

2013-2014

**Somerset County Council
[Breastfeeding
Health Equity Audit
April 2013-March
2014]**

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1. Introduction

1.1: Breastfeeding and Public Health

As highlighted in NICE Guidance 11: Maternal and Child Nutrition (2008) breastfeeding contributes to the health of both mother and child. Evidence has shown that babies who are breast-fed are less likely to suffer from, or be hospitalised for, gastro-intestinal or respiratory infections. There is also increasing evidence that breastfeeding in the early months of life can reduce the risk of obesity in later life. In addition to the benefits for the child breastfeeding also reduces the risk of breast and ovarian cancer for the mother. Despite these benefits the UK has lower breastfeeding rates compared to many other countries in Europe.

A 2005 infant feeding survey (Bolling et al, 2007) highlighted that while a large proportion of mothers initiate breastfeeding in the UK (approximately 78%), there is a large drop in breastfeeding rates by six weeks of age, with only around a fifth of babies being exclusively breastfed by this time.

1.2: National and local policy

There are a number of national and international policies and guidance promoting the benefits of increasing breastfeeding initiation and duration. These include the Baby Friendly Initiative (UNICEF/WHO); Maternal and Child Nutrition, Post-natal Care, and Antenatal Care Guidelines (NICE, 2008); Protection, Promotion and Support of Breastfeeding in Europe: A Blueprint for Action (European Commission, 2008) and the England and Wales' Public Health Outcomes Framework (PHOF, 2012). Current UK policy is to promote exclusive breastfeeding for the first six months of life before introducing a more varied diet.

Somerset is served by two main acute trusts that provide maternity services (Taunton and Somerset NHS Foundation Trust and Yeovil District Hospital NHS Foundation Trust). The sole provider of Health Visiting services in Somerset is Somerset Partnership NHS Trust. All three main providers of Midwifery and Health Visiting services are World Health Organisation (WHO) 'Baby Friendly Initiative' accredited and attend an established Breastfeeding and Infant Nutrition Steering group along with representatives from Somerset County Council Public Health Team. Somerset County Council is currently in the process of rolling out 'Breastfeeding Welcome', a programme whereby local businesses agree to specified criteria that support and enable breastfeeding in their establishment.

1.3: Measuring breastfeeding: Glossary of terms

‘Breastfeeding Initiation’ is defined as the percentage of mothers who give their babies breast milk in the first 48 hours after delivery (PHOF, 2012). The numerator is the number of mothers initiating breast feeding and the denominator is the total number of maternities. This data is collected by NHS Hospital Trusts. It is important to note that breastfeeding initiation may only constitute one feed.

‘Breastfeeding Prevalence’ is defined as the proportion of infants that are totally or partially breastfed at age 6-8 weeks. *Totally breastfed* is defined as infants who are exclusively receiving breast milk at 6-8 weeks of age - that is, they are not receiving formula milk, any other liquids or food. *Partially breastfed* is defined as infants who are currently receiving breast milk at 6-8 weeks of age and who are also receiving formula milk or any other liquids or food. *Not at all breastfed* is defined as infants who are not currently receiving any breast milk at 6-8 weeks of age. The numerator is the count of the number of infants recorded as being breastfed (totally or partially) at 6-8 weeks. The denominator is the total number of infants due a 6-8 weeks check. This information is available through Child Health Records.

‘Drop-off rate’ is the proportion of mothers discontinuing breastfeeding at a point in time e.g. discharge from hospital (as % of those previously breastfeeding).

‘Breastfeeding prevalence at discharge/primary check/3-month check’ refers to the proportion of infants that are totally or partially breastfed at various points in time. These figures are not nationally reported and collated. There are therefore some missing data and resultant limitations (*see data limitations sec: 5.4*).

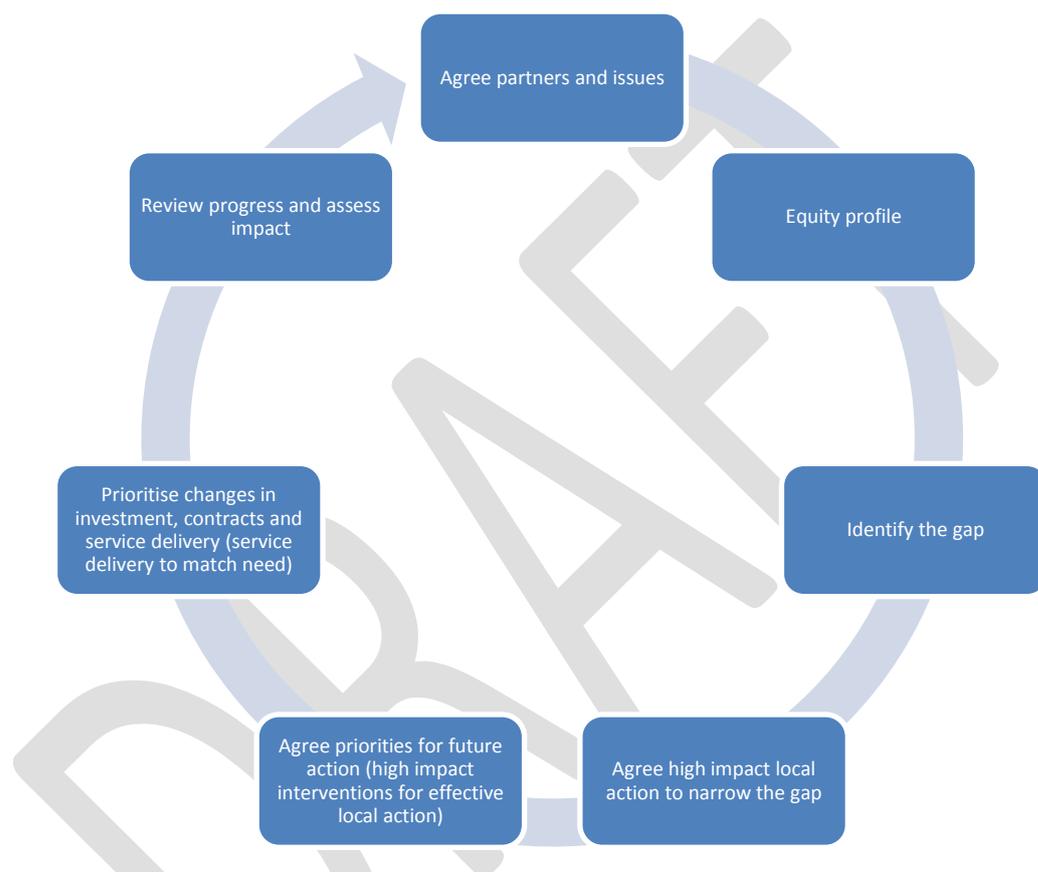
- *Primary visit is typically at 10-15 days with a Health Visitor; 6-8 week check is typically with a GP.*

‘Somerset residents V Somerset CCG registered’ in this report ‘resident births’ refer to all births to mothers that live at an address with a postcode within the Somerset County Council boundaries. CCG registered births refer to births to mothers registered at a Somerset GP surgery.

‘GP Federations’ refer to clusters of GP surgery’s within Somerset which are grouped together (geographically) into nine federations. GP practices within these federations aim to work collaboratively to identify local needs and tailor services accordingly.

1.4: Health Equity Audit

The purpose of a Health Equity Audit (HEA) is to reduce health inequalities within a population in a measurable way. This is achieved by the redistribution of resources in relation to a population's needs. Evidence from the HEA can be used to inform decisions on commissioning, service planning and investment. Re-audit can then be used to assess how effective changes to service delivery have been in reducing these inequalities. The process uses the following six cyclical steps:



A Breastfeeding Health Equity Profile (HEP) forms the second step of the HEA and for this report will contain the following information;

- An overview of infant feeding in Somerset measured in terms of breastfeeding initiation, prevalence at discharge, prevalence at Primary Check/6-8 week check/3-month check (where available) and drop-off rates at each point from **April 2013-March 2014**. This will provide a baseline by which to measure progress.
- Identification of areas of health inequality to enable stakeholders to influence commissioning and redistribute service provision as appropriate
- Identification of areas where there is missing data or it is not fit for purpose.

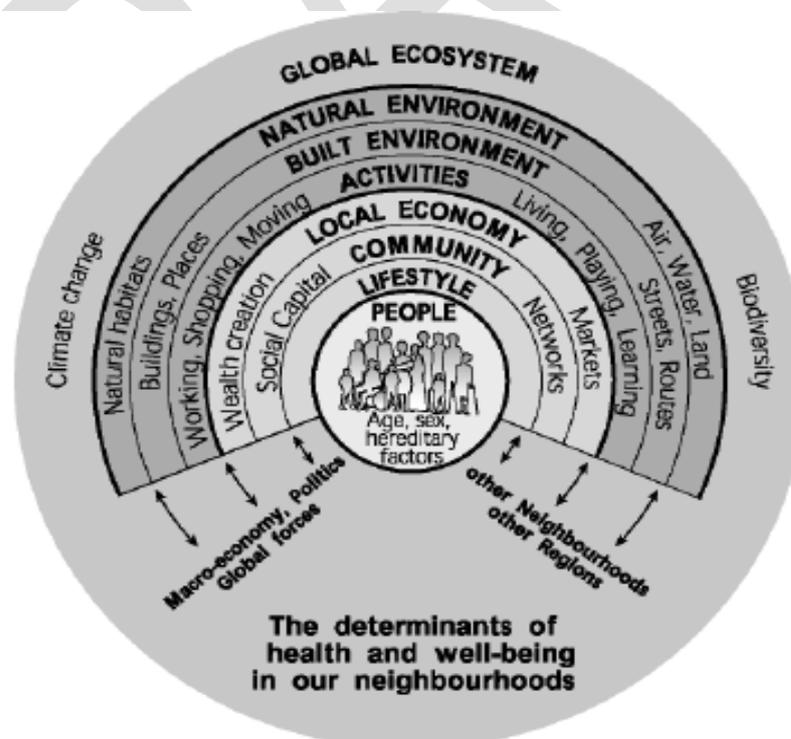
1.5: Health Equity Audit – Rationale

1.5.1: Reduce health inequalities

It is well recognised that there are differences in the determinants of health between different groups of people. For example, between men and women, those in different socio-economic groups, people with different ethnicities or people in different age groups. Where health differences are unnecessary, avoidable and considered unjust they are described as health inequalities. Initiation and prevalence of breastfeeding is known to be lowest among younger mothers and in families from lower socio-economic groups, therefore the relative health advantages of breastfeeding only add to health inequalities.

Health improvement activity strives to close the gaps in health inequality by acknowledging and acting upon the fact that well-being is not only influenced by individual lifestyle choices but is determined by a wide range of interacting factors. These include age, sex, inherited conditions, lifestyle, support networks, living and working conditions, culture, education and availability and accessibility of health care services.

Figure 1: Determinants of health and well-being in our neighbourhoods (Barton and Grant, 2006)



Especially important in terms of breastfeeding are support networks and education. It is known that mothers with positive role-models, a good support network and appropriate and timely professional advice are more likely to breastfeed, and for longer (UNICEF, 2013). Increase in formula use in the UK over several decades has negatively impacted on the overall availability of non-professional breastfeeding knowledge in the community. Health care professionals and institutions now have an even more significant role to play in disseminating breastfeeding knowledge and supporting those that choose to breastfeed in their local populations.

1.5.2: Why was this identified as a priority area for exploration?

Somerset had statistically significantly higher rates of breastfeeding initiation and prevalence at 6-8 weeks during 2012/13 when compared to the England average (see section 2.2). There is however a large range in the proportion of mothers initiating and maintaining breastfeeding when summarised at a smaller level, for example, by GP surgery. It is also a concern that in 2013/2014 breastfeeding prevalence at 6-8 weeks in Somerset was the lowest it has been for several years. It was recognised that a Health Equity Audit was required to highlight exactly where these inequalities lie and make recommendations for consideration for future service commissioning and provision. This Health Equity Audit will help inform a Somerset Breastfeeding Strategy, due for completion in 2015.

2. Breastfeeding Health Equity Profile for Somerset

2.1: Somerset birth profile

A majority of pregnancies occur in women aged between 19 and 43 years of age. In Somerset, the population of females in this age bracket is approximately 54, 684 (based on 2013 ONS population estimates). A breakdown of births by age groups for the audit period is given in section 2.8.2.

There are typically around 5500 births per year in Somerset. During the audit period (April 2013 – March 2014) there were a total of 5348 maternities for Somerset CCG registered patients reported to NHS England. During the same period there were 1550 maternities at Yeovil District Hospital NHS Foundation Trust and 3222 at Taunton and Somerset NHS Foundation Trust.

The numbers of maternities in the Somerset CCG area and the numbers of maternities at the two main maternity hospitals will differ due for several reasons. Other hospitals serve Somerset residents (e.g. those in Dorchester, Bristol and Exeter) additionally some Somerset GP registered patients will reside in counties around Somerset.

The most complete dataset of Somerset resident births is the Health Visiting database (which includes all babies living in Somerset, regardless of their GP surgery or location of birth). There are 5613 documented births during this audit period.

Raw data from the four nearest acute trusts and the community Health Visiting services were combined in this audit. For the hospital analysis of initiation this constitutes 89% of the total Somerset resident births. For the analysis of community data only mothers that could be tracked from breastfeeding initiation (at these four hospitals) through to breastfeeding prevalence are included (n=4724, 84% of resident births).

2.2: Breastfeeding initiation – National and local trends

England's overall breastfeeding initiation has been within the region of 73-74% since 2008 (Figure 2). Due to low data coverage nationally during the 2013/2014 audit period NHS England was unable to validate the data; therefore the 2013/2014 England initiation figure is unavailable. However, the Somerset data was considered valid and shows initiation for the 2013/2014 period to be significantly higher than in previous years (82.7% CI: 81.6-83.7).

2.3: Breastfeeding prevalence – National and local trends

England's overall breastfeeding prevalence increased slightly from 2010 to 2012 and remained stable in 2012/2013. Again, due to incomplete reporting nationally during the 2013/2014 audit period, NHS England was unable to validate the national data; therefore the 2013/2014 England prevalence figure is unavailable. The Somerset data was considered valid showing the prevalence for 2013/2014 as lower than in previous years (although not statistically significantly so 48.5% CI: 47.2-49.8, Figure 3). The large confidence intervals observed are due to the data for Mendip residents not meeting the national validation criteria. This makes drawing conclusions from these results difficult; however it is clear that the breastfeeding prevalence at 6-8 weeks in Somerset should be closely monitored to establish if this is an on-going trend.

Figure 2: Proportion (%) of maternities initiating breastfeeding initiation within 48hours, National and Somerset 4-year trend data (data source, PHE/NHS England)

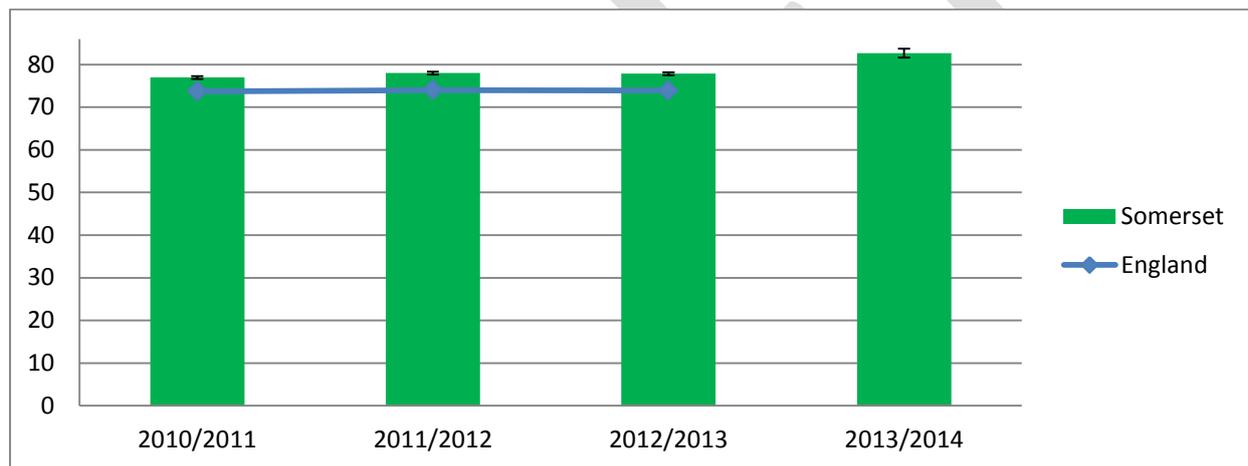
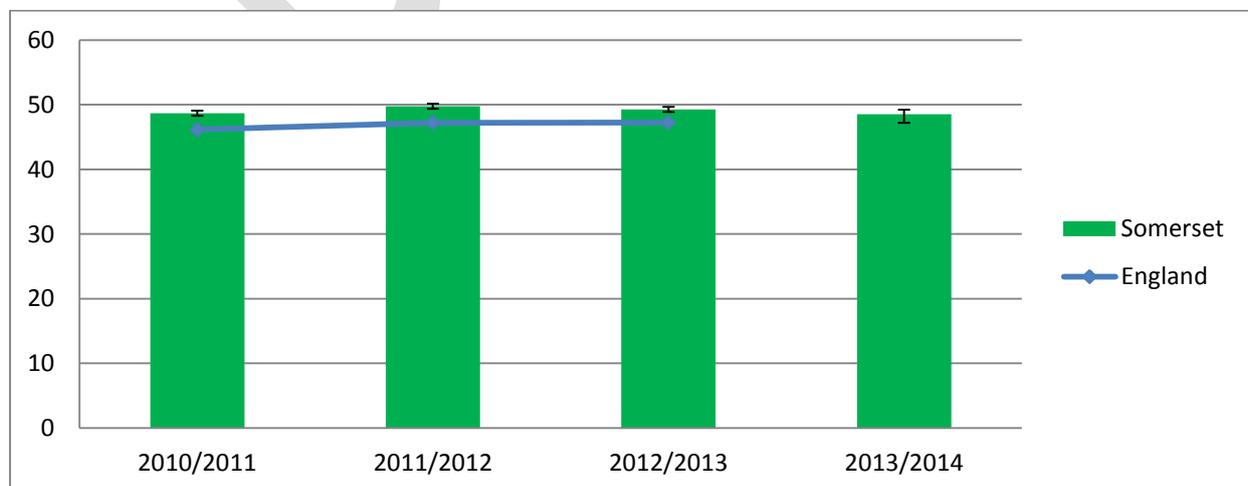


Figure 3: PHOF indicator 2.02ii: Proportion (%) of mother's breastfeeding at 6-8 weeks, National and Somerset 3-year trend data (data source, PHE/NHS England)



2.4: Comparison with statistical neighbours

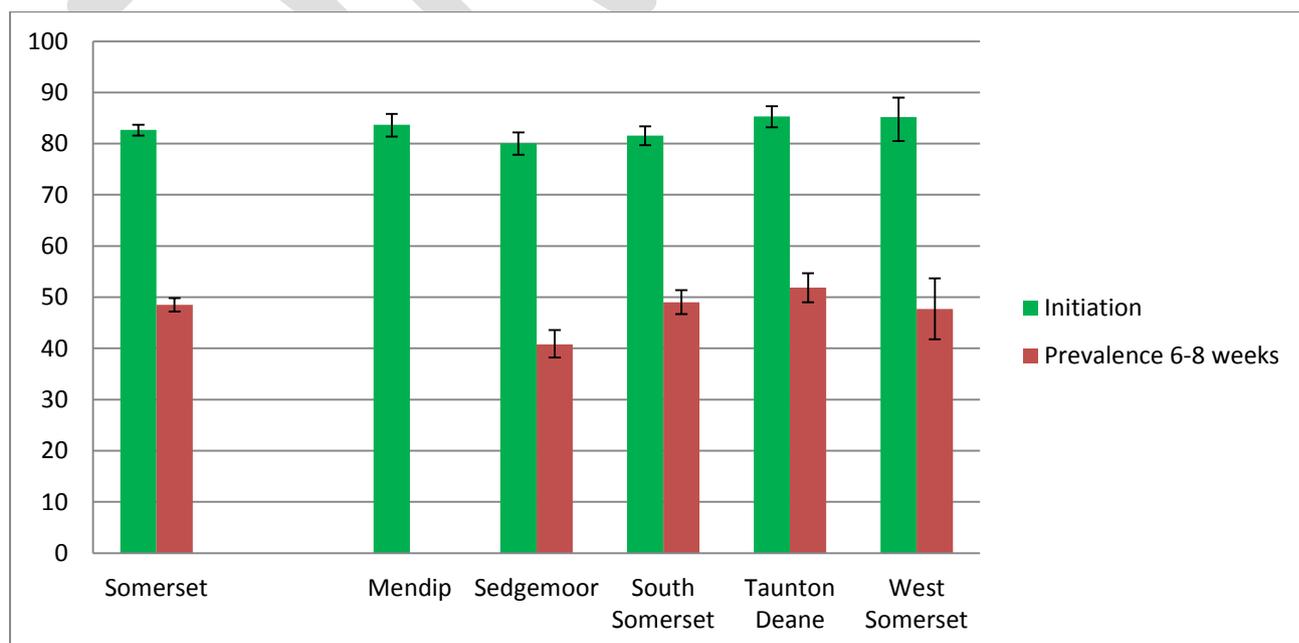
The term 'statistical neighbours' is used in reference to local authorities with similar characteristics in terms of geography and demography to Somerset e.g. Devon, Cornwall and Wiltshire. Statistical neighbours are often used to compare incidence and prevalence data between areas.

It was not possible to benchmark Somerset rates against other statistical neighbours due to many counties not meeting the national data validation criteria in the audit period. However when Somerset is compared to the South-West as a whole the initiation and prevalence rates are comparable.

2.5: Comparison between districts of Somerset

Somerset is a two tier local authority made up of five districts; Mendip, Sedgemoor, South Somerset, Taunton Deane and West Somerset. Figure 4 uses nationally reported data to show initiation and prevalence by districts within Somerset. This graph demonstrates that breastfeeding initiations rates are generally comparable; however there is some inequality with prevalence at 6-8 weeks in Sedgemoor significantly lower than prevalence in South Somerset and Taunton Deane. The Mendip prevalence is not shown as the data validation criterion was not met for Mendip registered births.

Figure 4: 2013-2014 Breastfeeding Initiation and Prevalence at 6-8 weeks by district (*data source: PHE/NHS England*)



2.6: Local data (Birth from April 1st 2013 –March 31st 2014)

The data supplied by the four main maternity service providers cover the period from 1st April 2013 to 31st March 2014. In addition to maternal characteristics this data shows;

- Breastfeeding initiation within 48hours of birth
- Breastfeeding status at discharge from hospital (where reported)

The data supplied by the provider of Health Visiting services in Somerset is the same as that held by Child Health Records. This data shows;

- Breastfeeding status at primary visit with a Health Visitor
- Breastfeeding status at 6-8 week check with a GP
- Breastfeeding status at 3 month check with Health Visitor (where reported)

2.7: Analysis of Hospital Data

During the audit period there were 4955 births to parents with a Somerset postcode reported by the four main acute trusts serving the county; Royal United Hospital Bath (650), Taunton and Somerset NHS Foundation Trust (3156), Weston Health Area NHS Trust (10) and Yeovil District Hospital (1139).

2.7.1: Breastfeeding initiation

For births reported at the four nearest trusts, 82.6% (n=4097) of mothers initiated breastfeeding within 48 hours of birth and 16.9% (n=835) did not initiate breastfeeding. In 0.34% (n=17) cases there was no breastfeeding status recorded. In the remaining 0.1% (n=6) cases other sources of milk were documented e.g. donor breast-milk, or the baby unfortunately died. Taunton and Somerset NHS Foundation Trust had the highest initiation rate however all acute trusts achieved 80% or higher breastfeeding initiation.

2.7.2: Breastfeeding initiation and maternal age

Figure 5 shows the number of births during the audit period by maternal age group. Most births were to mothers aged between 24 and 33 years. Figure 6 shows the proportion of mother initiating breastfeeding within 48 hours of birth and demonstrates that this increases with maternal age and is significantly higher for mother aged 29 or older (range of 89.67-95.0% in this age group). These findings are comparable to that reported in the Infant Feeding Survey (2005) where the highest rates for initial incidence of breastfeeding are evident in those aged 30 or over and lowest among mothers aged 20 and under.

Figure 5: Numbers of births in audit period by maternal age-group

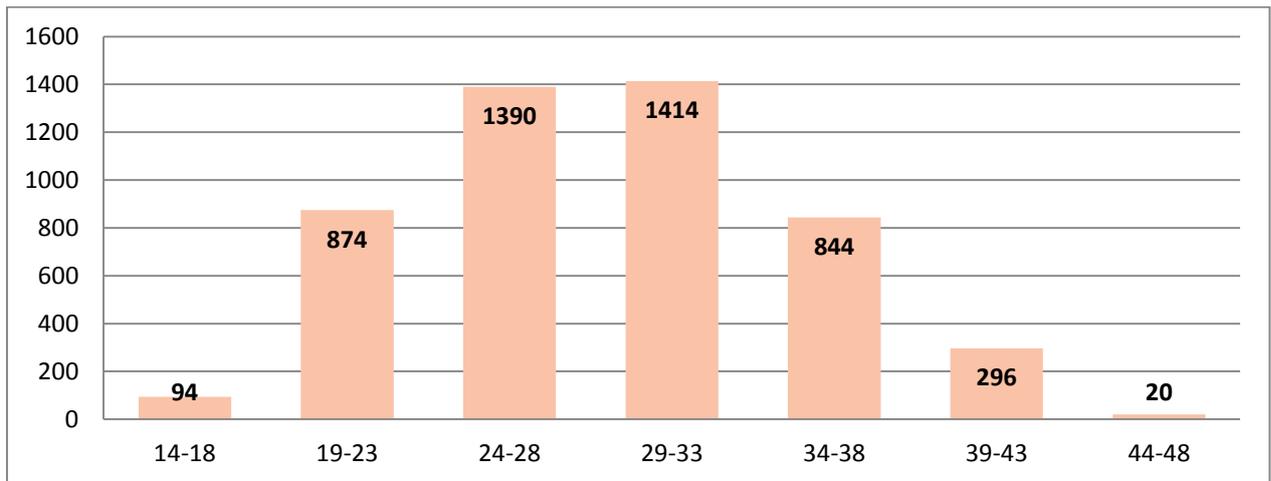
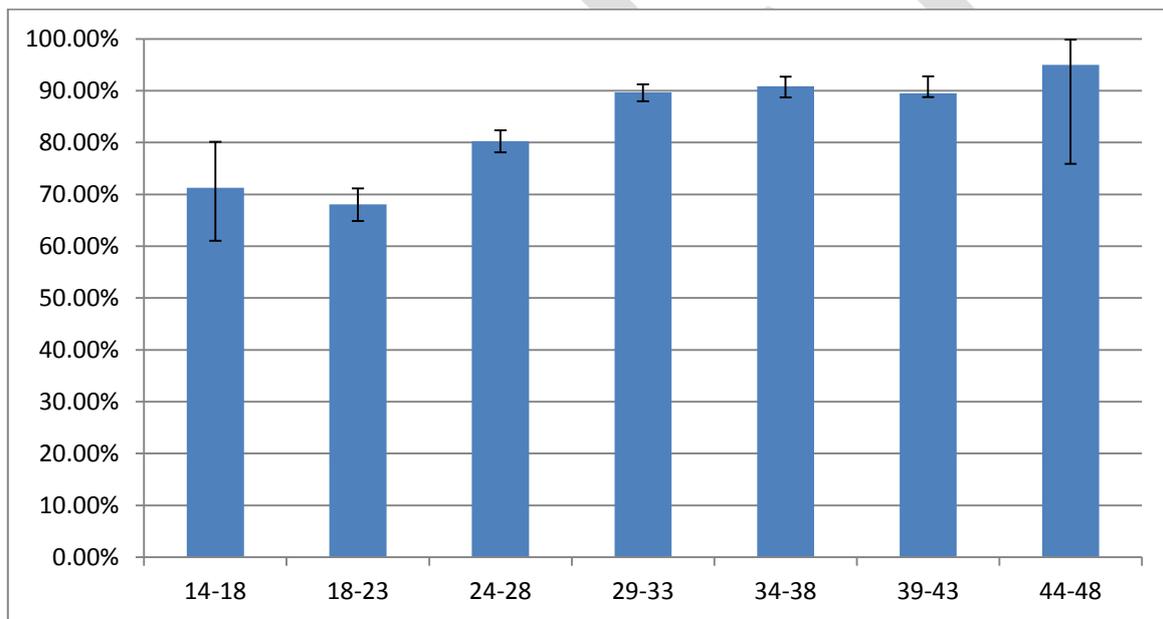


Figure 6: Proportions of mothers initiating breastfeeding in the first 48 hours after birth, by maternal age group, where status reported (n=4933)



2.7.3: Breastfeeding initiation and ethnicity

The majority (87.7%) of mothers in this audit period were reported as being 'White British or Irish' (n=4381). 7.3% (n=364) were reported as being from 'Any other white background', 1.4% (n=69) of mothers were reported as being 'Asian or British Asian' (predominately Chinese, Indian or Bangladeshi), 1.7% (n=84) as being from any 'other ethnic groups' or 'mixed background', <1% (n=15) as 'White or Black African'. For <1% (n=42) of mothers ethnicity was not recorded.

Analysis of uptake by ethnicity shows that the proportion of women initiating breastfeeding within 48 hours of birth is comparable across ethnic groups with the lowest uptake seen in White British/Irish mothers. The numbers of births to non-White British/Irish women in Somerset is however low.

2.7.4: Breastfeeding initiation by geographical area

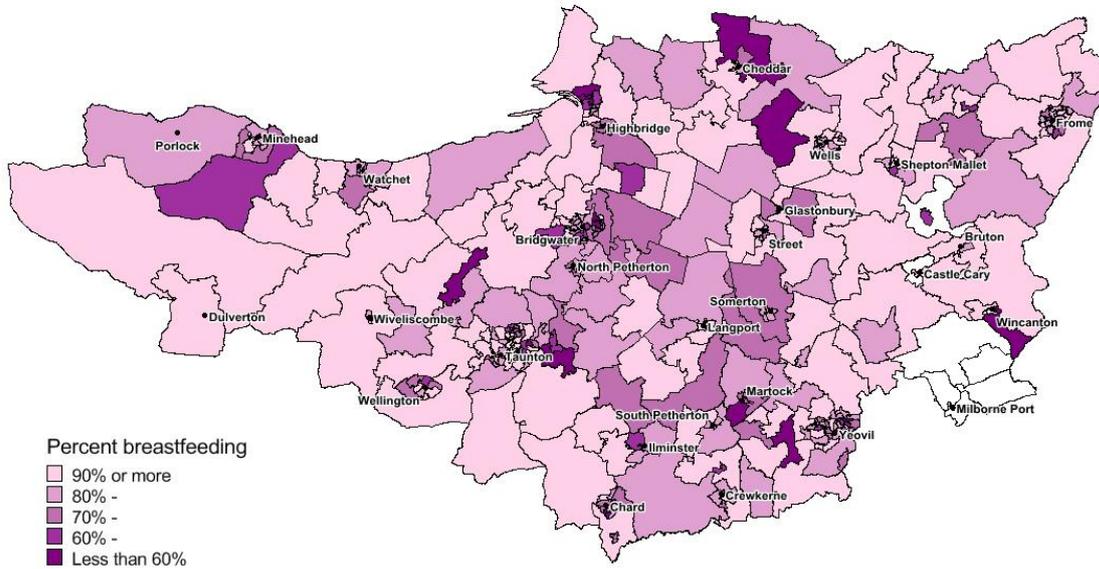
Section 2.5 demonstrates that at a district level breastfeeding initiation is significantly lower in Sedgemoor. Figure 7 shows breastfeeding initiation by smaller geographical area by mapping this at Lower Super Output Area (LSOA). This highlights specific areas of low uptake. As the actual numbers of births during one year could be very low in some of these LSOA's the initiation has also been mapped by Middle Super Output Area (MSOA) in Figure 8. It is useful to consider these maps in combination when identifying areas of low initiation that may require specialist breastfeeding services.

The ten LSOA's with the lowest initiation of breastfeeding were spread across Sedgemoor (East, Central, South), Taunton Deane (East and West) South Somerset (East and Central) and Mendip (Frome South) (see Appendix A). Initiation in the major towns of Bridgwater, Frome, Minehead, Taunton and Yeovil are shown in more detail in Appendix B.

Lower Super Output Areas (LSOA's) refer to areas consisting of 400-1200 households (or 1000-3000 people)

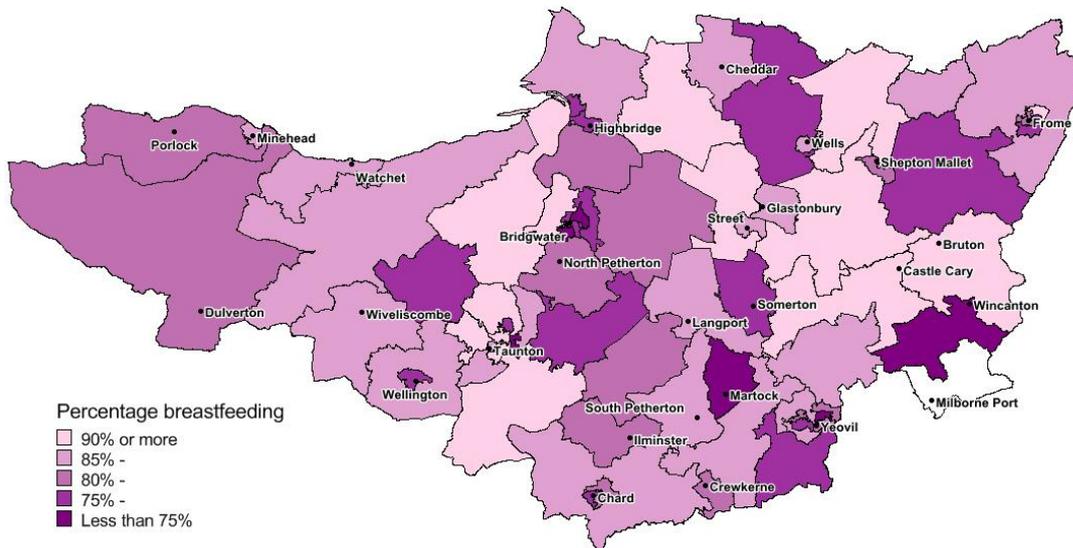
Middle Super Output Areas (MSOA's) refer to areas consisting of 2000-6000 households (5000 – 15,000)

Figure 7: Breastfeeding initiation by maternal Lower Super Output Area (LSOA)



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Figure 8: Breastfeeding initiation by maternal Middle Super Output Area (MSOA)

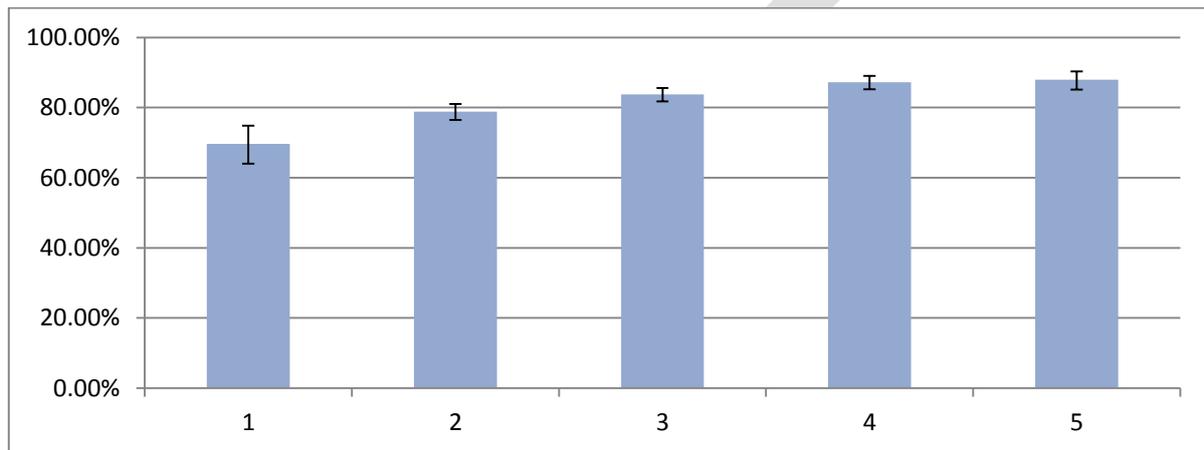


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2.7.5: Breastfeeding initiation by deprivation

Figure 9 shows initiation by deprivation quintile in Somerset (1 = most deprived, 5 = least deprived). It highlights that breastfeeding initiation is significantly lower in more deprived areas, mirroring the known determinants of breastfeeding initiation. The areas with the greatest proportion of deprived LSOAs in Somerset are the rural areas of West Somerset and urban areas of Bridgwater, Taunton and Yeovil.

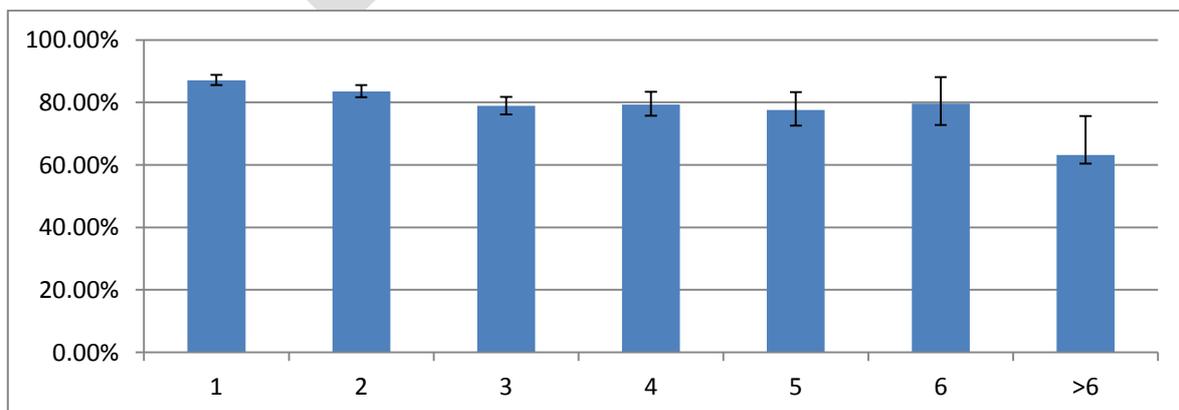
Figure 9: Proportions of mothers initiating exclusive breastfeeding in the first 48 hours after birth, by deprivation quintile (n=4933)



2.7.6: Breastfeeding initiation by gravidity (numbers of pregnancies)

1666 women in this audit period were first time mothers, 1491 had had two pregnancies and 171 women in this audit period were recorded as having a gravidity of 7 or greater (this could be partly due to errors in data collection). Figure 10 suggests that the proportion initiating breastfeeding is greatest with the first successful pregnancy and drops significantly following a third pregnancy. Unfortunately data on Parity (number of births) was not collected for this audit.

Figure 10: Proportions of mothers initiating exclusive breastfeeding in the first 48 hours after birth, by gravidity (number of pregnancies) n=4955

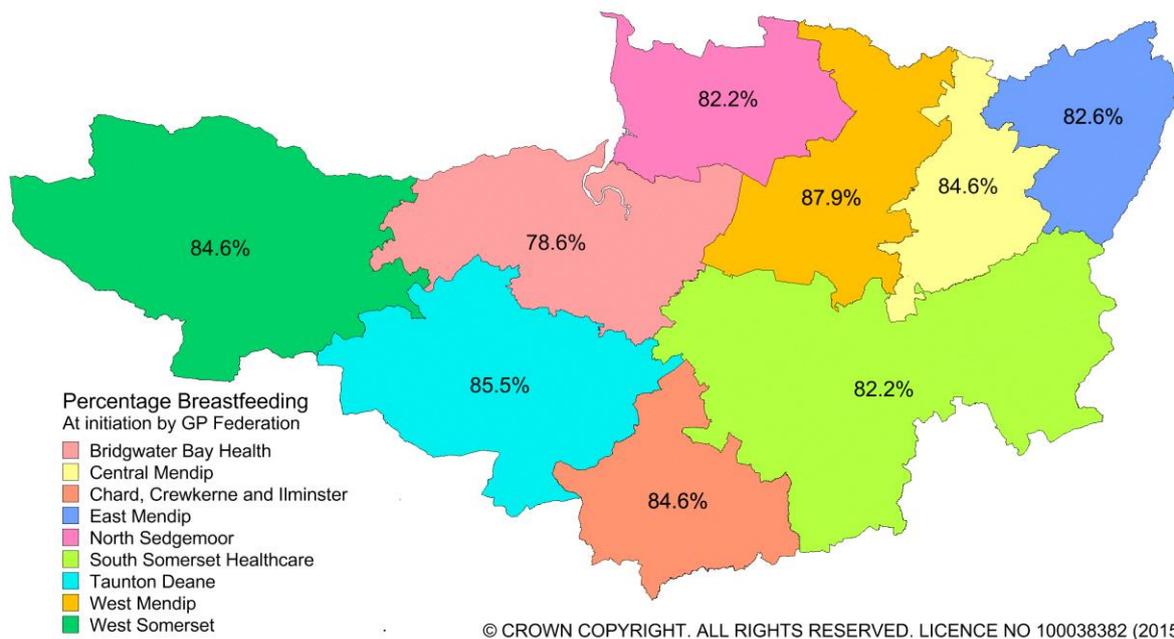


2.7.7: Breastfeeding initiation by GP federation

Somerset GP practices are clustered to form nine federations. When initiation is mapped against maternal surgery and aggregated to GP federation level (Figure 11) there are no significant differences between them; however 'Bridgwater Bay Health' is the only federation with initiation below 80%. It was not appropriate to map initiation by GP surgery as the numbers per surgery over the one year period were typically very low.

It is important to note that not all residents of Somerset are registered with a Somerset GP. Those women registered with GP's outside of Somerset are excluded from this specific analysis.

Figure 11: Proportions of mothers initiating breastfeeding in the first 48 hours after birth, by registered GP federation (n=4412)



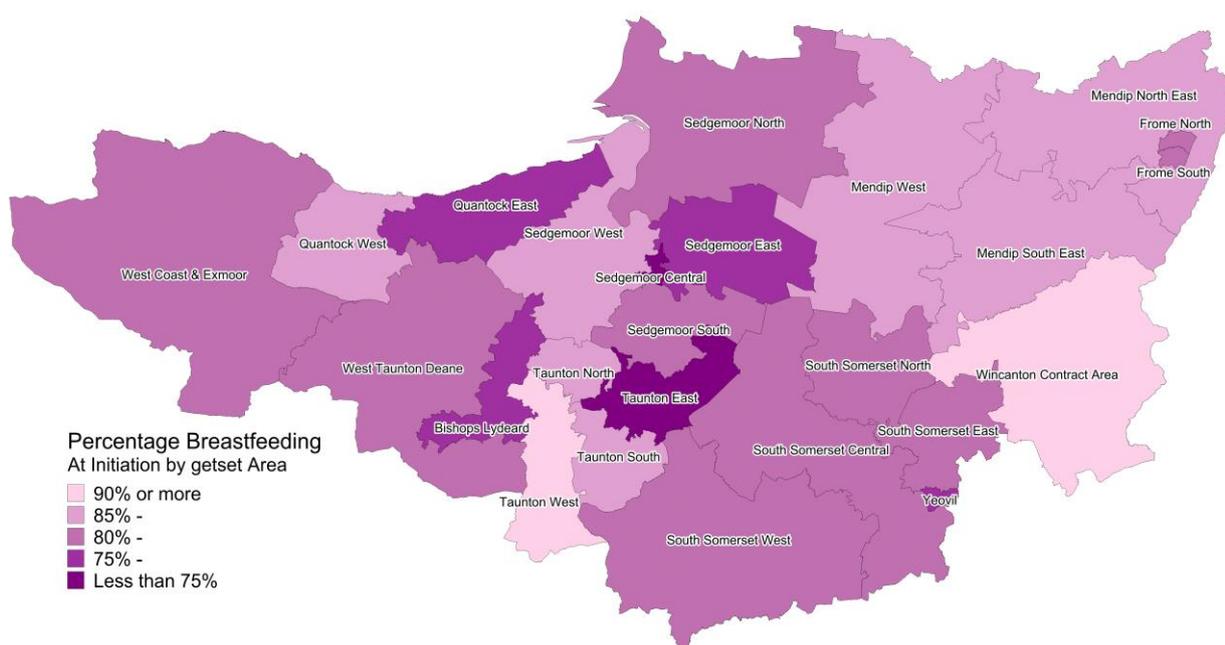
2.7.8: 'getset' and breastfeeding initiation

The 'getset' areas are catchment areas surrounding 'getset' hubs. The 'getset' hubs aim to bring together all services and support in Somerset for families and young people up to the age of 19 years. These hubs typically contain a children's centre and offer a package of early

year's support which may include breastfeeding advice and/or signposting to services. They may also serve as a base for infant feeding support groups.

Figure 12 shows breastfeeding initiation by 'getset' hub catchment area and shows that initiation is lowest in Taunton East and Sedgemoor Central catchment areas and highest in the Wincanton Contract Area. Bishops Lydeard, Quantock East, Sedgemoor East, Sedgemoor South also have initiation of 75% or lower.

Figure 12: Proportions of mothers initiating breastfeeding in the first 48 hours after birth, by 'getset' hub catchment areas (n=4914)



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2.7.9: Drop-off rates of breastfeeding from initiation to discharge

Of the 4097 mothers who initiated breastfeeding within 48 hours of birth, 81.5% (n=3341) were exclusively breastfeeding at discharge from hospital, 5.3% (n=216) were partially breastfeeding and 10.1% had stopped breastfeeding (n=414). This equates to 1 in every 10 mothers who initiate breastfeeding discontinuing before discharge from hospital.

Figure 13 shows drop off rates from breastfeeding by mothers' age group and highlights that drop-off rates decrease with increasing maternal age. Almost a quarter of young mothers (aged <23years) that had initiated breastfeeding had stopped by the time they were discharged from hospital. Exploration of drop-off rates by deprivation shows that those from

more deprived areas are more likely to discontinue breastfeeding before they leave hospital (Figure 14).

1.5% (n=13) mothers who had not initiated breastfeeding in the first 48 hours after birth were either exclusively or partially breastfeeding by discharge. For 3.4% (n=168) of mothers in this sample the status of breastfeeding on discharge from the acute trust is not documented. This missing data has to be considered in interpreting the drop-of rates in hospital, however it is a small proportion of the total.

Figure 13: Breastfeeding drop-off rates by age-group (proportion of those initially exclusively or partially breastfeeding within 48hours of birth who have discontinued by discharge) n=4097

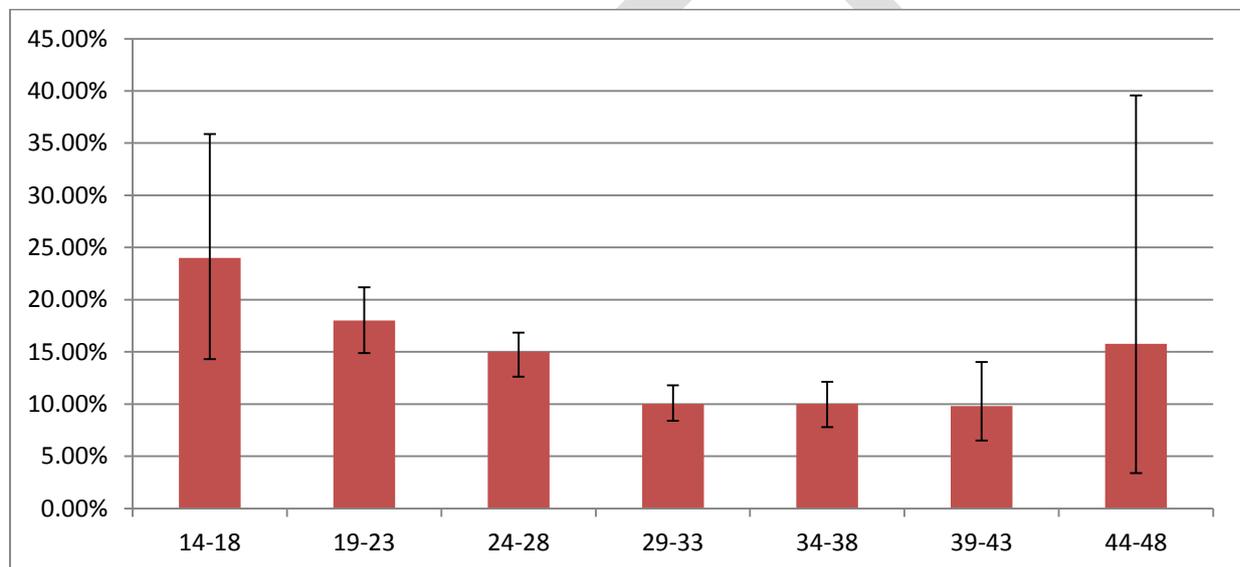
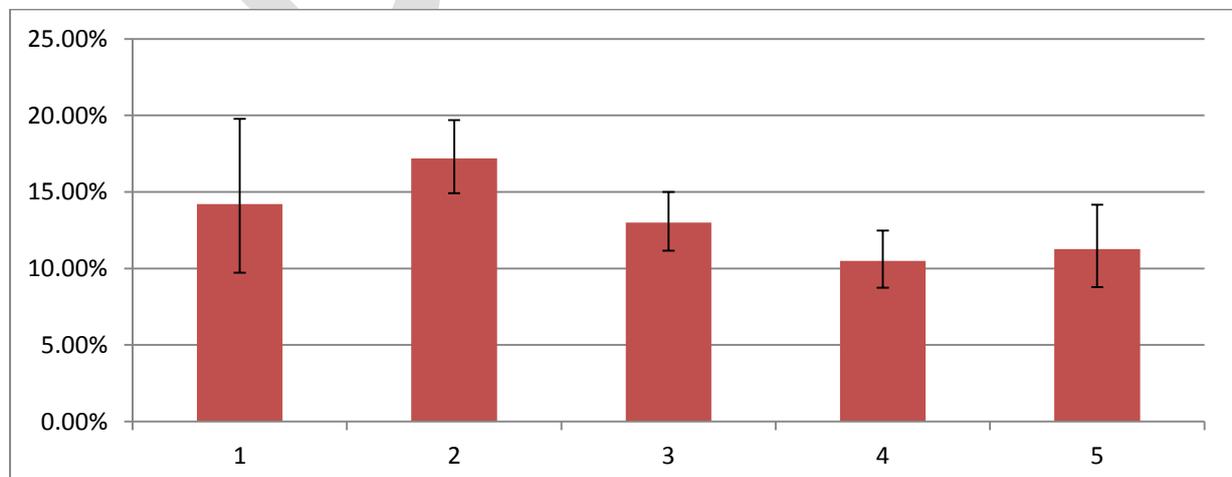


Figure 14: Breastfeeding drop-off rates by deprivation quintile (1 = least deprived, 5 = most deprived) n=4097



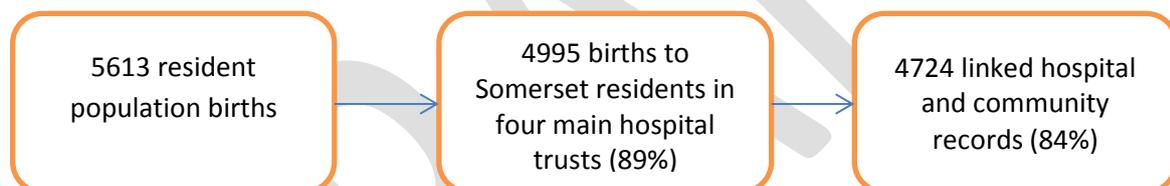
2.7.10: Reason for choosing not to breastfeed

Breastfeeding status and the reasons for not breastfeeding on discharge are not routinely electronically recorded.

For 532 records a reason for not breastfeeding was cited. 'mothers' choice' (311), 'medical condition for mother' (74), 'medical condition for baby' (95) and 'baby not interested in feeding' (42) were the main reasons documented. For the handful of records where a reason was cited for discontinuation of breastfeeding prior to discharge the themes were as follows; 'nipple or breast pain', 'baby will not latch', 'dislikes breastfeeding', 'perceived insufficient milk supply' and 'baby unsettled'.

2.8: Analysis of Community Data (births from April 1st 2013 –March 31st 2014)

There were a total of 5613 babies born during the audit period and resident in Somerset (as reported by Health Visiting service). This dataset was matched with the acute hospital data to track breastfeeding status from hospital to the community. This resulted in a total of 4724 linked records (84% of total births).



Unlinked community records were mapped (see section 5.4). Most unlinked cases lived in Mendip and South Somerset, suggesting that births occurred in Dorset, Wiltshire, Devon or Bristol. Some caution needs to be taken when generalising the findings of this audit to these two districts as a smaller proportion of babies have been included in the analysis.

165 of the hospital records (2%) had no associated community data and are therefore excluded from the community analysis. All these births occurred in Royal United Hospitals NHS Foundation Trust and are therefore also likely to be resident in Mendip. It is unclear why there is no matched record; however it is likely to be due to an error in the pseudoanonymisation procedure. This is a small proportion of the total records.

2.8.1: Breastfeeding prevalence at Primary check, 6-week check and 3 month check

81.5% of mothers were breastfeeding on discharge from Hospital. By the time they had their Primary Check with the Health Visitor at 10-15 days this had reduced to 60.6% (n=4698). At the 6-8 week check with Health Visitors this had reduced further to 49.4% (n=4684). At the

three month check prevalence for those seen was 41.29% (n=4618). All these reductions were statistically significant.

2.8.2: Breastfeeding prevalence at 6-8 weeks by maternal age-group and deprivation

Figures 15 and 16 explore breastfeeding prevalence by maternal age and deprivation (based on maternal LSOA). As with breastfeeding initiation this data shows that breastfeeding prevalence increases with maternal age and decreases with greater deprivation. Breastfeeding prevalence drops by almost 20% for mothers under 29 years of age.

Figure 15: Breastfeeding (exclusive or partial) prevalence at 6-8 week check by maternal age group

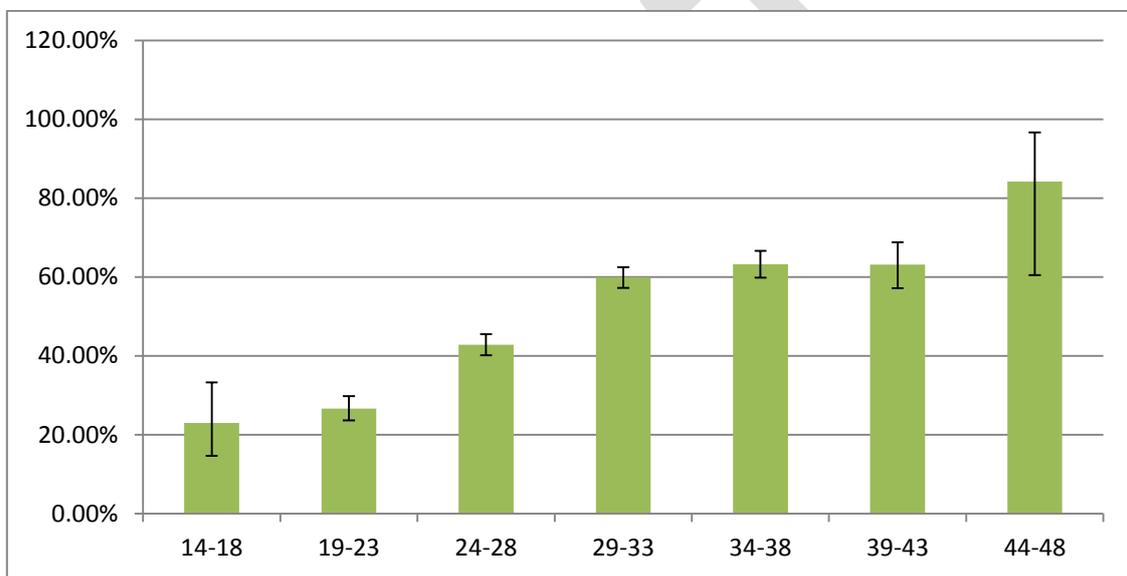
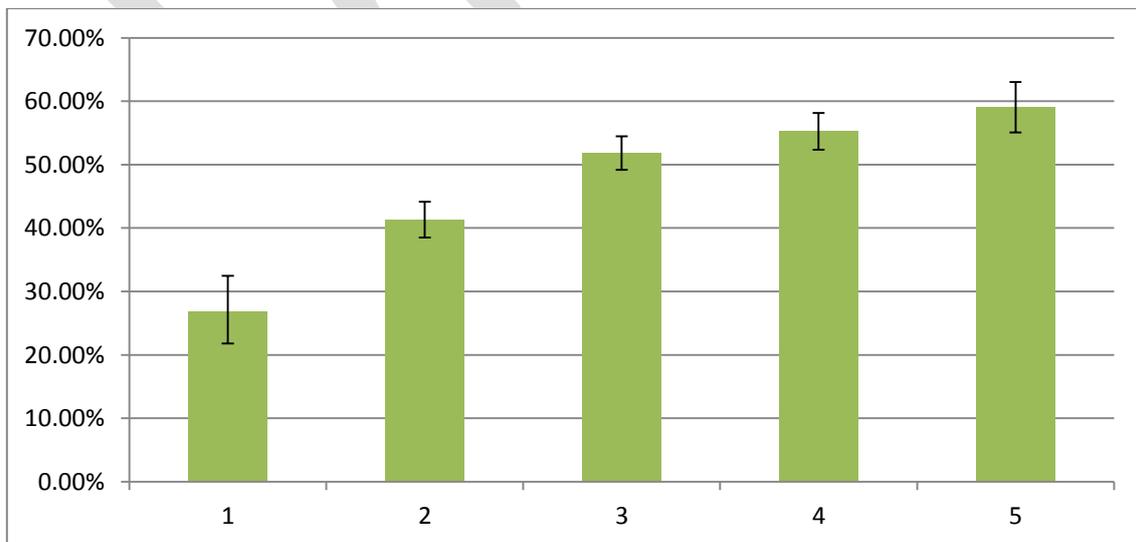


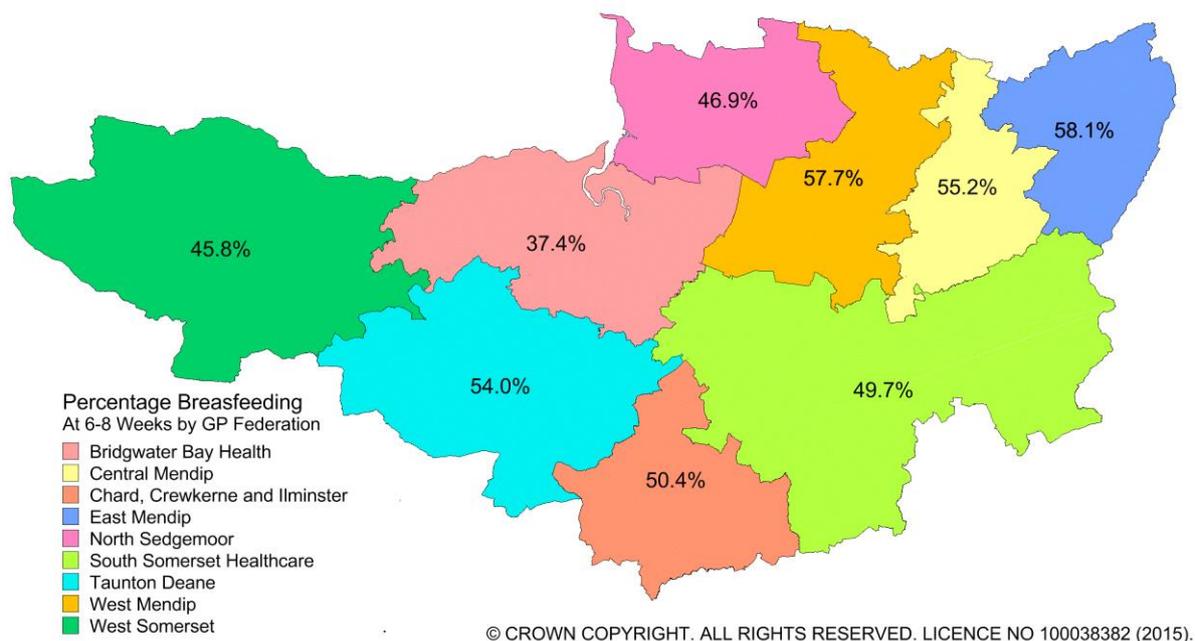
Figure 16: Breastfeeding (exclusive or partial) prevalence at 6-8 week check by deprivation quintile (1 = most deprived, 5 = least deprived)



2.8.3: Breastfeeding prevalence at 6-8 weeks by GP Federation

Somerset GP practices are clustered to form nine federations. When prevalence at 6-8 weeks is mapped by maternal surgery and aggregated to GP federation level (Figure 17) there are significant differences evident between them. Prevalence ranges from 37.4% in 'Bridgwater Bay Health' to 58.1% in 'East Mendip'. It was not appropriate to map prevalence by GP surgery as the numbers per surgery over the one year period were typically very low.

Figure 17: Proportions of mother's breastfeeding at 6-8 week check, by registered GP federation (n=4565)



It is important to note that not all residents of Somerset are registered with a Somerset GP. Those women registered with GP's outside of Somerset are excluded from this specific analysis.

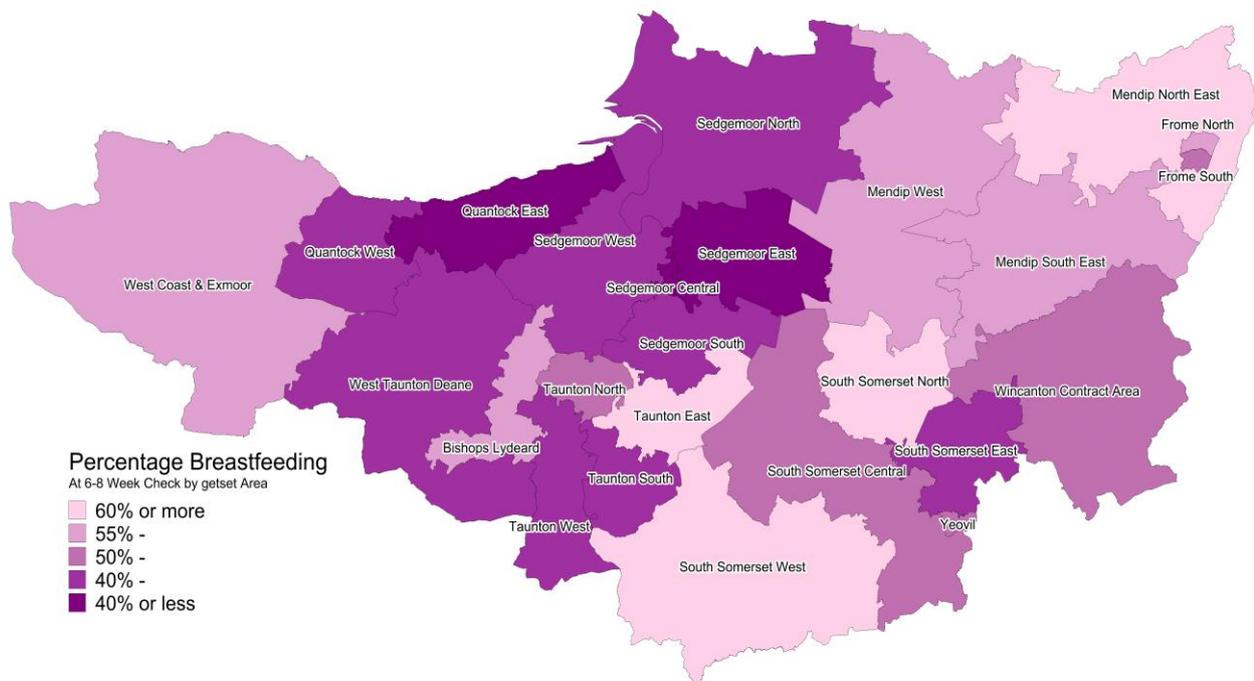
2.8.4: Breastfeeding prevalence at 6-8 weeks by getset hub area

The 'getset' areas are catchment areas surrounding 'getset' hubs. The 'getset' hubs aim to bring together all services and support in Somerset for families and young people up to the age of 19 years. These hubs typically contain a children's centre and offer a package of early year's support which may include breastfeeding advice and/or signposting to services. They may also serve as a base for infant feeding support groups.

Figure 18 maps breastfeeding initiation by 'getset' hub catchment area and shows that prevalence is lowest in Quantock East and Sedgemoor East catchment areas, and highest in the Wincanton Contract Area, South Somerset North, Taunton West and Mendip North East.

West Coast and Exmoor, Quantock West, Sedgemoor North and South, Taunton North and East and South Somerset East all have prevalence of less than 50%.

Figure 18: Proportions of mother’s breastfeeding at 6-8 week check, by ‘getset’ hub catchment area (n=4394)



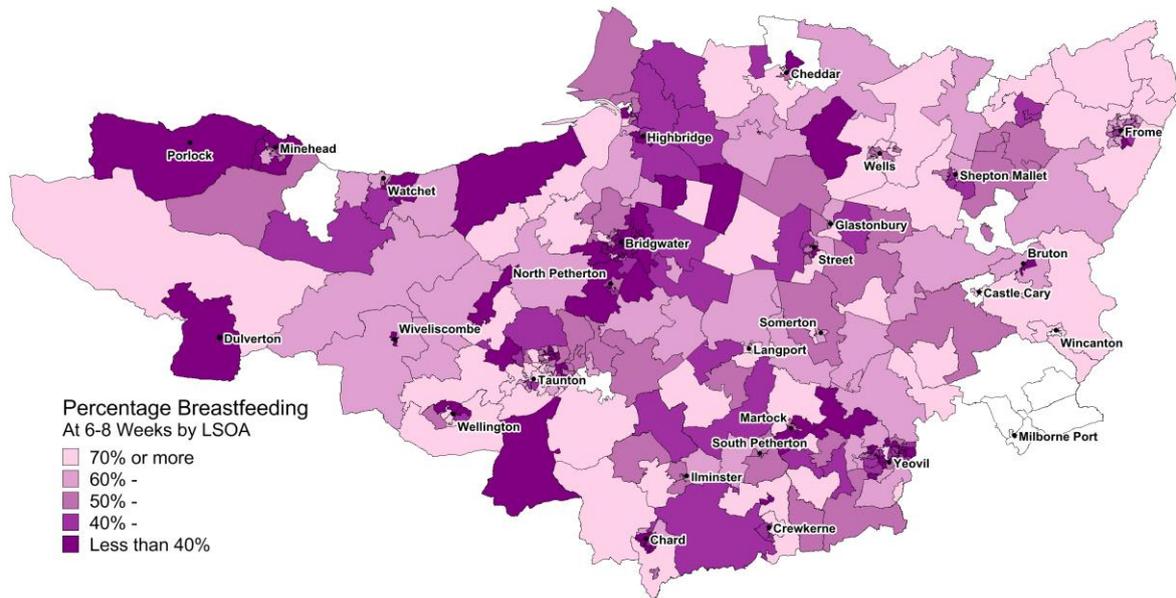
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2.8.5: Breastfeeding prevalence at 6-8 weeks by geographical area

Section 2.5 demonstrates that at a district level breastfeeding prevalence is significantly lower in Sedgemoor. Figure 19 shows breastfeeding initiation by smaller geographical area by mapping this at Lower Super Output Area (LSOA) highlights other areas of low uptake. As the actual numbers of births during one year could be very low in some of these LSOA’s the initiation has also been mapped by Middle Super Output Area (MSOA) in Figure 19. It is useful to consider these maps in combination when identifying which areas of low initiation may require specialist breastfeeding services.

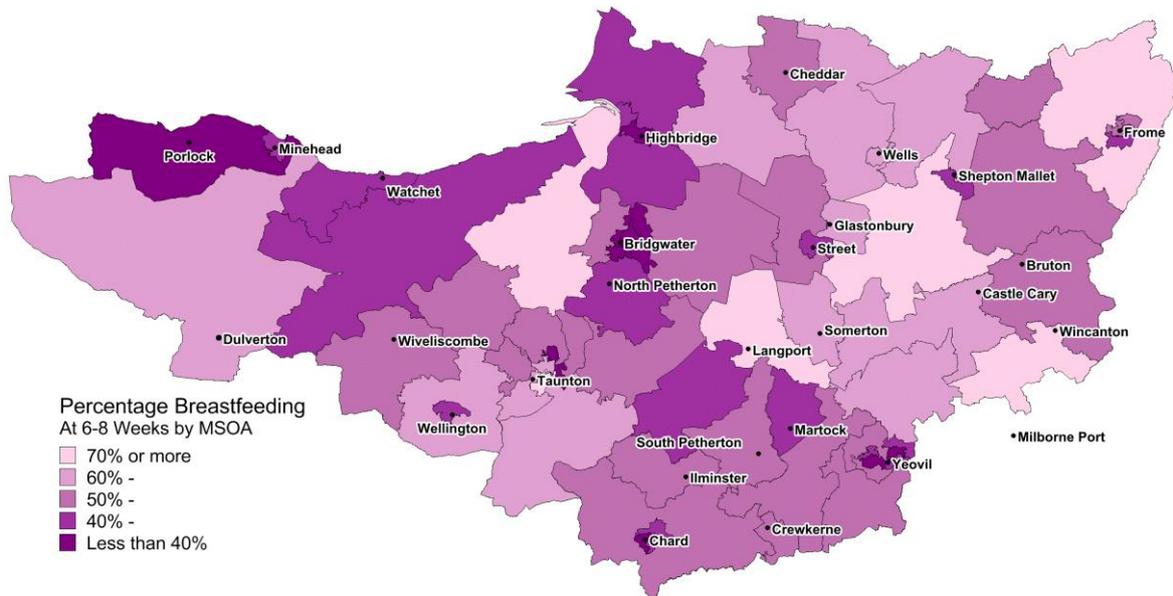
The 10 LSOA’s with the lowest prevalence were all in Sedgemoor with the exception of Frome South and South Somerset West (Appendix A). Prevalence in the major towns of Bridgwater, Frome, Minehead, Taunton and Yeovil are shown in more detail in Appendix C.

Figure 19: Breastfeeding prevalence 6-8 week check by Lower Super Output Area (LSOA)



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Figure 20: Breastfeeding prevalence 6-8 week check by Middle Super Output Area (MSOA)



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2.8.6: Drop off rates from Initiation to Community follow-up

As stated in section 2.8.1, by the time of the Primary Check breastfeeding prevalence (exclusive or partial) had reduced to 60.6% (n=4698). At the 6-8 week check this had reduced further to 49.4% (n=4684). At the three month check prevalence for those seen was 41.29% (n=4618). All these reductions were statistically significant.

Table 1 shows breastfeeding prevalence (exclusive or partial) at various points of professional contact by GP Federation area. The Primary Check typically occurs around day 10-15 with a Health Visitor. Breastfeeding status is also collected by the GP at their 6-8 week contact with a further 3 month follow-up with a Health Visitor for a majority of babies. Table 1 also shows the proportion of breastfeeding women that discontinued by each professional contact (drop-off rate).

Table 1: Breastfeeding prevalence and drop-off by GP federation

GP Federation	Primary Check		Drop-off from Initiation	6-8 Week Check		Drop-off from Primary	3-Month Check		Drop-off from 6-8 W
	Prevalence	CI		Prevalence	CI		Prevalence	CI	
Bridgwater Bay Health	48.37%	(44.98-51.77)	38.70%	37.41%	(34.16-40.75)	22.65%	32.48%	(29.35-35.72)	13.08%
Central Mendip Chard, Crewkerne and Ilminster	64.96%	(55.59-73.55)	20.83%	55.17%	(45.6-64.4)	15.79%	46.02%	(36.6-55.64)	18.75%
East Mendip	60.90%	(56.06-65.58)	25.72%	50.36%	(45.47-55.23)	17.51%	36.67%	(32.04-41.47)	27.36%
North Sedgemoor	66.76%	(61.48-71.75)	19.50%	58.06%	(52.62-63.35)	12.78%	50.29%	(44.85-55.73)	13.64%
South Somerset Healthcare	58.78%	(52.94-68.7)	29.27%	46.94%	(41.12-52.81)	20.69%	37.29%	(31.75-43.08)	20.29%
Taunton Deane	62.84%	(59.69-65.91)	23.99%	49.74%	(46.51-52.96)	21.26%	39.27%	(36.08-42.53)	24.68%
West Mendip	65.14%	(62.29-67.91)	24.49%	53.98%	(51.02-56.91)	17.57%	47.18%	(44.22-50.16)	13.44%
West Somerset	64.01%	(58.19-69.55)	27.45%	57.73%	(51.83-63.48)	9.19%	52.41%	(46.49-58.28)	9.52%
West Somerset	60.38%	(54.21-66.31)	28.89%	45.83%	(39.71-52.05)	24.38%	38.08%	(32.15-44.28)	18.18%

Primary Check

Bridgwater Bay Health area had a significantly lower prevalence of breastfeeding at Primary Check compared to other Federations, as well as the highest proportion of mothers discontinuing breastfeeding (38.7%). The other eight federations had comparable prevalence at the Primary Check however drop off was greater than 25% in all but four federations areas (East Mendip, Central Mendip, Taunton Deane and South Somerset Healthcare).

6-8 Week Check

At the 6-8 Week Check all nine federations had seen further drop off from breastfeeding. Bridgwater Bay Health area continued to have significantly lower breastfeeding prevalence

than other areas. The greatest drop off was seen in Bridgwater Bay Health, South Somerset Healthcare and West Somerset.

3-Month Check

At the 3-Month Check a similar rate and pattern of drop-off occurred across federations although Bridgwater Bay no longer had a significantly lower breastfeeding prevalence at this point. West Mendip, East Mendip and Taunton Deane had the highest prevalence at 3-months.

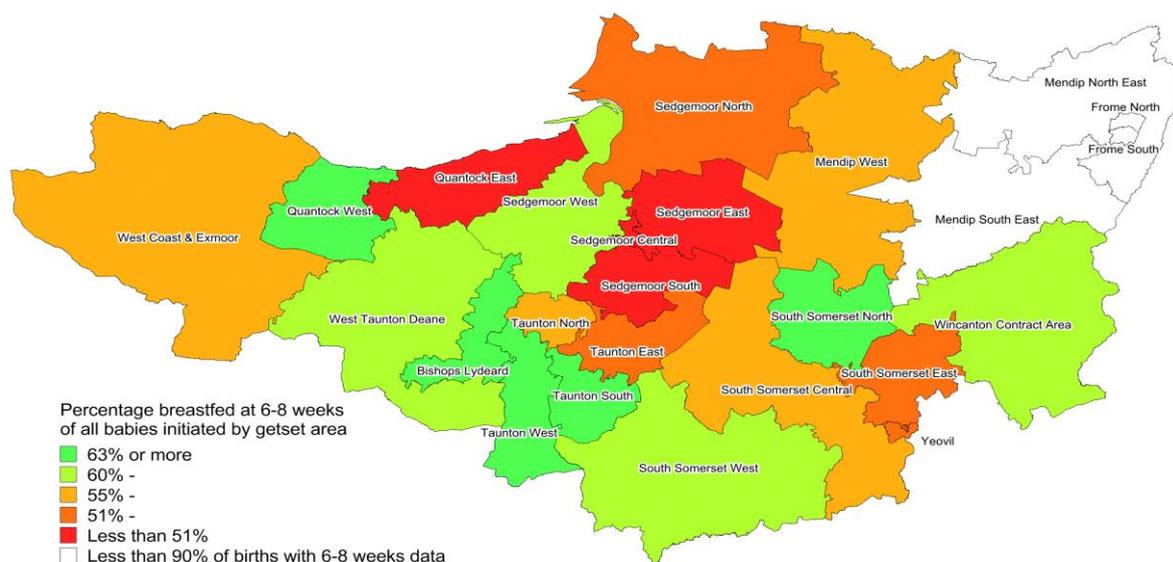
Overall drop-off rate

In terms of overall continuation of breastfeeding from hospital to 3-month community check East Mendip had the highest proportion of mothers still breastfeeding at 3-months (60.1%), followed by West Mendip (59.6%), Central Mendip (54.2%), Taunton Deane (53.9%), South Somerset Healthcare (45.1%), North Sedgemoor (44.7%), Chard, Crewkerne and Ilminster (44.5%), West Somerset (44%) and Bridgwater Bay Health (41.2%).

2.8.7: Drop off by 'getset' catchment area

Figure 21 highlights those 'getset' catchment area where drop-off rates are high. This is useful in prioritising those hubs which may require breastfeeding training and support services. Quantock East, Sedgemoor South, Central and East have the greatest drop-off rates. Mendip is excluded due to incomplete data.

Figure 21: Proportion of women discontinuing breastfeeding by 6-8 week check (drop-off) by 'getset' catchment area (n=4097)

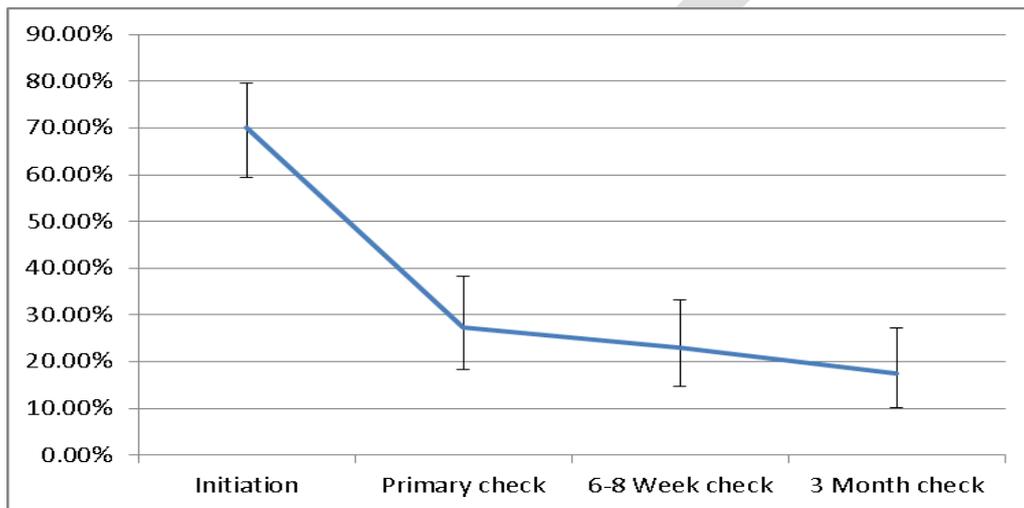


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2.9: Uptake of breastfeeding by young mothers (aged 14-18years)

During the audit period there were 94 births to mothers aged 18 years or less. Figure 22 shows that although a large proportion of teenage mothers initiate breastfeeding (70%) this rapidly drops off by the time of the primary check to under 30%. Only 17% are still breastfeeding at 3 months.

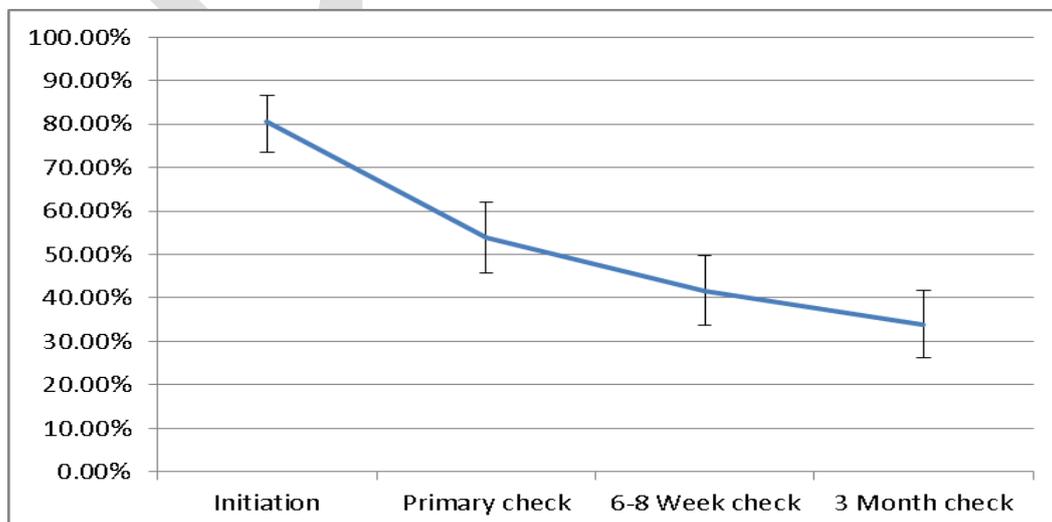
Figure 22: Breastfeeding rates for young mothers (aged 14-18 years) at different professional contacts



2.10: Uptake of breastfeeding in multiple births

During the audit period there were 76 multiple births reported resulting in 154 babies. Figure 23 shows that breastfeeding initiation was 80% but that gradually breastfeeding rates reduce to just over 30% by the 3 month check.

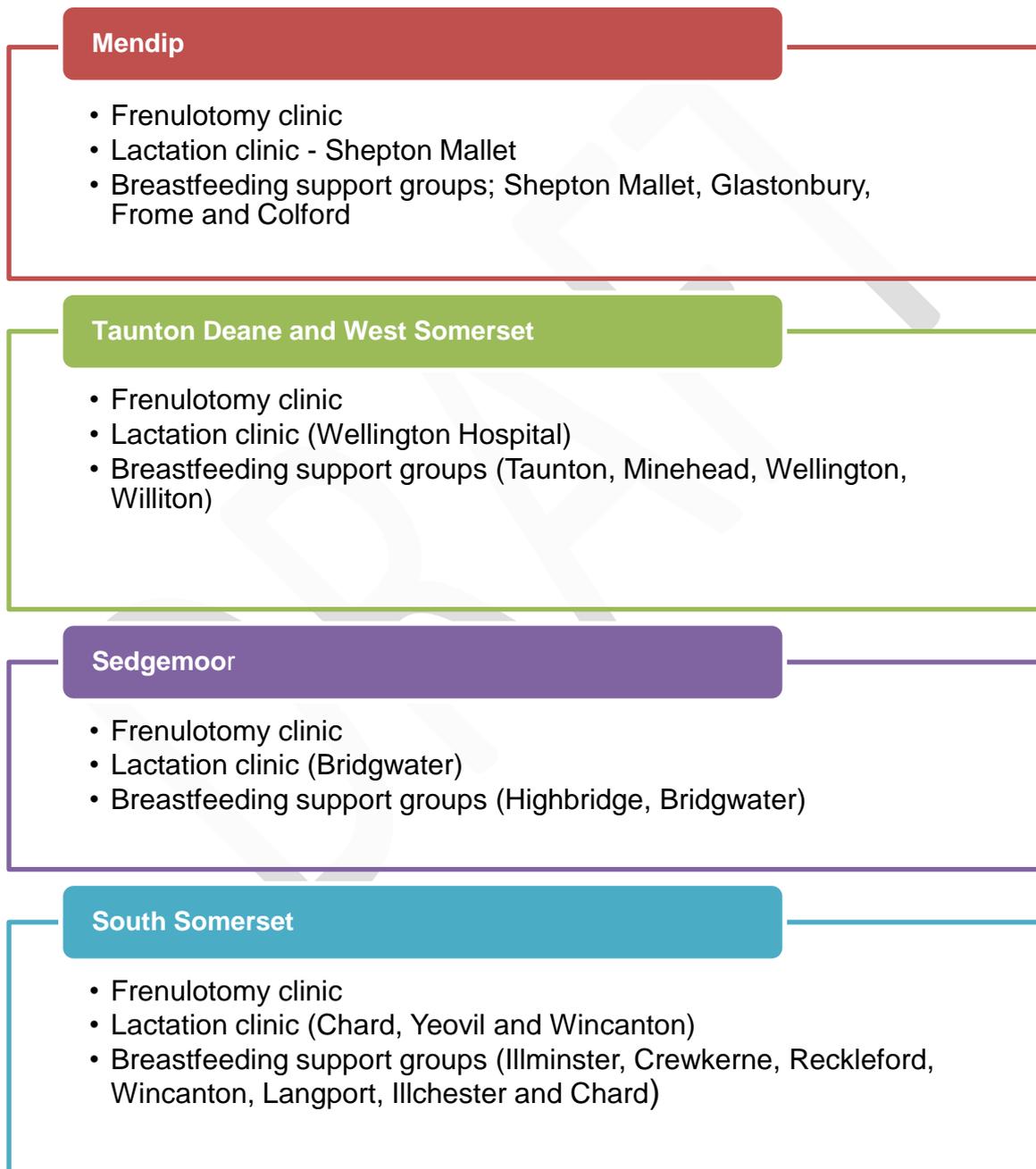
Figure 23: Breastfeeding rates in multiple births at different professional contacts



3. Current infant feeding support services

Somerset Partnership currently co-ordinate and provide Frenulotomy clinics, lactation clinics, breastfeeding trainers and breastfeeding groups across Somerset. Clinics are typically held weekly for up to two hours.

Figure 24: Current breastfeeding support services in Somerset



4. Geographic Segmentation

4.1: Introduction and definitions

'Segmentation' is the process of classifying a population by identifying distinct sub-groups (or segments) that display similar needs, attitudes or behaviours. This is supported by knowledge of psychographic (personal values, beliefs, preferences, behaviours) factors of the population. 'Geodemographics' has been defined as the 'analysis of people by where they live'. This helps to draw general conclusions about the characteristics and behaviours of the people who live in specific geographical areas.

'MOSAIC' is a form of geodemographic segmentation which uses over 850 million pieces of socio-demographic information across 450 different data points to identify 15 summary groups and 66 detailed sub-groups (Appendix D). These classifications can help develop a better understanding of the needs of populations which in turn enables finer targeting of interventions to support behaviour change. These classifications are based on where an individual lives and the main socio-demographic features in that particular geographical area. Therefore there will be cases where the MOSAIC profile isn't applicable. It is only one tool to be used alongside information on need, service provision, expert opinion and individual preference.

4.2: MOSAIC profiling of breastfeeding initiation

By mapping uptake data by MOSAIC category it can help highlight which sub-groups are less likely to initiate breastfeeding and can therefore help with planning interventions to increase uptake. In Somerset the MOSAIC sub-categories with the lowest initiation were all within three particular summary groups; L, M and O.

Category L – Transient renters

Sub-group	Initiation (%)
Disconnected youth Young people endeavouring to gain employment footholds while renting cheap flats and terraces	70% (n=97)
Renting a room Transient renters of low cost accommodation often within subdivided older properties	76% (n=71)
Make do and mend Yet to settle younger singles and couples making interim homes in low cost properties	75% (n=108)

M – Family basics

Sub-group	Initiation (%)
Budget generation Families supporting both adult and younger children where expenditure can often exceed income	68% (n=114)
Families with needs Families with many children living in areas of high deprivation and who need support	61% (n=157)
Solid economy Stable families with children renting better quality homes from social landlords	75% (n=133)

O – Municipal challenge

Sub-group	Initiation (%)
Low income workers Older social renters settled in low value homes in communities where employment is harder to find	63% (n=52)
Hard pressed singles Hard-pressed singles in low cost social flats searching for opportunities	72% (n= 74)

In addition to these three groups there was low initiation in sub group 61 (Vintage Value: Estate Veterans). This sub-group constitutes longstanding elderly renters of social homes who have seen neighbours change to a mix of owners and renters. While this sub-group does not represent the population initiating breastfeeding it is important to recognise that uptake of mothers living in these types of areas is low (71%) and that peer support from other new mothers in these communities could be low.

4.3: MOSAIC profiling of breastfeeding drop-off by 6-8 week check

If the proportion of mothers discontinuing breastfeeding is explored by MOSAIC group the same three categories see the greatest drop-off (L, M and O). However another group, K, also has a drop-off rate of 50% or greater. This suggests that mothers in these areas try to breastfeed but are unable, or choose not to, maintain this by the 6-8 week check. It is important to note that a majority of residents living in these areas will be parents with older children (or children that have moved away). Therefore the MOSAIC description for group K may be indicative of the community around new parents rather than the new parents themselves.

K – Modest traditions

Sub-group	Initiation (%)
Self-supporters Hard-working mature singles who own budget terraces manageable within their modest wage	56% (n=50)
Offspring overspill Lower income owners whose older children are still striving to gain independence meaning space is limited	50% (n=112)

L – Transient renters

Sub-group	Initiation (%)
Disconnected youth Young people endeavouring to gain employment footholds while renting cheap flats and terraces	65% (n=68)
Make do and mend Yet to settle younger singles and couples making interim homes in low cost properties	56% (n=81)

M – Family basics

Sub-group	Initiation (%)
Budget generation Families supporting both adult and younger children where expenditure can often exceed income	52% (n=77)
Childcare squeeze Younger families with children who own a budget home and are striving to cover all expenses	56% (n=90)
Families with needs Families with many children living in areas of high deprivation and who need support	65% (n=95)
Solid economy Stable families with children renting better quality homes from social landlords	58% (n=99)

O – Municipal challenge

Sub-group	Initiation (%)
Low income workers Older social renters settled in low value homes in communities where employment is harder to find	73% (n=33)
Hard pressed singles Hard-pressed singles in low cost social flats searching for opportunities	62% (n=53)

K (Modest traditions): Mature homeowners of value homes enjoying stable lifestyles

- Who are we?

People living in these areas are typically older homeowners with a moderate income (20-39K). Children living in the community may be older. Extended family typically does not live in the household.



- Use technology but won't pay a premium for it (early majority)
- Likely to have college level education
- Preferred method of contact is letter or phone
- Use the internet and email most days (less likely to use facebook or twitter)
- Likely to contact GP or health professional for health advice
- Less likely to research health issues (e.g. websites), might use books or leaflets

L (Transient renters): Single people privately renting low cost homes for the short term – who are we?

People living in these areas are typically young and on low to moderate income (20-29K). The proportion of people with children in the community is typically low for those 'renting a room' but higher in the 'disconnected youth' sub-group.

- Love technology, always get the latest gadgets (early adopters)
- Preferred method of contact is SMS, then mobile
- Likely to use NHS helplines and websites for health advice
- Likely to have secondary school level education
- 75% access the internet daily
- Regularly use facebook or twitter (more so than email)



M (Family basics): Families with limited resources who budget to make ends meet

- Who are we?

People living in these areas are typically in their mid-20's-30's and on very low income (<15K). The proportion of children and families living in the community is high. Extended family will often be a part of the household. Families can often be large.



- Love technology, always get the latest gadgets (early adopters)
- Preferred method of contact is SMS, then mobile
- Likely to use NHS helplines and websites for health advice
- Likely to have secondary school level education
- 70% access the internet daily
- Regularly use facebook, sometimes twitter (more so than email)
- Extended family often live nearby or within home

O (Municipal challenge): Urban renters of social housing facing an array of challenges

- Who are we?

People living in these areas will typically be older than in groups L and M. Income will be very low (<15K) and residents will typically rent or live in social housing. The proportion of children in the community can be low. Typically extended family do not live in the household.

- Love technology, always want the latest gadgets (early adopters), however not heavy users of the internet
- Preferred method of contact is telephone over SMS or letter
- Likely to contact GP or health professional for health advice
- Likely to have secondary school level education
- Unlikely to research health issues



5. Data methodology and limitations

5.1: Methodology

To forms the second step of the HEA for this report the following information was required from acute and community providers:

Infant feeding status;

- Within first 48hours
- Discharge from Hospital
- Discharge from midwife (this information was not collected as not electronically recorded)
- Primary visit (HV)
- 6-8 Weeks check
- 3 Month check
- Reason for not initiating breastfeeding or discontinuing breast feeding where documented

Maternal characteristics;

- Age
- Ethnicity
- Lower Super Output Area of residence
- GP Surgery
- Gravidity

5.2: Data collection

NHS England data for initiation and prevalence were used for the analysis of trends and comparison with national averages. Data is available from http://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2014/03/Breastfeeding-1314-Revised-Data_v4.pdf

For local raw data local acute trusts with maternity services were approached through email and phone and requested to supply information on all births during the audit period as well as a list of maternal characteristics (as 6.1). All trusts approached were willing to share information. A data sharing protocol was required by the sole community provider. This was developed and signed by both organisations.

5.3: Data anonymisation

Characteristics such as maternal and child NHS numbers and home postcode were required to link hospital and community records and analyse uptake by deprivation and geography.

To ensure that this could occur without sharing patient identifiable information an anonymisation protocol was developed. One lead data analyst applied a calculation to the NHS numbers which he shared with the other trust analysts. This ensured that the identifier would match across records without those external to the core analyst group being able to identify the NHS number. All provider analysts applied a VLOOKUP to convert home postcode to Lower Super Output Area and MOSAIC profile code. The report author was not informed of the pseudonymisation process and only received a non-identifiable dataset.

5.4: Data analysis and limitations

5.4.1: Data matching and missing data

Where data, such as ethnicity or GP, was missing the denominator was adjusted and the record excluded from analysis ('n' is stated in all figures).

Initiation

There is no national record of Somerset 'resident' births, only Somerset CCG registered births. Therefore community health visiting dataset was used as an estimate of total Somerset births. This could contain a number of Somerset resident babies who moved to the county after birth (therefore no hospital record will be found locally)

The Health Visitor database reported 5613 births to mothers living in Somerset while the four main acute trusts that supplied data found records of 4995 births to Somerset residents. The audit of hospital data consists of 89% of the possible total number of births to Somerset residents during the audit period. This is a high proportion and therefore the findings are likely to generalisable across the county.

Assuming that the Health Visitor dataset is correct this would mean that there were approximately 600 births that occurred in hospitals other than the four included in the audit. It is not know where these occurred but they are likely to be in Bristol, Exeter, Dorset or Wiltshire. Given the location of the 600 records (primarily Mendip) it is feasible that the data supplied by the main acute trust serving Mendip (Royal United Hospitals Bath) was incomplete. The data provided by RUH was from an archive held with the commissioning

organisation at the time of audit. The hospital is now commissioned by another organisation and it was not possible to interrogate the current database.

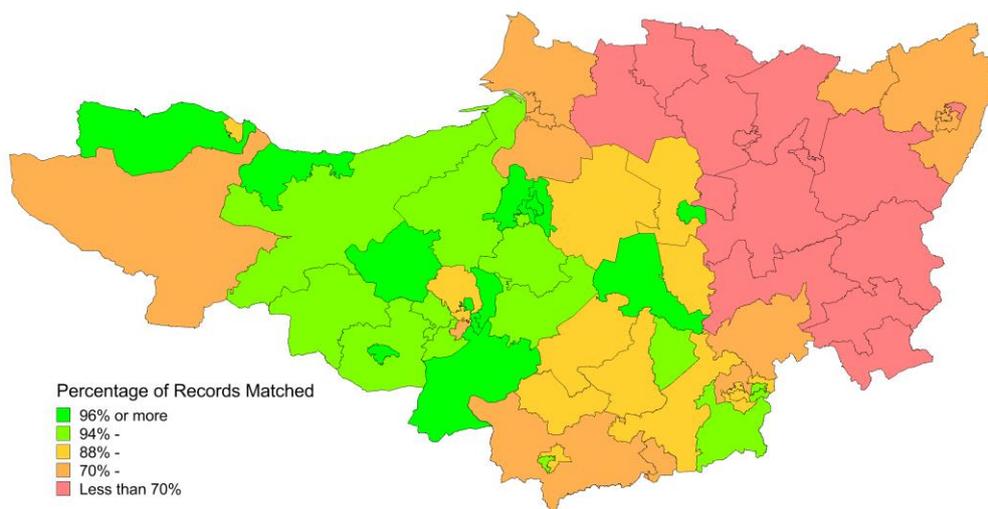
Prevalence

The 4995 records from the acute trust were linked with the community health visitor data set to follow the patient journey. 4724 records linked (84% of the total resident births). Records from the hospitals were linked to the Somerset Partnership dataset using a pseudonymised ID. In cases where the pseudonymised ID did not have a match the records were linked using location, date of birth and maternal GP Practice. Any records which were linked to no records or multiple records were excluded from the results.

165 hospital records (2%) had no associated community data and are therefore excluded from the community analysis. All these births were in Royal United Hospitals NHS Foundation Trust and therefore also likely to be resident in Mendip.

Unlinked community records were mapped (see Figure 25). Most unlinked cases lived in Mendip and South Somerset, suggesting that births occurred in Bristol, Dorset and Wiltshire. Some caution needs to be taken when generalising the findings of this audit to the MSOA areas where less than 70% of the total births are represented in the audit (Red). Data completeness in other areas (green-orange) is good.

Figure 25: Percentage of health visitor records matched with hospital birth records



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6. Key findings and recommendations

Breastfeeding initiation: Key findings

- Average breastfeeding initiation by Somerset residents was 82.5%
- The proportion initiating breastfeeding was lowest in under 24 year olds (<71%) and increased significantly in over 29 year olds (>89%) (section 2.7.2)
- Breastfeeding initiation was lowest in Sedgemoor district (79%). When explored at a smaller geographical level it is clear that there are multiple areas with lower uptake across the county (section 2.7.3)
- Breastfeeding initiation was found to be significantly associated with deprivation (section 2.7.4)
- First time mothers were more likely to breastfeed. Initiation reduced with subsequent births (section 2.7.5)
- Initiation was comparable when analysed by GP federation area although initiation in 'Bridgwater Bay Health' is below 80%. (Section 2.7.8)
- Initiation varied by 'getset' catchment area. The lowest initiation was found in 'Taunton East' and 'Sedgemoor Central' catchment areas. 'Bishops Lydeard', 'Quantock East', 'Sedgemoor East', 'Sedgemoor South' also have initiation of 75% or lower. The highest initiation was in the 'Wincanton Contract Area' (section 2.7.9).
- For those that initiated breastfeeding in hospital an average of 10% stopped all breastfeeding before they were discharged. Age was significantly associated with stopping breastfeeding. For mothers under 29 years of age the proportion discontinuing breastfeeding prior to discharge was >10% (section 2.7.9)

Breastfeeding prevalence: Key findings

- 81.5% of mothers were breastfeeding on discharge from Hospital. By their Primary Check with a health Visitor this had reduced to 60.6%. At the 6-8 week check this had reduced further to 49.4% and at the three month check this was 41.29% (section 2.8.1)
- As with breastfeeding initiation high breastfeeding prevalence was associated with increasing age and decreasing deprivation (section 2.8.2)
- At a district level prevalence of breastfeeding at 6-8 weeks was lowest in Sedgemoor. When explored at a smaller geographical area the 10 LSOA's with the

lowest prevalence were all in Sedgemoor, with the exception of Frome South and South Somerset West (Section 2.8.5)

- When prevalence was explored by GP federation there was significant variation. Prevalence ranged from 37.4% in 'Bridgwater Bay Health' to 58.1% in 'East Mendip' (section 2.8.3).
- When explored by 'getset' catchment areas prevalence at 6-8 weeks was lowest in 'Quantock East' and 'Sedgemoor East' catchment areas. The 'West Coast and Exmoor', 'Quantock West', 'Sedgemoor North and South', 'Taunton North and East' and 'South Somerset East' all had breastfeeding prevalence at 6-8 weeks of less than 50%. The highest prevalence was seen in the 'Wincanton Contract Area', 'South Somerset North', 'Taunton West' and 'Mendip North East' (section 2.8.4)
- Bridgwater Bay Health area had a significantly lower prevalence of breastfeeding at Primary Check, as well as the highest drop off rate (Section 2.8.5)

Drop-off rates: Key findings

- In terms of overall continuation of breastfeeding, from hospital to 3-month community check, East Mendip had the highest proportion of mothers still breastfeeding at 3-months (60.1%), followed by West Mendip (59.6%), Central Mendip (54.2%), and Taunton Deane (53.9%) (section 2.8.6)
- Drop-off from initiation to primary check was greater than 25% in five of the nine federations (Bridgwater Bay health, North Sedgemoor, South Somerset Healthcare, West Mendip and West Somerset) (section 2.8.6)
- At the 6-8 Week Check the greatest drop off from primary visit was seen in Bridgwater Bay Health, South Somerset Healthcare and West Somerset (section 2.8.6)
- At the 3-Month Check a similar rate and pattern of drop-off occurred across federations, although 'Bridgwater Bay' did not have significantly lower breastfeeding prevalence at this point. 'West Mendip', 'East Mendip' and 'Taunton Deane' had the highest prevalence at 3-months (section 2.8.6)
- When drop-off from initiation to 6-8 week check is explored by 'getset' catchment area 'Quantock East, Sedgemoor South, Central and East have the greatest drop-off rates(section 2.8.7)
- Exploration of breastfeeding rates for young mothers (aged 14-18 years) shows that breastfeeding rates drop rapidly after initiation (prior to their primary visits by a health visitor)

MOSAIC: Key findings

- In Somerset the MOSAIC sub-categories with the lowest initiation were 'Transient renters', 'Municipal Challenge' and 'Family values'. These groups, in addition to the those in sub-group 'Modest traditions' were also less likely to maintain breastfeeding (section 4.2)

Recommendations: Data

- Trusts agree a common set of data to be routinely reported to ensure complete information is available for subsequent audits. Reported data should routinely include maternal characteristics, location of birth, and breastfeeding status at; initiation, discharge from midwife, primary visit, 6-8 week and 3-month check. For babies that are transferred to NICU, feeding type should be collected for initiation and discharge
- Reason for discontinuing breastfeeding should be routinely collected at all community visits to help understand local barriers to breastfeeding and inform service planning. An audit of paper notes and/or discussion with parents and professional should be conducted to help inform the local strategy (in the absence of routinely collected qualitative information)
- An audit of community data should take place to identify which hospitals (aside of the four included in this audit) have significant numbers of Somerset resident maternities. This is to ensure that they are included in any subsequent audits and enable a greater proportion of patient journeys to be included in analysis

Recommendations: Reducing inequalities

- Evidence for increasing uptake of breastfeeding in younger adults (29 years and younger), those with multiple children and those in more deprived areas should be reviewed to inform local strategy development
- Breastfeeding strategy should be informed by the varying communication preferences of the four main MOSAIC groups with low initiation and high drop-off from breastfeeding. This is in addition to ensuring that the services that are currently effective are maintained
- Use findings on initiation, prevalence and drop-off by geographical location, 'getset' catchment area and GP federations to identify the most appropriate locations for professional breastfeeding support services and community peer support

interventions. This is to ensure that needs and demand for breastfeeding support matches service provision. Appears to be high need in Sedgemoor but few groups running.

- The use of social networks and virtual communities should be considered to ensure that access to breastfeeding support is maximised and appropriate to communication preferences
- Finally, the use of social marketing and targeted incentives for breastfeeding should be considered

DRAFT

Appendix A: Lower Super Output Areas (LSOA) with lowest initiation and/or prevalence

Table 2: Lowest initiation by LSOA (top 10)

LSOA	GetSet Area	Breastfeeding at Initiation
E01029293	Taunton East	52%
E01029106	Sedgemoor East	55%
E01029109	Sedgemoor Central	57%
E01029237	South Somerset East	59%
E01029038	Frome South	61%
E01029116	Sedgemoor North	62%
E01029107	Sedgemoor Central	63%
E01029311	West Taunton Deane	63%
E01029249	South Somerset Central	64%
E01029097	Sedgemoor South	64%

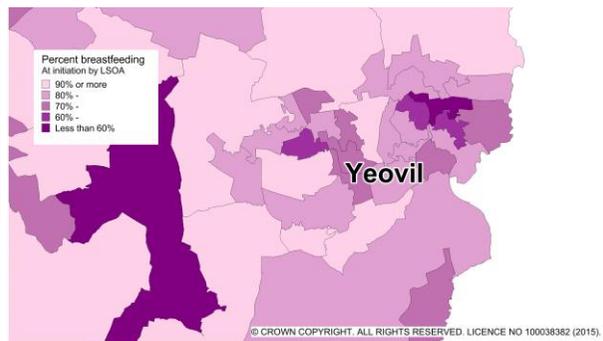
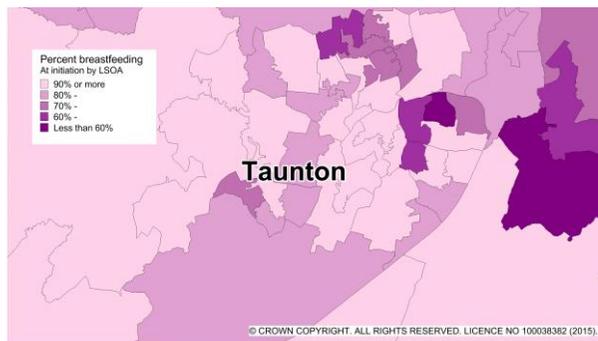
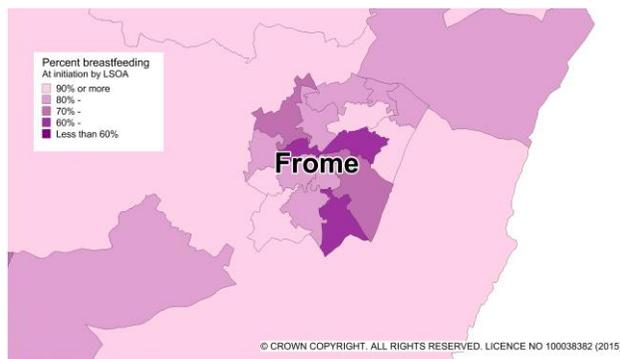
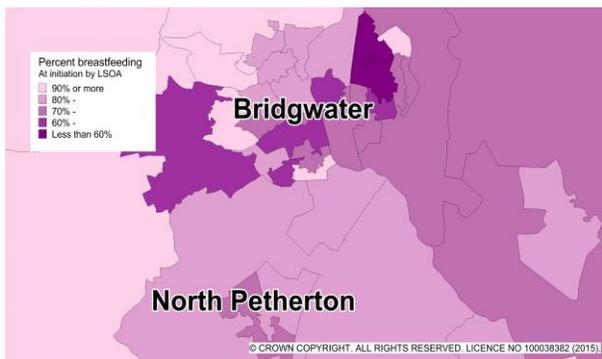
*excludes all LSOA's with 5 babies or less being breastfed.

Table 3: Lowest prevalence by LSOA (top 10)

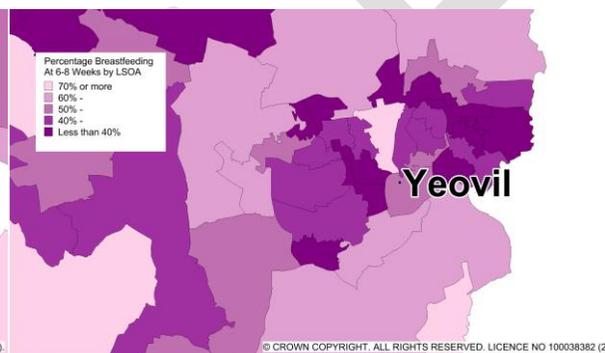
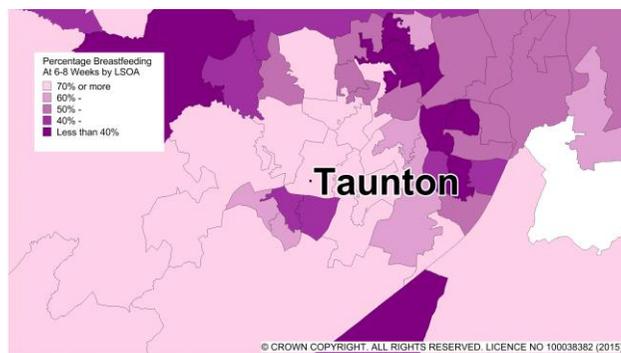
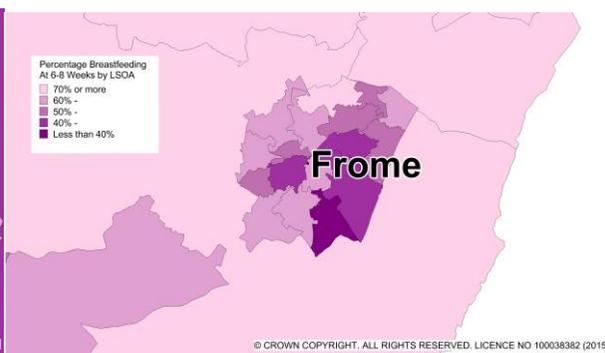
LSOA	GetSet Area	Breastfeeding at 6-8 Weeks
E01029090	Sedgemoor East	23%
E01029097	Sedgemoor South	24%
E01029237	South Somerset East	26%
E01032629	Sedgemoor South	26%
E01029093	Sedgemoor East	27%
E01029131	Sedgemoor North	27%
E01029108	Sedgemoor Central	27%
E01029038	Frome South	29%
E01029100	Sedgemoor South	29%
E01029175	South Somerset West	31%

*excludes all LSOA's with 5 babies or less being breastfed.

Appendix B: Breastfeeding initiation by LSOA (major towns)



Appendix C: Breastfeeding prevalence at 6-8 weeks (major towns)



Appendix D: MOSAIC profiling main groups

A. Country Living	Well-off owners in rural locations enjoying the benefits of rural life.
B. Prestige Positions	Established families in large detached homes living upmarket lifestyles
C. City Prosperity	High status city dwellers living in central locations and pursuing careers with high rewards
D. Domestic Success	Thriving families who are busy bringing up children and following careers
E. Suburban Stability	Mature suburban owners living settled lives in mid-range housing
F. Senior Security	Elderly people with assets who are enjoying a comfortable retirement
G. Rural Reality	Households living in inexpensive homes in village communities
H. Aspiring Homemakers	Younger households settling down in housing priced within their means
I. Urban Cohesion	Residents of settled urban communities with a strong sense of identity
J. Rental Hubs	Educated young people privately renting in urban neighbourhoods
K. Modest Traditions	Mature homeowners of value homes enjoying stable lifestyles
L. Transient Renters	Single people privately renting low cost homes for the short term
M. Family Basics	Families with limited resources who have to budget to make ends meet
N. Vintage Value	Elderly people reliant on support to meet financial or practical needs
O. Municipal Challenge	Urban renters of social housing facing an array of challenges

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