintain their skill set and ensure that recognised clinical and workforce standards can be achieved. Travel and access implications are explored in more detail in chapters 4 and 5.

- **Patient experience will be improved** through access to joined up care provided through redesigned hospital services where a one stop shop for diagnostic and outpatient services will be available.
- The concentration of expertise on certain sites, such as obstetric care at JRH, will allow **clinical resources to be pooled, supporting the achievement of workforce standards**.
- Through the creation of larger, more coordinated and resilient teams, with stability and job security, **staff satisfaction may be positively impacted**.

3.6.2 Negative impacts

- **Staff may experience negative impacts** if they are required to change their permanent place of employment. Associated impacts may include some staff having to travel further to their place of work, which is likely to have an impact in terms of personal costs of travel and the inconvenience associated with additional journey times. Ultimately, this may have an impact on the **retention** of staff.
- **Capacity at JRH and the ambulance service** is likely to be impacted by proposed changes around critical care, stroke and maternity services.
- A reduction in the number of hospitals providing some services could potentially have a **negative impact on the resilience of services**.
- **Potential transitional negative impacts** could be experienced **during the implementation of planned service changes**. Historical experience has shown that this can impact capacity, operational effectiveness, and patient experience, unless this can be appropriately managed.

As further detail on each of these service changes becomes available, and move into implementation planning, it is essential that these impacts, along with the suggested mitigating actions at the end of this report are reviewed on an ongoing basis.

4 Travel and access impacts

This chapter identifies travel and access impacts, which could potentially be experienced as a consequence of implementing the proposals. The chapter presents impacts for blue light ambulance as the journeys by patients for the services assessed would typically be made by this mode of transport; impacts for private car and public transport are included in appendix F. Impacts have been identified through quantitative journey time analysis, as well as a desk review. Detailed analysis by an equality group is included within the equality chapter (chapter 5). Appendix C provides heat maps for changes in travel times and appendix F provides a further breakdown of the changes in travel times.

Travel and access analysis has been undertaken on the basis of available current patient activity for the phase one services. Activity data, rather than population data, has been used so as to provide as accurate picture as possible about the potential impacts for patient journey times and to understand the potential volume of patients which would require longer trips. Data have been analysed at two levels, defined as:

- Overall patient activity: this refers to the number of patients who have accessed services within Oxfordshire CCG, regardless of whether they are resident in Oxfordshire or have come from outside Oxfordshire to access services.
- Oxfordshire patient activity only: this refers to the number of patients who have accessed services within Oxfordshire CCG and are resident in Oxfordshire.

This report has utilised thresholds of 30 and 60 minutes to report on the travel impacts. This allows for a consistent baseline upon which to record the differences between option configurations. Further details of the travel impact for additional travel time bands can be seen in appendix F.

4.1 Ambulatory care

Travel and access impacts have not been assessed for ambulatory care. This is because patients will continue to receive care at an AAU at their local hospital site, or because ongoing ambulatory care will be delivered in or closer to patients homes.

4.2 Critical care services

Analysis for the change to critical care services has not been assessed for travel and access impacts. This is due to the low volumes of patients receiving level 3 critical care.

4.3 Maternity

The tables below highlight the difference in travel times for maternity patients accessing hospitals for the baseline position and under a future scenario with obstetric-led maternity care removed from HGH. Residents living in the north of the county, namely Banbury and Chipping Norton and the surrounding areas, will need to travel further for their care.

The change to maternity services will not affect all patients. The HGH would move from providing 18 per cent of OUHFT's births to 6 per cent under the proposals in Phase One. The remaining 6 per cent (496) of births would be delivered at HGH at the on-site MLU.

4.3.1.1 Quantitative analysis of journey time impacts: overall patient activity

Based on current maternity patient activity data, 73 per cent of maternity patients can access obstetric-led maternity services by blue light within 30 minutes and 93 per cent within 60 minutes. Should obstetric-led maternity services not be provided at the HGH in future, 52 per cent of patients would be able to able to access obstetric-led maternity services within 30 minutes and 93 per cent within 60 minutes.

Table 5: Blue light ambulance journey time to obstetric-led maternity services: baseline - including services at the HGH (all patients)

	Travel time – blue light (baseline - including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	3,515	2,205	2,692	1,786	543	20	772
Percentage of patients reaching maternity services in journey time range	30%	19%	23%	15%	5%	0%	7%
Cumulative percentage	30%	50%	73%	88%	93%	93%	100%

Source: SUS SEM

Table 6: Blue light ambulance journey time to obstetric-led maternity services: without services at the HGH (all patients)

	Travel time - blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	1,798	1,540	2,676	3,809	910	19	781
Percentage of patients reaching maternity services in journey time range	16%	13%	23%	33%	8%	0%	7%
Cumulative percentage	16%	29%	52%	85%	93%	93%	100%

Source: SUS SEM

4.3.1.2 Quantitative analysis of journey time impacts: Oxfordshire patient activity only

Based on current maternity patient activity data, 79 per cent of patients resident in Oxfordshire can access obstetric-led maternity services by blue light within 30 minutes and 100 per cent within 60 minutes. Should obstetric-led maternity services not be provided at the HGH in future, 57 per cent of patient's resident in Oxfordshire would be able to access obstetric-led maternity services within 30 minutes and 100 per cent within 60 minutes.

Table 7: Blue light ambulance journey time to obstetric-led maternity services: baseline – including services at the HGH (Oxfordshire resident patients only)

	Travel time – blue light (baseline - including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patient's resident in Oxfordshire reaching maternity services in journey time range	3,515	2,073	2,636	1,742	469	0	0
Percentage of patient's resident in Oxfordshire reaching maternity services in journey time range	34%	20%	25%	17%	4%	0%	0%
Cumulative percentage	34%	54%	79%	96%	100%	100%	100%

Source: SUS SEM

Table 8: Blue light ambulance journey time to obstetric-led maternity services: without services at the HGH (Oxfordshire resident patients only)

	Travel time - blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	1,798	1,532	2,641	3,679	785	0	0
Percentage of patients reaching maternity services in journey time range	17%	15%	25%	35%	8%	0%	0%
Cumulative percentage	17%	32%	57%	92%	100%	100%	100%

Source: SUS SEM

4.4 Planned care services

Travel analysis on the impact of the changes to planned care services has not been possible for this IIA. To robustly assess the impacts on planned care services at the HGH, requires a greater level of disaggregation of the patient data than has been available. However, it is likely that travel times will be reduced for patients using these services, given the additional capacity being proposed at the HGH.

4.5 Stroke services

Stroke services for Oxfordshire will be centralised in the JRH. Direct conveyance of all appropriate Oxfordshire patients to the HASU at the JRH will be supported by the roll out of countywide early supported discharge to improve rehabilitation and outcomes. Residents living in the north of the county, namely Banbury and Chipping Norton and the surrounding areas, will have longer journeys to access care.

4.5.1.1 Quantitative analysis of journey time impacts: overall patient activity

Based on current stroke patient activity data, 71 per cent of patients can access stroke services by blue light ambulance within 30 minutes and 98 per cent within 60 minutes. Should stroke services not be provided at the HGH in future, 55 per cent of patients would be able to able to access stroke services within 30 minutes and 98 per cent within 60 minutes.

Table 9: Blue light ambulance journey time to stroke services: baseline - with series at the HGH (all patients)

	Travel time – blue light (baseline: including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	128	136	174	117	50	0	12
Percentage of patients reaching stroke services in journey time range	21%	22%	28%	19%	8%	0%	2%
Cumulative percentage	21%	43%	71%	90%	98%	98%	100%

Source: SUS SEM

Table 10: Blue light ambulance journey time to stroke services: without services at the HGH (all patients)

	Travel time - blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	68	101	170	200	66	0	12
Percentage of patients reaching stroke services in journey time range	11%	16%	28%	32%	11%	0%	2%
Cumulative percentage	11%	27%	55%	87%	98%	98%	100%

Source: SUS SEM

4.5.1.2 Quantitative analysis of journey time impacts: Oxfordshire patient activity only

Based on current stroke patient activity data, 72 per cent of patients resident in Oxfordshire can access stroke services by blue light within 30 minutes and 100 per cent within 60 minutes. Should stroke services not be provided at the HGH in future, 58 per cent of patients resident in Oxfordshire would be able to able to access stroke services within 30 minutes and 100 per cent within 60 minutes.

Table 11: Blue light ambulance journey time to stroke services: baseline - with the services at the HGH (Oxfordshire resident patients)

	Travel time – blue light (baseline: including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patient's resident in Oxfordshire reaching stroke services in journey time range	128	121	171	114	48	0	0
Percentage of patient's resident in Oxfordshire reaching stroke services in journey time range	22%	21%	29%	20%	8%	0%	0%
Cumulative percentage	22%	43%	72%	92%	100%	100%	100%

Source: SUS SEM

Table 12: Blue light ambulance journey time to stroke services: without services at the HGH (Oxfordshire resident patients)

	Travel time - blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patient's resident in Oxfordshire reaching stroke services in journey time range	68	100	170	190	54	0	0
Percentage of patient's resident in Oxfordshire reaching stroke services in journey time range	12%	17%	29%	33%	9%	0%	0%
Cumulative percentage	12%	29%	58%	91%	100%	100%	100%

Source: SUS SEM

4.6 Car parking

The separate parking study identified that there were few car parking issues at the HGH, but the findings from the JRH site highlighted some congestion issues when accessing the car park on particular days and times. For example, over the five survey days the JRH car parks sometimes saw queues form outside the car park barriers. It was suggested that further traffic planning take place in order review the access to the JRH and HGH sites given that patient activity at both sites is set to increase if Phase One proposals get implemented.

5 Equality impacts

5.1 Overview

In order to assess the impact of the service changes on protected characteristic and deprived groups, the scoping phase involved detailed analysis to understand which groups may have a disproportionate need for the services included in phase one of the Oxfordshire Transformation Programme.

This section, and Table 13 below, provides a summary of the groups scoped in for each of the services, and also provides an indication of the demographic representation of each group (where relevant and where the demographics of Oxfordshire differ from the national averages.) The full scoping analysis can be found in appendix D.

5.1.1 Ambulatory care: summary

The following groups have been identified as having a disproportionate need for ambulatory care: [55]

- Age (older people aged 65 and over)
- Gender reassignment
- Pregnancy and maternity

Certain lifestyle factors, such as higher rates of inactivity or taking certain medications, are risk factors for requiring access to this type of care. For example, treatment for simple pulmonary embolism is likely to be disproportionately needed by certain equality groups (*older people aged 65 and over, pregnancy and maternity*) or deep vein thrombosis (*older people aged 65 and over, pregnancy and maternity*).

5.1.2 Critical care: summary

We have not provided analysis on the equality impacts of the proposed changes to the delivery of level three critical care. This is because of the dependency of other clinical services currently being delivered at the HGH which will require access to level three critical care. These clinical specialities (such as complex theatre) are not included in phase one of the Oxfordshire Transformation Programme and will be considered in the IIA of phase two.

5.1.3 Maternity: summary

The following equality groups have been identified as having a disproportionate need for maternity services:

- Deprived communities
- Pregnancy and maternity
- BAME communities
- Sex: Female

[55] Please note that for sex, there is not a disproportionate need for ambulatory care by men or women; however, there is a differential need for planned care services i.e. females and males are likely to require the services equally, but the reasons why they require services are different). This evidence is further explained and captured in appendix D.

This is due to the nature of the service, which deals with women during pregnancy and lifestyle risk factors, such as having more children (*BAME communities*) and greater risk of complication (*BAME communities, deprived communities*).

5.1.4 Planned care services: summary

The following equality groups have been identified as having a disproportionate need for planned care services:[56]

- Age (children under 16)
- Age (older people aged 65 and over)
- Deprived communities
- Disability
- Gender reassignment
- BAME communities

Certain lifestyle factors, such as higher rates of smoking, obesity, diabetes or needing to take specific long-term medications, are risk factors for needing to access services. For example, musculoskeletal services are likely to be disproportionately needed by certain equality groups (*age (older people aged 65 and over), deprived communities, disability, gender reassignment, BAME communities*) or plastic surgery services (*children under 16, older people aged 65 and over*).

5.1.5 Stroke services: summary

The following equality groups have been identified as having a disproportionate or differential need for stroke services:[57]

- Age (older people aged 65 and over)
- Deprived communities
- Disability
- BAME communities

Lifestyle and cultural factors that are associated with a disproportionate or differential risk of stroke, such as obesity (*deprived communities*), diabetes (*BAME communities, deprived communities)* or heart problems *(disability).*

[56] Please note that for sex, there is not a disproportionate need for planned care services by men or women; however, there is a differential need for planned care services i.e. females and males are likely to require the services equally, but the reasons why they require services are different). This evidence is further explained and captured in appendix D.

[57] Please note that for sex, there is not a disproportionate need for stroke services by men or women; however, there is a differential need for stroke services (i.e. females and males are likely to require the services equally, but the reasons why they require services are different). This evidence is further explained and captured in appendix D.

Table 13: Summary of scoped in groups

Group	Ambulatory care	Maternity	Planned care services	Stroke	Demographic analysis
Age (children under 16)			✓		This is in line with national average.
Age (older people aged 65 and over)	✓		✓	✓	This is in line with national average.
Deprived communities		✓	✓	✓	In Oxfordshire, four per cent of the population is classified as living in the most deprived quintile. This is compared to 20 per cent of the population of England.
Disability			✓	✓	In Oxfordshire, 14 per cent of the population is classified as living in with a long-term disability or illness. This is in comparison to 18 per cent of the population of England.
Gender reassignment	✓		✓		No demographic analysis is available.
Marriage and civil partnership					N/A
Pregnancy and maternity	✓	✓			This is in line with national average.
Race and ethnicity: BAME communities		✓	✓	✓	In Oxfordshire, 17 per cent of the population is classified as being from a BAME background. This is in comparison to 20 per cent of the population of England.
Religion and belief[58]					N/A
Sex: Female		✓			N/A
Sex: Male					N/A
Sexual orientation					N/A

Source: Mott MacDonald scoping report, see Appendix D

5.2 Impacts on those groups identified as having a greater need for phase one services

5.2.1 Health impacts

The proposals under the Oxfordshire Transformation Programme are likely to provide positive health impacts, including improved patient outcomes, as well as improved patient experience and care which is better co-ordinated. The groups, which have a greater need for the services for which these health benefits are forecast (as summarised in table 13 above), are therefore likely to experience these positive health impacts to a disproportionate extent.

[58] Please note that for religion and belief a differential need was identified for planned care. This is due to a differential need for diabetes services by certain religious groups that adhere to fasting practices. This evidence is further explained and captured in appendix D.

The health component of this IIA has also identified that there could be some short-medium term transitional impacts of moving towards a new service configuration; these impacts are also likely to be experienced to a greater extent by those patient groups which have a higher need for the services under review. The transitional issues related to service and geographical familiarity are particularly likely to affect some protected characteristic groups (older people, disabled people and some people from BAME backgrounds, particularly those who do not have English as a first language) which traditionally find it more difficult to navigate the healthcare system.

5.2.2 Blue light ambulance travel and access impacts

As with the travel and access analysis presented in chapter four, this analysis has been undertaken on the basis of available current patient activity for the phase one services. Activity data, rather than population data, has been used so as to provide as accurate picture as possible about the potential impacts for patient journey times and to understand the potential volume of patients which would require longer trips.

Travel times for patients with particular characteristics (for example age, ethnicity, gender, level of deprivation) are compared to the travel times of all patients to ascertain whether there is a greater impact on a particular group. [59]

In reviewing the commentary and analysis below, please note that:

- Where differences in travel times have been identified, that is not to say that other groups are not also experiencing impacts, rather it is saying that an impact is likely to be felt to a greater or lesser extent.
- Deprivation is calculated using the lower layer super output area (LSOA) in which a patient is resident[60]. It is recognised that not every patient in a deprived LSOA will be deprived themselves, but that this is the best available data.

[59] Please note that analysis for disabled people is not provided as disability is not a characteristic that is linked to the patient data provided by the CSU for this IIA; as such, it is not possible to cross tabulate the impacts on patients by disability.

[60] An LSOA is an administrative boundary with a minimum population of 1,000 and a maximum population of 3000.

5.2.2.1 Maternity

The tables below highlight the travel times to obstetric-led maternity services for maternity patients within one of the scoped-in equality groups; baseline journey times are compared with the future proposal.

Table 14: Percentages able to reach obstetric-led maternity services in 30 minutes or less by blue light ambulance

Group	Baseline percentage able to reach obstetric-led maternity services by blue light ambulance in 30 minutes or less (including services at HGH)	Future percentage able to reach obstetric-led maternity services by blue light ambulance in 30 minutes or less (without services at HGH)	Difference
Overall – all patient activity	**73%**	**52%**	**-20pp change**
Oxfordshire patients only	**79%**	**57%**	**-22pp change**
Women aged 15-44 (all patients)	74%	52%	-22pp change
Women aged 15-44 (Oxfordshire patients only)	79%	57%	-22pp change
BAME (all patients)	86%	64%	-22pp change
BAME (Oxfordshire patients only)	92%	68%	-24pp change
Most deprived quintile (all patients)	99%	59%	-40pp change
Most deprived quintile (Oxfordshire patients only)	100%	59%	-41pp change

Source: SUS SEM

Table 15: Percentage able to reach obstetric-led maternity services in 60 minutes or less with by blue light ambulance

Group	Baseline percentage able to reach obstetric-led maternity services by blue light ambulance in 60 minutes or less (including services at HGH)	Future percentage able to reach obstetric-led maternity services by blue light ambulance in 60 minutes or less (without services at HGH)	Difference
Overall – all patient activity	**93%**	**93%**	**No change**
Oxfordshire patients only	**100%**	**100%**	**No change**
Women aged 15-44 (all patients)	93%	93%	No change
Women aged 15-44 (Oxfordshire patients only)	100%	100%	No change
BAME (all patients)	94%	94%	No change
BAME (Oxfordshire patients only)	100%	100%	No change
Most deprived quintile (all patients)	99%	99%	No change
Most deprived quintile (Oxfordshire patients only)	100%	100%	No change

Source: SUS SEM

- There is a 40 percentage point reduction in patients from deprived communities being able to reach these services within 30 minutes (by blue light ambulance), compared to a 20 percentage point reduction for the population overall. The change is due to the removal of the HGH as an option, the higher concentration of deprived communities (compared to other protected characteristic groups) in the Banbury area and the longer distances that could be involved in transporting a patient to the JRH.
- Women aged 15-44 will have the lowest percentage of patients who can access maternity services within 30 minutes by blue light (52 per cent - using activity data from all patients); these percentages are in line with access for the overall population.

5.2.2.2 Stroke

The tables below highlight the travel times for stroke patients by scoped in equality group, comparing the baseline scenario with the future proposal.

Table 16: Percentage able to reach stroke services within 30 minutes or less by blue light ambulance

Group	Baseline percentage able to reach stroke services by blue light ambulance in 30 minutes or less (including services at HGH)	Future percentage able to reach stroke services by blue light ambulance in 30 minutes or less (without services at HGH)	Difference
Population overall – all patient activity	**72%**	**55%**	**-17pp change**
Population overall - Oxfordshire patients only	**72%**	**58%**	**-14pp change**
Aged 65 years (all patients)	75%	56%	-19pp change
Aged 65 years (Oxfordshire patients only)	75%	57%	-18pp change
Most deprived quintile (all patients)	100%	57%	-43pp change
Most deprived quintile (Oxfordshire patients only)	100%	57%	-43pp change

Source: SUS SEM

Table 17: Percentage able to reach stroke services in 60 minutes or less with by blue light ambulance

Group	Baseline percentage able to reach stroke services by blue light ambulance in 60 minutes or less (including services at HGH)	Future percentage able to reach stroke services by blue light ambulance in 60 minutes or less (without services at HGH)	Difference
Population overall – all patient activity	**100%**	**98%**	**-2pp change**
Population overall - Oxfordshire patients only	**100%**	**100%**	**No change**
Aged 65 years (all patients)	100%	100%	No change
Aged 65 years (Oxfordshire patients only)	100%	100%	No change
Most deprived quintile (all patients)	100%	100%	No change
Most deprived quintile (Oxfordshire patients only)	100%	100%	No change

Source: SUS SEM

- There will be a 43 percentage point reduction in patients from the most deprived quintile being able to reach stroke services within 30 minutes compared to only a 14-17 percentage point drop for the general population.
- Those aged 65 years or more will have the lowest percentage of patients able to access stroke services within 30 minutes by blue light (56 per cent based on all patient activity data). However, this is in line with the overall patient average.

5.2.3 Other travel and access impacts for equality groups

There are several other **negative** impacts associated with increased journey times for equality groups:

- **Increased stress and anxiety**: increased journey times or the need to make different and/or unfamiliar journeys to access care, is likely to affect some equality groups to a greater extent than the general population, these issues and the associated impacts were highlighted in the focus groups, and interviews with community and patient representatives. These groups include:
    - Those who find navigating new journeys, particularly using public transport, more challenging and problematic, for example older people and those with mobility of vision impairments.
    - Those who are less confident in making unfamiliar journeys, which may result in anxiety or panic attacks.
    - Those who also no longer frequently drive in busy areas, such as older people or disabled people especially those with mental health issues, are also likely to be affected.
    - Those who may not be confident in making journeys at night, for example older people or those with impaired vision
    - Those who do not have access to a private mode of transport and are reliant on assistance or public transport, such as older people who cannot afford to run a car or are unable to drive anymore, as well as those from deprived communities.
- **Increased costs associated with travel**: some patients and visitors, for example those living in north Oxfordshire who need to access services or visit relatives at the JRH, will experience increased travel costs. This is likely to disproportionately impact upon those traditionally on lower incomes, such as those from deprived communities, disabled people and older people.
- **Lack of acceptable alternative transport methods**: the variable and high financial cost of certain transport methods, i.e. trains, acts as a barrier to utilising alternative transport modes of transport (other than cars). This impact is particularly relevant to those living in deprived communities, disabled and older people. This is particularly likely to affect patient relatives.

5.2.4 Experience and quality of care for equality groups

Issues of accessibility are likely to disproportionality impact certain protected characteristic groups including those with communication challenges, those who are not confident/nor speak English as a first language, the elderly and those with physical and learning disabilities. These negative impacts include:

- **Access difficulties for visitors and carers**: increased journey times (and associated costs) for visitors and carers of patients receiving care in a 'non-local' location may limit or prohibit regular visits. This could affect patients' experience in hospital, and could disproportionately impact those who are more reliant on assistance and support, for example, disabled and older people – especially those with learning difficulties or mental health conditions. Some of those from BAME backgrounds who do not have English as their first language may also rely on relatives to help translate. Limited access to carer or relative support would mean the patient is less likely to be able to communicate effectively with clinical staff to express their preferences or ask questions about their care.
- **Unfamiliarity of hospital:** some patients and visitors can become confused or disorientated when they are at an unfamiliar hospital. This can particularly affect older people and disabled people and may result in a negative impact of patient experience of care.

6 Sustainability impacts

Changes to how NHS services are delivered across Oxfordshire have the potential to change emissions of GHG, which contribute to climate change.

6.1 Impact analysis

Total emissions from patient travel in the 'do -something' scenario are predicted to be 4,313tCO_2e per annum, and emissions associated with patient travel without the changes are estimated to be 4,293tCO_2e. This means that with the proposed changes, GHG emissions would increase by approximately 20tCO_2e per annum, an increase of around 0.5 per cent, due to patient travel. It should be noted that the assessment has been based on 2015/16 data, and in line with NHS patient number forecasts, which are expected to increase in the future. The increase in emissions is likely due to the centralisation of services within the JRH resulting, on balance, in an increased average journey distance.

Across the whole of the NHS patient travel accounts for 1.4MtCO_2e[61], which is 44 per cent of all travel emissions (including NHS staff, visitors, patients, and contractors). If the proportion of travel emissions from patients within Oxfordshire are in line with national data, and if the changes to patient travel affected all travel equally, the changes would be expected to increase emissions by approximately 45 tCO_2e per annum due to all travel. Within the context of the total travel emissions from the NHS, which are 3.2MtCO_2e, the increase in emissions due to the changes to services is considered to be negligible.

[61] NHS Sustainable Development Unit (2012), Carbon Footprint update for NHS in England 2012, http://www.sduhealth.org.uk/policy-strategy/reporting/nhs-carbon-footprint.aspx - (2012 is that most recent year where the travel data is broken down into travel types)

7 Conclusions

This chapter brings together the impacts from across the service areas and impact assessment topics and outlines potential ways to enhance opportunities and to mitigate or reduce the effect of the negative impacts.

7.1 Summary of impacts

Table 18: Impact summary table

Impact Assessment area	Summary of positive impacts	Summary of negative impacts
Health	• **Improved outcomes for patients**, as a result of concentrating specific services such as a HASU or a diagnostic centre. • **Improved patient experience**, as a result of access to joined-up care. • Through the creation of larger, **more coordinated and resilient teams**, with stability and job security, staff satisfaction may be positively impacted and the achievement of workforce standards.	• **Staff may experience negative impacts** if they are required to change their permanent place of employment - this may impact the retention of staff. • A reduction in the number of some hospital services could negatively impact **the resilience of services**. • Potential **transitional negative impacts** could be experienced during the implementation of planned service changes. • Capacity at the JRH and the ambulance service is likely to be impacted by proposed changes around critical care, stroke and maternity services.
Travel		• Should obstetric-led maternity services not be provided at the HGH in future, 52 per cent of patients would be able to able to access obstetric-led maternity services within 30 minutes by blue light, in comparison to 73 per cent of maternity patients currently. • Should stroke services not be provided at the HGH in future, 55 per cent of patients would be able to able to access stroke services within 30 minutes by blue light, in comparison to 71 per cent of stroke patients currently.

Equality	• **Improved health outcomes:** patients identified as having a disproportionate need for certain services are likely to be disproportionately positively impacted by improved health outcomes.	• **Increased stress and anxiety**: increased journey times or the need to make different and/or unfamiliar journeys to access care, is likely to affect some equality groups to a greater extent than the general population. • **Increased costs associated with travel**: some patients and visitors will experience increased travel costs, which are likely to disproportionately impact upon those on lower incomes. • **Lack of viable alternative transport methods**: the high financial cost of certain transport methods acts as a barrier to utilising alternative transport modes to cars. • **Access difficulties for visitors and carers**: increased journey times for visitors and carers may limit or prohibit regular visits. This could affect patient experience in hospital, and could disproportionately impact those who are more reliant on assistance and support. • **Unfamiliarity of hospital:** some patients and visitors can become confused or disorientated when they are at an unfamiliar hospital. This can particularly affect older people and disabled people.
Sustainability	• N/A: impacts are negligible	• N/A: impacts are negligible

Source: Mott MacDonald

7.2 Enhancements and mitigations

Arising from this assessment, are a set of actions which focus on potential ways to enhance opportunities and to mitigate or reduce the effect of the potential negative impacts. It is suggested that these are considered by the Oxfordshire Transformation Programme as part of the implementation of proposals.

7.2.1 Health impacts

7.2.1.1 Programme level

- To overcome transitional implementation concerns, a clear change process is required. This should involve all key programme management and clinical group stakeholders in the development of implementation plans.
- The proposed changes will have an impact on the capacity of the ambulance service and it is essential that they are engaged on an ongoing basis in the development and refinement of the Oxfordshire Transformation Programme

7.2.1.2 Service level

- Clinical Groups to consider 2008 IRP recommendations where they continue to be relevant.
- Ensuring that the whole pathways of care for the services subject to change is considered. For example this includes considering both early stroke care and longer term support, as well as prevention initiatives which may support the modification of lifestyle behaviours known to be associated with this condition.
- Where clinically appropriate, consider the ability to move patients back to their local hospital as soon as patients are clinically fit. This will offset additional travel requirements for visitors and carers.
- Ensure that identified clinical interdependencies, monitored and reviewed as proposals develop. For example, this includes the ongoing link between level 2 critical care at HGH,

A&E and the proposed increase in inpatient elective surgery at HGH. It also includes ensuring that ambulatory care initiatives are fully implemented, so that patients can move through the stroke pathway and community rehabilitation beds do not become oversubscribed. Alignment with other clinical pathways should also be considered, including for example, any inter-dependency between the childhood and adult stroke pathway.

- Where relevant, communication between clinicians on different sites will continue to be essential, for example, allowing specialist opinion to be sought and expertise shared. IT and infrastructure must be able to facilitate this.
- Ensure that all providers of care (including those in surrounding areas) are aware of the changes and the appropriate pathways they should take with patients.
- Ensure that activity moving to neighbouring providers can be safely be absorbed into their capacity plans.

7.2.1.3 Workforce

- Offer and promote an engagement programme with staff to understand further the consequences of the potential impacts incurred when being required to work across sites, or from a different place of employment.
- Development of a workforce plan which quantifies and considers: recruitment requirements and potential lead times, skills gaps and considers mechanisms to ensure that the skills of staff can be maintained such as rotation. This includes recruiting sufficient medical physicians to ensure that AAUs can be resourced on a permanent basis, as well as securing 50 WTE[62] staff for the SHDS.

7.2.2 Travel impacts

A travel plan is a package of measures designed to manage the access to an establishment (e.g. a hospital site). Though hospitals already have a travel plan in place this should be reviewed in light of the proposals. A travel plan can address a range of travel issues such as staff commuting, business trips, journeys made by patients and visitors to the site, how an organisation's fleet is managed and how travel is made by suppliers. Research has found that the most successful way of managing an organisation's transport impacts is through improving the quality and choice of non-car modes and providing disincentives for the use of the car.

The following overarching objectives are recommended for a travel plan to support the Oxfordshire Transformation Programme:

7.2.2.1 Promotion of public transport

The travel plan needs to consider how staff, visitors and patients that currently use the services in the HGH can access the JRH by sustainable transport modes so that the level of traffic accessing the sites does not increase especially in the light of car parking issues at the JRH.

Consideration needs to be given to the potential impact of the increased volume of traffic to the HGH site if the Planned Care proposals are implemented. New park and ride options around Banbury might have to be considered in collaboration with the local authorities and transport providers.

Some of the major barriers to public transport use are related to a lack of knowledge regarding bus services, times and the areas that they serve; this is likely to see increased significance for

[62] Whole Time Equivalent

users required to access a less familiar location. It is therefore important that high quality information is provided to ensure that the lack of knowledge is not a barrier to public transport use. Public transport and travel planning information could be issued with appointment letters and correspondence. Provision of detailed public transport and travel planning information should also be made available on the HGH and JRH website ad regularly kept up to date.

The Programme could also consider working closely with the Council and/or local bus operators in order to improve access to the sites by public transport and try and secure discounts for the cost of weekly, monthly and annual bus tickets for their staff.

7.2.2.2 Car park review and management strategy

A car park management strategy would need to be implemented for parking at the JRH taking full account of the current situation and the proposals. This strategy should apply to all users at the hospital, including staff, patients and visitors. It is suggested that a full-scale parking review is implemented as significant parking issues have been identified at the JRH for users under the current situations. Both on-site and off-site parking options need to be investigated, as well as related alternatives e.g. park and ride.

While reducing the availability of car parking is potentially an opportunity to encourage employees, visitors and patients to consider alternative modes of transport, each site should have a level of car park availability which does not put undue pressure on the surrounding area, prevent access to services or add additional stress to user experience.

The NHS organisations should therefore recognise the importance of allowing sufficient parking provision whilst not encouraging unnecessary use of the car. As an opportunity to reduce car trips car sharing or lift-sharing can be an effective way to reduce congestion, especially at peak times. The main user benefits associated with car sharing are financial due to the shared petrol cost and reduced parking charges; there are also environmental and social benefits. This could be explored particularly for staff and be linked to rotas and home locations to help define potential opportunities.

The introduction and promotion of smarter working practices for example, flexi time, working from home, compressed working and teleconferencing wherever possible and the potential to reduce the need to travel for selected staff.

The whole site at the JRH should be signed to allow for easy navigation for all users to their respective car parks.

7.2.2.3 Encouraging greater use of active travel modes

This can be done by:

- Promoting the health benefits of walking and cycling to patients with appointment letters and correspondence.
- Promoting the health benefits of walking and cycling to staff through information posted in common areas, staff intranet, site website, distributed with pay slips, newsletters, etc.
- Establishing a Bicycle User Group (BUG) for all staff in order to promote cycling and gain feedback.
- Providing sufficient cycle parking for use by staff and visitors

- Reviewing lighting and signage for pedestrians and cyclists on site and ensuring pedestrian and cyclist signage to the site and within the site is clear.
- Working in partnership with the Council to improve pedestrian and cyclist access and signage to the site

7.2.2.4 Communication and marketing strategy

The full travel plan related to the proposals should be carefully marketed to staff, patients and visitors in order to ensure it is effective. Lack of information about the alternatives to single occupancy car use such as walking, cycling and public transport is often the most significant barriers to their use. It is important that this information is available to employees, patients and visitors in a variety of 'user friendly' formats.

Signposting staff, patients and visitors to information about Community Transport schemes on the Oxfordshire County Council website would be useful.

7.2.3 Equality impacts

7.2.3.1 Collaborate with others to improve access to the JRH

To mitigate the impact of increased and long journey times on patients and their families due to the poor connectivity and congestion between the north of Oxfordshire and Oxford, the CCG can seek to engage with local transport operators to investigate options to improve access to the JRH from the north of the county.

7.2.3.2 Communication and information

An important consideration in implementing proposals and in promoting accessibility is to ensure that the future model of care is well communicated to the local population, so they understand how to access and use services. Whilst there has been a formal consultation process undertaken to outline and seek views on the proposed changes, it is important and necessary for the communication of the changes to be a sustained activity that goes beyond this into the implementation of changes.

Reconfiguration is unlikely to be instantly understood, so educational activities would develop awareness gradually, with clear message reinforced by all health and social care professionals across Oxfordshire. Communication also needs to further demonstrate the rationale behind the changes and the potential for benefits to people's health, wellbeing and clinical outcomes as a result of the changes.

It is suggested that communication should take a variety of forms, for example Council and other advice centres, online, leaflets, press articles, through local community groups and voluntary associations, and directly by the NHS to its staff, primary care and to local authority staff. There is also an opportunity to target particular equality groups and groups who are known to face issues of accessibility such as traveller communities, or those who do not have English as their first language and those living in deprived communities.

7.2.4 Sustainability impacts

Although sustainability impacts have been assessed as negligible, any negative impacts can be further minimised by encouraging the use of public transport and active travel. Please see section 7.2.2 of the travel mitigations and enhancements section for more information on this.

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B. Current and future provision

B.1 Ambulatory care

Ambulatory care is currently being delivered by the pilot 'rebalancing the system' delayed transfer project

This has delivered:

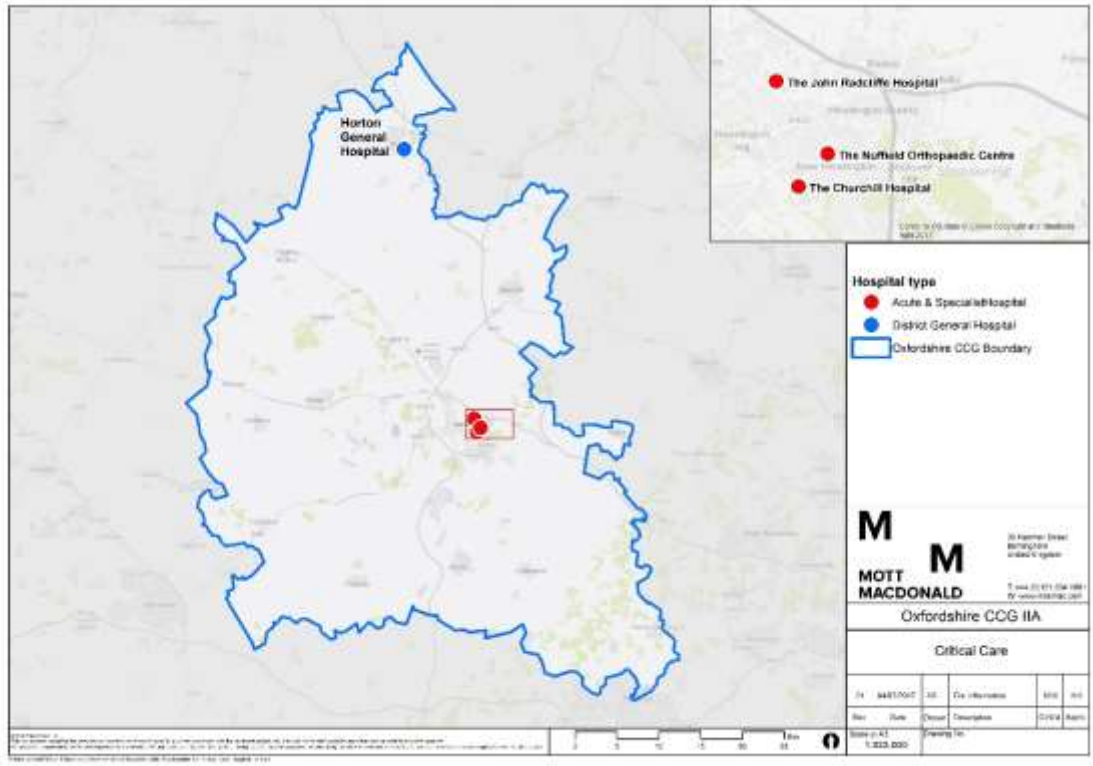
- A multi-agency Liaison Hub to manage complex delayed discharge patients by transfer to nursing home beds managed by the hub. This includes 134 intermediate care beds commissioned by the system in local nursing homes. This is further supported by an extended Supported Hospital Discharge Service (SHDS) and Discharge Liaison Team, to co-ordinate delayed discharges across the four OUHFT sites to streamline the discharge process.
- An ambulatory care pathway for medical patients which incorporates acute ambulatory units (AAUs) at both JRH and HGH. These are able to assess, diagnose and treat patients who are referred by the GP or Emergency Department, discharging them home with a follow up if required, or transferring them to an inpatient ward. The ambulatory pathway also includes providing care in-reach to people's homes (to deliver acute care for a set period of time).

Proposals seek to make permanent the decommissioning of 110 acute hospital beds that have already been closed and the 36 beds that are planned for closure subject to NHSE assurance, should these developments be adopted. This reduction in beds is associated to the reduction in hospital activity resulting from the movement of activity into the ambulatory care model and the avoided delayed discharges and transfers.

B.2 Critical care

Critical care is currently predominantly delivered at the HGH, the JRH through its adult intensive care unit and the Churchill intensive care unit.

Figure 2: Current critical care hospitals



The table below sets out current patient activity by hospital. Please note this refers to all levels of critical care, not just level three. Additional breakdown of critical care activity data has been requested by Mott MacDonald.

Table 19: Patient activity by hospital

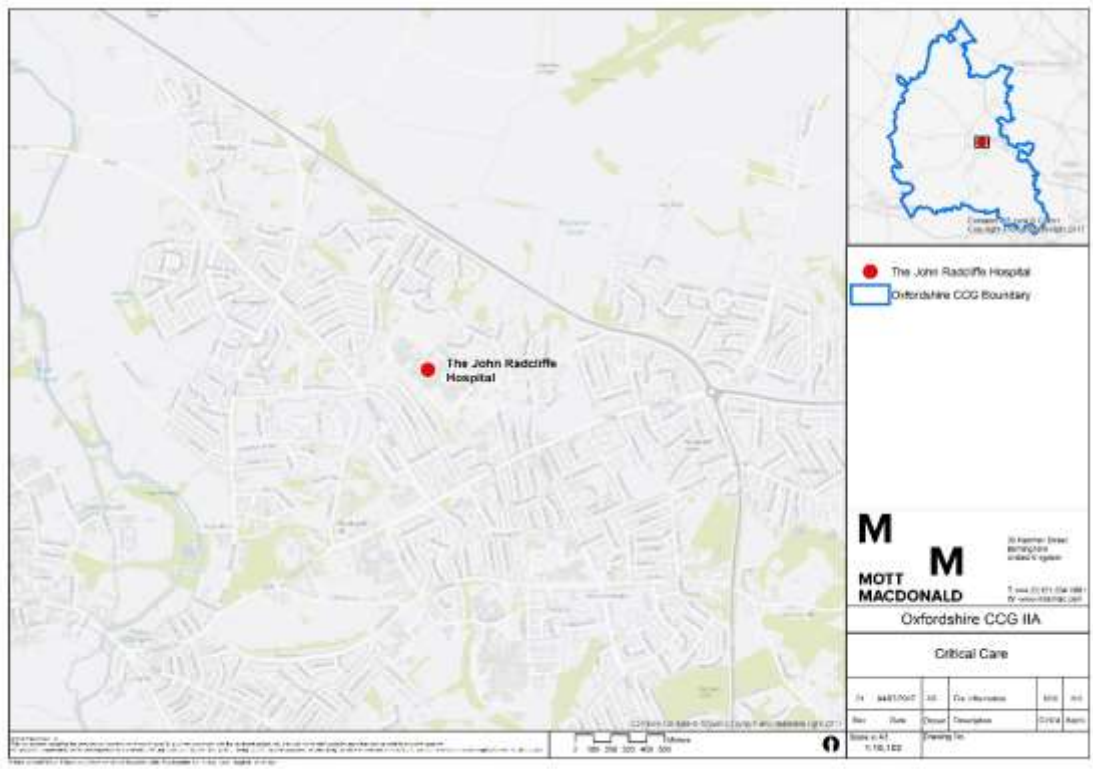
Hospital	Churchill	Horton General	Nuffield Orthopaedic Centre	John Radcliffe	Other Oxfordshire	Other Non-Oxfordshire
Total number of patients	91	141	36	526	0	161

Source: Data relates to the time period October 2015-September 2016. Data provided by Oxfordshire CCG

Under the proposals, critical care will continue to be delivered the HGH and the JRH through its adult intensive care unit and the Churchill intensive care unit, however Level 3 critical care beds will be delivered solely at the JRH, rather than at the HGH (as shown below in Figure 4). It is projected that there will be a 5.23 per cent growth in demand for Level 3 critical care from 2016/17-2020/21.[63]

[63] PCBC

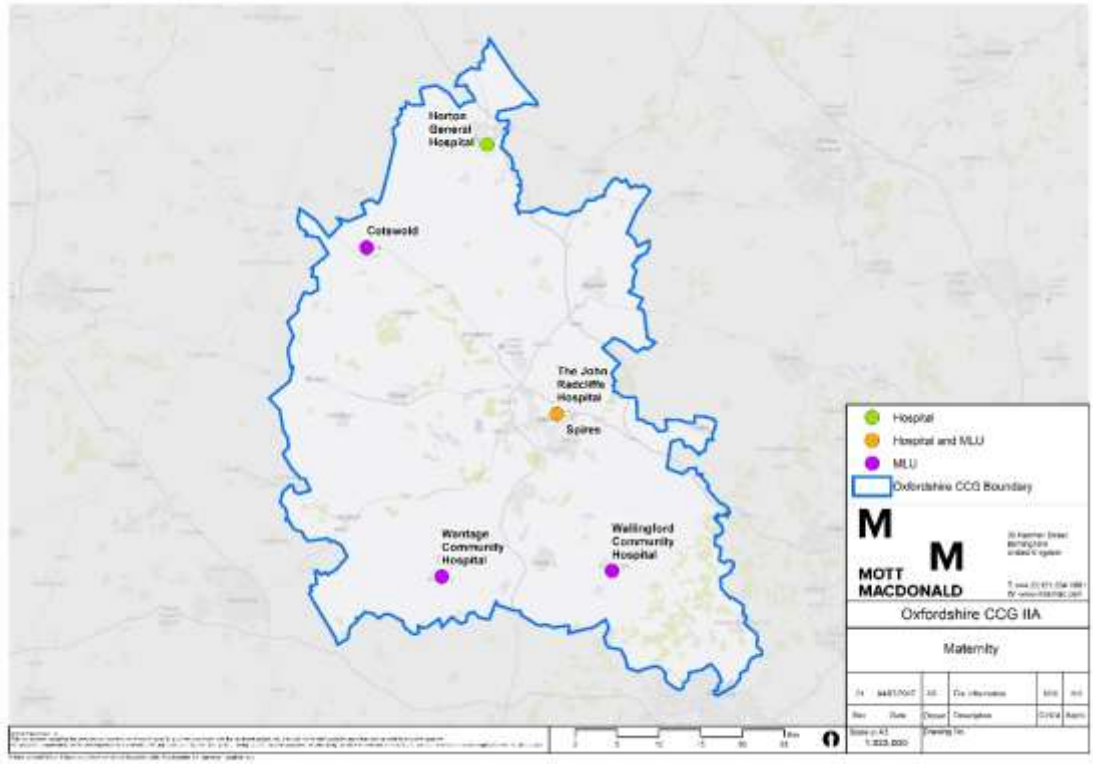
Figure 3: Proposed Level 3 critical care hospitals



B.3 Maternity

OUHFT provides maternity services for women in Oxfordshire and for up to 1,000 women from surrounding counties. Services are delivered in two separate obstetric units (at the JRH and the HGH), one alongside MLUs and three freestanding MLUs. The MLUs are in Wallingford, Wantage, Cotswold and Spires (as shown below in Figure 5).

Figure 4: Maternity hospitals and MLUs



Source: 2015 IMD

The table below sets out current activity by hospital. Please note this includes all maternity activity data.

Table 20: Patient activity by hospital

Hospital	John Radcliffe	Churchill	Horton General	Nuffield Orthopaedic Centre	Other Oxfordshire	Other Non-Oxfordshire
Total number of patients	7,970	-	2,556	-	325	685

Source: Data relates to the time period October 2015-September 2016. Data provided by Oxfordshire CCG

Under the proposals, a single specialist obstetric unit for Oxfordshire at the JRH will be created, supported by MLUs in both the North and the South of the county. Necessary consequential changes arising from the consolidation of obstetric services at the JRH are:

- SCBU services will be moved from the HGH to the JRH.
- Emergency gynaecology services will be centralised at the JRH.

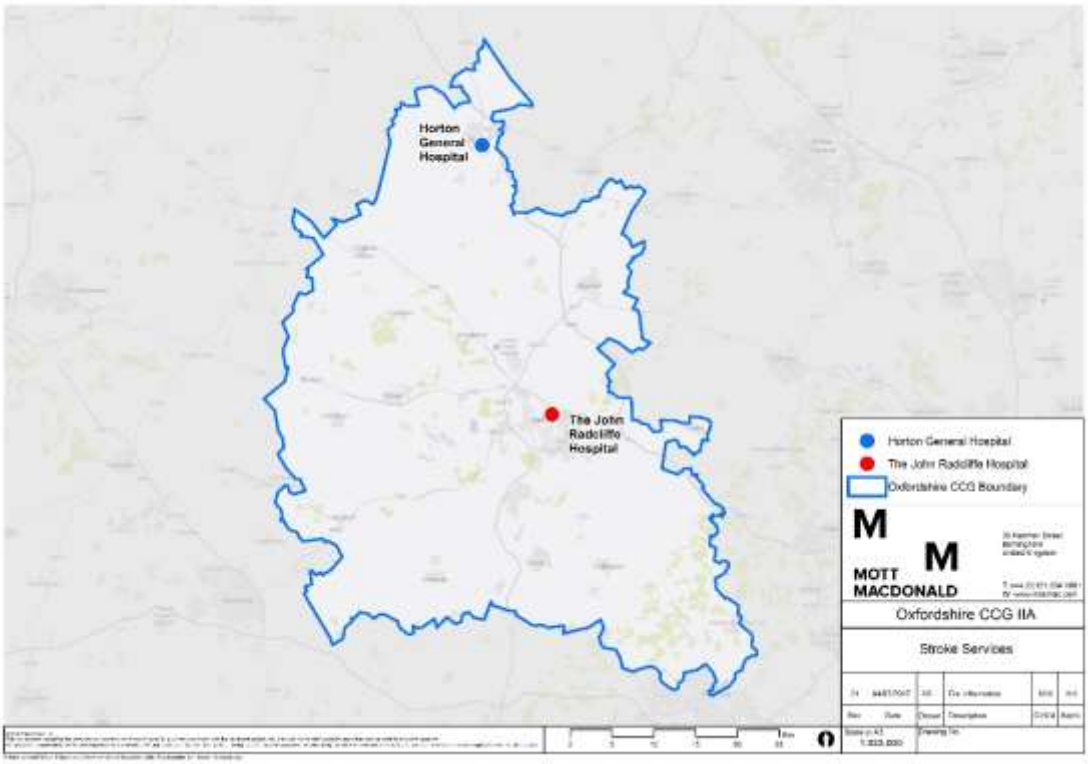
It is predicted that there will be a 5.23 per cent growth in the period 2016/2017 to 2020/21.[64]

[64] PCBC

B.4 Stroke services

There is a Hyper Acute Stroke Unit (HASU) at the JRH. An acute/Rehabilitation Stroke Unit at the HGH and a transient ischaemic attack (TIA / 'mini stroke') outpatient clinics at the JRH and the HGH (as shown below in Figure 6).

Figure 5: Current stroke services



Source: 2015 IMD

The table below sets out current stroke activity data.

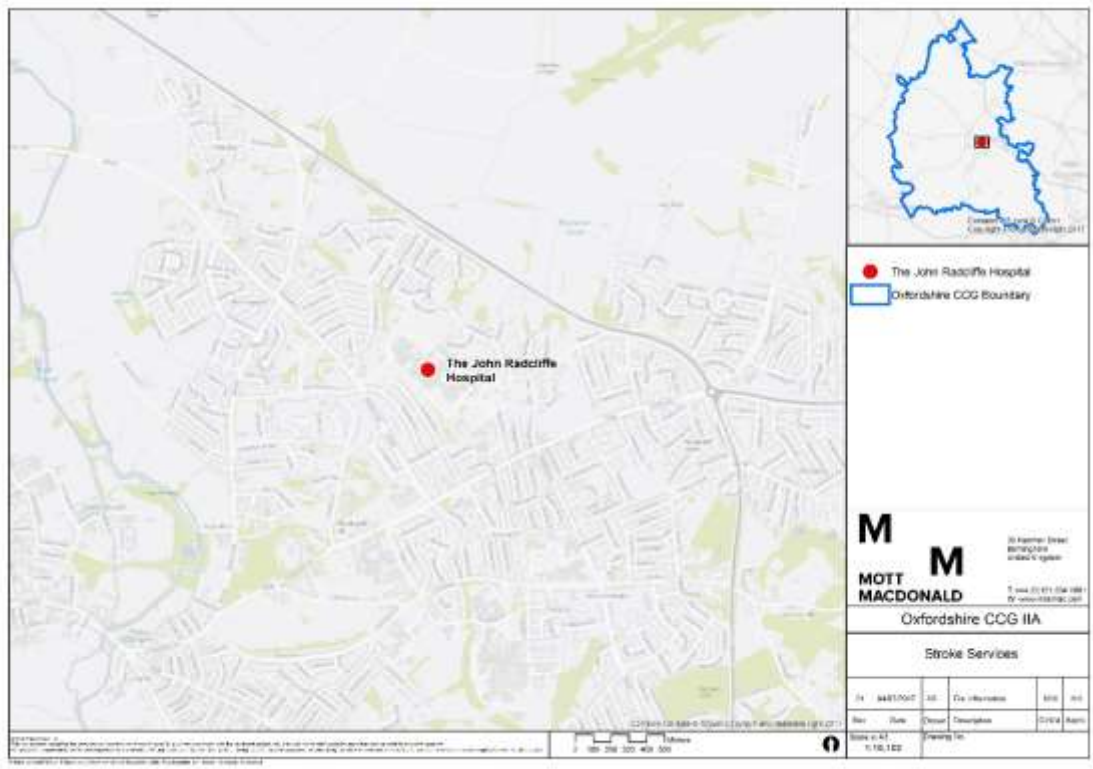
Table 21: Patient activity by hospital

Hospital	Churchill	HGH	Nuffield Orthopaedic Centre	JRH	Other Oxfordshire	Other non-Oxfordshire
Total number of patients	0	93	37	404	46	77

Source: Oxfordshire CCG

Under the proposals, stroke services will be centralised by enabling direct conveyance of all appropriate Oxfordshire patients to a HASU at the JRH in Oxford. This will be supported by the roll out of countywide Early Supported Discharge to improve rehabilitation and outcomes.

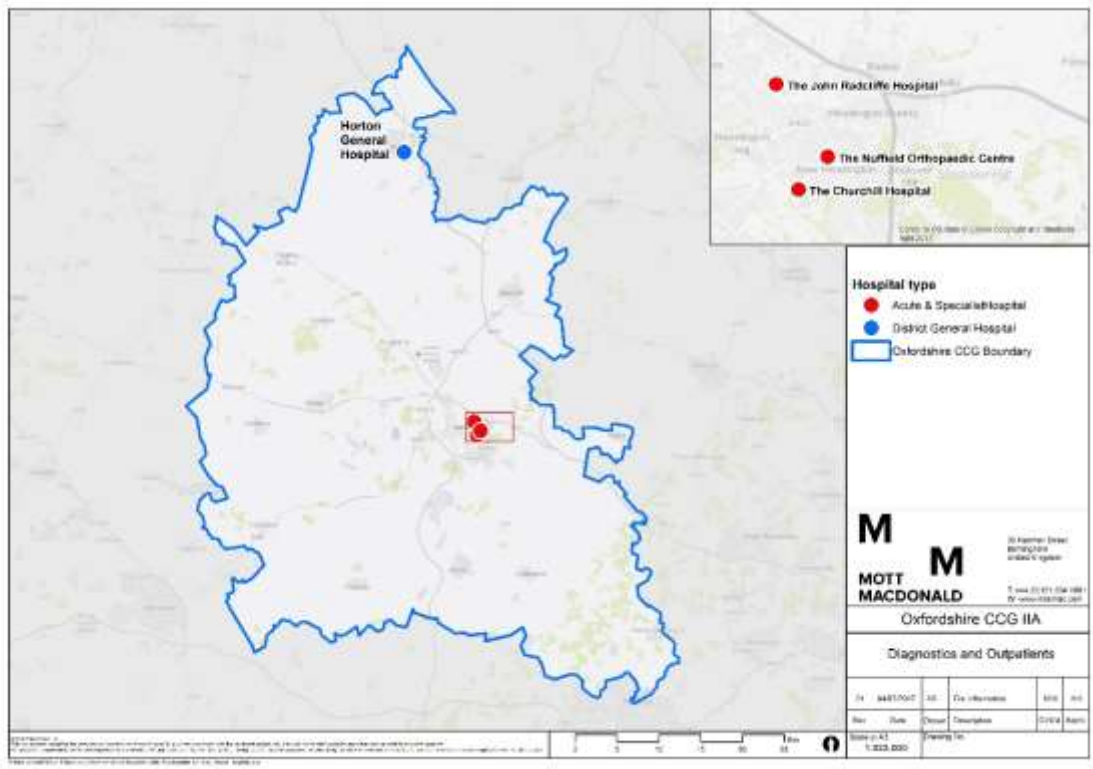
Figure 6: Future stroke services



B.5 Planned Care services

Planned Care services are offered at both the JRH, the Oxford Hospitals and Churchill Nuffield Orthopaedic Centre. However, the majority of Planned Care appointments are delivered at the Oxford Hospitals, and residents in the north of the country travel to the JRH for their treatment. This is shown below in Figure 8.

Figure 7: Diagnostics and outpatients hospitals



The table below details current activity

Table 22: Patient activity by hospital

Hospital	John Radcliffe	Churchill	Horton General	Nuffield Orthopaedic Centre	Other Oxfordshire	Other Non-Oxfordshire
Total number of patients	250,594	141,948	65,343	87,053	66,598	67,171

Source: Data relates to the time period October 2015-September 2016. Data provided by Oxfordshire CCG

Under the proposals, the following services will be delivered at the HGH:

- A new diagnostic facility will be developed at the HGH to provide high quality diagnostic procedures (MRI, CT scanners and ultrasound etc.), rapid assessment and reduced travel to Oxford for routine diagnostic imaging.
- A new outpatient facility will be developed with capacity for significant transfer of outpatient activity from Oxford in order to make local services more accessible to North Oxfordshire's population. This includes 'one stop clinics' which should also reduce multiple journeys.
- An Advanced Pre-Operative Assessment Unit will be introduced to enable smooth running of elective interventional services
- A Coordinated Theatre Complex will be developed at the HGH to improve surgical throughput and complement an enhanced Elective Care Centre.

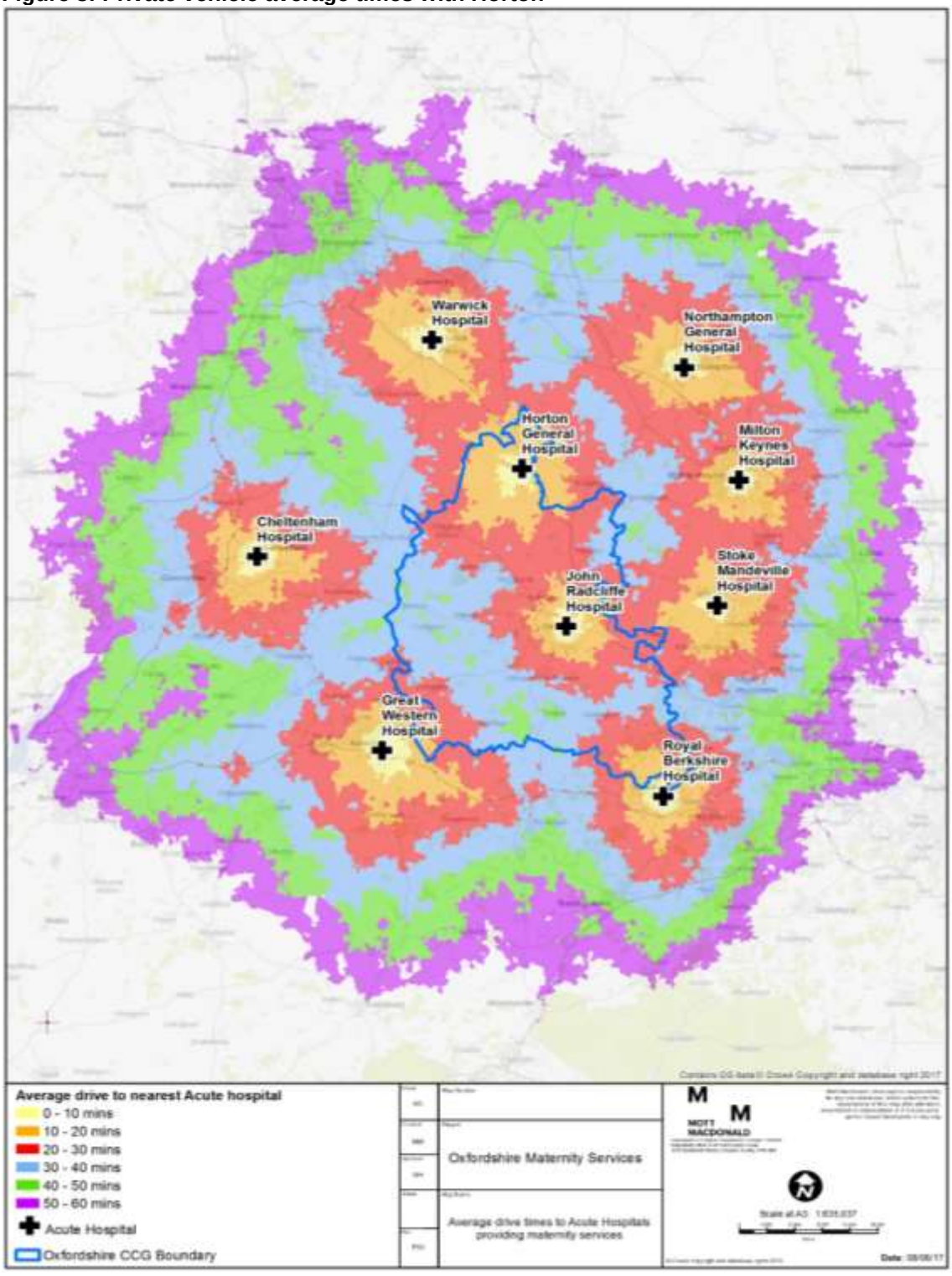
It has been estimated that there will be a 16.25 per cent increase from 2016/17-2020/21 in diagnostics.[65]

[65] PCBC

C. Travel analysis heat maps

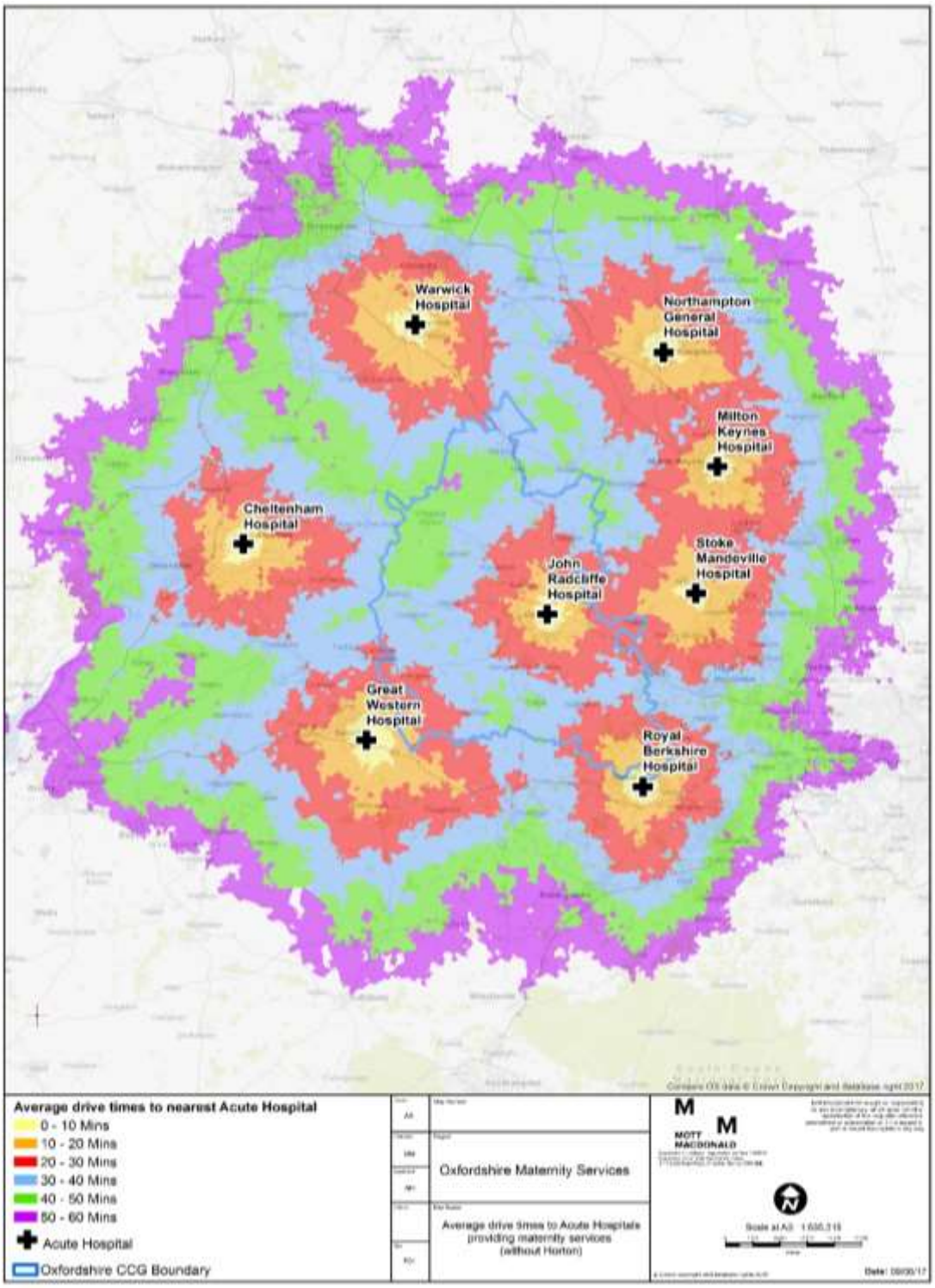
Transport accessibility plots are provided in the form of heat maps. These are produced from accessibility planning software which takes account of observed road speeds, public transport networks and the service locations (hospital sites) to create isochrones (areas of equal travel time). Once added to base mapping these highlight the travel time to access the service based on the site configuration in each assessed option for each transport mode. It is important to note that the model uses historic observed speed data and public transport timetables and therefore it is to be used as a snapshot for each travel mode and does not represent all potential journey's. Individuals may experience different travel durations.

Figure 8: Private vehicle average times with Horton



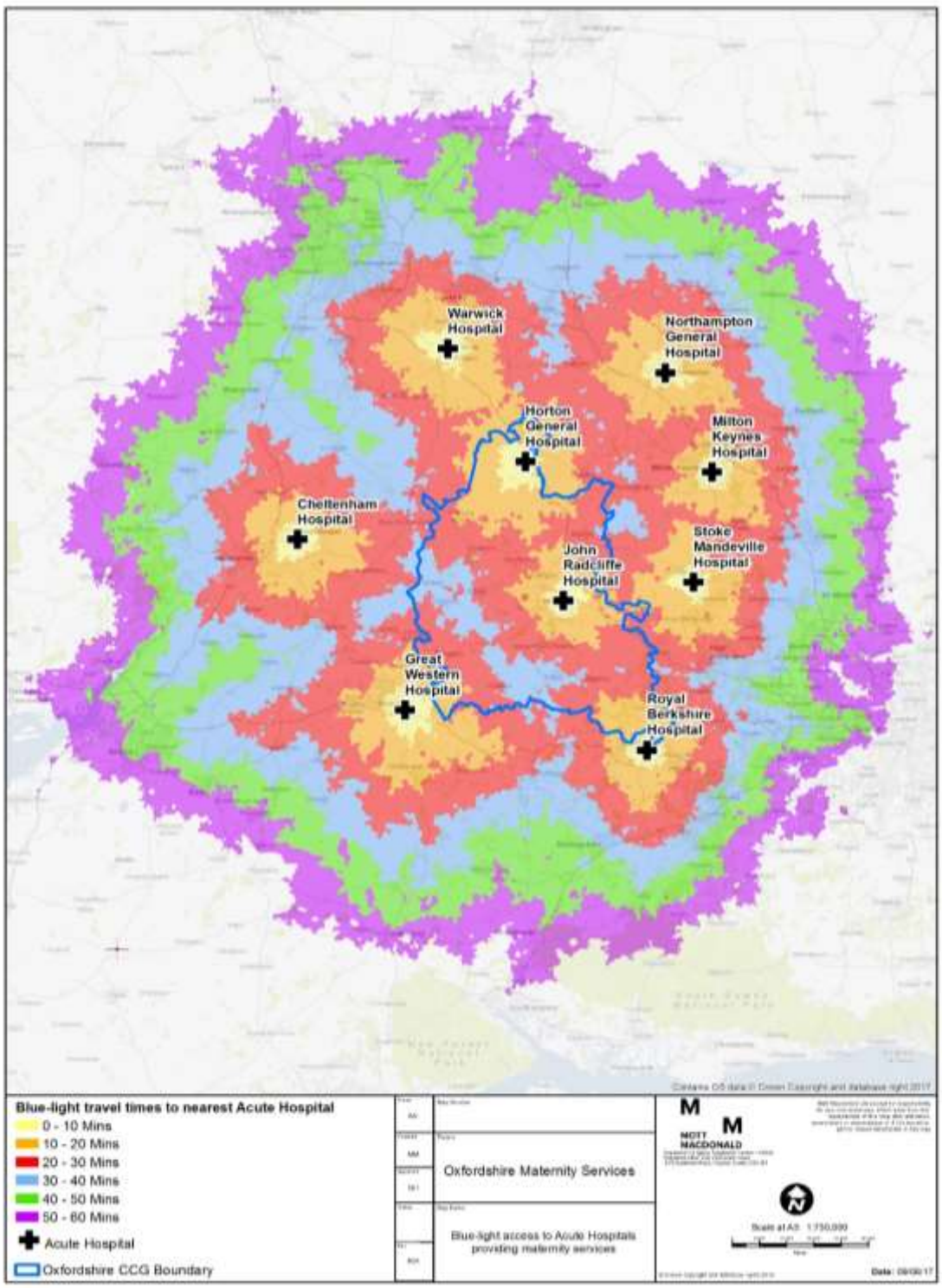
Source: Data provided by the CSU

Figure 9: Private vehicle average times without Horton



Source: Data provided by the CSU

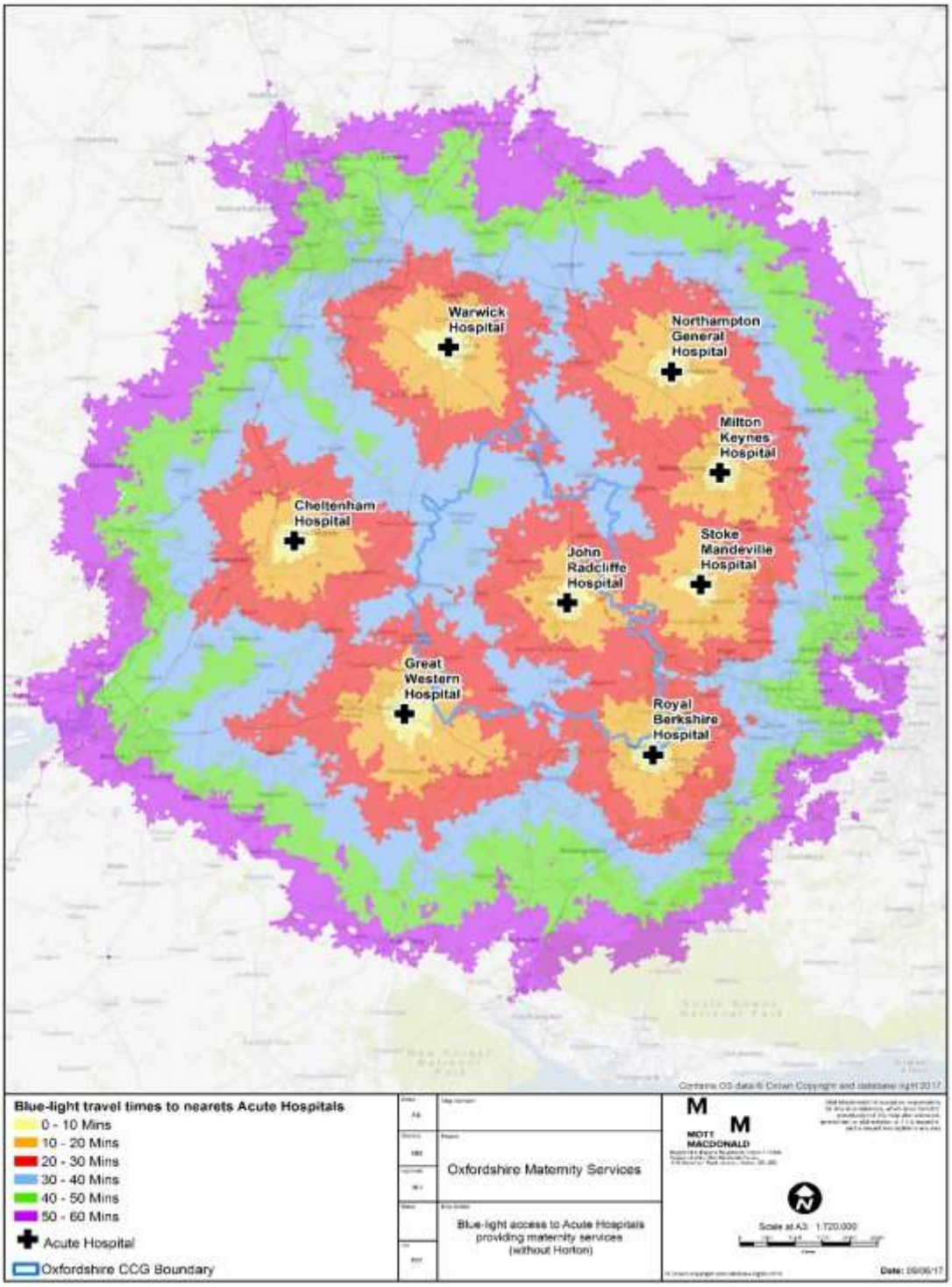
Figure 10: Blue light access with Horton[66]



Source: Data provided by the CSU

[66] Modelling has been done on the basis of pick up to destination both at non peak and peak times.

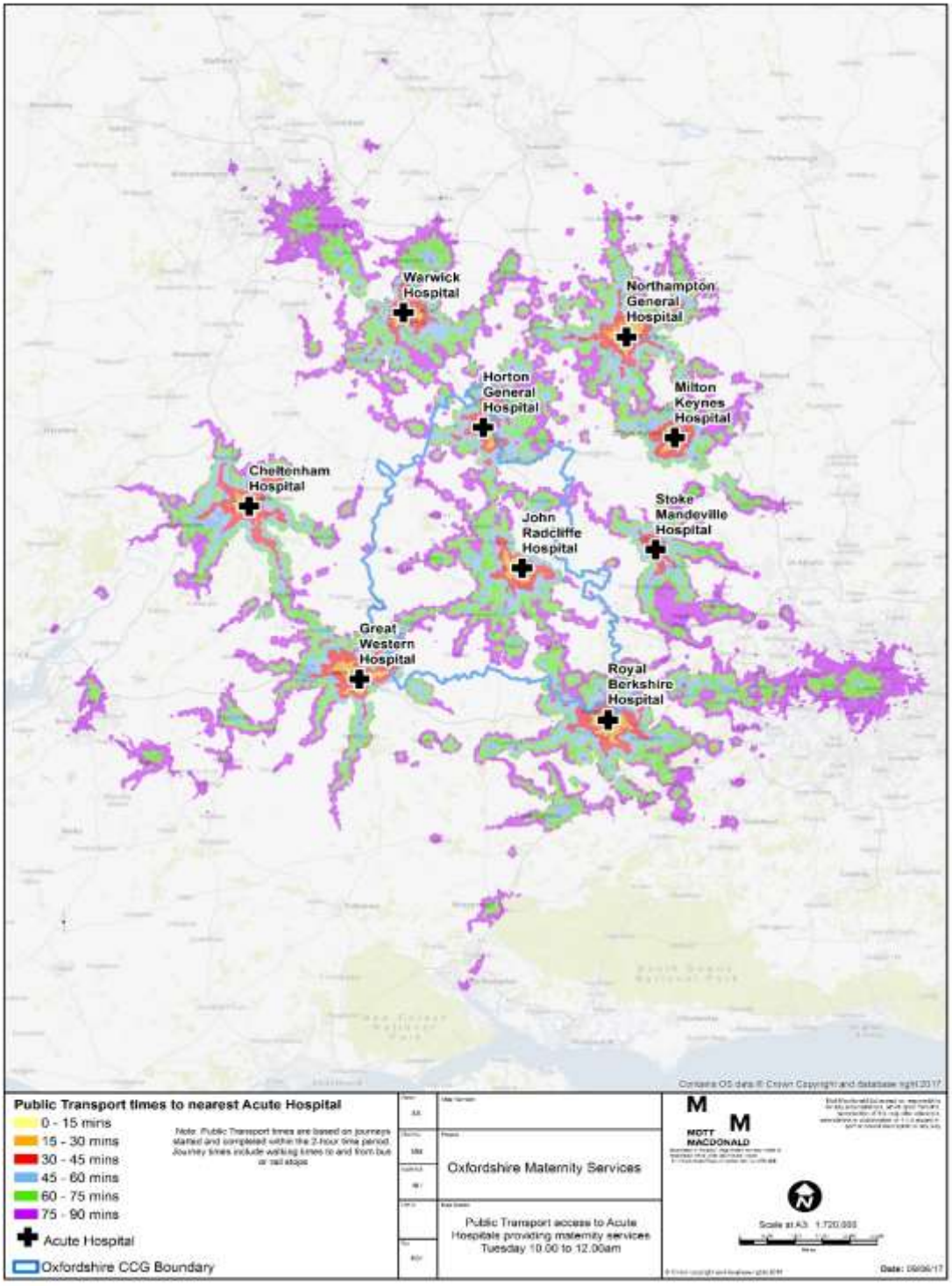
Figure 11: Blue light access without Horton[67]



Source: Data provided by the CSU

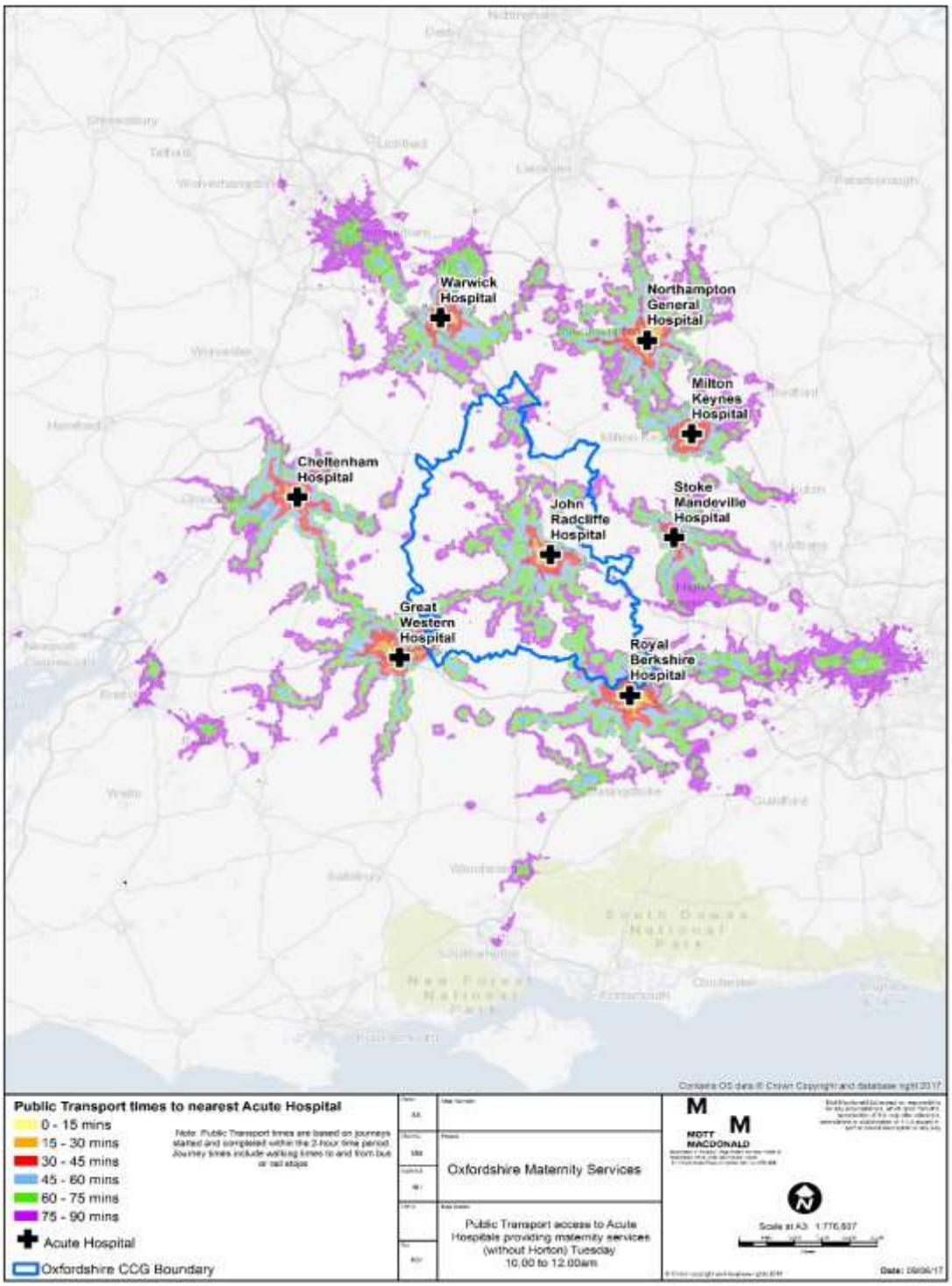
[67] Modelling has been done on the basis of pick up to destination both at non peak and peak times.

Figure 12: Public transport Tuesday 10am-12am with Horton – (e.g. access to antenatal services)



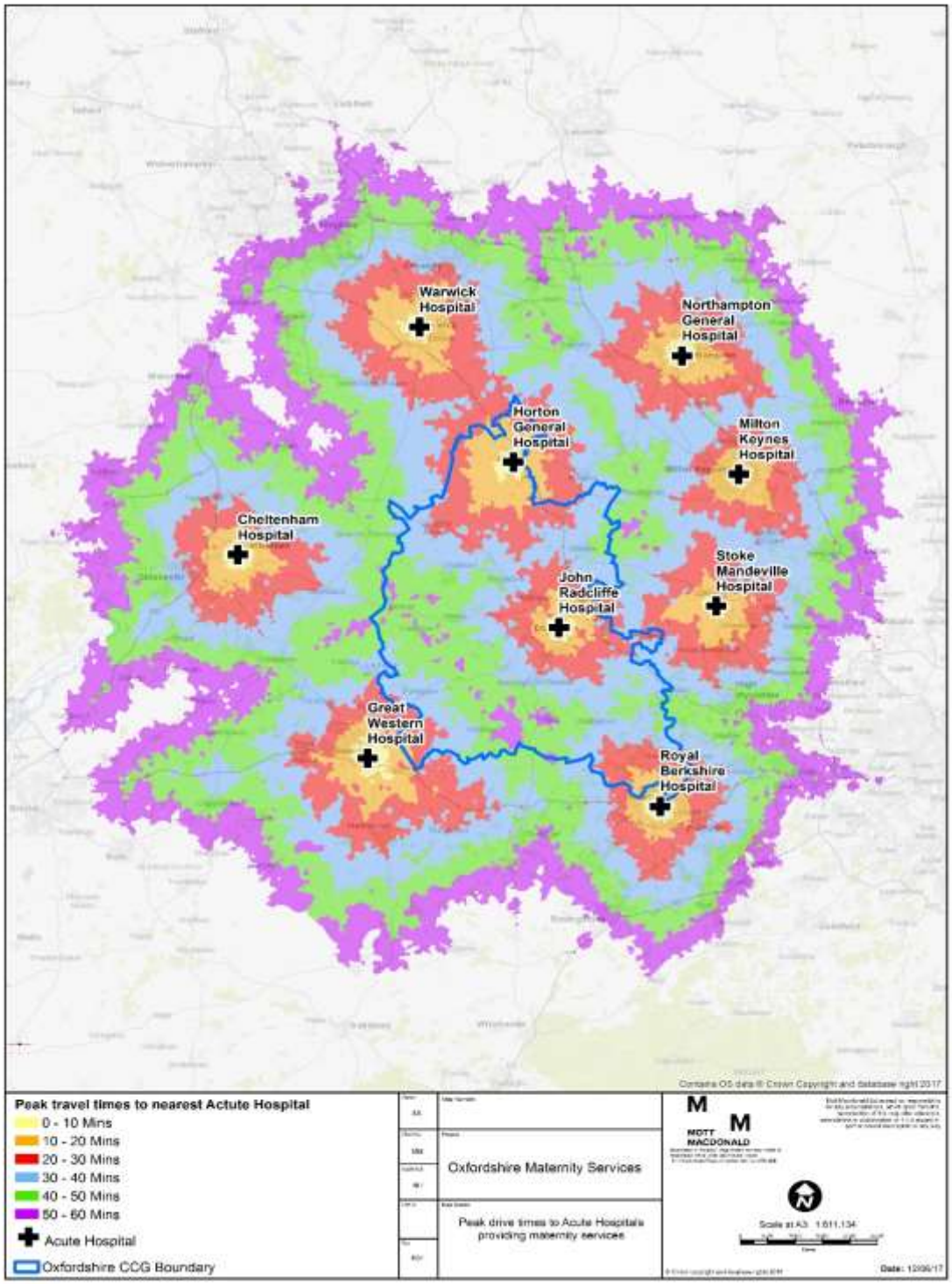
Source: Data provided by the CSU

Figure 13: Public transport Tuesday 10am-12am without Horton – (e.g. access to antenatal services)



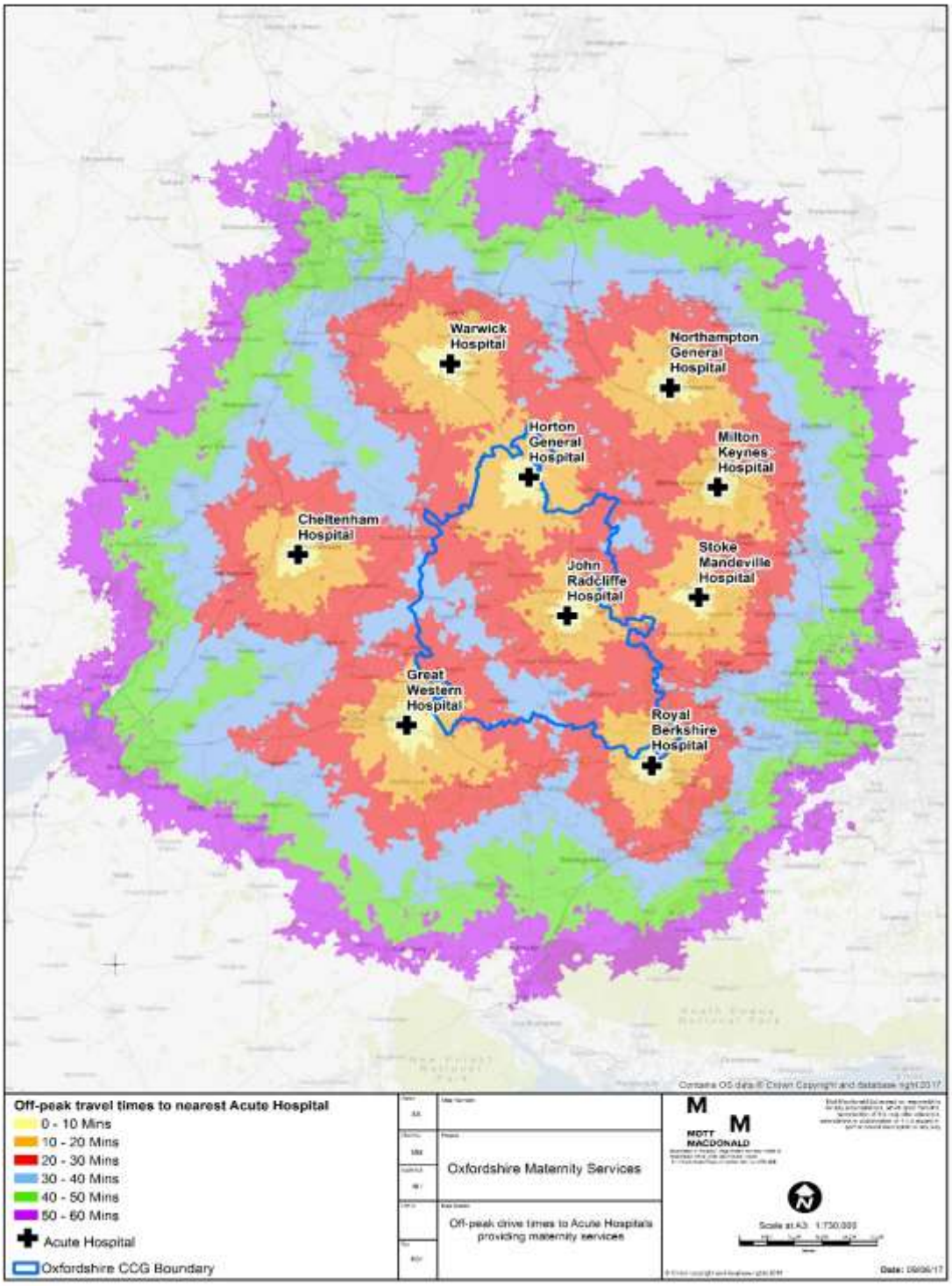
Source: Data provided by the CSU

Figure 14: Private vehicle peak times with Horton



Source: <Insert Notes or Source>

Figure 15: Private vehicle off-peak times with Horton



Source: Data provided by the CSU

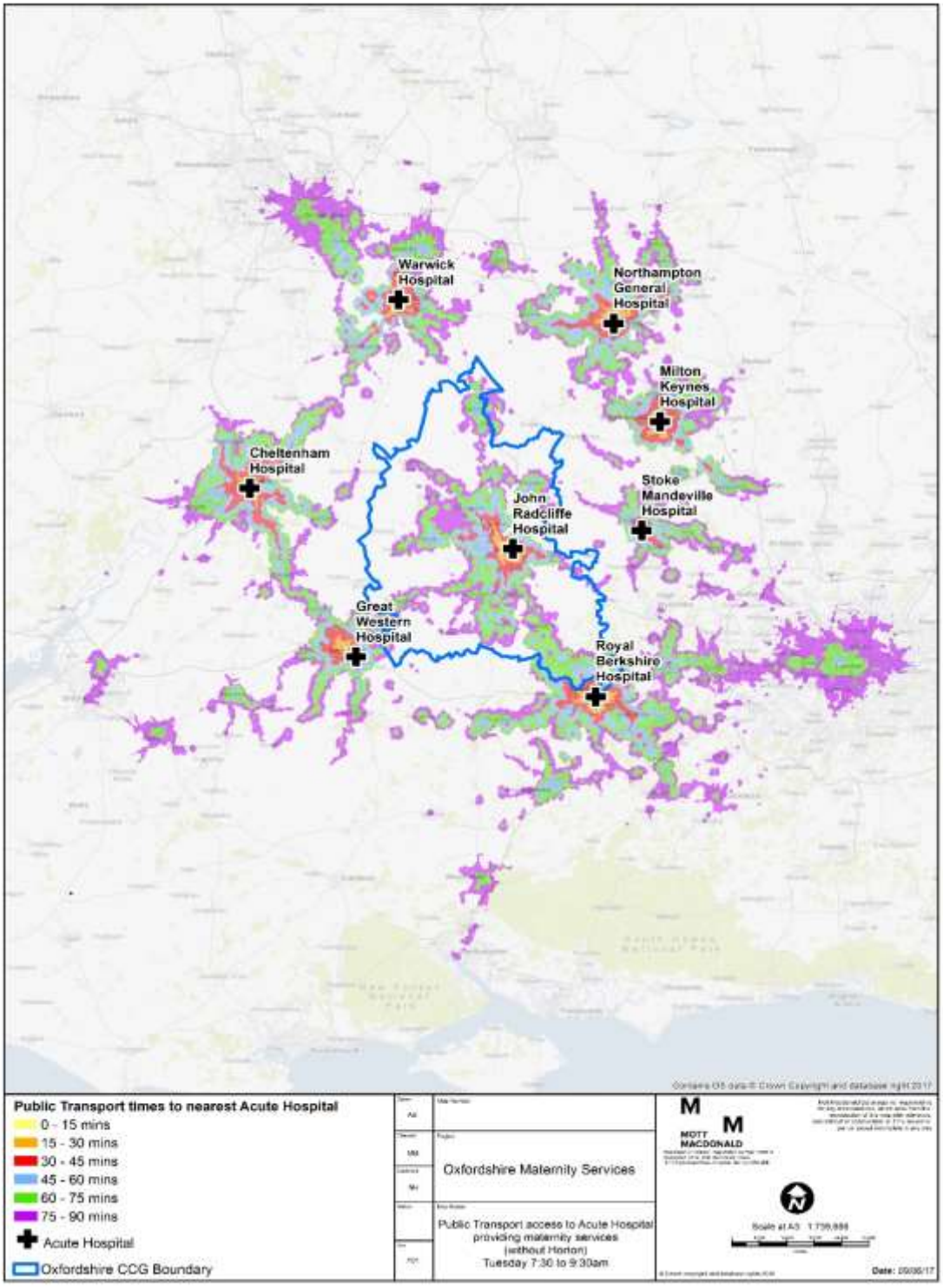
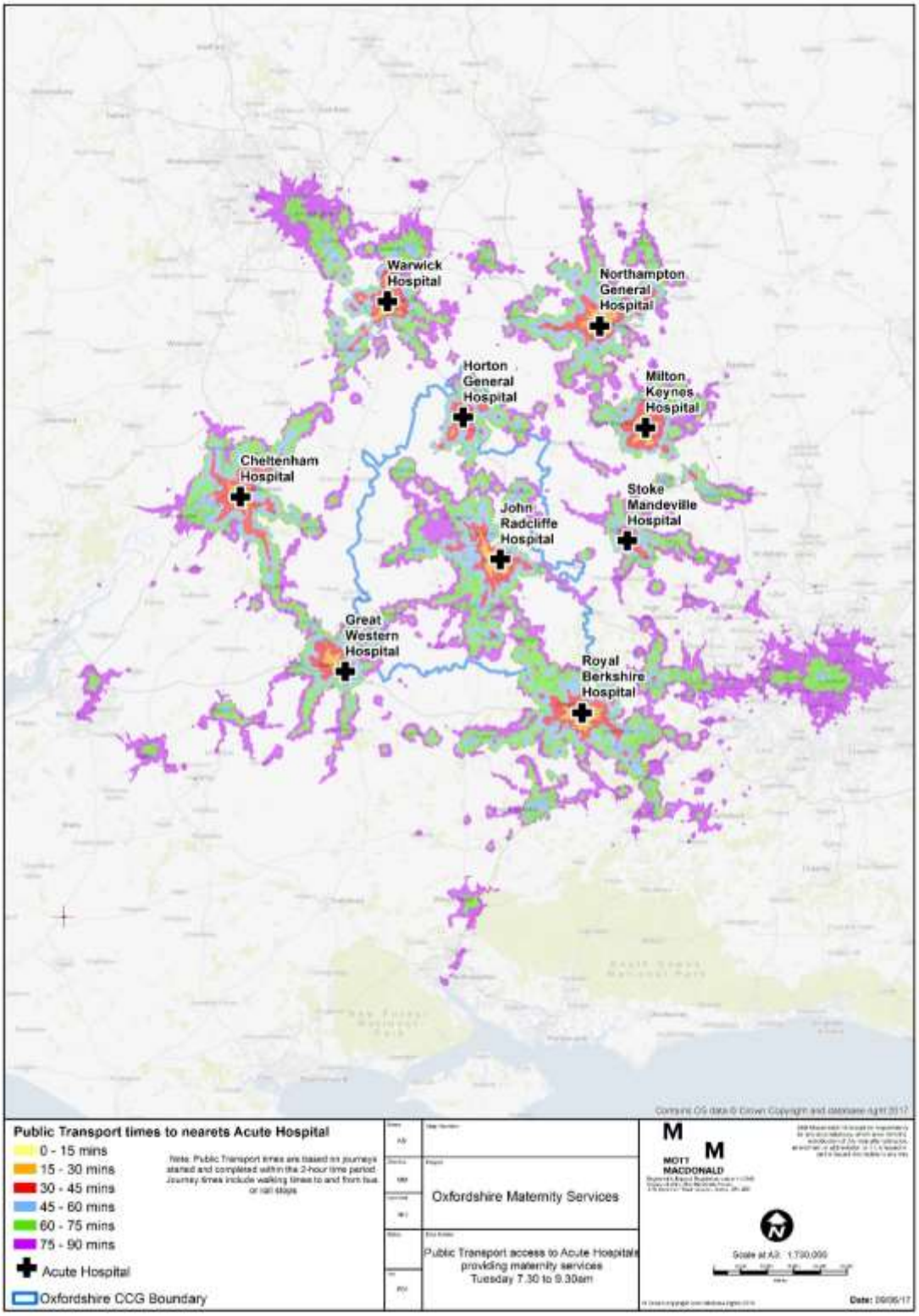
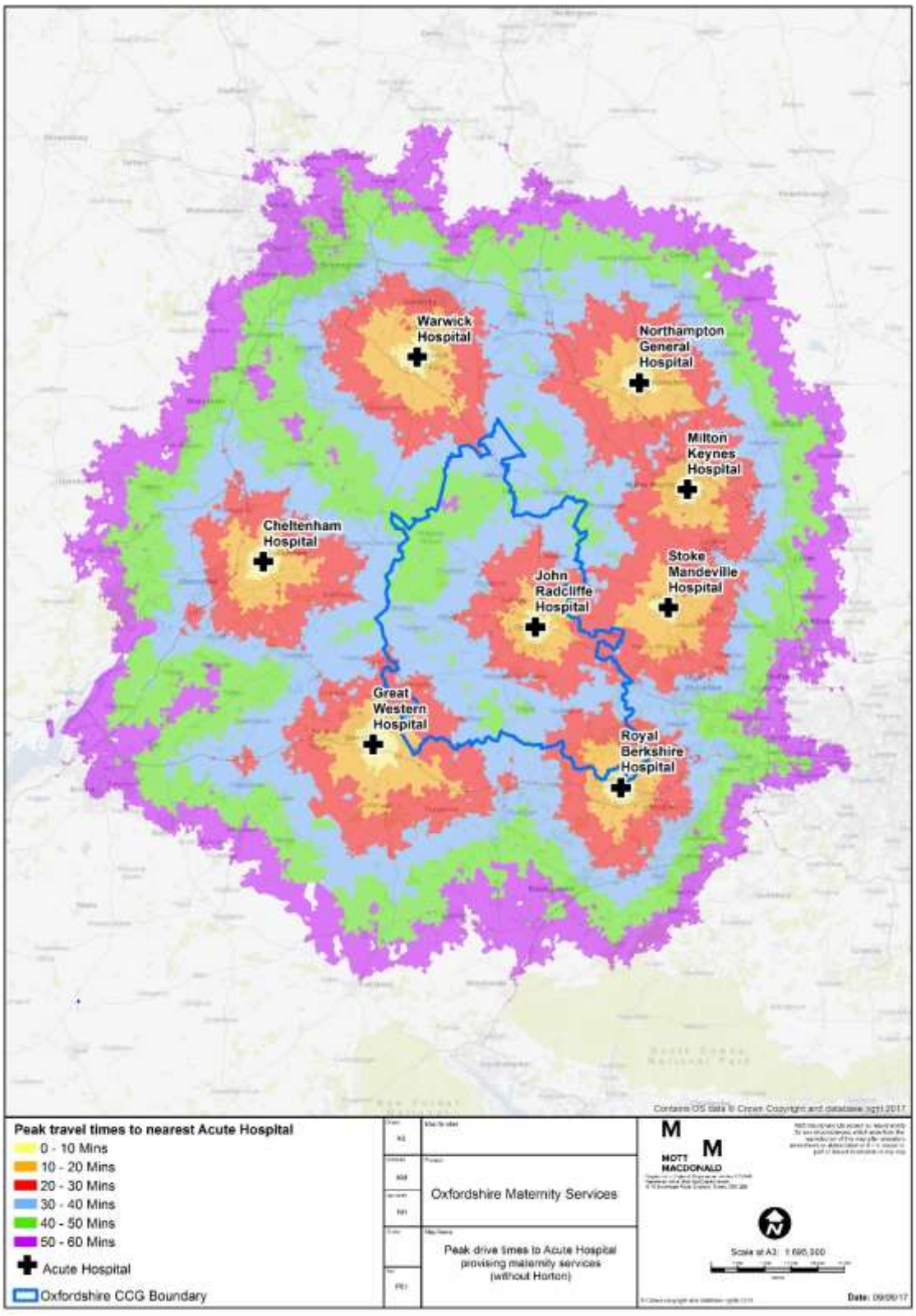

Warwick Hospital
Northampton General Hospital
Milton Keynes Hospital
Cheltenham Hospital
John Radcliffe Hospital
Stoke Mandeville Hospital
Great Western Hospital
Royal Berkshire Hospital
Public Transport times to nearest Acute Hospital
0 - 15 mins
15 - 30 mins
30 - 45 mins
45 - 60 mins
60 - 75 mins
75 - 90 mins
Acute Hospital
Oxfordshire CCG Boundary
Oxfordshire Maternity Services
Public Transport access to Acute Hospital providing maternity services (without Horton)
Tuesday 7:30 to 9:30am
MOTT MACDONALD

Figure 17: Public transport Tuesday 7.30-9.30 without Horton
Figure 16: Public transport Tuesday 7.30-9.30 with Horton



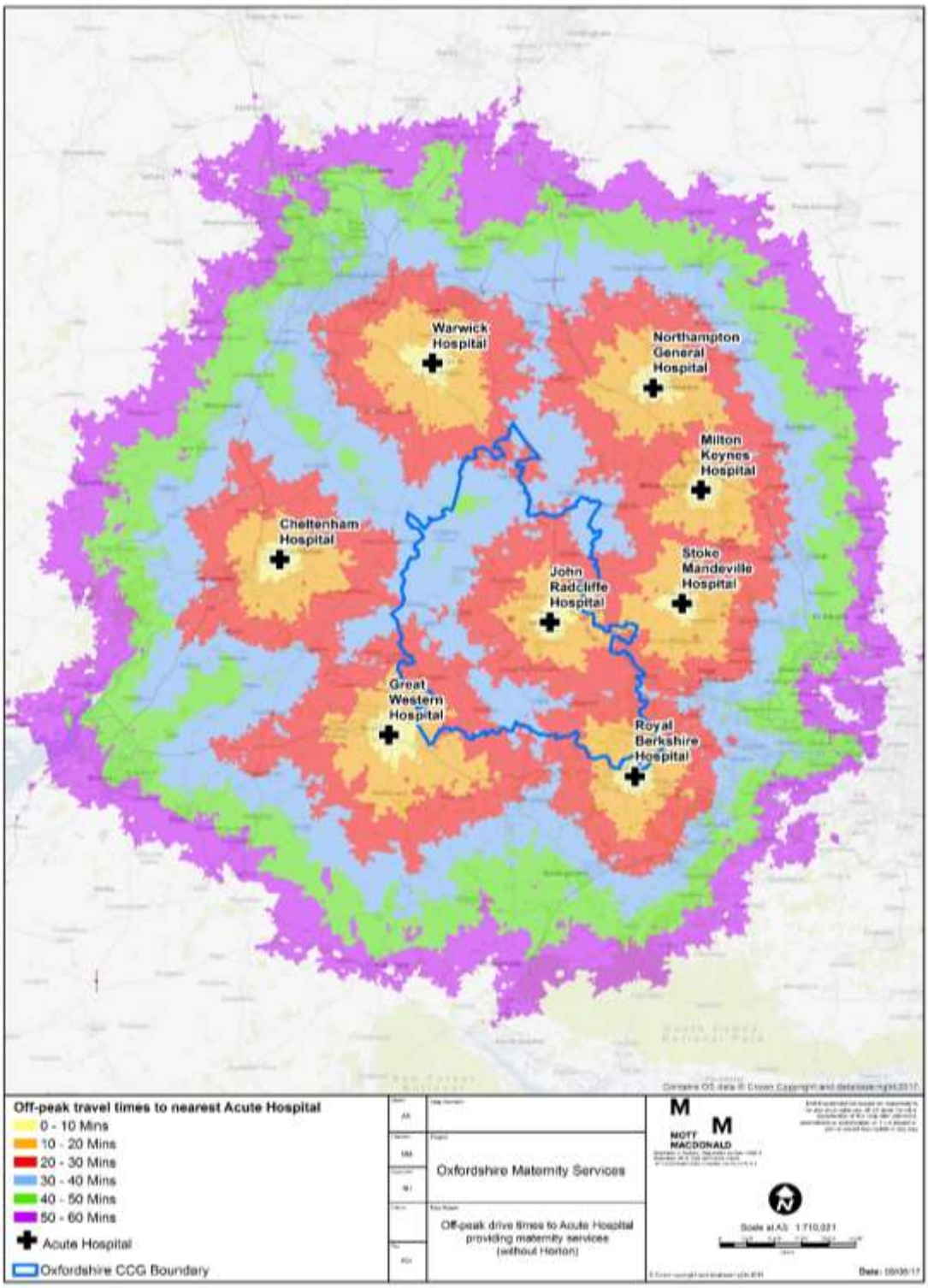
Data provided by the CSU

Figure 18: Private vehicle peak times without Horton



Source: Data provided by the CSU

Figure 19: Private vehicle off-peak times without Horton



Source: Data provided by the CSU

D. Equality chapter of the scoping report

This section of the report considers each of the nine 'protected characteristic' groups as defined by the Equality Act 2010, as well as considering deprived communities.[68] These groups are:

- Age (specifically children and older people)
- Deprived communities
- Disability
- Gender reassignment
- Marriage and civil partnership
- Pregnancy and maternity
- Race and ethnicity
- Religion and belief
- Sex
- Sexual orientation

For each group, a summary table is presented identifying whether and which services the group has is considered to have a disproportionate need (that is a need which is above the general population) or a differential need (that is a need which differs from the general population). Please note that we have not provided analysis on the equality impacts of the proposed changes to the delivery of Level 3 critical care. This is because of the dependency of other clinical services currently being delivered at the HGH which will require access to Level 3 critical care. These clinical specialities (such as complex theatre) are not included in Phase One of the Oxfordshire Transformation Programme and will be considered in the IIA of Phase Two. Services have been categorised into following:

- Ambulatory care
- Stroke services
- Maternity
- Planned Care services. *(Please note that we have included a number of clinical specialities in the evidence base below on the assumption that elective surgery will also require the use of Planned Care services prior to surgery).*

For each group, where possible, density maps and population tables are provided. The population for the whole study area and national figures are also provided to act as a comparator.

[68] Although not included as a protected characteristic under equality legislation, it is accepted best practice to review potential impacts on deprived communities in health service IIAs due to the well-established links between deprivation and poorer health outcomes.

D.1 Age: Children (16 and under)

Evidence of disproportionate need has been identified for the following service areas.

Table 23: Scoped in services –children (16 and under)

Service area	Evidence of disproportionate need	Evidence of differential need
Ambulatory care		
Maternity		
Planned Care services	✓	
Stroke services		.

Source: Mott MacDonald

D.1.1 Planned Care services

D.1.1.1 Ear nose and throat (ENT) services

ENT services are commonly required by children. For example, tonsillitis is a condition most common in children aged three to seven, as children have larger tonsils than adults and older children. [69]

Adenoids are small lumps of tissue at the back of the nose, above the roof of the mouth. They are part of the immune system, which helps fight infection and protects the body from bacteria and viruses. Adenoidectomy is sometimes required for children who experience breathing or sleeping problems or recurrent problems with the ears occur.[70]

D.1.1.2 Plastic surgery

There are certain conditions experienced predominantly by children which require plastic surgery treatment. This is likely to take place in childhood. Examples of these conditions include cleft lips (and other craniofacial birth defects), hand defects, blood vessel malformations, and skin / tissue defects.[71] [72] [73] [74]

D.1.1.3 Respiratory services

Asthma is a common long term condition that often starts in childhood.[75] Around one in 11 children are currently receiving treatment for asthma, compared to around one in 12 adults.[76] Respiratory conditions account for 50% of long term illnesses in children[77], suggesting that long term management care for these types of illnesses is likely to be higher for children.

[69] NHS (2015): 'Tonsillitis'.

[70] NHS (2016): 'Adenoids and adenoidectomy'.

[71] NHS (2016): 'Cleft lip'.

[72] NHS (2014): 'Craniosynostosis'

[73] The British Society for Surgery of the Hand (date unknown): 'Congenital hand conditions'. See: http://www.bssh.ac.uk/patients/congenital_hand_conditions.aspx

[74] GOSH (2016): 'Haemangiomas'

[75] NHS Choices (2016) 'Asthma'

[76] Asthma UK (date unknown) 'Asthma facts and statistics' and 'Diagnosing asthma in adults'

[77] NHS England (2014) 'NHS standard contract for paediatric medicine: respiratory'

D.1.1.4 Urology services

There are some urological conditions that are more common to children, with many requiring surgical intervention. These include hypospadias, bladder reconstruction, sex differentiation disorders, and childhood genitourinary tract cancers.[78]

D.1.2 Demographic profile

The table below shows that within Oxfordshire CCG, the number of 16 year olds is broadly in line with the national average

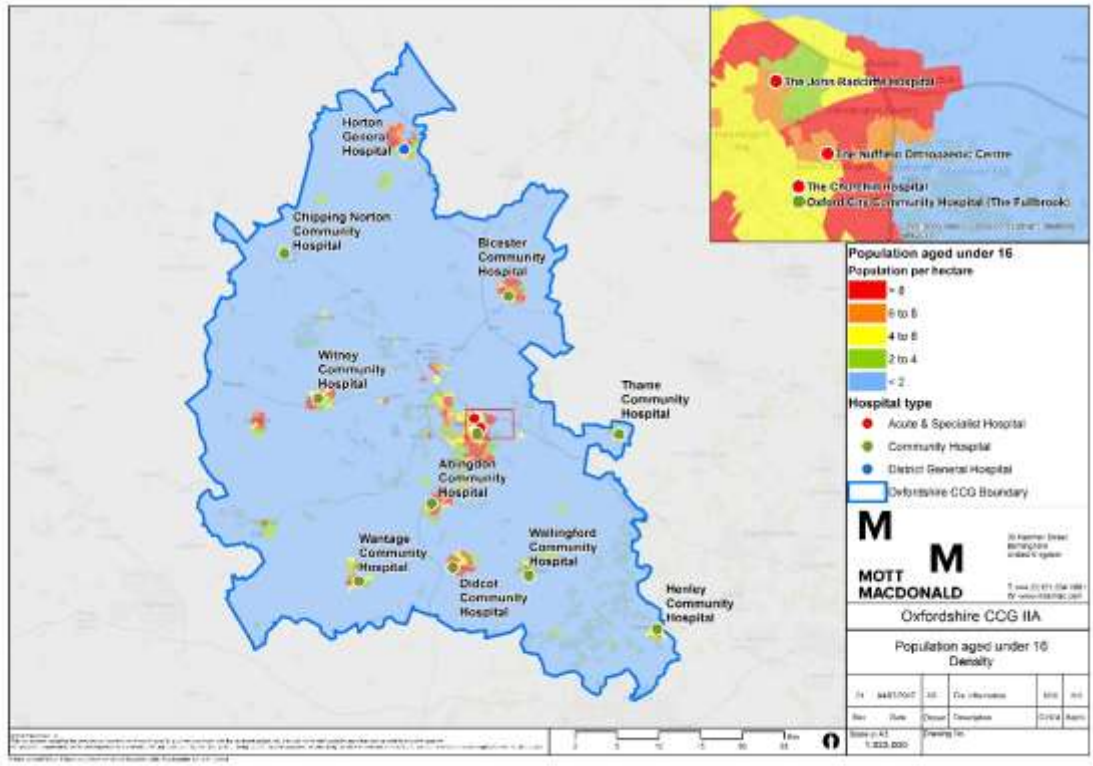
Table 24: Age (Children under the age of 16)

Study area	Total population	Under 16	Under 16 (%)
Oxfordshire CCG	663,556	138,648	21%
England	54,786,327	11,677,856	21%

Source: 2015 mid-year estimates

Figure 21 below shows that the highest densities of those aged under 16 match with urban centres, with a particular concentration around Oxford.

Figure 20: Population under 16



Source: 2015 mid- year estimates

[78] The British Association of Urological Surgeons (date unknown): 'Patients: gender information. Paediatrics'. See: http://www.baus.org.uk/patients/information/paediatrics.aspx

D.2 Age: Older people (65 and over)

Evidence of disproportionate and differential need has been identified for the following service areas:

Table 25: Scoped in services – age: older people (65 and over)

Service area	Evidence of disproportionate need	Evidence of differential need
Ambulatory care	✓	
Maternity		
Planned Care services	✓	
Stroke services	✓	

Source: Mott MacDonald

D.2.1 Ambulatory care

D.2.1.1 Abdominal pain

Inguinal hernias, a common reason for admission for abdominal pain, occur when fatty tissue or a part of the bowel, such as the intestine, pushes through the groin at the top of the inner thigh. [79] Older people disproportionately suffer from inguinal hernias as the muscles surrounding their abdomen weaken over time. [80]

Gastric ulcers, also known as stomach ulcers, are open sores that develop on the lining of the stomach. [81] Stomach ulcers mostly occur in people aged 60 or over. [82]

D.2.1.2 Deep Vein Thrombosis (DVT)

DVT is a blood clot that develops within a deep vein in the body, typically in the leg.[83] DVT is usually caused by being inactive for long periods.[84] A study by Sport England showed that those who are over 65 are more likely to be inactive than those who are under 65. [85] The NHS states that DVT becomes more common as you age.[86]

D.2.1.3 Simple pulmonary embolism

A pulmonary embolism (PE) occurs when the artery that carries blood to the lungs becomes blocked.[87] Pulmonary embolisms can be prevented by avoiding long periods of inactivity.[88] A study by Sport England showed that those who are over 65 are more likely to be inactive than those who are under 65.[89] Moreover, the NHS states that 'for evert 10 years after the age of 60,

[79] NHS Choices (2015) 'Inguinal hernia repair'
[80] NHS Choices (2015) 'Inguinal hernia repair'
[81] NHS Choices (2015) 'Stomach Ulcer'
[82] NHS Choices (2015) 'Stomach Ulcer'
[83] NHS Choices (2016) 'Deep Vein Thrombosis'
[84] NHS Choices (2016) 'Deep Vein Thrombosis'
[85] Sport England (2016) 'Active Lives Survey'
[86] NHS Choices (2016) 'Deep Vein Thrombosis'
[87] NHS Choices (2015) 'Pulmonary embolism – causes'
[88] NHS Choices (2015) 'Pulmonary embolism'
[89] Sport England (2016) 'Active Lives Survey'

the risk of having PE doubles'.[90] Therefore, older people have an increased risk of pulmonary embolism.[91]

D.2.2 Planned Care services

D.2.2.1 Cardiovascular services

Older people are likely to have a disproportionate need for cardiovascular long term care and management services. Most serious arrhythmias (heart rhythm problems)[92] are likely to affect people older than 60, as older adults are more likely to have heart disease and other health problems.[93]

D.2.2.2 Dermatology services

People with venous leg ulcers can develop rashes with scaly and itchy skin, often due to varicose eczema. The prevalence of venous leg ulcers increases markedly with age; people aged over 85 are sixteen times more likely to have venous leg ulcers compared to the general population and may require the treatment of a dermatologist for example where the ulcer fails to progress after three months, there is suspected malignant change or there is suspected contact allergic dermatitis.[94] [95]

D.2.2.3 Diabetes services

Older people are likely to have a disproportionate need for long term care and management services in relation to diabetes. Evidence from Public Health England shows that 14.3% of people aged 55-74 years and 16.5% of those aged over 75 years are estimated to have diabetes.[96] In comparison, it is estimated that less than 2% of people aged 16-34 years have diabetes.[97]

D.2.2.4 ENT services

Over one quarter of people over 65 have a hearing impairment, which raises to one third in people over 75. There are also some conditions which are more common in older people for example vestibular imbalance and tinnitus requiring treatment within ENT services.[98]

D.2.2.5 Musculoskeletal services

Conditions which require musculosketal services are more likely to occur in older people. For example, osteoporosis affects around 50% of people over the age of 75.[99] Another rheumatic condition which commonly affects older people is osteoarthritis; this affects joints within the knee, hip, foot, ankle, hand and wrist. In addition to this, cases of rheumatoid arthritis (the most common inflammatory joint disorder) in the UK are more frequent among those who are 75 years and over, followed by those who are aged between 64-74 years[100].

[90] National Heart, Lung and Blood Institute (2011) 'Who Is at Risk for Pulmonary Embolism'
[91] NHS Choices (2015) 'Pulmonary embolism – causes'
[92] British Heart Foundation (date unknown) 'Abnormal heart rhythms'
[93] National, Heart, Lung and Blood Institute (2011) 'Who Is at Risk for an Arrhythmia?'
[94] Primary care dermatology society, (2012). Clinical guidance leg ulcers
[95] Nursing times (2015) The burden of chronic wounds in the UK
[96] Public Health England (2014) 'Adult obesity and type 2 diabetes'
[97] Public Health England (2014) 'Adult obesity and type 2 diabetes'
[98] Tucci, D et al., (date unknown): 'Effects of aging on the Ears, Nose and Throat'.
[99] Age UK (2017) 'Osteoporosis>Could you be at risk?'
[100] Arthritis Research UK (date unknown) 'Rheumatoid Arthritis'

D.2.2.6 Ophthalmology services

Age-related macular degeneration is an eye condition that causes the loss of central vision, usually in both eyes. Age related macular degeneration is by far the leading cause of blindness in adults. One in five people aged 75 and over live with sight loss, which raises to half of people aged 90 and over.[101]

Glaucoma is an eye condition where the optic nerve, which connects the eye to the brain, becomes damaged. It can lead to loss of vision if not detected and treated early on. Glaucoma becomes more likely as people's age increases and the most common type affects around 1 in 10 people over 75.[102]

D.2.2.7 Plastic surgery

As rates of cancer and infections are higher among older people, there is likely to be a higher need for plastic surgery procedures to deal with the impacts of these illnesses. For example, as 65% of people with cancer are over 65 it is likely that procedures such as the removal of malignant tumours and benign lesions of the skins, and the rate of reconstruction surgery is going to be higher among older people.[103]

D.2.2.8 Urology services

Benign prostatic hyperplasia is an enlarged prostate gland. Benign prostatic hyperplasic is very common in older men and requires urological treatment.[104] Over 50% of men in their 60s and nearly all men in their 70s are beleived to suffer some symptoms of an enlarged prostate.[105]

Older adults are more prone to develop urinary tract infections (UTIs) than younger individuals. This is due to a number of reasons: incomplete bladder emptying (e.g. due to prostate enlargement), increased susceptibility to infection due to frailty and higher risk of catheter use.[106]

D.2.3 Stroke services

There is a high demand for stroke services within this age group. Three quarters of strokes in the UK occur in people aged 65 or older, in comparison to 18% of the population who are 65 or over.[107] Further evidence states that more than half of all people over the age of 75 have high blood pressure, which contributes towards 54% of strokes.[108] The regularity with which strokes occur in this age bracket show that they are likely to experience a disproportionate impact of any change in this service.

[101] RNIB (date unknown): 'Key information and statistics'. See: http://www.rnib.org.uk/knowledge-and-research-hub/key-information-and-statistics

[102] NHS Choices (2016). 'Glaucoma'

[103] Royal College of Surgeons (date unknown): 'Plastic and reconstructive'. See: https://www.rcseng.ac.uk/news-and-events/media-centre/media-background-briefings-and-statistics/plastic-and-reconstructive/.

[104] NHS (date unknown): 'Benign prostate enlargement'. See: http://www.nhs.uk/conditions/Prostate-enlargement/Pages/Introduction.aspx

[105] ProstateHealth UK (date unknown): 'Facts about enlarged prostate'. See: https://www.prostatehealthuk.com/prostate-cancer-information/enlarged-prostate-bph.

[106] Woodford H J, George J, (2011). Diagnosis and management of urinary infections in older people

[107] Stroke Association (2015) 'Stroke Statistics'

[108] Stroke Association (date unknown)

D.2.4 Demographic profile

The table below shows that within the study area the population aged 65 and over is broadly in line with the national average (17% compared to 18%).

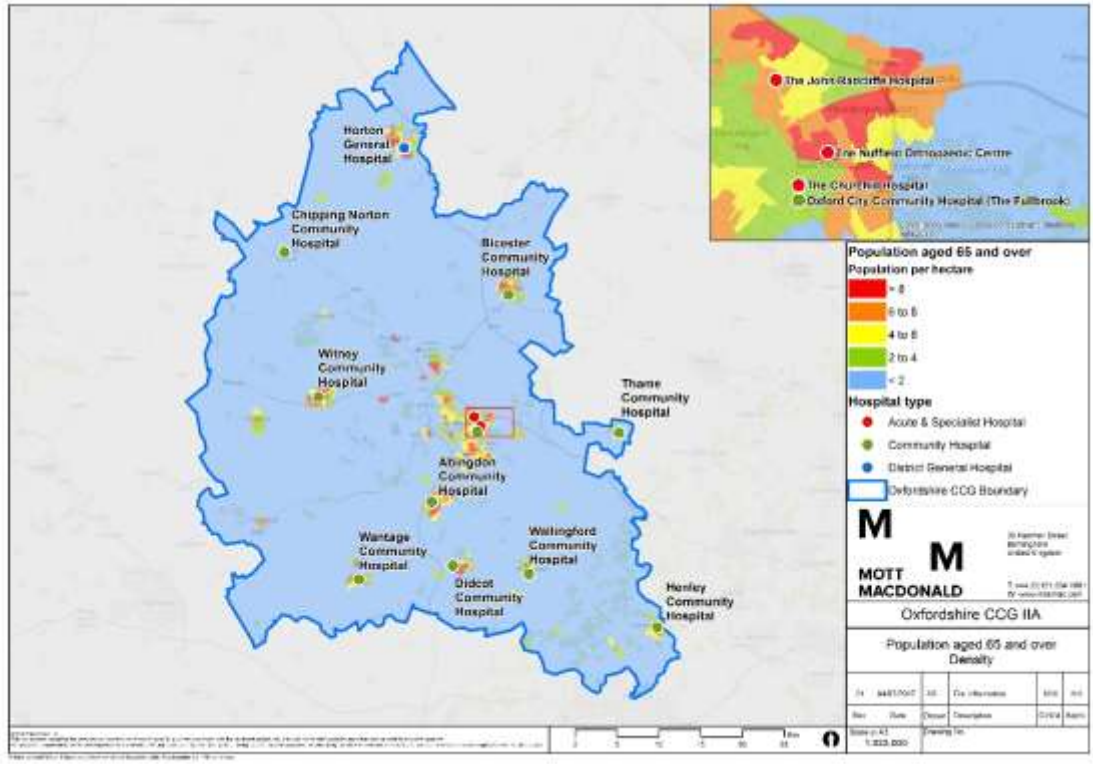
Table 26: Age (older people, 65 and over)

Study area	Total population	Aged 65 and over	Aged 65 and over (%)
Oxfordshire CCG	663,566	115,613	17%
England	54,786,327	9,711,572	18%

Source: 2015 mid-year estimates

Figure 22 shows that the highest densities of population aged 65 and over are found in urban centres, with a particular concentration around Oxford and Banbury. Small areas of high density can be found around Witney, Didcot and Wallingford.

Figure 21: Population aged 65 and over



Source: 2015 mid year estimates

D.3 Disabled people

Evidence of disproportionate need has been identified for the following service areas.

Table 27: Scoped in services – disabled people

Service area	Evidence of disproportionate need	Evidence of differential need
Ambulatory care		
Maternity		
Planned Care services	✓	
Stroke services	✓	

Source: Mott MacDonald

D.3.1 Planned Care services

D.3.1.1 Dermatology services

Psoriasis is a skin condition which is particularly common in people who have HIV. Psoriasis is also more complicated for those with HIV as the treatment for it tends to include immunosuppressive drugs; which are likely to put someone with HIV at even greater risk of an infection.[109]

People with certain disabilities and long term conditions can also have skin problems due to their treatments. This is especially common when treatment includes drugs that suppress a persons immune system such as anti-epileptics, cancer therapies and radiotherapy, or transplants - due to the drugs given to prevent transplant rejection.[110] [111]

D.3.1.2 Diabetes services

People with menthal health disorders are at increased risk of developing diabetes; this has been observed in depression, schizophenia.[112] Rates of depression in people with type 1 and type 2 diabetes are three times and twice higher than those in the general population, respectively.[113]Those who have bipolar illness, depression or are receiving treatment with antipsychotic medication are more at risk of developing type 2 diabetes.[114]

D.3.1.3 ENT services

People who are deaf are disproptionate users of ENT services in comparison to those without hearing impairments, for both management and treatment of their conditions. ENT services also provide cochlear implants, which enable the profoundly deaf people to gain a sense of hearing for the first time.[115]

D.3.1.4 Musculoskeletal services

People with learning disabilities have increased risk factors associated with osteoporosis and are likely to have a disproportionate need for MSK services. People with learning disabilities

[109] Roland J and Kim S (2016), 'What You Should Know About Psoriasis and HIV'

[110] Barts Health NHS, (2013). Patient information: Skin care after an organ transplant Also for those who have a suppressed immune system

[111] Parliament (2013) 'Written evidence from the British Association of Dermatologists (LTC 89)'

[112] Kenneth M. Shaw, Michael H. Cummings, (2012). Diabetes Chronic Complications

[113] Chris Garrett and Anne Doherty, (2014). Diabetes and mental health

[114] Diabetes UK (2017) 'Diabetes risk factors'

[115] Royal College of Surgeons (date unknown): 'Ear, nose and throat'. See: https://www.rcseng.ac.uk/news-and-events/media-centre/media-background-briefings-and-statistics/ear-nose-and-throat/

have an increased prevalence of low bone mineral density.[116] Contributory factors for this include possible lack of weight-bearing exercise and immobility, delayed puberty, entering menopause at an earlier than average age for women, poor nutrition, being underweight, use of anti-epilepsy medication and diagnosis of down's syndrome.[117]

D.3.1.5 Neurology services

More than 40% of patients with HIV develop neurological complications. Some of these are caused directly by HIV, but a number of conditions are a side effect of treatment or other conditions caused by HIV.[118]

D.3.1.6 Ophthalmology services

Adults with learning disabilities are 10 times more likely to go blind or partially sighted than the general population, and therefore are more likey to be higher users of opthalmology services.[119]

D.3.2 Stroke services

The need for stroke services among disabled people is likely to be high. Disabled people are more likely to have atrial fibrillation (which causes irregular heartbeat) which can increase the risk of having a stroke by five times.[120]

D.3.3 Demographic profile

To approximate the number of disabled people within the study area, data on population with a life-limiting long term illness (LLTI) has been used a proxy. The table below shows that within the study area there is a lower proportion of the population who have a LLTI (14%) compared to the national average (18%).

Table 28: Disability (LLTI)

Study area	Total population	Aged 65 and over	Aged 65 and over (%)
Oxfordshire CCG	663,566	88,095	14%
England	54,786,327	9,352,586	18%

Source: 2011 Census

Figure 23 shows that the highest densities of population with a LLTI are in urban centres, with a particular concentration around Oxford.

[116] Srikanth, R., Cassidy, G., Joiner, C. and Teeluckdharry, S. (2010). Osteoporosis in people with intellectual disabilities: a review and a brief study of risk factors for osteoporosis in a community sample of people with intellectual disabilities.

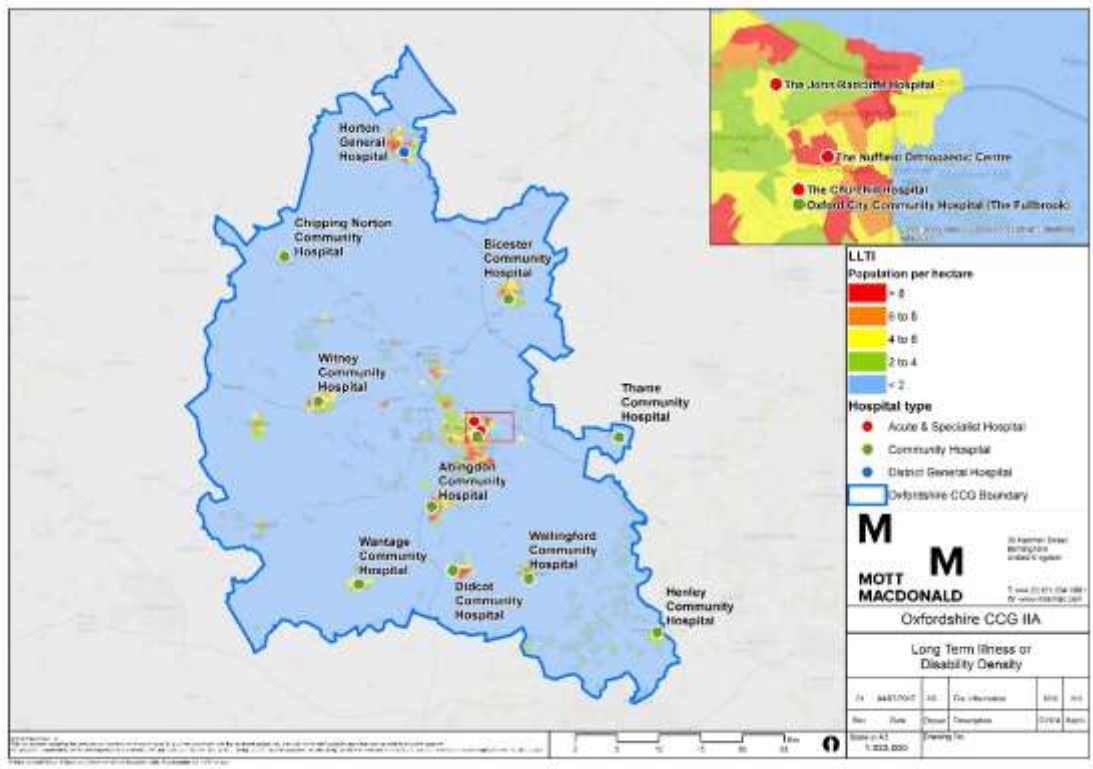
[117] Emerson et. Al (2012) 'Health inequalities and People with Learning Disabilities in the UK'

[118] Singh, R., Kaur, M., & Arora, D. (2011). Neurological complications in late-stage hospitalized patients with HIV disease.

[119] RNIB (date unknown): 'Key information and statistics'. See: http://www.rnib.org.uk/knowledge-and-research-hub/key-information-and-statistics

[120] Stroke Association (2012) 'Stroke statistics'

Figure 22: Population with an LLTI



Source: 2011 census

D.4 Sex

Evidence of disproportionate and differential need has been identified for the following service areas.

Table 29: Scoped in services – Gender

Service area	Evidence of disproportionate need	Evidence of differential need
Ambulatory care	✓	
Maternity	✓	
Planned Care services		✓
Stroke services		✓

Source: Mott MacDonald

D.4.1 Ambulatory care

D.4.1.1 Abdominal pain

Inguinal hernias, a common reason for admission for abdominal pain, are more common in men than in women . [121] This is due to the higher potential for a weakened inguinal canal.[122]

[121] NHS Choices (2015) 'Hernia'
[122] Healthline (20170 'Hernia'

D.4.1.2 Deep Vein Thrombosis

Women who take hormone therapy pills or birth control pills are at increased risk of DVT.[123]

D.4.2 Maternity

By the very nature of these service areas, women of childbearing age (16-44 years old) will experience a disproportionate need. Evidence has shown that in recent years, more women in Oxfordshire are having children at an older age: in 2015, 406 women gave birth over the age of 40, this follows the national trend.[124]

D.4.3 Planned Care services

Men and women have a disproportionate need for the different Planned Care services under review.

D.4.3.1 Dermatology services

Melasma, also called ‘chloasma’ and ‘pregnancy mask’, in which light to dark brown or greyish patches of pigmentation develop mainly on facial skin. 90% of the cases of melasma are in women.[125] Treatments for the condition include chemical peels, dermabrasion, and laser treatment, meaning a potential differential need for dermatology services.[126]

D.4.3.2 Diabetes services

The National Diabetes Audit, in 2012 found that 56% of all adults with diabetes in the UK are men in comparison to 44% of women.[127] This highlights a potential disproportionate need amongst men for diabetes services. Research has highlighted that men are more biologically susceptible than women to develop the condition.[128]

D.4.3.3 ENT services

Men are twice as likely to require treatment for certain conditions, such as obstructive sleep apnoea (OSA), that are treated by ENT services.[129] This is likely to be related to different patterns of body fat distribution and having a larger neck size. Treatment options for OSA include lifestyle changes, using a continuous positive airway pressure device, or wearing a mandibular advancement device.[130] These treatments mean that men are more likely to need ENT services.

There are also some conditions that women are more likely to require ENT services for than men, such as Meniere's disease, otitis externa and thyroid disorders.[131] This indicates a potential differential need for ENT services.

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[123] National Heart, Lung and Blood Institute (2011) ‘Who Is at Risk for Pulmonary Embolism’

[124] JSNA Annual Report (2016): ‘Oxfordshire’

[125] British Association of Dermatologists (2015): ‘Melasma’. See: http://www.bad.org.uk/for-the-public/patient-information-leaflets/melasma/?showmore=1&returnlink=http%3A%2F%2Fwww.bad.org.uk%2Ffor-the-public%2Fpatient-information-leaflets#.WNOnvtJviUk

[126] British Association of Dermatologists (2015): ‘Melasma’. See: http://www.bad.org.uk/for-the-public/patient-information-leaflets/melasma/?showmore=1&returnlink=http%3A%2F%2Fwww.bad.org.uk%2Ffor-the-public%2Fpatient-information-leaflets#.WNOnvtJviUk

[127] Diabetes UK (2016) ‘Facts and Stats’

[128] NHS (2011): ‘Men develop diabetes more easily’. See: http://www.nhs.uk/news/2011/10October/Pages/males-more-likely-to-get-diabetes.aspx

[129] NHS (2015): 'Obstructive sleep apnoea'.

[130] NHS (2015): 'Obstructive sleep apnoea'.

[131] NHS (2015): 'Meniere's disease, otitis externa, thyroid disorders'.

D.4.3.4 Gynaecology

A key service within outpatient gynaecology is screening for cervical cancer. As identified by Cancer Research UK, cervical cancer is the twelfth most common cancer among women females in the UK, accounting for around two per cent of all new cases of cancer in females. Over three-quarters (78 per cent) of cervical cancer cases occur in women aged between 25 and 64 years, however, women aged between 30-34 and 80- 84 are within the peak age specific incidence rates.[132]

Both endometriosis and heavy menstrual bleeding (HMB) are conditions solely experienced by women. Endometriosis, a condition where tissue similar to the lining of the womb (endometrium) is found outside the womb affects about 1 in 10 women of childbearing age. .[133] [134] HMB is the excessive menstrual blood loss which interferes with the woman's physical, emotional, social and material quality of life, and which can occur alone or in combination with other symptoms.

For endometrial polyps, a mass in the inner lining of the uterus, increasing age also appears to be the best-documented risk indicator with prevalence increasing by age during the reproductive years. It is not clear however whether it continues to rise or decreases after menopause. [135] Cervical polyps are also common in women over 20 years who have had children.[136]

Treatments and services relating to fertility are provided under the gynaecology remit of the NHS. As women age, the quality and number of their reproductive eggs deplete, the decline is more rapid over the age of 35[137] indicating that older women who still want to become pregnant are more likely to require gynaecological services relating to subfertility.

D.4.3.5 Musculoskeletal services

There is evidence to suggest that men, particularly between the ages of 40 and 50, are more likely to develop gout than women.[138] Gout impacts the joints by causing inflammatory arthritis, intermittent swelling, redness, heat, pain, and stiffness in the joints.[139]

As women tend to have smaller bones than men, and around the time of menopause, the amount of oestrogen (the hormone that protects bones) decreases sharply, women are more likely to develop osteoporosis than men.[140] In addition to this, Rheumatoid Arthritis is the most common inflammatory arthritis, with prevalence being two to four times greater in women (1.16%) than men (0.44%).[141]

D.4.3.6 Neurology services

There are a number of neurological conditions that are more common among men that require neurological services. There are more boys born with cerebral palsy than girls. For every 100 girls with cerebral palsy, there are 135 boys with cerebral palsy.[142] Motor neurone disease

[132] Cancer Research UK website: http://www.cancerresearchuk.org/cancer-info/cancerstats/types/cervix/incidence/

[133] Liverpool Women's NHS Foundation Trust (2008): http://www.liverpoolwomens.nhs.uk/Library/our_services/gynaecology/General_Gynaecology/Endometriosis.pdf

[134] Endometriosis; NICE CKS, June 2009

[135] AAGL Practice Report: Practice Guidelines for the Diagnosis and Management of Endometrial Polyps (2012) Journal of Minimally Invasive Gynecology 19, 3–10

[136] http://www.nlm.nih.gov/medlineplus/ency/article/001494.htm

[137] NHS Choices (2014) 'Protect your fertility'

[138] National Institute of Arthritis and Musculoskeletal and Skin Diseases (2016) 'Gout'

[139] National Institute of Arthritis and Musculoskeletal and Skin Diseases (2016) 'Gout'

[140] National Osteoporosis Foundation (2017) 'What Women Need to Know'

[141] College of Occupational Therapists (2015) 'Hand and wrist orthoses for adults with rheumatological conditions'

[142] PACE (date unknown): 'Disability statistics'. See: https://thepacecentre.org/information-centre/stats-facts/

affects slightly more men than women.[143] Such conditions in the long term will require support of neurological services.

Some neurological conditions are more prevalent in women. For example, 65% of people living with dementia are women.[144] Research also suggests the proportion of women with Multiple Sclerosis (MS) is increasing and that roughly between two and three women have MS for every man with the condition.[145] These are both complex conditions that require neurological services, indicating that women are likely to have a differential need for these services.

D.4.3.7 Ophthalmology services

Nearly two thirds of people living with sight loss are women.[146] A number of factors put women at a greater risk of suffering eye conditions, including longer life expectancy, hormonal changes, and an increase prevalence of obesity. Eye problems among women often occur at an earlier stage than in men.[147] Thyroid eye disease is a condition that is mainly associated with an over-active thyroid / Graves disease, which is up to 10 times more likely to affect women than men.[148]

D.4.3.8 Plastic surgery

Women who have suffered from breast cancer are high users of reconstructive plastic surgery. As one in eight women (compared with one in 870 men) will be diagnosed with breast cancer during their lifetime, the use of plastic surgery services for this purpose it likely to be higher among women.[149]

D.4.3.9 Respiratory services

Asthma is a common long term condition that requires the need for respiratory services. In adulthood, asthma affects more females than males.[150] Research has shown that just over one-third of women find their asthma symptoms get worse just before or during their period.[151] This is due to a change in the level of hormones oestrogen and progesterone.[152]

D.4.3.10 Urology services

There are many conditions that women are more likely to be affected by such as problems with the pelvic floor, urinary infections, bladder prolapse, and incontinence.[153] The Urology Foundation notes that women are much more likely to get a unitary tract infection, with about

[143] NHS (2015): ‘Motor neurone disease’. See: http://www.nhs.uk/conditions/Motor-neurone-disease/Pages/Introduction.aspx

[144] Alzheimer’s Research UK (date unknown): ‘Women and Dementia’

[145] MS Trust (date unknown): ‘Prevalence and incidence of multiple sclerosis’. See: https://www.mstrust.org.uk/a-z/prevalence-and-incidence-multiple-sclerosis

[146] RNIB (date unknown): 'Key information and statistics'. See: http://www.rnib.org.uk/knowledge-and-research-hub/key-information-and-statistics

[147] RNIB (date unknown): 'Key information and statistics'. See: http://www.rnib.org.uk/knowledge-and-research-hub/key-information-and-statistics

[148] British Thyroid Eye Disease (2015): 'Thyroid Eye Disease'. See: http://www.btf-thyroid.org/information/leaflets/36-thyroid-eye-disease-guide.

[149] Cancer Research UK (date unknown): 'Breast cancer'. See: http://www.cancerresearchuk.org/about-cancer/breast-cancer/treatment/surgery/breast-reconstruction/about

[150] Asthma UK (2016): ‘Women and Asthma’

[151] Asthma UK (2016): ‘Women and Asthma’

[152] Asthma UK (2016): ‘Women and Asthma’

[153] Cancer Research UK (date unknown): 'Urinary problems in women'. See: http://www.cancerresearchuk.org/about-cancer/coping/physically/sex-hormone-symptoms/women-coping-with-hormone-symptoms/urinary-problems.

50% of women having one during their lifetime.[154] This indicates that women are likely to have a differential need for urological services.

D.4.4 Stroke services

The cause of using stroke services is different for men than women. Men are at a 25% higher risk of having a stroke and at a younger age compared to women.[155][156] Men are 1.5 times more likely to have atrial fibrillation, which increases the risk of having a stroke by five times,[157] whilst a recent research study in England found that the risk of ischaemic stroke is more likely to be inherited by women than men.[158]

D.4.5 Demographic profile for males and females

The table below shows that Oxfordshire is broadly in line with the national average with regard to the population proportions of males and females.

Table 30: Population of males and females

	Total population	Males	Males (%)	Females	Females (%)
Oxfordshire CCG	663,566	329,974	50%	333,592	50%
England	54,786,327	27,029,286	49%	27,757,041	51%

Source: 2015 mid-year estimates

D.5 Gender reassignment

Evidence of disproportionate need has been identified for the following service areas.

Table 31: Scoped in services – Gender re-assignment

Service area	Evidence of disproportionate need	Evidence of differential need
Ambulatory care	✓	
Maternity		
Planned Care services	✓	
Stroke services		

Source: Mott MacDonald

D.5.1 Ambulatory care

D.5.1.1 Deep Vein Thrombosis

Many transwomen are treated with oestrogen. Oestrogen therapy can cause an increased risk of thrombosis including DVT.

[154] The Urology Foundation (date unknown): 'Urinary tract infection'.

[155] Royal College of Physicians Sentinel Stroke National Audit Programme (SSNAP) (2014). How good is stroke services? First SSNAP Annual Report prepared on behalf of the Intercollegiate Stroke Working Party

[156] Townsend, N., Wickramasinghe, K., Bhatnagar, P., Smolina, K., Nichols, M., Leal, J., Luengo Fernandez, R., Rayner, M. (2012). Coronary heart disease statistics 2012 edition. British Heart Foundation: London

[157] Stroke Association (2015) 'Stroke Statistics'

[158] Stroke Association (2012) 'Women and Stroke'

D.5.1.2 Simple pulmonary embolism

Oestrogen therapy can cause an increased risk of thrombosis including pulmonary embolism.[159]

D.5.2 Planned Care services

D.5.2.1 Musculoskeletal services

Trans men (female-to-male) and trans women (male-to-female) are at risk of developing osteoporosis because of the need to take hormones that change the balance of oestrogen and testosterone in the body.[160] After gender reassignment surgery, the level of hormones may decrease and this may also affect bone density increasing the risk of osteoporosis.[161]

D.5.2.2 Neurology services

A study by British researchers in 2016 found that men who have undergone gender re-assignment surgery (male to female conversion) had a nearly seven fold higher risk of developing MS in comparison to the general public.[162] A study discovered a link between low testosterone and MS risk.[163] The link represents evidence for the potential disproportionate need for neurology services among this protected characteristic.

D.5.3 Demographic profile for gender reassignment

There is no population data on gender reassignment

D.6 Marriage and civil partnership

The evidence review does not indicate a disproportionate or differential need for this protected characteristic group for services which are part of the Oxfordshire Transformation Programme Phase 1 review.

D.7 Pregnancy and maternity

Evidence of disproportionate need for the services under review has been identified for the following service areas.

Table 32: Scoped in services – Pregnancy and maternity

Service area	Evidence of disproportionate need	Evidence of differential need
Ambulatory care	✓	
Maternity	✓	
Planned Care services	✓	
Stroke services	✓	

Source: Mott MacDonald

[159] The Chartered Society of Physiotherapy (2016) 'Physiotherapy treatment of transgender patients'
[160] National Osteoporosis Society (2014) 'Transsexual people and osteoporosis'
[161] National Osteoporosis Society (2014) 'Transsexual people and osteoporosis'
[162] Neurology Advisor (2016) "Sex Change from Male to Female May Increase Risk"
[163] Neurology Advisor (2016) "Sex Change from Male to Female May Increase Risk"

D.7.1 Ambulatory care

D.7.1.1 Deep Vein Thrombosis

During pregnancy, blood clots more easily. This is the body's way of preventing too much blood being lost during childbirth. Pregnant women are up to 10 times more likely to develop thrombosis than non-pregnant women of the same age. A clot can form at any stage of pregnancy and up to six weeks after the birth.[164]

D.7.1.2 Simple pulmonary embolism

The NHS states that the risk of single pulmonary embolism is increased for up to six weeks after giving birth.[165] This is due to the hypercoagulable state of pregnancy that begins with conception, baseline levels of coagulation factors that do not return to normal until beyond 8 weeks postpartum.[166] There is increased venous stasis in the pelvic and lower limb veins due to the vasodilatory effects of pregnancy hormones. [167]

D.7.2 Maternity

By the very nature of these service areas, women who are pregnant, new mothers, or breastfeeding will experience disproportionate need for this type of care - in 2016 85% of births in England were in an obstetric unit.[168]

D.7.3 Planned Care services

D.7.3.1 Diabetes services

Gestational diabetes affects up to 5% of all pregnancies, and any pregnant women can develop gestational diabetes.[169]Gestational diabetes requires close monitoring, including blood sugar tests, throughout the pregnancy and therefore any changes to diabetes services may have an impact on those with gestational diabetes.

D.7.3.2 Musculoskeletal services

Women who are pregnant, new mothers (with babies under six months old), or breastfeeding may experience a disproportionate need for musculoskeletal services. Weight gain and hormonal changes in pregnancy have a huge impact on a woman's body. Pregnancy causes biomechanical and physiologic changes that may be responsible for a wide spectrum of musculoskeletal disorders in the mother.[170]

D.7.3.3 Respiratory services

Approximately one third of asthmatic women are likely to experience a worsening of their symptoms when pregnant. This is most likely to peak at six months.[171] Therefore asthmatic pregnant women are likely to have a disproportionate need for respiratory services.

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[164] NHS Choices (2016) 'Deep vein thrombosis'

[165] NHS Choices (2015) 'Pulmonary embolism – causes'

[166] Simcox L, Ormesher L, Tower C and Greer I (2015) 'Pulmonary thrombo-embolism in pregnancy: diagnosis and management'

[167] Simcox L, Ormesher L, Tower C and Greer I (2015) 'Pulmonary thrombo-embolism in pregnancy: diagnosis and management'

[168] National Maternity Review (date unknown): 'Better births: Improving outcomes of maternity services in England'. See: https://www.england.nhs.uk/wp-content/uploads/2016/02/national-maternity-review-report.pdf

[169] Diabetes UK, (2016). 'FACTS AND STATS'

[170] Proisy, M., Rouil, A., Raoult, H., Rozel, C., Guggenbuhl, P., Jacob, D. and Guillin, R. (2014). 'Imaging of Musculoskeletal Disorders Related to Pregnancy'

[171] NHS Choices (2015) 'Asthma and pregnancy'

D.7.3.4 Gynaecology

Urinary incontinence (UI) is a common condition for women; pregnant women are more likely to be affected by UI due to associated changes in pelvic muscle structure. UI requires both gynaecology services and musculoskeletal services (under physiotherapy exercises) to prevent the repeat occurrence of the condition. This is also a condition that can also be treated under urological services.

D.7.4 Stroke services

Pregnancy, causes the levels of female hormones to rise, this causes changes in the blood vessels and the make-up of the blood. Also, pregnancy can cause increased blood pressure. These changes increase the risk of stroke. Pregnant women are 13 times more likely to have a stroke than non-pregnant women of the same age.[172]

Several causes of stroke are unique to pregnancy and the postpartum period, such as preeclampsia and eclampsia, amniotic fluid embolus, postpartum angiopathy and postpartum cardiomyopathy.[173]

D.7.5 Demographic profile

Data on the number of women aged 16-44 has been used to approximate the levels of pregnancy and maternity in the study area. The table below shows that the study area has the same percentage of females aged 16-44 when compared to the national average (both 19%).

Table 33: Population of females aged 16-44

Study area	Total population	Females 16-44	Females 16-44 (%)
Oxfordshire CCG	663,566	126,267	19%
England	54,786,327	10,336,501	19%

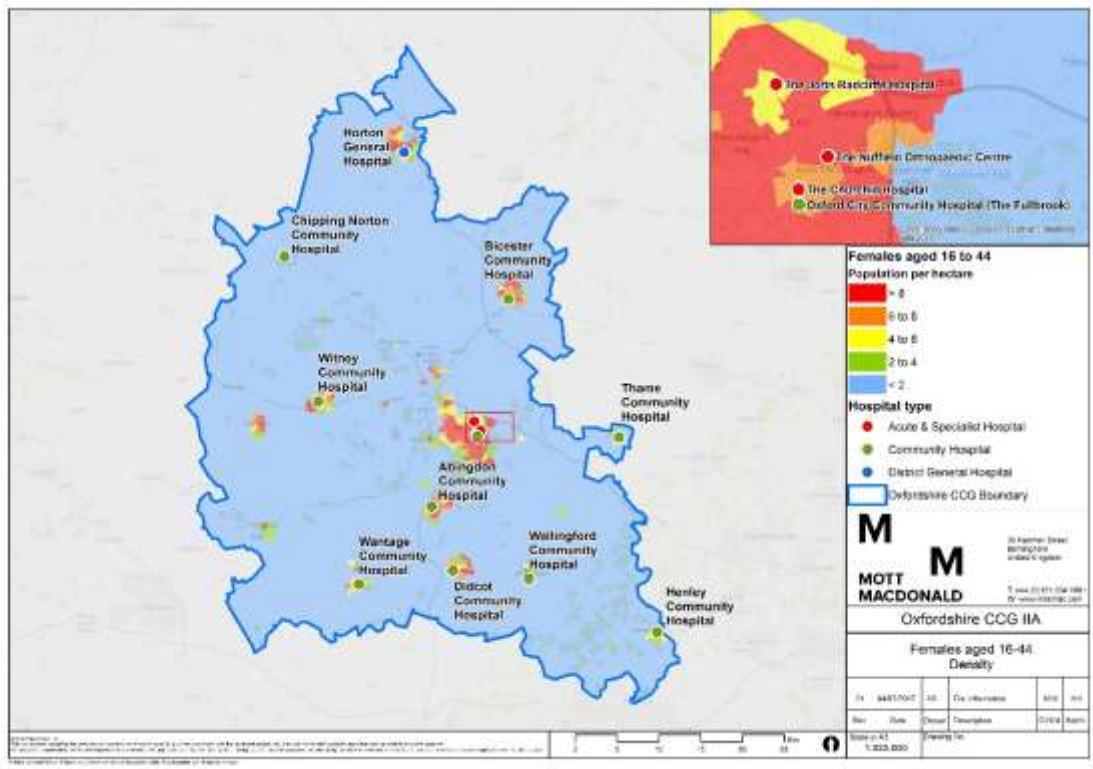
Source: 2015 mid-year estimates

Figure 24 shows that the highest densities of females aged 16-44 are in urban centres, particularly around Oxford. High densities are also in Abingdon, Horton and Witney.

[172] Stroke Association, (2012). Women and stroke

[173] Tate, J. and Bushnell, C. (2011). 'Pregnancy and stroke risk in women'

Figure 23: Population of females aged 16-44



Source: 2015 mid-year estimates

D.8 Race and ethnicity

Evidence of disproportionate need has been identified for the following service areas.

Table 34: Scoped in services – Race and ethnicity

Service area	Evidence of disproportionate need	Evidence of differential need
Ambulatory care		
Maternity	✓	
Planned Care services	✓	
Stroke services	✓	

Source: Mott MacDonald

D.8.1 Maternity

Pakistani and Bangladeshi communities among others are likely to have a greater demand for maternity services as they tend to have a higher number of children.[174]

[174] Coleman, D. A and Dubuc S (2010): 'The fertility of ethnic minorities in the UK, 1960s-2006' in Population Studies

The risk of maternal death in 2012-14 was found to be significantly higher among women from a minority ethnic background compared to White women. The need of minority ethnic women for maternity and obstetric services therefore is likely to be higher.[175]

D.8.2 Planned Care services

D.8.2.1 Dermatology services

Many forms of hyperpigmentation or dyschromia can disproportionately affect people from BAME communities including Lichen planus pigmentosus and Naevus of Ota.[176] The treatment of dyschromia is influenced by skin type, and thus people of Black and ethnic minorities will have a differential treatment need.[177]

Vitiligo, which results in the loss of normal skin colour, can have a significant effect on self-esteem for people from Black and ethnic minorities. People of Black and ethnic minorities will have a differential need in the treatment of Vitiligo. [178]

D.8.2.2 Diabetes services

Those from a minority ethnic background are likely to be disproportionate users of diabetes services as they are more than twice as likely to have diabetes than the UK general population. [179] A large-scale study undertaken in London revealed that by age 80 years, 40-50% of British South Asian, African, and African-Caribbean men and women had developed diabetes, at least twice the proportion of White Europeans of the same age.[180]

People from a minority ethnic background are likely to need the services earlier than White people. Type 2 diabetes affects people of South Asian, African-Caribbean, Chinese, or Black African descent up to a decade earlier than White Europeans.[181]

Women of minority ethnic backgrounds are likely to demonstrate a disproportionare and differential need for diabetes services. Women are at an increased risk of gestational diabetes if their family origins are South Asian, Chinese, African-Caribbean or Middle Eastern.[182]

D.8.2.3 Musculoskeletal services

A number of rheumatic conditions, such as Systemic Lupus Erythematosus (SLE) and osteomalacia, show particular prevalence and/or disease expression according to ethnic factors. Ethnic minorities may disproportionately use rheumatology services as a result. For example clinical variations in the epidemiology of SLE have been described in British South Asians. These patients with SLE have been noted to have much more aggressive disease and higher mortality rates than their White counterparts.[183]

Those from South Asian and Black/Afro-Carribean background are at a higher risk and have a higher incidence of diabetes. Complications from diabetes can affect the feet and diabetics are advised to visit their podiatrist regularly for risk assessments. This is because diabetes causes

[175] Maternity, Newborn and Infant Clinical Outcome Review Programme (2016): 'Savings Lives, Improving Mothers' Care'

[176] Primary Care Dermatology Service (2016) 'Hyperpigmentation – of the face and neck'
[177] Kang SJ et al. (2014) 'Dyschromia in skin colour'
[178] Parliament (2013) 'Written evidence from the British Association of Dermatologists (LTC 89)'
[179] Stroke association, (2016). 'State of the Nation Stroke statistics'
[180] Public Health England (2014) 'Adult obesity and type 2 diabetes'
[181] Public Health England, (2014). 'Adult obesity and type 2 diabetes'.
[182] Nhs.uk. (2017). 'Gestational diabetes'
[183] Samanta, Ash, and Shireen Shaffu, (2012). 'Ethnicity and musculoskeletal health: census and consensus'.

nerve damage known as peripheral neuropathy, affects the circulation and are more prone to infection. [184]

D.8.2.4 Ophthalmology services

People from BAME backgrounds are at a greater risk of some of the leading causes of sight loss. The Black population aged under 60 has a greater risk of developing age-related macular degeneration compared to the White population of the same age.[185]

Asian people have a greater risk of developing cataracts compared to both the Black and White population. The risk and severity of glaucoma is much higher for Black people compared to White people. Glaucoma can also develop at an earlier stage for Black people in comparison to White people .[186]

D.8.3 Stroke services

Black people are twice as likely to have a stroke than White people. [187]In addition, Black or Afro-Caribbean people are more likely than White people to have high blood pressure or diabetes both of which increase the risk of having a stroke.[188]

People form a South Asian background are more likely to have a stroke at a younger age than White people. They also have an increased prevalence of factors that increase their risk of stroke, including high blood pressure, cholesterol and diabetes. [189]

D.8.4 Demographic profile

To understand the race and ethnic composition of the study area, figures for those from BAME communities have been analysed. The table below shows the proportion of those from a BAME background in the study area (17%) is slightly lower than the national average (20%).

Table 35: Population of people from BAME backgrounds

Study area	BAME	BAME (%)
Oxfordshire CCG	106,173	17%
England	10,733,220	20%

Source: 2011 census

Figure 25 shows the highest densities of people from BAME backgrounds are in urban centres, with a particular concentration around Oxford. There are higher densities in Abingdon.

[184] Diabetes.co.uk. Diabetes Podiatry. http://www.diabetes.co.uk/features/diabetes-podiatry.html

[185] RNIB (date unknown): 'Key information and statistics'. See: http://www.rnib.org.uk/knowledge-and-research-hub/key-information-and-statistics.

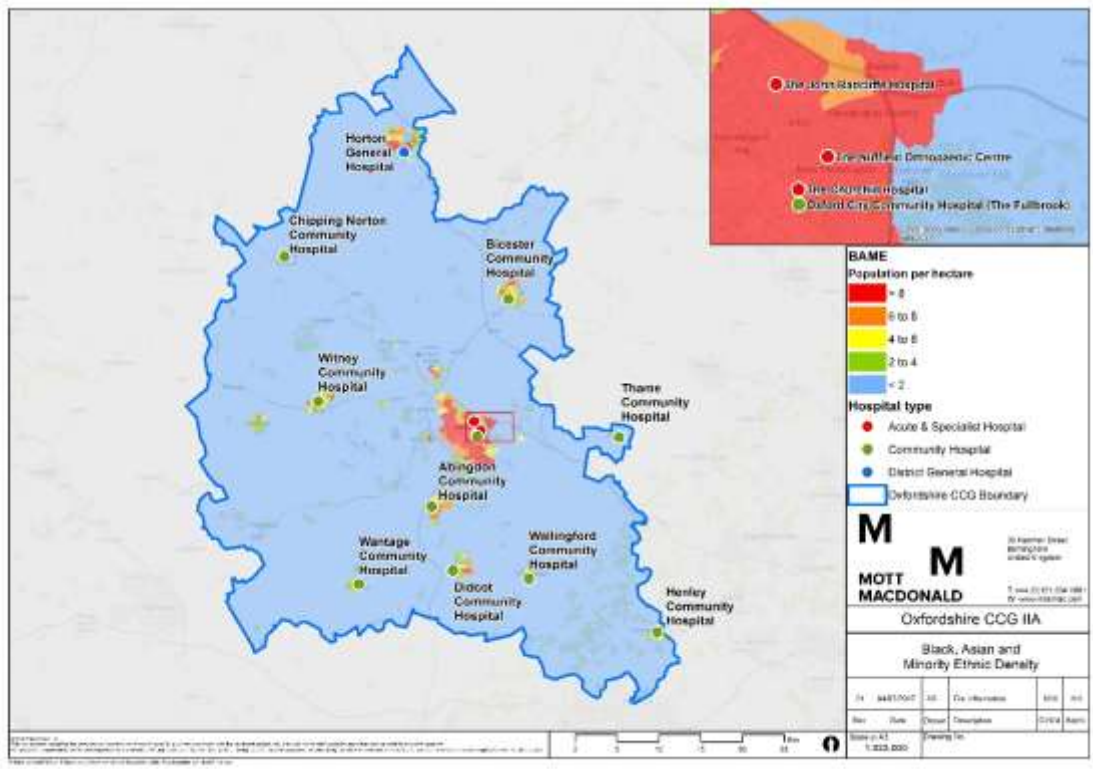
[186] Action for the blind (date unknown): 'Key statistics'. See: https://actionforblindpeople.org.uk/about-us/media-centre/key-statistics/.

[187] Stroke association, (2016). 'State of the Nation Stroke statistics'

[188] Stroke association, (2016). 'State of the Nation Stroke statistics'

[189] Stroke association, (2016). 'State of the Nation Stroke statistics'

Figure 24: BAME population



Source: 2011 census

D.9 Religion and belief

Evidence of disproportionate need has been identified for the following service areas.

Table 36: Scoped in services – Religion and belief

Service area	Evidence of disproportionate need	Evidence of differential need
Ambulatory care		
Maternity		
Planned Care services		✓
Stroke services		

Source: Mott MacDonald

D.9.1 Planned Care services

D.9.1.1 Diabetes services

Adherence to certain religions or beliefs may cause people to have a differential need for diabetes services. Some religions or beliefs (i.e. fundamental Christian sects, Sikhism, Hinduism, Islam, and Judaism) require a form of food avoidance/fast as part of their observances. This may have potential adverse effects on diabetes control. Diabetes medication doses may need to be altered during a fast, this would need to be done in consultation with a

person's clinician. This is as during fasting periods, low blood sugar (hypoglycaemia) is a potential issue and can be dangerous.

D.10 Sexual orientation

There is no evidence of disproportionate need for services included in Phase One of the Oxfordshire Transformation Programme on the basis of this protected characteristic.

D.11 Deprivation

Evidence of disproportionate need has been identified for the following service areas.

Table 37: Scoped in services – Deprivation

Service area	Evidence of disproportionate need	Evidence of differential need
Ambulatory care		
Maternity	✓	
Planned Care services	✓	
Stroke services	✓	

Source: Mott MacDonald

D.11.1 Maternity

Mothers from poorer backgrounds have a higher risk of perinatal mortality (foetal deaths after 24 weeks of gestation and death before seven completed days), maternal death, cardiac disease, miscarriage or premature births, preeclampsia, gestational diabetes, and infections among other conditions. [190] [191]

D.11.2 Planned Care services

D.11.2.1 Diabetes services

In England, type 2 diabetes is 40% more common among people in the most deprived quintile compared with those in least deprived quintile. Short term mortality risk from type 2 diabetes is also higher among those living in more deprived areas in England. [192]

People in social class V (unskilled manual) are three and a half times more likely to be ill as a result of diabetic complications than those in social class I (professional).[193]

D.11.2.2 Gynaecology

Cancer Research UK has identified that the rates of cervical cancer for women living in the most deprived areas are more than three times as high as those in the least deprived areas.[194]

[190] NHS England (2016): 'Saving Babies; Lives: A care bundle for reducing stillbirth'

[191] Heslehurst N et al (2010): 'A nationally representative study of maternal obesity in England'

[192] Public Health England, (2014). 'Adult obesity and type 2 diabetes'

[193] Ibid.

[194] Cancer Research UK: Cervical cancer statistics http://www.cancerresearchuk.org/cancer-info/cancerstats/types/cervix/

D.11.2.3 Musculoskeletal services

Complications from diabetes can affect the feet and diabetics are advised to visit their podiatrist at least once per year for a risk assessment. This is because diabetes causes nerve damage known as peripheral neuropathy, affects the circulation and are more prone to infection. [195]

Ankylosing Spondylitis (AS) is a long-term rheumatological condition where the spine and other areas of the body become inflamed. The need for healthcare is greatest for patients with AS who are living in more socially deprived areas. Those living in more deprived areas demonstrated significantly greater disease severity and poorer psychological health.[196]

D.11.2.4 Neurology services

Certain lifestyle factors that are strongly associated with people from deprived communities, such as high levels of smoking and diabetes, are factors that are strongly linked to having a stroke. ONS data shows that there is a link between smoking and deprivation in England; rates of smoking are highest in the most deprived areas of England. People who smoke are around twice as likely to develop MS compared to those who do not smoke.[197] Furthermore, as noted above levels of diabetes are high amongst people from deprived communities and people with this condition may require treatment and support from neurological services. About 60 to 70% of people with diabetes have some form of neuropathy. Diabetic neuropathy can be classified as peripheral, autonomic, proximal, or focal – each affects different parts of the body in various ways.[198]

D.11.2.5 Ophthalmology services

There are a number of lifestyle factors (obesity and smoking) which are highly prevalent among people from poor socioeconomic backgrounds, meaning that such people are likely to have a disproportionate need for ophthalmology services.

People who are obese are likely to develop certain eye conditions such as glaucoma.[199] Smoking also increases the risk of developing some eye conditions, such as thyroid eye disease (TED). A heavy smoker is eight times more likely to develop TED than non-smokers.[200]

Children and young people from deprived backgrounds are also more likely to have a visual impairment than those from less disadvantages families.[201]

D.11.2.6 Oral surgery

Smoking and poor diet are both lifestyle factors which are most prevalent among deprived communities. An estimated 91% of oral cancer cases are linked to lifestyle factors, including smoking, alcohol, and infections. Smoking is the main avoidable risk factor for oral cancer,

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[195] Diabetes.co.uk. Diabetes Podiatry. http://www.diabetes.co.uk/features/diabetes-podiatry.html

[196] Healey, E. L., Haywood, Kirstie L., Jordan, Kelvin, Garratt, Andrew M. and Packham, J. C. (2010) 'Disease severity in ankylosing spondylitis: variation by region and local area deprivation'

[197] http://www.nhs.uk/Conditions/Multiple-sclerosis/Pages/Causes.aspx

http://www.ons.gov.uk/ons/rel/disability-and-health-measurement/do-smoking-rates-vary-between-more-and-less-advantaged-areas-/2012/sty-smoking-rates.html

[198] Public Health England, (2014). Adult obesity and type 2 diabetes. [online] Public Health England, p.17. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/338934/Adult_obesity_and_type_2_diabetes_.pdf [Accessed 2 Mar. 2017].

http://www.diabetes.co.uk/diabetes-complications/diabetic-foot-ulcers.html

[199] Spaeth G., (date unknown): 'How does lifestyle affect glaucoma'.

[200] British Thyroid Eye Disease (2015): 'Thyroid Eye Disease'. See: http://www.btf-thyroid.org/information/leaflets/36-thyroid-eye-disease-guide.

[201] Vision 2020 (2016): 'Key facts about vision impairment in children and young people'.

linked to an estimated 65% of oral cancer cases in the UK.[202] Furthermore, a diet that consists of insufficient fruit and vegetable intake is linked to an estimated 56% of oral cancer cases in the UK. Mouth cancer requires a range of treatments, including oral surgery to remove tumours and affected tissue.[203] Therefore, people from deprived communities are likely to be high users of oral surgery services.

D.11.3 Stroke services

People from the most economically deprived areas of the UK are around twice as likely to have a stroke and are three times more likely to die from a stroke than those from the least deprived.[204] This is linked to the strong association between deprivation and stroke risk factors such as higher levels of obesity, physical inactivity, an unhealthy diet, smoking and poor blood pressure control.[205]

D.11.4 Demographic profile

The table below shows that the proportions of the population of Oxfordshire living in the most deprived quintile (4%) and second most deprived quintile (8%) are significantly lower than the national averages (20% for each quintile). Conversely, the populations living in the fourth most deprived quintile (27%) and least deprived quintile (46%) are significantly higher than the national average. Overall, this indicates that deprivation is low across the county.

Table 38: Overall deprivation quantiles

	Most deprived quintile	Second most deprived quintile	Third most deprived quintile	Fourth most deprived quintile	Least deprived quintile
Oxfordshire CCG	4%	8%	15%	27%	46%
England	20%	20%	20%	20%	20%

Source: 2015 IMD

Figure 26 below shows the distribution of the deprivation quintiles across the study area. The areas in which there is highest deprivation are around urban centres i.e. Oxford and Banbury.

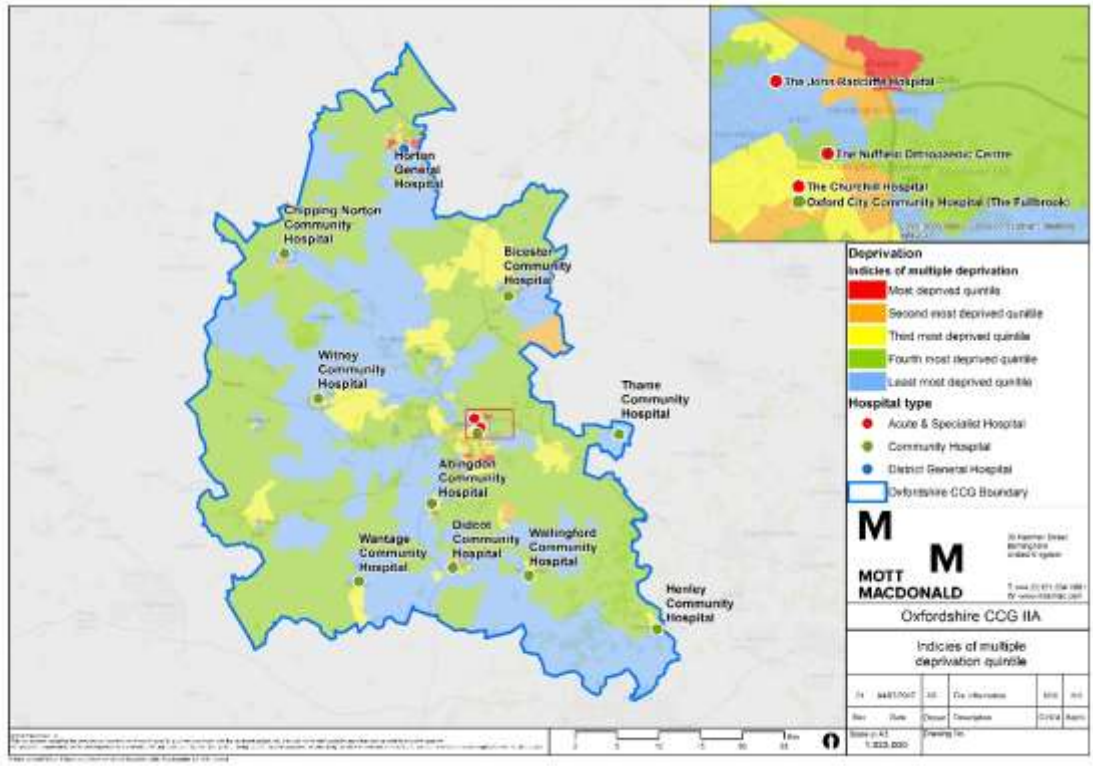
[202] Cancer research UK (2014): 'Oral cancer'. See: http://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/oral-cancer#heading-Three

[203] NHS (2016): 'Treating mouth cancer'. See: http://www.nhs.uk/Conditions/Cancer-of-the-mouth/Pages/Treatment.aspx

[204] Stroke association, (2016). 'State of the Nation Stroke statistics'

[205] Public Health England, (2014). 'Adult obesity and type 2 diabetes'.

Figure 25: Indices of Multiple Deprivation (IMD) – overall deprivation quantiles



Source: 2015 IMD

D.12 Summary

D.12.1 Scoped in equality groups according to service area

The matrix below identifies which groups, based on the initial literature review, have a disproportionate need for the services under review. The headline findings are:

- Those from deprived communities, females 16-44 and those from a BAME background have a disproportionate need for all the services under the scope of the review.
- Disabled people, older people have a disproportionate need for more than one service under the scope of the review.

Table 39: Summary of scoped in groups

Group	Ambulatory care	Maternity	Planned Care services	Stroke
Age (children under 16)			✓	
Age (older people aged 65 and over)	✓		✓	✓
Deprived communities		✓	✓	✓
Disability			✓	✓
Gender reassignment	✓		✓	
Marriage and civil partnership				
Pregnancy and maternity	✓	✓	✓	✓
Race and ethnicity: BAME communities		✓	✓	✓
Religion and belief			✓	
Sex: Female	✓	✓		
Sex: Male	✓		✓	✓
Sexual orientation				

Source: Mott MacDonald scoping report

E. Sustainability impact assessment methodology

Patient travel data available between October 2015 to October 2016 (1 year) has been used. The data is broken down into service areas (e.g. maternity, Planned Care etc.), and details the numbers of patients visiting all local hospitals by journey time. The data is also split up into two scenarios; the first represents actual traffic during the assessment period therefore with services delivered without any changes, and the second is a prediction of what the traffic would have been during the assessment period if the HGH was not available to deliver services.

To assess the impact of the proposed changes to NHS services on GHG emissions, the travel with and without the changes has been compared. The proposed changes to both maternity and stroke services are to move services from the HGH to the JRH. As such these changes have been assessed by comparing the scenario with the Horton and the scenario without the Horton from non-emergency stroke patients and maternity patients. The proposed changes to planned care, diagnostics and outpatients are to provide new services at the Horton. These changes were not presented in the data and were therefore not assessed. The proposed changes to critical care are to centralise level 3 critical care services in the JRH, whilst maintain level 2 critical care services in the HGH. The data available does not breakdown critical care into levels, and as such it is not clear how many of the critical care patients would be moved from the HGH to the JRH. Therefore, these changes were not assessed.

To calculate emissions with and without the changes, first the distance of each journey was assumed based on its duration. The data provided numbers of patients per service area by journey time bands if they were traveling by private vehicle. The medium of the journey times bands, was multiplied by the average speed on local A roads in Oxfordshire in 2016[206]. This produced an assumed distance. This was then multiplied by the number of patients, which resulted in the total distance travelled by all patients.

The total distance was then apportioned to transport mode using national 2015 data[207]. It was assumed patients would not travel by motorcycle, peddle bicycle, or air. Once the distances had been apportioned to transport mode, Defra's 2016 GHG emissions factors[208] were applied to the distances to estimate emissions, assuming one patient per car. The emissions were estimated with and without the changes, and doubled to account for return journeys, which were assumed to be the same in both directions for all patients. The difference between with and without the changes was then calculated.

[206] Department for transport (2017), Road congestion statistics Table CGN0501b.

[207] Department for transport (2017), Passenger transport, by mode: annual from 1952 Table TSGB0101

[208] https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2016

F. Travel and access additional breakdown

F.1 Maternity services

F.1.1 Population overall

Table 40: Baseline travel time by blue light to maternity services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	3,515	2,205	2,692	1,786	543	20	772
Percentage of patients reaching maternity services in journey time range	30%	19%	23%	15%	5%	0%	7%
Cumulative Percentage	30%	50%	73%	88%	93%	93%	100%

Source: SUS SEM

Table 41: Future travel time to maternity services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	1,798	1,540	2,676	3,809	910	19	781
Percentage of patients reaching maternity services in journey time range	16%	13%	23%	33%	8%	0%	7%
Cumulative Percentage	16%	29%	52%	85%	93%	93%	100%

Source: SUS SEM

Table 42: Baseline travel time by car to maternity services

	Travel Time - Car (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	2,974	2,154	2,533	2,693	411	6	762
Percentage of patients reaching maternity services in journey time range	26%	19%	22%	23%	4%	0%	7%
Cumulative Percentage	26%	44%	66%	90%	93%	93%	100%

Source: SUS SEM

Table 43: Future travel time to maternity services by car excluding the HGH

	Travel Time - Car (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	1,332	1,757	2,227	4,435	996	24	762
Percentage of patients reaching maternity services in journey time range	12%	15%	19%	38%	9%	0%	7%
Cumulative Percentage	12%	27%	46%	85%	93%	93%	100%

Source: SUS SEM

Table 44: Baseline travel time by public transport to maternity services

	Travel Time - Public transport (including HGH)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	363	2,240	1,789	1,913	2,053	1,258	1,917
Percentage of patients reaching maternity services in journey time range	3%	19%	16%	17%	18%	11%	17%
Cumulative Percentage	3%	23%	38%	55%	72%	83%	100%

Source: SUS SEM

Table 45: Future travel time to maternity services by public transport excluding the HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	148	1,179	1,475	2,521	2,732	1,355	2,123
Percentage of patients reaching maternity services in journey time range	1%	10%	13%	22%	24%	12%	18%
Cumulative Percentage	1%	12%	24%	46%	70%	82%	100%

Source: SUS SEM

F.1.2 Population overall in Oxfordshire only

Table 46: Baseline travel time by blue light to maternity services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	3,515	2,073	2,636	1,742	469	0	0
Percentage of patients reaching maternity services in journey time range	34%	20%	25%	17%	4%	0%	0%
Cumulative Percentage	34%	54%	79%	96%	100%	100%	100%

Source: SUS SEM

Table 47: Future travel time to maternity services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	1,798	1,532	2,641	3,679	785	0	0
Percentage of patients reaching maternity services in journey time range	17%	15%	25%	35%	8%	0%	0%
Cumulative Percentage	17%	32%	57%	92%	100%	100%	100%

Source: SUS SEM

Table 48: Baseline travel time by car to maternity services by car including the HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	2,955	1,802	1,930	2,097	1,365	286	0
Percentage of patients reaching maternity services in journey time range	28%	17%	18%	20%	13%	3%	0%
Cumulative Percentage	28%	46%	64%	84%	97%	100%	100%

Source: SUS SEM

Table 49: Future travel time to maternity services by car excluding the HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	1,313	1,568	1,671	2,097	3,421	365	0
Percentage of patients reaching maternity services in journey time range	13%	15%	16%	20%	33%	3%	0%
Cumulative Percentage	13%	28%	44%	64%	97%	100%	100%

Source: SUS SEM

Table 50: Baseline travel time to maternity services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	574	2,451	2,153	1,744	1,723	684	1,106
Percentage of patients reaching maternity services in journey time range	6%	23%	21%	17%	17%	7%	11%
Cumulative Percentage	6%	29%	50%	66%	83%	89%	100%

Source: SUS SEM

Table 51: Future travel time to maternity services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	189	1,431	1,591	1,960	2,372	1,556	1,336
Percentage of patients reaching maternity services in journey time range	2%	14%	15%	19%	23%	15%	13%
Cumulative Percentage	2%	16%	31%	50%	72%	87%	100%

Source: SUS SEM

F.1.3 Women aged 15-44 in the population overall

Table 52: Baseline travel time by blue light to maternity services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	3,494	2,201	2,679	1,735	498	10	760
Percentage of patients reaching maternity services in journey time range	31%	19%	24%	15%	4%	0%	7%
Cumulative Percentage	31%	50%	74%	89%	93%	93%	100%

Source: SUS SEM

Table 53: Future travel time to maternity services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	1,789	1,536	2,663	3,792	907	10	769
Percentage of patients reaching maternity services in journey time range	16%	13%	23%	33%	8%	0%	7%
Cumulative Percentage	16%	29%	52%	85%	93%	93%	100%

Source: SUS SEM

Table 54: Baseline travel time by car to maternity services by car including the HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	2,936	2,145	2,527	2,682	395	0	750
Percentage of patients reaching maternity services in journey time range	26%	19%	22%	23%	3%	0%	7%
Cumulative Percentage	26%	44%	67%	90%	93%	93%	100%

Source: SUS SEM

Table 55: Future travel time to maternity services by car excluding the HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	1,325	1,749	2,220	4,411	961	8	750
Percentage of patients reaching maternity services in journey time range	12%	15%	19%	39%	8%	0%	7%
Cumulative Percentage	12%	27%	46%	85%	93%	93%	100%

Source: SUS SEM

Table 56: Baseline travel time to maternity services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	347	2,223	1,785	1,909	2,033	1,254	1,900
Percentage of patients reaching maternity services in journey time range	3%	19%	16%	17%	18%	11%	17%
Cumulative Percentage	3%	22%	38%	55%	72%	83%	100%

Source: SUS SEM

Table 57: Future travel time to maternity services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	141	1,144	1,471	2,512	2,700	1,351	2,099
Percentage of patients reaching maternity services in journey time range	1%	10%	13%	22%	24%	12%	18%
Cumulative Percentage	1%	11%	24%	46%	70%	82%	100%

Source: SUS SEM

F.1.4 Women aged 15-44 in Oxfordshire only

Table 58: Baseline travel time by blue light to maternity services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	3,494	2,070	2,623	1,739	466	0	0
Percentage of patients reaching maternity services in journey time range	34%	20%	25%	17%	4%	0%	0%
Cumulative Percentage	34%	54%	79%	96%	100%	100%	100%

Source: SUS SEM

Table 59: Future travel time to maternity services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	1,789	1,528	2,628	3,665	782	0	0
Percentage of patients reaching maternity services in journey time range	17%	15%	25%	35%	8%	0%	0%
Cumulative Percentage	17%	32%	57%	92%	100%	100%	100%

Source: SUS SEM

Table 60: Baseline travel time by car to maternity services by car including the HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	2,917	1,797	1,927	2,087	1,349	284	0
Percentage of patients reaching maternity services in journey time range	28%	17%	19%	20%	13%	3%	0%
Cumulative Percentage	28%	45%	64%	84%	97%	100%	100%

Source: SUS SEM

Table 61: Future travel time to maternity services by car excluding the HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	1,306	1,563	1,667	2,087	3,406	363	0
Percentage of patients reaching maternity services in journey time range	13%	15%	16%	20%	33%	3%	0%
Cumulative Percentage	13%	28%	44%	64%	97%	100%	100%

Source: SUS SEM

Table 62: Baseline travel time to maternity services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	558	2,433	2,149	1,674	1,670	681	1,077
Percentage of patients reaching maternity services in journey time range	6%	23%	21%	17%	17%	7%	11%
Cumulative Percentage	6%	29%	50%	66%	83%	89%	100%

Source: SUS SEM

Table 63: Future travel time to maternity services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	188	1,425	1,587	1,952	2,360	1,548	1,332
Percentage of patients reaching maternity services in journey time range	2%	14%	15%	19%	23%	15%	13%
Cumulative Percentage	2%	16%	31%	50%	72%	87%	100%

Source: SUS SEM

F.1.5 Asian or Asian British

Table 64: Baseline travel time by blue light to maternity services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	414	92	48	31	13	0	29
Percentage of patients reaching maternity services in journey time range	66%	15%	8%	5%	2%	0%	5%
Cumulative Percentage	66%	81%	88%	93%	95%	95%	100%

Source: SUS SEM

Table 65: Future travel time to maternity services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	252	83	47	202	14	0	30
Percentage of patients reaching maternity services in journey time range	40%	13%	7%	32%	2%	0%	5%
Cumulative Percentage	40%	53%	61%	93%	95%	95%	100%

Source: SUS SEM

Table 66: Baseline travel time by car to maternity services by car including the HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	358	123	53	57	12	0	28
Percentage of patients reaching maternity services in journey time range	57%	19%	8%	9%	2%	0%	4%
Cumulative Percentage	57%	76%	85%	94%	96%	96%	100%

Source: SUS SEM

Table 67: Future travel time to maternity services by car excluding the HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	206	123	48	209	17	0	28
Percentage of patients reaching maternity services in journey time range	33%	19%	8%	33%	3%	0%	4%
Cumulative Percentage	33%	52%	60%	93%	96%	96%	100%

Source: SUS SEM

Table 68: Baseline travel time to maternity services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	30	301	144	64	31	22	39
Percentage of patients reaching maternity services in journey time range	5%	48%	23%	10%	5%	3%	6%
Cumulative Percentage	5%	52%	75%	85%	90%	94%	100%

Source: SUS SEM

Table 69: Future travel time to maternity services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	20	175	131	168	76	22	39
Percentage of patients reaching maternity services in journey time range	3%	28%	21%	27%	12%	3%	6%
Cumulative Percentage	3%	31%	52%	78%	90%	94%	100%

Source: SUS SEM

F.1.6 Asian or Asian British in Oxfordshire only

Table 70: Baseline travel time by blue light to maternity services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	414	92	48	31	13	0	0
Percentage of patients reaching maternity services in journey time range	69%	15%	8%	5%	2%	0%	0%
Cumulative Percentage	69%	85%	93%	98%	100%	100%	100%

Source: SUS SEM

Table 71: Future travel time to maternity services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	252	83	47	202	14	0	0
Percentage of patients reaching maternity services in journey time range	42%	14%	8%	34%	2%	0%	0%
Cumulative Percentage	42%	56%	64%	98%	100%	100%	100%

Source: SUS SEM

Table 72: Baseline travel time by car to maternity services by car including the HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	355	122	53	57	11	0	0
Percentage of patients reaching maternity services in journey time range	59%	19%	7%	8%	4%	1%	0%
Cumulative Percentage	59%	79%	86%	94%	99%	100%	100%

Source: SUS SEM

Table 73: Future travel time to maternity services by car excluding the HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	203	117	38	50	182	8	0
Percentage of patients reaching maternity services in journey time range	34%	20%	6%	8%	30%	1%	0%
Cumulative Percentage	34%	54%	60%	68%	99%	100%	100%

Source: SUS SEM

Table 74: Baseline travel time to maternity services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	54	309	135	43	30	0	22
Percentage of patients reaching maternity services in journey time range	9%	52%	23%	7%	5%	0%	4%
Cumulative Percentage	9%	61%	84%	91%	96%	96%	100%

Source: SUS SEM

Table 75: Future travel time to maternity services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	28	191	110	60	127	60	22
Percentage of patients reaching maternity services in journey time range	5%	32%	18%	10%	21%	10%	4%
Cumulative Percentage	5%	37%	55%	65%	86%	96%	100%

Source: SUS SEM

F.1.7 Black or Black British

Table 76: Baseline travel time by blue light to maternity services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	82	66	32	16	6	0	20
Percentage of patients reaching maternity services in journey time range	37%	30%	14%	7%	3%	0%	9%
Cumulative Percentage	37%	67%	81%	88%	91%	91%	100%

Source: SUS SEM

Table 77: Future travel time to maternity services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	72	57	31	32	10	0	20
Percentage of patients reaching maternity services in journey time range	32%	26%	14%	14%	5%	0%	9%
Cumulative Percentage	32%	58%	72%	86%	91%	91%	100%

Source: SUS SEM

Table 78: Baseline travel time by car to maternity services by car including the HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	66	79	27	26	0	0	18
Percentage of patients reaching maternity services in journey time range	31%	37%	13%	12%	0%	0%	8%
Cumulative Percentage	31%	67%	80%	92%	92%	92%	100%

Source: SUS SEM

Table 79: Future travel time to maternity services by car excluding the HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	48	79	25	44	6	0	18
Percentage of patients reaching maternity services in journey time range	22%	36%	11%	20%	3%	0%	8%
Cumulative Percentage	22%	58%	69%	89%	92%	92%	100%

Source: SUS SEM

Table 80: Baseline travel time to maternity services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	14	54	63	34	21	0	31
Percentage of patients reaching maternity services in journey time range	6%	25%	29%	16%	10%	0%	14%
Cumulative Percentage	6%	31%	60%	76%	86%	86%	100%

Source: SUS SEM

Table 81: Future travel time to maternity services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	9	46	64	41	26	0	31
Percentage of patients reaching maternity services in journey time range	4%	21%	29%	19%	12%	0%	14%
Cumulative Percentage	4%	25%	55%	74%	86%	86%	100%

Source: SUS SEM

F.1.8 Black or Black British in Oxfordshire only

Table 82: Baseline travel time by blue light to maternity services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	82	66	32	16	6	0	0
Percentage of patients reaching maternity services in journey time range	41%	33%	16%	8%	3%	0%	0%
Cumulative Percentage	41%	73%	89%	97%	100%	100%	100%

Source: SUS sem

Table 83: Future travel time to maternity services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	72	57	31	32	10	0	0
Percentage of patients reaching maternity services in journey time range	36%	28%	15%	16%	5%	0%	0%
Cumulative Percentage	36%	64%	79%	95%	100%	100%	100%

Source: SUS SEM

Table 84: Baseline travel time by car to maternity services by car including the HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	66	78	25	18	10	0	0
Percentage of patients reaching maternity services in journey time range	34%	40%	13%	9%	5%	0%	0%
Cumulative Percentage	34%	73%	86%	95%	100%	100%	100%

Source: SUS SEM

Table 85: Future travel time to maternity services by car excluding the HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	48	78	23	18	30	0	0
Percentage of patients reaching maternity services in journey time range	24%	40%	12%	9%	15%	0%	0%
Cumulative Percentage	24%	64%	76%	85%	100%	100%	100%

Source: SUS SE

Table 86: Baseline travel time to maternity services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	15	65	65	28	19	0	7
Percentage of patients reaching maternity services in journey time range	8%	33%	33%	14%	10%	0%	4%
Cumulative Percentage	8%	40%	73%	87%	96%	96%	100%

Source: SUS SEM

Table 87: Future travel time to maternity services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	8	58	59	36	0	8	7
Percentage of patients reaching maternity services in journey time range	5%	33%	34%	20%	0%	5%	4%
Cumulative Percentage	5%	38%	71%	91%	91%	96%	100%

Source: SUS SEM

F.1.9 Deprived communities

Table 88: Baseline travel time by blue light to maternity services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	54%	43%	2%	0%	0%	0%	1%
Percentage of patients reaching maternity services in journey time range	54%	97%	99%	99%	99%	99%	100%
Cumulative Percentage	54%	43%	2%	0%	0%	0%	1%

Source: SUS SEM

Table 89: Future travel time to maternity services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	117	352	18	333	0	0	9
Percentage of patients reaching maternity services in journey time range	14%	42%	2%	40%	0%	0%	1%
Cumulative Percentage	14%	57%	59%	99%	99%	99%	100%

Source: SUS SEM

Table 90: Baseline travel time by car to maternity services by car including the HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	451	352	0	18	0	0	8
Percentage of patients reaching maternity services in journey time range	54%	42%	0%	2%	0%	0%	1%
Cumulative Percentage	54%	97%	97%	99%	99%	99%	100%

Source: SUS SEM

Table 91: Future travel time to maternity services by car excluding the HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	118	352	0	351	0	0	8
Percentage of patients reaching maternity services in journey time range	14%	42%	0%	42%	0%	0%	1%
Cumulative Percentage	14%	57%	57%	99%	99%	99%	100%

Source: SUS SEM

Table 92: Baseline travel time to maternity services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	115	336	265	87	19	0	7
Percentage of patients reaching maternity services in journey time range	14%	41%	32%	10%	2%	0%	1%
Cumulative Percentage	14%	54%	86%	97%	99%	99%	100%

Source: SUS SEM

Table 93: Future travel time to maternity services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	0	117	379	232	93	0	7
Percentage of patients reaching maternity services in journey time range	0%	14%	46%	28%	11%	0%	1%
Cumulative Percentage	0%	14%	60%	88%	99%	99%	100%

Source: SUS SEM

F.1.10 Deprived communities in Oxfordshire only

Table 94: Baseline travel time by blue light to maternity services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	450	352	18	0	0	0	0
Percentage of patients reaching maternity services in journey time range	55%	43%	2%	0%	0%	0%	0%
Cumulative Percentage	55%	98%	100%	100%	100%	100%	100%

Source: SUS SEM

Table 95: Future travel time to maternity services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching maternity services in journey time range	117	352	18	333	0	0	0
Percentage of patients reaching maternity services in journey time range	14%	43%	2%	41%	0%	0%	0%
Cumulative Percentage	14%	57%	59%	100%	100%	100%	100%

Source: SUS SEM

F.2 Stroke services

F.2.1 Population overall

Table 96: Baseline travel time by blue light to stroke services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	128	136	174	117	50	0	0
Percentage of patients reaching stroke services in journey time range	21%	22%	29%	19%	8%	0%	0%
Cumulative Percentage	21%	44%	72%	92%	100%	100%	100%

Source: SUS SEM

Table 97: Future travel time to stroke services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	68	101	170	200	66	0	12
Percentage of patients reaching stroke services in journey time range	11%	16%	28%	32%	11%	0%	2%
Cumulative Percentage	11%	27%	55%	87%	98%	98%	100%

Source: SUS SEM

Table 98: Baseline travel time to stroke services by car including HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	85	126	182	174	5	0	12
Percentage of patients reaching stroke services in journey time range	15%	22%	31%	30%	1%	0%	2%
Cumulative Percentage	15%	36%	67%	97%	98%	98%	100%

Source: SUS SEM

Table 99: Future travel time to stroke services by car excluding HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	49	98	166	235	58	0	12
Percentage of patients reaching stroke services in journey time range	8%	16%	27%	38%	9%	0%	2%
Cumulative Percentage	8%	24%	51%	89%	98%	98%	100%

Source: SUS SEM

Table 100: Baseline travel time to stroke services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	21	83	80	126	118	83	111
Percentage of patients reaching stroke services in journey time range	3%	13%	13%	20%	19%	13%	18%
Cumulative Percentage	3%	17%	30%	50%	69%	82%	100%

Source: SUS SEM

Table 101 Future travel time to stroke services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	7	44	76	139	132	100	120
Percentage of patients reaching stroke services in journey time range	1%	7%	12%	22%	21%	16%	19%
Cumulative Percentage	1%	8%	21%	43%	64%	81%	100%

Source: SUS SEM

F.2.2 Population in Oxfordshire only

Table 102: Baseline travel time by blue light to stroke services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	128	121	171	114	48	0	0
Percentage of patients reaching stroke services in journey time range	22%	21%	29%	20%	8%	0%	0%
Cumulative Percentage	22%	43%	72%	92%	100%	100%	100%

Source: SUS SEM

Table 103: Future travel time to stroke services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	68	100	170	190	54	0	0
Percentage of patients reaching stroke services in journey time range	12%	17%	29%	33%	9%	0%	0%
Cumulative Percentage	12%	29%	58%	91%	100%	100%	100%

Source: SUS SEM

Table 104: Baseline travel time to stroke services by car including HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	104	93	135	124	102	24	0
Percentage of patients reaching stroke services in journey time range	18%	16%	23%	21%	18%	4%	0%
Cumulative Percentage	18%	34%	57%	78%	96%	100%	100%

Source: SUS SEM

Table 105: Future travel time to stroke services by car excluding HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	49	83	117	121	185	27	0
Percentage of patients reaching stroke services in journey time range	8%	14%	20%	21%	32%	5%	0%
Cumulative Percentage	8%	23%	43%	64%	95%	100%	100%

Source: SUS SEM

Table 106: Baseline travel time to stroke services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	26	88	128	89	108	51	92
Percentage of patients reaching stroke services in journey time range	4%	15%	22%	15%	19%	9%	16%
Cumulative Percentage	4%	20%	42%	57%	75%	84%	100%

Source: SUS SEM

Table 107: Future travel time to stroke services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	0	54	102	102	128	85	101
Percentage of patients reaching stroke services in journey time range	0%	9%	18%	18%	22%	15%	18%
Cumulative Percentage	0%	9%	27%	45%	67%	82%	100%

Source: SUS SEM

F.2.3 Age 65 years or more overall

Table 108: Baseline travel time by blue light to stroke services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	91	106	130	86	24	0	0
Percentage of patients reaching stroke services in journey time range	21%	24%	30%	20%	5%	0%	0%
Cumulative Percentage	21%	45%	75%	95%	100%	100%	100%

Source: SUS SEM

Table 109: Future travel time to stroke services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	36	77	127	150	41	0	0
Percentage of patients reaching stroke services in journey time range	8%	18%	29%	35%	10%	0%	0%
Cumulative Percentage	8%	26%	56%	90%	100%	100%	100%

Source: SUS SEM

Table 110: Baseline travel time to stroke services by car including HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	76	92	139	130	0	0	0
Percentage of patients reaching stroke services in journey time range	17%	21%	32%	30%	0%	0%	0%
Cumulative Percentage	17%	38%	70%	100%	100%	100%	100%

Source: SUS SEM

Table 111: Future travel time to stroke services by car excluding HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	17	72	126	177	38	0	0
Percentage of patients reaching stroke services in journey time range	4%	17%	29%	41%	9%	0%	0%
Cumulative Percentage	4%	21%	50%	91%	100%	100%	100%

Source: SUS SEM

Table 112: **Baseline travel time to stroke services by public transport including HGH**

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	0	55	60	87	84	68	87
Percentage of patients reaching stroke services in journey time range	0%	12%	14%	20%	19%	15%	20%
Cumulative Percentage	0%	12%	26%	46%	65%	80%	100%

Source: SUS SEM

Table 113: Future travel time to stroke services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	0	13	51	97	98	81	93
Percentage of patients reaching stroke services in journey time range	0%	3%	12%	22%	23%	19%	21%
Cumulative Percentage	0%	3%	15%	37%	60%	79%	100%

Source: SUS SEM

F.2.4 Age 65 years or more in Oxfordshire only

Table 114: Baseline travel time by blue light to stroke services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	91	94	128	84	18	0	0
Percentage of patients reaching stroke services in journey time range	22%	23%	31%	20%	4%	0%	0%
Cumulative Percentage	22%	45%	75%	96%	100%	100%	100%

Source: SUS SEM

Table 115 Future travel time to stroke services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	36	76	127	143	34	0	0
Percentage of patients reaching stroke services in journey time range	9%	18%	31%	34%	8%	0%	0%
Cumulative Percentage	9%	27%	57%	92%	100%	100%	100%

Source: SUS SEm

Table 116: Baseline travel time to stroke services by car including HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	76	69	102	94	72	6	0
Percentage of patients reaching stroke services in journey time range	18%	16%	24%	22%	17%	1%	0%
Cumulative Percentage	18%	35%	59%	81%	99%	100%	100%

Source: SUS SEM

Table 117: Future travel time to stroke services by car excluding HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	17	63	87	90	139	6	0
Percentage of patients reaching stroke services in journey time range	4%	16%	22%	22%	35%	1%	0%
Cumulative Percentage	4%	20%	42%	64%	99%	100%	100%

Source: SUS SEM

Table 118: Baseline travel time to stroke services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	6	59	91	57	85	33	71
Percentage of patients reaching stroke services in journey time range	1%	15%	23%	14%	21%	8%	18%
Cumulative Percentage	1%	16%	39%	53%	74%	82%	100%

Source: SUS SEM

Table 119: Future travel time to stroke services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	0	29	72	69	103	56	78
Percentage of patients reaching stroke services in journey time range	0%	7%	18%	17%	25%	14%	19%
Cumulative Percentage	0%	7%	25%	42%	67%	81%	100%

Source: SUS SEM

F.2.5 Males overall

Table 120: Baseline travel time by blue light to stroke services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	54	77	73	57	24	0	0
Percentage of patients reaching stroke services in journey time range	19%	27%	26%	20%	8%	0%	0%
Cumulative Percentage	19%	46%	72%	92%	100%	100%	100%

Source: SUS SEM

Table 121: Future travel time to stroke services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	28	55	75	95	32	0	0
Percentage of patients reaching stroke services in journey time range	10%	19%	26%	33%	11%	0%	0%
Cumulative Percentage	10%	29%	55%	89%	100%	100%	100%

Source: SUS SEM

Table 122: Baseline travel time to stroke services by car including HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	43	70	93	68	11	0	0
Percentage of patients reaching stroke services in journey time range	15%	25%	33%	24%	4%	0%	0%
Cumulative Percentage	15%	40%	72%	96%	100%	100%	100%

Source: SUS SEM

Table 123: Future travel time to stroke services by car excluding HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	21	53	81	100	30	0	0
Percentage of patients reaching stroke services in journey time range	7%	19%	28%	35%	11%	0%	0%
Cumulative Percentage	7%	26%	54%	89%	100%	100%	100%

Source: SUS SEM

Table 124: Baseline travel time to stroke services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	10	32	41	69	53	32	52
Percentage of patients reaching stroke services in journey time range	3%	11%	14%	24%	18%	11%	18%
Cumulative Percentage	3%	15%	29%	53%	71%	82%	100%

Source: SUS SEM

Table 125: Future travel time to stroke services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	7	15	39	71	57	43	57
Percentage of patients reaching stroke services in journey time range	2%	5%	13%	25%	20%	15%	20%
Cumulative Percentage	2%	8%	21%	46%	65%	80%	100%

Source: SUS SEM

F.2.6 Males in Oxfordshire only

Table 126: Baseline travel time by blue light to stroke services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	28	55	75	95	32	0	0
Percentage of patients reaching stroke services in journey time range	10%	19%	26%	33%	11%	0%	0%
Cumulative Percentage	10%	29%	55%	89%	100%	100%	100%

Source: SUS SEM

Table 127: Future travel time to stroke services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	28	54	75	89	25	0	0
Percentage of patients reaching stroke services in journey time range	10%	20%	28%	33%	9%	0%	0%
Cumulative Percentage	10%	30%	58%	91%	100%	100%	100%

Source: SUS SEM

Table 128: Baseline travel time to stroke services by car including HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	99	82	125	102	0	0	0
Percentage of patients reaching stroke services in journey time range	24%	20%	31%	25%	0	0	0
Cumulative Percentage	24%	44%	75%	100%	100%	100%	100%

Source: SUS SEM

Table 129: Future travel time to stroke services by car excluding HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	21	53	79	91	27	0	0
Percentage of patients reaching stroke services in journey time range	8%	20%	29%	34%	10%	5%	0%
Cumulative Percentage	8%	27%	56%	90%	100%	100%	100%

Source: SUS SEM

Table 130: Baseline travel time to stroke services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	10	32	40	60	52	32	45
Percentage of patients reaching stroke services in journey time range	4%	12%	15%	22%	19%	12%	17%
Cumulative Percentage	4%	15%	30%	52%	72%	83%	100%

Source: SUS SEM

Table 131: Future travel time to stroke services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	7	15	39	71	56	37	46
Percentage of patients reaching stroke services in journey time range	3%	6%	14%	26%	21%	14%	17%
Cumulative Percentage	3%	8%	23%	49%	69%	83%	100%

Source: SUS SEM

F.2.7 Females overall

Table 132: Baseline travel time by blue light to stroke services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	74	59	101	60	26	0	0
Percentage of patients reaching stroke services in journey time range	23%	18%	32%	19%	8%	0%	0%
Cumulative Percentage	23%	42%	73%	92%	100%	100%	100%

Source: SUS SEM

Table 133: Future travel time to stroke services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	40	46	95	105	34	0	12
Percentage of patients reaching stroke services in journey time range	12%	14%	29%	32%	10%	0%	4%
Cumulative Percentage	12%	26%	55%	86%	96%	96%	100%

Source: SUS SEM

Table 134: Baseline travel time to stroke services by car including HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	61	56	89	106	9	0	12
Percentage of patients reaching stroke services in journey time range	18%	17%	27%	32%	3%	0%	4%
Cumulative Percentage	18%	35%	62%	94%	96%	96%	100%

Source: SUS SEM

Table 135: Future travel time to stroke services by car excluding HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	28	45	85	135	28	0	12
Percentage of patients reaching stroke services in journey time range	8%	14%	26%	41%	8%	0%	4%
Cumulative Percentage	8%	22%	47%	88%	96%	96%	100%

Source: SUS SEM

Table 136: Baseline travel time to stroke services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	11	51	39	57	65	51	59
Percentage of patients reaching stroke services in journey time range	3%	15%	12%	17%	20%	15%	18%
Cumulative Percentage	3%	19%	30%	47%	67%	82%	100%

Source: SUS SEM

Table 137: Future travel time to stroke services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	0	29	37	68	75	57	63
Percentage of patients reaching stroke services in journey time range	0%	9%	11%	21%	23%	17%	19%
Cumulative Percentage	0%	9%	20%	41%	64%	81%	100%

Source: SUS SEM

F.2.8 Females in Oxfordshire only

Table 138: Baseline travel time by blue light to stroke services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	74	55	100	58	24	0	0
Percentage of patients reaching stroke services in journey time range	24%	18%	32%	19%	8%	0%	0%
Cumulative Percentage	24%	41%	74%	92%	100%	100%	100%

Source: SUS SEM

Table 139: Future travel time to stroke services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	40	46	95	101	29	0	0
Percentage of patients reaching stroke services in journey time range	13%	15%	31%	32%	9%	0%	0%
Cumulative Percentage	13%	28%	58%	91%	100%	100%	100%

Source: SUS SEM

Table 140: Baseline travel time to stroke services by car including HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	105	84	132	105	12	0	0
Percentage of patients reaching stroke services in journey time range	24%	19%	30%	24%	3%	0%	0%
Cumulative Percentage	24%	43%	73%	97%	100%	100%	100%

Source: SUS SEM

Table 141: Future travel time to stroke services by car excluding HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	28	44	83	130	26	0	0
Percentage of patients reaching stroke services in journey time range	9%	14%	27%	42%	8%	0%	0%
Cumulative Percentage	9%	23%	50%	92%	100%	100%	100%

Source: SUS SEM

Table 142: Baseline travel time to stroke services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	11	51	37	55	64	50	43
Percentage of patients reaching stroke services in journey time range	4%	16%	12%	18%	21%	16%	14%
Cumulative Percentage	4%	20%	32%	50%	70%	86%	100%

Source: SUS SEM

Table 143: Future travel time to stroke services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	0	29	36	68	74	55	45
Percentage of patients reaching stroke services in journey time range	0%	9%	12%	22%	24%	18%	15%
Cumulative Percentage	0%	9%	21%	43%	67%	85%	100%

Source: SUS SEM

F.2.9 Deprived communities

Table 144: Baseline travel time by blue light to stroke services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	18	17	0	0	0	0	0
Percentage of patients reaching stroke services in journey time range	51%	49%	0%	0%	0%	0%	0%
Cumulative Percentage	51%	100%	100%	100%	100%	100%	100%

Source: SUS SEM

Table 145: Future travel time to stroke services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	0	17	0	13	0	0	0
Percentage of patients reaching stroke services in journey time range	0%	57%	0%	43%	0%	0%	0%
Cumulative Percentage	0%	57%	57%	100%	100%	100%	100%

Source: SUS SEM

Table 146: Baseline travel time by car to stroke services by car including the HGH

	Travel Time - Car (including Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	18	17	0	0	0	0	0
Percentage of patients reaching stroke services in journey time range	51%	49%	0%	0%	0%	0%	0%
Cumulative Percentage	51%	100%	100%	100%	100%	100%	100%

Source: SUS SEM

Table 147: Future travel time to stroke services by car excluding the HGH

	Travel Time - Car (excluding Horton)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	0	17	0	15	0	0	0
Percentage of patients reaching stroke services in journey time range	0%	53%	0%	47%	0%	0%	0%
Cumulative Percentage	0%	53%	53%	100%	100%	100%	100%

Source: SUS SEM

Table 148: Baseline travel time to stroke services by public transport including HGH

	Travel Time - Public transport (including Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching maternity services in journey time range	6	12	0	0	0	0	0
Percentage of patients reaching maternity services in journey time range	33%	67%	0%	0%	0%	0%	0%
Cumulative Percentage	33%	100%	100%	100%	100%	100%	100%

Source: SUS SEM

Table 149: Future travel time to stroke services by public transport excluding HGH

	Travel Time - Public transport (excluding Horton)						
Journey time (number of minutes)	0-15	16-30	31-45	46-60	61-75	76-90	>90
Number of patients reaching stroke services in journey time range	0	0	20	7	0	0	0
Percentage of patients reaching stroke services in journey time range	0%	0%	74%	26%	0%	0%	0%
Cumulative Percentage	0%	0%	74%	100%	100%	100%	100%

Source: SUS SEM

F.2.10 Deprived communities in Oxfordshire only

Table 150: Baseline travel time by blue light to stroke services

	Travel Time - Blue light (including HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	18	17	0	0	0	0	0
Percentage of patients reaching stroke services in journey time range	51%	49%	0%	0%	0%	0%	0%
Cumulative Percentage	51%	100%	100%	100%	100%	100%	100%

Source: SUS SEM

Table 151: Future travel time to stroke services by blue light excluding the HGH

	Travel Time – Blue light (excluding HGH)						
Journey time (number of minutes)	0-10	11-20	21-30	31-40	41-50	51-60	>60
Number of patients reaching stroke services in journey time range	0	17	0	13	0	0	0
Percentage of patients reaching stroke services in journey time range	0%	57%	0%	43%	0%	0%	0%
Cumulative Percentage	0%	57%	57%	100%	100%	100%	100%

Source: SUS SEM