

Date: Wednesday, 2 October 2019

Time: 3.00 pm

Venue: Shrewsbury Room, Shirehall, Abbey Foregate, Shrewsbury, Shropshire,  
SY2 6ND

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## JOINT HEALTH OVERVIEW AND SCRUTINY COMMITTEE

### TO FOLLOW REPORT (S)

#### 4 Transforming Midwifery Care in Shropshire, Telford and Wrekin (Pages 1 - 76)

To receive a progress update on Transforming Midwifery Care in Shropshire, Telford and Wrekin, a presentation **will follow**

Debbie Vogler, Associate Director, Shropshire and Telford and Wrekin CCGs, Fiona Ellis, Commissioning and Redesign Lead, Women and Children's Services, and Jessica Sokolov, Medical Director, Shropshire CCG will attend the meeting and answer questions

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**Transforming Midwifery Care**  
in Shropshire, Telford & Wrekin



# Update on Transforming Midwifery Care Programme

**Joint HOSC**  
**2<sup>nd</sup> October 2019**



## Recap on Reasons for Change

## Reasons for Change

- Provide safe, high quality midwifery care now and in the future
- Improve the health of pregnant women and their babies
- Provide better patient experience, choice and personalised care for women and their families
- More women have services closer to home
- Right staff and services in the right place at the right time
- Make best use of resources



## Recap of Proposed Model of Care

## Model of Care (1)

- Network of MLUs, Maternity Hubs, Clinics in the Community, Home Visits including Home births, 24/7 access to midwives
- Midwives and Maternity Support workers will work flexibly across the network, providing personalised care for women throughout pregnancy, birth and beyond
- **MLUs**
  - Only MLUs will be at PRH and RSH
  - Open 24/7 for births. Home births also available 24/7.
  - No inpatient postnatal provision. Women can stay up to 6 hours after giving birth.
  - All inpatient provision provided from consultant unit
  - The MLUs at RSH and PRH will also operate as maternity hubs, offering the same wide range of services 12 hours a day, seven days a week
- **Clinics**
  - Will continue to be available across the county. Currently over 50. In a range of locations including GP practices, children's centres and other community buildings.



## Model of Care (2)

- **Maternity hubs**
  - Open 12 hours a day 7 days a week
  - Range of maternity services including midwife clinics, advice and support from Maternity Support Workers, growth scans and obstetric clinics.
  - Range of related services such as perinatal mental health, smoking cessation, weight management
  - Maternity Support Workers will be available during opening hours for advice and support. This will allow midwives to work flexibly across different settings, only needing to be at the hubs to run midwife-led clinics.
  - Clinics will run at set times according to demand. Hubs will provide outreach into areas of particular need.
  - The MLUs at RSH and PRH will also operate as maternity hubs, offering the same wide range of services 12 hours a day, seven days a week
  - Women will only be able to give birth at hubs that are co-located with a MLU





**Transforming Midwifery Care**  
in Shropshire, Telford & Wrekin



## Options Appraisal Outcome

## Outcome of Option Appraisal

- The options that ranked highest were those with the two MLU birthing hubs plus an additional three or four community based maternity hubs without birthing provision.
- Two measures used: a combined financial and non financial weighted score and a cost per benefit point calculation.
- In both calculations, there was only a marginal difference between having the additional 3 or 4 community based maternity hub options.
- Both 3 and 4 community based maternity hubs are clinically and financially viable; 4 hubs appeared to potentially offer additional benefit
- We then examined a range of data to ensure that the maternity hubs are proposed in the best locations where the most women will benefit
- This includes public health data looking at differential need, the equalities impact on women and a detailed travel access data analysis.

## Location of Hubs: Needs analysis

<b>Maternity Pathway</b>	<ul style="list-style-type: none"> <li>- Proportion of women on an intermediate/intense pathway for antenatal and postnatal care?</li> <li>- Proportion of women who had deliveries with complications and co-morbidities?</li> </ul>
<b>Risk</b>	<ul style="list-style-type: none"> <li>- Maternal Obesity</li> <li>- Women smoking at time of delivery</li> <li>- Deliveries to teenage mothers</li> <li>- Pre-terms births</li> <li>- Breastfeeding initiation</li> <li>- Use of alcohol during pregnancy</li> <li>- History of substance misuse (pregnant women)</li> <li>- Involvement with mental health services (pregnant women)</li> </ul>

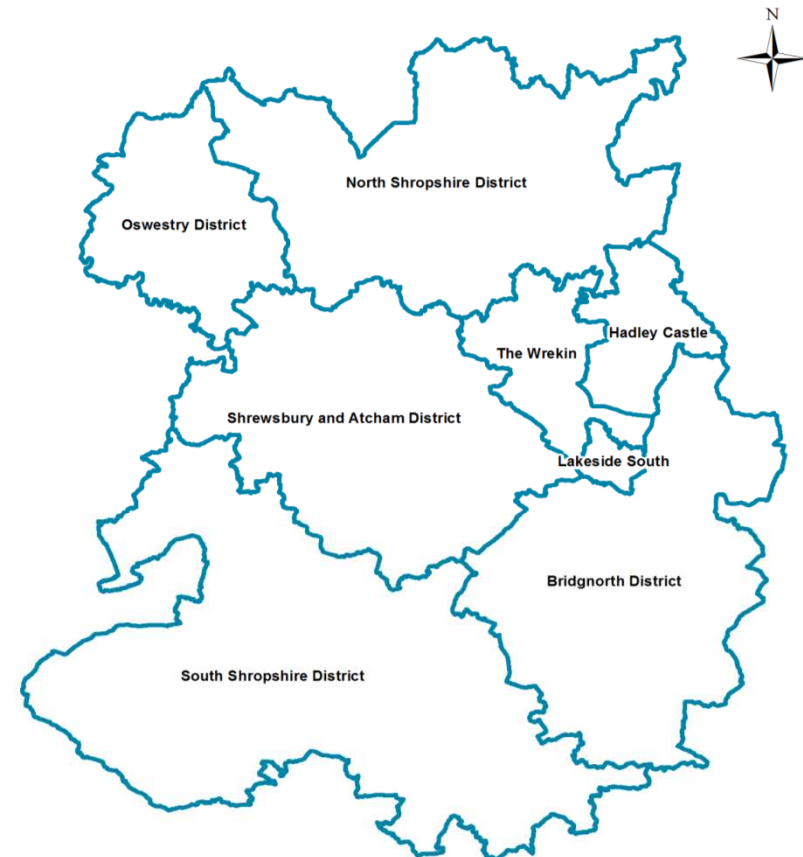
## Location of Hubs: Needs Analysis

<b>Deprivation</b>	<ul style="list-style-type: none"> <li>- Index of multiple deprivation</li> <li>- Income deprivation</li> <li>- IDACI</li> <li>- Health deprivation and disability</li> <li>- Barriers to housing and services</li> </ul>
<b>Population</b>	<ul style="list-style-type: none"> <li>- How many women aged 16-44 years live in the locality currently?</li> <li>- How is the population of women aged 16-44 years predicted to change over the next 10 years in the locality?</li> </ul>
<b>Demand</b>	<ul style="list-style-type: none"> <li>- How many women in this locality gave birth in 2016/17?</li> <li>- How many women in this locality have given birth in the last 5 years?</li> </ul>
<b>Access</b>	<ul style="list-style-type: none"> <li>- What is the distance/travel time from this locality to Royal Shrewsbury Hospital?</li> <li>- What is the distance/travel time from this locality to Princess Royal Hospital?</li> </ul>



# Understanding Differential Need

- 1 Lakeside South
- 2 Wrekin
- 3 Hadley Castle
- 4 Shrewsbury and Atcham
- 5 North Shropshire
- 6 South Shropshire
- 7 Oswestry
- 8 Bridgnorth





**Transforming Midwifery Care**  
in Shropshire, Telford & Wrekin



# Access Impact Assessment Summary Findings



## Background

- Access Impact Assessment commissioned in order to understand how potential hub locations would impact access and travel times for women and their families
- Undertaken by the Strategy Unit at Midlands and Lancashire Commissioning Support Unit
- The full report has been provided to the JHOSC
- The access impact assessment considered what impact the different potential hub locations would have for women in relation to:
  - Accessing birthing locations
  - Accessing hub services (dating scans were used as a proxy measure)

## Births 2016/17

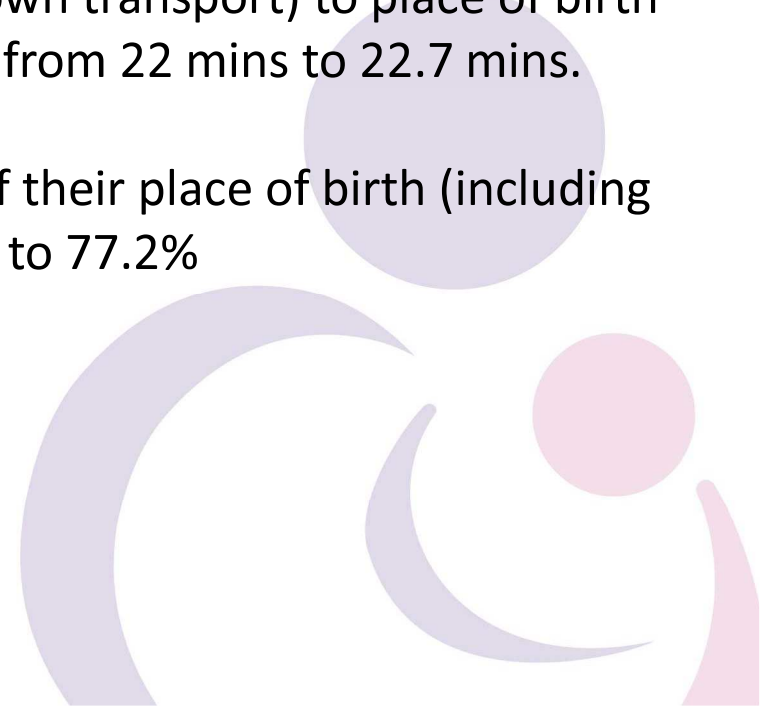
Site name	n women	%
The Princess Royal (Maternity)*	4071	90.6
Royal Shrewsbury (Maternity)	144	3.2
Bridgnorth (Maternity)	69	1.5
Oswestry (Robert Jones & Agnes Hunt Orthopaedic & District)	51	1.1
Ludlow	32	0.7
<b>Subtotal</b>	<b>4367</b>	<b>97.1</b>

In the same year, 264 women from Shropshire, Telford and Wrekin gave birth over the LMS border with 106 women delivering at Betsi Cadwaladr in Wrexham and others giving birth at English hospitals including Worcestershire Royal, Hereford County, Royal Stoke University, New Cross, Leighton and Russell's Hall.



## Summary Findings : All Births (1)

- The impact of reducing the number of midwifery led birth locations overall makes a marginal difference, as the vast majority of women give birth in the consultant unit. (85%)
- Overall, mean journey time (weekday by own transport) to place of birth (including consultant led births) increases from 22 mins to 22.7 mins.
- Overall, the % of women within 30 mins of their place of birth (including consultant led births) reduces from 79.3% to 77.2%



## Summary Findings : MLU Births (2)

- Looking at MLU births only, the mean car journey time will increase on average by 5 minutes from 15.9 mins to 21 mins.
- Looking at MLU births only, the mean travel time for public transport rises on average by approximately 11 minutes.
- Overall, the % of women within 30 mins of an MLU place of birth reduces from 92.7% to 78.4% and the % of women within 45 mins of an MLU place of birth reduces from 98% to 94.3%
- Mothers in Bridgnorth and Oswestry would have to travel on average around 15 minutes further by car to the nearest MLU.
- Mothers in South Shropshire would have to travel on average around 20-25 minutes further by car to the nearest MLU.

## Access to Hubs: 13 Scenarios examined

	Other midwifery care													
	Current	2 + 3 hubs							2 + 4 hubs					
		1	2	3	4	5	6	7	8	9	10	11	12	13
Shrewsbury (RSH)	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Wrekin (PRH)	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Lakeside South	•	•	•			•	•	•	•	•	•	•	•	•
Hadley Castle				•	•	•	•	•	•	•				
Oswestry	•										•	•		
Bridgnorth	•												•	•
N. Shropshire (Whitchurch)		•		•		•			•		•		•	
N. Shropshire (Mkt Drayton)			•		•		•			•		•		•
S. Shropshire (Ludlow)		•	•	•	•			•	•	•	•	•	•	•

## Summary Findings : Access to Hubs (1)

- Access to scans is currently worst in North Shropshire and South Shropshire where there is no existing facility
- All of the potential configurations slightly improve travel times compared to the current configuration regardless of location of hubs.
- In 2018/19, 92.8% women travelled up to 30 minutes for their dating scan
- In the new model of care between 94% and 99% of these women would have been within 30 minutes of their nearest hub depending on the scenarios for the location of hubs
- In line with the findings of the options appraisal, the access impact assessment indicates that the benefits of having four hubs rather than three is marginal.

## Summary Findings : Access to Hubs (2)

The hub location scenarios that appear to have the greatest positive impact for a three hub model in terms of access are:

- Scenario 1 (Lakeside South, Whitchurch and Ludlow) and
- Scenario 2 (Lakeside South, Market Drayton and Ludlow)

There is marginal difference between these two scenarios.

For a four hub model the scenarios that appear to have the greatest positive impact are:

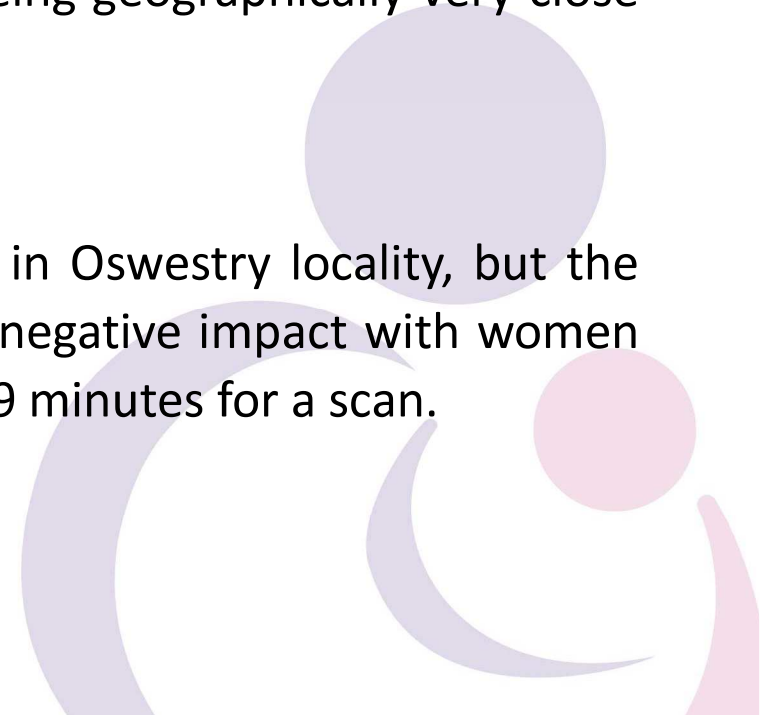
- Scenario 10 (Lakeside South, Oswestry, Whitchurch and Ludlow) and
- Scenario 11 (Lakeside South, Oswestry, Market Drayton, Ludlow).

There is marginal difference between these two scenarios.

## Consideration of Access and Needs Analysis

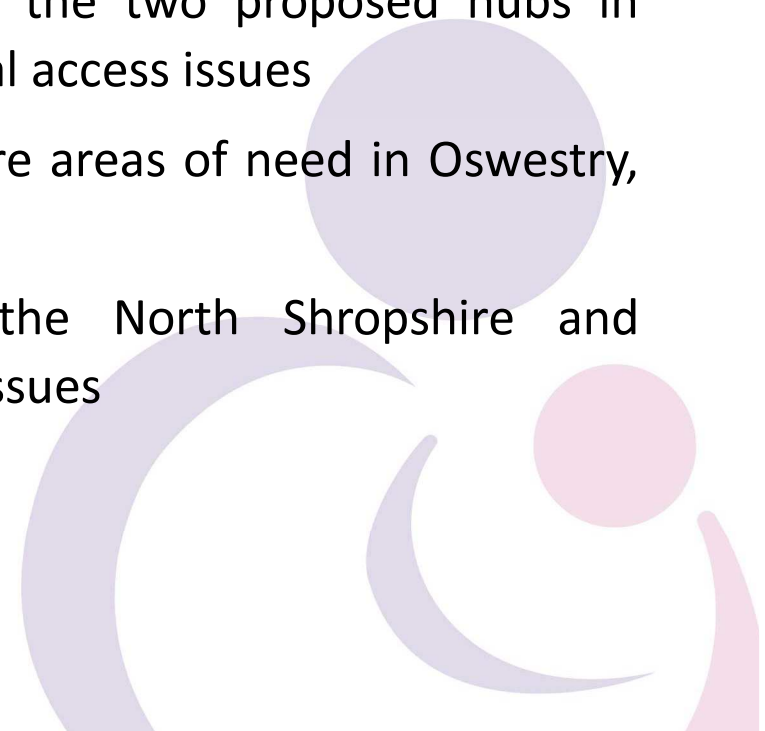
- Whilst need scores highly in the Telford localities, locating hubs in Hadley Castle and Lakeside South would appear to result in sub-maximal access in terms of travel time for women across the county area as a whole. This is due to Wrekin, Hadley Castle and Lakeside South being geographically very close to each other.

- Overall needs analysis scored relatively lower in Oswestry locality, but the access data analysis appears to have the most negative impact with women potentially travelling on average an additional 19 minutes for a scan.



## Consideration of targeted support

- Hadley Castle has the highest population of BAME women and high levels of deprivation in parts.
- Access challenges are not necessarily related only to travel time and distance from services.
- Targeted outreach for Hadley Castle from the two proposed hubs in Telford and Wrekin could address any cultural access issues
- The evidence suggested that whilst there are areas of need in Oswestry, the numbers are comparatively very low.
- Targeted outreach for Oswestry from the North Shropshire and Shrewsbury Hubs could address any access issues





- Any proposals are subject to NHSE/I assurance process. Regional Stage 2 Panel date confirmed in October.
- National sign off will follow the Regional panel
- Feedback received from NHSE/I on the proposed model to date has been positive.
- PCBC and final proposals including consultation documentation will need to go to CCG Boards after NHSE Assurance process is concluded and before consultation process begins
- These will also be shared with JHOSC for its scrutiny and comments taken into account.
- Start date for consultation yet to be agreed. Depending on when consultation starts, it will not be shorter than 8 weeks.
- The final proposal that we do take to consultation is then subject to change following the consultation findings report and conscientious



**Questions?**



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# Assessing the impacts of changes to midwifery care services on travel and access.

Shropshire and Telford & Wrekin

June 2019

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# Background

As part of continued plans to reconfigure healthcare services across the Shropshire and Telford & Wrekin footprint, changes to midwifery care are being considered by the Local Maternity System (LMS).

The plans and proposals will require wide engagement with clinicians, patients, the public and other stakeholders as well as central assurance before a decision can be made on the best arrangement of services.

Arriving at an agreement will require assessments of the economic, quality, equality, environmental and travel and access impacts of potential changes, as well as other factors.

The programme team have access to previous impact assessment work from the Future Fit programme and recent access analysis at GP practice-level, however it was felt that up-to-date and more robust analysis are needed.

This report seeks to address the travel and access impacts with the use of recent maternity activity data and population data alongside road speeds data and travel modelling software in order to support feasibility study, options appraisal, impact assessment and other assurance processes for families accessing midwifery care in the area.

# Proposed changes to midwifery care services

The current commissioned model of midwifery care includes five Midwife-Led Units (MLU) that are open 24/7. A review of midwifery care has found that the configuration of the current model is not in line with demand.

A new model is being proposed that includes community midwives working across Shropshire and Telford & Wrekin, supported by five or six hubs offering a range of services (including antenatal scans) which will be open for 12 hours a day. **Routine antenatal and postnatal care will continue to be offered at GP practices and other locations across the county (map opposite).**

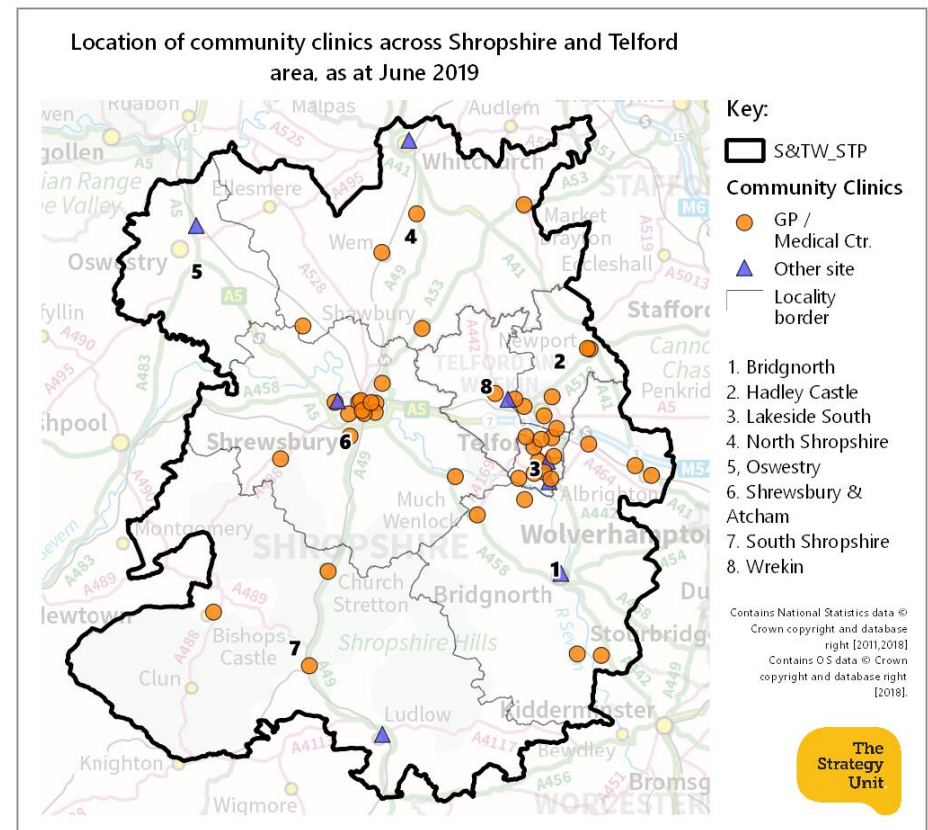
Two 24/7 MLUs based at Princess Royal and Royal Shrewsbury hospital sites will also be available as well as support for home births across the county.

The maternity hub locations being considered are central sites\* in:

- Hadley castle
- Lakeside South
- North Shropshire (Whitchurch **OR** Market Drayton)
- South Shropshire (Ludlow)
- Oswestry
- Bridgnorth

\* It should be noted that there are no fixed and agreed hub sites within these locations at this time - this analysis is intended to be indicative of access to those areas and to enable comparison of a range of options. However; in order to calculate road and public transport journeys, we have had to specify central locations. A full list of these can be found in Appendix 3.

Community clinics across the region provide many antenatal and postnatal services, and this will continue to be provided in the new model.

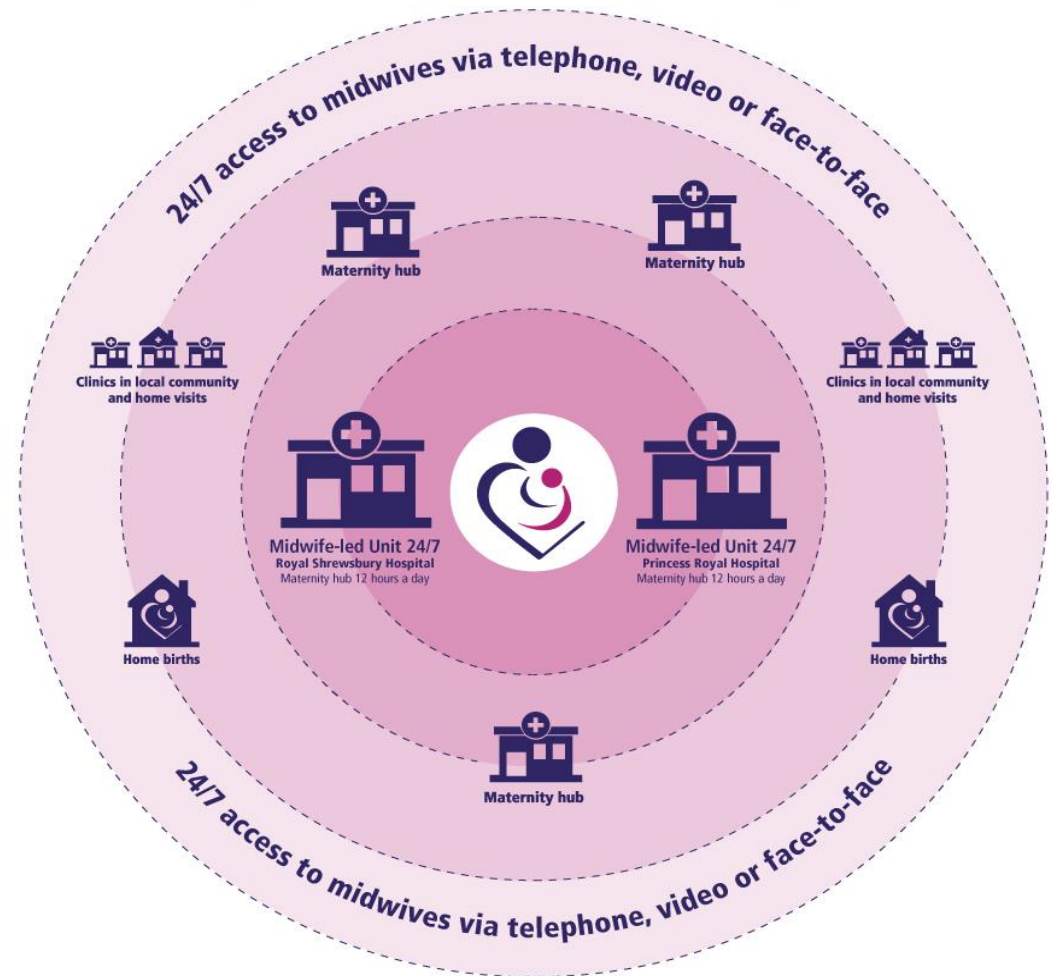


# The proposed commissioning model for maternity care

"We (the LMS) are proposing to transform the way that midwifery care is currently delivered across Shropshire, Telford and Wrekin to provide all women with safe, high quality and personalised care throughout their pregnancy (antenatal care), during the birth and following the birth of their baby (postnatal care).

We would do this by creating a network of midwife-led units, maternity hubs, clinics in the local community and home visits. Midwives and maternity support workers (previously known as women's support assistants) would work flexibly across this network, providing high quality, personalised care to women throughout all stages of their pregnancy, birth and beyond."

## Proposed model of midwifery care



Source: Transforming midwifery care programme, Shropshire and Telford & Wrekin LMS.

# Methods: MLU Birth services

The last full operational year of the current commissioned model where there was a genuine choice of Midwife-led Units (MLU) for giving birth across the Shropshire and Telford & Wrekin area was 2016/17.

We extracted all the hospital episodes for that year where there was a record of a birth based on spell-level Health Resource Groups (HRG, full list in Appendix 4), making sure only the maternal record was retained i.e. excluding the infant record.

Using the output area\* of mothers home address, we ascertained the 'actual' travel times by private vehicle to the birth destination.

For birth episodes at the 3 rural MLU sites (Oswestry, Ludlow and Bridgnorth) we ascertained the 'modelled' journey time to the nearest (in terms of time) of PRH and RSH birth units to facilitate comparison.

We calculated journey times using the TRACC software (Basemap, <https://www.basemap.co.uk/tracc/>) and integrated road networks alongside both off-peak and peak road speeds data.

Note that while for comprehensiveness we have included public transport travel times for births we recognised that this not a feasible choice in the overwhelming majority of cases.

\* Output areas (OAs) are a static statistical geography covering on average 300 to 400 people of all ages. As unit postcodes are no longer retained in routine commissioner datasets, this is the lowest level of positional accuracy we have for patients accessing acute services. We will use the population-weighted centre of each OA as the assumed journey start point and where there is marginal difference to multiple destinations we will pro-rata patients accordingly to account for large area (rural) OAs.



# Methods: Other midwifery care services

We utilised comprehensive records of antenatal scans in hospital and community sites across Shrewsbury and Telford & Wrekin for the 2018/19 financial year. This formed our proxy baseline of midwifery care for comparison of access.

We extracted all the outpatient attendances during the period where there was a record of a routine antenatal scan, based on OPCS-4 procedure code R361 (dating scan).

Using the output area of mothers home address, we ascertained the 'actual' travel times by private vehicle to the outpatient site of attendance. Where multiple scans were undertaken on the same date we assumed only one journey was made.

For all relevant activity we produced a 'modelled' journey time to the nearest (in terms of time) maternity hubs for each of the 13 alternative scenarios to facilitate comparison. We made the assumption that all women chose their nearest available hub. Note that, in reality, some may have a preference for the 24/7 MLU or consultant-led sites if they are booked to birth there.

We calculated journey times using the TRACC software and integrated road networks alongside both weekday and weekend road speeds data. Additionally we calculated Public Transport journeys assuming a midweek daytime travel window.

To aid comparison, we provided average journey times (mean) and time-banded break-downs of the population affected across the 8 locality areas in Shropshire, Telford & Wrekin.

In order to assess the impact of the potential configurations, for each we have reported the difference in average journey times for the 2 or 3 modes/times of day compared to the baseline (actual) journeys. We have done this for:

- the Shropshire and Telford & Wrekin footprint
- the 8 sub-localities
- different age groups, socio-economic and ethnic groups (to support separate but parallel impact assessment work). This breakdown is available in the appendices.

# Datasets

Due to time constraints, the sharing of trust data to the project team featuring full unit postcodes was not feasible. The current (and hypothetical) access to services was therefore determined using Secondary Uses Service (SUS) data already held within the CSU data warehouse.

Whilst this data will sacrifice some geographical granularity (using output area instead of postcode) it is available for instant extraction and analysis and will also enable the inclusion of patients travelling to external sites for their scans which would not be possible using SATH shared data.

Informatics staff at SATH provided episode IDs for women who used Sutton Hill Community Centres services which could then be linked to SUS data sets.

## Summary of impacts

# Impact of changes to MLU birth centres

- Around 85% of women gave birth in the centralised consultant-led unit under the current service model.
- There is only one proposed alternative service model, with the consolidation of 5 MLU to 2 central MLU in Telford and Shrewsbury therefore the impacts are only likely to affect a relatively small number of women and only in some areas - 160 (around 5%) of total births occur at one of the 3 rural MLU.
- The access impact of the proposed change on the **total maternal population** of the area is minimal for access - 1-3 minutes additional on average and the majority are still within 30 minutes travel of an MLU.
- The impacts, as expected, are slightly more marked for those women who would have given birth in one of the **three rural MLU's** with on average an extra 5-10 minutes of travel to their nearest site dependent on mode of transport. There is a corresponding drop in the 30 minute population catchment of MLU by 10-20% depending on mode of transport and time of travel.
- Mothers in Bridgnorth and Oswestry would have to travel on average around 15 minutes further by car or 40 minutes by public transport to their nearest MLU.
- Mothers in South Shropshire would have to travel on average around 20-25 minutes further to their nearest MLU by car or public transport.

# Impact of changes to other midwifery services

- Access to dating scans (as a proxy for the care offered in proposed midwifery hubs) is currently worst in North Shropshire and South Shropshire where there is no existing facility.
- The largest proportion of mothers requiring midwifery care live in the Telford & Wrekin area and central Shrewsbury.
- As most women, even some in more rural areas already travel to either Shrewsbury or Telford for antenatal scans, the proposed changes are only likely to adversely affect a relatively small number of women - between 100 and 250 depending on the placement of maternity hubs - and many more may choose closer services.
- All of the potential configurations slightly improve travel times (for the population as a whole) compared to the current configuration of services although only the 2+4 hub options improve access by public transport.
- On balance of all the travel time information, the 2+4 hub option with sites in Oswestry, Ludlow, Whitchurch and Lakeside South is best from a whole population access perspective, although only marginally.
- All of the 2+4 hub configurations result in slightly better access than the best 2+3 hub configuration, although only by very small margins.
- There is little to differentiate the 2+3 hub scenarios from each other on the whole population-level, although impacts in certain localities may need to be considered alongside other measures of needs.
- In both the 2+3 and 2+4 hub configurations, having hubs in both Hadley and Lakeside results in sub-maximal access coverage across the county area as a whole although slightly improves access times by Public Transport. This is due to their close proximity to each other.
- Options where the North Shropshire hub is located in Market Drayton are marginally better for access times but result in slightly lower population coverage than if based in Whitchurch.

## Births: detailed analysis

# Location of all women giving birth



This map should be used in conjunction with the scenario maps to put into context the travel times from various areas. The size of each point represents the number of women coming from an output area. The range of births per output area was 1 to 35+.

While there may be regions where the journey time is relatively high, these are often areas with low populations of women in the age groups concerned e.g. South Shropshire.

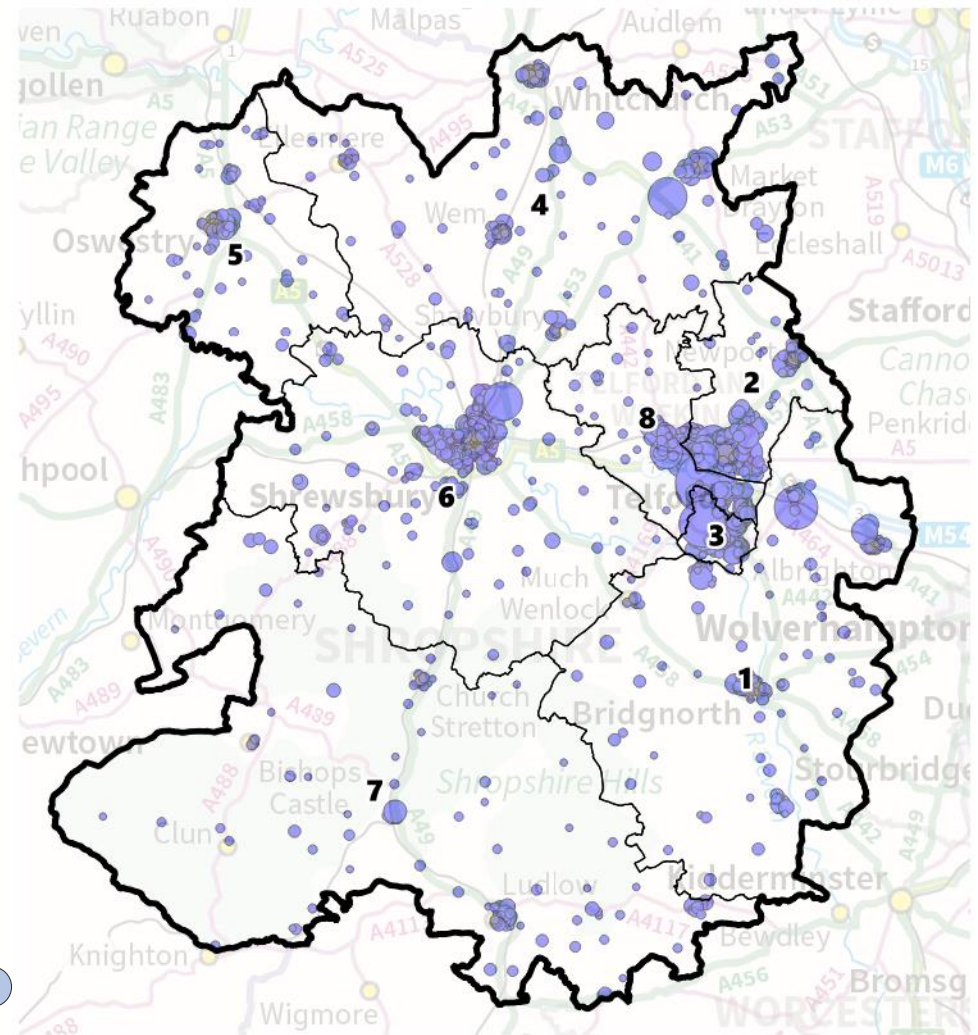
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Area code	Locality	Mothers giving birth in baseline year
1	Bridgnorth	427
2	Hadley Castle	767
3	Lakeside South	604
4	North Shropshire	464
5	Oswestry	223
6	Shrewsbury & Atcham	1,008
7	South Shropshire	238
8	The Wrekin	582

Legend:

1 Woman   
35+ Women 

Location and density of mothers giving BIRTH by output area, 2016/17 baseline



# Patient flows for all birth episodes

Number and % of women registered with GPs within the Local Maternity System (LMS) using sites *within* Shropshire, Telford and Wrekin at these sites:

Site name	n women	%
The Princess Royal (Maternity)*	4071	90.6
Royal Shrewsbury (Maternity)	144	3.2
Bridgnorth (Maternity)	69	1.5
Oswestry (Robert Jones & Agnes Hunt Orthopaedic & District)	51	1.1
Ludlow	32	0.7
Subtotal	4367	97.1

Number and % of women registered with GPs within the Local Maternity System (LMS) giving birth *outside* Shropshire, Telford and Wrekin at these consultant-led sites^.

Site name	n women	%
Worcestershire Royal	39	0.9
Hereford County	34	0.8
Royal Stoke University	25	0.6
New Cross	15	0.3
Leighton	10	0.2
Russells Hall	3	0.1
Subtotal	158	2.9

^ SUS data do not cover activity presenting outside of England. As such, this activity and subsequent scenario modelling does not account for births at Wrexham hospital - likely to be exclusively mothers from Oswestry area. During the equivalent period, according to NHS Wales, there were 106 births at Wrexham to mothers from Shropshire and Telford & Wrekin area, some of whom may choose to deliver babies in Shrewsbury when acute services move there under the Future Fit programme.



# All births: Comparison of travel times for two scenarios

For the alternative scenario, across the whole population, the mean travel time rises by just 40 seconds for off-peak car journeys both during the week and at the weekend. For public transport during the week the mean travel time rises by 90 seconds.

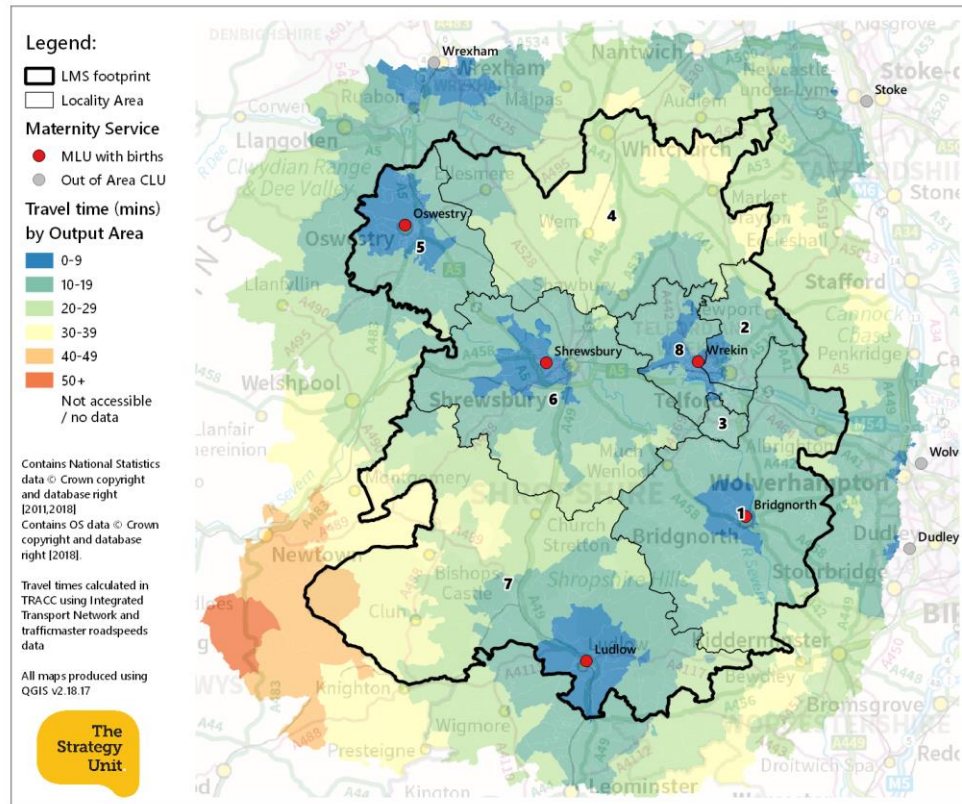
To aid comparison, we provide average journey times (mean) and time-banded break-downs of the population affected across the 8 locality areas in Shropshire and Telford on the following pages. The effect of the scenarios on different ages, socio-economic backgrounds and ethnic groups is included in appendix 1.

	Scenario	
	Current	Proposed
Shrewsbury (RSH)	●	●
Wrekin (PRH)	●	●
Oswestry	●	
Bridgnorth	●	
S. Shropshire (Ludlow)	●	

Travel type	Current	Proposed	Diff (mins)
wday mean journey time (mins)	22.0	22.7	+ 0.7
wend mean journey time (mins)	20.6	21.3	+ 0.7
ptrans mean journey time (mins)	53.5	55.0	+ 1.5

		Current	Proposed
% of all women within 30 mins of service:	w/day	79.3	77.2
	w/end	82.7	81.5
	P/trans	24.4	22.1

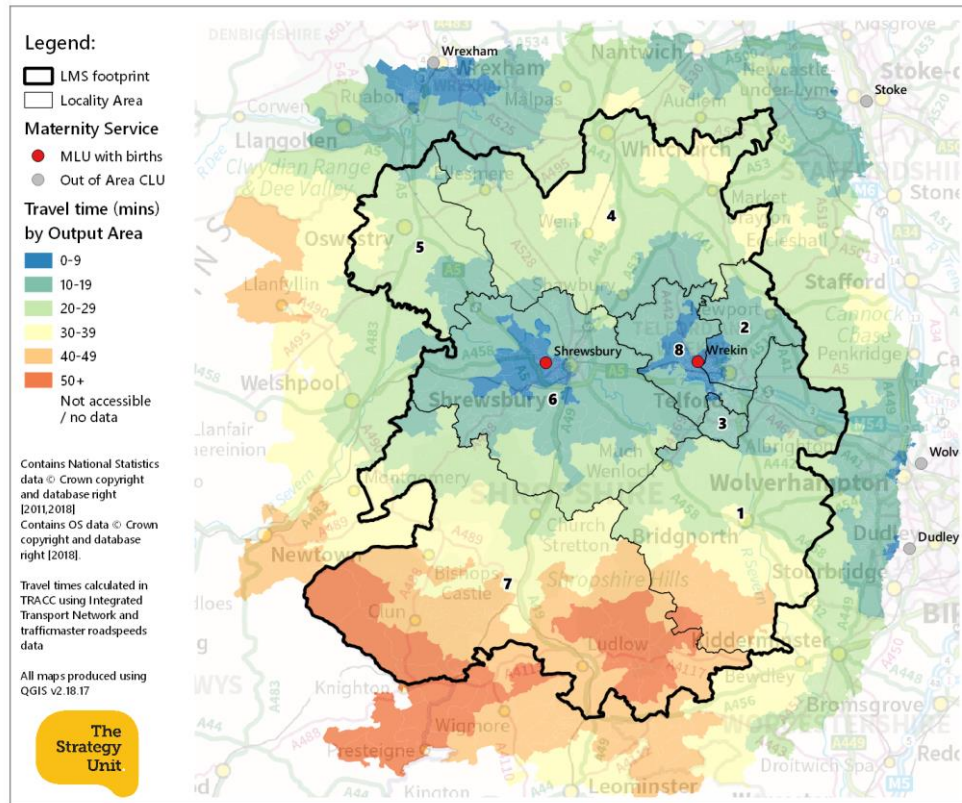
# All births: Baseline travel times - actual sites used for delivery



type	stat	Travel time (mins)					
		NA	0-14	15-29	30-44	45-59	60+
wday	n women	134	1,745	1,839	489	396	53
wend	n women	134	1,935	1,804	470	280	33
ptrans	n women	134	467	638	737	1,006	1,674
wday	% women	2.9	37.5	39.5	10.5	8.5	1.1
wend	% women	2.9	41.6	38.7	10.1	6.0	0.7
ptrans	% women	2.9	10.0	13.7	15.8	21.6	36.0

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	427	767	604	464	223	1,008	238	582	423
wday	mean travel time (mins)	22.8	11.6	14.5	29.6	40.1	24.4	43.7	9.1	43.9
wend	mean travel time (mins)	21.3	10.5	13.3	27.5	38.0	22.9	41.5	8.2	42.1
ptrans	mean travel time (mins)	62.0	38.9	49.9	78.2	76.3	54.2	67.3	23.1	85.4

# All births: Alternative scenario travel times



type	stat	Travel time (mins)					
		NA	0-14	15-29	30-44	45-59	60+
wday	n women	130	1,651	1,841	552	425	53
wend	n women	130	1,834	1,851	503	301	33
pttrans	n women	130	412	587	731	1,018	1,774
wday	% women	2.8	35.5	39.6	11.9	9.1	1.1
wend	% women	2.8	39.4	39.8	10.8	6.5	0.7
pttrans	% women	2.8	8.9	12.6	15.7	21.9	38.1

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	427	767	604	464	223	1,008	238	582	423
wday	mean travel time (mins)	25.8	11.5	14.5	29.8	43.3	24.4	48.2	9.1	44.7
wend	mean travel time (mins)	24.0	10.5	13.3	27.7	41.1	22.9	45.7	8.2	42.9
pttrans	mean travel time (mins)	70.7	38.9	49.9	78.8	84.3	54.1	72.5	23.1	85.8

# Patient flows for birth episodes at MLUs

Number of women registered with the STP giving birth at an MLU *within* Shropshire, Telford and Wrekin, and percentage of all STP registered women giving birth at these sites\*.

<u>Site name</u>	<u>n women</u>
The Princess Royal (Maternity)	337
Royal Shrewsbury (Maternity)	144
Bridgnorth (Maternity)	69
Oswestry (Robert Jones & Agnes Hunt Orthopaedic & District)	51
<u>Ludlow</u>	<u>32</u>
Subtotal	633

\* Current coding practice and SUS data protocols prohibit definitive attribution of births at PRH to the Wrekin MLU; all episodes are assigned to the same provider site code as the acute site (RXWMT). We obtained MLU births for Wrekin (n=337) based on consultant code H9999998 - 'Other Healthcare Professional' at the PRH site, validated against trust reported figures of 334.

# MLU births: Comparison of travel times for two scenarios

As the current MLU model manage 15% (in our representative baseline) of all births in Shropshire, the effect on the travel times of removing them in a future centralised configuration would be larger than for an all births cohort demonstrated in the previous section. This 15% of mothers would therefore be those that would be 'directly affected' or 'displaced' under the new arrangement - **some figures throughout the rest of the report refer to the displaced population in order to describe those who would be directly affected by proposed changes** as well as the overall impacts on the total maternal cohort.

For the alternative scenario, the mean travel time rises by 5 minutes for off-peak car journeys during the week and by a similar amount at the weekends. For public transport during the week the mean travel time rises by approximately 11 minutes.

To aid comparison, we provide average journey times (mean) and time-banded break-downs of the population affected across the 8 locality areas in Shropshire and Telford on the following pages. The effect of the scenarios on different ages, socio-economic backgrounds and ethnic groups is included in the appendix.

Appendix 5 shows the location of mothers who give birth at rural MLU's as well as those who give birth at the Royal Shrewsbury and Princess Royal MLU's.

	Scenario	
	Current	Proposed
Shrewsbury (RSH)	●	●
Wrekin (PRH)	●	●
Oswestry	●	
Bridgnorth	●	
S. Shropshire (Ludlow)	●	

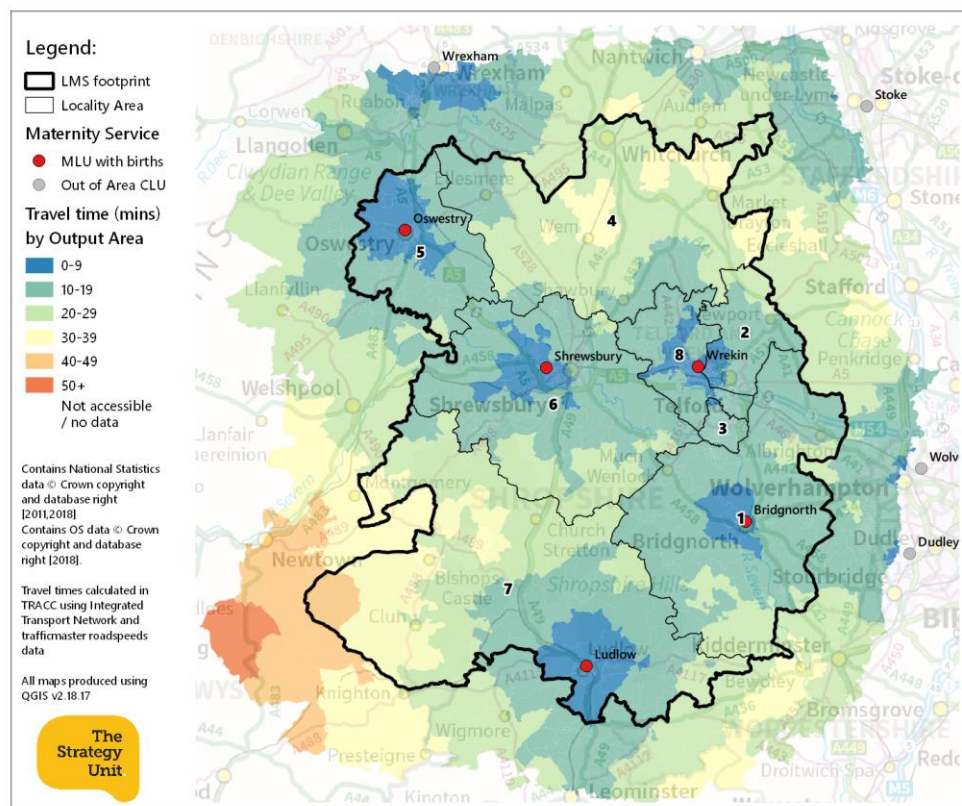
Travel type	Current	Proposed	Diff (mins)
wday mean journey time (mins)	15.9	21.0	+ 5.1
wend mean journey time (mins)	14.7	19.5	+ 4.8
ptrans mean journey time (mins)	40.8	51.6	+ 10.8

	Current	Proposed
w/day	92.7	78.4
w/end	95.0	86.6
P/trans	42.4	25.9

% of women (MLU births) within 30 mins of service:



# MLU births: Baseline travel times



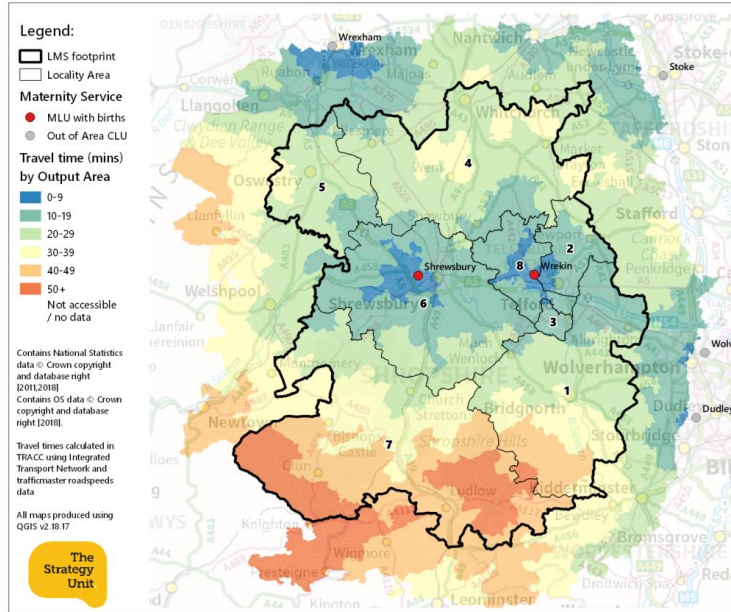
		Travel time (mins)				
type	stat	0-14	15-29	30-44	45-59	60+
wday	n women	337	260	41	6	-
wend	n women	374	238	28	4	-
pttrans	n women	136	137	138	104	129
wday	% women	51.8	39.9	6.3	0.9	-
wend	% women	57.5	36.6	4.3	0.6	-
pttrans	% women	20.9	21.0	21.2	16.0	19.8

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	90	84	66	86	45	161	47	56	17
wday	mean travel time (mins)	15.0	11.8	13.9	27.0	12.4	15.8	18.9	8.9	18.4
wend	mean travel time (mins)	14.0	10.8	12.8	25.1	11.5	14.6	17.8	8.1	17.5
pttrans	mean travel time (mins)	30.0	39.1	47.9	73.0	27.9	38.7	34.5	21.5	58.1

# MLU births: Alternative scenario travel times

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	Scenario	
	Current	Proposed
Shrewsbury (RSH)	●	●
Wrekin (PRH)	●	●
Oswestry	●	
Bridgnorth	●	
S. Shropshire (Ludlow)	●	



type	stat	Travel time (mins)				
		0-14	15-29	30-44	45-59	60+
wday	n women	243	262	104	35	-
wend	n women	273	285	61	25	-
pttrans	n women	81	86	132	116	229
wday	% women	37.6	40.6	16.1	5.4	-
wend	% women	42.3	44.1	9.4	3.9	-
pttrans	% women	12.5	13.3	20.4	18.0	35.4
'Displaced' women	wday n women	2	59	70	29	-
	wend n women	2	98	39	21	-
	pttrans n women	18	1	8	16	117
	wday % women	1.2	36.9	43.8	18.1	-
	wend % women	1.2	61.3	24.4	13.1	-
	pttrans % women	11.2	0.6	5.0	10.0	73.1

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	90	84	66	86	45	161	47	56	17
wday	mean travel time (mins)	28.9	11.7	13.9	28.4	28.5	15.6	41.8	8.9	37.4
wend	mean travel time (mins)	26.9	10.6	12.8	26.4	26.8	14.4	39.1	8.1	35.1
pttrans	mean travel time (mins)	71.0	38.7	47.9	76.2	67.3	38.4	60.5	21.5	65.9
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	65	1	-	11	37	5	35	-	6
wday	mean travel time (mins)	31.3	10.3	-	31.4	26.9	17.8	45.5	-	44.2
wend	mean travel time (mins)	29.2	9.6	-	29.6	25.2	16.8	42.5	-	41.5
pttrans	mean travel time (mins)	75.3	41.9	-	68.4	66.1	30.4	63.2	-	74.6

## Other midwifery care services: detailed analysis



# Location of women using other midwifery care services



This map should be used in conjunction with the scenario maps to put into context the travel times from various areas. The size of each point represents the amount of activity coming from an output area. The range of other midwifery activity (dating scans) per output area was 1 to 120+.

While there may be regions where the journey time is relatively high, these are often areas with low populations of women in the age groups concerned e.g. South Shropshire.

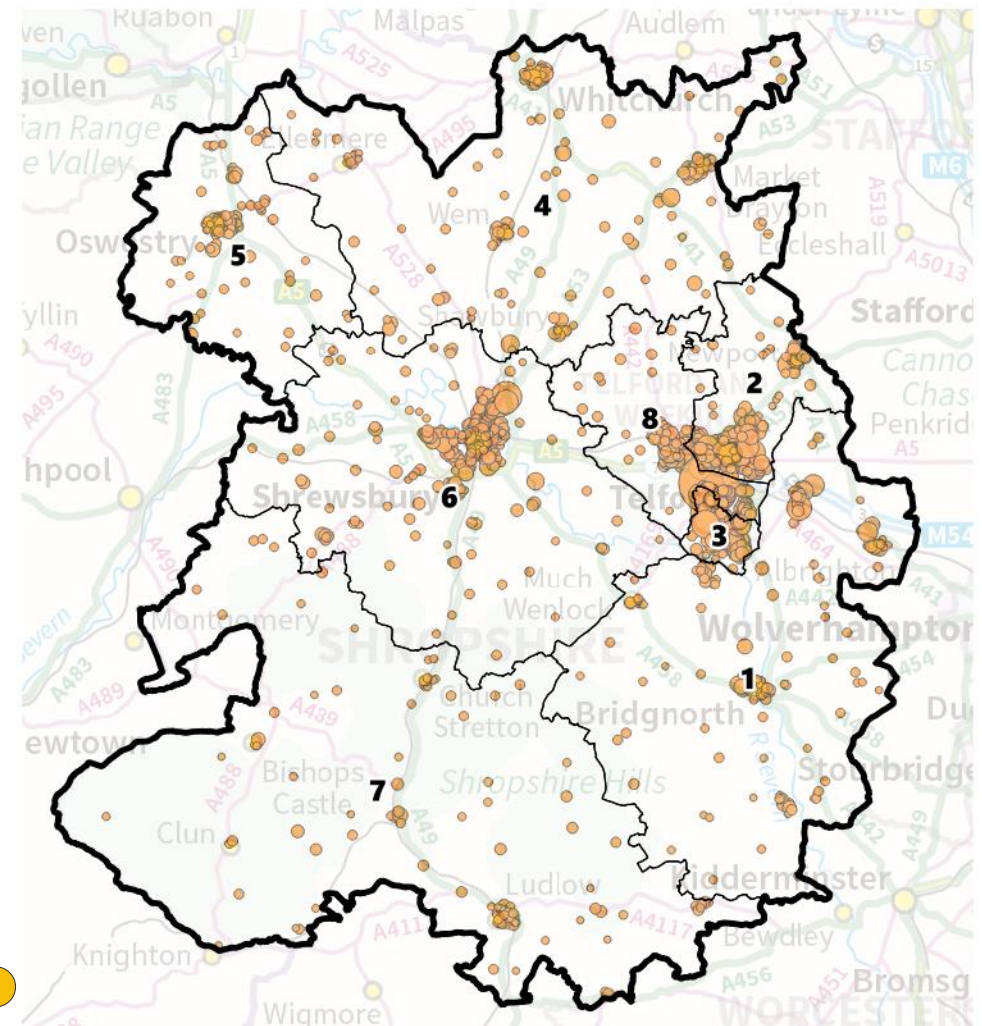
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Area code	Locality	Mothers having a dating scan in baseline year
1	Bridgnorth	407
2	Hadley Castle	747
3	Lakeside South	590
4	North Shropshire	434
5	Oswestry	226
6	Shrewsbury & Atcham	936
7	South Shropshire	196
8	The Wrekin	600

Legend:

1 Woman   
120+ Women 

Location and density of mothers' DATING SCANS by output area, 2018/19 baseline



# Patient flows for other midwifery care services

Number and % of women registered with GPs within the Local Maternity System (LMS) with a dating scan\* *within* Shropshire, Telford and Wrekin at these sites:

Site name	n women	%
The Princess Royal (Maternity)	2300	55.6
Royal Shrewsbury (Maternity)	1456	35.2
Oswestry (Robert Jones & Agnes Hunt Orthopaedic & District)	146	3.5
Sutton Hill	117	2.8
Bridgnorth (Maternity)	91	2.2
Subtotal	4110	99.3

We wouldn't expect to be able to reconcile the numbers of women receiving scans, above, with the "all birth" numbers due to the different years under study. However, the gap may be large enough to consider explanations beyond changes in fertility rates. It could be that:

- Not all routine dating scans are coded as such
- A greater number of Oswestry residents receive dating scans at Wrexham
- Women may choose private clinics for scans

Number and % of women registered with GPs within the Local Maternity System (LMS) with a dating scan *outside* Shropshire, Telford and Wrekin at these sites:

Site name	n women	%
Kidderminster	20	0.5
Leighton	4	0.1
Worcestershire Royal	1	< 0.1
Subtotal	25	< 0.7

\* Based on count of first recorded dating scan.

# Other midwifery services: Comparison of travel times, all mothers

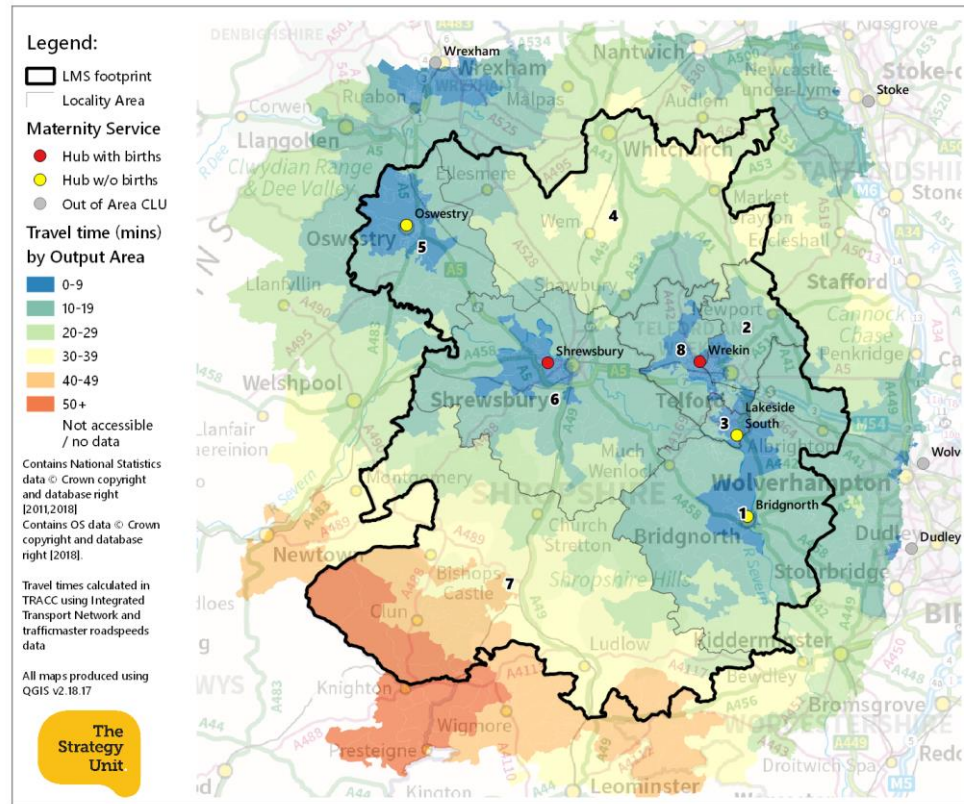
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	Other midwifery care														
	Current	2 + 3 hubs							2 + 4 hubs						
		1	2	3	4	5	6	7	8	9	10	11	12	13	
Shrewsbury (RSH)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Wrekin (PRH)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Lakeside South	●	●	●			●	●	●	●	●	●	●	●	●	
Hadley Castle				●	●	●	●	●	●	●					
Oswestry	●										●	●			
Bridgnorth	●												●	●	
N. Shropshire (Whitchurch)		●		●		●			●		●		●		
N. Shropshire (Mkt Drayton)			●		●		●			●		●		●	
S. Shropshire (Ludlow)		●	●	●	●			●	●	●	●	●	●	●	

type		Current	1	2	3	4	5	6	7	8	9	10	11	12	13
w/day	mean travel time (mins)	13.5	13.2	13.1	13.1	13.0	13.3	13.2	13.1	12.1	12.1	12.1	11.9	12.7	12.6
w/end	mean travel time (mins)	12.4	12.2	12.1	12.3	12.2	12.3	12.2	12.2	11.3	11.2	11.1	11.0	11.8	11.7
P/trans	mean travel time (mins)	33.8	36.6	36.0	37.2	36.6	35.3	34.7	35.2	33.8	33.2	33.8	33.2	33.8	33.1

		Current	1	2	3	4	5	6	7	8	9	10	11	12	13
w/day		92.8	98.6	97.9	97.8	97.1	94.8	94.1	94.7	98.6	97.9	99.2	99.2	98.7	98.0
% of women within 30 mins of service:	w/end	93.9	99.4	98.8	98.5	9.08	95.5	95.0	96.4	99.4	98.8	99.7	99.7	99.4	98.8
	P/trans	51	46.2	46.6	42.1	42.5	50.3	50.7	50.5	52.8	53.2	50.9	51.3	50.9	51.3

# Other midwifery services: Baseline travel times



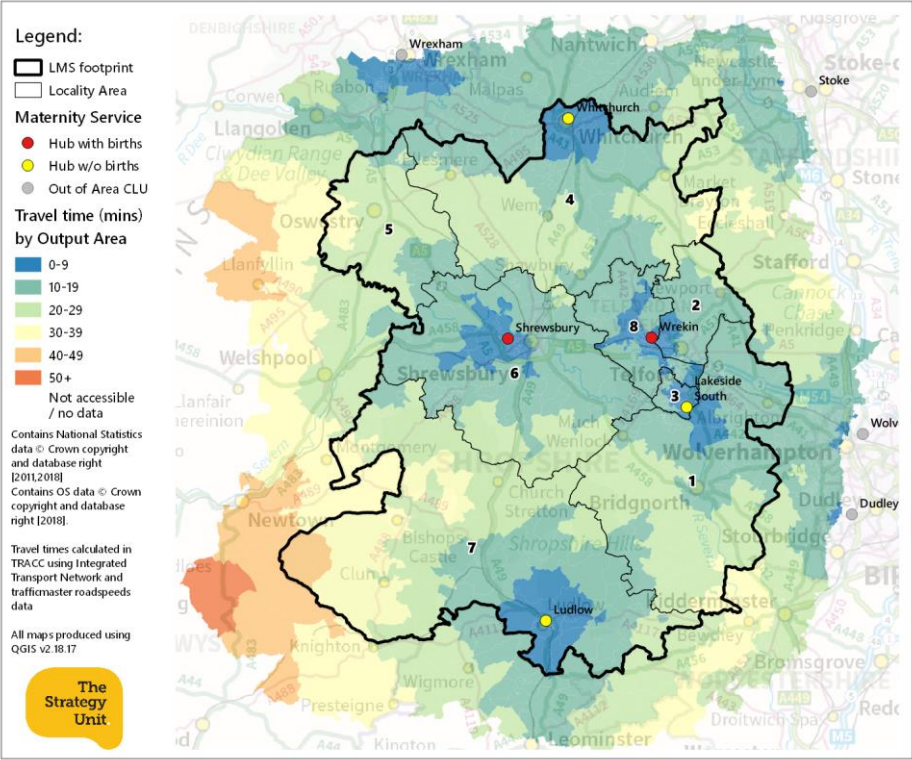
type	stat	Travel time (mins)				
		0-14	15-29	30-44	45-59	60+
wday	n women	2,960	945	287	18	-
wend	n women	3,080	872	250	8	-
ptrans	n women	807	1,341	1,065	482	515
wday	% women	70.3	22.4	6.8	0.4	-
wend	% women	73.2	20.7	5.9	0.2	-
ptrans	% women	19.2	31.9	25.3	11.4	12.2

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	12.1	11.4	8.0	26.9	7.0	12.5	34.4	8.4	26.0
wend	mean travel time (mins)	11.2	10.4	7.2	25.1	6.4	11.5	32.8	7.5	24.5
ptrans	mean travel time (mins)	29.1	39.5	23.1	56.7	16.2	34.8	49.1	22.1	48.8



# Other midwifery services: Scenario 1 travel times

	Current	Proposed
Shrewsbury (RSH)	<div></div>	<div></div>
Wrekin (PRH)	<div></div>	<div></div>
Lakeside South	<div></div>	<div></div>
Hadley Castle		
Oswestry	<div></div>	
Bridgnorth	<div></div>	
N. Shropshire (Whitchurch)		<div></div>
N. Shropshire (Mkt Drayton)		
S. Shropshire (Ludlow)		<div></div>

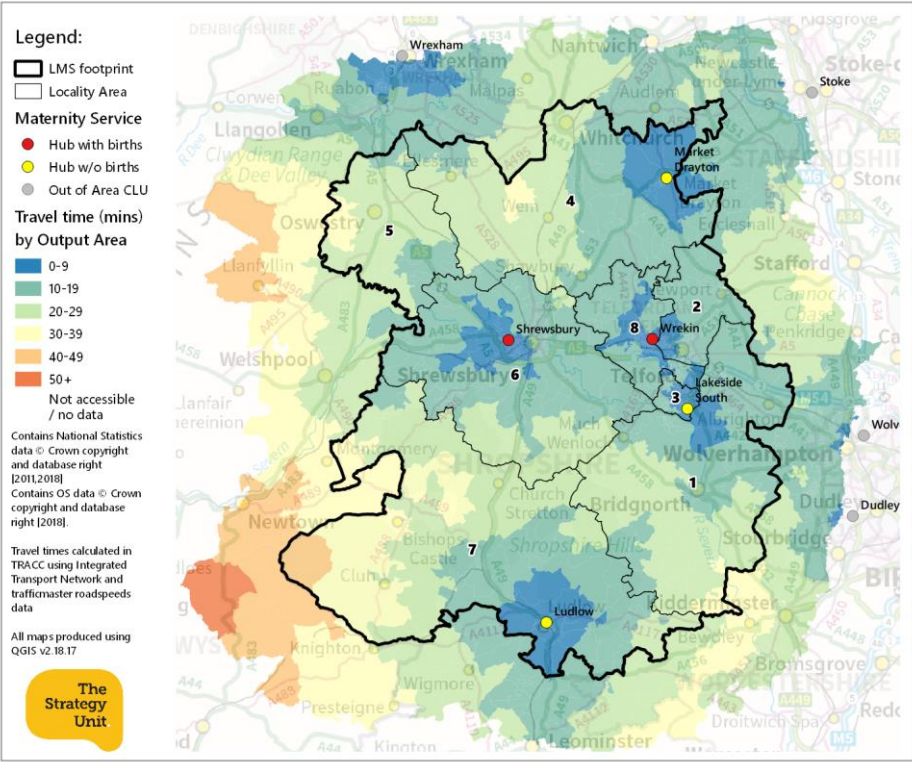


		Travel time (mins)					
type	stat	0-14	15-29	30-44	45-59	60+	
wday	n women	2,844	1,305	61	-	-	
wend	n women	2,964	1,221	25	-	-	
ptrans	n women	682	1,262	1,062	520	684	
wday	% women	67.6	31.0	1.4	-	-	
wend	% women	70.4	29.0	0.6	-	-	
ptrans	% women	16.2	30.0	25.2	12.4	16.2	
'Displaced' women	wday	n women	21	207	20	-	-
	wend	n women	32	209	7	-	-
	ptrans	n women	15	11	7	45	170
	wday	% women	8.5	83.5	8.1	-	-
	wend	% women	12.9	84.3	2.8	-	-
	ptrans	% women	6.0	4.4	2.8	18.1	68.5

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	16.7	11.4	8.0	17.9	26.1	12.5	16.2	8.4	25.4
wend	mean travel time (mins)	15.4	10.4	7.2	17.2	24.6	11.5	15.3	7.5	24.0
ptrans	mean travel time (mins)	57.6	39.5	23.1	45.5	63.3	35.1	18.7	22.1	50.8
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	88	-	4	15	123	6	1	-	11
wday	mean travel time (mins)	19.2	-	9.2	25.3	26.3	15.7	15.0	-	24.6
wend	mean travel time (mins)	17.9	-	8.2	24.7	24.7	14.7	15.0	-	23.4
ptrans	mean travel time (mins)	67.9	-	27.7	68.6	63.8	35.5	0.0	-	59.0

# Other midwifery services: Scenario 2 travel times

	Current	Proposed
Shrewsbury (RSH)	<div></div>	<div></div>
Wrekin (PRH)	<div></div>	<div></div>
Lakeside South	<div></div>	<div></div>
Hadley Castle		
Oswestry	<div></div>	
Bridgnorth	<div></div>	
N. Shropshire (Whitchurch)		
N. Shropshire (Mkt Drayton)		<div></div>
S. Shropshire (Ludlow)		<div></div>

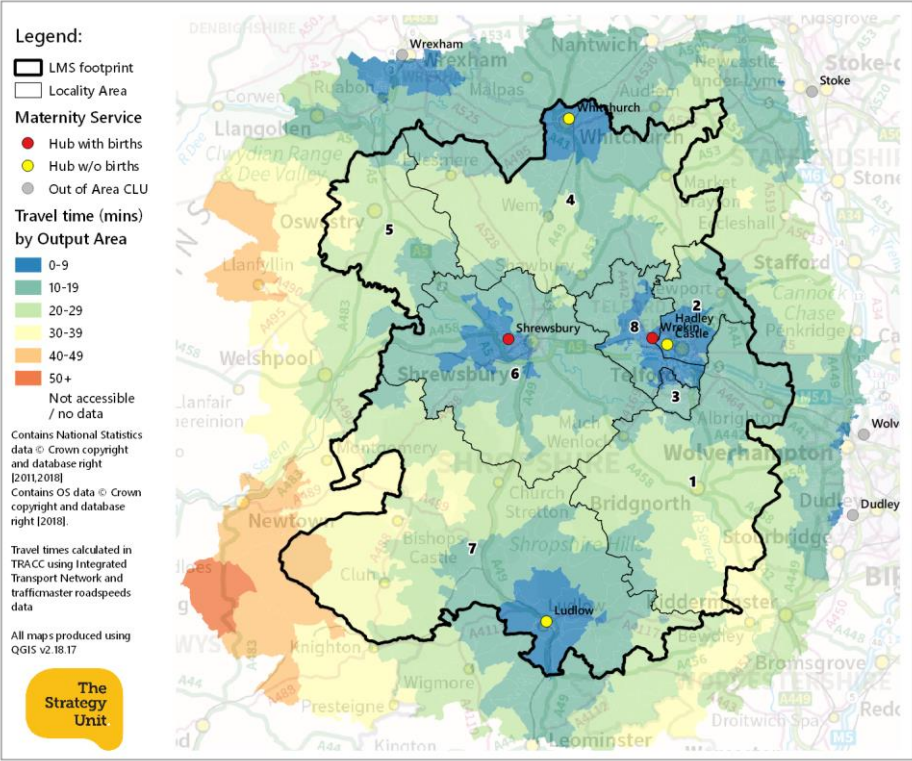


		Travel time (mins)					
type	stat	0-14	15-29	30-44	45-59	60+	
wday	n women	2,883	1,238	89	-	-	
wend	n women	3,013	1,148	49	-	-	
ptrans	n women	744	1,217	1,029	562	658	
wday	% women	68.5	29.4	2.1	-	-	
wend	% women	71.6	27.3	1.2	-	-	
ptrans	% women	17.7	28.9	24.4	13.3	15.6	
'Displaced' women	wday	n women	21	194	33	-	-
	wend	n women	32	198	18	-	-
	ptrans	n women	15	11	8	44	170
	wday	% women	8.5	78.2	13.3	-	-
	wend	% women	12.9	79.8	7.3	-	-
	ptrans	% women	6.0	4.4	3.2	17.7	68.5

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	16.7	11.4	8.0	17.2	26.2	12.5	16.2	8.4	25.1
wend	mean travel time (mins)	15.4	10.3	7.2	16.2	24.6	11.5	15.3	7.5	23.8
ptrans	mean travel time (mins)	57.6	39.5	23.1	39.7	63.3	35.0	18.1	22.1	51.5
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	88	-	4	15	123	6	1	-	11
wday	mean travel time (mins)	19.2	-	9.2	31.5	26.4	15.7	15.0	-	24.6
wend	mean travel time (mins)	17.9	-	8.2	29.7	24.8	14.7	15.0	-	23.4
ptrans	mean travel time (mins)	67.9	-	27.7	67.6	63.8	35.5	0.0	-	59.0

# Other midwifery services: Scenario 3 travel times

	Current	Proposed
Shrewsbury (RSH)	<div></div>	<div></div>
Wrekin (PRH)	<div></div>	<div></div>
Lakeside South	<div></div>	
Hadley Castle		<div></div>
Oswestry	<div></div>	
Bridgnorth	<div></div>	
N. Shropshire (Whitchurch)		<div></div>
N. Shropshire (Mkt Drayton)		
S. Shropshire (Ludlow)		<div></div>



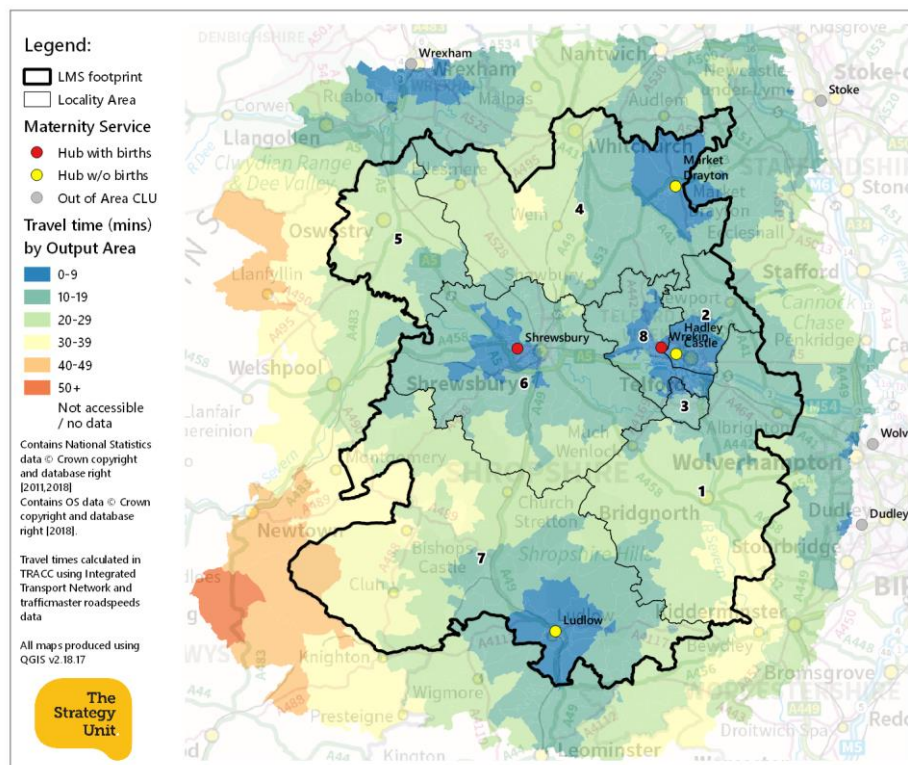
		Travel time (mins)				
type	stat	0-14	15-29	30-44	45-59	60+
wday	n women	2,868	1,251	91	-	-
wend	n women	2,997	1,151	62	-	-
ptrans	n women	809	964	1,057	742	638
wday	% women	68.1	29.7	2.2	-	-
wend	% women	71.2	27.3	1.5	-	-
ptrans	% women	19.2	22.9	25.1	17.6	15.2
'Displaced' women	wday n women	9	206	33	-	-
	wend n women	12	215	21	-	-
	ptrans n women	15	8	3	40	182
	wday % women	3.6	83.1	13.3	-	-
	wend % women	4.8	86.7	8.5	-	-
	ptrans % women	6.0	3.2	1.2	16.1	73.4

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	20.6	7.1	11.1	17.8	26.1	12.5	16.2	7.3	24.5
wend	mean travel time (mins)	19.6	6.6	10.5	17.1	24.6	11.5	15.3	6.8	23.4
ptrans	mean travel time (mins)	62.3	26.1	42.7	45.5	63.3	35.2	18.7	20.7	48.2
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	88	-	4	15	123	6	1	-	11
wday	mean travel time (mins)	24.0	-	12.9	25.3	26.3	15.5	15.0	-	27.5
wend	mean travel time (mins)	22.9	-	12.2	24.7	24.7	14.7	15.0	-	26.4
ptrans	mean travel time (mins)	72.5	-	57.9	68.6	63.8	35.5	0.0	-	59.0



# Other midwifery services: Scenario 4 travel times

	Current	Proposed
Shrewsbury (RSH)	●	●
Wrekin (PRH)	●	●
Lakeside South	●	
Hadley Castle		●
Oswestry	●	
Bridgnorth	●	
N. Shropshire (Whitchurch)		
N. Shropshire (Mkt Drayton)		●
S. Shropshire (Ludlow)		●



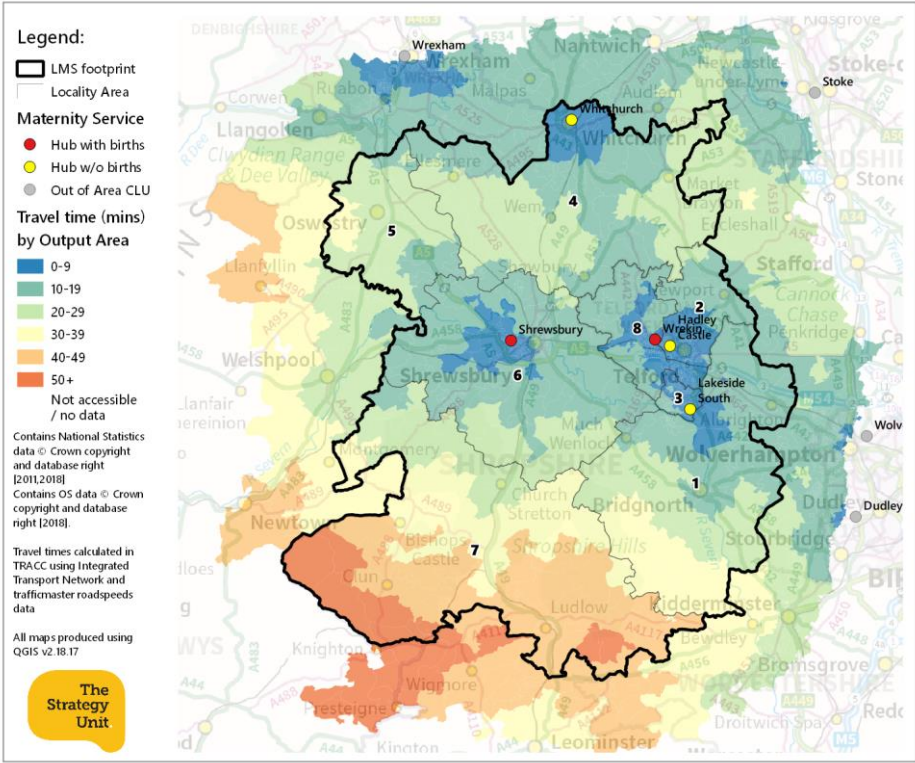
		Travel time (mins)					
type	stat	0-14	15-29	30-44	45-59	60+	
wday	n women	2,907	1,181	122	-	-	
wend	n women	3,046	1,078	86	-	-	
ptrans	n women	871	919	1,024	784	612	
wday	% women	69.0	28.1	2.9	-	-	
wend	% women	72.4	25.6	2.0	-	-	
ptrans	% women	20.7	21.8	24.3	18.6	14.5	
'Displaced' women	wday	n women	9	193	46	-	-
	wend	n women	12	204	32	-	-
	ptrans	n women	15	8	4	39	182
	wday	% women	3.6	77.8	18.5	-	-
	wend	% women	4.8	82.3	12.9	-	-
	ptrans	% women	6.0	3.2	1.6	15.7	73.4

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	20.6	7.1	11.1	17.2	26.2	12.5	16.2	7.3	24.6
wend	mean travel time (mins)	19.6	6.6	10.5	16.2	24.6	11.5	15.3	6.8	23.5
ptrans	mean travel time (mins)	62.3	26.1	42.7	39.7	63.3	35.1	18.1	20.7	48.9
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	88	-	4	15	123	6	1	-	11
wday	mean travel time (mins)	24.0	-	12.9	31.5	26.4	15.5	15.0	-	27.5
wend	mean travel time (mins)	22.9	-	12.2	29.7	24.8	14.7	15.0	-	26.4
ptrans	mean travel time (mins)	72.5	-	57.9	67.6	63.8	35.5	0.0	-	59.0



# Other midwifery services: Scenario 5 travel times

	Current	Proposed
Shrewsbury (RSH)	<div></div>	<div></div>
Wrekin (PRH)	<div></div>	<div></div>
Lakeside South	<div></div>	<div></div>
Hadley Castle		<div></div>
Oswestry	<div></div>	
Bridgnorth	<div></div>	
N. Shropshire (Whitechurch)		<div></div>
N. Shropshire (Mkt Drayton)		
S. Shropshire (Ludlow)		

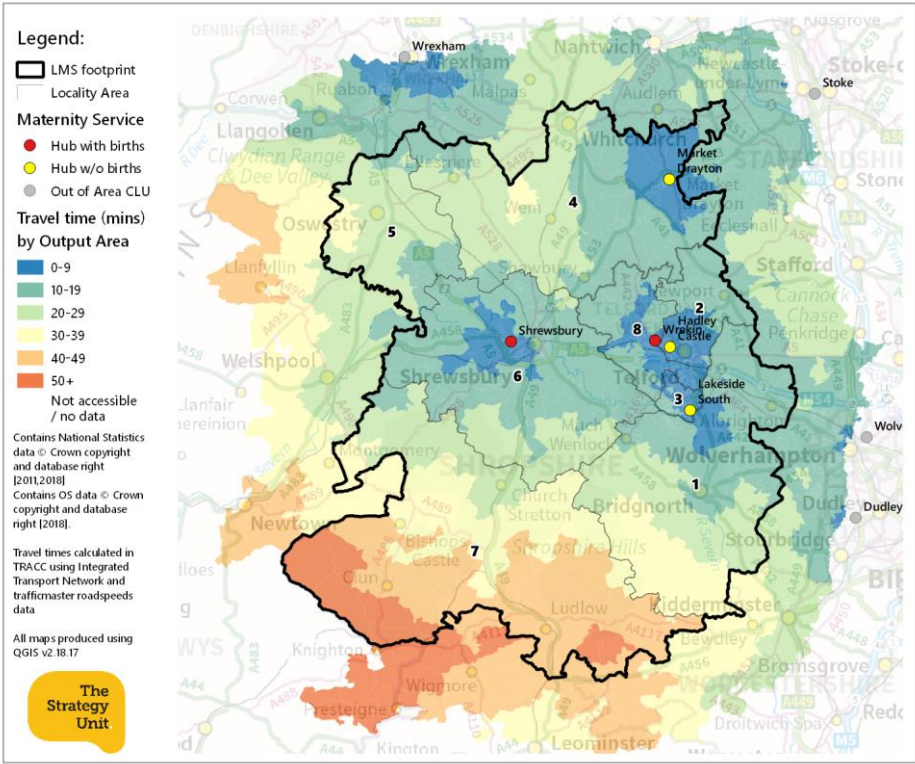


		Travel time (mins)					
type	stat	0-14	15-29	30-44	45-59	60+	
wday	n women	2,829	1,162	127	90	2	
wend	n women	2,990	1,032	143	45	-	
ptrans	n women	872	1,245	868	560	665	
wday	% women	67.2	27.6	3.0	2.1	0.0	
wend	% women	71.0	24.5	3.4	1.1	-	
ptrans	% women	20.7	29.6	20.6	13.3	15.8	
'Displaced' women	wday	n women	20	204	24	-	-
	wend	n women	36	201	11	-	-
	ptrans	n women	14	8	8	48	170
	wday	% women	8.1	82.3	9.7	-	-
	wend	% women	14.5	81.0	4.4	-	-
	ptrans	% women	5.6	3.2	3.2	19.4	68.5

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	16.9	7.1	7.6	17.8	26.1	12.5	40.0	7.2	25.7
wend	mean travel time (mins)	15.6	6.6	6.9	17.1	24.6	11.5	37.7	6.6	24.4
ptrans	mean travel time (mins)	58.2	26.1	22.9	45.5	63.8	35.2	48.7	20.1	48.7
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	88	-	4	15	123	6	1	-	11
wday	mean travel time (mins)	19.4	-	9.2	25.3	26.3	15.5	37.6	-	24.6
wend	mean travel time (mins)	18.1	-	8.2	24.7	24.7	14.7	35.4	-	23.4
ptrans	mean travel time (mins)	69.7	-	27.7	68.6	64.3	35.5	0.0	-	59.0

# Other midwifery services: Scenario 6 travel times

	Current	Proposed
Shrewsbury (RSH)	<div></div>	<div></div>
Wrekin (PRH)	<div></div>	<div></div>
Lakeside South	<div></div>	<div></div>
Hadley Castle		<div></div>
Oswestry	<div></div>	
Bridgnorth	<div></div>	
N. Shropshire (Whitchurch)		
N. Shropshire (Mkt Drayton)		<div></div>
S. Shropshire (Ludlow)		

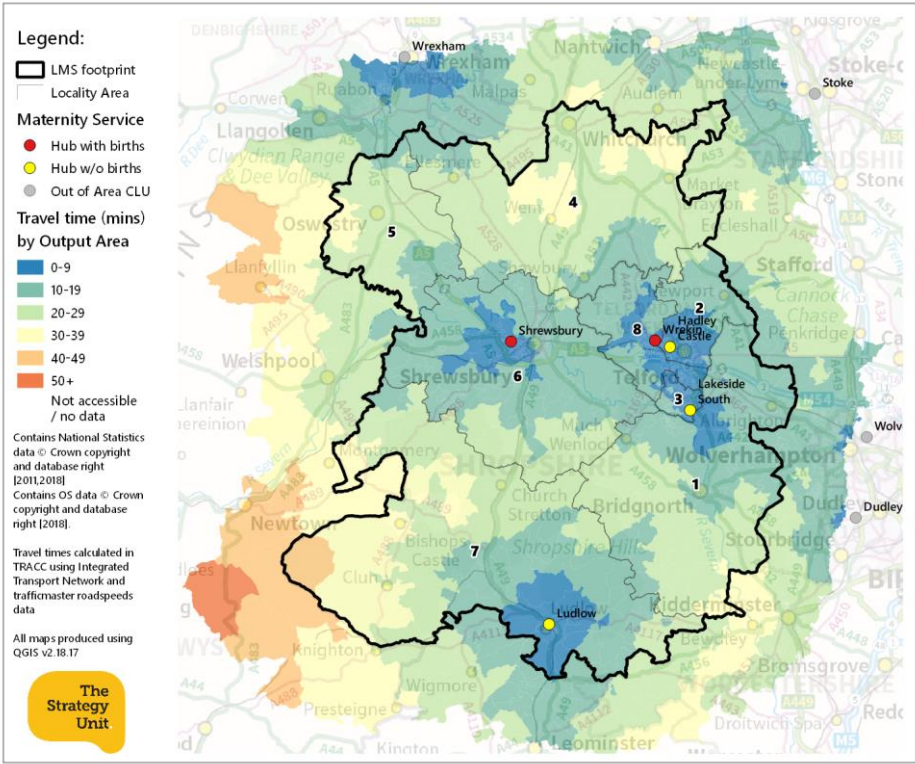


		Travel time (mins)					
type	stat	0-14	15-29	30-44	45-59	60+	
wday	n women	2,868	1,092	158	90	2	
wend	n women	3,039	959	167	45	-	
ptrans	n women	934	1,200	835	597	644	
wday	% women	68.1	25.9	3.8	2.1	0.0	
wend	% women	72.2	22.8	4.0	1.1	-	
ptrans	% women	22.2	28.5	19.8	14.2	15.3	
'Displaced' women	wday	n women	20	191	37	-	-
	wend	n women	36	190	22	-	-
	ptrans	n women	14	8	9	47	170
	wday	% women	8.1	77.0	14.9	-	-
	wend	% women	14.5	76.6	8.9	-	-
	ptrans	% women	5.6	3.2	3.6	19.0	68.5

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	16.9	7.1	7.6	17.2	26.2	12.5	40.0	7.2	25.7
wend	mean travel time (mins)	15.6	6.6	6.9	16.2	24.6	11.5	37.7	6.6	24.5
ptrans	mean travel time (mins)	58.2	26.1	22.9	39.7	63.8	35.1	48.5	20.1	49.4
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	88	-	4	15	123	6	1	-	11
wday	mean travel time (mins)	19.4	-	9.2	31.5	26.4	15.5	37.6	-	24.6
wend	mean travel time (mins)	18.1	-	8.2	29.7	24.8	14.7	35.4	-	23.4
ptrans	mean travel time (mins)	69.7	-	27.7	67.6	64.3	35.5	0.0	-	59.0

# Other midwifery services: Scenario 7 travel times

	Current	Proposed
Shrewsbury (RSH)	<div></div>	<div></div>
Wrekin (PRH)	<div></div>	<div></div>
Lakeside South	<div></div>	<div></div>
Hadley Castle		<div></div>
Oswestry	<div></div>	
Bridgnorth	<div></div>	
N. Shropshire (Whitechurch)		
N. Shropshire (Mkt Drayton)		
S. Shropshire (Ludlow)		<div></div>



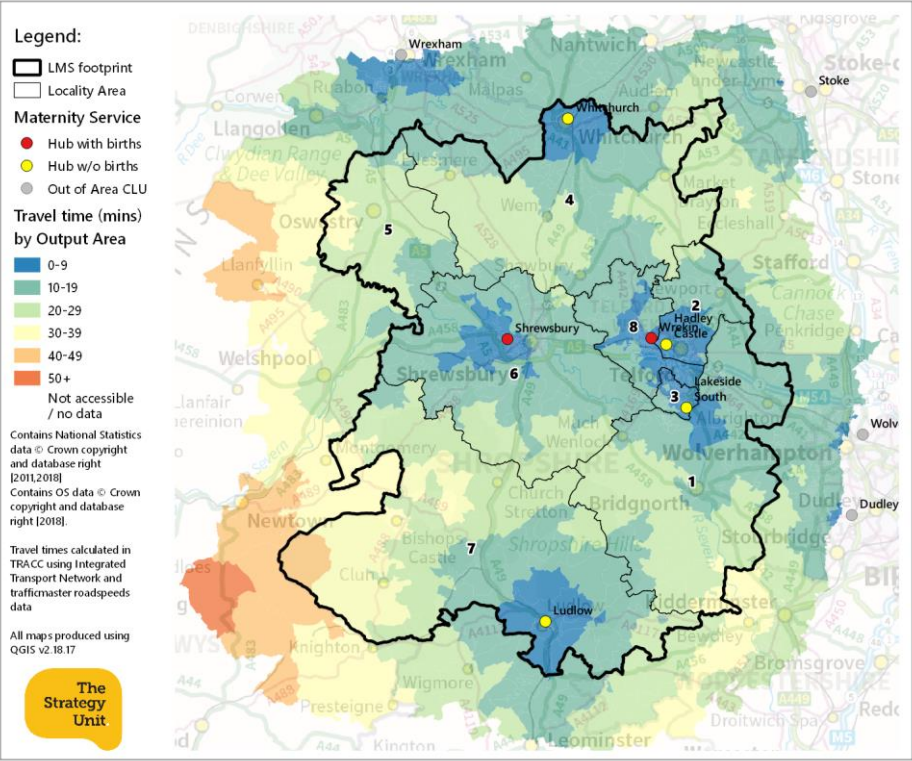
		Travel time (mins)					
type	stat	0-14	15-29	30-44	45-59	60+	
wday	n women	2,816	1,171	222	1	-	
wend	n women	2,975	1,084	151	-	-	
ptrans	n women	880	1,247	833	573	677	
wday	% women	66.9	27.8	5.3	0.0	-	
wend	% women	70.7	25.7	3.6	-	-	
ptrans	% women	20.9	29.6	19.8	13.6	16.1	
'Displaced' women	wday	n women	21	194	33	-	-
	wend	n women	36	194	18	-	-
	ptrans	n women	15	11	7	45	170
	wday	% women	8.5	78.2	13.3	-	-
	wend	% women	14.5	78.2	7.3	-	-
	ptrans	% women	6.0	4.4	2.8	18.1	68.5

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	16.6	7.1	7.6	27.8	26.2	12.5	16.2	7.2	24.9
wend	mean travel time (mins)	15.3	6.6	6.9	26.0	24.6	11.5	15.3	6.6	23.7
ptrans	mean travel time (mins)	57.2	26.1	22.9	59.1	63.3	35.1	18.7	20.2	49.8
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	88	-	4	15	123	6	1	-	11
wday	mean travel time (mins)	19.0	-	9.2	31.5	26.4	15.5	15.0	-	24.6
wend	mean travel time (mins)	17.8	-	8.2	29.7	24.8	14.7	15.0	-	23.4
ptrans	mean travel time (mins)	67.2	-	27.7	68.6	63.8	35.5	0.0	-	59.0



# Other midwifery services: Scenario 8 travel times

	Current	Proposed
Shrewsbury (RSH)	<div></div>	<div></div>
Wrekin (PRH)	<div></div>	<div></div>
Lakeside South	<div></div>	<div></div>
Hadley Castle		<div></div>
Oswestry	<div></div>	
Bridgnorth	<div></div>	
N. Shropshire (Whitchurch)		<div></div>
N. Shropshire (Mkt Drayton)		
S. Shropshire (Ludlow)		<div></div>

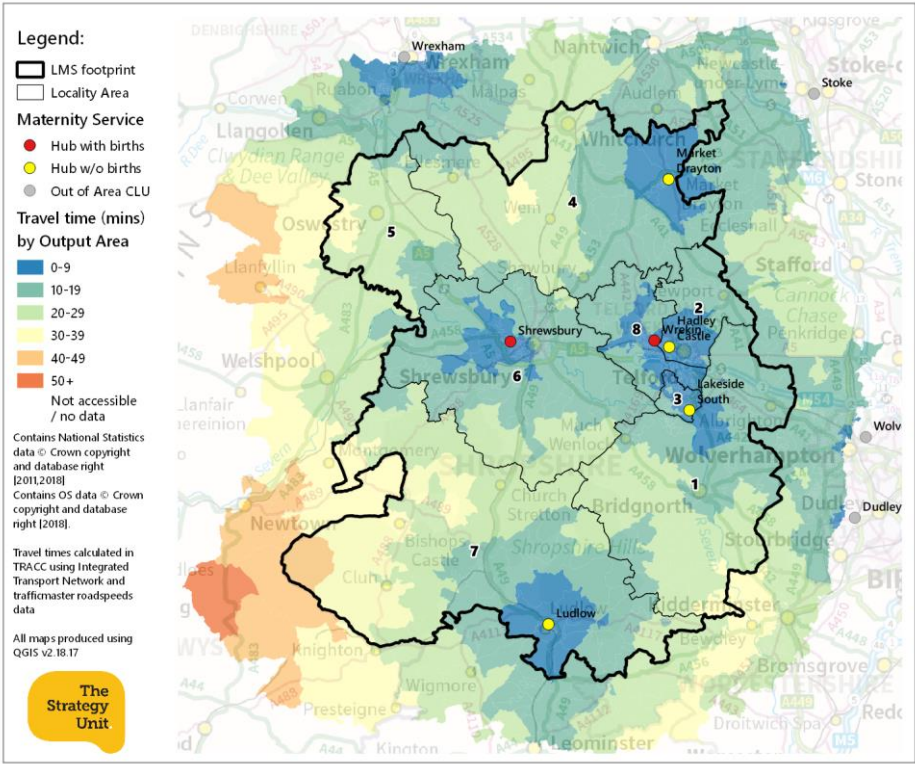


		Travel time (mins)					
type	stat	0-14	15-29	30-44	45-59	60+	
wday	n women	2,933	1,219	58	-	-	
wend	n women	3,092	1,093	25	-	-	
ptrans	n women	919	1,302	876	535	578	
wday	% women	69.7	29.0	1.4	-	-	
wend	% women	73.4	26.0	0.6	-	-	
ptrans	% women	21.8	30.9	20.8	12.7	13.7	
'Displaced' women	wday	n women	21	207	20	-	-
	wend	n women	36	205	7	-	-
	ptrans	n women	15	11	7	45	170
	wday	% women	8.5	83.5	8.1	-	-
	wend	% women	14.5	82.7	2.8	-	-
	ptrans	% women	6.0	4.4	2.8	18.1	68.5

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	16.6	7.1	7.6	17.8	26.1	12.5	16.2	7.2	23.7
wend	mean travel time (mins)	15.3	6.6	6.9	17.1	24.6	11.5	15.3	6.6	22.6
ptrans	mean travel time (mins)	57.2	26.1	22.9	45.5	63.3	35.1	18.7	20.1	48.2
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	88	-	4	15	123	6	1	-	11
wday	mean travel time (mins)	19.0	-	9.2	25.3	26.3	15.5	15.0	-	24.6
wend	mean travel time (mins)	17.8	-	8.2	24.7	24.7	14.7	15.0	-	23.4
ptrans	mean travel time (mins)	67.2	-	27.7	68.6	63.8	35.5	0.0	-	59.0

# Other midwifery services: Scenario 9 travel times

	Current	Proposed
Shrewsbury (RSH)	<div></div>	<div></div>
Wrekin (PRH)	<div></div>	<div></div>
Lakeside South	<div></div>	<div></div>
Hadley Castle		<div></div>
Oswestry	<div></div>	
Bridgnorth	<div></div>	
N. Shropshire (Whitchurch)		
N. Shropshire (Mkt Drayton)		<div></div>
S. Shropshire (Ludlow)		<div></div>

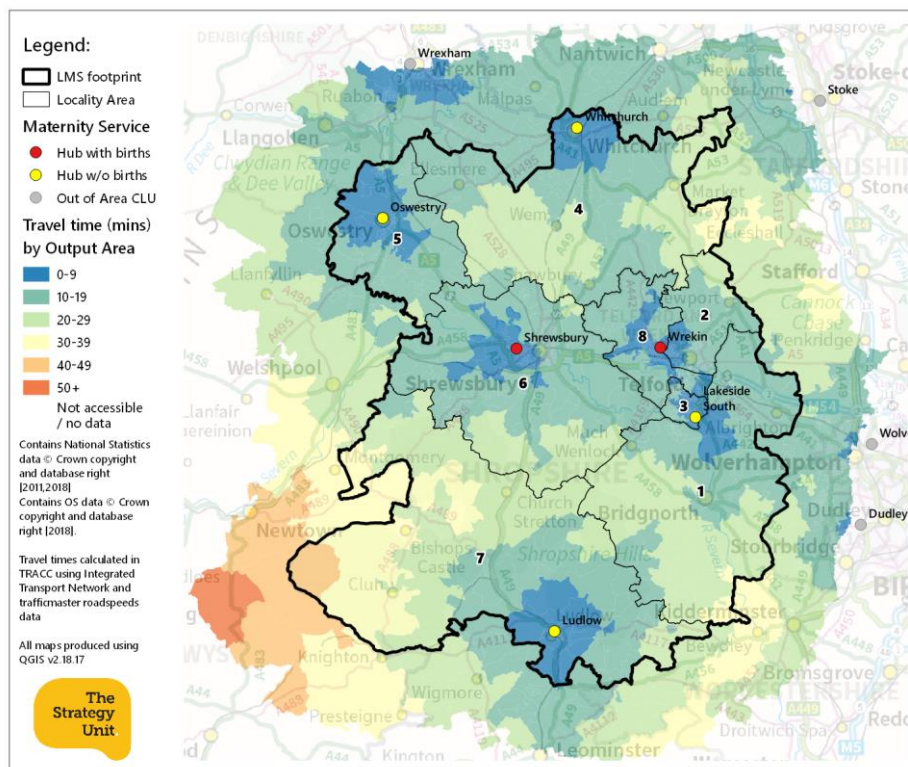


		Travel time (mins)					
type	stat	0-14	15-29	30-44	45-59	60+	
wday	n women	2,972	1,149	89	-	-	
wend	n women	3,141	1,020	49	-	-	
ptrans	n women	981	1,257	843	577	552	
wday	% women	70.6	27.3	2.1	-	-	
wend	% women	74.6	24.2	1.2	-	-	
ptrans	% women	23.3	29.9	20.0	13.7	13.1	
'Displaced' women	wday	n women	21	194	33	-	-
	wend	n women	36	194	18	-	-
	ptrans	n women	15	11	8	44	170
	wday	% women	8.5	78.2	13.3	-	-
	wend	% women	14.5	78.2	7.3	-	-
	ptrans	% women	6.0	4.4	3.2	17.7	68.5

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	16.6	7.1	7.6	17.2	26.2	12.5	16.2	7.2	23.8
wend	mean travel time (mins)	15.3	6.6	6.9	16.2	24.6	11.5	15.3	6.6	22.6
ptrans	mean travel time (mins)	57.2	26.1	22.9	39.7	63.3	35.0	18.1	20.1	48.9
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	88	-	4	15	123	6	1	-	11
wday	mean travel time (mins)	19.0	-	9.2	31.5	26.4	15.5	15.0	-	24.6
wend	mean travel time (mins)	17.8	-	8.2	29.7	24.8	14.7	15.0	-	23.4
ptrans	mean travel time (mins)	67.2	-	27.7	67.6	63.8	35.5	0.0	-	59.0

# Other midwifery services: Scenario 10 travel times

	Current	Proposed
Shrewsbury (RSH)	●	●
Wrekin (PRH)	●	●
Lakeside South	●	●
Hadley Castle		
Oswestry	●	●
Bridgnorth	●	
N. Shropshire (Whitchurch)		●
N. Shropshire (Mkt Drayton)		
S. Shropshire (Ludlow)		●



type	stat	Travel time (mins)				
		0-14	15-29	30-44	45-59	60+
wday	n women	3,059	1,117	34	-	-
wend	n women	3,190	1,008	12	-	-
ptrans	n women	803	1,338	1,100	477	492
wday	% women	72.7	26.5	0.8	-	-
wend	% women	75.8	23.9	0.3	-	-
ptrans	% women	19.1	31.8	26.1	11.3	11.7

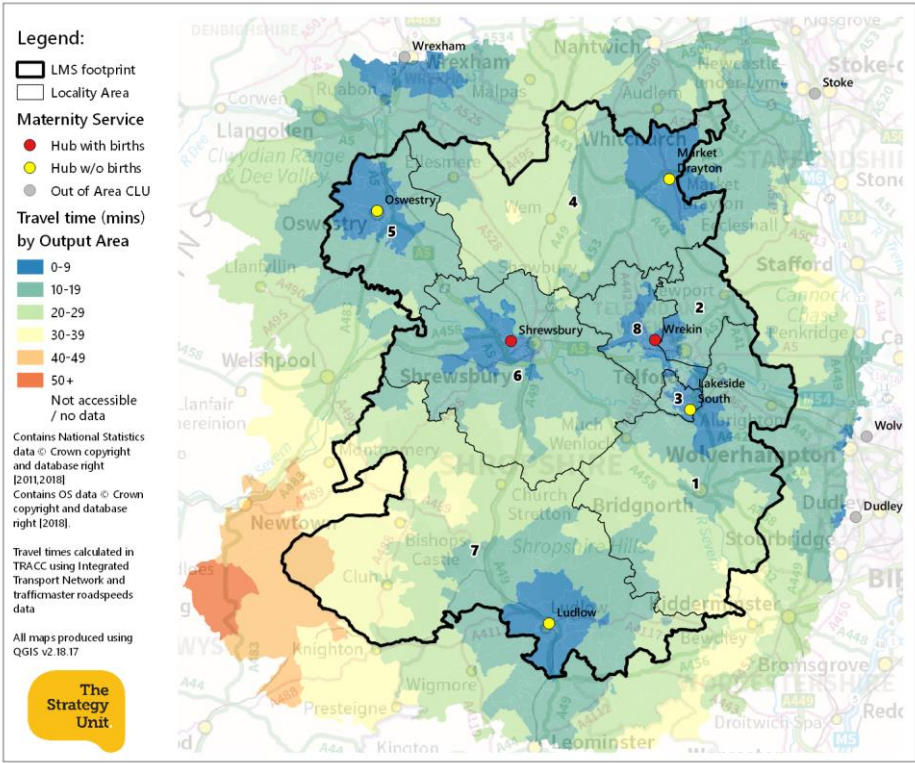
'Displaced' women	wday	n women	17	83	2	-	-
	wend	n women	28	74	-	-	-
	ptrans	n women	8	3	6	20	65
	wday	% women	16.7	81.4	2.0	-	-
	wend	% women	27.5	72.5	-	-	-
	ptrans	% women	7.8	2.9	5.9	19.6	63.7

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	16.7	11.4	8.0	17.4	7.0	12.5	16.2	8.4	23.5
wend	mean travel time (mins)	15.4	10.4	7.2	16.6	6.4	11.5	15.3	7.5	22.1
ptrans	mean travel time (mins)	57.6	39.5	23.1	43.1	16.2	35.1	18.7	22.1	49.6
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	88	-	4	-	-	2	1	-	7
wday	mean travel time (mins)	19.2	-	9.2	-	-	19.6	15.0	-	19.3
wend	mean travel time (mins)	17.9	-	8.2	-	-	18.5	15.0	-	18.2
ptrans	mean travel time (mins)	67.9	-	27.7	-	-	60.6	0.0	-	76.0



# Other midwifery services: Scenario 11 travel times

	Current	Proposed
Shrewsbury (RSH)	<div></div>	<div></div>
Wrekin (PRH)	<div></div>	<div></div>
Lakeside South	<div></div>	<div></div>
Hadley Castle		
Oswestry	<div></div>	<div></div>
Bridgnorth	<div></div>	
N. Shropshire (Whitchurch)		
N. Shropshire (Mkt Drayton)		<div></div>
S. Shropshire (Ludlow)		<div></div>

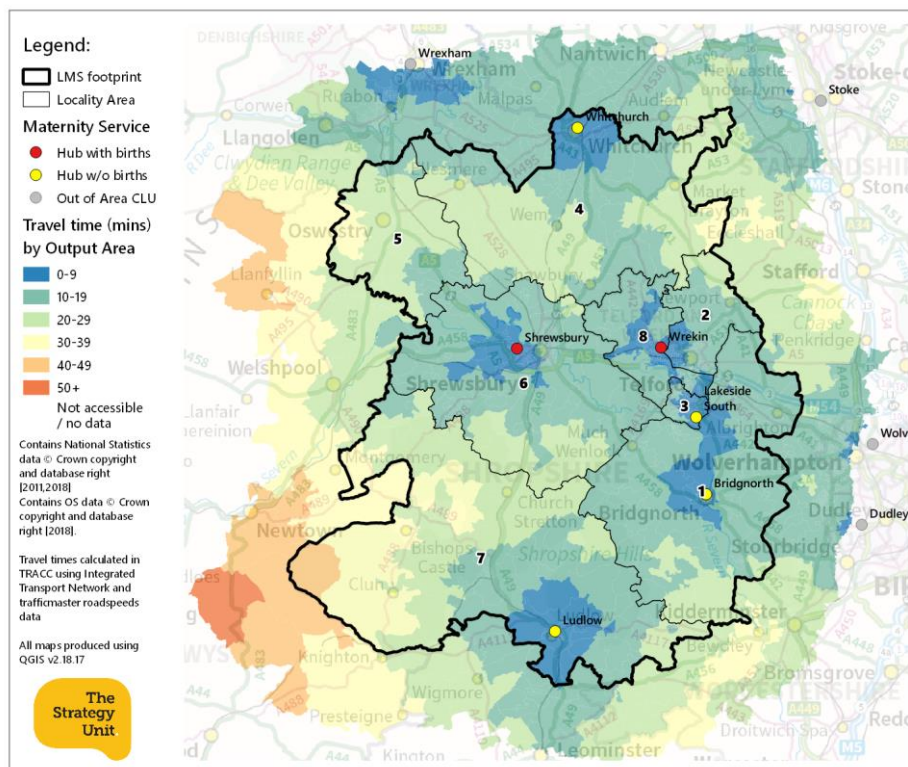


		Travel time (mins)					
type	stat	0-14	15-29	30-44	45-59	60+	
wday	n women	3,098	1,079	33	-	-	
wend	n women	3,239	959	12	-	-	
ptrans	n women	865	1,293	1,067	519	466	
wday	% women	73.6	25.6	0.8	-	-	
wend	% women	76.9	22.8	0.3	-	-	
ptrans	% women	20.5	30.7	25.3	12.3	11.1	
'Displaced' women	wday	n women	17	83	2	-	-
	wend	n women	28	74	-	-	-
	ptrans	n women	8	3	6	20	65
	wday	% women	16.7	81.4	2.0	-	-
	wend	% women	27.5	72.5	-	-	-
	ptrans	% women	7.8	2.9	5.9	19.6	63.7

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	16.7	11.4	8.0	16.3	7.0	12.5	16.2	8.4	23.2
wend	mean travel time (mins)	15.4	10.3	7.2	15.2	6.4	11.5	15.3	7.5	21.9
ptrans	mean travel time (mins)	57.6	39.5	23.1	37.3	16.2	35.0	18.1	22.1	50.3
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	88	-	4	-	-	2	1	-	7
wday	mean travel time (mins)	19.2	-	9.2	-	-	19.6	15.0	-	19.3
wend	mean travel time (mins)	17.9	-	8.2	-	-	18.5	15.0	-	18.2
ptrans	mean travel time (mins)	67.9	-	27.7	-	-	60.6	0.0	-	76.0

# Other midwifery services: Scenario 12 travel times

	Current	Proposed
Shrewsbury (RSH)	●	●
Wrekin (PRH)	●	●
Lakeside South	●	●
Hadley Castle		
Oswestry	●	
Bridgnorth	●	●
N. Shropshire (Whitchurch)		●
N. Shropshire (Mkt Drayton)		
S. Shropshire (Ludlow)		●



type	stat	Travel time (mins)				
		0-14	15-29	30-44	45-59	60+
wday	n women	2,966	1,188	56	-	-
wend	n women	3,073	1,112	25	-	-
ptrans	n women	768	1,376	1,078	472	516
wday	% women	70.5	28.2	1.3	-	-
wend	% women	73.0	26.4	0.6	-	-
ptrans	% women	18.2	32.7	25.6	11.2	12.3

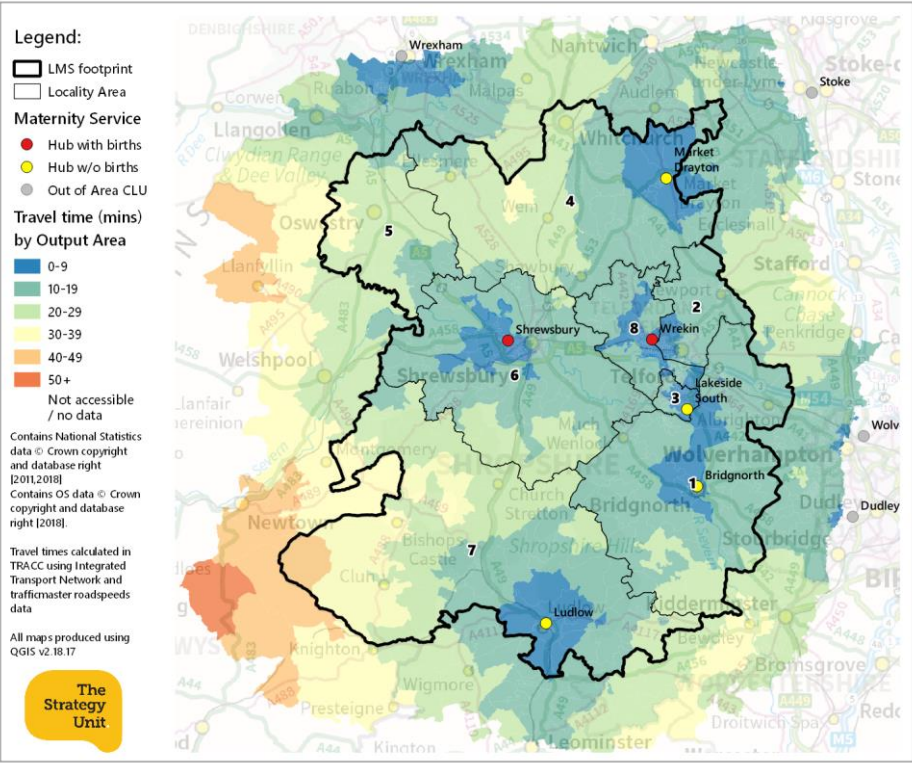
'Displaced' women	wday	n women	4	124	18	-	-
	wend	n women	4	135	7	-	-
	ptrans	n women	7	8	1	25	105
	wday	% women	2.7	84.9	12.3	-	-
	wend	% women	2.7	92.5	4.8	-	-
	ptrans	% women	4.8	5.5	0.7	17.1	71.9

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	12.0	11.4	8.0	17.9	26.1	12.5	16.1	8.4	25.2
wend	mean travel time (mins)	11.1	10.4	7.2	17.2	24.6	11.5	15.3	7.5	23.9
ptrans	mean travel time (mins)	29.0	39.5	23.1	45.5	63.3	34.8	18.7	22.1	47.9
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	-	-	-	15	123	4	-	-	4
wday	mean travel time (mins)	-	-	-	25.3	26.3	13.7	-	-	33.7
wend	mean travel time (mins)	-	-	-	24.7	24.7	12.7	-	-	32.3
ptrans	mean travel time (mins)	-	-	-	68.6	63.8	22.9	-	-	29.2



# Other midwifery services: Scenario 13 travel times

	Current	Proposed
Shrewsbury (RSH)	<div></div>	<div></div>
Wrekin (PRH)	<div></div>	<div></div>
Lakeside South	<div></div>	<div></div>
Hadley Castle		
Oswestry	<div></div>	
Bridgnorth	<div></div>	<div></div>
N. Shropshire (Whitchurch)		
N. Shropshire (Mkt Drayton)		<div></div>
S. Shropshire (Ludlow)		<div></div>



		Travel time (mins)				
type	stat	0-14	15-29	30-44	45-59	60+
wday	n women	3,005	1,121	84	-	-
wend	n women	3,122	1,039	49	-	-
ptrans	n women	830	1,331	1,045	514	490
wday	% women	71.4	26.6	2.0	-	-
wend	% women	74.2	24.7	1.2	-	-
ptrans	% women	19.7	26.9	24.8	12.2	11.6
'Displaced' women	wday n women	4	111	31	-	-
	wend n women	4	124	18	-	-
	ptrans n women	7	8	2	24	105
	wday % women	2.7	76.0	21.2	-	-
	wend % women	2.7	84.9	12.3	-	-
	ptrans % women	4.8	5.5	1.4	16.4	71.9

type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	407	747	590	434	226	936	196	600	74
wday	mean travel time (mins)	12.0	11.4	8.0	17.2	26.2	12.5	16.1	8.4	25.0
wend	mean travel time (mins)	11.1	10.3	7.2	16.2	24.6	11.5	15.3	7.5	23.7
ptrans	mean travel time (mins)	29.0	39.5	23.1	39.7	63.3	34.7	18.1	22.1	48.5
type	stat	[1] Bridgnorth	[2] Hadley Castle	[3] Lakeside South	[4] North Shropshire	[5] Oswestry	[6] Shrewsbury & Atcham	[7] South Shropshire	[8] The Wrekin	OutsideLMS
	n women	-	-	-	15	123	4	-	-	4
wday	mean travel time (mins)	-	-	-	31.5	26.4	13.7	-	-	33.7
wend	mean travel time (mins)	-	-	-	29.7	24.8	12.7	-	-	32.3
ptrans	mean travel time (mins)	-	-	-	67.6	63.8	22.9	-	-	29.2

## Appendices

# Appendix 1: Demographic impact of scenarios on mean travel times (Births, all mothers)

Current configuration:		Age			Ethnicity					Deprivation Index						
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	171	3,671	894	121	46	82	3,887	31	569	851	1,055	1,134	873	512	311
wday	mean_time	20.8	21.8	23.1	14.2	13.1	17.3	22.6	20.8	21.2	15.3	20.6	25.6	21.6	20.7	54.1
wend	mean_time	19.3	20.4	21.6	13.2	12.1	16.0	21.1	19.3	19.8	14.2	19.2	24.0	20.2	19.3	52.4
ptrans	mean_time	53.6	53.3	54.1	34.0	39.5	43.7	54.4	52.4	53.6	45.0	49.4	55.4	56.7	57.4	88.0

Proposed configuration:		Age			Ethnicity					Deprivation Index						
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	171	3,671	894	121	46	82	3,887	31	569	851	1,055	1,134	873	512	311
wday	mean_time	20.9	22.6	23.5	14.3	13.6	17.4	23.3	20.8	22.0	15.6	21.4	26.5	22.1	21.8	54.4
wend	mean_time	19.5	21.2	22.0	13.3	12.5	16.1	21.8	19.3	20.5	14.4	20.0	24.8	20.7	20.3	52.6
ptrans	mean_time	54.0	55.0	55.3	34.4	40.2	44.2	56.1	52.4	54.9	45.5	50.9	57.0	58.5	60.3	88.5

## Appendix 2: Demographic impact of scenarios (other midwifery care services , all mothers)

### Current configuration:

Current configuration:		Age			Ethnicity						Deprivation Index					
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	13.8	13.5	13.5	9.1	9.1	9.1	13.8	10.7	13.5	9.2	14.0	16.7	13.4	12.1	28.1
wend	mean_time	12.7	12.4	12.5	8.3	8.2	8.3	12.7	9.7	12.5	8.3	13.0	15.5	12.4	11.0	26.9
ptrans	mean_time	33.6	33.9	33.5	25.3	25.6	24.8	34.2	31.4	34.8	25.6	32.0	34.2	38.6	41.8	44.8

### Scenario 1:

Scenario 1:		Age			Ethnicity						Deprivation Index					
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	11.9	13.1	13.8	9.3	9.6	10.2	13.4	12.0	13.2	9.9	12.7	15.3	13.7	13.2	31.3
wend	mean_time	11.0	12.1	12.8	8.4	8.7	9.3	12.4	10.9	12.2	9.0	11.7	14.3	12.7	12.2	30.1
ptrans	mean_time	32.3	36.6	38.1	26.6	26.5	28.8	37.0	35.7	38.1	27.6	33.3	37.3	42.4	47.0	45.0

### Scenario 2:

Scenario 2:		Age			Ethnicity						Deprivation Index					
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	12.7	13.0	13.7	9.4	9.6	10.1	13.4	12.0	12.8	9.6	12.5	15.7	13.3	13.3	32.0
wend	mean_time	11.6	12.0	12.6	8.6	8.7	9.2	12.3	10.9	11.7	8.7	11.6	14.6	12.3	12.2	30.7
ptrans	mean_time	33.6	35.8	37.4	27.1	26.5	28.2	36.4	35.7	36.7	26.3	32.1	38.7	39.9	47.0	47.2

Scenario 3:		Age			Ethnicity					Deprivation Index						
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	12.2	13.0	13.7	7.7	9.1	10.0	13.4	10.3	13.0	10.7	11.8	15.3	13.5	13.1	31.3
wend	mean_time	11.5	12.2	12.9	7.1	8.5	9.3	12.5	9.5	12.3	10.0	11.1	14.5	12.7	12.1	30.1
ptrans	mean_time	35.7	37.1	38.2	22.8	29.6	29.6	37.6	31.6	38.6	34.8	31.5	37.0	41.7	44.9	45.0

Scenario 4:		Age			Ethnicity					Deprivation Index						
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	13.0	12.9	13.6	7.8	9.1	9.9	13.3	10.3	12.6	10.4	11.6	15.8	13.1	13.2	32.0
wend	mean_time	12.1	12.0	12.7	7.2	8.5	9.2	12.5	9.5	11.9	9.7	10.9	14.8	12.2	12.2	30.7
ptrans	mean_time	36.9	36.4	37.4	23.3	29.6	28.9	37.1	31.6	37.2	33.5	30.4	38.4	39.3	44.9	47.2

Scenario 5:		Age			Ethnicity					Deprivation Index						
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	11.7	13.3	13.7	8.0	8.0	8.9	13.7	10.1	13.2	9.1	13.0	16.4	13.5	12.9	34.2
wend	mean_time	10.9	12.4	12.7	7.3	7.4	8.2	12.7	9.3	12.3	8.3	12.2	15.4	12.7	11.9	32.9
ptrans	mean_time	30.5	35.4	36.4	23.0	23.6	24.9	35.9	31.8	36.3	25.0	31.6	37.2	42.0	44.6	47.0

Scenario 6:		Age			Ethnicity						Deprivation Index					
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	12.4	13.2	13.6	8.2	8.0	8.8	13.7	10.1	12.8	8.8	12.9	16.9	13.1	13.0	34.9
wend	mean_time	11.5	12.3	12.6	7.5	7.4	8.1	12.7	9.3	11.9	8.0	12.0	15.7	12.2	12.0	33.5
ptrans	mean_time	31.8	34.7	35.7	23.5	23.6	24.3	35.4	31.8	35.0	23.7	30.4	38.6	39.6	44.6	49.2

Scenario 7:		Age			Ethnicity						Deprivation Index					
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	13.4	13.1	13.7	7.8	8.0	9.1	13.6	10.1	12.7	8.8	12.5	16.9	13.5	12.5	32.6
wend	mean_time	12.4	12.1	12.7	7.2	7.4	8.4	12.6	9.3	11.8	8.0	11.6	15.7	12.5	11.5	31.3
ptrans	mean_time	33.5	35.1	36.3	22.5	23.1	25.4	36.0	31.2	35.5	24.6	31.1	38.6	41.3	43.9	47.2

Scenario 8:		Age			Ethnicity						Deprivation Index					
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	11.0	12.0	12.8	7.5	8.0	8.9	12.5	10.1	11.8	8.8	11.1	14.6	12.9	12.4	31.3
wend	mean_time	10.2	11.2	11.9	6.9	7.4	8.2	11.6	9.3	11.0	8.0	10.3	13.7	12.1	11.4	30.1
ptrans	mean_time	29.9	33.7	35.3	22.0	23.1	24.9	34.4	31.2	34.4	24.6	29.1	35.3	40.6	43.9	45.0

Scenario 9:		Age			Ethnicity					Deprivation Index						
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	11.8	12.0	12.7	7.7	8.0	8.8	12.5	10.1	11.4	8.4	10.9	15.0	12.5	12.5	32.0
wend	mean_time	10.9	11.1	11.8	7.1	7.4	8.1	11.5	9.3	10.6	7.7	10.1	14.0	11.6	11.5	30.7
ptrans	mean_time	31.2	33.0	34.5	22.5	23.1	24.3	33.8	31.2	33.1	23.3	27.9	36.7	38.1	43.9	47.2

Scenario 10:		Age			Ethnicity					Deprivation Index						
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	11.3	12.0	12.5	8.5	9.1	9.4	12.2	11.1	12.3	8.9	11.7	13.8	12.9	12.4	24.6
wend	mean_time	10.4	11.1	11.6	7.7	8.2	8.6	11.3	10.1	11.3	8.1	10.7	12.8	12.0	11.3	23.5
ptrans	mean_time	31.1	33.7	34.9	24.6	25.2	27.0	34.0	33.5	35.8	25.1	30.8	33.3	40.3	44.5	40.7

Scenario 11:		Age			Ethnicity					Deprivation Index						
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	12.0	11.8	12.3	8.6	9.1	9.3	12.1	11.1	11.8	8.6	11.4	14.1	12.5	12.3	25.2
wend	mean_time	11.0	10.9	11.4	7.8	8.2	8.5	11.2	10.1	10.8	7.7	10.5	13.0	11.5	11.3	24.1
ptrans	mean_time	32.4	33.0	34.2	25.1	25.2	26.3	33.4	33.5	34.5	23.9	29.6	34.7	37.8	44.5	42.9

Scenario 12:

Scenario 12:		Age			Ethnicity						Deprivation Index					
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	11.6	12.7	13.3	9.1	9.6	9.7	13.0	11.6	12.6	9.9	12.2	14.6	13.2	12.6	31.3
wend	mean_time	10.7	11.7	12.3	8.3	8.7	8.9	12.0	10.5	11.6	9.0	11.3	13.7	12.2	11.6	30.1
ptrans	mean_time	30.6	33.7	34.7	25.9	26.4	26.5	34.1	33.6	34.2	27.6	30.4	33.0	38.8	43.5	45.0

Scenario 13:

Scenario 13:		Age			Ethnicity						Deprivation Index					
type	stat	<20	20-35	35+	Asian	Black	Mixed	White	Other	Unknown	1	2	3	4	5	NA
	n	181	3,292	737	94	47	61	3,357	28	623	829	964	1,077	829	490	21
wday	mean_time	12.4	12.5	13.2	9.3	9.6	9.6	12.9	11.6	12.2	9.6	12.1	15.0	12.8	12.7	32.0
wend	mean_time	11.3	11.5	12.2	8.4	8.7	8.8	11.9	10.5	11.2	8.7	11.2	13.9	11.8	11.6	30.7
ptrans	mean_time	31.9	33.0	33.9	26.4	26.4	25.8	33.6	33.6	32.9	26.3	29.2	34.4	36.3	43.5	47.2



## Appendix 2: Impact of scenarios on mean travel times (other midwifery care services, total population, by locality)



## Appendix 3: Proxy hub locations used in travel-time calculations

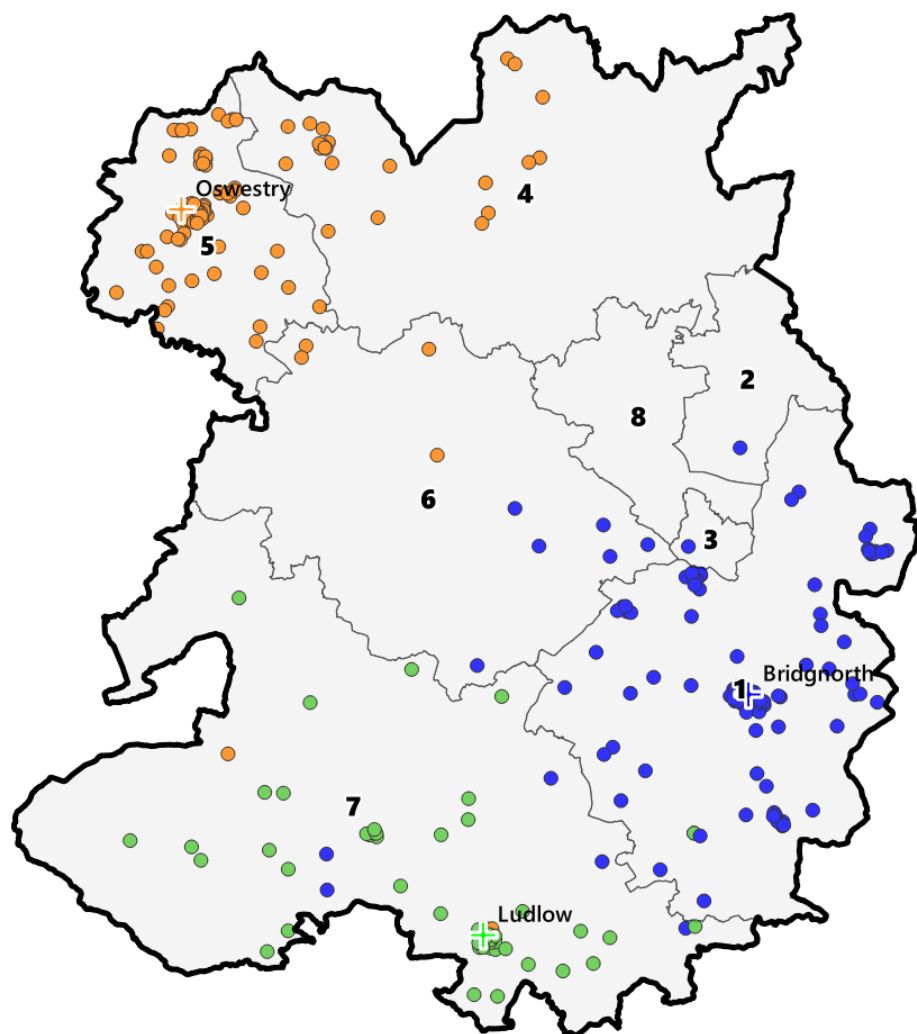
Area	Sub-area	Site used as proxy hub
Shrewsbury	-	Royal Shrewsbury Hospital
Telford & Wrekin	Wrekin	Princess Royal Hospital
Telford & Wrekin	Hadley Castle	Hadley Community Centre
Telford & Wrekin	Lakeside South	Sutton Hill Community Centre
North Shropshire	Whitchurch	Whitchurch Community Hospital
North Shropshire	Market Drayton	Festival Centre, Frogmore Rd.
South Shropshire	-	Ludlow Community Hospital
Oswestry	-	The Centre, Oak Street
Bridgnorth	-	Bridgnorth Community Hospital

## Appendix 4: List of HRG codes used to identify delivery

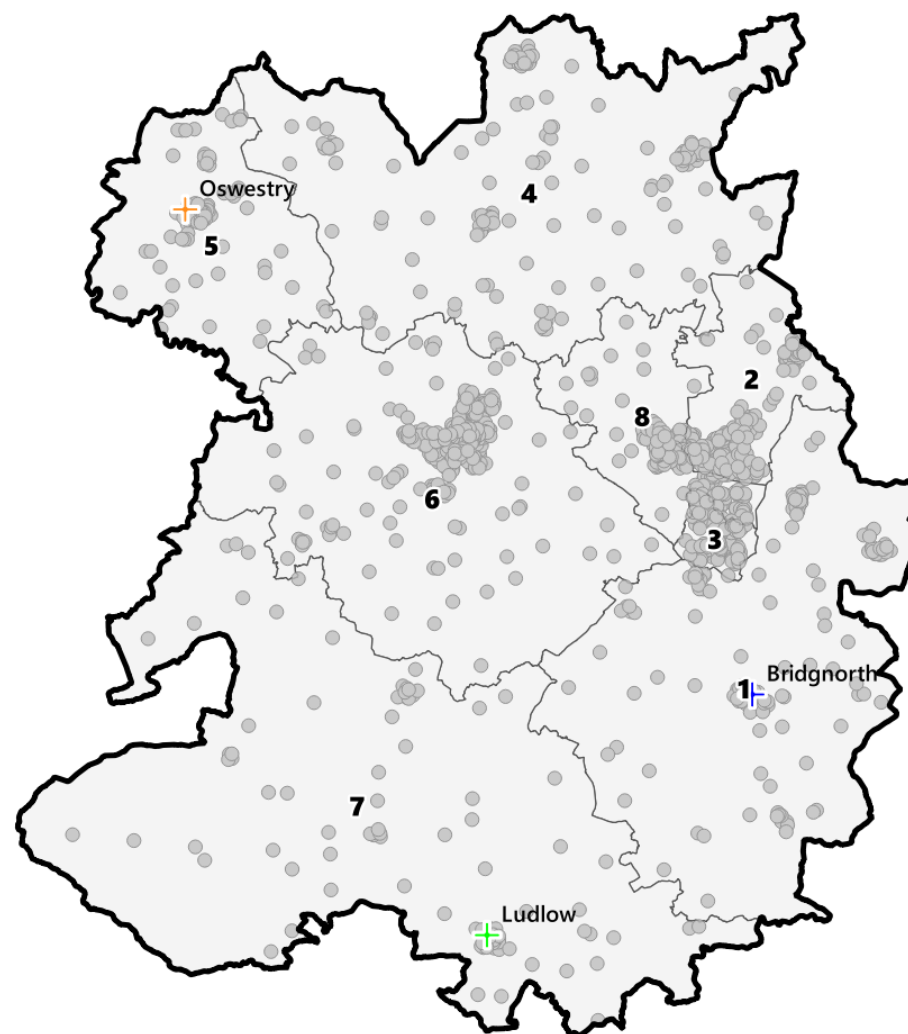
Code	Description
NZ11A	Normal Delivery with CC
NZ11B	Normal Delivery without CC
NZ11C	Normal Delivery with Epidural, with CC
NZ11D	Normal Delivery with Epidural, without CC
NZ11E	Normal Delivery with Induction, with CC
NZ11F	Normal Delivery with Induction, without CC
NZ11G	Normal Delivery with Post-partum Surgical Intervention
NZ12A	Assisted Delivery with CC
NZ12B	Assisted Delivery without CC
NZ12C	Assisted Delivery with Epidural, with CC
NZ12D	Assisted Delivery with Epidural, without CC
NZ12E	Assisted Delivery with Induction, with CC
NZ12F	Assisted Delivery with Induction, without CC
NZ12G	Assisted Delivery with Post-partum Surgical Intervention
NZ13A	Planned Lower Uterine Caesarean Section with CC
NZ13B	Planned Lower Uterine Caesarean Section without CC
NZ14A	Emergency or Upper Uterine Caesarean Section, with CC
NZ14B	Emergency or Upper Uterine Caesarean Section, without CC
NZ15Z	Caesarean Section with Eclampsia, Pre-eclampsia or Placenta Praevia

## Appendix 5: Location of mothers giving birth at 3 rural MLU / Other SATH sites, 2016/17

Location of mothers giving birth at Bridgnorth, Ludlow or Oswestry MLU in 2016/17



Location of mothers giving birth at PRH or RSH in 2016/17



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