



Breastfeeding Health Equity Audit
County Durham
2016

Michelle Baldwin
Katie Dunstan-Smith
Michael Fleming

July 2016

Title	Breastfeeding Health Equity Audit 2016
Author	Michelle Baldwin (Public Health Portfolio Lead) Michael Fleming (Public Health Epidemiologist) Katie Dunstan-Smith (Public Health Intelligence Specialist)
Date	July 2016
Purpose	To systematically identify and measure inequality in breastfeeding by assessing the distribution of breastfeeding relative to deprivation with County Durham. To make recommendations based on the findings to ensure that action is agreed and incorporated into systems with planning, policy and practice in order to improve breastfeeding uptake and maintenance.
Contact details	katie.dunstan-smith@durham.gov.uk

Contents	Page
-----------------	-------------

Key findings	4
Breastfeeding infographic	5
1. Introduction	6
1.1 Breastfeeding: why is it important?	6
1.2 National and Local Policy	7
1.3 What are health inequalities?	8
1.4 What is Health Equity Audit?	8
1.5 Measuring breastfeeding: glossary and definitions	9
1.6 Data quality, availability and limitations	10
2. Profiling County Durham	12
2.1 County Durham population and deprivation profile	13
2.2 Birth profile	15
2.3 National and local trends	17
2.4 Benchmarking	19
2.5 Analysis by age and ethnicity	21
3. Within County Durham	23
3.1 Within County Durham – locality analysis	23
3.2 Within County Durham – small area (MSOA) variation	24
3.3 Measuring the inequality gap within County Durham	28
4. Recommendations	33

Key Findings

1. By comparing County Durham to others...

- Breastfeeding rates for initiation and 6 to 8 week prevalence in County Durham are consistently and significantly lower than England.
- There has been little change in breastfeeding initiation in County Durham since 2010/11.
- Nationally, 6 to 8 week breastfeeding prevalence has decreased (-5%) but in County Durham it has increased (7.4%). The relative gap has narrowed from 71.4% to 51.6%.
- Most of the indicators in the Breastfeeding profile show County Durham to be significantly worse than England.
- Durham is ranked low within statistical neighbour groupings for initiation and 6 to 8 week prevalence.

2. By looking within County Durham...

- Roughly 30% women who live in County Durham deliver at hospitals outside of the County boundary.
- Under the age of 30 years breastfeeding rates are low. As age increases the proportion of women who start but then stop breastfeeding (drop-off) decreases.

CCG and locality

- There is variation in breastfeeding rates within County Durham.
- The proportion of women initiating breastfeeding is higher in North Durham CCG (57.7%) compared to Durham Dales and Easington (DDES) CCG (51.5%).
- The highest initiation rate is in the Durham City locality (61.2%) whereas Easington has the lowest initiation rate (45.5%)
- Prevalence at 10 days is similar across the localities.
- Prevalence at 6-8 weeks is higher in North Durham CCG (31.5%) than DDES CCG (24.4%).
- In the Durham City locality, 37.5% of infants are breastfed at 6-8 weeks compared to 20.6% in Easington.







Small area (MSOA)

- At a small area level (MSOA) there is wide variation within localities for all breastfeeding measures.
- The distribution of breastfeeding prevalence is unequal; it is lower in the more deprived areas for initiation and both 10 days and 6-8 week prevalence.
- The distribution of drop-off is unequal; the proportion of women who start but then stop breastfeeding is higher in the more deprived areas.

Breastfeeding in County Durham.....at a glance

For every 100 infants or mothers in County Durham, there are....

 = 10 infants/mothers

 <p><5</p>	<p>Babies born to mothers born in the Middle East and Asia</p> <p>Infants with no breastfeeding status recorded at birth</p>	 <p>20-30</p>	<p>Infants being breastfed at 6-8 weeks</p> <p>Infants who were breastfed at 10 days but not at 6-8 weeks</p>
 <p>5-10</p>	<p>Mothers with missing ethnic group</p> <p>Hospital admissions of babies under 14 days</p>	 <p>30-40</p>	<p>Infants who were breastfed at birth but not at 10 days</p> <p>Infants being breastfed at 10 days</p>
 <p>10-20</p>	<p>Deliveries to women aged 35 years or above</p>	 <p>50-60</p>	<p>Mothers breastfeeding their child from birth</p>

1. Introduction

1.1 Breastfeeding: why is it important?

Breastfeeding is a major contributor to public health and is central to promoting the health and wellbeing of infants, children and mothers. It has an important role in the prevention of illness and reducing health inequalities. If sustained for the first six months of life, breastfeeding can make a major contribution to an infant's health and development and is also associated with better health outcomes for the mother.

Despite the evidence of the benefits of prolonged exclusive and partial breastfeeding, England has one of the lowest breastfeeding rates in Western Europe, with some areas of County Durham recorded as having some of the lowest breastfeeding rates in England. Young mothers, women of lower socioeconomic status or those who left full-time education at an early age being least likely either to start breastfeeding or to continue breastfeeding beyond six to eight weeks. This means that those women who are most disadvantaged and who leave full time education at age 16 or under, are least likely to breastfeed, or more likely to stop breastfeeding sooner.

Social and cultural norms play a strong role in the decision to breastfeed or not, as does personal and family experience. The incidence of breastfeeding is also strongly associated with high maternal socio-economic status and educational attainment. Lower income groups, which have a higher incidence of low birth weight infants and infectious diseases in childhood, have the potential for great health gain from increased breastfeeding.

These factors make the unequal distribution of breastfeeding a cause and a result of health inequalities. Low rates of breastfeeding also impact directly on NHS costs in terms of admissions to hospital and attendances at the GP for infections and conditions which may have been avoided if the infant were breastfed.

There are acknowledged links between sustained breastfeeding and a reduced risk of childhood obesity, and there is significant reliable evidence to demonstrate that breastfeeding is a major contributor to public health and has an important role to play in reducing health inequalities.

Breastfeeding is a priority for improving children's health (Department of Health (DH) High Impact areas 2014) and research continues to show:

- The importance of breast milk as the best nourishment for babies aged up to six months.
- That breastfeeding can play an important role in reducing health inequalities.
- The benefits of breastfeeding for mother and baby including promoting emotional attachment between them.
- That breastfed babies have a reduced risk of respiratory infections, gastroenteritis, ear infections, allergic disease and Sudden Infant Death Syndrome.
- That breastfed babies may have better neurological development and be at lower risk of tooth decay and cardiovascular disease in later life.
- That women who breastfeed are at lower risk of breast cancer, ovarian cancer and hip fractures/reduced bone density.

Although it is acknowledged that breastfeeding is best for the first year of life, improving breastfeeding rates is a complex process that requires an integrated approach involving a number of agencies and professionals.

1.2 National and Local policy

Breastfeeding and the need to increase breastfeeding initiation and continuation rates in the United Kingdom remains a significant public health problem. Improving breastfeeding rates forms part of key national drivers in child health and is highlighted in numerous government policy documents, supported by the evidence (UNICEF 2013). Breastfeeding is also one of the six high impact areas for Early Years (DH 2014) where health visitors could have a significant impact on health and wellbeing and improving outcomes for children, families and communities

Nice guidance (PH11) highlights that the current UK policy is to promote exclusive breastfeeding (feeding only breast milk) for the first 6 months. Thereafter, it recommends that breastfeeding should continue for as long as the mother and baby wish, while gradually introducing a more varied diet (DH 2003).

There is no local policy or strategy for breastfeeding although County Durham has a strong commitment. This is recognised in the Health and Wellbeing Strategy 2016-2019 and the Children Young People and Families plan 2015-2018. Breastfeeding is embedded into the 0-19 service delivered by Health Visitors and School Nurses where it is identified a key priority.

1.3 National Evidence

- Breastfeeding contributes to the health of both mother and child, in the short and long term. For example, babies who are not breastfed are many times more likely to acquire infections such as gastroenteritis in their first year (Ip et al. 2007; Horta et al. 2007). It is estimated that if all UK infants were exclusively breastfed, the number hospitalised each month with diarrhoea would be halved, and the number hospitalised with a respiratory infection would be cut by a quarter (Quigley et al. 2007).
- Exclusive breastfeeding in the early months may reduce the risk of eczema (DH 2004). In addition, there is some evidence that babies who are not breastfed are more likely to become obese in later childhood (DH 2004a; Li et al. 2003; Michels et al. 2007). Mothers who do not breastfeed have an increased risk of breast and ovarian cancers and may find it more difficult to return to their pre-pregnancy weight (World Cancer Research Fund 2007; DH 2004).
- The UK infant feeding survey 2005 (Bolling et al. 2007) showed that 78% of women in England breastfed their babies after birth but, by 6 weeks, the number had dropped to 50%. Only 26% of babies were breastfed at 6 months. Exclusive breastfeeding was practised by only 45% of women one week after birth and 21% at 6 weeks (Bolling et al. 2007).
- Three quarters of British mothers who stopped breastfeeding at any point in the first 6 months (and 90% of those who stopped in the first 2 weeks) would have liked to have continued for longer. This suggests that much more could be done to support them. The British figures also contrast with data from Norway, where over 80% of mothers breastfeed for the first 6 months (Lande et al. 2003).

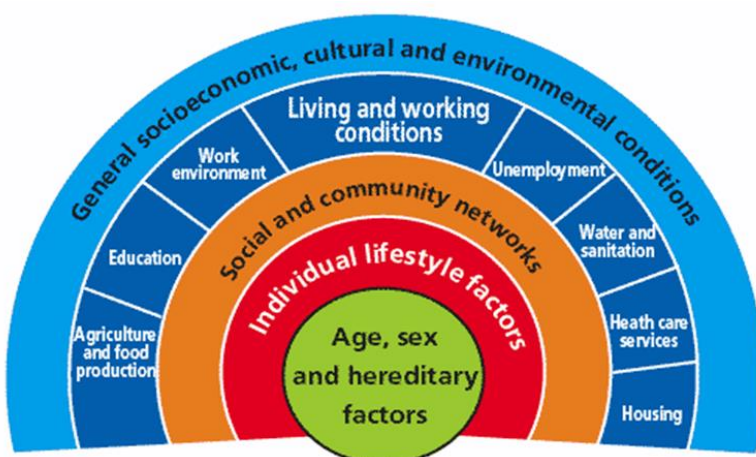
1.4 What are health inequalities?

Health inequalities are disparities between population groups that are systematically associated with socio-economic and environmental factors.

The health of the people in County Durham has improved significantly over recent years, but remains worse than the England average. Health inequalities remain persistent and pervasive. Levels of deprivation are higher and life expectancy is lower than the England average. The health and wellbeing of County Durham's population is shaped not only by lifestyle and behavioural factors but also by a wide variety of social, economic and environmental factors (such as poverty, housing, ethnicity, place of residence, education, and environment). This is nothing new, and the importance of these social determinants of health inequalities is well established. Evidence from 'Due North: Independent Inquiry on Health Equity for the North' (2014), the Marmot review ('Fair Society, Healthy Lives', 2010), the Acheson Report (1998) and the Black Report (1982) is very clear that health inequalities are the result of complex interactions that are caused by a number of factors. We know that health deteriorates with increasing socio-economic disadvantage, and that improvements in health outcomes cannot be made without action in these social (or wider) determinants.

Health inequalities can be defined as differences in health status or in the distribution of health determinants between different population groups (WHO, 2013). They arise from differences in socio-economic and environmental factors that influence people's behaviour, the opportunities available to them, the choices they make, their risk of poor health and their resilience. Often these inequalities are geographical, with health status or outcomes worse in more deprived areas (the social gradient). They can also be experienced by different population groups (such as older people, children, black and minority ethnic groups (BME), lesbian, gay, bisexual, transgender (LGBT)). Inequalities in these social determinants of health are not inevitable, and are therefore considered avoidable and unjust. Health inequalities are an extremely complex issue, and only through concerted and collective effort they can be prevented.

Figure 1: The rainbow model of health



Source: Dahlgren and Whitehead, Policies and strategies to promote social equity in health, 1991

The social determinants of health are widely described as ‘the causes of the causes of health inequalities’. These are the conditions in which people are born, grow, live, work and age. We know these conditions affect the likelihood of people enjoying long, healthy lives, and will determine variations in health and life expectancy. The extensive evidence base on health inequalities demonstrates the need for policy makers to focus actions on the social determinants of health as the most effective way of addressing the issue (Marmot, 2010).

Marmot also demonstrated a gradient in health outcomes; the lower an individual’s social and economic status, the worse their expected health. However, these health inequalities are avoidable and to reduce them is a fundamental issue of social justice, bringing significant benefits to society. The Marmot Review also presented an evidence base of interventions which could contribute to reducing health inequalities by levelling up the gradient. Focusing solely on the most disadvantaged in society will not reduce health inequalities sufficiently. To reduce the steepness of the social gradient in health, actions must be universal, but with a scale and intensity which is proportionate to the level of disadvantage. This is called proportionate universalism.

‘Due North’ documented the scale of the health divide between the North and the rest of England. It noted the causes of these health inequalities were broadly similar across the country; differences in poverty, power and resources needed for health. However, it stated the severity of these causes was greater in the North. Furthermore, it suggested austerity measures were making the situation even worse, impacting more heavily on the North and disadvantaged areas.

The importance of these social determinants of health inequalities is well established; the evidence is very clear that health inequalities are the result of complex interactions caused by a number of factors. These can be described as:

- Inequalities in opportunity – caused by poverty, family circumstances, education, employment, environment, housing
- Inequalities in unhealthy behaviours – caused by smoking, lack of physical activity, eating poor quality food, drugs misuse, inappropriate alcohol consumption and risky sexual activity
- Inequalities in access to services for those who are already ill or have accrued risk factors for disease (health inequity).

1.5 What is health equity audit?

Health equity audit (HEA) is an important tool when considering how to reduce health inequalities and inequities in the provision of appropriate services. It identifies how fairly services or other resources are distributed relative to the health needs of different groups and areas. The ultimate aim of HEA is distribute resources relative to need. It is a cyclical process as illustrated in figure 2.

The first output of a health equity audit is the production of a health equity profile. This should identify and quantify both the need and inequality. A health equity profile only becomes a health equity audit once the cycle as shown in figure 2 is complete i.e. once changes in resource allocation have been made and outcomes of this change have been reviewed. This process should normally take no less than three years.

Figure 2: The health equity audit cycle



This HEA assesses the distribution of breastfeeding (initiation, at 10 days and at 6-8 weeks and drop-off) relative to deprivation within County Durham and the two Clinical Commissioning Groups (CCGs) within its borders; North Durham (ND) CCG and Durham Dales, Easington and Sedgefield (DDES) CCG.

1.6 Measuring breastfeeding: Glossary and definitions

Analysis within this document covers initiation and prevalence at 10 days and 6-8 weeks. Drop-off rates are also presented. The terms are defined below:

Initiation: % of all mothers who give their babies breastmilk in the first 48hrs after delivery. The numerator is the number of mothers initiating breast feeding and the denominator is the total number of maternities. This indicator is nationally collated and reported in the Public Health Outcomes Framework (2.02i).

Prevalence (10d): % of infants that are totally or partially breastfed at 10 days of age. The numerator is the total number of infants recorded as being breastfed (totally or partially) at 10 days. The denominator is the total number of infants due a 10 day visit with a Health Visitor. This figure is not nationally collated or reported there are therefore some limitations.

Prevalence (6-8w): % of all infants that are totally or partially breastfed at 6-8 weeks of age. The numerator is the total 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 indicator is nationally collated and reported in the Public Health Outcomes Framework (2.02ii).

Drop-off:	Initiation to 10d % of mothers discontinuing breastfeeding at 10 days (as a proportion of those previously breastfeeding at Initiation)
	10d to 6-8w % of mothers discontinuing breastfeeding at 6-8 weeks (as a proportion of those previously breastfeeding at 10 days)

1.7 Data quality, availability and limitations

To undertake this HEA two anonymised data sets were provided at Middle Super Output Area (MSOA) level by the Information Team at County Durham and Darlington Foundation Trust (CDDFT). MSOA's refer to areas consisting of 2000-6000 households (5000 – 15,000 population). In 2013 the average MSOA population in England was 7,910. There are 66 MSOAs in County Durham.

Data set 1 - CDDFT mothers:

County Durham resident mothers delivering at the acute trust that provides maternity services in County Durham.

Contains information on MSOA of residence, age and ethnicity. As well as breastfeeding status at birth, 10 days, 6-8 weeks and beyond. Information was provided from 2009 but there is significant missing data prior to September 2011. Therefore this report mainly focuses on pooled data from 2012/13 – 2014/15.

Data set 2 - CD babies:

Babies living in County Durham and registered with a GP in County Durham.

Contains information on MSOA of residence and breastfeeding status at birth, 10 days, 6-8 weeks, 4 months, 6 months, 9 months and 12 months. Again, due to missing data, the report mainly focuses on pooled data from 2012/13 – 2014/15.

The populations used in this document vary dependent on data availability, as described above. The titles 'CDDFT mothers' and 'CD babies' are used throughout the document to indicate to the reader which population is being used.

For the three years of data used in the majority of this report, there is a difference between nationally released numbers of maternities and infants and the local data provided by CDDFT. There are:

- 813 more maternities in the local data (5.0%)
- 124 fewer mothers initiating breastfeeding (-1.4%)
- 177 fewer infants breastfed at 6-8 weeks (-3.8%)

It is reasonable to assume that these discrepancies are due to data cleansing and validation criteria applied when data is transferred to NHS England. These differences equate to a less than 5% variance and this is an acceptable tolerance.

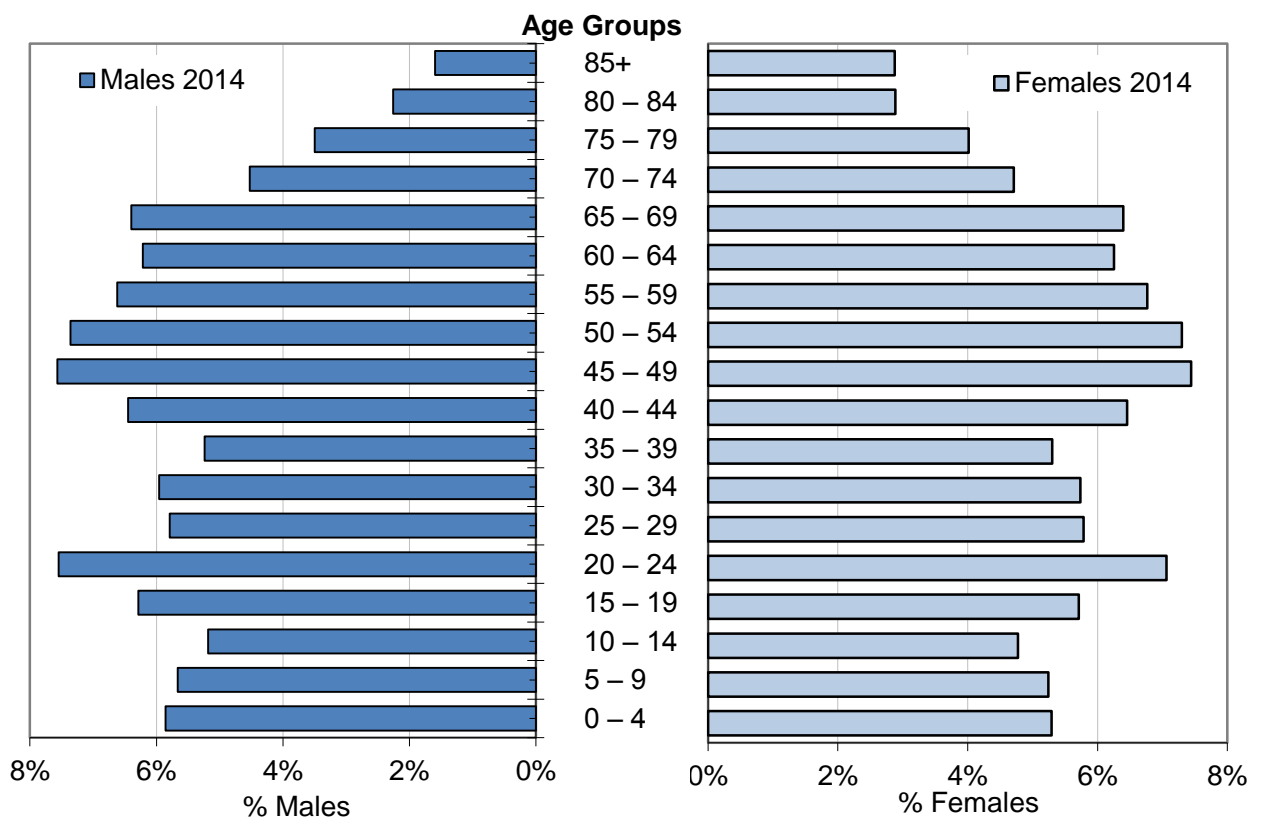
The denominator used for all three breastfeeding indicators, initiation, prevalence (10d) and prevalence (6-8w), includes the cases where breastfeeding status is unknown. This follows the same methodology as NHS England. It implicitly assumes that all patients whose breastfeeding status is unknown did not initiate breastfeeding. It is known that this will result in an underestimate of the percentage infants' breastfeeding.

2 Profiling County Durham

2.1 County Durham population and deprivation profile

Within County Durham, NHS Durham Dales, Easington and Sedgefield (DDES) serves a population of around 272,000 across the south of the County. NHS North Durham serves a population of 240,000 in the north. County Durham has an ageing population structure. This follows national and historical trends brought about by the post Second World War spike in births, followed by steadily decreasing birth rates until the start of the new millennium. The number of children and young people aged 0-17 in the county has steadily fallen over the last twelve years. In 2013 there were almost 6,300 fewer 0-17 year olds than there were in 2001, a decrease of 6%.

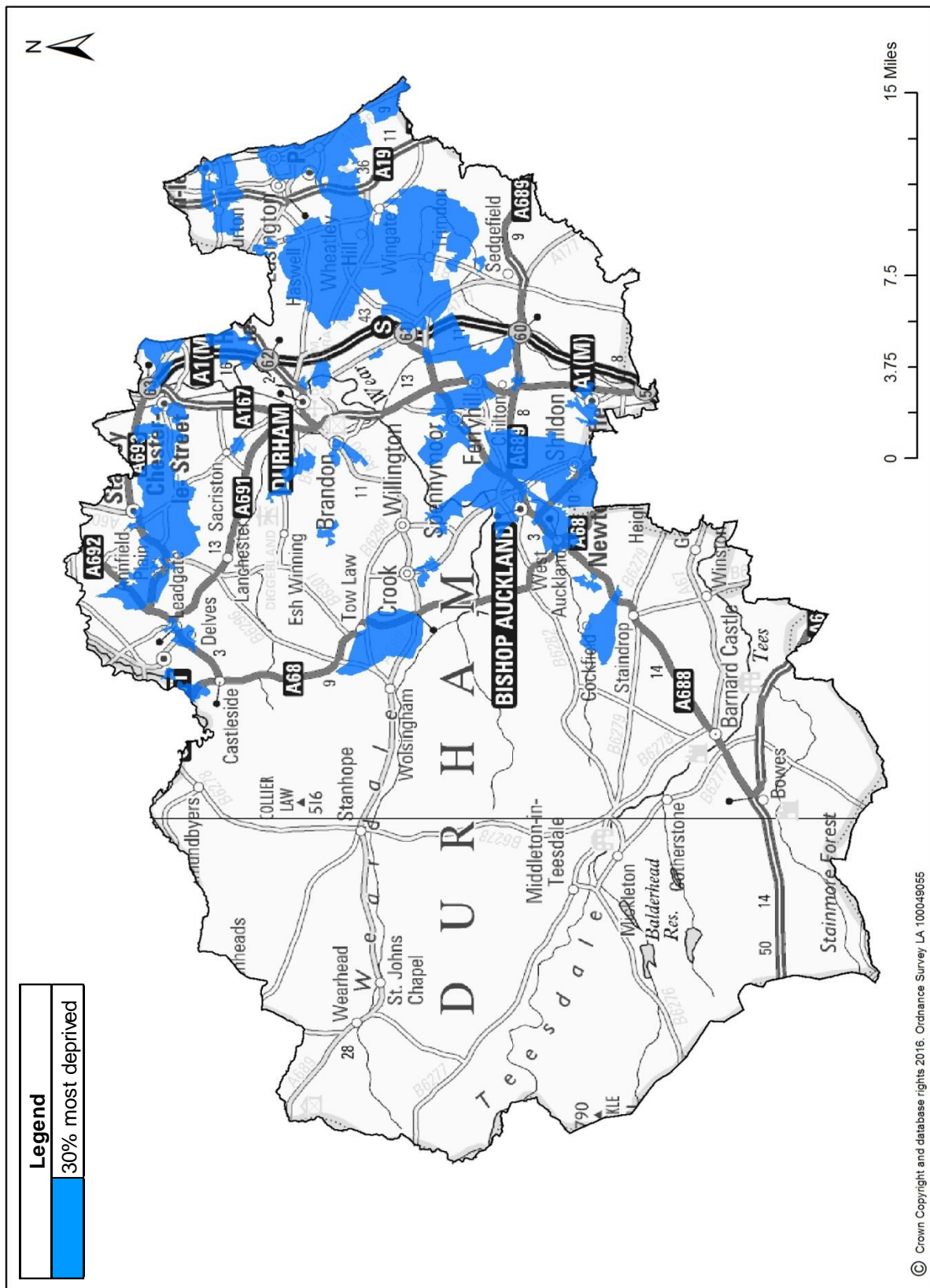
Figure 3: County Durham population pyramid. Source: 2014 mid-population estimates, ONS.



County Durham is a large and diverse area and experiences higher levels of deprivation than the national average. It should be noted that pockets of relative deprivation exist across the County, even in more relatively affluent areas such as Durham and Chester-le-Street.

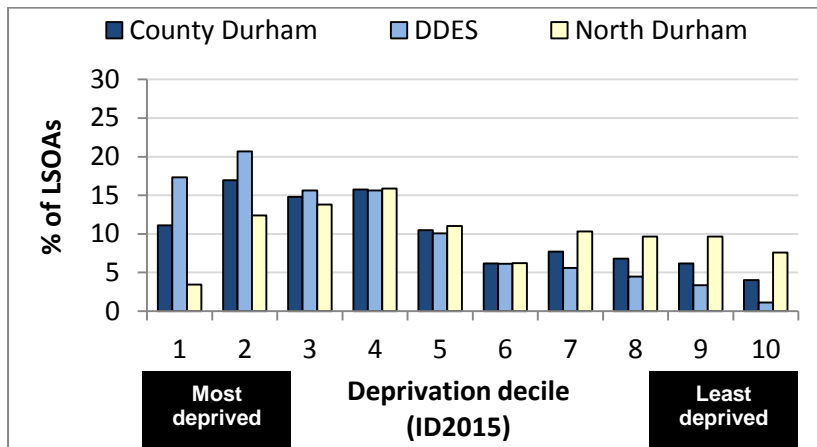
Over 40% of our population live in relatively deprived areas (43% of County Durham's Lower Super Output Areas (LSOAs) are in the 30% most deprived nationally). The variation in County Durham is shown on the map below (figure 4).

Figure 4: Map showing County Durham's most 30% most deprived LSOAs nationally. Source: ID2015, DCLG.



© Crown Copyright and database rights 2016. Ordnance Survey LA 100049055

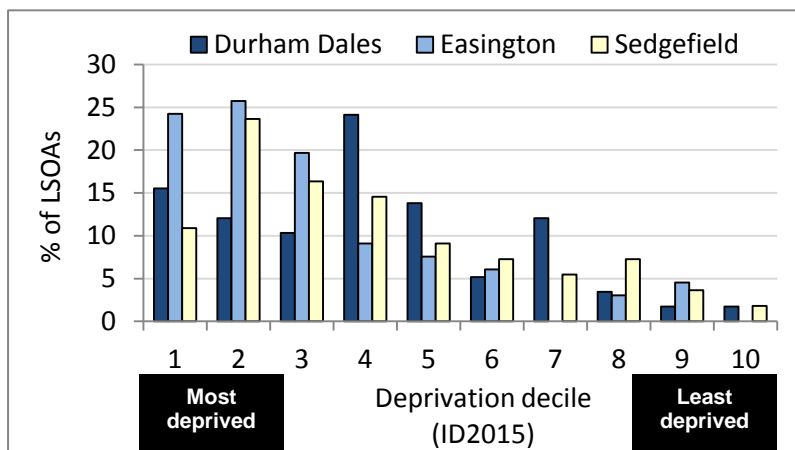
Figure 5: Percentage of LSOAs by national deprivation deciles (Overall Rank, Index of Deprivation 2015), County Durham, DDES CCG and North Durham CCG. Source: ID2015, DCLG, Durham County Council Public Health Intelligence (DCCPHI).



% of LSOAs in the most deprived 30% nationally (ID2015):

- County Durham. 42.9%.
- North Durham CCG. 29.7%.
- DDES CCG. 53.6%.

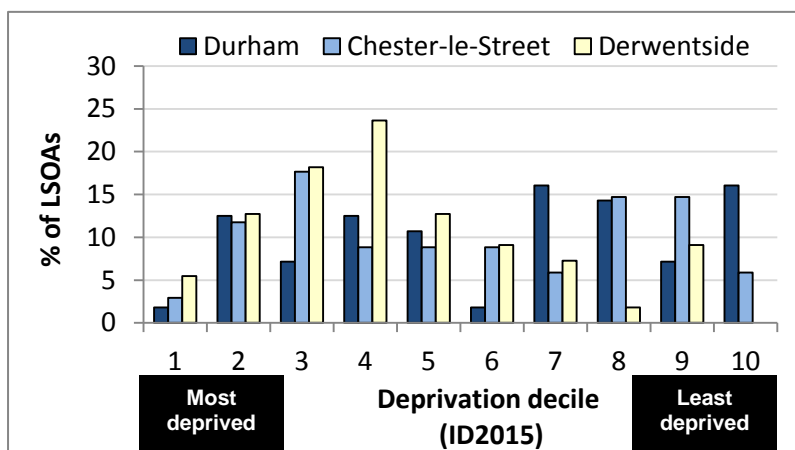
Figure 6: Percentage of LSOAs by national deprivation deciles (Overall Rank, Index of Deprivation 2015), Durham Dales, Easington and Sedgfield localities. Source: ID2015, DCLG, DCCPHI.



% of LSOAs in the most deprived 30% nationally (ID2015):

- Durham Dales. 37.9%
- Easington. 69.7%
- Sedgfield. 50.9%

Figure 7: Percentage of LSOAs by national deprivation deciles (Overall Rank, Index of Deprivation 2015), Durham, Chester-le-Street and Sedgfield localities. Source: ID2015, DCLG, DCCPHI.



% of LSOAs in the most deprived 30% nationally (ID2015):

- Durham. 21.4%
- Chester-le-Street. 32.4%
- Derwentside. 36.4%

2.2 County Durham birth profile

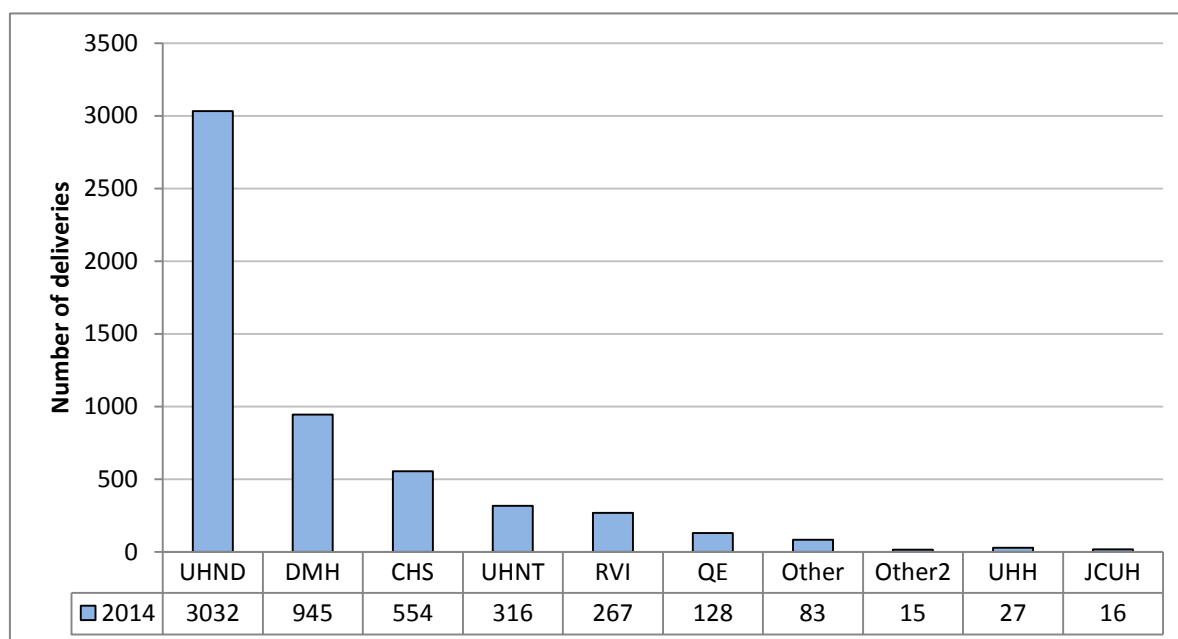
There are typically around 5,400 births per year in County Durham.

Figure 8: Live births by Area of Usual Residence, County Durham. Source: ONS.

Key statistics	2014	2012	2010	2008
Live births	5,361	5,701	5,846	5,686
Maternities	5,308	5,629	5,771	5,646
Total fertility rate	1.71	1.83	1.88	1.84
Crude live birth rate (per 1,000)	10.4	11.1	11.4	11.3
Maternity rate (per 1,000)	55.9	58.5	58.9	57.1

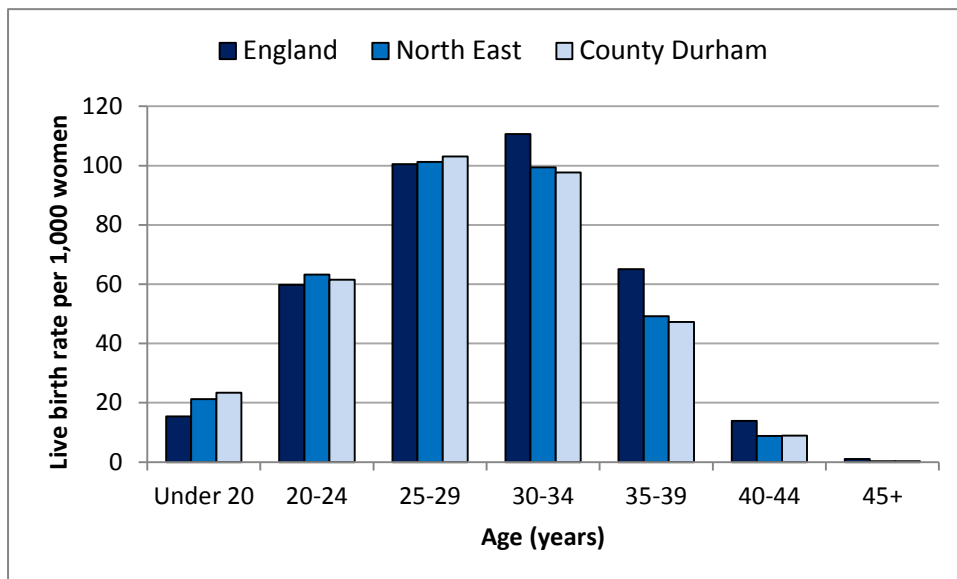
Women who live in County Durham may deliver at hospitals outside of the county boundary. In 2014, 56% of women delivered at University Hospital North Durham (UHND) and 18% delivered at Darlington Memorial Hospital (DMH). These are the two maternity units operated by the local care provider County Durham and Darlington NHS Foundation Trust (CDDFT). This means that the local data set, CDDFT mothers, accounts for roughly 70% of births by women who live in County Durham. The third most popular hospital for deliveries is Sunderland Royal Hospital (SRH) which is operated by City Hospitals Sunderland NHS Foundation Trust.

Figure 9: Number of Durham resident mother deliveries by location, 2014. Source: ONS, public health annual birth file.



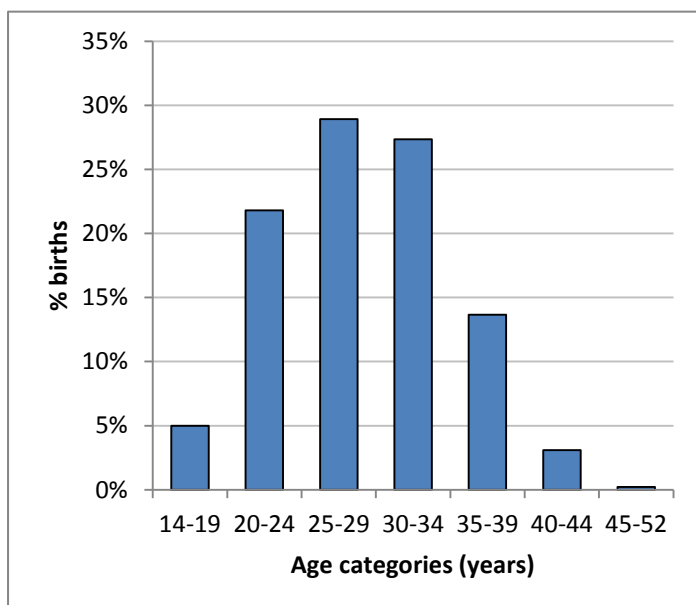
Key: UHND – University Hospital of North Durham; DMH – Darlington memorial Hospital; CHS – City Hospitals Sunderland; UHNT – University Hospital of North Tees; RVI – Royal Victoria Hospital; QE – Queen Elizabeth Hospital; Other – Home or Hospital out of North East; Other2 – Other North East Hospital (including midwifery-led units); UHH – University Hospital Hartlepool; JCUH – James Cook University Hospital.

Figure 10: Live birth rate by Area of Usual Residence (County Durham) and age, 2014.
Source: ONS.



The birth rate in County Durham is similar to the North East as a whole (Figure 10). The birth rate is lower for the age categories beyond 30 years than England. Characteristics of mothers who deliver at CDDFT hospitals are analysed below. Almost 60% of all mothers, over the three year period are aged between 25 and 34 years. Roughly 200 women per year (5%) are aged 19 and under and 130 per year (3%) are aged over 40 years.

Figure 11: Percentage of mothers by age categories, 2012/13 - 2014/15, CDDFT mothers
Source: CDDFT Information Team, DCCPHI.



Age band	Births (n)	% of all mothers
14-19	586	5.0
20-24	2,561	21.8
25-29	3,399	28.9
30-34	3,212	27.3
35-39	1,605	13.7
40-44	362	3.1
45-52	25	0.2
Total	11,750	100

County Durham’s ethnic group profile does not match England. In the 2011 census, 98% of people were white compared to 86% for England and Wales. Ethnic group breakdown of mothers resident in County Durham is not publically available. The table below shows the ethnic group of mothers who gave birth within CDDFT between 2012/13 and 2014/15.

Figure 12: Numbers and percentages of mother’s ethnic group, 2012/13 – 2014/15, CDDFT mothers. Source: CDDFT Information Team, DCCPHI.

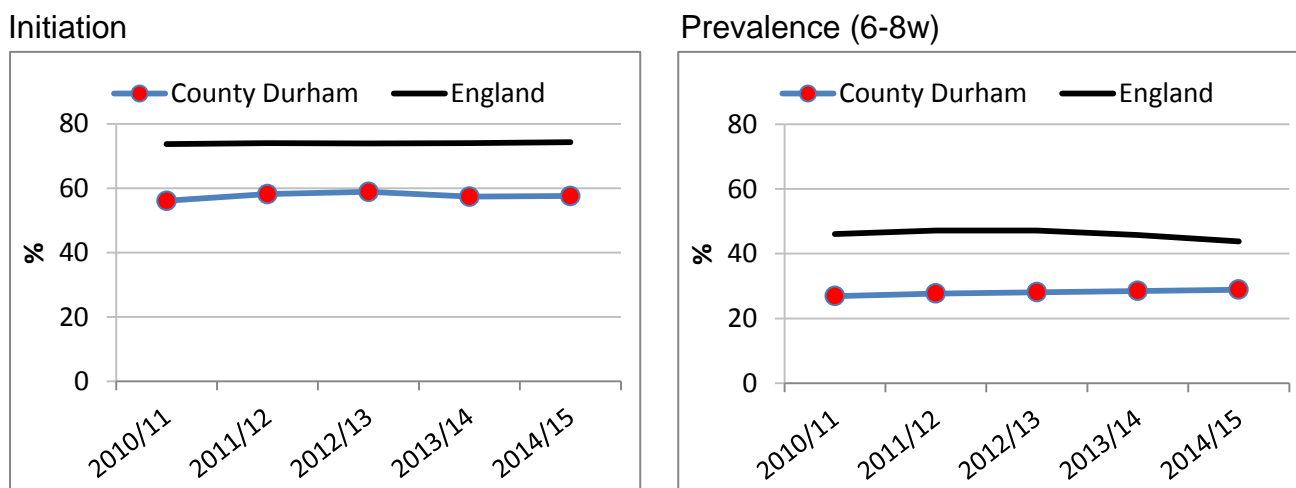
Ethnic group	Mothers (n)	% of all mothers
Mixed	26	0.2
Black	28	0.2
Chinese	43	0.4
Asian or Asian British	73	0.6
Other ethnic groups	86	0.7
Missing	921	7.8
White	10573	90.0

The PHE Breastfeeding Profile (see Figure 16 on page 20) includes an indicator of the percentage of babies born to mothers born in the Middle East and Asia. In County Durham the proportion (1.8%) is significantly lower than the North East (4.5%) and England (9.7%)

2.3 National and local breastfeeding trends

Breastfeeding initiation and prevalence (6-8w) indicators are valid and important measures of public health and are included in the Public Health Outcomes Framework (PHOF, Figure 13).

Figure 13: Trends in breastfeeding (%), County Durham and England. Source: Public Health Outcomes Framework, Public Health England.



● Significantly lower than England

Breastfeeding rates (initiation and prevalence (6-8w)) are significantly lower in County Durham than England. It is possible to quantify this gap with the two measures defined below:

- **Absolute inequality** gaps between County Durham are simply the difference between the value for County Durham and the value for England for any given indicator.
- **Relative inequality** is calculated by dividing the absolute gap by the value in the standard or less deprived area, in this case England. This measure allows comparison between different indicators.

Figure 14: Absolute and relative gaps in breastfeeding initiation and prevalence between (residents of) County Durham and England, and trends over time. Source: DCCPHI, Public Health Outcomes Framework, Public Health England.

Initiation	2010/11	2011/12	2012/13	2013/14	2014/15	% change over time
County Durham %	56.1	58.2	58.9	57.4	57.6	2.7
<i>Number initiating</i>	3,161	3,330	3,098	3,006	2,943	
England %	73.7	74	73.9	74	74.3	0.8
Absolute gap between County Durham and England %	17.6	15.8	15	16.6	16.7	
Relative gap %	31.4	27.1	25.5	28.9	29.0	

Prevalence (6-8w)	2010/11	2011/12	2012/13	2013/14	2014/15	% change over time
County Durham %	26.9	27.7	28.1	28.5	28.9	7.4
<i>N. totally or partially breastfed</i>	1,542	1,602	1,591	1,546	1,572	
England %	46.1	47.2	47.2	45.8	43.8	-5.0
Absolute gap between County Durham and England %	19.2	19.5	19.1	17.3	14.9	
Relative gap %	71.4	70.4	68.0	60.7	51.6	

Initiation:

- Compared to 2010/11 breastfeeding initiation rates for County Durham and England have increased slightly; 2.7% increase in County Durham and 0.8% increase in England.
- The absolute and relative gaps between County Durham and England have slightly narrowed. The gap was smallest in 2012/13 and has since started to widen.

Prevalence (6-8w):

- Since 2010/11 the percentage of infants breastfed at 6-8 weeks has increased in County Durham by 7.4% compared to a decrease of 5% for England.
- The relative gap between County Durham and England has narrowed from 71.4% to 51.6%

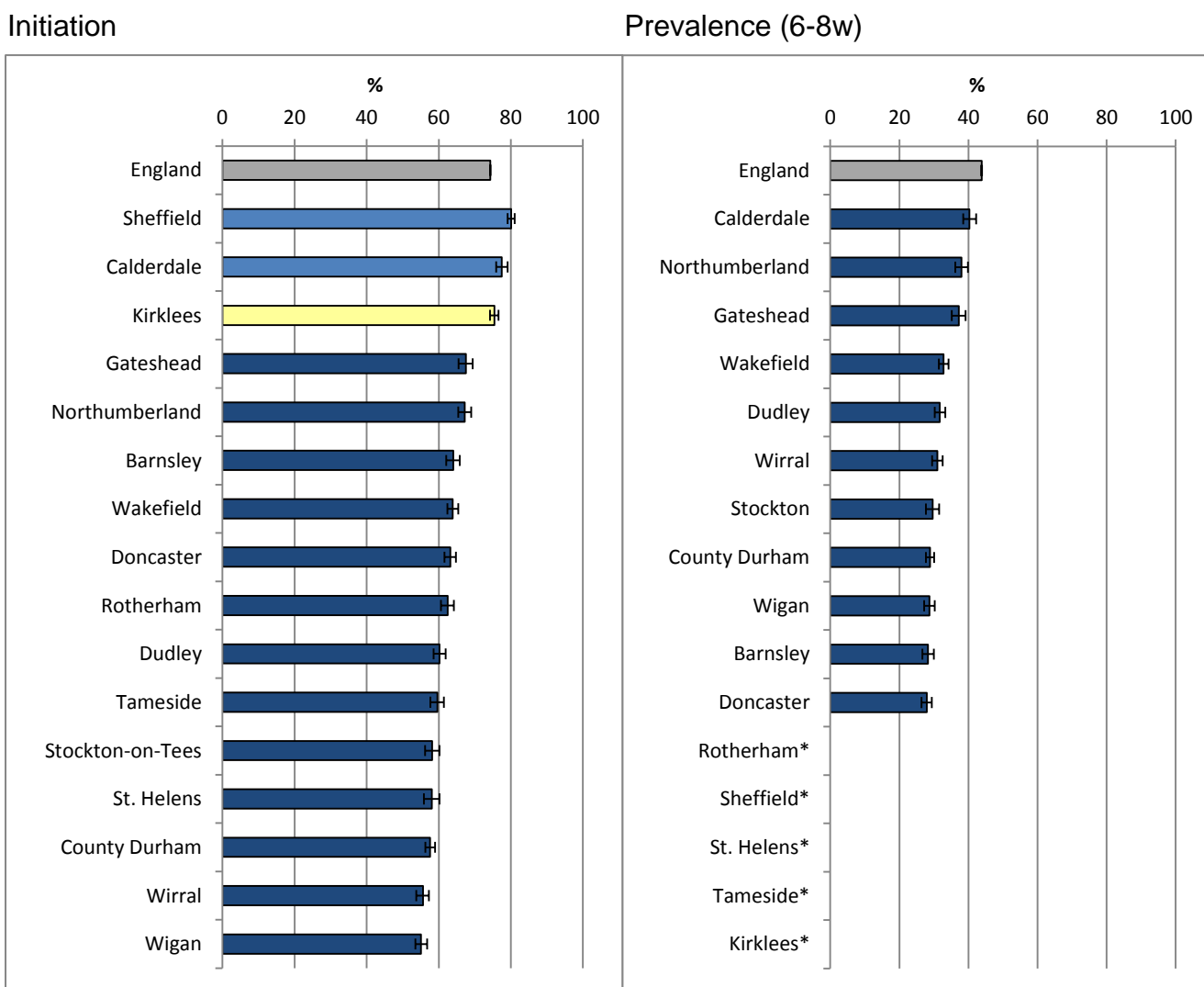
2.4 Benchmarking

The Chartered Institute of Public Finance and Accountancy (CIPFA) have created a model which seeks to measure similarity between Local Authorities. County Durham is in a group with 15 other councils with the most similar statistical characteristics in terms of social and

economic features. Durham's rank is low within this grouping for the breastfeeding indicators:

- **Initiation** - Durham is ranked 14th lowest out of 16 statistical neighbours. County Durham and twelve out of the sixteen local authorities are statistically worse than England for initiation.
- **Prevalence (6-8 w)** - Durham is ranked 8th out of the 11 statistical neighbours with published data. All eleven similar local authorities are statistically worse than England for prevalence at 6 to 8 weeks.

Figure 15: Breastfeeding rates in County Durham (2014/15) compared to England and CIPFA statistical neighbours, with 95% confidence intervals. Source: Public Health England.



■	worse than England
■	similar to England
■	better than England

* = value not published as did not meet national data validation criteria

The two key breastfeeding indicators in the PHOF are built on by the Children and Young People's Health Benchmarking Tool and this includes a Breastfeeding Profile which is presented below (figure 16).

Figure 16: County Durham Breastfeeding profile.

Source: Children & Young People’s Health Benchmarking Tool, Public Health England.

Indicator	Period	Co Durham		North East	England
		Count	Value	Value	Value
Percentage of babies born to mothers born in Middle East and Asia	2014	96	1.8%	4.5%	9.7%
Deprivation score (IMD 2015)	2015	-	25.7	-	21.8
Caesarean section %	2014/15	1,263	23.7%	23.8%	25.8%
Percentage of deliveries to women aged 35 years or above	2014/15	791	14.9%	15.1%	20.4%
Teenage mothers	2014/15	92	1.7%	1.7%	0.9%
Smoking status at time of delivery	2014/15	975	19.0%	-	11.4%
Breastfeeding initiation	2014/15	2,943	57.6%	-	74.3%
Breastfeeding prevalence at 6-8 weeks after birth	2014/15	1,572	28.9%	-	43.8%
Infant mortality	2012 - 14	56	3.4	3.6	4
Admissions of babies under 14 days	2014/15	456	85.6	67.7	60.7
Admissions for gastroenteritis in infants aged under 1 year	2014/15	185	339.6	321.8	173.1
Admissions for gastroenteritis in infants aged 1 year	2014/15	130	229.2	202.3	116.5
Admissions for gastroenteritis in infants aged 2, 3 and 4 years	2014/15	107	60.4	62.4	43.1
Admissions for respiratory tract infections in infants aged under 1 year	2014/15	385	706.7	719	522.4
Admissions for respiratory tract infections in infants aged 1 year	2014/15	57	100.5	86.8	66.8
Admissions for respiratory tract infections in infants aged 2, 3 and 4 years	2014/15	53	29.9	23.2	20.3

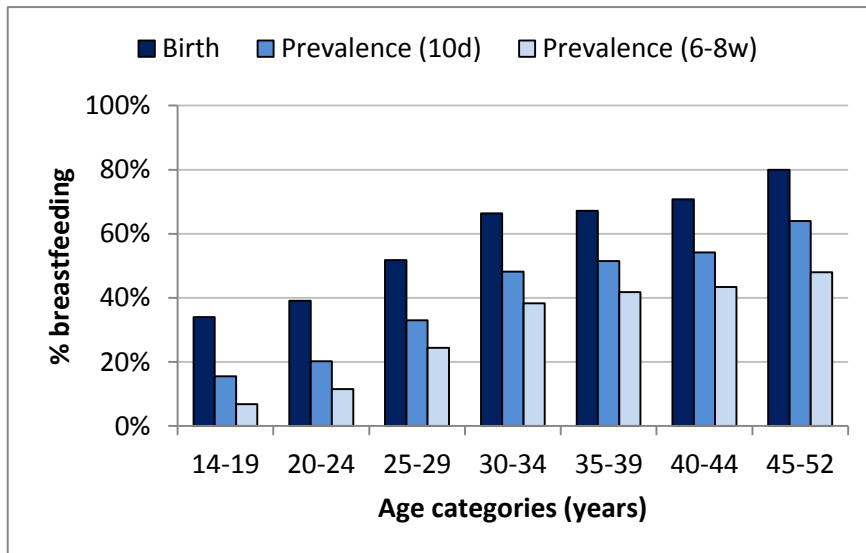
■	worse than England
■	similar to England
■	better than England

Most of the indicators in the Breastfeeding profile show County Durham to be significantly worse than England. For one of the indicators, infant mortality, County Durham is not significantly different to England and for caesarean section County Durham is significantly better.

2.5 Analysis by age and ethnicity

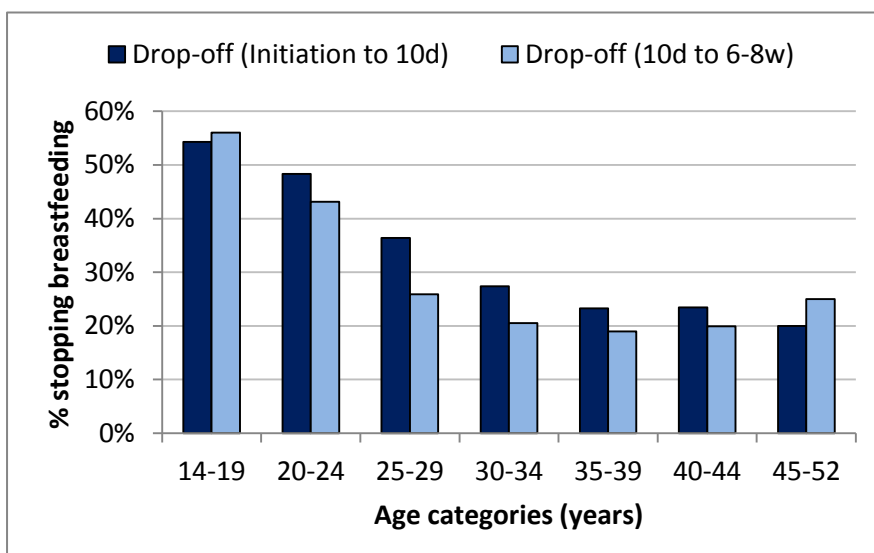
The local data provided on CDDFT mothers allows analysis of differentiation in breastfeeding by age and ethnicity.

Figure 17: Breastfeeding rates by age category, County Durham, 2012/13-2014/15, CDDFT mothers. Source: CDDFT Information Team, DCCPHI.



- As age increases so too does breastfeeding initiation, and prevalence (10d and 6-8w)
- Under the age of 30 years breastfeeding rates are low
- It should be noted that the 45-52 year category is based on only 25 births therefore caution should be given when interpreting the above percentages

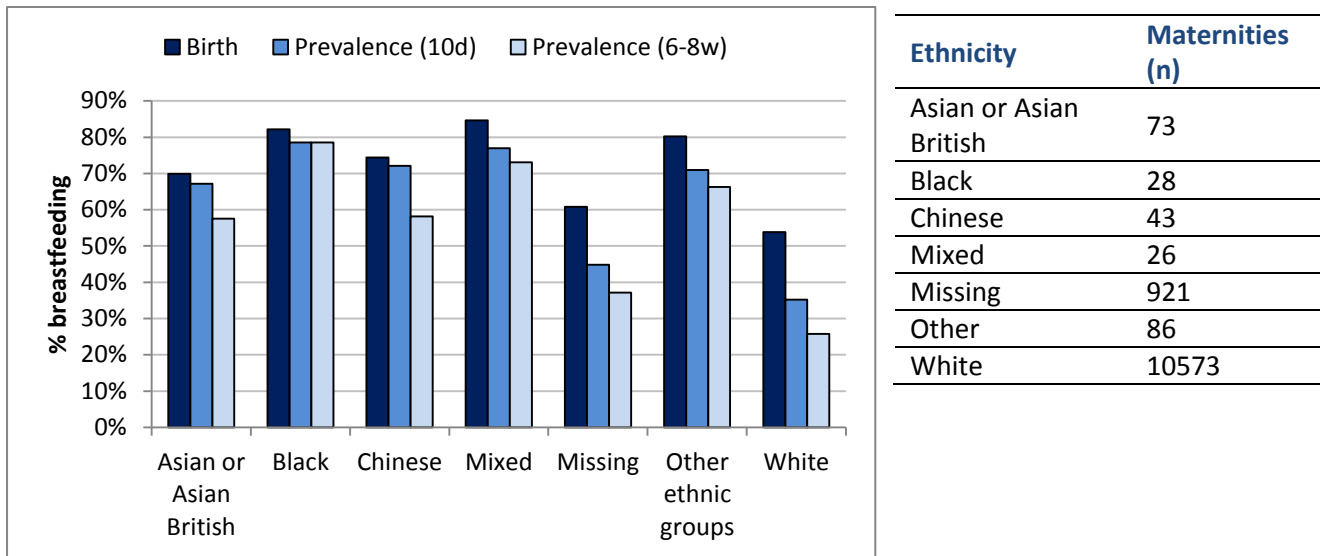
Figure 18: Breastfeeding drop-off rates by age category, County Durham, 2012/13-2014/15, CDDFT mothers. Source: CDDFT Information Team, DCCPHI.



- As age increases, both drop-off rates decrease
- Drop-off falls sharply between the ages of 14 and 29 years
- For the age bands from the age of 30 years onwards, drop-off rates are static
- Apart from the youngest (14-19 years) and the oldest (45-52 years) age categories, the percentage of women starting and then stopping breastfeeding is largest between initiation and 10 days rather than 10 days and 6-8 weeks

- It should be noted that the 45-52 year category is based on only 25 births therefore caution should be given when interpreting the above percentages

Figure 19: Breastfeeding rates by ethnicity, County Durham, 2012/13 - 2014/15, CDDFT mothers. Source: CDDFT Information Team, DCCPHI.



- Low numbers of women in ethnic groups other than 'White' mean that caution must be given when drawing conclusions about levels of breastfeeding by ethnicity
- 90% of mothers are White and 8% of records do not include ethnicity
- The proportion of white mothers who breastfeed is lower than all other ethnic groups

3 Within County Durham

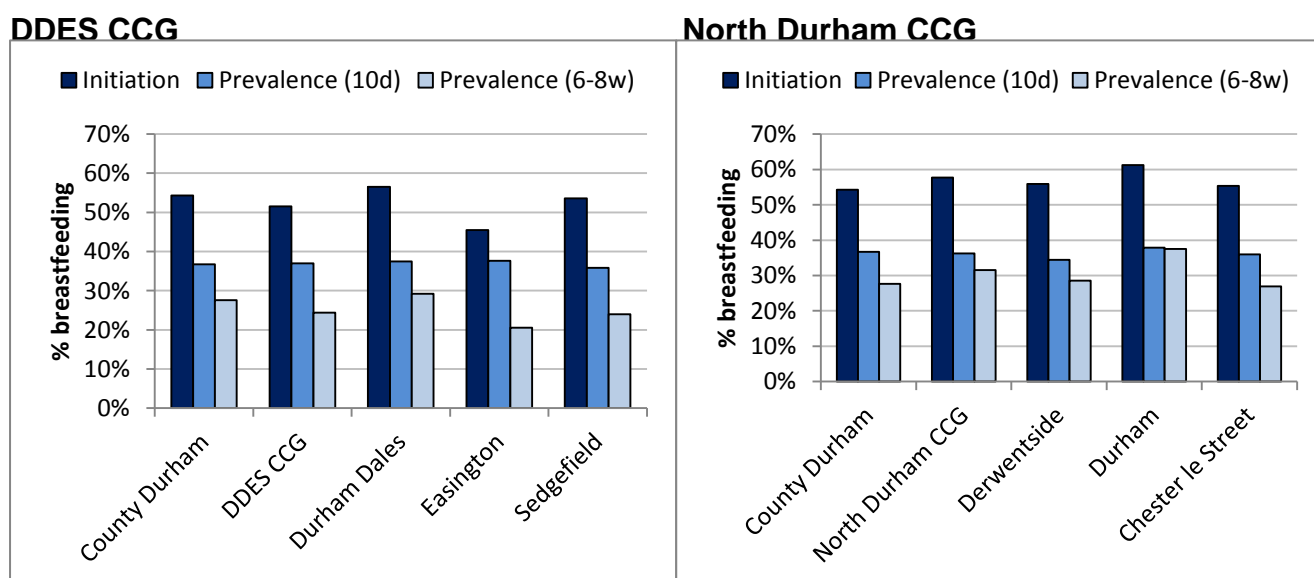
3.1 Within County Durham - locality analysis

A previous breastfeeding HEA undertaken by County Durham and Darlington PCT in 2012 identified variation in breastfeeding rates within County Durham (by locality). It concluded that there were differences for initiation and duration, with the lowest uptake recorded in the Easington locality and highest in Durham & Chester-le-Street.

Figure 20: Locality breastfeeding rates, 2012/13 – 2014/15. Source: CD babies, CDDFT Information Team, DCCPHI.

	Initiation %	10d %	6-8w %
County Durham	54.3	36.7	27.6
DDES CCG	51.5	37.0	24.4
Durham Dales	56.6	37.5	29.2
Easington	45.5	37.6	20.6
Sedgefield	53.6	35.8	24.0
North Durham CCG	57.7	36.2	31.5
Derwentside	55.9	34.4	28.6
Durham	61.2	37.9	37.5
Chester-le-street	55.3	36.0	27.0

Figure 20: Locality breastfeeding rates, 2012/13 – 2014/15. Source: CD babies, CDDFT Information Team, DCCPHI.

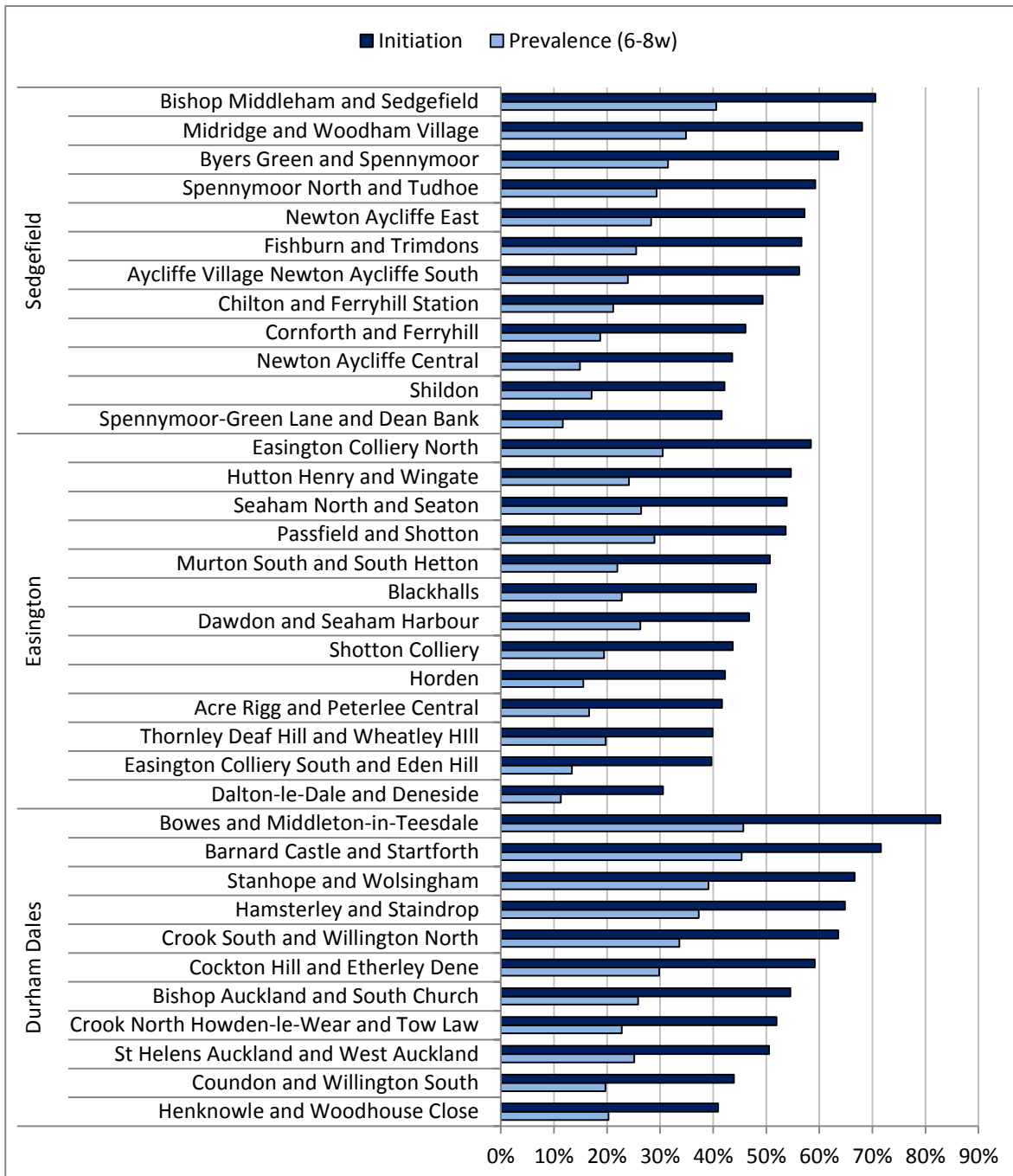


- The proportion of women initiating breastfeeding is highest in North Durham CCG (57.7%) and particularly in the Durham City locality (61.2%)
- There is less variation in the prevalence rates at 10 days in the County. The rates are slightly higher in DDES CCG (37.0%) than North Durham CCG (36.2%)
- Prevalence at 6-8 weeks is higher in North Durham CCG (31.5%) than DDES CCG (24.4%). In Durham locality 37.5% of infants are breastfed at 6-8 weeks compared to 20.6% in Easington

3.2 Within County Durham - small area (MSOA) variation

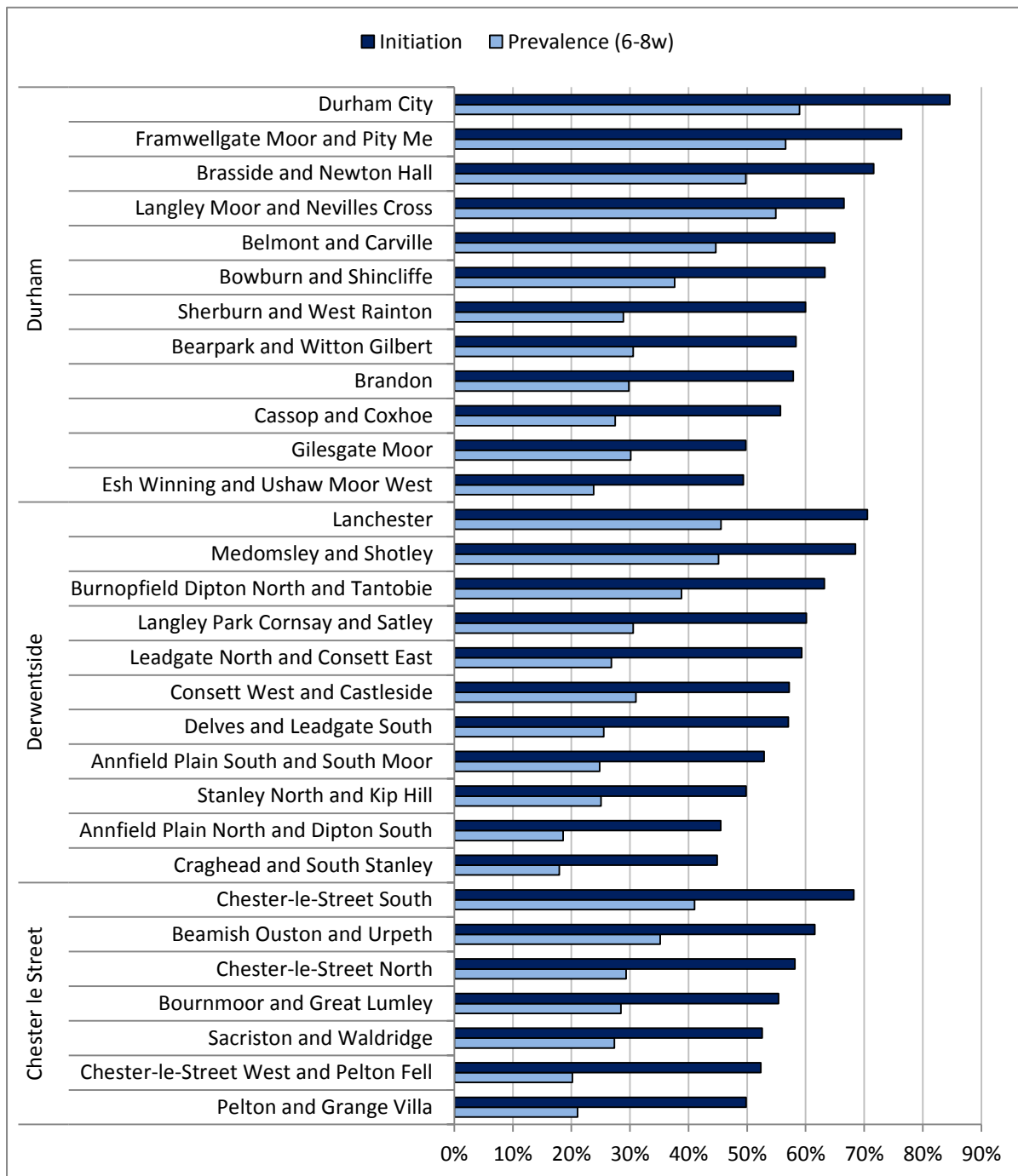
The following section describes the variation between the least and most deprived areas in County Durham, in terms of the key breastfeeding indicators.

Figure 21: DDES CCG initiation and prevalence (6-8w) rates, broken down by locality and MSOA, 2012/13 – 2014/15. Source: CD babies, CDDFT Information Team, DCCPHI.



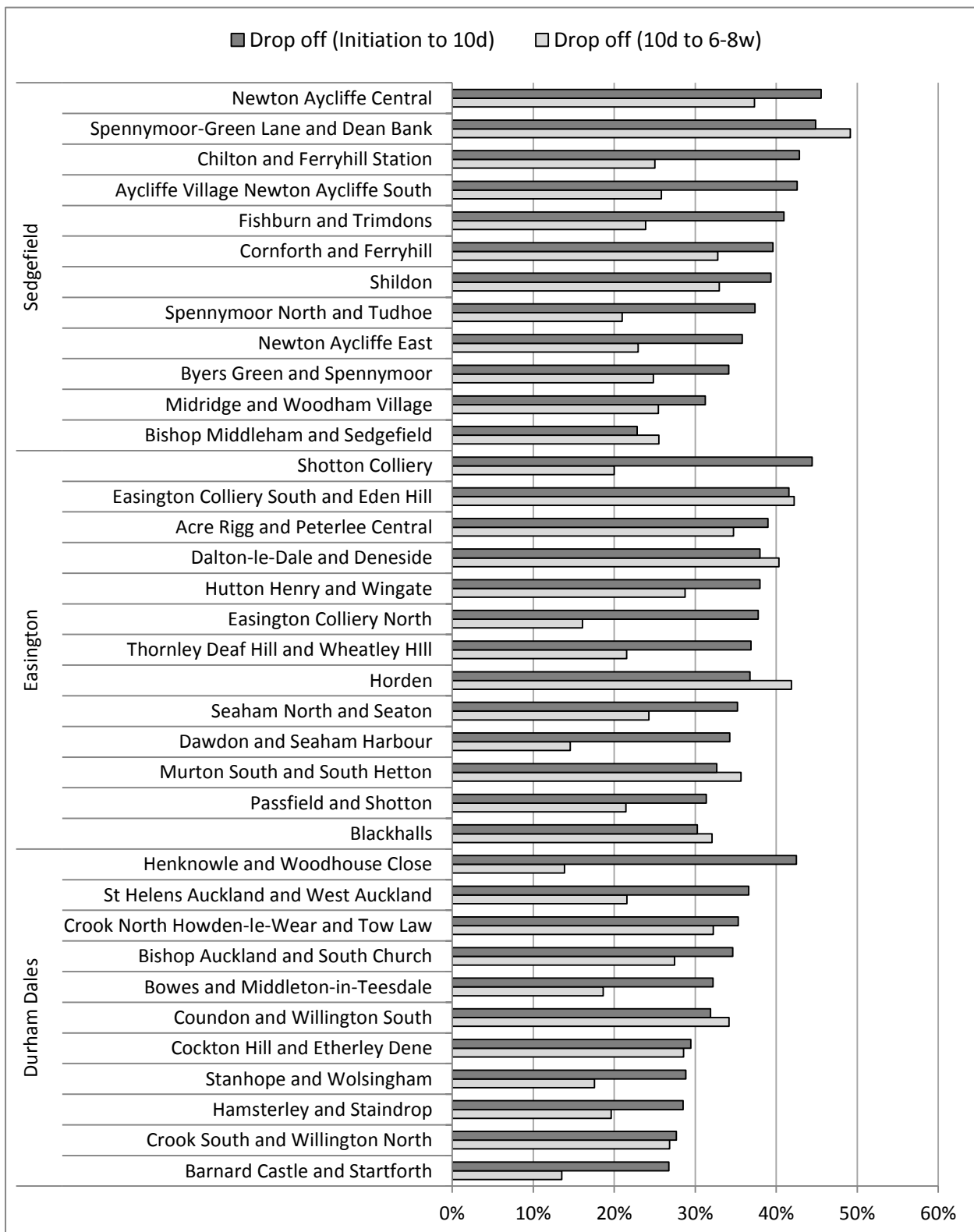
- In DDES CCG there is wide variation in breastfeeding initiation and prevalence (6-8w)
- Initiation ranges from 82.9% in Bowes and Middleton-in-Teesdale to 30.6% in Dalton-le-Dales and Deneside

Figure 22: North Durham CCG, initiation and prevalence (6-8w) rates, broken down by locality and MSOA, 2012/13 – 2014/15. Source: CD babies, CDDFT Information Team, DCCPHI.



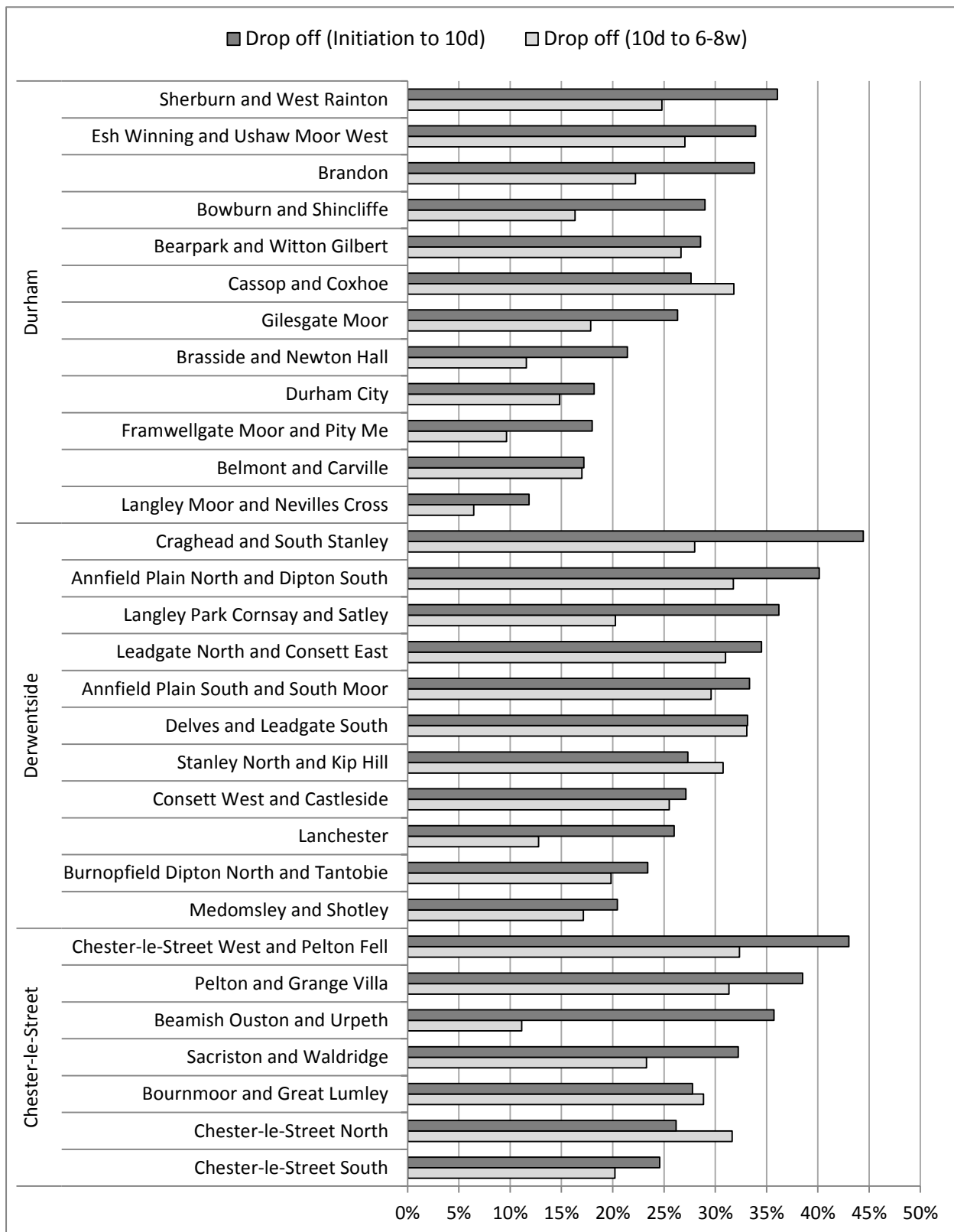
- In North Durham CCG there is wide variation in breastfeeding initiation and prevalence (6-8w)
- Prevalence (6-8w) ranges from 59.0% in Durham City to 18.0% in Craghead and South Stanley

Figure 23: DDES CCG, drop-off rates, broken down by locality and MSOA, 2012/13 – 2014/15. Source: CD babies, CDDFT Information Team, DCCPHI.



- In DDES CCG, drop-off between initiation and 10 days ranges from 45.5% in Newton Aycliffe central to 22.8% in Bishop Middleham and Sedgefield

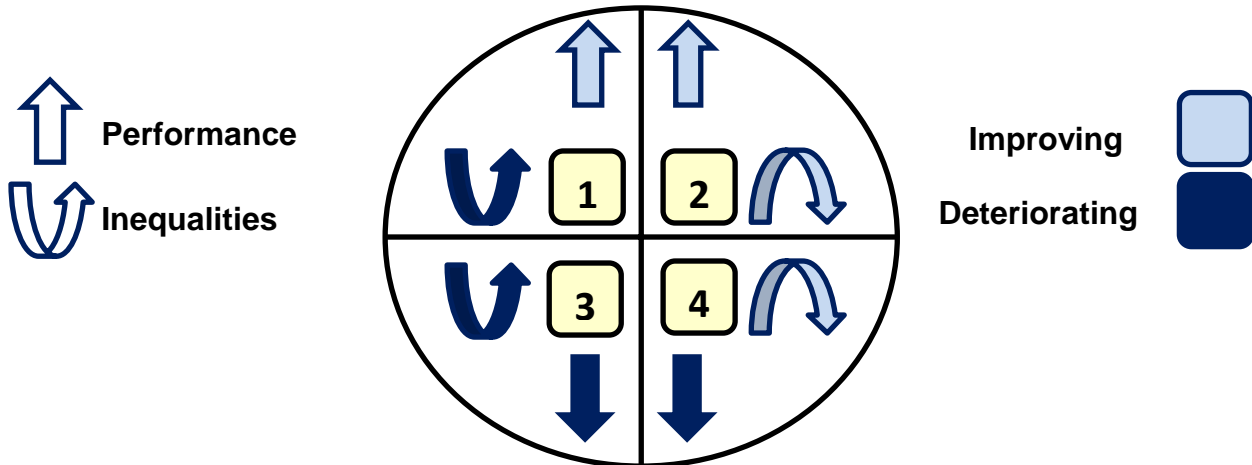
Figure 24: North Durham CCG, drop-off rates, broken down by locality and MSOA, 2012/13 – 2014/15. Source: CD babies, CDDFT Information Team, DCCPHI.



- In North Durham CCG, drop-off between 10 days and 6-8 weeks ranges from 33.1% in Delves and Leadgate South to 6.5% in Langley Moor and Nevilles Cross.

3.3 Measuring the inequality gap within County Durham

Drives to increase breastfeeding initiation and prevalence (10d and 6-8w) at a large area level i.e. County Durham, take no account of inequalities within areas. The MSOA charts presented in section 3.2 above show that there is wide variation, Performance can increase alongside widening inequalities. This is scenario 1 out of the four presented below.



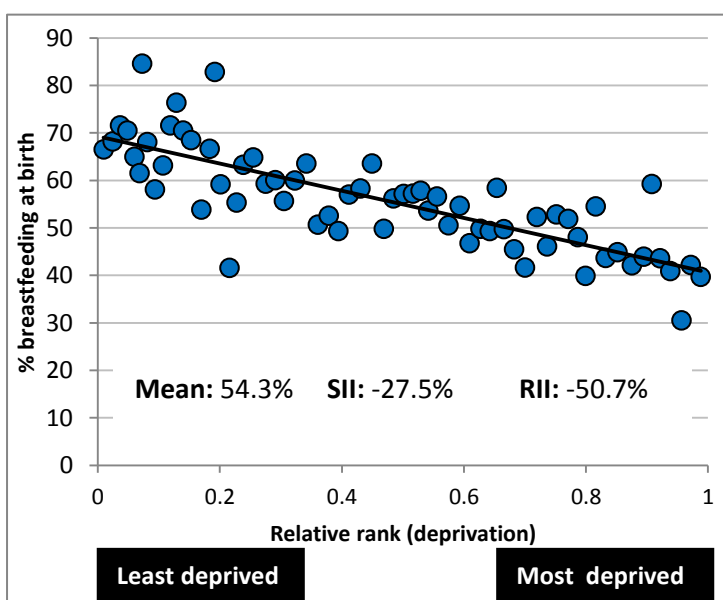
To conduct a HEA the Slope and Relative Indices of Inequality are calculated and analysed. Both of these measures are based on the socio-economic dimension to inequalities in health.

The **Slope Index of Inequality (SII)** is used to show the association between a chosen outcome in an area (in this instance breastfeeding) compared to its relative rank in the socio-economic distribution, taking into account the number of subjects in each category. The SII allows the absolute gap between the least and most deprived areas across all MSOAs in a given area to be shown for a particular measure (e.g. 6-8 week prevalence). It provides a consistent measure of health inequalities across local populations and takes into account the position of all groups across the social gradient simultaneously.

The **Relative Index of Inequality (RII)** is the size of the SII gap between the least and the most deprived MSOAs expressed as a percentage of the average rate for all areas. This permits comparisons to be made over time.

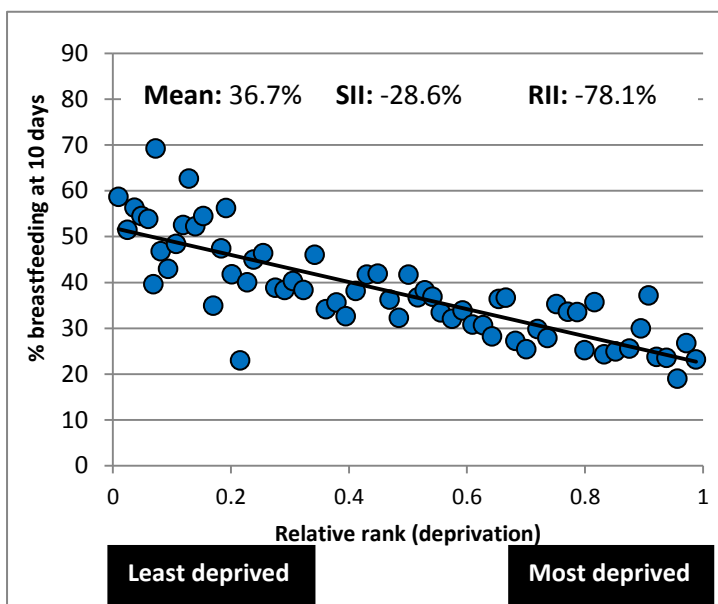
Figure 25: Initiation, County Durham registered babies, 2011/12 – 2013/14.

Source: CD babies, CDDFT Information Team, DCCPHI.



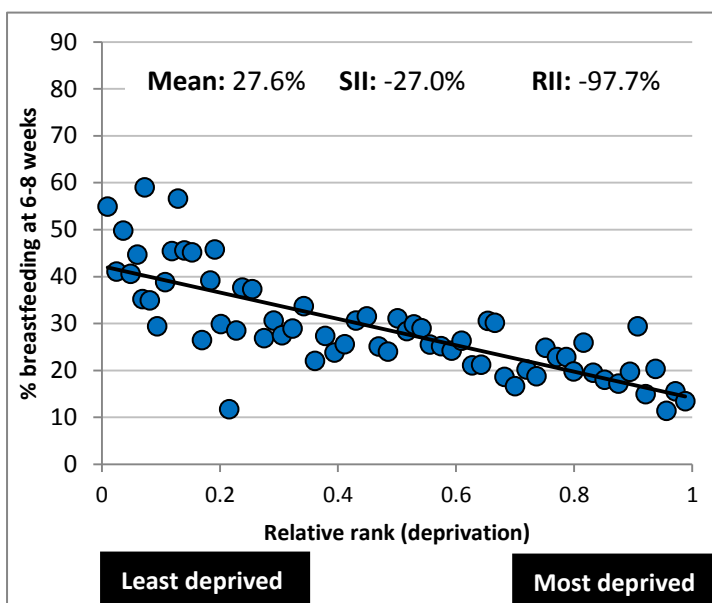
- The distribution of mothers initiating breastfeeding is unequal. It is lower in the more deprived areas.
- The relative inequality gap (RII) between the least and most deprived areas is 50.7%

Figure 26: Prevalence (10d), County Durham registered babies, 2011/12 – 2013/14
 Source: CD babies, CDDFT Information Team, DCCPHI.



- The distribution of breastfeeding prevalence at 10 days is unequal. It is lower in the more deprived areas.
- The relative inequality gap (RII) between the least and most deprived areas is -78.1%.

Figure 27: Prevalence (6-8w), County Durham registered babies, 2011/12 – 2013/14
 Source: CD babies, CDDFT Information Team, DCCPHI.



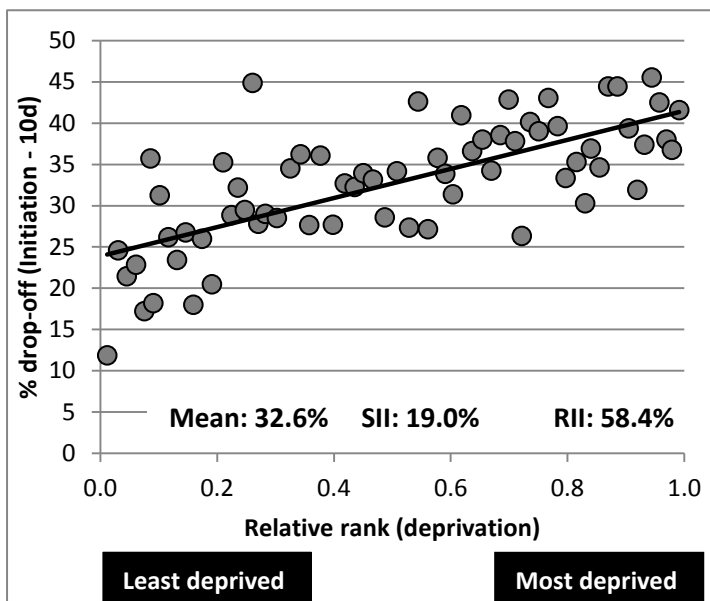
- The distribution of breastfeeding prevalence at 6-8 weeks is unequal. It is lower in the more deprived areas.
- The relative inequality gap (RII) between the least and most deprived areas is -97.7%.

SII: the difference in the selected measure between those MSOAs which are least and most deprived taking account of all MSOAs in the area

RII: the size of the gap between the least and most deprived MSOAs (expressed as a percentage of the average rate for all areas)

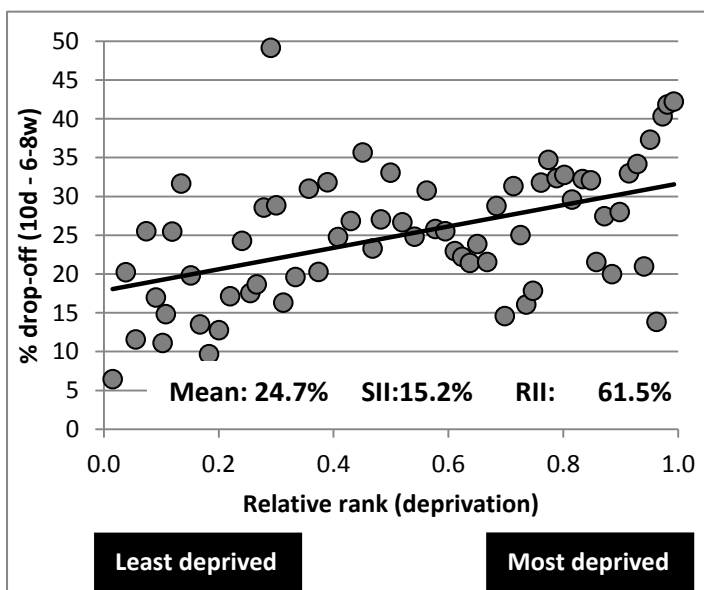
N.B. The y axis scale changes between pages 29 and 30

Figure 28: Drop-off (Initiation to 10d), County Durham registered babies, 2011/12 – 2013/14. Source: CD babies, CDDFT Information Team, DCCPHI.



- The distribution of drop-off between initiation and 10 days is unequal. Drop-off is higher in the more deprived areas.
- The relative inequality gap (RII) between the least and most deprived areas is 58.4%.

Figure 29: Drop-off (10d to 6-8w), County Durham registered babies, 2011/12 – 2013/14. Source: CD babies, CDDFT Information Team, DCCPHI.



- The distribution of drop-off between 10 days and 6-8 weeks is unequal. Drop-off is higher in the more deprived areas.
- The relative inequality gap (RII) between the least and most deprived areas is 61.5%.

SII: the difference in the selected measure between those MSOAs which are least and most deprived taking account of all MSOAs in the area

RII: the size of the gap between the least and most deprived MSOAs (expressed as a percentage of the average rate for all areas)

To summarise the inequality in breastfeeding across the county each of the five RIIs are presented below (figure 30). The chart shows the difference in RII from initiation, prevalence (10d) and prevalence (6-8w) and also for the two drop-off rates. This also allows us to understand how inequality varies at the various checkpoints between birth and 6 to 8 weeks.

Figure 30: Relative Index of Inequality (RII) for breastfeeding rates and drop-off, County Durham registered babies, 2012/13 – 2014/15. Source: CD babies, CDDFT Information Team, DCCPHI.

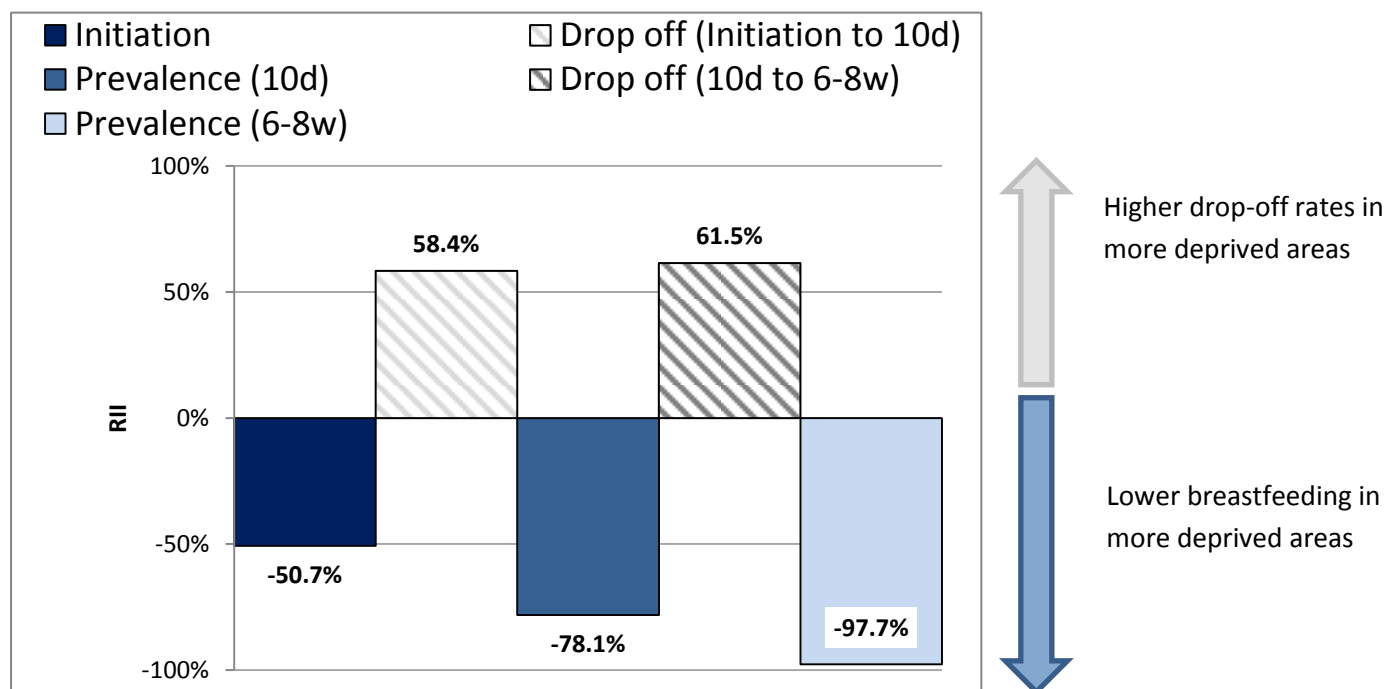


Figure 31: Summary of HEA key inequalities within County Durham, County Durham registered babies, 2012/13 – 2014/15. Source: CD babies, CDDFT Information Team, DCCPHI.

	Mean (%)	SII (%)	RII (%)
Initiation	54.3	-27.5	-50.7
Prevalence (10d)	36.7	-28.6	-78.1
Prevalence (6-8w)	27.6	-27.0	-97.7
Drop-off 1	32.6	19.0	58.4
Drop-off 2	24.7	15.2	61.5

Key: Drop off 1 – drop-off between initiation to 10d; Drop-off 2 – drop-off between 10d and 6-8w.

- There is a stepped increase in the inequality gap between the most and least deprived areas from initiation (-50.7%), 10 day prevalence (-78.1%) and 6-8 week prevalence (-97.7%).
- If breastfeeding rates increased in the more deprived areas, and rates were maintained elsewhere, the inequality gap (RII) would narrow.
- Drop-off rates are higher in the more deprived areas of County Durham, with a slight increase in inequality between initiation and 10 days (58.4%) and between 10 days and 6-8 weeks (61.5%). If drop-off rates reduced in the more deprived areas and rates were maintained elsewhere, the inequality gap would narrow.
- Deprivation plays a greater role in explaining variation in breastfeeding rates than drop-off rates.

- An RII of zero would mean no inequalities between deprivation and breastfeeding. When this MSOA analysis is refreshed as part of the HEA cycle the ideal situation would be for the RIIs to have reduced.

Recommendations

Local Authority

1. Durham County Council should continue to commission evidence based multifaceted infant feeding initiatives as part of a strategic partnership approach to increasing breastfeeding and reducing health inequalities.
2. Maintain level 3 UNICEF UK Baby Friendly accreditation in the Health Visiting/Public Health Nursing Service, and support DCC children's centre to achieve this accreditation.
3. The findings of this HEA should be used to inform strategy development, future breastfeeding support and practice in order to address the inequalities identified. Intelligence on initiation, prevalence and drop-off should be used to identify the most appropriate locations, and discrete groups, for targeted breastfeeding support and interventions.
4. Public Health to look at variation by MSOA to look at similar neighbourhoods (MSOAs) which experience markedly different drop-off rates and share findings and recommendations.

Multi agency – Local Authority and Health

5. All stakeholders must work collaboratively to ensure evidence based multifaceted infant feeding initiatives are developed and promoted within maternity services.
6. In order to improve breastfeeding initiation and prevalence in discrete populations where inequality has been identified, support and interventions should be aimed at (a) mothers aged less than 30 years old and (b) those living in more deprived communities within County Durham, whilst continuing to provide a universal service.
7. Evidence for increasing uptake of breastfeeding in younger women and those in more deprived areas should be reviewed to inform local strategy development.
8. Reasons for the large drop-off of breastfeeding mothers in the more deprived areas of County Durham should be investigated more fully by the multi-agency 'Breastfeeding Steering Group'. This will help to further inform breastfeeding service development and target interventions.
9. Learning from statistical neighbours for evidence of good practice (for example Sheffield and Calderdale) should be encouraged.
10. The use of social networks and virtual communities should be considered by the breastfeeding steering group to ensure that access to breastfeeding support is maximised and appropriate to communication preferences.

Data quality and access

11. The Children and Families Partnership must be assured that data relating to breastfeeding is available for all mothers and babies who live in County Durham regardless of where they deliver or are delivered.
12. Partners should agree a common set of data to be routinely reported to ensure complete information is available for subsequent equity 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. This should be recorded accurately to prevent records being unusable or misleading. A data validation process needs to be put in place to ensure data collected is robust (e.g. postcodes, date of birth).
13. 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).