

Children and Young People Overview and Scrutiny Committee – Supplementary agenda No. 1

A meeting of the Children and Young People Overview and Scrutiny Committee will be held on:

Date: 19 January 2016

Time: 6.30pm

Venue: Meeting Room 2 - Level 3, Gun Wharf, Dock Road, Chatham ME4 4TR

Items

- 6 Annual Public Health Report of the Director of Public Health (Pages 2014/15 3 - 74)**

This report presents the Annual Public Health Report of the Director of Public Health for 2014/15. The report focuses on the health of Medway's infants and young children and makes recommendations for Medway Council and partners.

Please find attached the Annual Public Health Report 2014/15 itself. This has been circulated separately to the Committee Members.

For further information please contact Teri Reynolds, Democratic Services Officer on Telephone: 01634 332104 or Email: democratic.services@medway.gov.uk

Date: 11 January 2016



This agenda and reports are available on our website
www.medway.gov.uk

A summary of this information can be made available in other formats from **01634 333333**

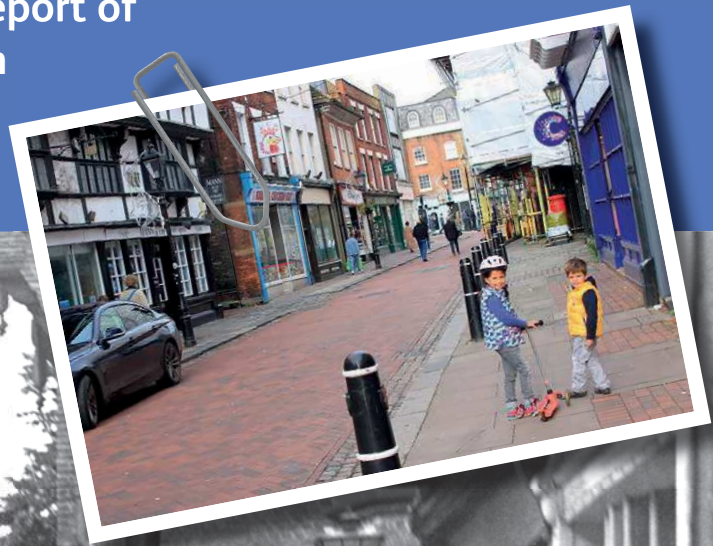
If you have any questions about this meeting and you want to speak to someone in your own language please ring **01634 335577**

বাংলা	331780	ગુજરાતી	331782	ਪੰਜਾਬੀ	331784	كوردی	331841	ارو	331785	Русский	332374
中文	331781	हिंदी	331783	Polski	332373	ଏହିସଂସ୍କୃତ	331786	فارسی	331840	Lietuviškai	332372

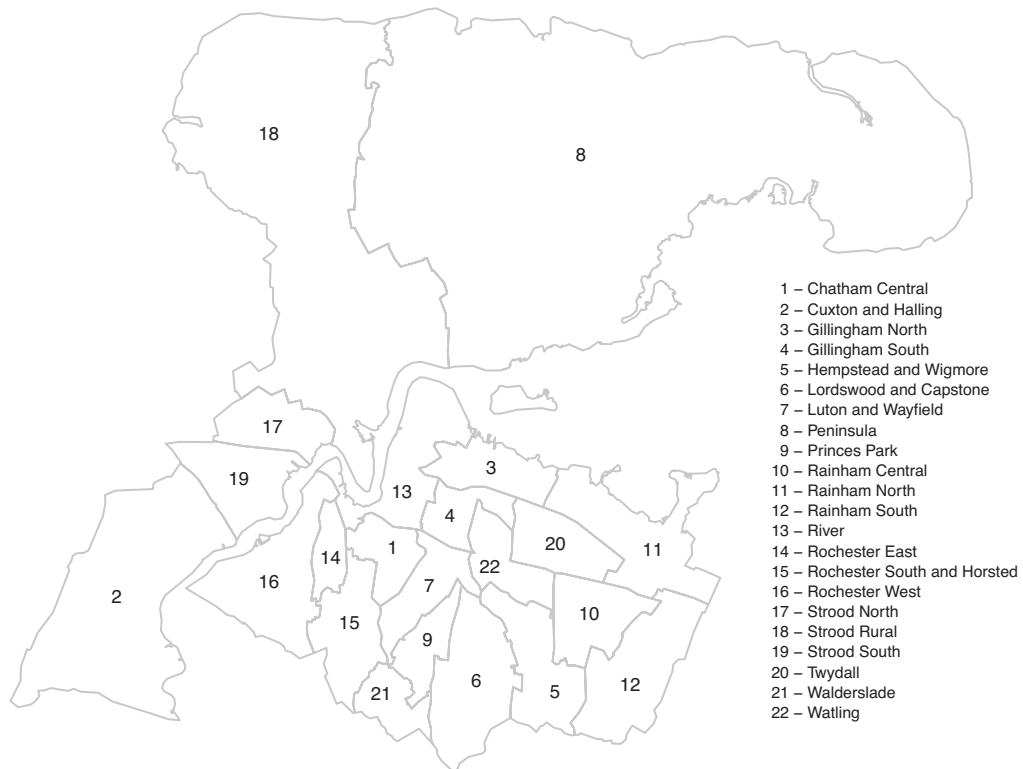
The best start in life? The past, present and future for the health and wellbeing of Medway's youngest children

The Annual Public Health Report of
the Director of Public Health

2014/15



Electoral wards in Medway



Front cover photographs, main and inset: children in Rochester High Street, 1908 and 2015.

Main photograph: courtesy of The Francis Frith Collection.

Table of contents

Foreword	iv
Acknowledgements	v
List of figures	vi
List of tables	vii
Chapter 1: Introduction	1
Chapter 2: The early home environment	11
Chapter 3: Smoking in pregnancy	25
Chapter 4: Breastfeeding	33
Chapter 5: Maternal nutrition	41
Chapter 6: Control of infectious diseases	49
Chapter 7: Teenage pregnancy	57

Foreword



The inspiration for this year's Annual Public Health Report is the transfer of responsibility for commissioning the Healthy Child Programme for children aged 0–5 years from the NHS to local authorities from October 2015. The Healthy Child Programme is an early intervention and prevention programme which is offered to every family with children aged 0–5 years. It offers screening, developmental reviews and information to support the healthy development of children and parenting. It provides support to all families, with more help for those who need it, to ensure that all children are given the opportunity to receive care which meets their needs.

Local authorities have a long and successful history of tackling public health challenges within their communities and of improving the health of young children. Public health was the responsibility of local authorities prior to 1974 when it transferred to the NHS and subsequently came back to local authorities in 2013. Until 1974 the Medical Officer of Health was the equivalent of my role as Director of Public Health, and each produced an annual report on the health of the people in their borough and activity undertaken by the council to improve health.

Medway Council's archives are home to many of these reports from the former boroughs within Medway. We have reviewed reports from a hundred years ago to show how the health of children has improved over this time. Without doubt there have been very significant improvements in living conditions which have resulted in fewer deaths in childhood and better health. Much of this improvement was delivered by local action on housing and sanitation as well as the actions of midwives and health visitors. Although much has changed for the better, it is interesting to see how some challenges still prevail today, such as infant deaths due to co-sleeping and the impact of socio-economic disadvantage on health. Today we face new challenges to the health of children such as the impact of smoking, particularly in pregnancy and the home; maternal obesity, and substance misuse. Some factors, such as domestic violence and mental health problems, have greater prominence but perhaps are better recognised now than in the past.

Looking back at these significant improvements in child health reminds us that public health is a long game. Achieving further improvements requires the identification of needs and the courage to prioritise those actions that will make a difference and to pursue them relentlessly. I hope that this report will provide direction to all who can contribute to improving the health of children in Medway and that in years to come our successors will be able to look back and celebrate the outcomes of our actions.

A handwritten signature in black ink that reads "Alison Barnett".

Dr Alison Barnett
Director of Public Health
Medway Council

Acknowledgements

This report has been produced by the Public Health Directorate with support from colleagues from Medway Council as well as Medway NHS Foundation Trust, Medway Clinical Commissioning Group and Medway Community Healthcare.

I would particularly like to thank Dr. Saloni Zaveri for leading the production of the report.

Thanks are also due to Helen Beaney, Laura Bottle, Kelly Brace, Caroline Browne, Alison Cable, Mark Chambers, Geraldine Chant, Steve Chevis, Caroline Edwards, Scott Elliott, Keeley Fowler, Aeilish Geldenhuys, Samantha Graves, Chantelle Hall-Lindop, Mark Holmes, Beverley Hunt, Colin Leach, Phil Lewis, Donna Mills, Oni Odelade, Fareeda Ozerek, Heidi Shute, Sharon Spencer, Julia Thomas, Maria Watson, Dr. David Whiting, Andrew Willetts, Dr. Kirstin Williamson and Dr. Rella Workman.

List of figures

Chapter 1: Introduction

Figure 1: Population pyramid, Medway, 1911	3
Figure 2: Population pyramid, Medway and England and Wales, 2014	4
Figure 3: Total numbers of infant deaths in Medway, 1850–2000	6

Chapter 2: The early home environment

Figure 1: Percentage of children aged under 16 years living in poverty, Medway and England, 2006–2012	14
Figure 2: Income deprivation affecting children 2015. Local quintiles for Medway using Lower Super Output Area	14
Figure 3: Percentage of low birth weight babies by Medway ward, 2012–2014	16
Figure 4: Inequality in early cognitive development of children in the 1970 British Cohort Study, at ages 22 months to 10 years	19

Chapter 3: Smoking in pregnancy

Figure 1: Trends in smoking at the time of delivery, Medway and England, 2010/11–2014/15	28
Figure 2: Smoking status at the time of delivery, 2014/15	28
Figure 3: Maternal smoking and health inequalities	28

Chapter 4: Breastfeeding

Figure 1: Breastfeeding initiation by local deprivation quintile, Medway resident women, 2009–2014	36
Figure 2: Breastfeeding initiation by age group, Medway resident women, 2009–2014	36

Chapter 5: Maternal nutrition

Figure 1: National prevalence of obesity in females aged 16–44 years during the period 1993–2013	45
--	----

Chapter 6: Control of infectious diseases

Figure 1: Diphtheria cases and deaths, England and Wales, 1914–2003	52
Figure 2: Uptake of first dose of MMR immunisation by age two, Medway and England, 2005/06–2014/15	53

Chapter 7: Teenage pregnancy

Figure 1: Health inequalities related to teenage parenthood	59
Figure 2: Number of conceptions per 1,000 females aged 15–17 years, Medway, 1999–2013	60

List of tables

Chapter 1: Introduction

Table 1: Causes of death of infants in the Borough of Gillingham during 1914	5
Table 2: Causes of deaths where a child death review has been completed by Medway Child Death Overview Panel, 2008/09–2014/15	7
Table 3: Groups of Medway women found to be significantly less likely to access antenatal services in a timely manner	8

Chapter 2: The early home environment

Table 1: Infant mortality by size of tenement in Finsbury, 1905	17
Table 2: Key modifiable factors associated with an increased/decreased incidence of SIDS	18

Chapter 5: Maternal nutrition

Table 1: Health impacts of maternal obesity	43
---	----

Chapter 6: Control of infectious diseases

Table 1: Number of deaths from Infantile Diarrhoea, Borough of Chatham, 1911–1915	51
---	----

1 Introduction

98

Borough of  Gillingham
KENT.

ANNUAL REPORT
OF THE
Medical Officer of Health
AND
School Medical Officer
For the Year 1914.

TOGETHER WITH THE
Annual Report of the Chief
Sanitary Inspector
AND
School Dentist.

Gillingham.
Parrett & Neves, Ltd., 70, Balmoral Road.
1915.

1 Introduction

Life in Medway 100 years ago certainly was different to life today. Britain was plunged into war in the summer of 1914, and the impact of World War I locally was notable from an early stage, with significant naval losses and activity by military troops housed here.

Chatham Dockyard was at the forefront of shipbuilding and industrial technology, with thousands of people travelling to work each day and night to repair damaged ships. Sailors flowed constantly to and from HMS Pembroke barracks, now University of Kent buildings and the Naval Hospital, now Medway Maritime Hospital.

Healthcare, pre-NHS, was a luxury not everyone could afford. The poor often went without medical treatment and, in the pre-antibiotic age, the threat of death from infectious diseases loomed.

Nationally, life expectancy at birth 100 years ago was about 52 years for males and 55 years for females, compared with 79 years and 83 years respectively today. Life expectancy at birth for Medway's population has also risen over the last 100 years, and continues to rise: babies born in Medway during 2011–2013 had a life expectancy at birth of 78.8 years and 79.4 years for males and females respectively.

The pyramidal nature of Medway's population profile in 1911 (figure 1) was typical of a population with a high birth rate, high number of young dependents and a low life expectancy at birth.

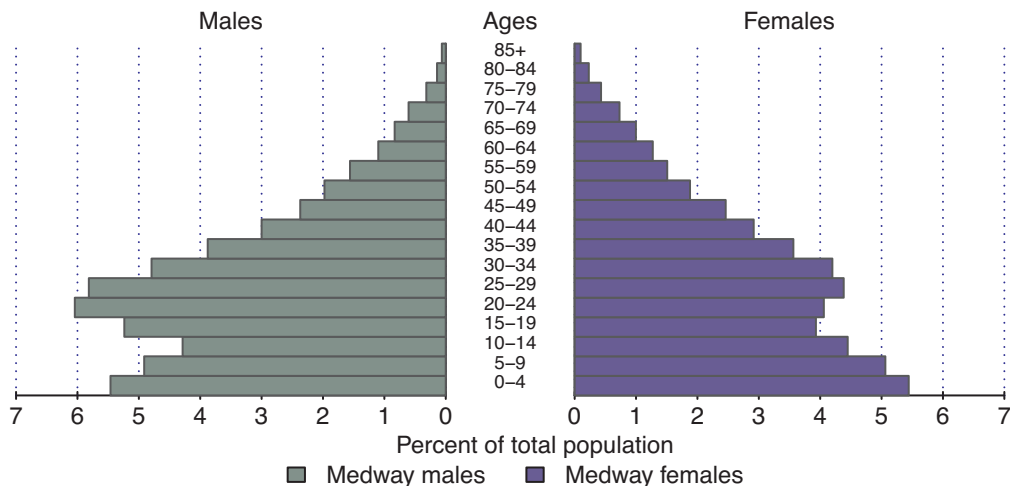


Figure 1: Population pyramid, Medway, 1911

Source: GB Historical GIS/University of Portsmouth, Medway PLU/RegD through time/Population Statistics/Age & Sex Structure data in 5-year bands to age 100, A Vision of Britain through Time

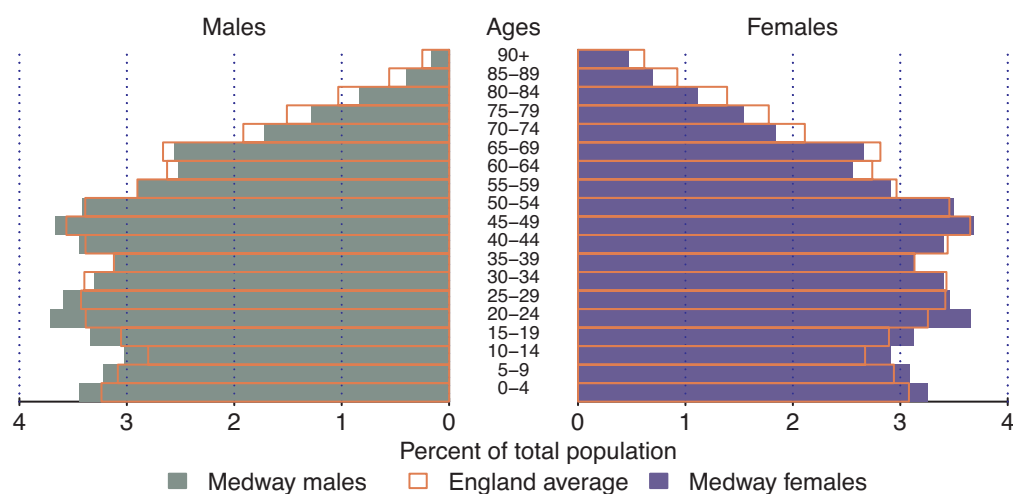


Figure 2: Population pyramid: Medway and England & Wales, 2014

Source: Mid-year estimates 2014, Office for National Statistics

Figure 2 shows the barrel-shaped profile of Medway’s population pyramid in 2014 and reflects the demographic transition which has occurred over the preceding century: infant mortality (an important factor influencing life expectancy at birth) has declined, the fertility rate has fallen and life expectancy has continued to rise, resulting in more of the “births” surviving into older age. The population has been ageing, resulting in a greater proportion of older people in the population.

Archived public health reports held by local authorities can give a rich picture of the health of local populations in the past. These reports, the first of which were produced by the Medical Officers for Health (MOH) in local authorities as long as 150 years ago, were an independent assessment by the MOH of the state of health in boroughs around the country. They set out the work undertaken by his public health and sanitary officers and provided data on birth and death rates, infant mortality, and incidence of infectious and other diseases. The reports also allowed

the MOH to express the diversity of his local communities, his own personal interests and a general statement on the health of the population.¹

Child and infant mortality

A particularly striking finding within reports from MOHs for the Medway area is the high mortality rate amongst very young children, notably infants. This finding is in keeping with the national picture during the early part of the 20th century, when infant mortality in the UK was very high and many families lived with tragedies of this nature.

Infant mortality (deaths of babies in their first year of life, expressed as a rate per 1,000 live births) has long been considered as an indicator of the overall health status of a population. In the Borough of Gillingham in 1914, 30 per cent of all deaths occurred in children under the age of five years. There were 124 deaths reported for the Borough of Gillingham of children under a year of age, giving an infant mortality rate of 99.6 per 1,000 live births during that year. This means that,

out of every 1,000 babies born alive, nearly 100 babies in Gillingham died during their first year of life as little as just over one hundred years ago.

Nationally, seasonal peaks in infant mortality typically coincided with hot summers when diarrhoeal illness took its toll.² Table 1 shows that, in 1914, infectious diseases (including diarrhoeal illness), accounted for a substantial number of infant deaths in Gillingham, as did prematurity and conditions relating to inadequate nutrition.

Sanitation—the cleanliness of water and the living environment—was recognised as being an important factor. The MOH for the Borough of Gillingham wrote in 1914:

“The infantile mortality rate is dependent on many various conditions in a town: climatic conditions as to hot or dry summers. When but a small quantity of rain falls, or the sewers, yards and back premises are not regularly flushed, to carry away accumulated dust or decaying vegetable matter, little children suffer from diarrhoea, which is a very fatal disease to those of tender age, especially in crowded streets and alleys, where they have no other place to go for fresh air...”

Throughout the second half of the 19th century, a raft of legislative changes gave responsibility to local authorities for the provision and maintenance of adequate sewerage and water supplies for all houses. Street cleaning became mandatory and housing standards were provided, leading to slum clearance and council house building in the late 19th century. The 1875 Public Health Act, the most comprehensive legislation to date, covered housing, sewage, drainage, water supply and contagious disease. All new sewers were public and the property of the local authority. All new housing had to have self-contained sanitation and water services.

The MOH for Gillingham wrote in 1914:

“...special attention is given by the sanitary staff to see that the collectors do their duty regularly and thoroughly, and that the gullies are kept in a flushed condition...”

“The Local Government Board send out circulars to all authorities, informing them that special attention must be given to these matters during the summer months...”

Table 1: Causes of death of infants in the Borough of Gillingham during 1914

Cause	Number of deaths
Infectious diseases	29
Premature births	29
Atrophy, debility, marasmus*	22
Congenital defects	6
Suffocation	2
All others	33
Total	124

Source: Report of the MOH for the Borough of Gillingham, 1914

*Marasmus: a form of severe malnutrition caused by a deficiency in calories and energy and leading to chronic wasting of fat, muscle and other body tissues.

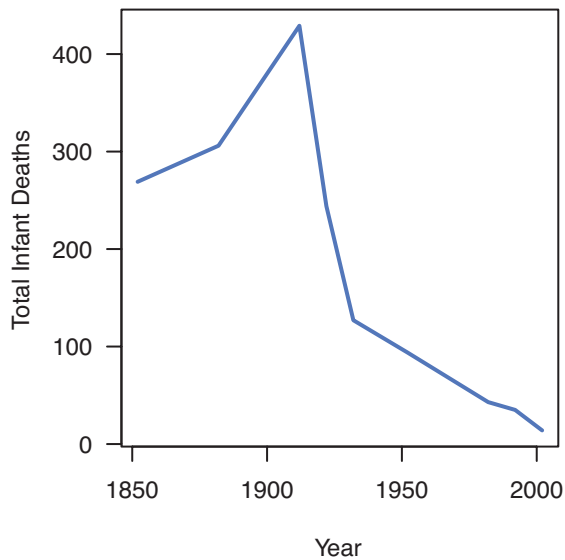


Figure 3: Total numbers of infant deaths in Medway, 1850–2000

Source: GB Historical GIS/University of Portsmouth, Medway UA through time/Life & Death Statistics/Infant Deaths, A Vision of Britain through Time

The infant mortality rate for England and Wales fell dramatically throughout the 20th century, with a major part of the improvement occurring from the early part of the 20th century. By 1970 the infant mortality rate was around 18 infant deaths per 1,000 live births for England and Wales. Since then, infant mortality rates have continued to fall, reaching an all-time record low of 4.2 deaths per 1,000 live births in England and Wales in 2011. In 1901, infant mortality accounted for 25 per cent of all deaths nationally. By the end of the century this had fallen to less than one per cent.

Trends in infant mortality for Medway since the late 19th–early 20th century have been in keeping with the national picture (figure 3).

The decline in infant mortality since the early 20th century has been attributed to improvements in public health, medical advancement, hygiene, environmental factors and nutrition. Dramatic improvements in the number of infants with prematurity-related conditions and severe congenital abnormalities who survive the early neonatal period have been seen since a century ago.³

The MOH noted in his 1914 report for Gillingham that the largest proportion of infant deaths over the earliest years of the 20th century had occurred in very early infancy: in 1914, 43 per cent of infant deaths in Gillingham had occurred amongst infants aged less than one month. Deaths amongst infants over the age of one month had declined, however, over the course of the early 20th century, and the MOH made the following observation:

“The chief reduction in infant mortality has taken place amongst children over the age of one month. This fact suggests that the greater part of this early mortality is due to causes operating before birth. In other words, whilst the deaths due to conditions of defective environment have declined, those due to ante-natal causes remain unaltered. The inference is that better antenatal care and better midwifery arrangements are needed.”

It is striking that, just as a century ago, the main causes of infant deaths nationally now are still attributable to factors “operating before birth”: immaturity related conditions (in babies born at less than 37 weeks gestation) and congenital anomalies (conditions or malformations present before or at the time of birth).

Between 2008/09 and 2011/15, a total of 118 child deaths in Medway were reviewed by the Medway Child Death Overview Panel (CDOP). The causes of these deaths are shown in table 2.

Table 2 shows that a perinatal/neonatal event, often associated with premature birth, caused almost half (42.4 per cent) of these deaths, with chromosomal, genetic and congenital anomalies accounting for 18.6 per cent of cases.

For all deaths reviewed by Medway CDOP during 2008/09–2014/15, modifiable factors have been considered in order to identify whether the death could have been preventable. Maternal smoking has been identified as a major, avoidable risk factor implicated in a number of deaths amongst infants.

Inequalities in child health

There is overwhelming evidence of the importance of events occurring during the early years of life and their impact on health and wellbeing across the entire life course. It is now widely accepted that pregnancy and the first two years of a child’s life represent a golden window of opportunity to influence a child’s future life chances, and a period when parents are particularly receptive to offers of advice and support.⁴ Investment in the early years, and a whole system approach to early intervention and prevention, leads to cost effective improvements at an individual, community and population level and is critical to reducing health inequalities and creating a fairer society.^{5,6}

It is well known that those living in deprived areas have poorer health outcomes in relation to almost every indicator of health and well-being. There are well documented links between a number of key maternal, neonatal and child health indicators and deprivation. Infant mortality, for example, is strongly influenced by the health, socio-economic circumstances, environmental influences on

Table 2: Causes of deaths where a child death review has been completed by Medway Child Death Overview Panel, 2008/09–2014/15

Cause of death	Total number of deaths
Deliberately inflicted injury, abuse or neglect	<5
Suicide or deliberate self-inflicted harm	<5
Trauma and other external factors	6
Malignancy	10
Acute medical or surgical condition	<5
Chronic medical condition	7
Chromosomal, genetic and congenital anomalies	22
Perinatal/neonatal event	50
Infection	8
Sudden unexpected, unexplained death	9
Total	118

Source: Medway Child Death Overview Panel Annual Report 2014/2015

the mother before, during and after pregnancy and the quality of antenatal and postnatal care received by the mother.⁷ There is strong evidence that the following factors reduce the risk of infant mortality:^{6,8}

- good uptake of pre-conception and antenatal advice, screening and care;
- uptake of high quality services by women during and after pregnancy, and for children during the early years;
- not smoking during pregnancy;
- breastfeeding, good nutrition and healthy choices in pregnancy;
- identification of high risk pregnancies and provision of appropriate additional services for these;
- reduction of teenage pregnancies and targeting support for teenage mothers;
- reduction of child poverty.

Antenatal care is widely accepted as being a key method for improving outcomes for pregnant women and their babies. Booking for antenatal care early in pregnancy is important, as it provides an opportunity to give advice, for example, on diet and infant feeding, and for referral to the Stop Smoking Service if applicable. Any problems can also be identified early. Maternal and perinatal deaths have been shown to be higher for women who book late for antenatal care.⁸

Evidence shows that certain women, for example, those aged under 20 years, from an ethnic minority group, living in temporary housing or those from deprived backgrounds are less likely to access antenatal care and support in a timely manner than others.⁸ Indeed, a recent Health Equity Audit into maternity services in Medway found that certain groups of women were less likely to access services (table 3).

Table 3: Groups of Medway women found to be significantly less likely to access antenatal services in a timely manner

Service	Groups found to be significantly less likely to access the service
Antenatal services (as measured by the proportion of women booking after the maximum recommended gestation in the UK of 12 weeks and six days)	<ul style="list-style-type: none"> • Women aged less than 20 years • Women from “white other”, “black” or “Asian” ethnic minority groups • Women from the most deprived quintile
Breastfeeding support (as measured by the proportion of women signing up to the breastfeeding support service)	<ul style="list-style-type: none"> • Women aged less than 20 years • Women from the most deprived quintile
Stop smoking support (as measured by the proportion of women setting a quit date)	<ul style="list-style-type: none"> • Women aged less than 20 years • Women from the most deprived quintile

Source: Medway NHS Foundation Trust, Medway Council Stop Smoking Service, Medway Council breastfeeding support services, Medway Family Nurse Partnership programme

The vital role of health visitors from the earliest days of a child's life—even before birth—in helping to create an environment which promotes healthy child development has also long been recognised. The MOH wrote in his annual report for Chatham in 1915:

“The causes of infantile mortality are multiple and inter-related. It is only by a study of the factors concerned, which vary in their relative importance and incidence, that suitable measures can be adopted. On one of these measures there is universal agreement, and that is: a complete and well organised system of health visiting.”

He was pleased to state in his subsequent report that an additional health visitor had been recruited:

“In last year's report I expressed the opinion that a primary need was to put the arrangements for health visiting on a more satisfactory basis, and to extend the period of visitation. This has been done, an additional health visitor being appointed in April 1916.”

More recently, the Health Visitor Programme was launched in 2011 with the aim of improving access to services, families' experience and health outcomes and contributing to reducing inequalities. This resulted in a rapid expansion of the health visiting workforce and we now have over 70 health visitors (whole time equivalents) in Medway.

Despite the fact that we know what works to reduce infant mortality, significant inequalities remain nationally and locally between different population groups, and most protective factors relating to infant mortality show a socio-economic gradient, with the most deprived groups in society being the least likely to exhibit them.^{6,8} The infant mortality rate for Luton and Wayfield—one of the wards in Medway with the highest levels of socio-economic deprivation—was 9.8 deaths per 1,000 live births in the period 2008–2013. This is significantly higher than the average infant mortality rate across Medway during this time period, which was 3.4 deaths per 1,000. The England average for this time period was 4.2 infant deaths per 1,000.

The death of an infant is one of the most devastating possible occurrences in a family's lifetime. Improving the factors which are protective against infant mortality will also have a significant positive impact on a child's entire life course: this report explores how we can make this happen in Medway.

References

1. Wellcome Library. London's Pulse: Medical Officer of Health reports 1848–1972. Available at: <http://wellcomelibrary.org/moh/>.
2. Office for National Statistics, 2003. Health Statistics Quarterly 18: 20th Century mortality trends in England and Wales.
3. Pryce J.W. et al. Changing patterns of infant death over the last 100 years: autopsy experience. *J R Soc Med.* 2012 Mar; 105(3): 123–130.
4. The 1001 critical days: the importance of the conception to age two period—a cross-party manifesto. Accessed from: <http://www.wavetrust.org/our-work/publications/reports/100—critical-days-importance-conception-age-two-period>.
5. Department of Health, 2010. Tackling health inequalities in infant and maternal health outcomes.
6. UCL Institute of Health Equity, 2010. Fair Society, Healthy Lives.
7. National Children's Bureau, 2014. Why children die: death in infants, children and young people in the UK.
8. Public Health England, 2015. Reducing infant mortality in London.

2 The early home environment

Children outside
their house in
Cross Street,
Chatham, c1925



Mothers with
their children in
Gillingham Park,
1905



2 The early home environment

There is strong evidence that a problematic early home environment can have a significant adverse impact on child health. Early risk—for example, living in poverty, poor housing, maternal mental illness and maternal substance misuse during pregnancy and childhood—can all have significant negative impacts on the health, wellbeing and life chances of children from infancy and onwards throughout the entire life course.^{1,2,3}

This situation was observed by a Medical Officer for Health (MOH) who wrote in his 1915 report on the Borough of Gillingham:

“In many cases, had these infants had healthy surrounding, they would have survived and become useful members of society, but the social position of the parents of some of these children dying within a short time of birth is decidedly unsatisfactory: the effects of poor food, bad housing, extreme dirt...”

Child poverty

Child poverty is defined as the proportion of children living in families in receipt of out-of-work benefits or in receipt of tax credits where their reported income is less than 60 per cent of median income.

The Child Poverty Act was passed in 2010, committing the UK government to eradicate child poverty by 2020. The strategy “A new approach to child poverty: tackling the causes of disadvantage and transforming families’ lives”, published in 2011,⁴ outlined the following key areas for intervention to meet the ambitious targets around reducing child poverty:

- improving family support and children’s life chances;
- supporting families to achieve financial independence;
- improving neighbourhoods to transform lives.

In many ways, fulfilling this commitment is becoming ever more challenging, with recent welfare reforms, the rising cost of food, fuel and daily living all being likely to impact on Medway’s families.

The level of child poverty in Medway has been consistently higher than the England average for a number of years (figure 1), with 21.2 per cent of children aged under 16 years living in poverty.⁵

Figure 1 shows that the level of child poverty in Medway has changed very little over recent years, and has not seen the decline that has occurred nationally since 2006. Medway falls just below the 75th percentile and so has a relatively high rate of child poverty.

Figure 2 shows the variation in child poverty across Medway. The wards with the highest child poverty levels are Chatham Central, Gillingham North and Luton and Wayfield.

It should be noted that the data reflected in figure 2 relates to 2012.

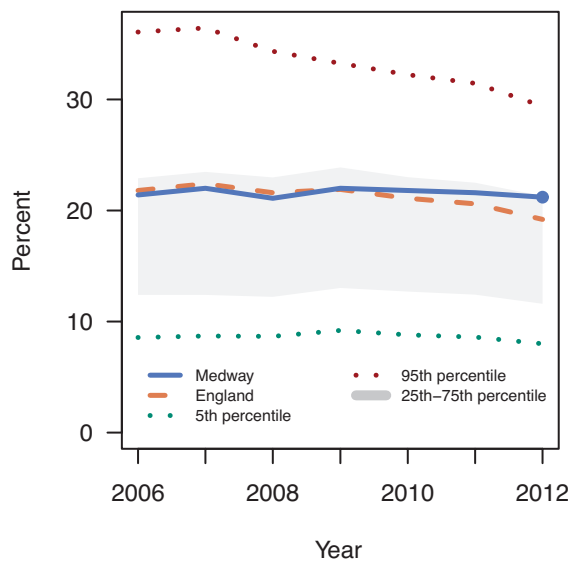


Figure 1: Percentage of children aged under 16 years living in poverty, Medway and England, 2006-2012

Source: HM Revenue & Customs

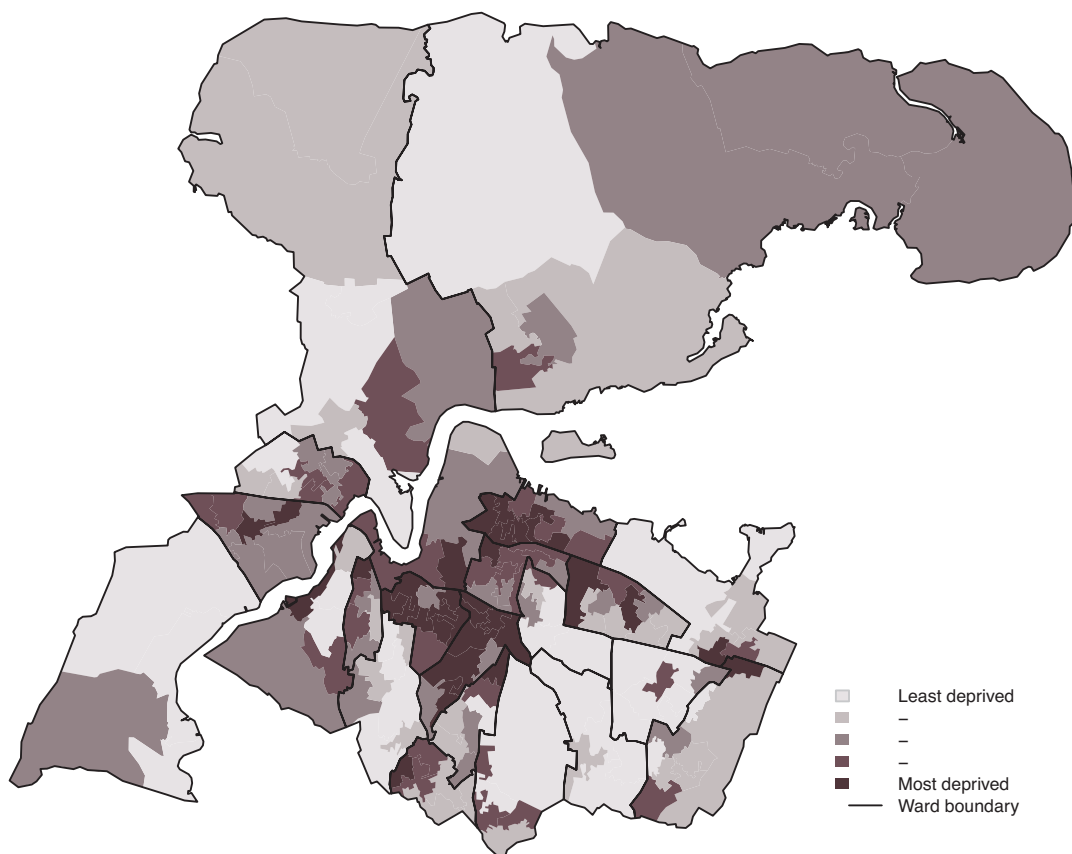


Figure 2: Income deprivation affecting children 2015. Local quintiles for Medway using Lower Super Output Area

Source: Department for Communities and Local Government. Please refer to map of electoral wards on inside front cover.

Families at higher risk of child poverty

Some families are at greater risk of child poverty. These include families where there is:⁶

- a non-traditional family structure, for example, lone parents. The proportion of lone parent households in Medway in which there is at least one dependent child (24.5 per cent) is the same as for England as a whole, but considerably higher than for the South East region (20.7 per cent);
- no adult in the household in employment. The proportion of households in Medway with dependent children where no adult is in employment is 4.9 per cent: this is higher than the national (4.2 per cent) and South East average (3.1 per cent);
- a child or children under the age of five in the household. The proportion of households with dependent children aged 0–4 years is higher for Medway (12.9 per cent) compared to the England and South East average (11.8 per cent);
- teenage parenthood. Medway's teenage pregnancy rate is high compared to the England and South East averages. This is explored in detail in chapter seven.
- large families (three or more children). Medway has a higher proportion of families (7.4 per cent) with three or more children compared to the national (7 per cent) and South East (6.7 per cent) averages.

The prevalence of all five of these factors is noticeably higher for Medway compared with the South East average, and higher than the England average for four of the five factors.

Considerable differences in infant mortality rates by socio-economic group persist in England and Wales, with significantly higher infant mortality rates for the routine and manual occupations (5.4 deaths per 1,000 live births) compared with higher managerial, administrative and professional occupations (2.2 deaths per 1,000 live births).⁷

Babies born into poor families are more likely to be born prematurely and have low birth weight (birth weight less than 2,500 grams) and are twice as likely to die within one year of birth as babies born into affluent families.⁸

Low birth weight (LBW) is a major predictor of infant mortality and of adverse health outcomes in childhood and adulthood.⁹ Two-thirds of all infant deaths in England and Wales are among those born of LBW. Babies just below the threshold for LBW (2,500 grams) are five times as likely to die as an infant as those of normal birthweight, whilst babies of extremely LBW (less than 1,000 grams) are 200 times more likely to die as an infant than those of normal birthweight.

LBW is associated with poor outcomes in child health¹⁰ and, in particular, the development of cognitive skills. In addition, LBW is also associated with health problems in adulthood such as diabetes, stroke and lung disease and other long-term health difficulties including deficits in growth and cognitive development.^{11,12}

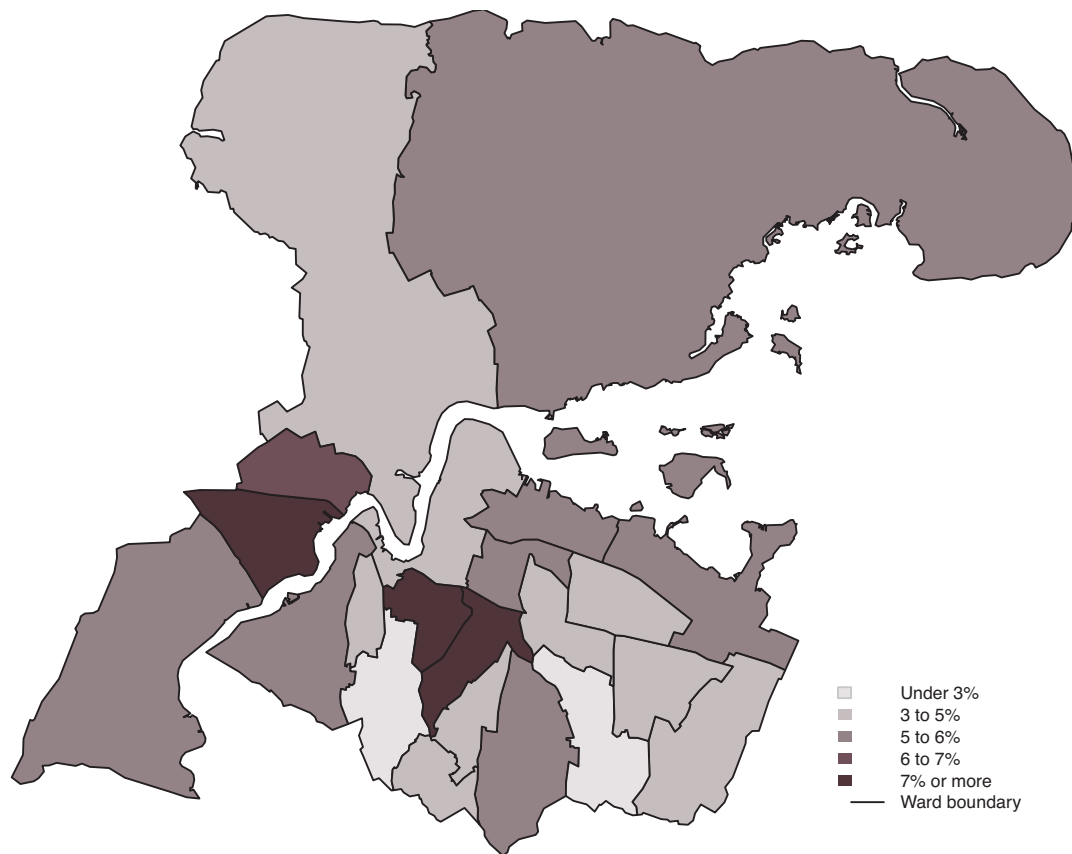


Figure 3: Percentage of low birth weight babies by Medway ward, 2012–2014

Source: Public Health Births File, Office for National Statistics

There is a well-established socio-economic gradient for LBW. Rates of LBW are higher in groups with higher levels of socio-economic disadvantage and are associated in particular with negative health behaviours which are more common in these groups such as poor uptake of antenatal care, smoking, poor nutrition during pregnancy and substance misuse.¹

In 2014, 2.7 per cent of all live births ‘at term’ (a gestational age of at least 37 weeks) with recorded birth weight in Medway were born with LBW; this is similar to the England average of 2.9 per cent.

Figure 3 shows that between 2012 and 2014, there was substantial variation between Medway’s wards in the proportion of babies born with LBW. In this period the percentage with LBW of those born in Chatham Central, Luton and Wayfield and Strood South wards was significantly higher compared with those born in Rochester South and Horsted and Hempstead and Wigmore wards.

The living environment

Historically, differences in the living environment have had a major effect on health outcomes for children. In the early 20th century, a medical officer in Finsbury, London, reported that the infant mortality rate in 1905 for babies born in dwellings with only one room was 219 per 1,000 compared with 99 per 1,000 for those born into a household with four rooms (table 1).

Today, despite significant medical, technological and economic advancements, there is still strong evidence supporting the critical importance of a healthy living environment during early years in protecting health and wellbeing. Poor quality housing and homelessness impact adversely on health, particularly the health of children. As well as the associations between overcrowded, inadequate housing and accidents, children living in overcrowded conditions are more likely to suffer respiratory problems, have mental or behavioural problems and contract meningitis. In addition, growing up in poor housing conditions can impact on a child's learning, development and education and therefore has a potential long-term impact on children's future life chances. There is also evidence to suggest that overcrowding and poor housing can have adverse impacts on a child's physical health.¹³

Sudden Infant Death Syndrome (SIDS)

SIDS is defined as "the sudden and unexpected death of an infant under one year of age, with the onset of the lethal episode apparently occurring during sleep, that remains unexplained after a thorough investigation including performance of a complete autopsy and review of the circumstances of death". The incidence of SIDS fell significantly during the 1990s following public health campaigns to raise awareness of the dangers of prone sleeping positions, maternal smoking and overheating, but SIDS remains the leading cause of unexpected death in infants in Western countries, including England and Wales.

A number of key modifiable factors have been identified as being associated with an increased and decreased risk of SIDS. These are shown in table 2.¹⁴

Table 1: Infant mortality by size of tenement in Finsbury, 1905

Size of tenement	Census population 1901	Infant mortality per 1,000 births	
		All causes	Diarrhoea and other zymotic* diseases
		1905	1905
One room	14,516	219	53
Two rooms	31,482	157	42
Three rooms	21,280	141	34
Four rooms and upwards	33,185	99	19
Borough total	101,463	148	37

Source: G. Newman, *The Health of the State* (London, 1907)

Note: *Smallpox, measles, scarlet fever, diphtheria, whooping cough and fever

Table 2: Key modifiable factors associated with an increased/decreased incidence of SIDS¹⁴

Factors associated with an increased risk of SIDS	Factors associated with a decreased risk of SIDS
Placing infants in the prone position to sleep	Breastfeeding
Exposure to cigarette smoke (prenatally and postnatally)	Sleeping in the parental bedroom for the first 6–12 months
Unsafe sleeping environments: <ul style="list-style-type: none"> • Bed sharing or parental co-sleeping on a sofa or couch, particularly if the infant is younger than three months of age or if the parents smoke, use illicit drugs or consume alcohol • Overcrowding • Temperature • Bedding and mattresses 	Dummy use

A number of these factors relate to the living environment. Overcrowding in particular has an impact on SIDS, although the reasons for this are unclear. The risks of unsafe sleeping environments to infants was recognised a hundred years ago. The MOH wrote in his 1914 report for the Borough of Gillingham:

“As to the sleeping of infants, I consider it most essential that they should sleep in a separate cradle or cot, and were this universally carried out it would prevent many a case of suffocation, which one so often hears about in enquiries by the Coroner”.

Early child development and school readiness

School readiness, as measured by the proportion of children achieving a “good level of development” in the Early Years Foundation Stage, is strongly associated with future educational attainment and is therefore key to future success, income and health.¹⁵

Children from deprived backgrounds are significantly less likely to reach a good level of development by the age of five years and children who start school behind their peers tend to remain behind throughout the remainder of their education.

The level of school readiness is also influenced by factors such as maternal age, maternal and child health, the early home learning environment and the quality of early years settings.

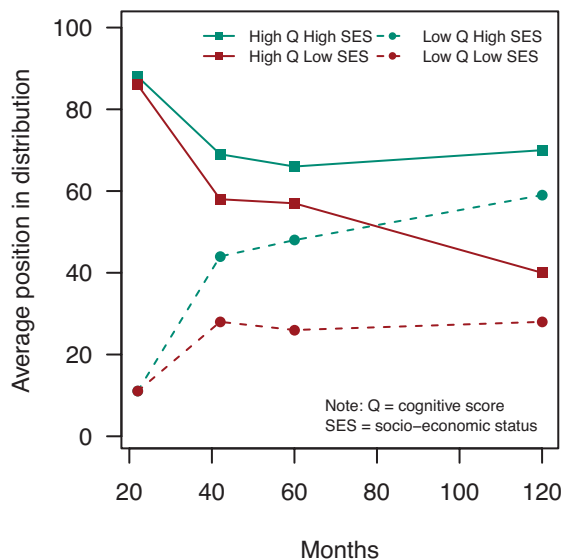


Figure 4: Inequality in early cognitive development of children in the 1970 British Cohort Study, at ages 22 months to 10 years¹⁶

There is evidence that a child's socio-economic status is a more significant factor than their own innate ability. Figure 4 shows that children from more affluent families who have low cognitive scores at 22 months of age improve their relative scores as they progress through childhood, whilst the relative position of children from more deprived backgrounds but with high cognitive scores at 22 months worsens as they become older.¹⁶

Parental factors

The provision of good parenting—a secure home life, helping the child to learn to share and respect others, developing the child's self-esteem—is a vital part of caring for a child. Parenting and the home learning environment have a strong influence on early child development and, subsequently, school readiness.

The provision of parenting support has been identified as an important factor that can help to improve outcomes for children. This is particularly important for children of women with complex needs such as:

Mental health problems

There is evidence that mental disorders during pregnancy can affect the wellbeing of the mother, the fetus and the infant and may be associated with poorer long term outcomes for children. It has been estimated that 10 to 15 per cent of women having a baby suffer from post-natal depression and this has been associated with cognitive delay and emotional and behavioural difficulties in young children.^{17,18}

Alcohol and substance misuse

Substance misuse during pregnancy can be harmful to the health of the fetus through direct exposure to drugs during pregnancy, poor maternal health and nutrition and potential exposure to blood-borne viral infections through intravenous drug use.¹⁹

Normal family structure and parenting can be negatively affected by alcohol and substance misuse and children of parents who misuse substances are more likely to suffer behavioural disturbance, emotional difficulties and social isolation.^{20,21}

Women who misuse alcohol and drugs are also more likely to smoke than other pregnant women²² and have other complex problems including poor diet, poverty and domestic abuse, which are also associated with adverse maternal and child outcomes. Alcohol and drug misuse are significantly associated with SIDS.

Other factors affecting parenting capacity

Family relationship problems, including domestic abuse, can have a negative impact on children's social and emotional wellbeing. Other factors that may increase the vulnerability of a child to poor outcomes include having parents with learning difficulties, parents with emotional issues or a parent or child with disabilities.²³

What are we doing to improve the early home environment for children in Medway?

Investing in the early years of life to ensure that every child has a good start in life is a strategic priority of Medway's Health and Wellbeing Board.

Medway Children's Action Network (CAN), launched in December 2014, brings together key agencies and organisations to take a leadership role in improving life chances and outcomes for children in Medway. A range of services are delivered in Medway to support this agenda:

Sure Start Children's Centres

Medway's Children's Centres provide a wide range of information and services to meet the needs of families in the local community with young children aged from 0–5 years. Services include play and learning for children, baby clinics, support and advice for parents on employment and financial matters, links with voluntary agencies, information and advice about breastfeeding, child development and aspects of parenting. Children's Centres are particularly focused on attracting families on low incomes and other vulnerable families.

Health visitors

Medway's health visitors are trained nurses or midwives with an additional diploma or degree in specialist community public health nursing that includes child health, health promotion and education. As public health practitioners, health visitors work with local communities to provide a core universal service for all children aged 0–4 through leading the delivery of the Healthy Child Programme (HCP) for 0–5s. The HCP is an integrated evidence-based programme of support which starts in pregnancy and ends at five years. It is delivered in close partnership with GPs, midwives, Sure Start Children's Centre teams and other local organisations. The core aim is to ensure that all children and families receive the support they need to get the best possible start in life. The HCP offers every family a programme of screening tests, immunisations, developmental reviews and information and guidance to support parenting and healthy choices.

Additional services are provided for children and families with health and social needs. These might include care packages which the health visitor may provide, co-ordinate or refer into, for example, maternal mental health and parenting support; and a range of support for vulnerable families, for example, socially disadvantaged families, families where domestic abuse is present, families with disabled children, adult mental health problems or substance misuse.

Medway Family Information Service

Medway Family Information Service provides comprehensive, accurate and up-to-date information, advice and guidance on services, facilities or publications that could be of benefit to parents, prospective parents, grandparents, practitioners of children and young people up to the age of 20 (and up to 25 for young people with special educational needs or disability). The information includes parenting and family support and education and employment.

Early Help

Early help means intervention as early as possible to tackle problems emerging for children, young people and their families, or with a population most at risk of developing problems. It can be required at any stage in a child's life and applies to a wide range of additional needs the family, child or young person cannot deal with on their own. The aim of early help is to reduce or eliminate the need for support and to promote resilience in the child and family. An example of a situation where there may be a need for early help is a family circumstance presenting challenges for the child, such as substance abuse, adult mental health problems and domestic abuse.

A refreshed early help strategy for Medway has been developed during 2015, informed by collaboration and consultation with key agencies. The strategy sets out Medway's priorities for early help and how these will be delivered in order to ensure a multi-agency, collaborative approach.

Integrated Family Support Services Business Unit (IFSSBU)

IFSSBU (previously known as Medway Action for Families—MAfF) co-ordinates Medway's Troubled Families programme in partnership with local agencies. The government's national Troubled Families Programme was introduced in December 2010 with a commitment to turn around the lives of 120,000 of the country's most troubled families by 2015 by getting children back to school, reducing youth crime, getting adults back to work and reducing reliance on public services. Medway successfully met its target of turning around the lives of 560 troubled families between 2012–15.

The programme has been expanded for a further five years until 2020. The scope has been broadened and now includes:

- parents and children involved in crime or anti-social behaviour;
- children not attending school regularly;

- children who need help;
- adults out of work at risk of financial exclusion;
- families affected by domestic abuse/violence;
- parents and children with health problems.

Families may be eligible if they meet two or more criteria which can include, for example, having an adult on out-of-work benefits and where there is domestic violence. Local authorities are tasked with transforming local services in the expanded programme and ensuring significant and sustained progress with families.

Parenting programmes

A number of parenting programmes which have clear evidence of effectiveness have been developed nationally and are delivered locally. These range from infant programmes through to programmes targeted at older children.²⁴

Domestic abuse services

A range of support services are available across Medway that can provide advice and support to individuals experiencing domestic abuse. These include:

■ One Stop Shop

The One Stop Shop is overseen by the Medway Domestic Abuse Forum. Based at the Sunlight Centre and well established within the community, it offers free, practical advice and support from a range of agencies for domestic abuse victims.

■ Multi Agency Risk Assessment Conference (MARAC)

The Medway MARAC is supported by Medway-wide partners including Kent Police, Children's Social Care, Kent Probation, Adult Social Care, Mental Health, Housing, substance misuse service providers and both statutory and voluntary partners. The MARAC receives multi-agency referrals and provides joint safety planning for victims assessed as being high risk.

■ Independent Domestic Violence Advisors (IDVAs)

The IDVAs support victims of domestic abuse through the MARAC process as the independent advocate for the victim, and provide support through the Specialist Domestic Violence Court and One Stop Shop. IDVAs co-ordinate risk assessments, multi-agency working and the development of action plans for both the victim and children.

What more can we do?

Addressing child poverty and improving the living environment for children and their families requires a long-term, multi-agency approach underpinned by early intervention and prevention. Families with multiple risk factors for poor outcomes will need the most support. We should:

- ensure that children's and families' needs are at the centre of service design and delivery;
- take a neighbourhood approach and build on the assets of individuals and communities;

■ ensure that problems are identified early to enable prompt intervention and prevent the escalation of problems to the point of crisis;

■ raise educational attainment to increase the likelihood that an individual will be in employment as an adult. This can be achieved through:

- maximising the number of children from deprived backgrounds who are accessing early years education;
- promoting good parenting in order that parents provide the most supportive, positive home environment;
- supporting young people from deprived backgrounds to remain in education or training for as long as possible.

Case Study: Medway Action for Families (MAfF)

A large family was referred to MAfF (now IFSSBU) in January 2015.

The case worker had particular concerns around James, a teenage member in the family who had multiple medical diagnoses. James was not managing his medication properly which had led to hospitalisation at one time and consistently poor school attendance.

The family's living arrangements were also a cause for concern. They were living in overcrowded and cluttered conditions, with mum sleeping downstairs. The oldest child was often put in charge of the other children which caused resentment and fighting amongst the siblings. This discontent added to the chaotic nature of the family environment.

Using the Common Assessment Framework process and Team Around the Family meetings, a collaboration was possible between Mum, a nurse, schools and the local youth community group. Through this collaboration, the issues relating to the management of James's health and school attendance were resolved. Medway Homechoice supported the rehousing of the family to a larger property. The family is no longer living in cramped conditions.

MAfF supported Mum to complete her studying and she hopes to return to work this year. The oldest child has been able to concentrate on college life and studying rather than taking on extra responsibilities for the siblings within the home. The family is now looking forward positively to the future.

References

1. National Children's Bureau, 2014. Why children die: death in infants, children and young people in the UK.
2. Department of Health, 1998. Independent Inquiry into Inequalities in Health Report.
3. UCL Institute of Health Equity, 2010. Fair Society, Healthy Lives (Marmot report).
4. Department for Education, 2011. A new approach to child poverty: tackling the causes of disadvantage and transforming families' lives.
5. Public Health England, 2012. From HM Revenue and Customs: Personal Tax Credits: Related Statistics—Child Poverty Statistics.
6. Office for National Statistics. Census 2011.
7. Oakley, L., et al (2009) 'Multivariate analysis of infant death in England and Wales in 2005–06, with focus on socio-economic status and deprivation', *Health Statistics Quarterly* 42, pp 22–33.
8. Public Health England, 2015. Reducing infant mortality in London.
9. Office for National Statistics, 2006. Risk factors for low birthweight based on birth registration and census information, England and Wales, 1981–2000.
10. Richardson, K, 2001. Smoking, low income and health inequalities: thematic discussion document.
11. Barker, D. et al. Fetal and placental size and risk of hypertension in adult life. *BMJ* 1990;310:259–262.
12. Barker, D. Fetal origins of coronary heart disease. *BMJ* 1995;311:171–174.
13. British Medical Association Board of Science, 2013. Growing up in the UK: ensuring a healthy future for our children.
14. The Lullaby Trust: evidence base. Updated October 2014. Available at: <http://www.lullabytrust.org.uk/evidencebase>.
15. The Deputy Prime Minister's Office, 2015. Social mobility indicators.
16. UCL Institute for Health Equity, 2010. Fair Society, Healthy Lives.
17. Royal College of Psychiatrists. Postnatal Depression. Updated April 2014. Available at: <http://www.rcpsych.ac.uk/healthadvice/problemsdisorders/postnataldepression.aspx>.
18. NICE Guideline C192, 2015. Antenatal and postnatal mental health: full guideline.
19. Cuthbert, C (2011) in Manning, V. Estimates of the number of infants (under the age of one year) living with substance misusing parents. Available at: http://www.nspcc.org.uk/Inform/resourcesforprofessionals/underones/substance_misusing_parents_pdf_wdf85712.pdf.
20. Velleman R., Templeton L. Understanding and modifying the impact of parents' substance misuse on children. *Advances in Psychiatric Treatment* 2007, 13:79–89.
21. Tunnard, J (2002). Parental problem drinking and its impact on children. London: Research in Practice.
22. Royal College of Physicians, Royal College of Psychiatrists. Smoking and mental health. London: RCP, 2013.
23. NICE, October 2012. Social and emotional wellbeing: early years.
24. Department of Health, 2007. Implementation plan for reducing health inequalities in infant mortality.

3 Smoking in pregnancy



3 Smoking in pregnancy

In his 1936 paper in the American Journal of Obstetrics and Gynaecology,¹ the American obstetrician, Campbell, drew attention to “a subtle and sinister condition”: the “excessive smoking” which had “clutched the young women of this country” during the past two decades. Campbell asked the members of the American Association of Obstetricians and Gynaecologists for their opinion about the effect of smoking 25 cigarettes or more daily on maternal health and the great majority supported his beliefs that excessive smoking in pregnancy was harmful to the mother. There was no suggestion in his paper that smoking might also have an effect on the fetus, although the paper appeared to prompt a flurry of ongoing international attention to the subject of maternal smoking.

Since then, much research has been undertaken to identify the impact of smoking in pregnancy. We now know that smoking is the single most important modifiable risk factor in pregnancy, carrying substantial risks to both mother and child. Babies of smokers are more likely to:

- be born prematurely;
- have a low birth weight (birth weight less than 2,500 grams);²
- die in infancy. Smoking in pregnancy is estimated to increase the risk of infant mortality by 40%.

Secondhand smoke exposure has also been shown to be harmful to the health of the unborn child, infants and children,⁴ with evidence that passive smoking is a cause of respiratory disease, cot death, middle ear infections and asthma in children. In pregnancy, second-hand smoke can reduce fetal growth and increase the risk of a preterm baby.

The UK government prioritised the reduction of smoking in pregnancy in the late 1980s, with the publication of Smoking Kills⁵ and setting of national targets to reduce the percentage of women who smoke in pregnancy from 23 per cent to 15 per cent by 2010. Smoking in pregnancy data is monitored locally by collection of rates of mothers smoking at time of delivery (SATOD). Smoking in pregnancy has consistently been higher over time in Medway compared with the national average (figure 1).

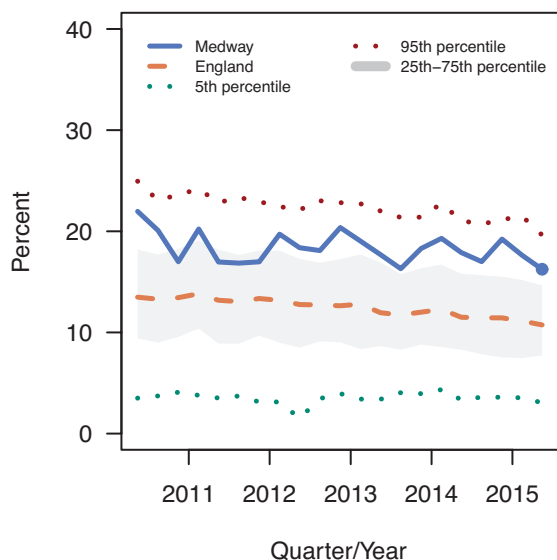


Figure 1: Trends in smoking at the time of delivery, Medway and England, 2010/11-2014/15

Source: Health & Social Care Information Centre

Smoking in pregnancy remains a problem in Medway, with just under one in five babies born to women who smoke at the time of delivery. This is consistently higher than the rate in England (11.4 per cent) (figure 2).

Figure 3: Maternal smoking and health inequalities

- Mothers aged 20 or under are five times more likely than those aged 35 and over to have smoked throughout pregnancy (45% and 9% respectively);
- Mothers in routine and manual occupations are more than four times as likely to smoke throughout pregnancy compared to those in managerial and professional occupations (29% and 7% respectively);
- Pregnant women with poor educational attainment, those living in rented accommodation and those who are single or have a partner who smokes are more likely to smoke during pregnancy.

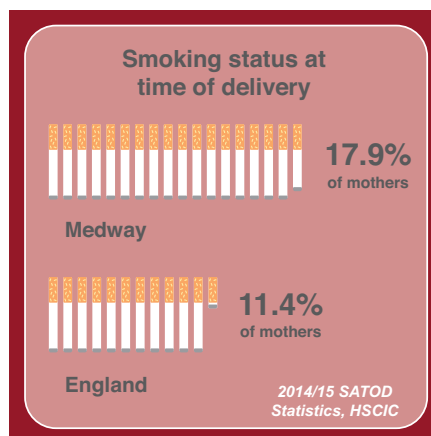


Figure 2: Smoking status at the time of delivery, Medway and England, 2014/15

Source: Health & Social Care Information Centre

Smoking in pregnancy is strongly associated with mother's age and socio-economic position, and contributes significantly to health inequalities (figure 3).⁶

Significant variation in rates of smoking at the time of delivery can be seen across Medway. For babies born in 2013 to Medway resident mothers, the highest SATOD rate at Medway ward level was 28.9 per cent, and the lowest 4.7 per cent. The Medway wards with the highest proportions of women smoking at the time of delivery were, in descending order, Luton and Wayfield, Gillingham South, Gillingham North, Watling and Chatham Central. These wards are also amongst those with the highest levels of deprivation in Medway.

What are we doing to reduce smoking in pregnancy?

Medway Council is working with partners on the following initiatives:

■ *Helping smokers to quit*

There is evidence that smokers are up to four times more likely to quit with specialist support. Medway Stop Smoking Service provides a specialist service for anyone, including pregnant women, wanting to stop smoking.

BabyClear is an enhanced stop smoking service to support pregnant women to quit. In accordance with NICE guidance, systematic carbon monoxide testing is included across Medway as part of the routine tests all women receive at first booking appointments. Women with raised levels are referred to the Stop Smoking Service urgently. At the 12-week dating scan and, more recently, at the Fetal Medicine Consultant's specialist clinic for women with poor fetal growth in pregnancy, any pregnant women who are still smoking are offered an immediate appointment with the Specialist Stop Smoking Midwife. This will include a more detailed explanation of the potential harm to the fetus along with the use of visual aids to illustrate the effects of smoking on the baby during pregnancy. Following this session, women may be referred to the Stop Smoking Service for further support to stop smoking. Early results are positive and indicate that 39 per cent of women using this service have quit smoking successfully. A detailed evaluation using data from a full year of service delivery is currently in progress.

■ *Smoke free homes*

Medway's Tobacco Control Team has been working with schools and Children's Centres to raise parental awareness of the effect second-hand smoke has on children. Parents/carers are encouraged to make a 'Smoke-free homes pledge'. There are three levels of pledge available:

- to make both your home and car smoke-free;
- to make your home smoke-free;
- to smoke only in one well-ventilated room and never in a child's presence.

Between June 2014 and February 2015, a total of 107 pledges have been made by people wishing to make their home and/or car smoke-free.

Sixty-three pledges were for homes where there was at least one child aged five or under in the home.

What more can we do?

Reducing smoking in pregnancy is challenging. Although many women will quit when trying to conceive or as soon as they discover they are pregnant, others may not have a full enough understanding of the risk to their unborn baby to motivate them to stop, or they may face barriers that prevent them from quitting. Most smokers become addicted to nicotine, a drug that is found naturally in tobacco: this makes giving up smoking challenging.

The following local actions will help to reduce smoking in pregnancy:

- strong encouragement and support from all healthcare professionals for women coming into contact with them to quit smoking when planning a pregnancy or as early as possible in the pregnancy;
- women who have quit successfully during pregnancy should be supported not to take it up again after they have had their baby;
- other family members should also be supported to quit;

- NICE has produced national guidance⁶ on how best to support women to stop smoking in pregnancy, and makes a number of recommendations aimed at supporting pregnant women to quit successfully. These include the following:
 - identification and referral of pregnant women who smoke;
 - sufficient expertise in local stop smoking services to meet the needs of pregnant women;
 - smoking cessation training for all health professionals working with pregnant women;
 - effective communication with women and their families;
 - effective communication between healthcare professionals.
- All patient data on smoking status at the time of booking and at delivery should be recorded accurately and kept up-to-date to ensure reliability and enable progress to be monitored;
- All staff coming into contact with pregnant women have an important role in encouraging women to quit. Midwives are particularly well placed to deliver smoking cessation advice and should attend Brief Intervention Training on smoking in order to maximise opportunities to support pregnant women to quit.



Case study: smoking cessation in pregnancy Maria Watson, Specialist Stop Smoking Midwife

I met Jane when she was expecting her third child, after she was referred to me for the Risk Perception Intervention, part of the routine antenatal care package for pregnant smokers in Medway.

Jane's mental health history was long and complex. She appeared anxious at the beginning of the appointment and not very receptive to the idea of quitting smoking. After building up a rapport with Jane, she began to talk about certain triggers for her mental illness. I signposted her to the Specialist Mental Health Midwife who could offer her some additional support. As a result of the conversation that I had with Jane and her partner, it became apparent that neither of them had ever thought about quitting smoking before. Jane disclosed that due to the pregnancy she was not taking medication for her mental illness. This made things particularly hard for her as she felt she would be losing her

“crutch” if she gave up smoking, and she was concerned about how she was going to be able to cope with everyday life being smoke-free.

As part of the Risk Perception Intervention we discussed the harmful effects of the carcinogens found in cigarettes. Both Jane and her partner felt that they had learnt something new as a result of the Risk Perception Intervention. Jane's carbon monoxide reading was taken with her consent and was nine parts per million (ppm) at her first ultrasound scan.

I continued to see Jane regularly over the next few weeks. Nine weeks after we had first met she told me that she had quit smoking for six weeks. Her carbon monoxide reading was then one ppm.

I know how hard quitting smoking would have been for Jane, and it is a fantastic achievement, I am very proud of her!

References

1. Campbell, A.M. The Effect of Excessive Cigarette smoking on Maternal Health. *Am. J. Obstet. Gynecol.* 31, 502, 1936.
2. Bull, J., Mulvihill, C., Quigley, R. Prevention of low birth weight: assessing the effectiveness of smoking cessation and nutritional interventions. London: Health Development Agency, 2003.
3. Department of Health, 2007. Review of the health inequalities infant mortality PSA target.
4. Department of Health, 2004. Scientific Committee on Tobacco and Health report. *Secondhand Smoke: Review of evidence since 1998.*
5. London: Department of Health Department of Health, 1989. *Smoking Kills: A White Paper on Tobacco.*
6. NICE, 2010. *Quitting smoking in pregnancy and following childbirth.*

4 Breastfeeding



4 Breastfeeding

Breastfeeding is a key indicator of child health and wellbeing, which contributes to reducing infant mortality and health inequalities. There is good quality evidence that babies who are breastfed are at reduced risk of gastro-intestinal, respiratory and ear infections; diabetes; overweight/obesity; and sudden unexpected death in infancy. Recent evidence has shown an increased risk of poorer cognitive development and behavioural problems in children who were not breastfed.¹ Benefits to the mother include a reduction in the risk of breast and ovarian cancer and possible reductions in hip and spinal fractures and the risk of reduced bone density. Emerging evidence also suggests that breastfeeding has a positive impact on mother-baby relationships, which is important for the baby's future healthy emotional, social and physical development.

There are strong associations between socio-demographic factors and breastfeeding. The highest incidence of breastfeeding is found amongst mothers who:²

- are aged 30 years or over;
- are from ethnic minority groups;
- left education aged over 18 years;
- are in managerial and professional occupations;
- live in the least deprived areas.

Local authorities in Britain started collecting data about infant feeding in the early twentieth century. Information was collected by Health Visitors and published in annual reports of the Medical Officer for Health (MOH) for the local authority. The quality

of the data was variable, but analysis of the reports has provided a general picture of infant feeding during the first half of the twentieth century when it appears that, for the UK as a whole, breastfeeding initiation was high, and dominated as feeding method for the first one or two months of infant life. Breastfeeding rates of around 80 per cent were reported during these early months of life. Many mothers, however, then quickly weaned their babies onto bottle or solid foods.³

The mothers of Rochester were no exception. The MOH for Rochester wrote in his annual report in 1915:

"The majority of mothers suckle their infants for a short period but later on the tendency is to supplement or to entirely substitute bottle feeding".

The need to return to work, and therefore stop breastfeeding, is commonly cited in archived MOH reports as a reason for substitution of bottle feeding. Prior to the advent of artificial dried milk, infants, sometimes left in the charge of a sibling while the mother went to work, were often fed cow's or condensed milk from inadequately cleaned bottles. The MOH noted in 1915 the situation in the North of England where the infant mortality rate was particularly high and where factory employment was common. At times of factory strikes, when mothers had to stay at home, breastfeeding rates tended to rise and infant morbidity and mortality were seen to decline.

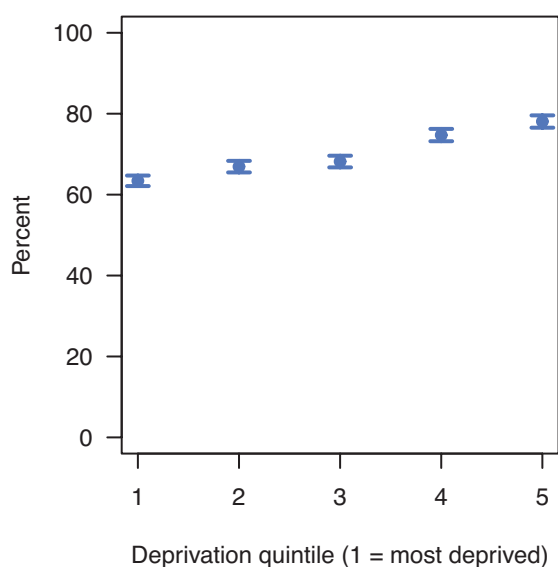


Figure 1: Breastfeeding initiation by local deprivation quintile, Medway resident women, 2009–2014

Source: Medway NHS Foundation Trust

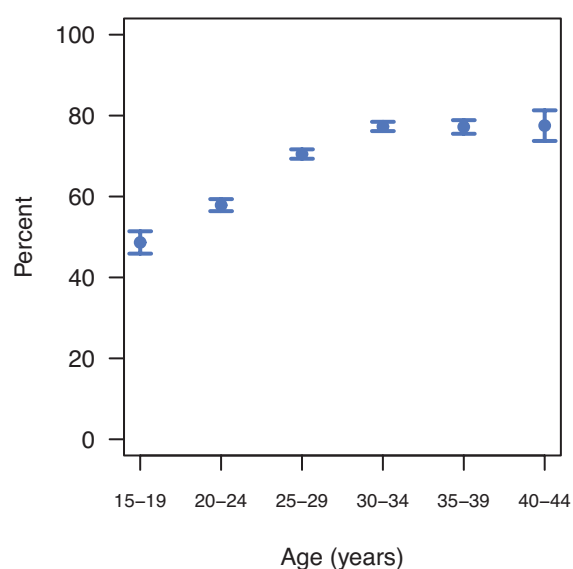


Figure 2: Breastfeeding initiation by age group, Medway resident women, 2009–2014

Source: Medway NHS Foundation Trust

The 20th Century saw a rise in the marketing and use of artificial milks. After the first world war, the increased availability of dried milk made artificial feeds more popular, with the advantage that they did not carry the same contamination risk as cow’s or condensed milk:

“Considerable credit must be given to the wide use of dried milk, which is in all respects a better and safer food for infants who cannot be suckled, than is either cow’s milk, with its usual complement of dirt, or condensed milk, which is so liable to contamination after the tin has been opened”

[MOH report for Rochester, 1918]

Breastfeeding rates declined sharply throughout the first half of the 20th Century to a low point during the 1960s and 1970s. The first infant feeding survey for England and Wales, conducted in 1975, found that only 51 per cent of women initiated breastfeeding.

The World Health Organization and UNICEF recommendations on breastfeeding are:

- initiation of breastfeeding within the first hour after the birth;
- exclusive breastfeeding for the first six months;
- continued breastfeeding for two years or more, together with safe, nutritionally adequate, age appropriate, responsive complementary feeding starting in the sixth month.

Although UK rates have improved since the 1970s, most likely as a consequence of increased public and professional awareness of the impact of infant feeding on health and of public health policy development, they remain amongst the lowest in Europe, with an average initiation rate of 70 per cent and much lower continuation rates.⁴ Breastfeeding initiation in Medway has remained at a level of around 70 per cent for the past three years. This is slightly below the England average, and significantly less than for the South East Coast area.

Analysis of births to Medway residents during the period 2009–2014 has shown that there is a significant relationship between both breastfeeding initiation and maternal age, and breastfeeding initiation and deprivation (figures 1 and 2 respectively): initiation rates increase as maternal age increases and deprivation level decreases.

What are we doing to increase breastfeeding in Medway?

Our local approach to support breastfeeding is led by the Infant Feeding Strategy Group which has members from Medway Community Healthcare (MCH), Medway NHS Foundation Trust (MFT) and Medway Council (Early Years and Public Health). The group is leading the delivery of a range of evidence-based⁵ actions to improve breastfeeding rates across Medway:

- The WHO/UNICEF Baby Friendly Initiative is a global accreditation programme which aims to improve practice in all maternity health services to bring about an increase in breastfeeding rates. The programme introduces best practice standards for breastfeeding. Excellent progress has been made with the programme in Medway, with stage one achieved for midwifery, stage two for Health Visitors and Children's Centres. Plans to work towards subsequent stages are in place;
- Peer support programmes, which enable local mothers who have breastfed to provide support for new mothers, have been shown to be successful. Medway Breastfeeding Network provides breastfeeding support and advice through local drop-ins held in Children's Centres, one-to-one meetings and support through existing family services e.g. Health Visitor clinics, libraries, Family Nurse Partnership and on the maternity wards at MFT;
- Breastfeeding Advocates are in place in 16 of Medway's 19 Children's Centres: the advocates are staff who have been trained by the National

Childbirth Trust to support breastfeeding mothers;

- Provision of regular training sessions for Children's Centre staff and Health Visitors on introducing solids and safe formula feeding.

What more can we do?

Improving breastfeeding rates is complex and requires a multi-agency approach in order to achieve the cultural shift that is needed to normalise breastfeeding and ensure that parents get the support they need to breastfeed. Actions which are planned for Medway to increase breastfeeding include:

- progressing towards the achievement of full UNICEF UK Baby Friendly Initiative (BFI) accreditation for women and children's services in acute and community settings;
- the development of Medway's Breastfeeding Network to offer universal support to breastfeeding mothers;
- implementation of workforce training and development in all maternity and early years settings to increase knowledge of infant feeding;
- the development of a cross-organisational Infant Feeding Pathway, which includes pre-conception, pregnancy and children aged 0–5 years, to promote optimum nutrition;
- engagement with and communication of the benefits of breastfeeding and infant nutrition across Medway's population.

Case Study: Chantelle's Story



My name's Chantelle and I am a 22 year old mum with two children—Arabella who is nearly four and Alfie who is nearly one.

Let's start with Arabella...I was a young mum at the age of 19 when I had her and breastfeeding never entered my mind. I didn't know anyone my age that had done it. When she was born, I had no understanding of how to get her to latch and felt I had failed when I couldn't get her to take the breast. I waited for my milk to come in but it never did, which just made me feel more like a failure. So I gave her a bottle but still struggled. I felt as though I struggled to bond with her. It wasn't because I didn't breastfeed, but because I didn't get the support I needed.

I was so determined to breastfeed my second child, Alfie, but again I couldn't get him to latch. We left hospital and continued to struggle. When Alfie was four days old I went to my local breastfeeding group at Hand in Hand Children's Centre, Twydall. The peer supporter sat with me and helped me with my technique yet something wasn't working as he was still falling asleep feeding. The peer supporter recommended that I go along to the Medway Breastfeeding Clinic for a more in-depth assessment and they diagnosed a tongue tie. From the moment it was cut things got easier; the improvement was instant and it just got better from there on.

I've continued to go to the support group and made life-long friends. I've found a great support network for all my breastfeeding and parenting concerns. I have had a few issues now and again and the peer supporters have helped me avoid things becoming more serious. Alfie still doesn't sleep through the night, but we enjoy the cuddling and him needing us as one day they will be grown up and not need that comfort anymore and I will miss it.

Luckily my milk supply has always been good and I've even been able to donate to Medway's milk bank which is a great feeling. No one tells you that breastfeeding is easier than a bottle but also benefits mum's physical and mental wellbeing. I felt better quicker after the birth and much less stressed.

So after nearly a year we have a happy, healthy, two stone baby boy who's walking and learning so fast. Knowing how proud my partner is of how I've managed to feed our boy for nearly a year makes me proud of myself and makes it so worthwhile.

I'm glad I had the support and was able to breastfeed this time. I tell everyone to try breastfeeding. I've inspired a few friends to give breastfeeding a go with their next children. Everyone says how good it is for the baby but it's just as rewarding for the mum!

References

1. Unicef, 2012. Preventing disease and saving resources: the potential contribution of increasing breastfeeding rates in the UK.
2. Unicef UK. UK breastfeeding rates. Accessed on 11th August 2015. Available at: <http://www.unicef.org.uk/BabyFriendly/About-Baby-Friendly/Breastfeeding-in-the-UK/UK-Breastfeeding-rates/>
3. Atkins, P.J. (2003). Mother's milk and infant death in Britain c1900–1940. *Anthropology of Food*.
4. Weaver, L. (2009). Feeding babies in the 21st Century: Breast is still best, but for new reasons. *History and Policy* 2009.
5. NICE. Dyson, L. et al. Promotion of breastfeeding initiation and duration. Evidence into practice briefing July 2006.

5 Maternal nutrition



5 Maternal nutrition

The nutritional status of women before, during and after pregnancy can have a significant influence on fetal, infant and maternal health, with strong evidence linking poor maternal nutrition to congenital abnormalities, low birth weight and maternal complications.¹

The theory of “fetal programming”, first described by Barker and colleagues in 1989,² argues that environmental factors in the womb, notably maternal nutrition, influence physiological processes in the fetus, particularly during critical periods of growth and development. This can have lifelong consequences with respect to chronic disease development. The Barker Hypothesis suggests that the risk of cardiovascular disease and diabetes in adult life is programmed in-utero by abnormal patterns of fetal growth associated with poor maternal nutrition.

Maternal obesity is a major threat to maternal and child health, with links to a number of negative health impacts for both mother and baby (table 1).

On the other hand, poor maternal weight gain in pregnancy due to an inadequate diet, increases the risk of premature delivery, low birthweight and birth defects.² Deficiencies in vitamins and minerals, also termed ‘micronutrients’, can also result from an inadequate diet and can impact negatively on fetal and child health.³

Several steps have been taken in recent years to optimise maternal and infant nutrition, one of which is Healthy Start, a UK-wide government scheme which was introduced across the UK from November 2006 and aims to improve the health of pregnant women and families on benefits or low incomes.

Table 1: Health impacts of maternal obesity

Poorer maternal health, including:	Poorer fetal/child health, including:
<ul style="list-style-type: none"> • cardiac disease 	<ul style="list-style-type: none"> • macrosomia (weight greater than 4.5kg) or fetal growth restriction
<ul style="list-style-type: none"> • pre-eclampsia (a potentially dangerous condition during pregnancy when there is a sudden, sharp rise in blood pressure, swelling and excess protein leaks into the urine) 	<ul style="list-style-type: none"> • increased risk of miscarriage and stillbirth
<ul style="list-style-type: none"> • increased risk of thromboembolism (the blockage of a blood vessel by a blood clot carried through the bloodstream from the site where it was formed) 	<ul style="list-style-type: none"> • congenital anomalies, for example, cleft lip and palate, neural tube defects
<ul style="list-style-type: none"> • gestational diabetes 	<ul style="list-style-type: none"> • prematurity (born before 37 weeks of pregnancy) or post-dates (born after 42 weeks of pregnancy)
<ul style="list-style-type: none"> • increased difficulty monitoring the health of the fetus during pregnancy and birth 	<ul style="list-style-type: none"> • obesity

Source: https://www.noo.org.uk/NOO_about_obesity/maternal_obesity/childhealth

The scheme provides vouchers for pregnant women and those with children younger than four years to spend on milk, fruit and vegetables. Women who receive certain benefits or are pregnant and aged under 18 years qualify for the vouchers. The scheme also provides vitamin supplements to eligible pregnant women, women with a baby under one year old and children from six months old to their fourth birthday. Healthy Start women's vitamins include:

Folic acid

Inadequate folic acid intake before and during early pregnancy is associated with an increased risk of neural tube defects (NTDs—birth defects of the brain, spinal cord and spine. One of the most common NTDs is spina bifida. There is very strong evidence that folic acid supplements taken by women during pregnancy prevent at least 70 per cent of occurrences of neural tube defects.⁴

Vitamin D

Vitamin D is essential for healthy bones and teeth, and low levels have been associated with a number of negative outcomes for mother and child. The Department of Health recommends that all pregnant and breastfeeding mothers should take a daily supplement containing 10 micrograms of vitamin D to ensure that the

mother's requirements are met and that the fetus's stores are adequate for early infancy. This can improve the baby's growth during their first year of life and can reduce their risk of developing certain conditions, such as rickets.

In keeping with the national picture, the uptake of Healthy Start vitamins is negligible in Medway and the scheme is not currently fulfilling its potential to address vitamin deficiencies. More information on the Healthy Start scheme is available at:

www.healthystart.nhs.uk/index.asp

National statistics on the prevalence of maternal obesity are not collected routinely in the UK. According to a national audit of obesity during pregnancy conducted by the Centre for Maternal and Child Enquiries (CMACE) in 2009,⁵ the UK prevalence of women with a known body mass index (BMI) ≥ 35 at any point in pregnancy who give birth at 24+ weeks' gestation, is 4.99 per cent. This equates to approximately 38,478 maternities each year. It should be noted that the BMI threshold of ≥ 35 used in this study is higher than the standard threshold for obesity of $\geq 30\text{kg/m}^2$.

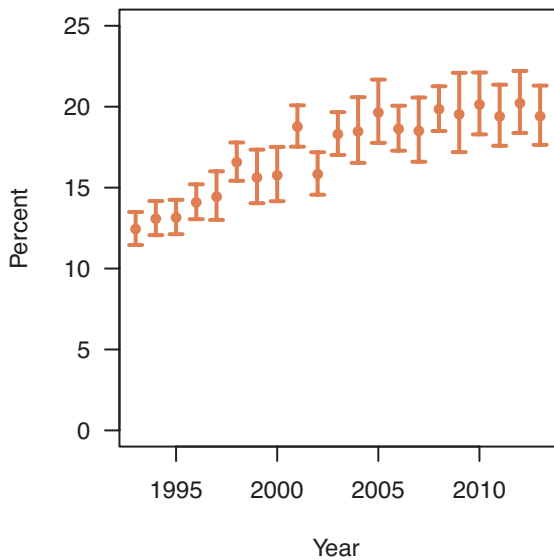


Figure 1: National prevalence of obesity (with 95 per cent confidence intervals) in females aged 16–44 years during the period 1993–2013

Source: Health Survey for England

Data for the period 1993–2013 show an increase in the prevalence of obesity (BMI at least 30 kg/m²) amongst women of childbearing age (figure 1).

Factors that are linked to obesity during pregnancy are maternal age over 35 years, deprivation and being of white Caucasian ethnicity.⁶ Women from disadvantaged groups tend to have poorer diets and are more likely to be either obese or to show low weight gain during pregnancy.^{7,8} Mothers from these groups are also less likely to take folic acid or other supplements before, during or after pregnancy.⁹

In line with these well-documented associations, there is a statistically significant relationship between maternal obesity and maternal age, and maternal obesity and deprivation for Medway.

What are we doing to improve maternal nutrition in Medway?

Midwifery Specialist Care Pathway—Obesity (Medway NHS Foundation Trust)

Care provision has been enhanced for obese pregnant women in recent years. Pregnant mothers with a BMI greater than 35 are identified by the midwife and referred to a Consultant Obstetrician for further support. Women with a BMI greater than 40 are also referred to the nutrition and dietetics service at Medway NHS Foundation Trust.

Weight management services

A range of community-based weight management services available to any adult in Medway are provided by Medway Council's Public Health Directorate. Each service has its own specific inclusion criteria. For further details please follow the following link to the obesity management care pathway on the A Better Medway website:

<http://bit.ly/1QA47xv>

NICE guidance does not encourage women to engage in weight loss programmes whilst pregnant (although it does encourage healthy eating and physical activity) and these programmes would therefore be best suited to women who may be thinking about planning a pregnancy in the future or post-pregnancy. Local information about these services and healthy eating can be found here:

<http://www.abettermedway.co.uk/healthyeating/healthyeatingadvice.aspx>

Investigating barriers to accessing antenatal care and advice

Certain groups of women in Medway have been found to be less likely to access antenatal care and support in a timely way. These groups include women under the age of 20 years, women from deprived backgrounds and women from certain ethnic minority groups. A study is currently being planned in collaboration with the University of Kent to investigate the reasons why certain groups are less likely to access care than others, with the aim of identifying the best channels and methods of communication to deliver pre-conception and antenatal advice to these groups.

What more can we do?

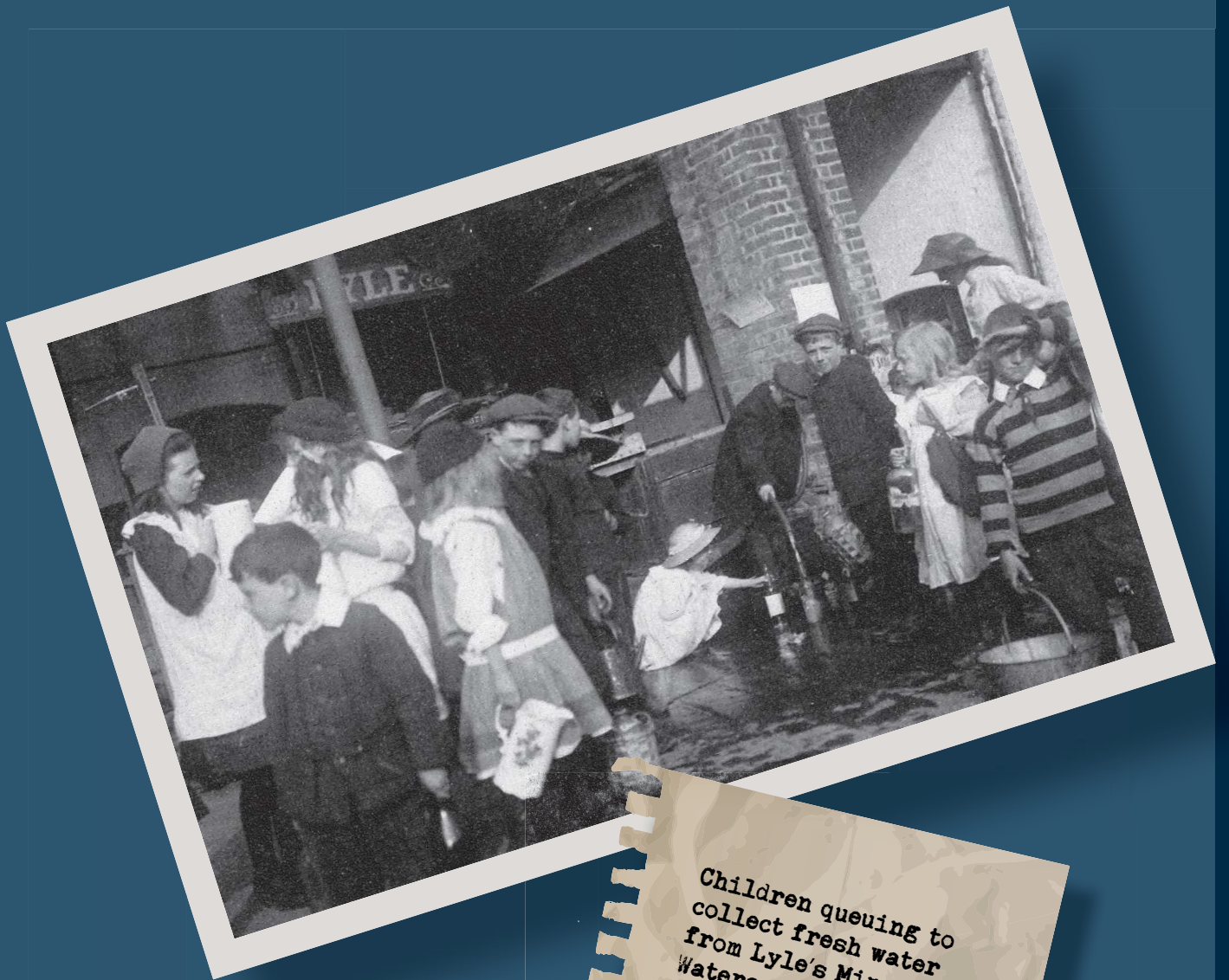
It is essential that mothers are supported to have good physical and mental health during pregnancy and following the birth of their child. Many health factors in pregnancy are difficult to address once a pregnancy has started and it is therefore more effective if advice and behaviour change occur before conception. The following actions are recommended:

- targeted support and pre-pregnancy counselling for women in certain high risk groups, including obese women, who may become pregnant;⁸
- links should be further developed with local weight management services and referral pathways developed for preconception and postnatal care;
- breastfeeding can help with post-natal weight reduction and also reduce the baby's future risk of childhood obesity and obesity in adulthood. Interventions and programmes to encourage breastfeeding are therefore important;
- review the accessibility, availability and uptake of Healthy Start supplements and ensure that uptake is strongly encouraged amongst eligible families.

References

1. Darnton-Hill, I. (2013). Nutrition counselling during pregnancy: biological, behavioural and contextual rationale. Available at: http://www.who.int/elena/bbc/nutrition_counselling_pregnancy/en/.
2. Barker, D.J.P. et al. Weight in infancy and death from ischaemic heart disease. *Lancet* 1989; 2: 577–580.
3. Royal College of Obstetricians and Gynaecologists. Vitamin D in Pregnancy. Scientific impact paper number 43, June 2014.
4. Medical Research Council Vitamin Study Research Group. Prevention of neural tube defects: results of the Medical Research Council Vitamin Study. *Lancet*. 1991 Jul 20;338(8760):131-7.
5. Centre for Maternal and Child Enquiries report on maternal deaths, 2010.
6. Public Health England, 2015. Infant mortality in London.
7. Bull, J. et al (2003). Prevention of low birth weight: a review of reviews for the effectiveness of smoking cessation and nutritional interventions. London: Health Development Agency.
8. Food Standards Agency (2007). Low income diet and nutrition survey: summary of key findings. London: The Stationery Office.
9. BMRB. Social Research. (2007). Infant Feeding Survey, 2005. [data collection]. UK Data Service.

6 Control of infectious diseases



Children queuing to collect fresh water from Lyle's Mineral Waters well, Frindsbury, during the Typhoid epidemic of 1912.

The epidemic was attributed to the contamination of water from the Strood Reservoir.

6 Control of infectious diseases

A substantial proportion of mortality amongst infants and young children nationally was attributable to infectious diseases in the early 20th century. The Medical Officer for Health, in his 1915 annual report for the Borough of Chatham, collected data on the number of deaths from “Infantile Diarrhoea” and noted the climatic conditions at the time (table 1). He commented that “Infective Enteritis” was a common cause of infant mortality, the incidence of which varied with climatic conditions, being very prevalent in hot summers:

“Dirty surroundings and the prevalence of flies, together with defective food storage are contributory causes. Bottle fed infants are specially affected.”

A significant rise in infant mortality was seen during the influenza outbreak of 1918, but overall there have been significant improvements in mortality and morbidity from childhood infections over the last 100 years. Scientific advances, improvements in sanitation, living conditions and nutrition contributed to a decline in all deaths from infectious disease by the mid-late 20th century.

By the end of the twentieth century, these diseases accounted for less than a fifth of all deaths.

High levels of coverage of safe, effective childhood immunisations has led to the virtual eradication in the UK of some communicable diseases, for example, polio and diphtheria, which are no longer a significant cause of disease in England.

Prior to the 1940s, diphtheria, for example, was common in the UK and was the third leading cause of death in children in England and Wales in the 1930s.¹ The introduction of diphtheria immunisation on a national scale during the 1940s resulted in a dramatic fall in the number of notified cases and deaths from the disease. In 1940, more than 61,000 cases with 3,283 deaths were reported in the UK, compared with 38 cases and six deaths in 1957 (figure 1).

Dramatic declines have also been seen in the incidence of previously common childhood diseases such as measles, mumps, rubella, Haemophilus influenza type B and meningitis C.

Table 1: Number of deaths from Infantile Diarrhoea, Borough of Chatham, 1911–1915

Year	Total	Under one year	Temperature
1911	58	39	High
1912	12	11	Low
1913	22	15	Moderate
1914	38	31	High
1915	16	14	Moderate

Source: Report of the MOH for the Borough of Chatham, 1915

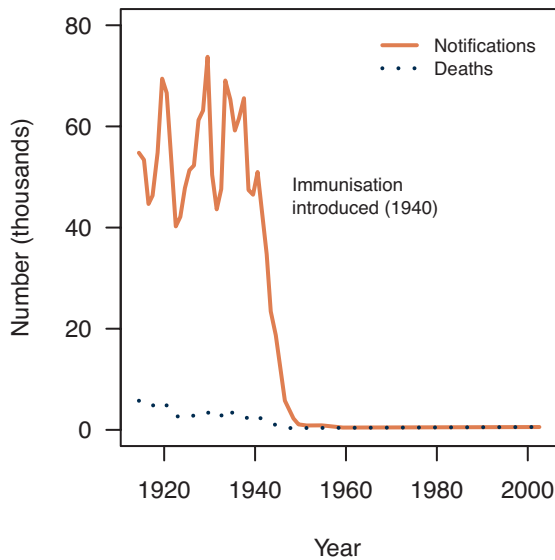


Figure 1: Diphtheria cases and deaths, England and Wales, 1914–2003

Source: *Diphtheria: the green book, chapter 15, Public Health England*

The discovery of antimicrobials, notably Sir Alexander Fleming’s discovery of penicillin in 1928, heralded the start of the antibiotic era and was one of the most significant medical achievements of the twentieth century, leading to huge numbers of lives saved and dramatic improvements in quality of life during the 20th century. Rheumatic fever and rheumatic heart disease, for example, considered a “deadly enemy of youth” until the mid-20th century have almost disappeared in developed countries due to the use of antibiotics for streptococcal infections.²

Despite a dramatic decline in infant and childhood morbidity and mortality due to infectious diseases, challenges still remain, of which key examples are outlined below.

Immunisation

Immunisation is a vital intervention for the prevention of communicable diseases which may impact on the health of young children, and efforts to promote and encourage uptake are important. Whilst the main aim of immunisation is to protect the individual who receives it, high

levels of immunity in a population mean that those who cannot be immunised, for example because they are too young, are at reduced risk of being exposed to a disease. This is known as “herd immunity”. Coverage for most routine childhood immunisations is compared against the World Health Organisation target of 95 per cent coverage by two years of age at the national level.

Historically, Medway’s childhood immunisation uptake has been generally high and numbers of confirmed cases of infectious diseases, which are preventable through the childhood immunisation programme, have fallen to very low levels. Indeed, aggregated numbers of cases amongst children aged less than five years of the vaccine-preventable childhood infections for the five year period from 2010–2014 for Medway were either zero or very low, with less than five confirmed cases of pertussis, pneumococcal infection and mumps, and only six confirmed cases of measles.

There is, however, substantial variation between local GP practices in the proportion of children receiving immunisation. Furthermore, a concerning

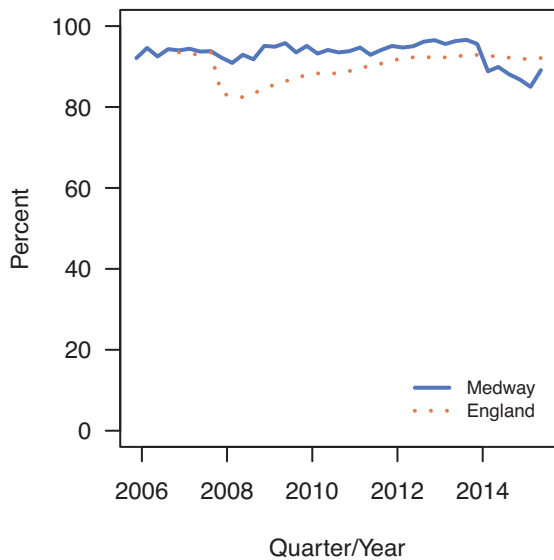


Figure 2: Uptake of first dose of MMR immunisation by age two, Medway and England, 2005/06–2014/15

Source: COVER statistics, Public Health England

decline in the uptake of childhood immunisations in Medway has been apparent since 2013. This decline has, in general, persisted and can be seen to a varying degree across a number of the routine childhood immunisations. Figure 2 shows how the uptake rate for the first MMR immunisation has changed in Medway over the last ten years from a stable rate, which remained consistently above the national average, until 2013 when the decline in uptake began.

Initial investigations by Public Health England, supported by Medway’s Public Health Directorate, suggest that the reason for this decline in immunisation uptake is likely to be a data reporting issue. However, should the decline be a true reflection of the level of immunisation, then there is a risk that coverage may fall to levels below that which is required to achieve “herd immunity”. This may lead to an increase in the number of new cases of infection, and those who are amongst the most vulnerable in the population, for example, newborn infants and those who are too unwell to be immunised, will not be protected against

potentially life threatening infections.

Some infectious diseases can cause serious harm to a pregnant woman or her unborn baby and immunisation reduces this risk. There is evidence that immunising pregnant women with influenza vaccines in the second and third trimester is safe and protects the pregnant woman and her infant up to six months of age from flu infection, and the fetus by decreasing the risk for low birth weight.³ Uptake of seasonal flu immunisation amongst pregnant women in 2014/15 for Medway was 44.6 per cent; this is an improvement compared with the uptake of 38.5 per cent for 2013/14 but still substantially lower than the target uptake of 75 per cent.

Despite national and local efforts to raise awareness amongst healthcare professionals and the public, the uptake of pertussis immunisation amongst pregnant women has been low nationally since its introduction and was 60.2 per cent for Medway during 2014/15 compared to 56.3 per cent for Kent and Medway.

Antibiotic resistance

Antibiotic prescribing—the majority of which takes place in the community—has increased in England year-on-year, with an increasing number of bloodstream infections reported where antibiotic resistance has been implicated.⁴ Overuse and inappropriate use of antibiotics has contributed to the emergence of resistance. It has been estimated that up to 50 per cent of antibiotic prescribing is inappropriate and considerable variability can be seen in both antibiotic resistance and antibiotic prescribing across England, with high prescribing areas frequently also having high resistance.⁴

Antibiotic resistance was identified in the 1940s when an enzyme produced by bacteria and able to destroy penicillin was discovered. Sir Alexander Fleming himself, on collecting a Nobel Prize for his discovery of penicillin, predicted the emergence of antibiotic resistance, saying:

“It is not difficult to make microbes resistant to penicillin in the laboratory by exposing them to concentrations not sufficient to kill them...”

As microorganisms become resistant to antibiotic treatments, there is a very real possibility that these drugs, which have saved millions of lives, may become ineffective in the future. A growing number of healthcare-associated infections are caused by bacteria that are resistant to multiple antibiotics, for example, Methicillin Resistant Staphylococcus Aureus (MRSA), Vancomycin Resistant Enterococci (VRE) and Carbapenemase Producing Enterobacteriaceae (CPE).

In her 2013 annual report,⁵ Dame Sally Davies, England’s Chief Medical Officer, warned of the “catastrophic effect” of antibiotic resistance and the threat that deaths from routine surgery might once again become commonplace.

Breastfeeding uptake

There is evidence that breastfeeding has protective effects against respiratory, gastrointestinal and middle ear infections, thus reducing morbidity and mortality from these infections and reducing the need for antibiotic use. Compared with never breastfed infants, studies have shown that infants who were breastfed exclusively until the age of four months and partially thereafter had lower risks of respiratory and gastrointestinal infections until the age of six months and of lower respiratory tract infections between the ages of seven and 12 months.⁷

Breastfeeding initiation in Medway has remained below the England average, and significantly below the average for the South East Coast area, for a number of years (see chapter four).

Maternal smoking

Smoking in pregnancy is associated with an increased risk of infant respiratory infections⁸ and middle ear infections.⁹ Second hand smoke exposure in the home has been shown to increase infants’ risks of developing respiratory infections and invasive meningococcal disease.⁹ Smoking in pregnancy remains a problem in Medway, with 17.9 per cent of women smoking at time of delivery (SATOD). This is consistently higher than the rate in England (11.4 per cent).

What are we doing to prevent and control infections amongst children in Medway?

- Medway Council's Public Health Directorate is supporting Public Health England in monitoring immunisation uptake, investigating the reasons for poor uptake, raising public and professional awareness through communications and working with partners to improve immunisation rates.
- Antimicrobial stewardship describes the evidence-based measures that can be adopted to promote the appropriate use of antibiotics and optimise outcomes for patients who receive them, including standards for routine antibiotic use, ensuring competency and educational programmes for all staff that use antibiotics and auditing the impact and outcome of the stewardship processes. Medway NHS Foundation Trust (MFT) has an anti-microbial stewardship policy in place which aims to curtail the duration of unnecessary prescribing which in turn will tackle antibiotic resistance across the wider community.
- A ward audit has recently been undertaken by MFT with the aim of reviewing antibiotic prescribing against guidelines or clinical appropriateness and identifying whether a 48 hour antimicrobial review—and appropriate subsequent clinical decision on the use of antibiotics—has taken place for patients prescribed antibiotics. Audit results will be fed back to management and clinical governance teams and regular re-audits are planned with the aim of tracking improvements.
- Recent data suggest that antibiotic prescribing levels may be declining in Medway but this reduction needs to be continued. The control of prescribing of antibiotics which are considered high risk for the development of antibiotic

resistant bacteria (notably co-amoxiclav, cephalosporins and quinolones) remains a challenge in the community and Medway CCG has a quality improvement plan in place to tackle this issue with primary care and other providers.

- A wide range of initiatives and interventions are in place, which aim to increase breastfeeding rates and reduce maternal smoking. These are described in chapters three and four.

What more can we do?

- Taking a multidisciplinary approach to tackling antibiotic resistance and increasing immunisation uptake is vital.
- There is an urgent need for interventions to improve antibiotic prescribing such as:
 - education of healthcare professionals and the public;
 - promotion of self-care of self-limiting infections;
 - restriction of drugs;
 - strict implementation of guidelines.
- Infection prevention and control measures, for example, adequate hand hygiene, use of personal protective equipment and environmental hygiene measures, not only in hospitals but also at home and in community care settings, are important as part of efforts to reduce antibiotic resistance.
- It is important that efforts to ensure optimum uptake of immunisations continue and that reasons for and solutions to poor uptake are identified promptly. Maintaining accurate data is of critical importance to improving immunisation rates.

References

1. National Immunization Program, Centers for Disease Control and Prevention, 2009. Epidemiology and Prevention of Vaccine-Preventable Diseases, 11th Edition (The Pink Book).
2. Essop, M.R. , Peters, F. Contemporary issue in rheumatic fever and chronic rheumatic heart disease. *Circulation*. 2014;130:2181-2188.
3. Canadian Paediatric Society. The benefits of influenza vaccine in pregnancy for the fetus and the infant younger than six months of age. *Practice Point. Paediatr Child Health* 2014;19(9):e121-22.
4. Public Health England, 2014. English surveillance programme antimicrobial utilisation and resistance (ESPAUR) 2014 report.
5. Chief Medical Officer for England Annual Report, 2013. Volume Two: Infections and the rise of antimicrobial resistance.
6. Medical Research Council, 2014. Antimicrobial timeline report. Available at: <http://www.mrc.ac.uk/documents/pdf/antimicrobial-resistance-timeline-report/>.
7. Duijts, L et al (2010). Prolonged and Exclusive Breastfeeding Reduces the Risk of Infectious Diseases in Infancy. *Pediatrics*; 126: e18-e25.
8. Metzger, M.J.et al. Association of maternal smoking during pregnancy with infant hospitalization and mortality due to infectious diseases. *Pediatr Infect Dis J*. 2013 Jan;32(1):e1-7.
9. ASH Research Report, 2014. Secondhand smoke: the impact on children.

7 Teenage pregnancy



7 Teenage pregnancy

Teenage pregnancy often results in poor outcomes for both the teenage parent and the child, in terms of the baby's health, the mother's emotional health and wellbeing and the likelihood of both the parent and child living in long-term poverty (figure 1).

- Teenage mothers are three times more likely to smoke throughout their pregnancy;
- Teenage mothers are less likely to engage with antenatal services;
- Babies born to teenage mothers are at an increased risk of prematurity, congenital abnormality, low birth weight and death during infancy. Infant mortality in this group is 41 per cent higher than for babies of older women;
- Teenage mothers are 50 per cent less likely to breastfeed, with negative health consequences for the child;
- Children of teenage mothers have a 63 per cent increased risk of being born into poverty and are more likely to have accidents and behavioural problems; and
- Mothers under the age of 20 years have a 30 per cent higher risk of mental illness two years after giving birth, which impacts adversely on maternal wellbeing and attachment with the baby.

We know that most teenage pregnancies are unplanned and many—just under 50 per cent in 2013—end in abortion, which represents an emotional cost to the parent and an avoidable cost to the NHS.

Reducing under-18 conceptions has been a longstanding national and local priority for both health and local authority children and young people's services. Throughout most of Western Europe, teenage birth rates fell throughout the 1970s–1990s. The UK rate, however, failed to fall in line with the rest of Western Europe.

A substantial reduction in the teenage conception rate has been achieved in recent years: the rate for England and Wales in 2013 was 24.5 conceptions per thousand women aged 15–17 years, which represents the lowest rate since records began in 1969. The national rate remains, however, significantly higher than comparable western European countries³ and there are significant regional differences in teenage conception rates nationally.

Medway's teenage conception rate has also declined in recent years but it has been consistently above the South-East average and significantly above the England average since 2010 (figure 2). In 2013 Medway had 171 under-18 conceptions (a rate of 33.4 conceptions per 1,000 females aged 15–17).

Figure 1: Health inequalities related to teenage parenthood^{1,2}

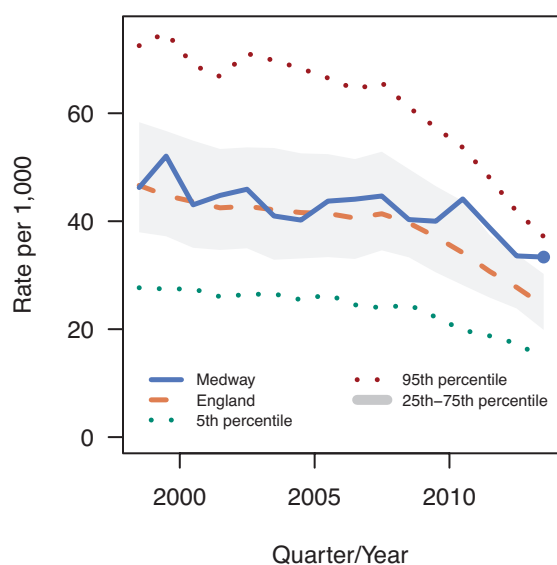


Figure 2: Number of conceptions per 1,000 females aged 15–17 years, Medway, 1999–2013

Source: Office for National Statistics

Areas with high teenage conception rates typically correlate to areas of high social disadvantage, with young women from the most deprived quintile being at approximately ten times the risk of becoming teenage mothers as those from the most affluent quintile. Reasons for this relationship between teenage pregnancy and deprivation are thought to include low aspirations and poor uptake of services. The relationship is demonstrated in Medway, where data for 2011–2013 shows that the highest rates of teenage conception are seen in the Medway wards with the highest levels of deprivation: Luton and Wayfield, Chatham Central, Gillingham South and Gillingham North. These four wards have teenage conception rates which are significantly above the Medway average.

Other groups of young people who are particularly vulnerable to becoming teenage parents include those who are:⁴

- in or leaving care;
- homeless;

- disengaged from or under-performing at school;
- children of teenage mothers;
- members of certain ethnic minority groups, for example, Caribbean, Pakistani and Bangladeshi women;
- involved in crime.

What are we doing about teenage pregnancy in Medway?

- Teenage pregnancy cannot be tackled by one agency in isolation: a targeted, co-ordinated multi-agency approach is required to make a long-term impact. The Medway Sexual Health Network meets quarterly to promote networking and a co-ordinated approach to sexual health issues, including teenage pregnancy. The multi-agency network includes representation from youth services, school nursing, sexual health providers and a range of other key partners.
- Medway is one of the first local authorities to work with the Personal, Social and Health

Education (PSHE) Association to deliver a consistent PSHE delivery framework across all secondary schools. In the first year, nine of Medway's seventeen secondary schools were reviewed, staff were trained and a Medway focused framework complete with lesson plans and resources was distributed. The work continues to expand across all secondary schools and has also commenced at primary schools.

- There is strong evidence that the provision of high quality, comprehensive relationships and sex education (RSE) in schools impacts positively on teenage pregnancy rates. Strong support is currently provided to Medway's schools through the provision of an accredited, quality assured RSE package. Medway's RSE programme has now received the PSHE Association Quality Assurance mark and is being used in 12 of Medway's Secondary Schools.
- Sexual health services must be accessible and youth friendly. There has been significant consultation with stakeholders, residents and service users on the configuration of local sexual health services as they are transformed into an integrated service for Medway. A model for delivery has been developed with the Medway Sexual Health Network, with the needs of young people being a key factor.
- Risk Avert is a targeted, early intervention and prevention programme for young people vulnerable to risk. Year Eight pupils are screened and those who are identified as most vulnerable to risk, including teenage pregnancy, are offered a targeted risk intervention programme. Risk Avert has been implemented in seven secondary schools across Medway to date, with plans for expansion of the programme to all Medway secondary schools during 2015/16.

- The Family Nurse Partnership (FNP) is a preventive programme targeted at first time young mothers. The nurses who deliver the programme have all undergone specialist training and deliver an intensive programme of home visiting and support to teenage mothers, starting during early pregnancy and continuing until the child is two years old. There is strong evidence of the effectiveness of this programme in the USA in improving short and long term outcomes for the young mums and their children, including, for example, improved prenatal health, fewer childhood injuries, greater intervals between births, increased maternal employment and improved school readiness.⁵

The FNP was launched in Medway in 2009 and targets the most vulnerable young mothers and families in Medway. Recent data relating to the Family Nurse Partnership (FNP) Programme indicates, however, that the number of women eligible for the programme exceeds the available capacity, leaving some women without access to the service. Recent evidence relating to the effectiveness of the UK programme indicates that, for short term outcomes, the programme may have limited benefit to families. Discussions are in progress to identify how the programme may be adapted to increase its effectiveness.

What more can we do?

Whilst the reduction in the teenage conception rate nationally and locally is a positive achievement, there is work still to do to continue the downward trend.

Multiagency collaboration and continued investment in the following areas is important to ensure continued progress:

- provision of a full range of cost-effective, good quality, young people friendly contraceptive and sexual health services;
- good comprehensive RSE and PSHE provision across all schools;
- support for young parents to ensure their parenting skills and their inclusion in society.

References

1. Office for National Statistics, 2014. Childhood, Infant and Perinatal mortality in England and Wales, 2012.
2. Department of Health, 2004. Teenage Pregnancy Unit research briefing. Long term consequences of teenage births for parents and their children.
3. Eurostat 2014. Population, demography, fertility.
4. Department for Education and Skills, 2010. Teenage Pregnancy: Accelerating the Strategy to 2010.
5. Family Nurse Partnership National Unit/ Department of Health, 2011. Evidence Base for Family Nurse Partnership.

Medway Council

Gun Wharf
Dock Road
Chatham
Kent ME4 4TR

Tel: 01634 306 000

Email: info@medway.gov.uk

