

Breastfeeding at 6-8 weeks in East Sussex, 2012/13

Executive Summary

Key findings

Since 2008/09 the recording of babies' breastfeeding status at 6-8 weeks has improved in East Sussex from about 80% to over 95%. The prevalence of breastfeeding amongst all eligible babies has risen as a result of increased coverage. However, the prevalence of breastfeeding amongst babies of known status has hardly changed.

The East Sussex PCTs are amongst the middle ranking PCTs in the South East Coast Strategic Health Authority (SHA) for prevalences of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status). The breastfeeding prevalence in East Sussex Downs and Weald (ESDW) PCT (54%) is significantly higher than the England average (49%) whereas the prevalence in Hastings and Rother (H&R) PCT (45%) is significantly lower. Remarkably, Brighton and Hove PCT reports a much higher prevalence (73%) than the East Sussex PCTs.

Within East Sussex there are differences in the coverage and prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) according to demographic factors such as electoral ward, Children's Centre and place of birth. Demographic findings of note are:

- Younger mothers were much less likely to be breastfeeding at 6-8 weeks than older mothers.
Less than one in five babies with teenage mothers, and one in three with mothers aged 20-24, were breastfed, compared to over 60% of babies with mothers aged over 30.
- Even if they lived in less deprived areas, younger mothers were less likely to breastfeed than older mothers.
- The percentage of infants that were breastfed was about 1.5 times higher for infants living in the quintile of East Sussex SOAs with the lowest percentages of children living in low-income families than in the quintile with the highest percentages (the most deprived quintile).
- The prevalence of breastfeeding was significantly lower for babies of White British ethnicity than for babies of all other ethnic groups.

Comparisons of breastfeeding initiation rates and the prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) revealed that:

- Younger mothers were somewhat less likely to initiate, but much less likely to continue, breastfeeding (for 6-8 weeks) than older mothers.
- Area deprivation also impacted on breastfeeding initiation and continuation.
- The Conquest Hospital, Eastbourne District General Hospital (Eastbourne DGH) and the Royal Sussex County Hospital (RSCH) had

the highest proportions of younger mothers and mothers from more deprived areas, which may help explain the substantially lower prevalences of breastfeeding at 6-8 weeks for babies born at these hospitals than the others.

- Although Brighton and Hove PCT reported a high prevalence of breastfeeding at 6-8 weeks, a similar proportion of babies born to East Sussex mothers at the RSCH (in Brighton) initiated breastfeeding, and were breastfeeding at 6-8 weeks, as those born at Eastbourne DGH and at the Conquest Hospital.

Previously we recommended [see Breastfeeding at 6-8 weeks in East Sussex, 2009/10. East Sussex Public Health Directorate (2010)] that, in addition to the breastfeeding status at 6-8 weeks, the breastfeeding initiation status should also be recorded on children's records held on the East Sussex Child Health Information Systems (CHISs). However, the data is not recorded in the same way by each of the main maternity units, only about three-quarters of it is being sent to and/or recorded on the community health systems and different data entry protocols are being used on the two systems.

Recommendations

As the proportions of mothers in East Sussex (of known breastfeeding status) that are still breastfeeding their babies at age 6-8 weeks are not increasing, strategies are needed to encourage initiation and continuation of breastfeeding.

Mothers in their twenties as well as teenage mothers could benefit from more intensive breastfeeding support.

Consistent entry of standardised maternity unit data on breastfeeding initiation on the East Sussex child health systems is needed. This will enable the analysis of breastfeeding initiation and continuation rates for different groups of babies and can inform the targeting and effectiveness of interventions aimed at encouraging breastfeeding.

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Background

Breastfeeding has positive health benefits for both mother and baby in the short and long term, and the longer the duration of breastfeeding the greater the health benefits (World Health Organization, 2000).

However in 2000 the UK had one of the lowest breastfeeding rates worldwide and ranked the second lowest among 32 countries in the WHO European Region, with a breastfeeding rate at 6 months of 21% (World Health Organization, 2005). Despite a modest increase to 26% by 2005, breastfeeding rates in the UK were still among the lowest in Europe (the Infant Feeding Survey, 2005). According to the Infant Feeding Survey - UK, 2010, In 2010 81% of UK mothers initiated breastfeeding compared to 76% in 2005. However, only 55% of mothers were still breastfeeding at six weeks and 34% at six months. The prevalence of breastfeeding was highest among mothers from managerial and professional occupations, those with the highest educational levels, those aged 30 and over, those from the least deprived areas and those from minority ethnic groups.

The Acheson report on health inequalities (1998) highlighted breastfeeding as a strong indicator of social inequalities, and this has since been confirmed (for example see the Infant Feeding Surveys, 2005 and 2010). The NHS Priorities and Planning Framework set a target to increase breastfeeding initiation rates by two percentage points per year, focusing particularly on women in deprived groups. The aim was to reduce the gap in breastfeeding rates between women in the more and less deprived groups. All PCTs now report the prevalence of breastfeeding at 6-8 weeks from birth as part of Integrated Performance Measures Monitoring (previously 'Vital Signs' monitoring). The importance of improving the rates of breastfeeding at 6-8 weeks is also highlighted in the East Sussex Children and Young People's Plan.

It is important to note that PCTs are required to report the percentage of **all eligible** babies that are breastfed at 6-8 weeks. Therefore the figure reported depends not only on the proportion of babies that are breastfed but also on the proportion whose breastfeeding status is recorded (the coverage of recording). For example, if 60 out of 100 babies have a breastfeeding status recorded and 40 of them are breastfed, this means that although two thirds of those of known status are breastfed (40 out of 60 babies), the prevalence amongst all eligible babies is only 40% (40 out of the 100 babies).

PCTs are monitored on both the coverage and prevalence of breastfeeding at 6-8 weeks **amongst eligible babies**. The Department of Health data for 2012/13 and for the previous 3 years is shown in Table 1. All PCTs are expected to exceed a 95% coverage target. No specific prevalence targets were set for 2012/13 but the change in prevalence compared to the previous year can be monitored. Outcomes for each quarter as well as for the year overall are presented.

Table 1: Coverage and prevalence of breastfeeding at 6-8 weeks amongst eligible babies

	ESDW PCT		H&R PCT		East Sussex	
	% coverage (target = 95.0%)	% prevalence	% coverage (target = 95.0%)	% prevalence	% coverage (target = 95.0%)	% prevalence
Quarter 1	95.3	49.3	96.0	48.9	95.5	49.1
Quarter 2	96.5	53.7	97.4	43.2	96.8	50.0
Quarter 3	96.7	53.1	99.4	41.6	97.7	49.1
Quarter 4	95.1	49.6	97.5	43.2	95.9	47.3
2012/13	95.9	51.4	97.6	44.2	96.5	48.9
2011/12	97.3	50.2	97.7	44.0	97.4	48.0
2010/11	94.7	49.3	95.5	43.2	95.0	47.1
2009/10	91.5	48.8	89.8	41.4	90.9	46.2

Source: DoH, 2010-2013

In 2012/13

- both PCTs exceeded the 95% coverage target. However coverage was lower in Q1 and Q4 than Q2 and Q3. Coverage was also lower in 2012/13, particularly in ESDW PCT, than in 2011/12.
- both PCTs exceeded the 2011/12 prevalences of breastfeeding at 6-8 weeks amongst all eligible babies.

Data and technical information

In this report, data on the 'coverage' and 'prevalence' of breastfeeding at 6–8 weeks from birth is analysed for ESDW PCT and H&R PCT for the year April 2012 to March 2013 (2012/13). Data was extracted from the East Sussex CHISs in September 2013. Records were rigorously cleaned to mitigate for changes in address, health visitor or GP practice that occurred after the baby was 6 weeks old. Some details may therefore differ slightly to those used for the Q1-Q4 Integrated Performance Measures Monitoring submissions for 2012/13. Breastfeeding initiation data for 2012/13 was provided by the maternity units. Some maternity units recorded this activity under the heading

breastfeeding intention. We assume, but do not have confirmation, that the recorded data reflects breastfeeding initiation, not just an intention to breastfeed.

Some charts and tables include 95% confidence intervals. This confidence interval is the range within which we can be 95% certain that the true value lies. For areas/groups to have statistically significant differences (for example, in the prevalence of breastfeeding), their confidence intervals must not overlap. Smaller areas/groups will have wider confidence intervals because they contain smaller numbers of individuals.

Super output areas (SOAs) are sub-ward level areas with, on average, a population of about 1,600 people. East Sussex has 329 SOAs contained within its 101 wards. SOAs facilitate the identification of small pockets of deprivation. The percentage of children living in low-income households in each SOA (or ward) is used as a measure of area deprivation (see the HM Revenue & Customs website: <http://www.hmrc.gov.uk/statistics/child-poverty-stats.htm> and the accompanying HMRC publication: Children in Low-Income Families Local Measure – 2011). SOAs (or wards) can be grouped according to which quintile (or fifth) they rank in within East Sussex for the percentage of children living in low-income families. (Quintile 1 covers the fifth of SOAs [or wards] in East Sussex with the highest percentages of children living in low-income families.) Note however that different children living within the same SOA may experience different levels of income deprivation, so the percentage of children living in low-income families in any SOA cannot be used to deduce individuals' circumstances.

Figure 1 shows the electoral wards that rank in each deprivation quintile within East Sussex. A map serving as a key to identifying wards in East Sussex is provided in the Appendix.

Rural isolation is another factor that potentially impacts on service delivery in East Sussex. A map showing the 2011 Rural/Urban classification of SOAs within East Sussex is therefore also included (Figure 2). However, unlike area deprivation, the data reported here have not been analysed further by rural/urban typology.

Figure 1: Map of wards ranking in each East Sussex quintile for the percentage of children living in low-income families

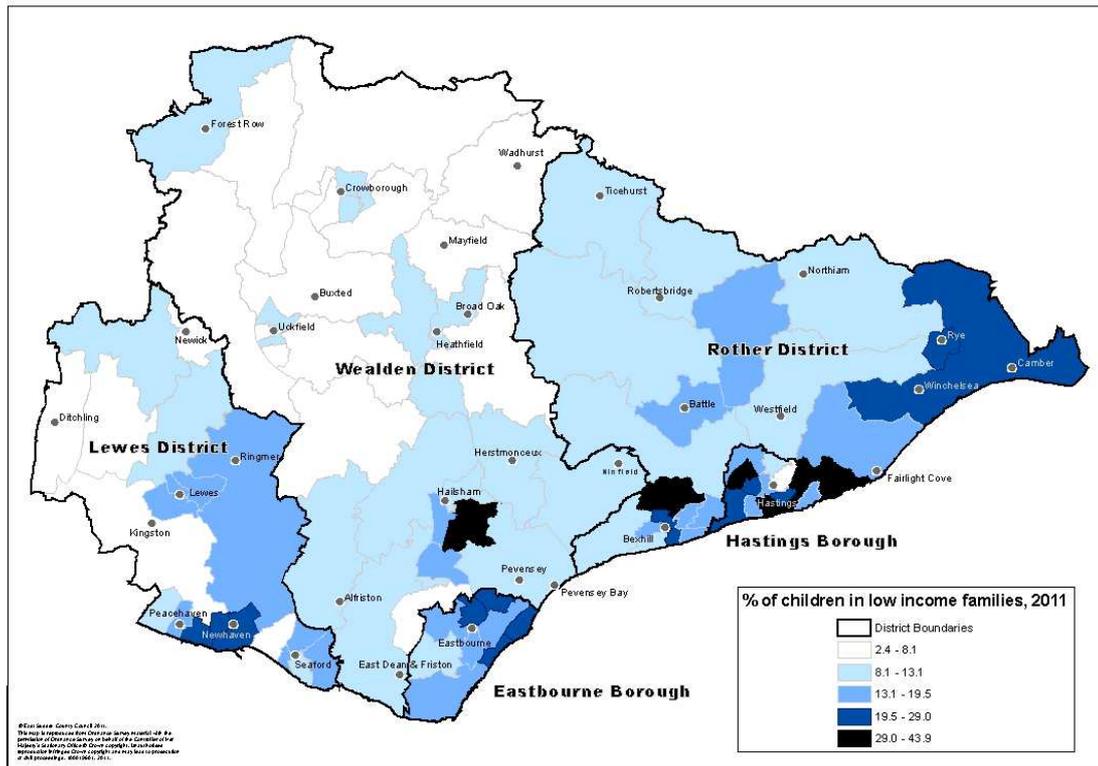
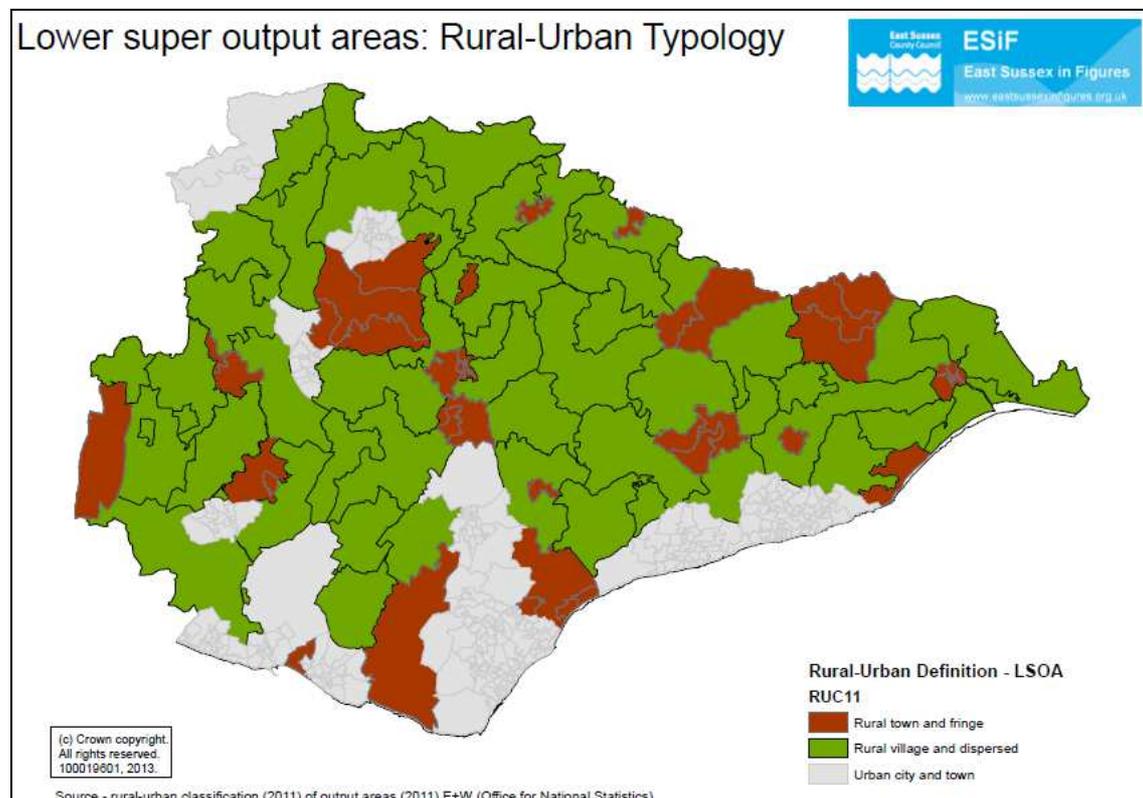


Figure 2: Map of East Sussex showing the Rural/Urban classification of SOAs, 2011



Findings

In Figure 3 the outcomes for the East Sussex PCTs for the last four financial years are compared to those for England. In each case the % coverage and the % of eligible babies that were breastfed increased between 2009/10 and 2012/13. However, overall, since 2009/10, the prevalence of breastfeeding amongst babies of known status has not changed in England (49.2% in both 2009/10 and 2012/13), has increased very slightly in East Sussex Downs and Weald PCT (from 53.4% to 53.6%) and fallen slightly in Hastings and Rother PCT (a decrease from 46.1% to 45.3%). These findings suggest that the increased prevalence of breastfeeding amongst eligible babies (Table 1) simply reflects the increased recording of breastfeeding status.

As recording of babies' breastfeeding status is close to 100% there is little scope for increasing the proportion of eligible babies that are breastfed by further increasing the coverage. Achieving higher levels of breastfeeding at 6-8 weeks amongst all eligible babies will require implementing actions that leverage an increase in the actual proportion of babies that are breastfed.

East Sussex in context

In Table 2 Department of Health data on breastfeeding initiation and breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) in 2012/13 is summarised by SHA.

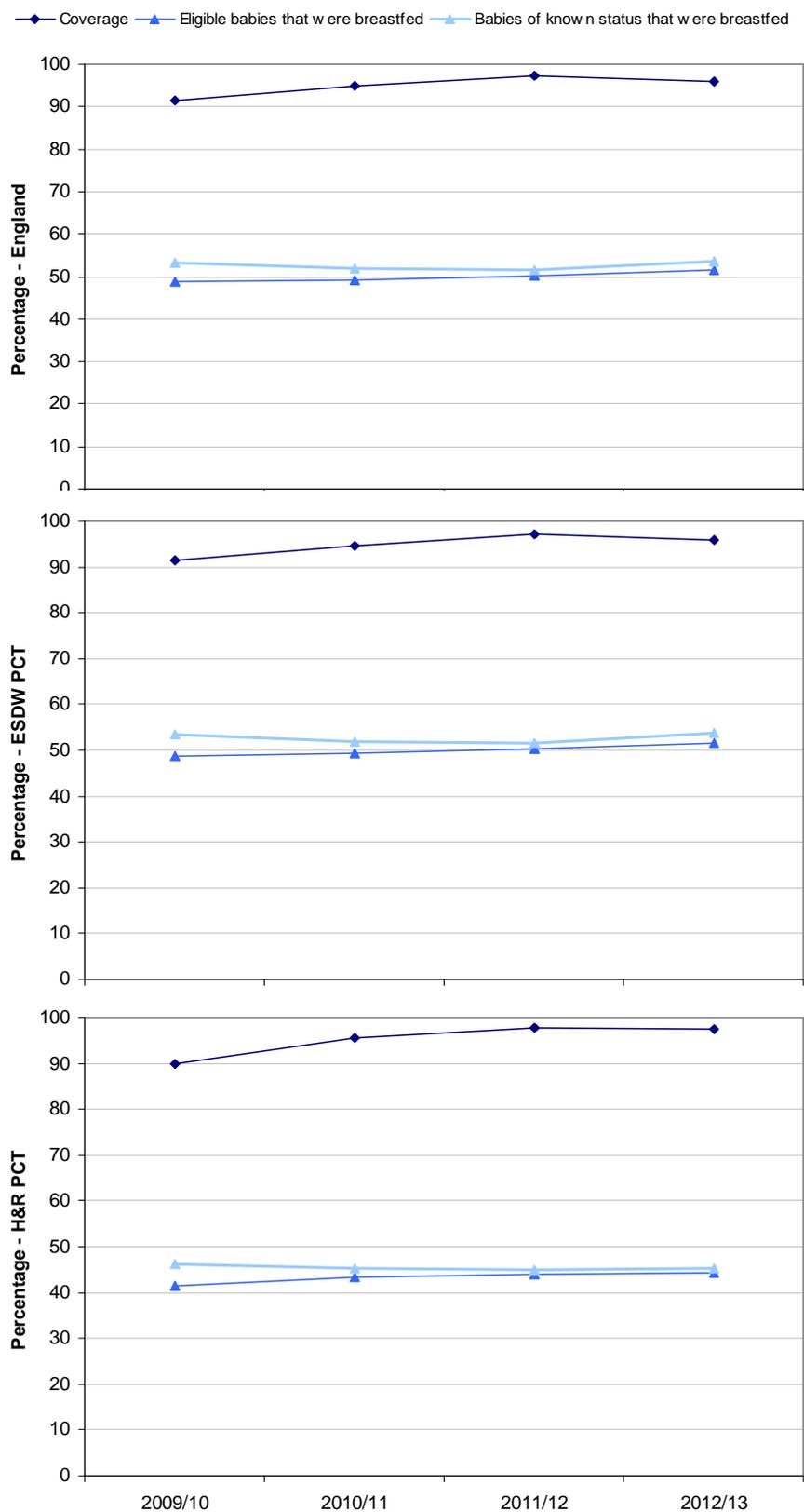
Table 2: Breastfeeding initiation and breastfeeding at 6-8 weeks by Strategic Health Authority, 2012/13

Strategic Health Authority	Percentage of babies (of known status) initiating breastfeeding	Percentage of babies (of known status) that were breastfed at age 6-8 weeks
London	87.6	71.5
South Central	78.5	53.0
South East Coast	78.9	51.7
South West	78.8	50.6
East of England	76.5	48.5
East Midlands	73.0	43.5
West Midlands	68.4	42.1
Yorkshire & Humber	68.4	40.5
North West	62.8	35.1
North East	59.5	31.7
England	74.6	49.2

SHAs are ordered by decreasing prevalence of breastfeeding at 6-8 weeks

Table 2 shows that, amongst babies of known breastfeeding status, a substantially higher percentage of those in London initiated breastfeeding, and were breastfed at 6-8 weeks, than in any other SHA. The data reveals a north-south divide, with the highest prevalences of breastfeeding in London and the SHAs in the south of England and the lowest prevalences in the north of the country. Only London and the three southern SHAs have higher prevalences of breastfeeding at 6-8 weeks than the national average.

Figure 3: Trends in the coverage and prevalence of breastfeeding at 6-8 weeks, 2009/10 to 2012/13



In Figure 4 the incidence of breastfeeding initiation and prevalence of breastfeeding at 6-8 weeks (amongst babies of known status) for 2012/13 are shown by PCT. The East Sussex PCTs are amongst the middle ranking PCTs in the South East Coast SHA for prevalences of breastfeeding at 6-8 weeks. The percentage of babies (of known status) breastfed at 6-8 weeks in East Sussex Downs and Weald PCT is significantly higher than the England average of 49.2% whereas that in Hastings and Rother PCT is significantly lower. In Brighton and Hove PCT a remarkably high percentage of babies are breastfed at 6-8 weeks. This PCT ranks 17th of the 151 PCTs and is the only PCT outside of London amongst the top ranking 27 PCTs.

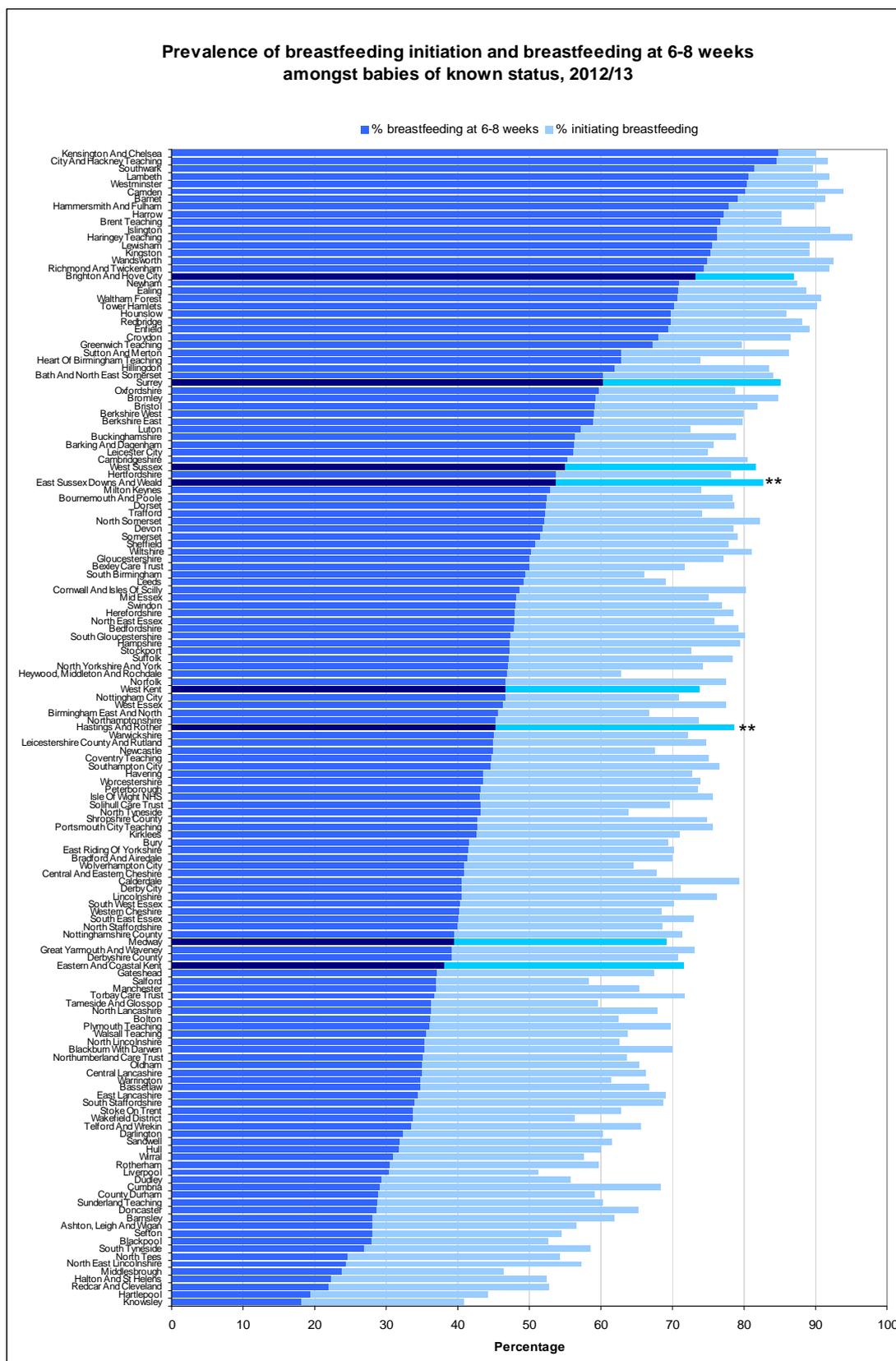
The numbers of infants due a 6 week check in 20/13 living in SOAs in each East Sussex quintile for the percentage of children living in low-income families are shown in Table 3. Table 3 shows that a considerably higher percentage of the infants due a 6 week check in H&R PCT live in income deprivation than in ESDW PCT. In H&R PCT the percentage of babies living in the most deprived quintile of East Sussex SOAs (47%) is more than twice that in ESDW PCT (22%).

Table 3: Number of babies due a 6-8 week check by deprivation quintile, 2012/13

Percentage of children in low income families - East Sussex quintile	ESDW PCT		H&R PCT		East Sussex PCTs	
	n	%	n	%	n	%
(highest percentage/most deprived) 1	723	22	907	47	1630	31
2	669	20	472	25	1141	22
3	631	19	248	13	879	17
4	728	22	206	11	934	18
(lowest percentage/least deprived) 5	587	18	82	4	669	13
Total	3338	100	1915	100	5253	100

In East Sussex recording of breastfeeding status at 6-8 weeks has improved from over 80% in 2008/09 to over 96% in 2012/13. This increase has been accompanied by a shift in the pattern of coverage from 2008/09, where babies from the more deprived areas were possibly somewhat under represented, to the current year, where coverage is not significantly different in more and less deprived areas (data not shown).

Figure 4: Breastfeeding initiation and breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) by PCT, 2012/13



PCTs are ordered by decreasing prevalence of breastfeeding at 6-8 weeks. PCTs in the South East Coast SHA are highlighted. East Sussex PCTs are marked with asterisks.

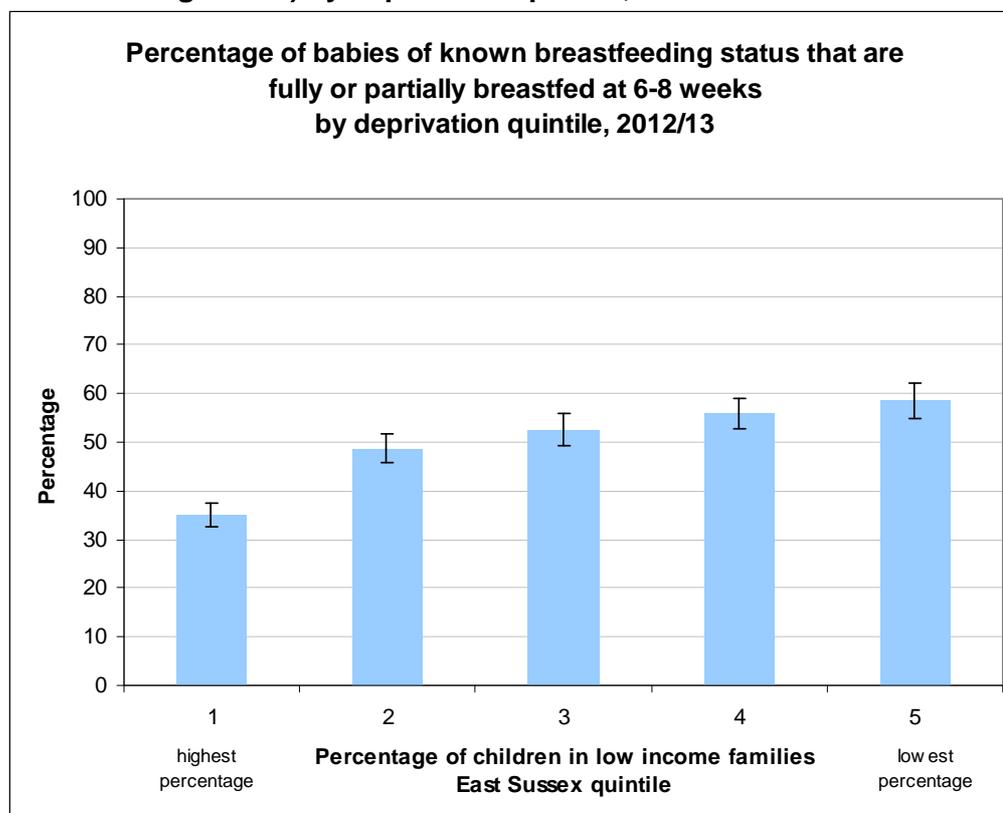
Deprivation and the prevalence of breastfeeding at 6-8 weeks

For babies whose breastfeeding status was recorded, the prevalence of breastfeeding was determined by deprivation quintile (Figure 5). This includes babies who are exclusively (totally) breastfed as well as those who are partially breastfed (that is, receiving breast milk, but also receiving formula milk or any other liquids or food).

Figure 5 shows that in East Sussex substantially (and significantly) lower proportions of babies living in SOAs ranking in the most deprived quintile were breastfed at 6-8 weeks than in the other four quintiles. (The prevalence was also significantly lower in the first and second quintiles than in the fourth and fifth quintiles). The percentage of infants that were breastfed was more than 1.5 times higher in the least deprived quintile than in the most deprived quintile.

Amongst the babies that were breastfed at age 6-8 weeks 72% were exclusively breastfed (data not shown). The percentages that were exclusively breastfed were determined by deprivation quintile and were lowest in the two most deprived quintiles. Values ranged from 68.3% (in quintile 1) to 76.0% (in quintile 3).

Figure 5: Prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) by deprivation quintile, 2012/13

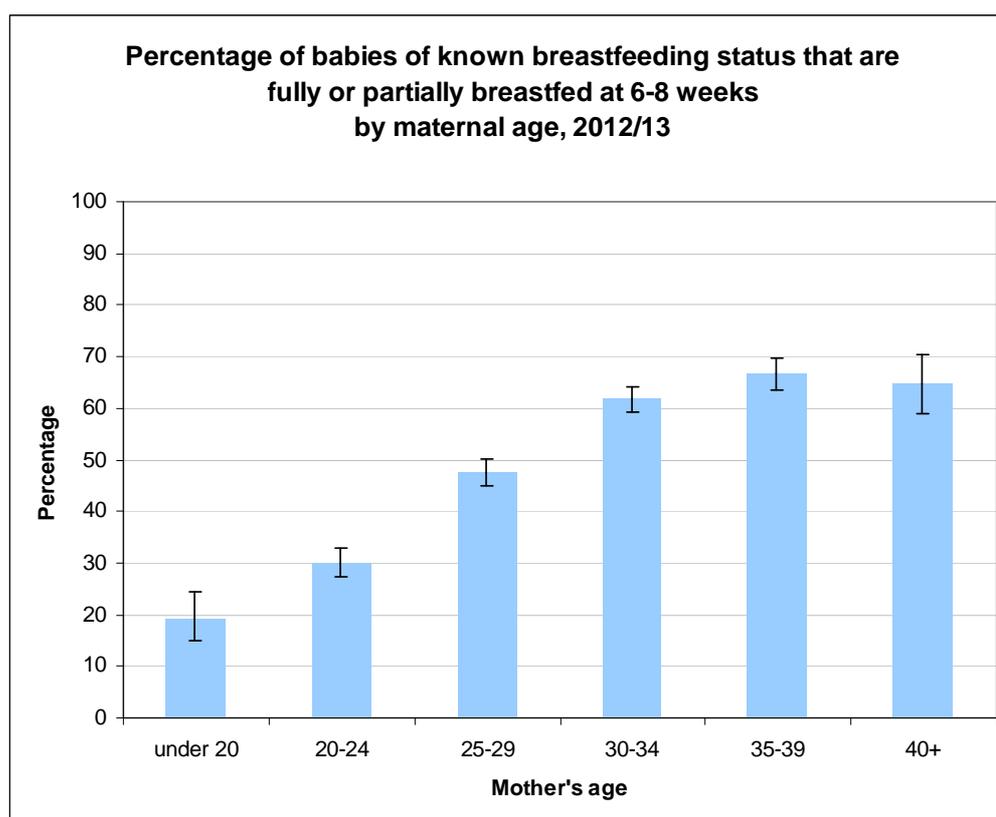


Maternal age and the prevalence of breastfeeding at 6-8 weeks

The prevalence of breastfeeding at 6-8 weeks (amongst babies whose breastfeeding status was recorded) was determined for mothers of different ages. As shown in Figure 6, babies born to younger mothers were considerably less likely to be breastfed at 6-8 weeks than those born to older mothers. The prevalence of breastfeeding was very low for babies with teenage mothers (only about one in five infants were breastfed). It was significantly higher for babies whose mothers were aged 20-24, however fewer than one in three of these infants were breastfed. The prevalence of breastfeeding was significantly higher for mothers aged 25-29, nevertheless under half of these infants were breastfed. The prevalence of breastfeeding was significantly higher for mothers aged 30 and over, nearly two-thirds of these infants were breastfed.

These findings suggest that mothers in their twenties as well as teenage mothers could benefit from more intensive breastfeeding support than older mothers.

Figure 6: Prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) by maternal age, 2012/13



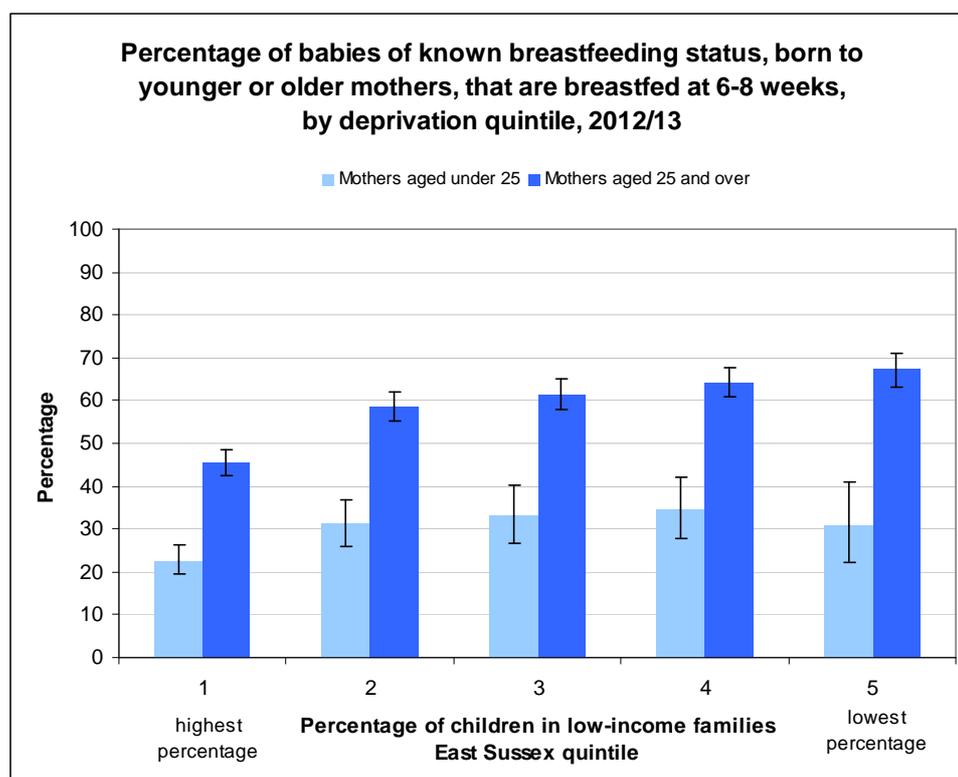
It is worth noting (Table 4) that the percentage of mothers aged under 30 varies in different local authorities in the South East from 34% in Surrey to 60% in Medway (2011 data). Importantly, comparing Table 4 to Figure 4 reveals there is a broad correspondence between PCTs with lower prevalences of breastfeeding at 6-8 weeks and local authorities with higher percentages of younger mothers.

Table 4: Percentage of mothers aged under 30 in local authorities in South East England, 2011

Local Authority or area	% mothers aged under 30
Surrey	34
Brighton and Hove	37
West Sussex	46
East Sussex	52
Kent	53
Medway	60
South East	46
England	51

The relationship between maternal age and deprivation in East Sussex is explored in Figure 7. Figure 7 shows that, for younger mothers, the impact of area deprivation on breastfeeding is relatively modest. (Mothers aged under 25, even if they live in less deprived areas, are significantly less likely to breastfeed than older mothers living in the more deprived areas).

Figure 7: Prevalence of breastfeeding at 6-8 weeks amongst babies (of known breastfeeding status) born to younger or older mothers, by deprivation quintile, 2012/13



Ethnicity and the prevalence of breastfeeding

The prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) was determined for babies of different ethnic groups. As shown in Table 5, it was substantially and significantly lower for White British babies (46.7% with 95% CI of 45.2– 48.2%) than for any other ethnic group. White British babies make up 83% of the babies in East Sussex.

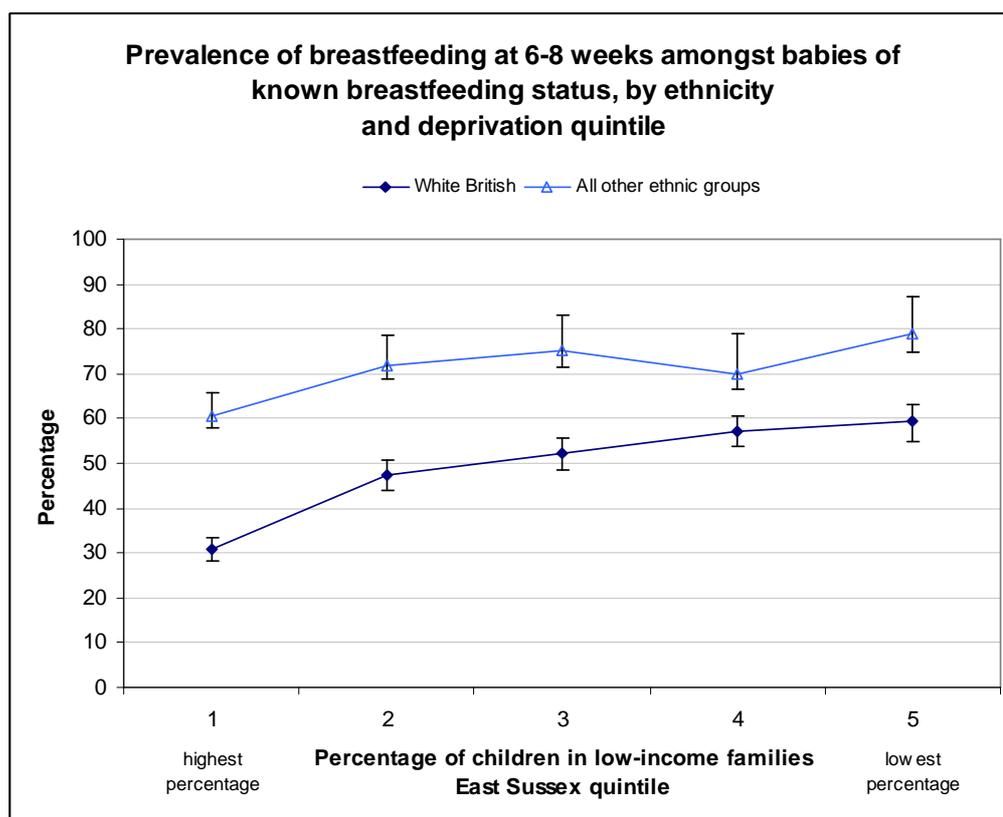
The higher prevalence of breastfeeding at 6-8 weeks of babies of non-White (British) ethnicities is recognised in the national evidence base (for example, see the Infant Feeding Survey – UK, 2010), and it may help explain why London SHA reported a substantially higher prevalence of breastfeeding than any other SHA in the country (see Table 2). Intriguingly, Brighton and Hove PCT, with a predominantly White (British) population, and a slightly higher percentage of younger mothers than Surrey PCT (see Table 4), records the highest prevalence of breastfeeding at 6-8 weeks of any non-London PCT and a considerably higher prevalence of breastfeeding than Surrey PCT (see Figure 4).

Table 5: Coverage and prevalence of breastfeeding at 6-8 weeks in East Sussex by ethnic group, 2012/13

	Eligible babies	Breastfeeding status at 6-8 weeks recorded	% coverage	Breastfed	% babies of known status that were breastfed at 6-8 weeks	95% CI lower level	95% CI upper level
White	4,808	4,744	98.7	2,311	48.7	47.3	50.1
White British	4,339	4,282	98.7	1,998	46.7	45.2	48.2
White non-British	469	462	98.5	313	67.7	63.4	71.8
Mixed	250	247	98.8	151	61.1	54.9	67.0
Asian/Asian British	108	104	96.3	90	86.5	78.7	91.8
Black/Black British	41	41	100.0	33	80.5	66.0	89.8
Other	50	49	98.0	32	65.3	51.3	77.1

The relationship between ethnicity and deprivation in East Sussex is explored in Figure 8. Here the prevalence of breastfeeding at 6-8 weeks (for babies of known breastfeeding status) is compared, by deprivation quintile, for babies of White British ethnicity and babies of all other ethnic groups. In all except the most deprived quintile, the prevalence of breastfeeding of babies that are not of White British ethnicity exceeds that of White British babies.

Figure 8: Prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) by ethnicity and deprivation quintile, 2012/13



Breastfeeding outcomes by Children’s Centres

The prevalences of breastfeeding at 6-8 weeks for babies allocated to each Children’s Centre are summarised in the Table 6. Table 6 also shows the numbers of babies seen by each Children’s Centre, the percentages of eligible babies living in the two quintiles of East Sussex SOAs with the highest percentages of children living in low-income families, and the numbers that were not breastfed. These data offer some perspective on the relative workloads for each Children’s Centre. The prevalences of breastfeeding at 6-8 weeks amongst babies of known breastfeeding status range from over 71% in Ringmer to 22% in Robsack and, very broadly, they are lower for the groups of babies living in more deprived areas.

‘League’ tables like this one are often used to compare the performance of different healthcare providers. Confidence intervals are often included to identify providers with significantly different performance, in a statistical sense, from the average. However, such tables can lead to a spurious focus on rank. This is because much of the variation is random, so the ranking order can vary considerably from one reporting period to another.

Table 6: Prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) by Children's Centre, 201/13

Children's Centres are listed in order of decreasing prevalence of breastfeeding (of babies of

Cluster	Children's Centre	Eligible babies	% of babies living in the most deprived quintile	% of babies living in the two most deprived quintiles	Babies that were not breastfed	% eligible babies that were breastfed at 6-8 weeks	% babies of known breastfeeding status that were breastfed at 6-8 weeks	Outliers
Lewes	Ringmer	115	0	21	32	68.7	71.2	Above 3SD limit
Lewes	Lewes	200	23	34	58	70.5	70.9	Above 3SD limit
Wealden	Crowborough	299	0	5	90	69.2	69.7	Above 3SD limit
Rother	Battle	156	0	33	52	64.7	66.0	Above 3SD limit
Eastbourne	Old Town	189	21	21	69	61.9	62.9	Above 3SD limit
Wealden	Uckfield	222	0	7	82	62.2	62.7	Above 3SD limit
Wealden	Heathfield	201	0	10	86	57.2	57.2	
Rother	High Weald	86	0	0	37	54.7	56.0	
Eastbourne	Devonshire	413	28	70	191	52.3	53.1	
The Havens	Peacehaven	238	4	45	109	50.8	52.6	
Rother	Rye	172	15	73	82	52.3	52.3	
Hailsham	Polegate	158	0	15	75	51.3	51.9	
Lewes	Chailey	57	0	11	28	50.9	50.9	
The Havens	Seaford	221	9	33	103	48.0	50.7	
Hastings	The Bridge	94	35	85	47	48.9	49.5	
St Leonards	West St Leonards	125	51	67	64	48.8	48.8	
Bexhill	Egerton Park	230	46	57	117	47.4	48.2	
Hailsham	Langney	245	47	71	130	46.1	46.5	
Bexhill	Sidley	137	50	96	75	44.5	44.9	
St Leonards	St Leonards	256	86	100	142	44.5	44.5	
St Leonards	Silverdale	205	12	20	115	42.9	43.3	ALERT - below 2SD but not 3SD limit
Hastings	Hastings Town	166	84	100	94	41.0	42.0	ALERT - below 2SD but not 3SD limit
Hastings	Red Lake	60	55	100	35	40.0	40.7	
Hailsham	Hailsham East	258	30	33	151	39.9	40.6	ALARM - below 3SD limit
The Havens	Newhaven	152	51	84	88	39.5	40.5	ALERT - below 2SD but not 3SD limit
Eastbourne	Willingdon Trees	119	77	88	74	37.8	37.8	ALERT - below 2SD but not 3SD limit
Eastbourne	Hampden Park	94	51	100	60	36.2	36.2	ALERT - below 2SD but not 3SD limit
St Leonards	Churchwood	97	52	52	62	36.1	36.1	ALERT - below 2SD but not 3SD limit
Hastings	East Hastings	124	54	100	80	33.9	34.4	ALARM - below 3SD limit
Hailsham	Shinewater	150	62	90	100	32.0	32.4	ALARM - below 3SD limit
St Leonards	Robsack	83	100	100	65	21.7	21.7	ALARM - below 3SD limit

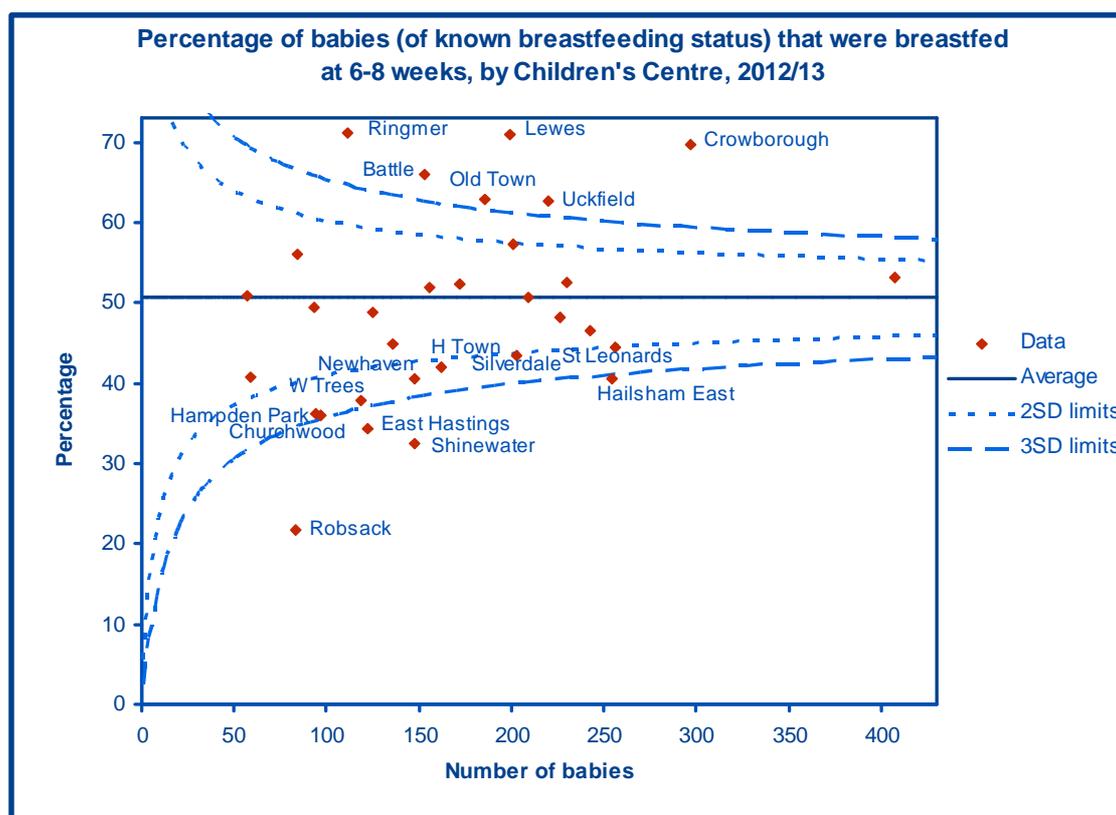
known breastfeeding status) at 6-8 weeks. Children's centres with breastfeeding prevalences that are significantly lower or higher than the East Sussex average are flagged as potential outliers (see Figure 9 and the related text).

Funnel plots offer a more objective and informative approach than league tables (Spiegelhalter, 2005). A funnel plot of the data on babies of known breastfeeding status is presented in Figure 9. The percentage of babies that were breastfed is plotted on the Y-axis and the number of babies (of known status) seen by each Children's Centre is plotted on the X-axis.

Superimposed lines are drawn to mark out a set of control limits that are designed to contain the majority of the variation in values that could be due to random variation. Random variation is greatest when the numbers of babies seen are small (left of the funnel plot) and reduces as the numbers increase. This is why these confidence limits take the characteristic funnel shape seen in the following plot.

In the funnel plot the 95% (2 standard deviation, or 2SD) control limits, as well as the more restrictive 99.7% (3SD) control limits are shown. Children's Centres with breastfeeding prevalences falling below the 3SD limit should sound an alarm because the prevalences are so low that they are extremely unlikely to be due to random variation. Those falling below the 2SD lower limit, but not the 3SD lower control limit, should signal an alert, and be monitored, because the prevalences are low enough that they might not be due to random variation. Those above the 3SD upper control limit have such high prevalences that they are extremely unlikely to be due to random variation, and further investigation may, in some cases, therefore yield insights into good practice.

Figure 9: Funnel plot showing the prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) by Children's Centre, 2012/13



Potential outlier Children's Centres, with prevalences of breastfeeding at 6-8 weeks that exceed the upper and lower 2SD and 3SD control limits, are flagged.

This funnel plot identifies that the low breastfeeding prevalences for Robsack, Shinewater, East Hastings and Hailsham East Children's Centres are extremely unlikely to be due to random variation. By comparing the funnel plot to Table 6 we can see that the low prevalence for Hailsham East might, on the basis of ranking alone, fail to sound an alarm, but in fact the breastfeeding prevalence falls below the 3SD control limits. The funnel plot, which takes into account the higher random variation associated with the considerably lower number of babies seen by some Children's Centres, also shows that the low prevalence for Red Lake is likely due to random variation. Figure 9 also shows that Crowborough, Lewes, Ringmer, Battle, Old Town and Uckfield are, likely, performing better than East Sussex overall.

Mapping the coverage and prevalence of breastfeeding in East Sussex

In Figure 10 a map of East Sussex, showing the prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) at ward-level, is presented. Most of the wards with a significantly lower prevalence of breastfeeding than East Sussex have relatively high levels of deprivation (compare Figure 10 to Figure 1). Exceptions are Cross in Hand/Five Ashes and Pevensy and Westham wards which rank in the second least deprived quintile of East Sussex wards for the percentage of children living in low-income families. However, in a funnel plot (see Figure 13 and related

discussion), neither of these wards have such low breastfeeding prevalences as to sound an alarm (neither fall below the lower 3SD control limits).

In Figure 11 the wards where recording of breastfeeding status at 6-8 weeks from birth amongst eligible infants was below target levels are highlighted. A comparison of Figure 11 and Figure 1 reveals that below-target coverage is not predominantly associated with deprived areas. The majority of under target coverage wards rank in the two least deprived quintiles.

In Figure 12 the wards where the prevalence of breastfeeding at 6-8 weeks for all eligible babies is below target are highlighted. This map reveals that poor performance against the prevalence target is often associated with area deprivation. But for this indicator poor coverage also contributes to poor performance.

In Figure 13 a funnel plot showing the prevalence of breastfeeding at 6-8 weeks, amongst babies of known breastfeeding status, by ward is presented. This funnel plot complements the mapped information.

Figure 10: Map of East Sussex showing the prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) by ward, 2012/13

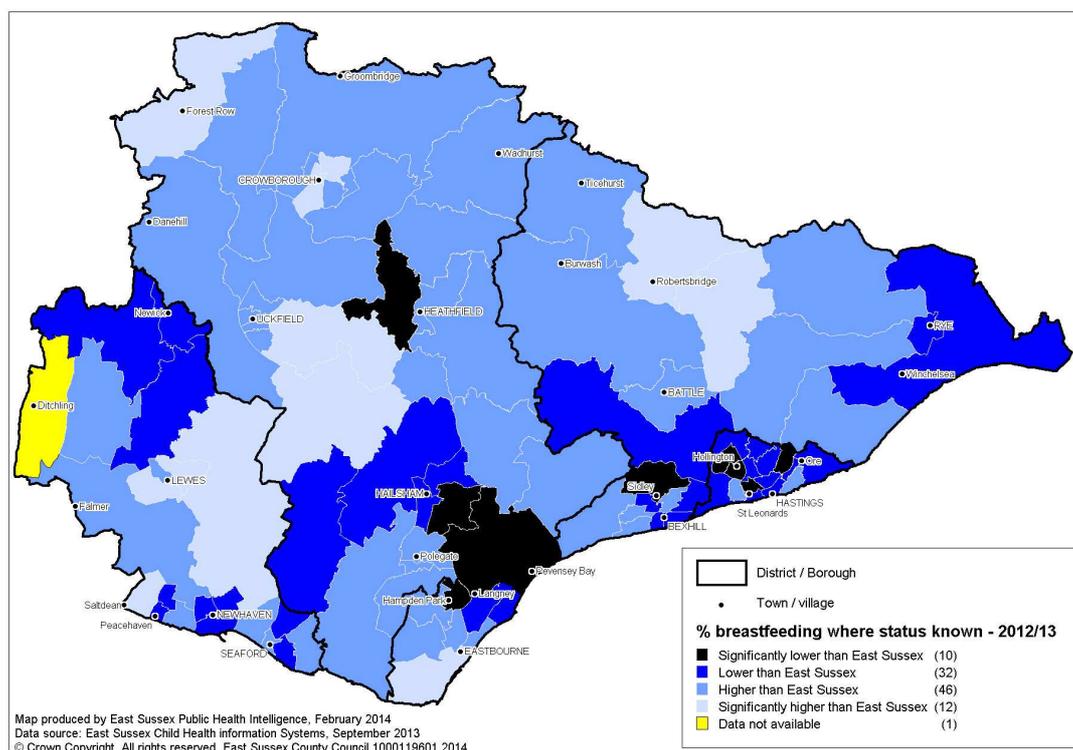


Figure 11: Map of East Sussex showing wards with below target coverage of breastfeeding status at 6-8 weeks, 2012/13

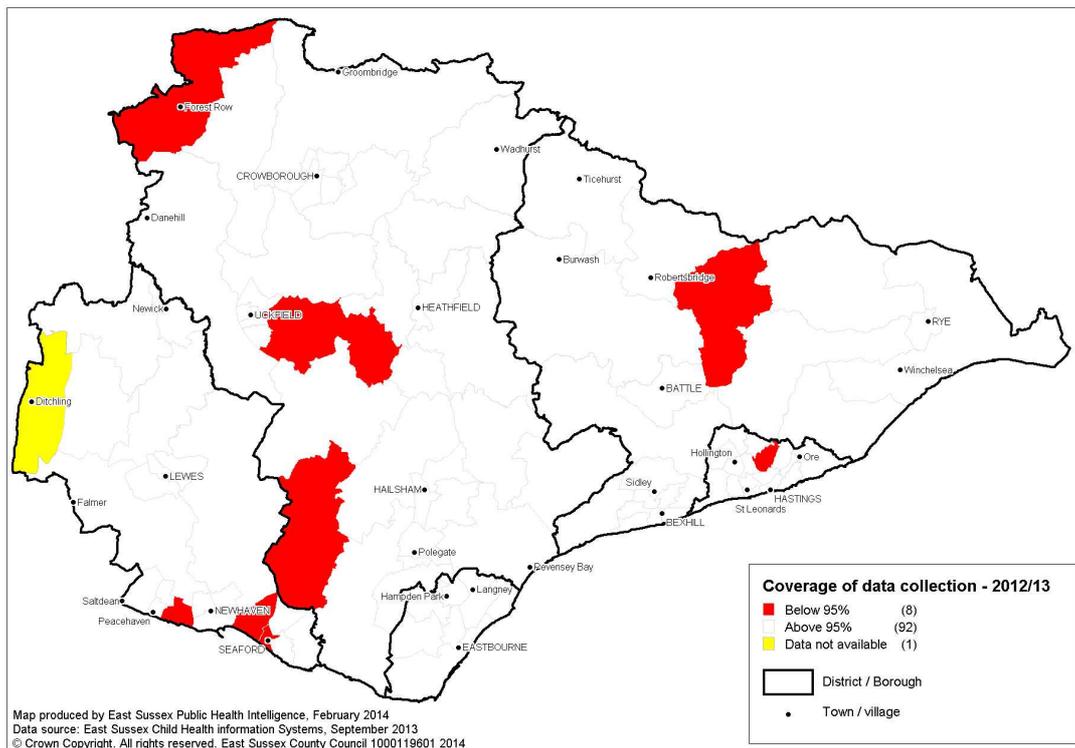


Figure 12: Map of East Sussex wards with below target prevalence of breastfeeding at 6-8 weeks amongst all eligible babies, 2012/13

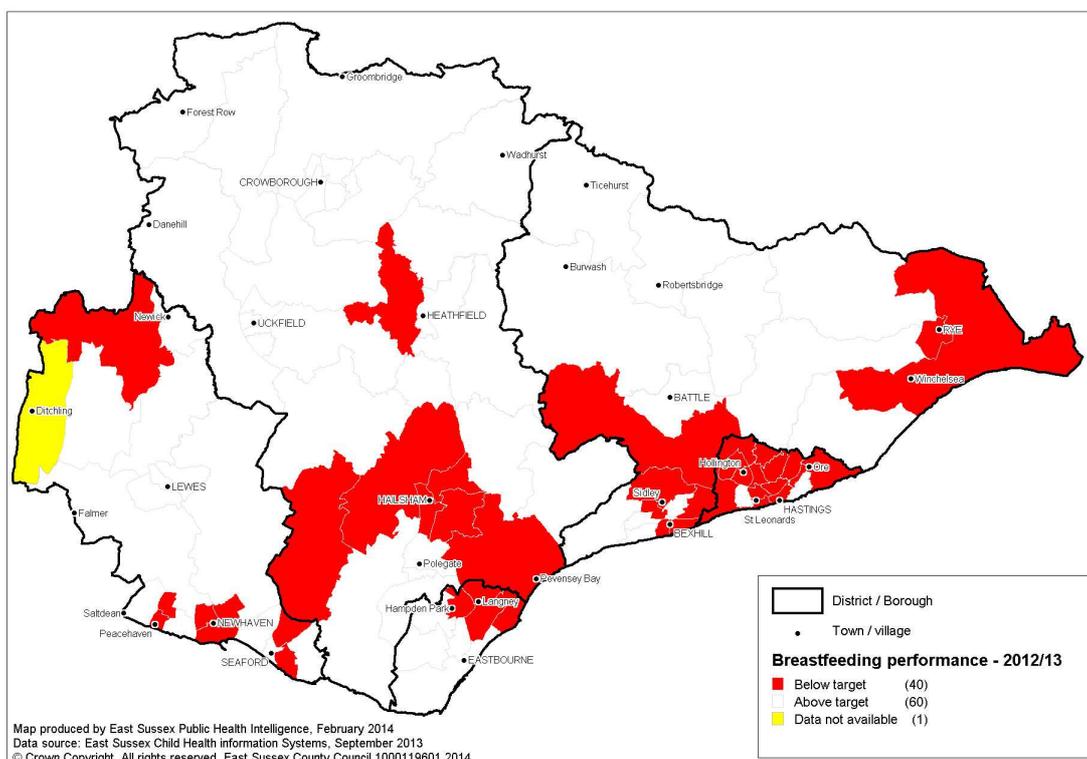
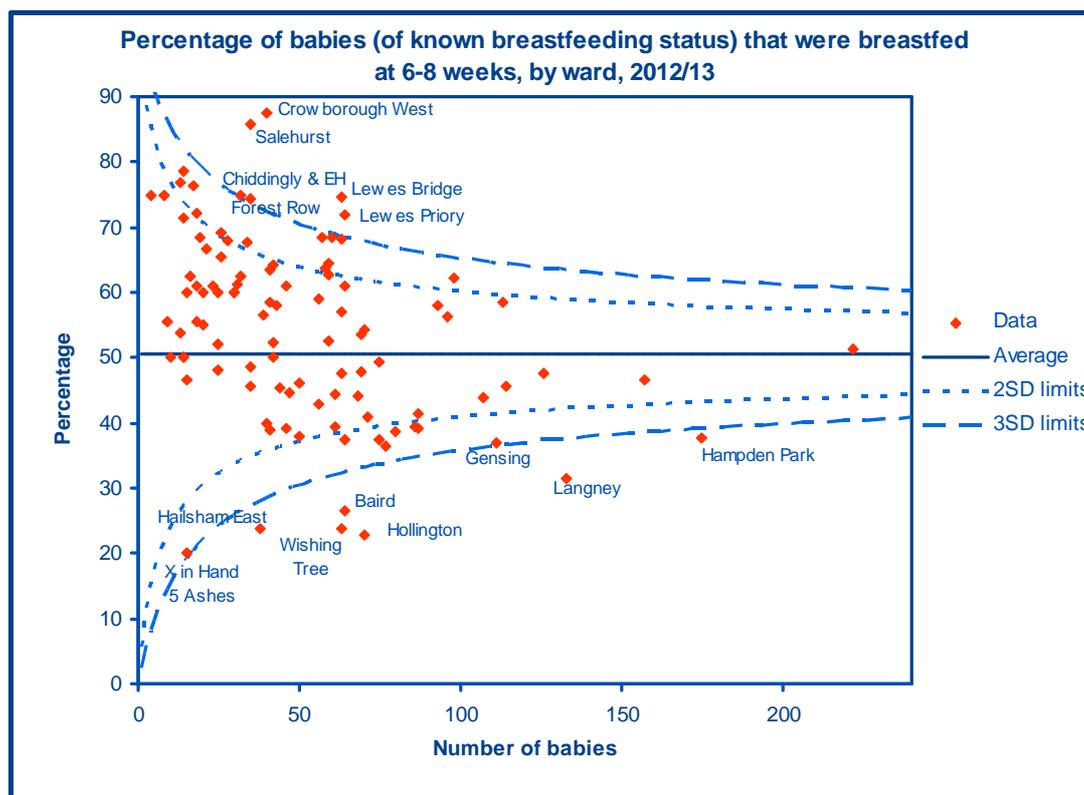


Figure 13: Funnel plot showing the prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) by ward, 2012/13

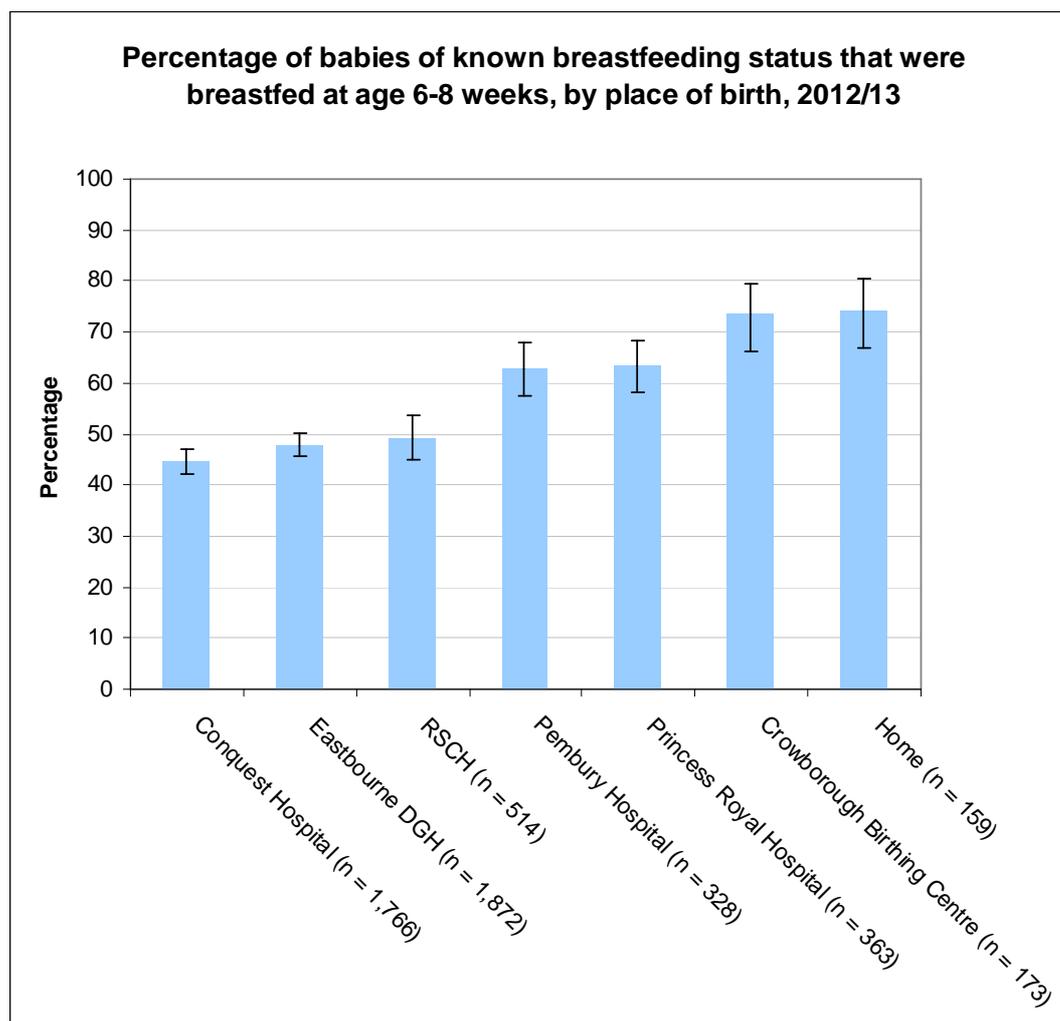


All wards falling below the lower 3SD control limit and above the upper 3SD control limit are flagged. Cross in Hand/Five Ashes and Gensing wards are also flagged as they are very close to the lower 3SD control limit.

Breastfeeding outcomes by place of birth

The prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) by place of birth is shown in Figure 14. The prevalences were significantly higher for babies born at Pembury Hospital, Princess Royal Hospital, Crowborough Birthing Centre and at home, than for those born at Eastbourne DGH, the Conquest Hospital and the RSCH.

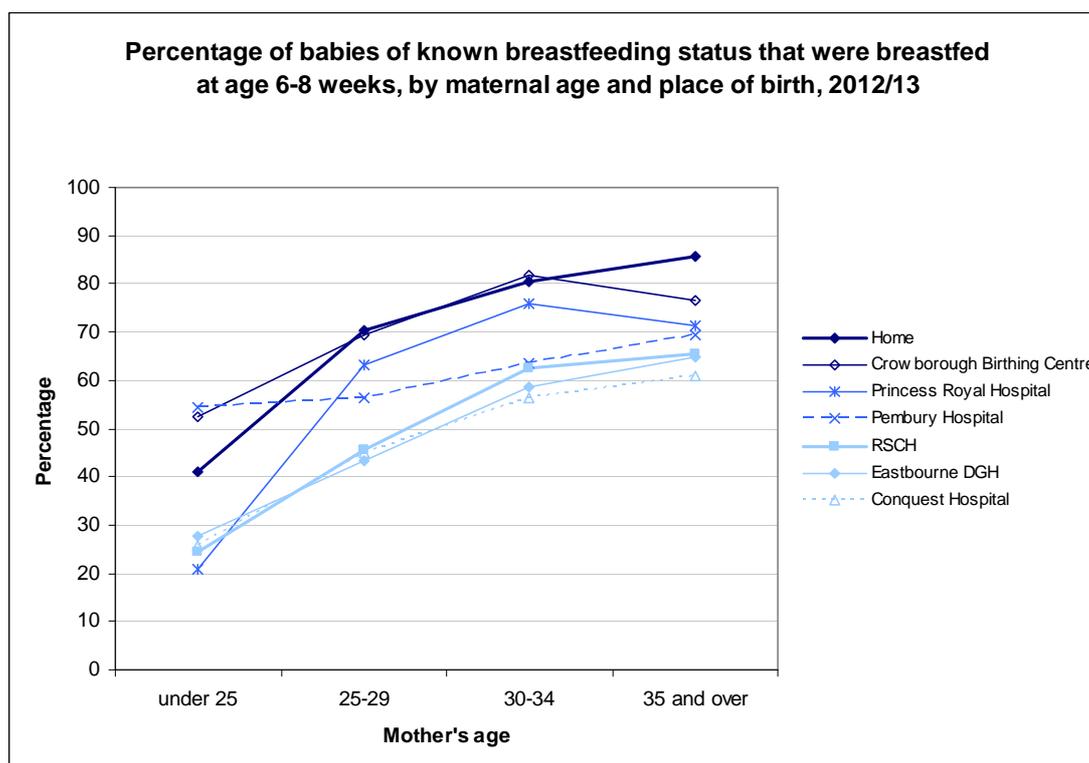
Figure 14: Prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) by place of birth, 2012/13



Places of birth are ordered from left to right by increasing prevalence of breastfeeding at 6-8 weeks amongst babies of known breastfeeding status. Numbers of infants of known breastfeeding status born at each site are recorded in brackets alongside place of birth.

In Figure 15 the prevalences of breastfeeding at 6-8 weeks are broken down by maternal age grouping as well as place of birth. Figure 15 shows that, at each maternal age group, the prevalences of breastfeeding at 6-8 weeks are higher for babies born at home and at the Crowborough Birthing Centre than for babies born at all other sites (with the exception of under 25 year olds at Pembury Hospital).

Figure 15: Prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status) by maternal age and place of birth, 2012/13



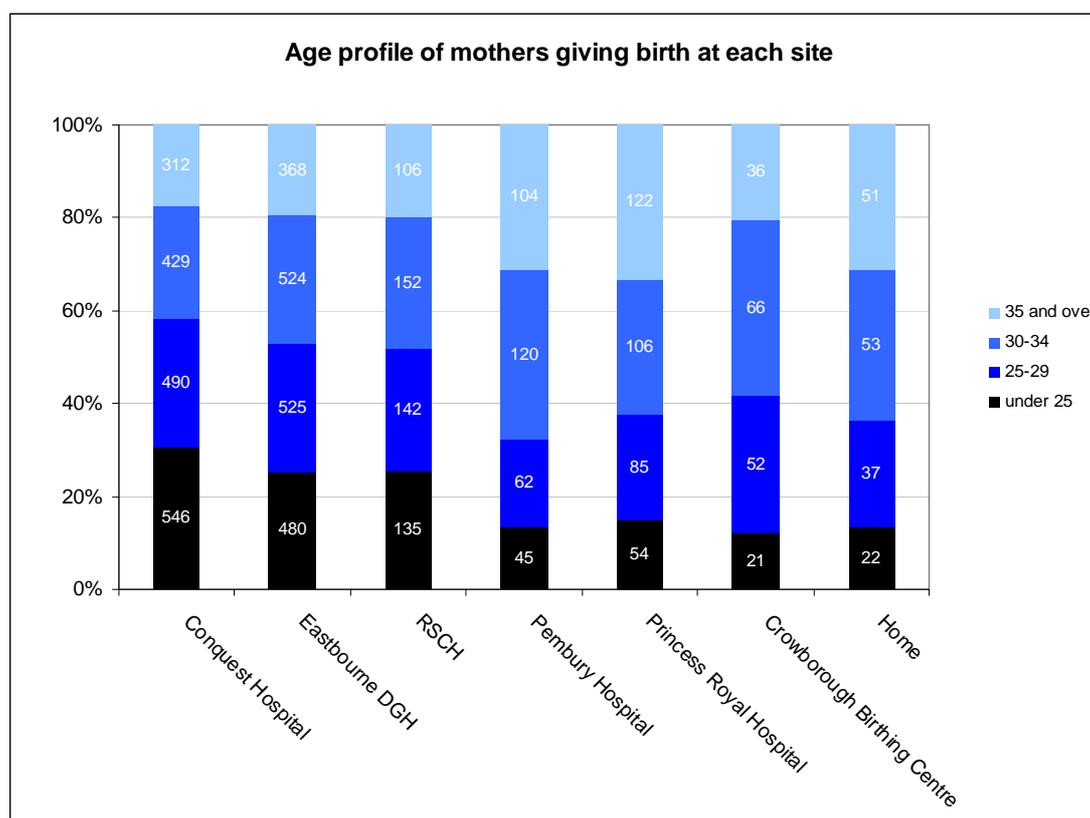
The age profiles (and numbers) of mothers giving birth at each site are summarised in Figure 16. Higher proportions of the mothers giving birth at the Conquest Hospital, Eastbourne DGH and the RSCH were aged under 25 years than at the other sites. In contrast, lower proportions of the mothers giving birth at the Conquest Hospital, Eastbourne DGH and the RSCH were in the older age groups than at the other sites. The relatively high proportions of younger mothers and relatively low proportions of older mothers at the Conquest Hospital, Eastbourne DGH and the RSCH will contribute to the lower overall prevalences of breastfeeding for babies born at these sites.

In Table 7 the numbers and percentages of deliveries to mothers living in the most deprived quintile of East Sussex SOAs for the percentage of children living in low-income families are summarised for each place of birth. A comparison of Table 17 and Figure 16 reveals that the Conquest Hospital, which had the highest proportion of younger mothers (Figure 16) also had the highest proportion of mothers living in the most deprived quintile of SOAs in East Sussex (Table 7).

In view of the high prevalence of breastfeeding at 6-8 weeks reported by Brighton and Hove PCT (Figure 4) it is noteworthy that babies born to East Sussex mothers at the RSCH in Brighton had a similar prevalence of breastfeeding at 6-8 weeks as babies born at Eastbourne DGH. The maternal age profile for East Sussex mothers giving birth at the RSCH was also similar to that for mothers at Eastbourne DGH. However about 1 in 5 East Sussex mothers who gave birth at the RSCH were from the most deprived quintile of East Sussex SOAs for the percentage of children living in low-income

families, compared to almost 1 in 3 of those who gave birth at Eastbourne DGH. Therefore giving birth at the RSCH (rather than Eastbourne DGH or the Conquest Hospital) does not appear to positively impact on the prevalence of breastfeeding at 6-8 weeks of East Sussex babies.

Figure 16: Age profile of mothers giving birth at each site



Places of birth are ordered from left to right by increasing prevalence of breastfeeding at 6-8 weeks (amongst babies of known breastfeeding status). Numbers of mothers in each age group are recorded.

Table 7: Number and percentage of babies born to mothers living in the the most deprived quintile of East Sussex SOAs, 2012/13

Place of birth	All babies	Most deprived East Sussex quintile for percentage of children in low income families	
		n	%
Home	161	37	23.0
Crowborough Birthing Centre	174	5 or less	<5
Princess Royal Hospital	361	26	7.2
Pembury Hospital	327	5 or less	<5
RSCH	522	107	20.5
Eastbourne DGH	1895	581	30.7
Conquest Hospital	1775	857	48.3

Breastfeeding initiation and continuation

As coverage of eligible babies' breastfeeding status at 6-8 weeks is now close to 100% the only way to increase the prevalence of breastfeeding at 6-8 weeks in East Sussex is to support more mothers to breastfeed. To still be breastfed at this age, babies' mothers must have (i) initiated breastfeeding and (ii) continued to breastfeed for at least 6-8 weeks.

Therefore we determined what proportion of mothers initiated breastfeeding and what proportion of them continued breastfeeding for at least 6-8 weeks. The overall incidence of breastfeeding initiation (amongst babies of known initiation status) was 82%. As shown in Figure 17, taking maternal age into account, the proportion of mothers that initiate breastfeeding is somewhat (and significantly) lower for younger mothers (about two thirds of under 25 year olds) than older mothers (at least 4 in every 5 of those aged 25+). However, the difference between the two values (light blue bar minus dark blue bar) is much greater for younger mothers than older mothers, meaning that whilst the majority of younger mothers initiated breastfeeding, they were much less likely to continue breastfeeding for 6-8 weeks than older mothers. The data show that over two thirds of mothers aged under 20 who had initiated breastfeeding had stopped breastfeeding by the time their babies were 6-8 weeks old, compared to less than half of those aged 25-29 and only about a quarter of those aged 35+.

In Figure 18 the percentage of babies (of known breastfeeding status) that initiated breastfeeding, and that were breastfed at 6-8 weeks, is compared by East Sussex deprivation quintile. Figure 18 shows that mothers living in more deprived areas are somewhat less likely to initiate breastfeeding than those living in less deprived areas (percentages range from 73% in quintile 1 to 89% in quintile 5). However the impact of deprivation on continuation of breastfeeding to age 6-8 weeks is less dramatic than that of younger maternal age. More than half of the babies living in quintile 1 that initiated breastfeeding were still breastfed at age 6-8 weeks. Two-thirds of those living in quintile 3, and over 70% of those living in quintile 5, that initiated breastfeeding were still breastfed at age 6-8 weeks.

In Figure 19 the same comparisons are made by place of birth. This chart shows that breastfeeding drop-off rates are generally highest for babies born at the hospitals with the lowest initiation rates. About 40% of mothers giving birth at the Conquest Hospital, Eastbourne DGH and RSCH that initiated breastfeeding have ceased to breastfeed at 6-8 weeks. Only 22% of mothers giving birth at the Crowborough Birthing Centre and 13% of those giving birth at home that initiated breastfeeding had ceased to breastfeed at 6-8 weeks.

Figure 17: The percentages of babies (of known breastfeeding status) initiating breastfeeding and breastfed at 6-8 weeks, by maternal age, 2012/13

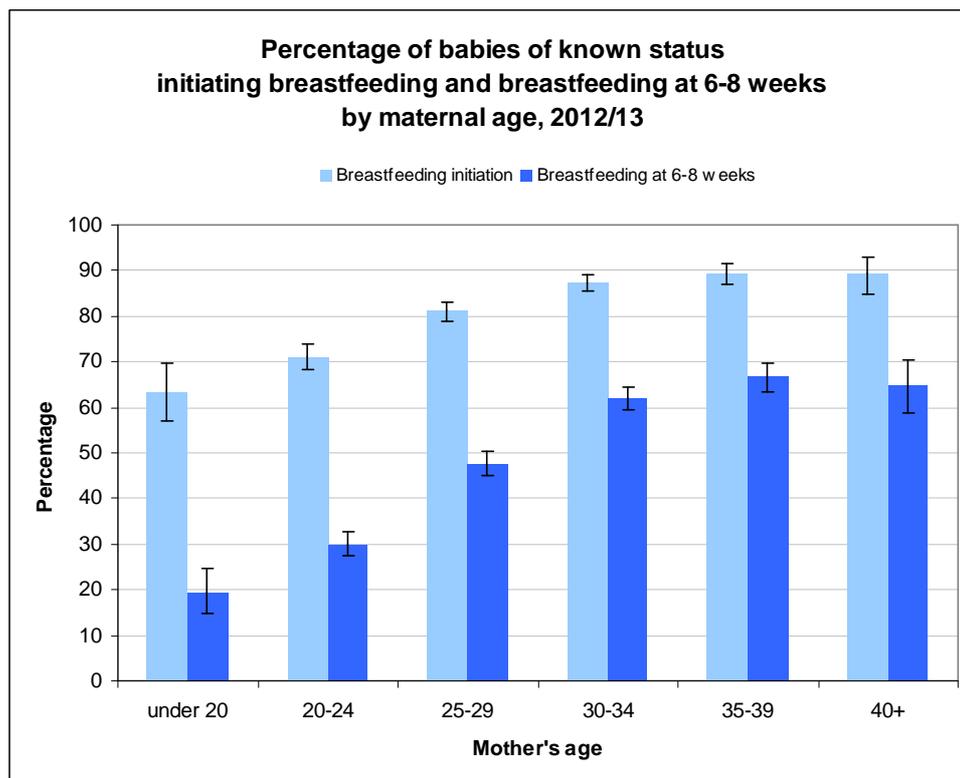


Figure 18: The percentages of babies (of known breastfeeding status) initiating breastfeeding and breastfed at 6-8 weeks, by deprivation quintile, 2012/13

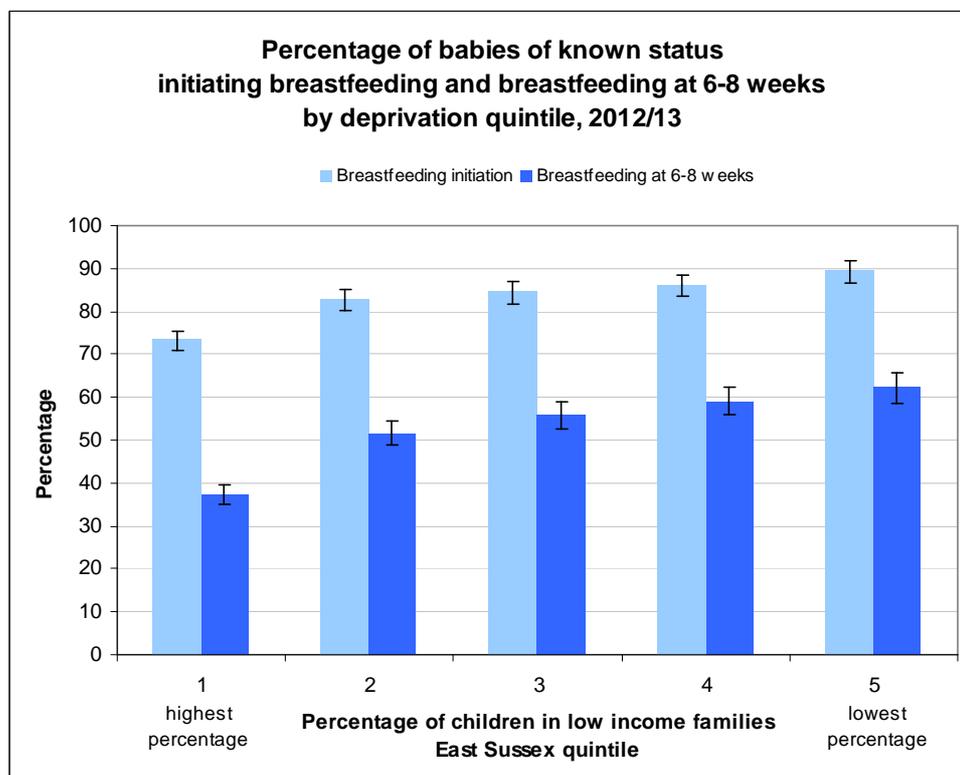
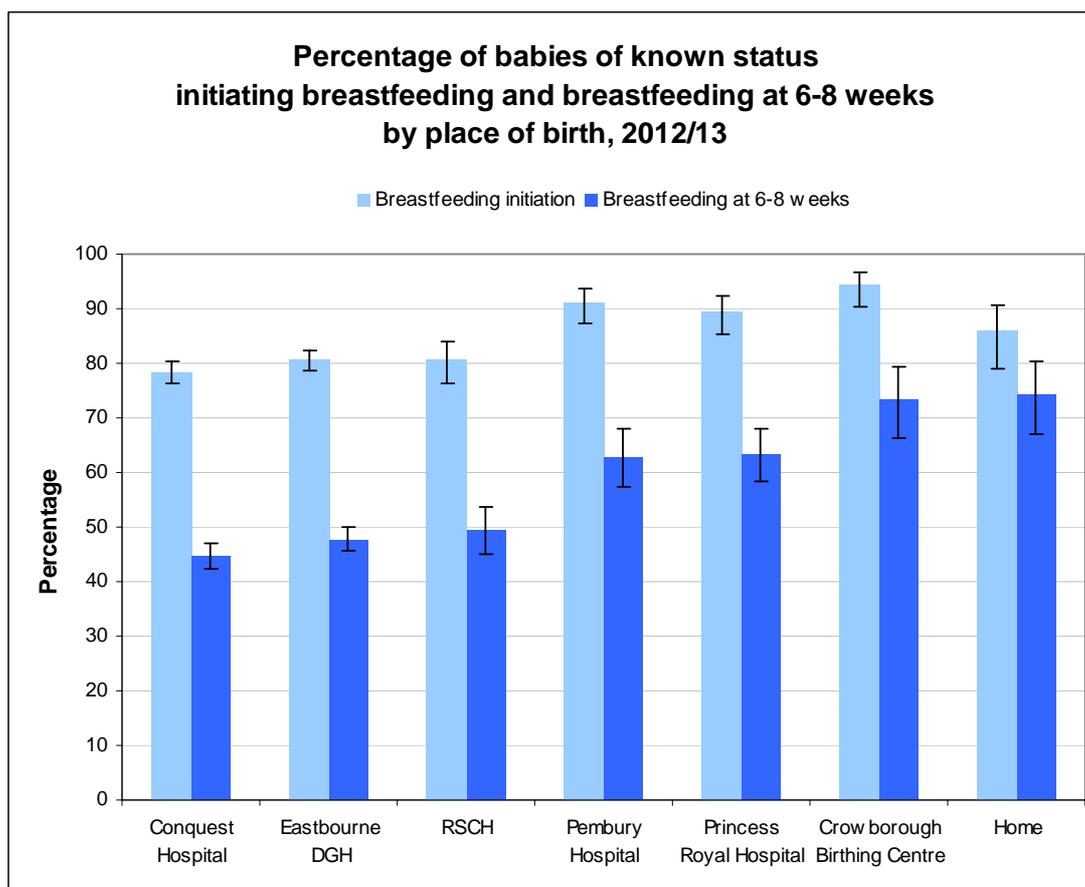


Figure 19: The percentages of babies (of known breastfeeding status) initiating breastfeeding and breastfed at 6-8 weeks, by place of birth, 2012/13



Places of birth are ordered from left to right by increasing prevalence of breastfeeding at 6-8 weeks amongst babies of known breastfeeding status.

Recording of breastfeeding initiation data

Following East Sussex Public Health's previous recommendation (2010), breastfeeding initiation data (recorded on birth notification forms) is now being entered on the East Sussex community child health information systems. Previously however we found that the initiation data supplied directly to the East Sussex public health team by the NHS hospital trusts did not match the initiation data that has been entered on the community child health systems (Breastfeeding at 6-8 weeks in East Sussex, 2011/12):

- Not all of the maternity unit data was being entered on the CHIS.
 - Only about 75% of babies recorded as breastfed at birth by the trusts were recorded as breastfed at birth on the community health systems.
- Data was not being entered into the ESDW CHIS and the H&R CHIS using a common protocol.
 - H&R CHIS were only making an entry if a baby was breastfed at birth. So where there was no entry we did not know whether this was because no status was recorded, no record was received, or the baby was formula fed at birth.

A small sample of birth notification forms (one for each of the main places of birth) revealed that different trusts, and different hospitals within Brighton and Sussex University Hospitals NHS Trust, produce birth notification forms with different formats. On two of these records no breastfeeding initiation status was recorded and on one the status was recorded under the heading "Delivery Feeding Intention". Unfortunately, if no initiation status is recorded we do not know whether this is because the status was unknown or whether this means that the mother did not initiate breastfeeding. We also do not know whether an affirmative entry under the heading "Delivery Feeding Intention" is only made if breastfeeding is actually initiated.

Clearly all of the above issues need to be addressed in order to facilitate the comprehensive recording of breastfeeding initiation status on the community health systems. Ideally there should be a common protocol and format for recording breastfeeding initiation status

- at different places of birth
- on birth notification forms from the different trusts/units

As a new CHIS is soon to be introduced covering the whole of East Sussex, it is important that all birth notification forms are sent on to the CHIS and that a rigorous protocol for entry of the data is adopted, that clarifies whether the breastfeeding initiation status was recorded and whether breastfeeding was initiated, for every baby.

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Appendix

Districts and wards of East Sussex

