HSC Public Health Agency

Children's Health in Northern Ireland

2024/25

Health Intelligence, Directorate of Population Research and Intelligence

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Key Findings

- **Birth rate is falling:** The crude live birth rate in Northern Ireland (NI) decreased from 13.3 per 1,000 population in 2014 to 10.1 in 2024 ($p_{trend} < 0.001$).
- **Lowest stillbirth rate in the UK:** NI recorded the lowest stillbirth rate in the UK in 2024, at 3.1 per 1,000 total births.
- **Record low number of teenage births:** In 2024, 380 registered births were to women aged under 20 years, the lowest annual number since records began. NI also had the lowest teenage birth rate in the UK, measured as births per 1,000 women aged 15-19 years.
- **Younger mothers are more likely to book later for antenatal care:** In 2024/25, the proportion of births to mothers who booked for antenatal care at 15 or more completed weeks of gestation was significantly higher among those aged under 20 years than among those aged 20 years and over (18.7% vs 6.4%; p <0.001). The corresponding proportion for all maternal ages was 6.7%.
- **Maternal smoking has decreased:** The proportion of women reporting smoking at antenatal booking fell from 14.5% in 2014/15 to 9.0% in 2024/25 ($p_{trend} < 0.001$).
- **Maternal obesity has increased:** In 2023/24, 28.6% of mothers were classified as obese at antenatal booking, compared with 19.7% in 2013/14 ($p_{trend} < 0.001$). Data for 2024/25 are not currently available.
- **Caesarean section deliveries have increased:** The proportion of singleton live births delivered by Caesarean section increased from 27.9% in 2014/15 to 42.7% in 2024/25 ($p_{trend} < 0.001$).
- **Low birth weight is more prevalent in deprived areas:** In 2024/25, 7.9% of infants born to mothers residing in the most deprived areas had low birth weight, compared with 5.0% in the least deprived areas ($p < 0.001$).
- **Around half of infants are breastfed at discharge:** In 2024/25, 53.5% of live infants with a known feeding status were breastfed totally or partially at hospital discharge. Feeding status was not recorded for 13% of infants.
- **Primary 1 overweight and obesity prevalence is high in NI:** In 2024/25, 28.0% of Primary 1 children in NI were classified as overweight or obese using the UK90 reference, compared with 23.5% in England, 24.4% in Scotland and 27.3% in Wales.

Introduction

The Children's Health in Northern Ireland report provides an overview of maternal, birth and child health across Northern Ireland (NI). It brings together routinely collected information from a range of healthcare systems to describe patterns, trends, and inequalities in maternal and child health.

The report covers a range of topics across the maternal and child health pathway, including maternal age at birth, gestational age at antenatal booking and delivery, maternal risk factors, maternal body-mass index (BMI), mode of delivery, infant birth weight, breastfeeding and childhood growth measurements among Primary 1 and Year 8 children.

Where data permit, findings are presented by relevant population characteristics, including maternal age, ethnic group, area-level deprivation, Health and Social Care (HSC) Trust and parity. Comparisons over time are also presented to highlight changes in maternal and child health and identify inequalities between population groups.

The report is supported by accompanying data tables, available in Excel and CSV formats, which provide the underlying statistics used to produce the report. A supplementary slide pack containing further analysis is also available. These resources can be accessed through the Public Health Agency (PHA) website: https://www.publichealth.hscni.net/protecting-our-health/population-research-and-intelligence/statistics

Methods

Data sources

This report draws on routinely collected health service data from the Northern Ireland Maternity System (NIMATS), Encompass, the Child Health System (CHS) and the Northern Ireland Statistics and Research Agency (NISRA). These sources provide information on maternal characteristics, pregnancy and birth outcomes, breastfeeding and childhood growth.

Prior to the introduction of Epic electronic health records, maternity data for births in NI were recorded on the NIMATS. NIMATS contains demographic, clinical and obstetric information relating to mothers and infants, including current and previous maternity history. It is a key source of information on birth numbers, gestational age at antenatal booking and delivery, maternal risk factors, maternal body-mass index (BMI), smoking, mode of delivery, birth weight and breastfeeding at hospital discharge.

On 9 November 2023, the Encompass HSC Programme introduced a single, integrated electronic health and social care record system (Epic) across NI, replacing a number of legacy information systems. Implementation was phased across HSC Trusts, beginning in the South Eastern HSC Trust in November 2023, followed by Belfast HSC Trust in June 2024, Northern HSC Trust in November 2024, and Southern and Western HSC Trusts in May 2025.

During the phased implementation, maternity information was recorded across both NIMATS and Epic, depending on the HSC Trust and date of implementation. Consequently, data for 2024/25 are derived from both systems. The transition has affected the availability and comparability of some indicators, as consistent data extraction and validation from Epic have not yet been established for all variables. In particular, data relating to some maternal risk factors and maternal BMI are incomplete for 2024/25 and are therefore not presented in full.

Statistics in this publication derived from Epic are designated as Official Statistics in Development, in accordance with the Code of Practice for Statistics. This designation reflects the ongoing stabilisation of the new data source and the development of associated data extraction and quality assurance processes. Although these statistics are considered to be of sufficient quality for publication and use, they should be interpreted with appropriate caution, particularly when making comparisons with data from previous years or assessing trends over time.

The CHS is a patient-centred, community-based operational system comprising seven modules covering different aspects of child health. This report draws on information from Module 1 (Child Register) and Module 4 (School Health). These data provide information on child registration, breastfeeding and school-age health measurements, including BMI measurements for Primary 1 and Year 8 children.

Breastfeeding information recorded in the CHS is classified as 'Total', 'Partial' or 'Not at all'. 'Total' refers to infants receiving breast milk only, with no other type of milk, liquids or food; 'Partial' refers to infants receiving breast milk alongside formula milk, other liquids or food; and 'Not at all' refers to infants receiving no breast milk. Breastfeeding percentages are calculated using records with a known feeding status as the denominator, with records where feeding status is missing or unknown excluded.

Birth statistics from NISRA are based on registrations with District Registrars during a given calendar year, rather than the date on which the birth occurred. Consequently, NISRA birth registration figures might differ from figures derived from NIMATS and Epic, which are based on maternity records and the reporting period in which births occurred. Some births occurring in one calendar year might not be registered until the following year, contributing to differences between these sources.

Classification of childhood growth measurements

Childhood BMI was classified using age- and sex-specific reference standards, including the International Obesity Task Force (IOTF) thresholds and the British 1990 Growth Reference (UK90).

The IOTF thresholds were derived from BMI data from six, nationally representative, cross-sectional surveys undertaken in Brazil, Great Britain, Hong Kong, the Netherlands, Singapore and the United States, comprising 192,727 individuals aged 0-25 years. Each data set has over 10,000 subjects, with age ranges covering at least the period from 6 to 18 years. Age- and sex-specific cut-off points are extrapolated from adult BMI thresholds of 25 kg/m^2 and 30 kg/m^2 for overweight and obesity, respectively. Three grades of thinness are defined using equivalent adult BMI thresholds of 16, 17 and 18.5 kg/m^2.

The UK90 BMI reference provides age- and sex-specific centile curves for children and young people from birth to 23 years. It was developed using a sample of 32,222 measurements from 12 surveys conducted between 1978 and 1994, rebased to 1990 levels. BMI centiles were calculated using Cole's LMS method, which accounts for age, sex and the distribution of BMI.

Under the UK90 classification, underweight was defined as a BMI at or below the 2nd centile; healthy weight as above the 2nd and below the 85th centile; overweight as at or above the 85th and below the 95th centile; and obesity as at or above the 95th centile.

Statistical analysis

Descriptive statistics were used to summarise maternal, birth and child health indicators, with results presented as numbers, percentages, rates or mean values, as appropriate. Differences in proportions between population groups and reporting periods were assessed using Pearson's chi-square (χ^2) test, while differences in mean values for continuous variables were assessed using Welch's independent-samples t-test.

Temporal trend analyses were undertaken to assess evidence of increasing or decreasing trends over time, with missing observations excluded without imputation. Adjustments for multiple comparisons were applied where appropriate. All statistical tests were two-sided, with statistical significance defined as $p < 0.05$.

Section 1: Key Trends

In 2024, 19,476 births were registered in NI (19,416 live births and 60 stillbirths), representing a crude total birth rate of 10.1 per 1,000 population. Figure 1.1 shows a downward trend in the total birth rate over the past decade ($p_{trend} < 0.001$). Despite the downward trend, NI had the highest crude live birth rate among the four UK countries in 2024, at 10.1 per 1,000 population, compared with 9.7 in England, 8.4 in Wales and 8.3 in Scotland.

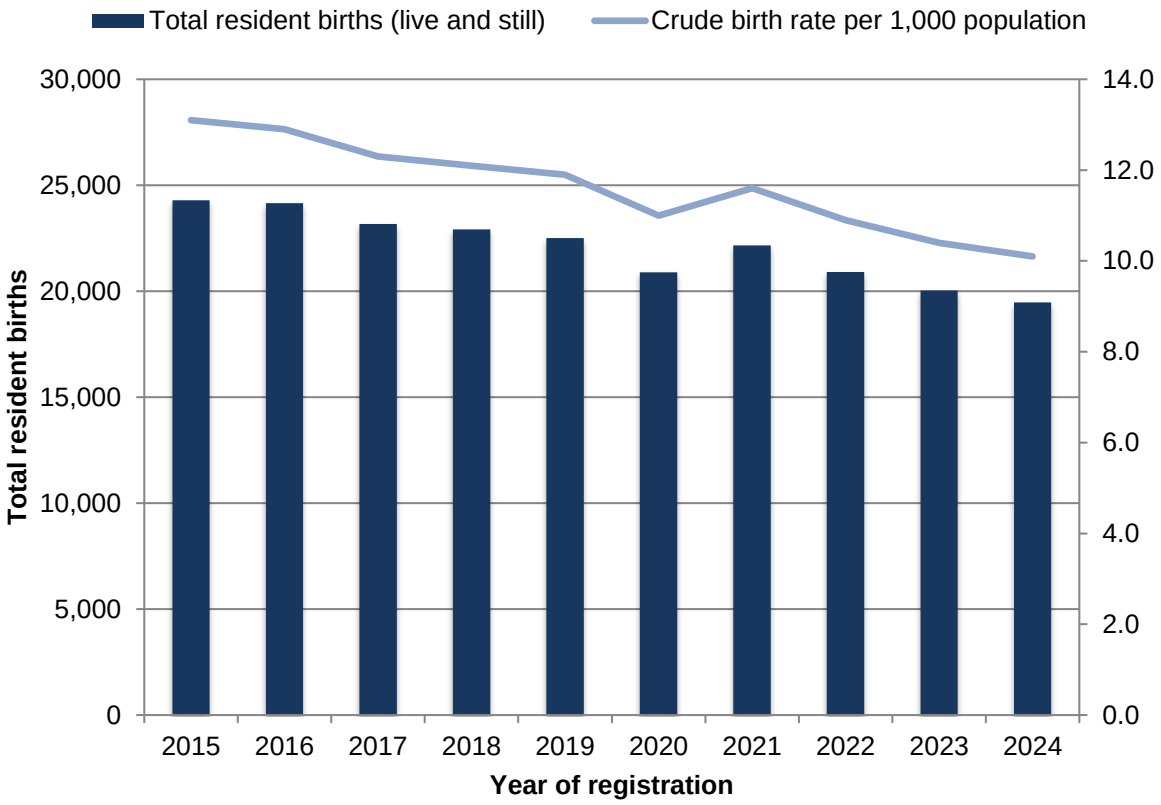

Figure 1.1. Total resident births (live and still) and crude birth rate, Northern Ireland, 2015-2024. Source: See Table 1.2 in the accompanying Excel file.

Section 2: Fertility

Total period fertility rates (TPFR) in NI have declined over recent decades ($p_{trend} < 0.001$). The TPFR represents the average number of children a woman would have over her reproductive lifetime if she experienced the age-specific fertility rates observed in a given year. In 2024, the TPFR in Northern Ireland was 1.61 children per woman, the highest among the four UK countries, followed by England (1.42), Wales (1.35) and Scotland (1.25) (Figure 2.1). Declining fertility rates may reflect a combination of factors, including access to contraception and abortion services, economic and financial uncertainty, postponement of childbearing and changing reproductive preferences [2,3].

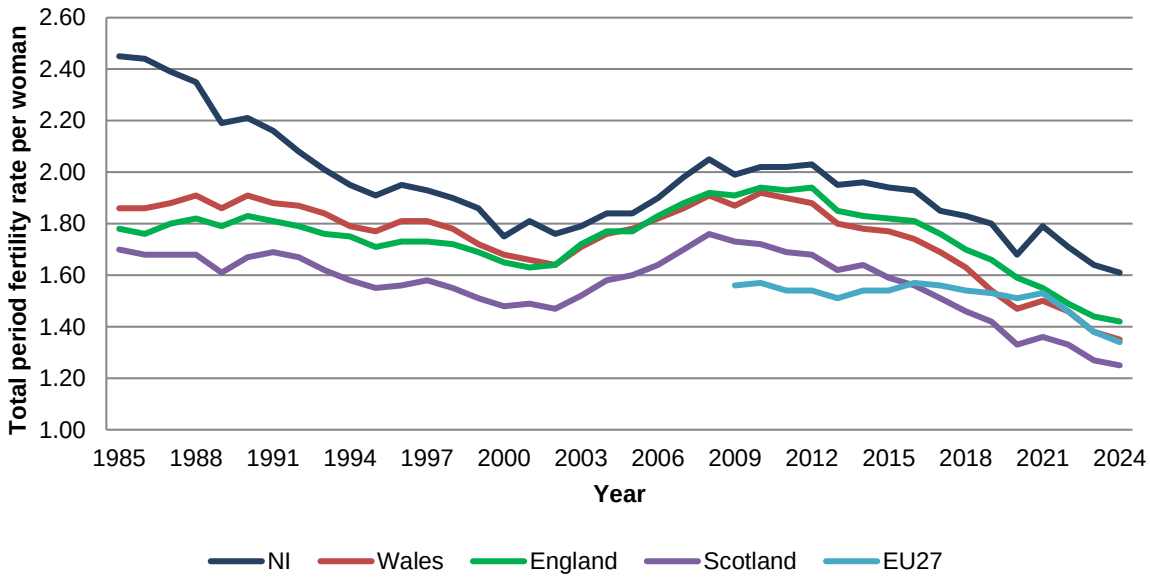

Figure 2.1. Total period fertility rate per woman in England, Wales, Scotland, Northern Ireland and the European Union, 1985-2024. Source: See Table 2.1 in the accompanying Excel file.

Between 1975 and 2024, fertility rates in Northern Ireland declined significantly ($p_{trend} < 0.001$), with a shift towards childbearing at older ages (Figure 2.2). The fertility rate among women aged 15-44 years decreased from 90.0 to 53.5 live births per 1,000 women, a reduction of 40.6% ($p_{trend} < 0.001$). Significant downward trends were observed in the general fertility rate and age-specific fertility rates among women younger than 30 years ($p_{trend} < 0.001$). Following an increase from 57.7 in 2020 to 61.2 in 2021, the fertility rate declined for three consecutive years, reaching 53.5 in 2024, representing reductions of 7.3% relative to 2020 and 12.6% relative to 2021. Between 2023 and 2024, fertility rates declined across all age groups younger than 35 years, whereas small increases were observed among women aged 35-39 and 45-49

years. In 2024, fertility rates were highest among women aged 30-34 years (112.5 per 1,000 women), followed by those aged 25-29 years (81.5 per 1,000 women) and 35-39 years (64.5 per 1,000 women). Fertility rates among women younger than 30 years reached their lowest levels across the years examined ($p_{trend} < 0.001$).

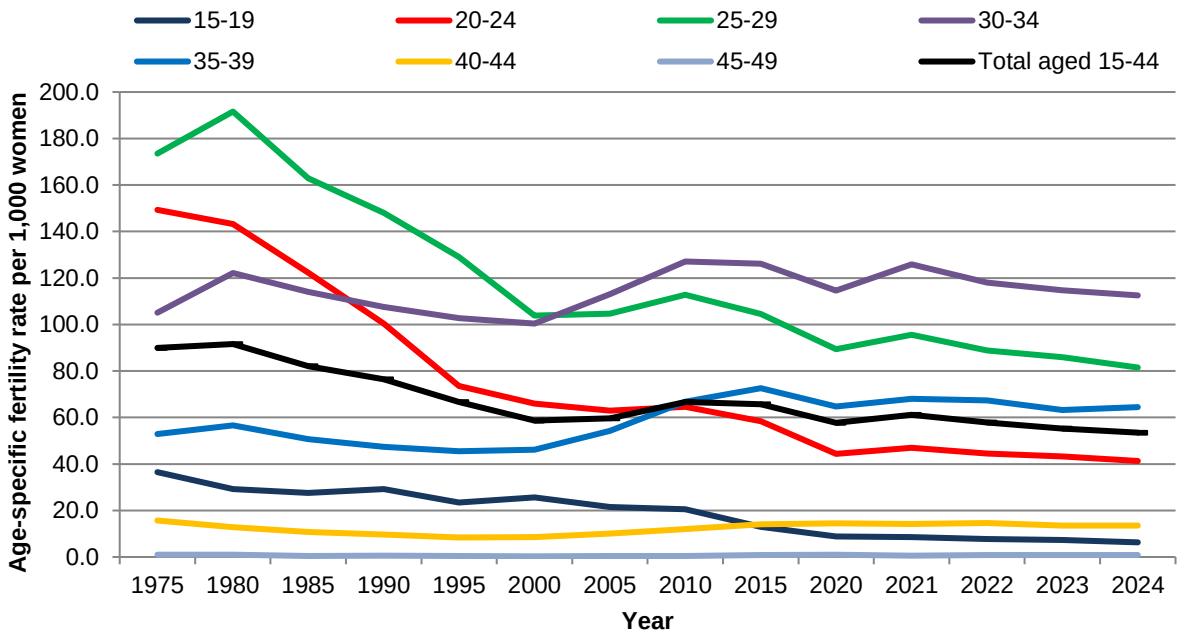

Figure 2.2. Age-specific fertility rate (ASFR) by age group of mother, Northern Ireland, 1975-2024. Source: See Table 2.2 in the accompanying Excel file.

Section 3: Maternal Age at Birth

Average maternal age increased, from 30.0 years in 2014/15 to 31.0 years in 2024/25 ($p < 0.001$). For first time mothers, the average age has increased from 27.5 years in 2014/15 to 28.9 years in 2024/25 (($p < 0.001$). Of those mothers delivering in 2024/25, the highest proportion were aged between 30 and 34 (more than one-third (36.4%) of all mothers).

During 2024/25, births to teenage mothers (under 20 years) accounted for 2.0% of all births. The number of births to teenage mothers has been falling, from 712 births in 2014/15 to 377 in 2024/25. However, the percentage teenage births varies by level of deprivation of mother at time of birth, from 0.7% in the least deprived areas of NI in 2024/25, to 3.7% in the most deprived areas [4].

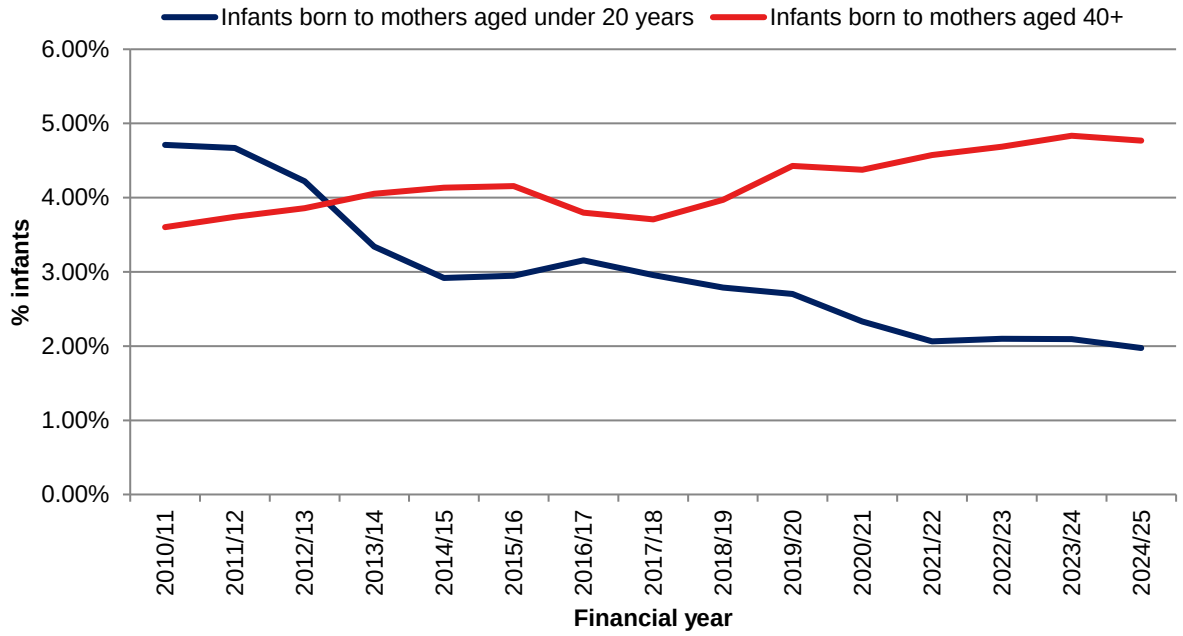

Figure 3.1. Births to mothers aged under 20 years and mothers aged 40 years and over, Northern Ireland, 2010/11-2024/25. Source: See Table 3.1 in the accompanying Excel file.

Despite a long-term decline in teenage birth rates in NI, rates in NI and the UK overall remain among the highest in Western Europe [5,6,7]. Although rates have decreased across socioeconomic groups, teenage pregnancies are still more likely to occur in communities affected by social and economic disadvantage, with the rate in the most deprived areas of NI more than four times that of the least deprived [8].

Teenage pregnancy is a complex issue shaped by a combination of social, economic and behavioural factors, including socioeconomic and educational disadvantage, adverse

childhood experiences, health-related behaviours and unequal access to support and healthcare services [9]. While teenage pregnancy can be a positive experience for some young people, many are unplanned and young parents may face challenges which can be made worse by existing disadvantage and vulnerability [9,10,11]. For example, evidence suggests that adverse childhood experiences (ACEs) and care experience are associated with an increased likelihood of teenage pregnancy and parenthood [12,13].

Teenage pregnancy is associated with increased risk of adverse health, educational and psychosocial outcomes for both mothers and babies [9,14,15]. Obstetric and perinatal risks include pre-eclampsia, preterm birth, low birth weight, stillbirth and increased mortality (including Sudden Infant Death Syndrome) [9,14]. Longer term risks for teenage mothers include social isolation and exclusion, poorer mental health including postnatal depression and suicide, relationship breakdown, poor educational attainment and unemployment [9,14]. While the children of teenage mothers are more likely to live in poverty, be hospitalised for gastroenteritis or accidental injury, experience neurodevelopmental delay and become teenage mothers [14,16].

Despite declining rates, teenage pregnancy remains an important public health issue in NI due to its close association with social disadvantage and poorer outcomes for both parents and children [17].

In 2024/25, 4.8% of all births were to mothers aged 40 years and over. Figure 3.1 shows a significant upward trend in the proportion of births to mothers in this age group, from 3.6% in 2010/11 to 4.8% in 2024/25 ($p_{trend} < 0.001$). Consistent with trends observed in other European countries, age-specific fertility rates in NI indicate a shift towards childbearing at older ages [18,19]. Mean maternal age has increased significantly over recent decades, both among mothers overall (from 28.6 years in 1994 to 31.5 years in 2024; $p_{trend} < 0.001$) and among first-time mothers (from 26.3 years in 1994 to 29.6 years in 2024; $p_{trend} < 0.001$).

The trend towards later parenthood is likely to be influenced by not only personal choice but also a range of social, economic and demographic factors including prolonged participation in education, career development, housing and financial considerations, changing social norms, and the increasing availability of assisted reproductive technologies (ART) [20,21]. Studies have shown ART as a risk factor for pregnancy related complications and adverse perinatal outcomes [22,23].

However, there are a number of risks associated with advancing maternal age and pregnancy relating to [24,25]:

- obstetric complications in older mothers including e.g. c-section, gestational diabetes, pre-eclampsia, hypertension, preterm labour, and postpartum haemorrhage
- adverse outcomes for babies including e.g. preterm birth, low birthweight, admission to neonatal care and increased risk of stillbirth

Figure 3.2 illustrates differences in the age distribution of mothers giving birth across deprivation quintiles in NI. The distribution of maternal age differed significantly by deprivation quintile ($p<0.001$), with younger mothers accounting for a greater proportion of maternities in more deprived areas. In the most deprived quintile, 20.7% of mothers were aged under 25 years, compared with 5.0% in the least deprived quintile, while the corresponding proportions aged 35 years and over were 22.2% and 33.9%, respectively.

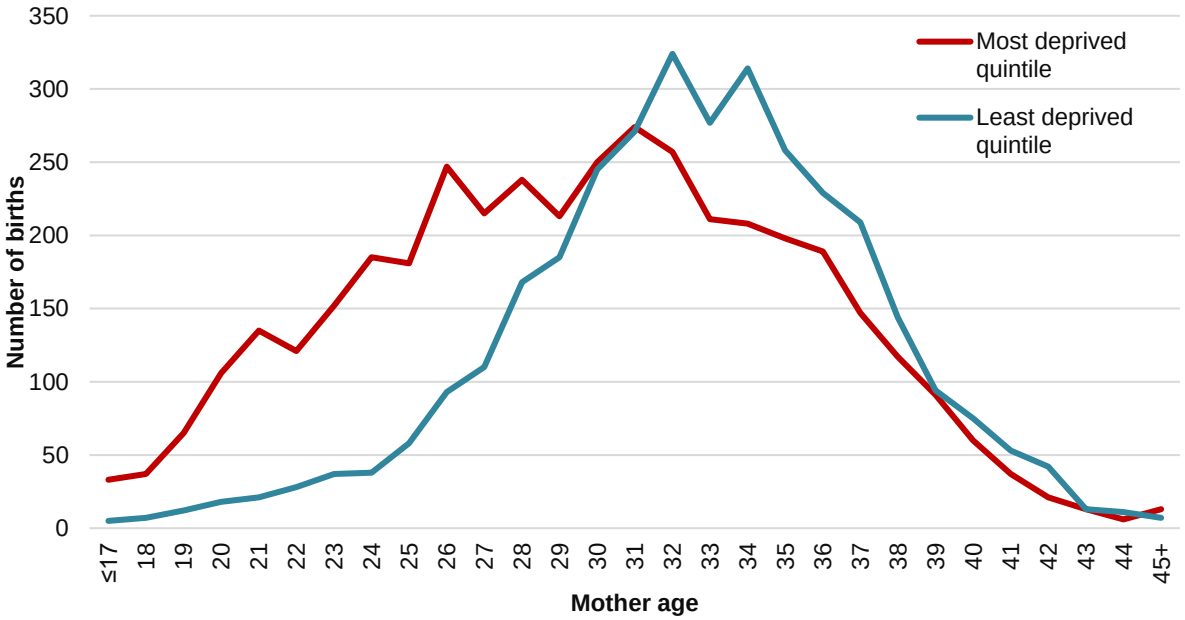

Figure 3.2. Births by age of mother in the most and least deprived quintiles, Northern Ireland, 2024/25. Source: See Table 3.4 in the accompanying Excel file.

Section 4: Multiple Births

The proportion of infants born as part of a multiple birth remained broadly stable between 2014/15 and 2024/25, fluctuating between 2.7% and 3.2%, with no statistically significant temporal trend (p_{trend} = 0.64). In 2024/25, 619 infants (3.2%) were born as part of a multiple birth, representing the joint highest proportion recorded during this period (Figure 4.1).

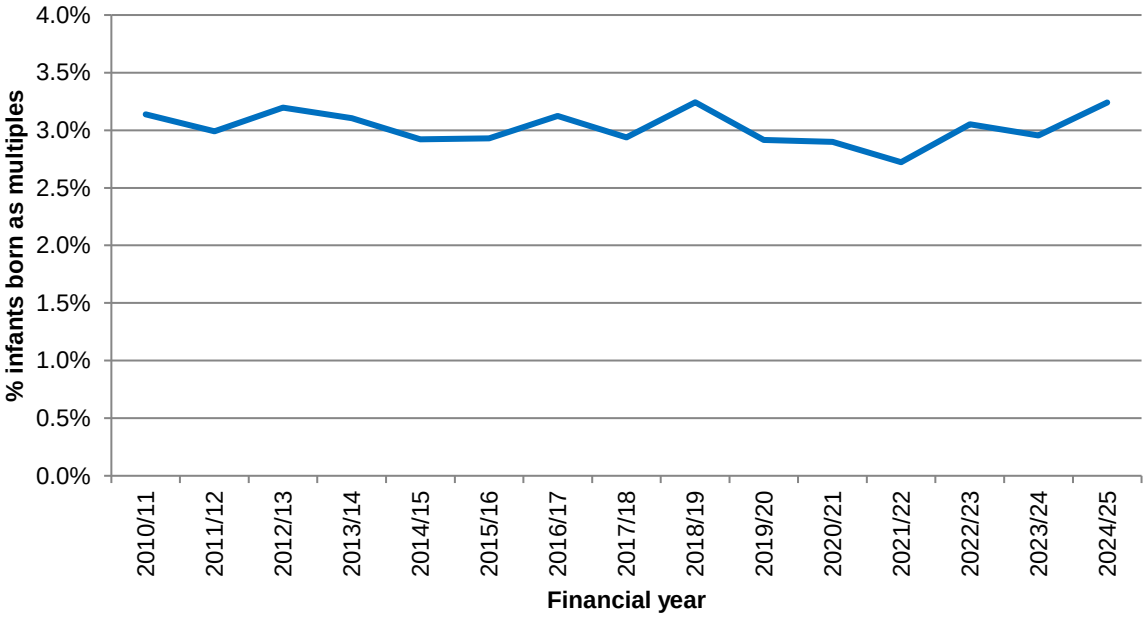

Figure 4.1. Percentage of infants born as part of a multiple birth, Northern Ireland, 2010/11-2024/25. Source: See Table 4.1 in the accompanying Excel file.

Registered births data published by NISRA show that the proportion of maternities resulting in a multiple birth fluctuated between 1.22% and 1.73% over the period 1994-2024, with no statistically significant temporal trend (p_{trend} = 0.06) [26]. Although the proportion was higher in 2024 (1.56%) than in 1994 (1.22%), there was no evidence of a sustained increase over this period [26].

Having a multiple pregnancy increases the risk of maternal mortality, miscarriage, post-partum haemorrhage, preterm birth and the need for intervention during delivery e.g. Caesarean Section. Infants are at risk of complications if the placenta is shared e.g. possible stillbirth. Other risks to infants include premature birth (<37 weeks gestation), low birth weight, congenital abnormalities, physical/learning disabilities, and perinatal mortality [27,28,29].

Section 5: Gestation at Antenatal Booking and Delivery

Gestation at antenatal booking

Antenatal care is beneficial in improving outcomes for a woman and her developing baby. Women are encouraged to attend for their first antenatal care appointment ("booking appointment") by 10 weeks gestational age [30,31]. At this early stage, potential risks to the pregnancy can be identified and appropriate lifestyle advice and support can be given e.g. healthy eating, physical activity, alcohol intake and stopping smoking. Early antenatal care ensures women are provided with the correct advice, support, screening and interventions to promote positive experiences and outcomes for both mother and baby.

However, there are some groups of women e.g. young mothers, women from a non-white ethnic group, those with low income or educational level, and those living in more deprived areas, who do not attend early in pregnancy [32,33]. One study also associated late booking with those women who have had numerous prior births, or those who were migrants to the UK or who had limited English language skills [34].

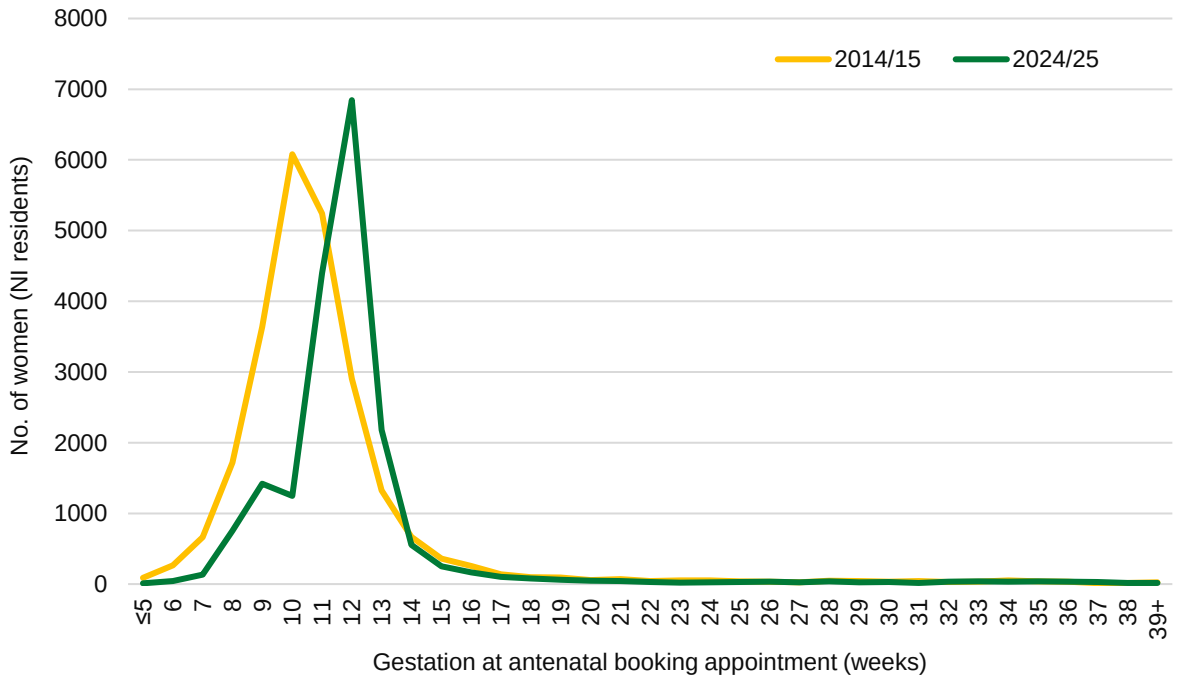

Figure 5.1. Number of women, NI residents, attending antenatal booking appointments by gestational age at booking, Northern Ireland, 2014/15 and 2024/25. Source: See Table 5.1 in the accompanying Excel file.

In NI, almost 7% of births to women in 2024/25 were not booked for antenatal care until 15 weeks or more gestation (Figure 5.1). Just over 19% of births to women in 2024/25 were booked by 10 weeks gestation.

In 2024/25, the proportion of births to women booking at 15+ weeks gestation:

- was higher for women of a non-white ethnic group (23.0%), compared to women of a white ethnic group (5.1%) ($p < 0.001$);
- was higher for women living in more deprived areas (10.4%), compared to those living in the least deprived areas (5.5%) ($p < 0.001$);
- was higher for women living in Sure Start areas (8.8%), compared to those not living in Sure Start areas (5.2%) ($p < 0.001$).

Gestation at delivery

Preterm birth, defined as birth before 37 completed weeks of gestation, is an important determinant of neonatal mortality and morbidity and can have implications for health throughout life [35].

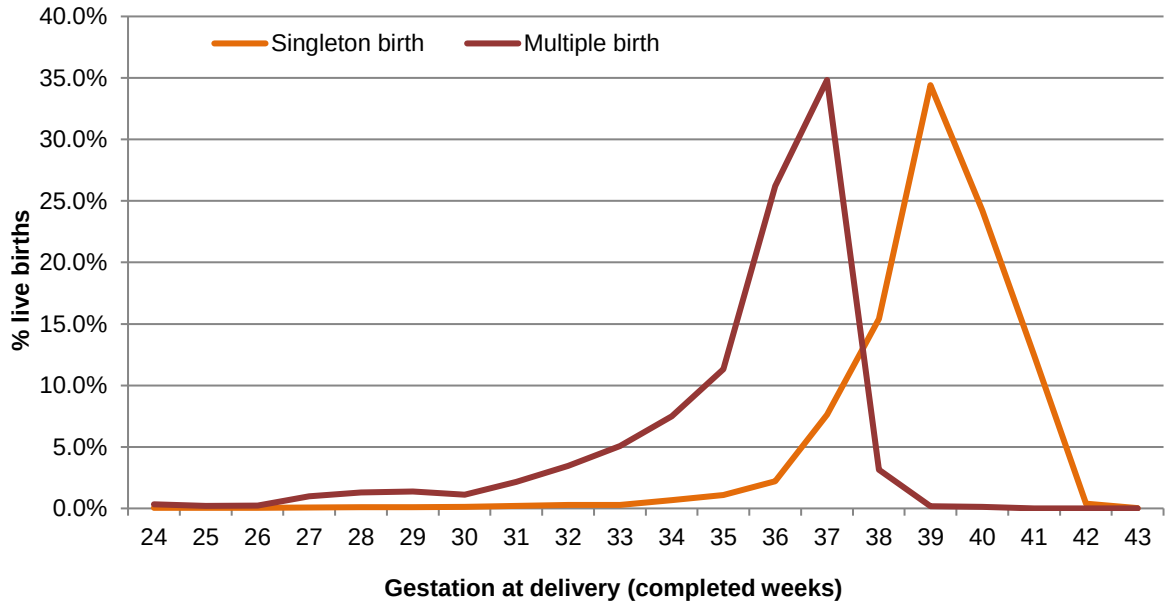

Figure 5.2. Percentage of singleton and multiple live births by gestational age at delivery between 24 and 43 completed weeks, Northern Ireland, 2020/21-2024/25. Percentages are calculated using all live births as the denominator. Source: See Table 5.6 in the accompanying Excel file.

In NI, 7.4% of live births in 2024/25 occurred before 37 completed weeks of gestation, compared with 7.6% in 2014/15 (Figure 5.2). The proportion of preterm births has therefore remained stable over the past decade ($p_{trend} = 0.34$). However, differences were observed by area-level deprivation. In 2024/25, 8.5% of live births to mothers residing in the most deprived areas were preterm, compared with 6.8% among mothers residing in the least deprived areas ($p < 0.001$).

Section 6: Maternal Risk Factors

Smoking

Stopping smoking is the single most important thing a mother-to-be can do to protect her own health and the health of her baby. Giving up at any stage of the pregnancy provides benefits.

The PHA provides information on the complications of smoking while pregnant:

- More likely to have a premature delivery, still birth and miscarriage [36];
- Three times more likely to develop a problem with the placenta [37].

An infant born to a mother who smoked is at greater risk of:

- Low birth weight/small for gestational age – higher carbon monoxide levels can reduce the amount of oxygen available to the infant, while nicotine from cigarettes can narrow the blood vessels, restricting the blood flow and reducing the supply of nutrients and oxygen to the infant [36,38];
- Sudden or unexplained death (SIDS) [36,38];
- Eye disorders – smoking increases the risk of infants being born with eye disorders such as strabismus (crossed eyes) or underdevelopment of the optic nerve which can cause blindness [36];
- Developing respiratory conditions such as asthma, chest infections [36].

In NI, the proportion of women who reported that they smoked (at antenatal booking appointment) has continued to decrease (2014/15 = 14.5%, 2024/25 = 9.0%; $p_{trend} < 0.001$).

Of those giving birth in 2024/25:

- Younger mothers were more likely to smoke (16.8% of those aged <20 years) compared to older mothers (7.3% of those aged 40 and over) ($p < 0.001$).
- Mothers living in the most disadvantaged areas of NI reported higher smoking rates than those living in the least disadvantaged areas (16.9% compared with 3.3% respectively) ($p < 0.001$).
- Smoking rates were higher amongst those women who were of a white ethnic background (9.5%), compared to those of a non-white ethnic background (4.1%) ($p < 0.001$).

- A smaller proportion of first time mothers smoked (6.1%), compared to those who had given birth previously (10.6%) ($p < 0.001$).

Diabetes

The prevalence of diabetes in the general population is increasing and the same trend can be seen among pregnant women [39,40]. There are additional risks to the mother and her baby associated with pre-existing diabetes - Type 1 and Type 2 [41]. Women with high blood sugar at time of conception increases the risk of health problems [41]. Women who are diabetic may be more likely to deliver an infant that is large for gestational age (with induced labour or a Caesarean Section delivery possible) [41,42]. Women may have an increased risk of pre-eclampsia or miscarriage [41].

Infants born to mothers with diabetes are at greater risk of:

- Stillbirth / premature birth (<37 weeks gestation) [42];
- Neonatal death [42];
- Congenital abnormality which can be caused by poorly controlled blood sugar in early pregnancy [43,44];
- Birth injury in higher weight infants e.g. shoulder dystocia [42];
- The increased risk of overweight/obesity and Type 2 diabetes in later life [41,42].

Gestational diabetes is diabetes which develops during pregnancy. Pregnancy places a heavy demand on the body and some women are less able to produce enough insulin, resulting in high blood glucose levels. It is becoming more prevalent in women of child bearing age, possibly due to increasing maternal age and obesity levels, which brings additional risk to the mother and her baby. Mothers with gestational diabetes are more likely to develop gestational diabetes in future pregnancies, and may have an increased risk of developing Type 2 diabetes in later life [45,46].

Risk factors for developing gestational diabetes include:

- Being overweight or obese [47];
- Coming from an African-Caribbean, South Asian, Chinese or Middle Eastern background [47];
- Having a close relative e.g. parent, brother or sister with diabetes [47];
- Having had gestational diabetes before [47];
- Having had a very large baby in a previous pregnancy (≥4.5kg) [47].

Of those mothers delivering during 2024/25, 12.8% of mothers had diabetes (2014/15 = 5.7%). The percentage of mothers with diabetes increased with age, from 4.7% of those aged less than 20 years, compared to 20.2% of mothers aged 40 and over ($p < 0.001$). (Figure 6.1). A higher proportion of mothers from a non-white ethnic background had diabetes recorded (23.0%), compared to those from a white ethnic background (12.3%) ($p < 0.001$)

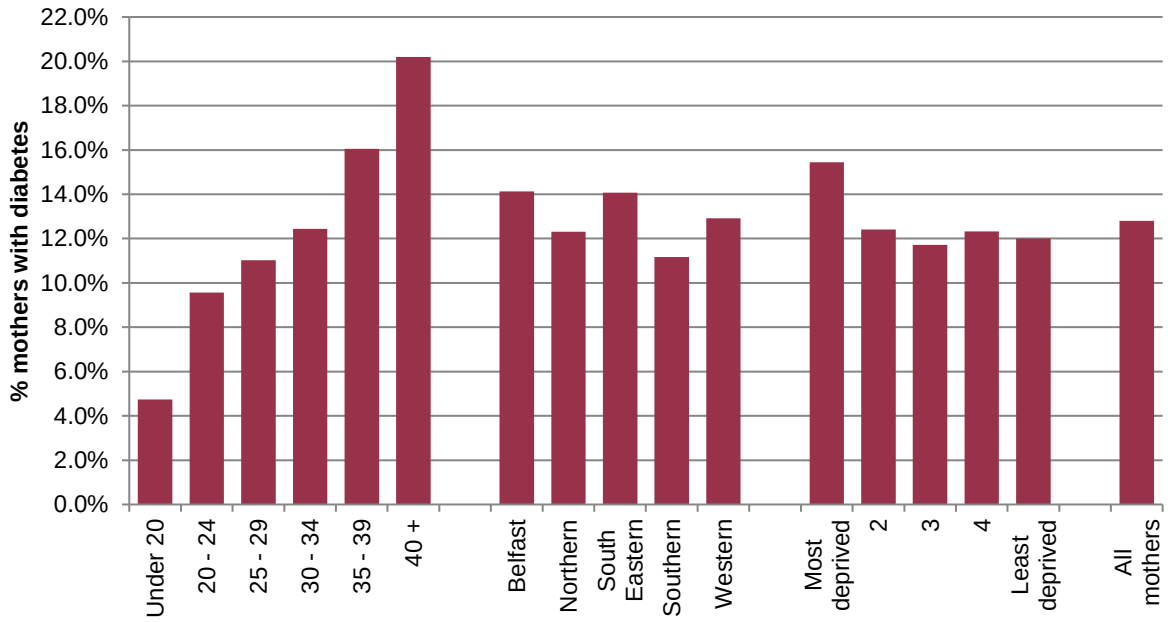

Figure 6.1. Percentage of mothers with diabetes by maternal age, HSC Trust of residence and deprivation quintile, Northern Ireland, 2024/25. Deprivation quintiles are based on the Northern Ireland Multiple Deprivation Measure (NIMDM) 2017, with quintile 1 representing the most deprived areas and quintile 5 the least deprived areas. Source: See Table 6.3 in the accompanying Excel file.

Section 7: Maternal BMI at Antenatal Booking

Maternal BMI data are presented up to 2023/24, as data for 2024/25 are not currently available (Figure 7.1). The proportion of women giving birth who had a BMI of 25 kg/m² or higher at antenatal booking increased from 49% in 2013/14 to 60% in 2023/24 ($p_{trend} < 0.001$). In 2023/24, 28.7% of mothers were classified as having obesity (BMI ≥30 kg/m²), including 4.6% with class III obesity (BMI ≥40 kg/m²). To provide wider population context, the Health Survey Northern Ireland 2023/24 reported that 26% of women aged 16 years and over had obesity, including 6% with severe obesity [48].

In 2023/24, just over 1% of mothers giving birth were classified as underweight (BMI <18.5 kg/m²) at antenatal booking. The prevalence of underweight was higher among younger mothers, particularly those aged under 20 years, mothers from non-White ethnic groups and those living in more deprived areas of NI.

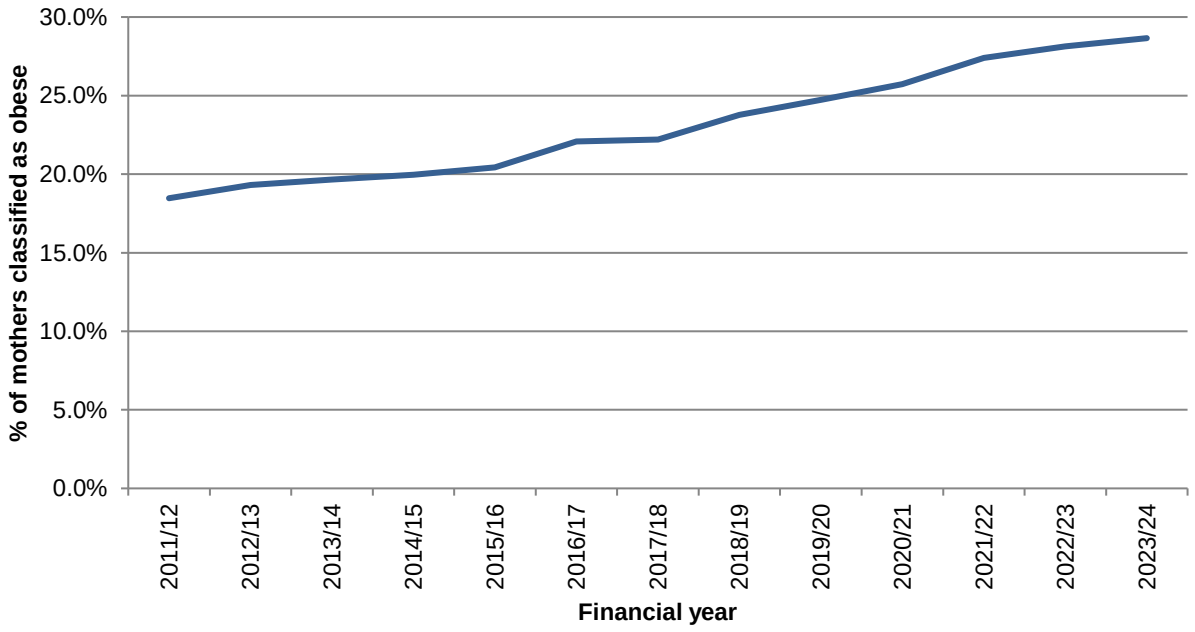

Figure 7.1. Percentage of mothers classified as obese (including Obese I, II, and III) at antenatal booking, Northern Ireland, 2011/12-2023/24. Source: See Table 7.1 in the accompanying Excel file.

In 2023/24, the prevalence of maternal obesity was 32% among mothers living in the most deprived areas and 23% among those living in the least deprived areas of Northern Ireland. The prevalence of obesity was 25% among first-time mothers and 31% among mothers who had previously given birth.

Maternal obesity and excessive gestational weight gain are associated with adverse maternal and infant health outcomes. Risks associated with maternal obesity include:

- Reduced fertility [49];
- Greater risk of miscarriage / still birth / congenital anomalies [49,50];
- Greater risk of developing gestational diabetes [49,50];
- Having a larger baby (>4kg) resulting in complications such as infant shoulder dystocia [49,50];
- Increased risk of requiring instrumental delivery or Caesarean Section [49,50];
- Greater risk of conditions such as diabetes and hypertension to both mother and child [49].

In the postnatal period, maternal obesity has been associated with depression and breastfeeding difficulties, as well as adverse longer-term cardiovascular and respiratory outcomes in offspring [49,51]. The Royal College of Obstetricians and Gynaecologists also identifies an increased risk of venous thromboembolism, hypertension, pre-eclampsia, wound infection following caesarean section, anaesthetic complications and postpartum haemorrhage among women with obesity [52].

Section 8: Method of Delivery

In 2024/25, almost 45% of all infants were born by a normal delivery method, 44% delivered by Caesarean section, with the remaining 11% by another method e.g. instrumental delivery. Of those delivered by Caesarean Section, 22% were elective (or planned), 16% were an emergency (or unplanned) Caesarean Section and 6% were a Caesarean Section where the priority (emergency/planned) was unknown (reduced data quality due to introduction of a new electronic care record system in NI – see Methods section).

The proportion of singleton liveborn infants delivered by Caesarean Section increased consistently over the ten-year period, from 27.9% in 2014/15 to 42.7% in 2024/25 ($p_{trend} < 0.001$), representing an absolute increase of 14.8 percentage points. Increases were observed across all maternal age groups. In 2024/25, the proportion of infants delivered by Caesarean Section increased with maternal age, ranging from 27.2% among mothers aged under 20 years to 58.5% among those aged 40 years and over (Figure 8.1).

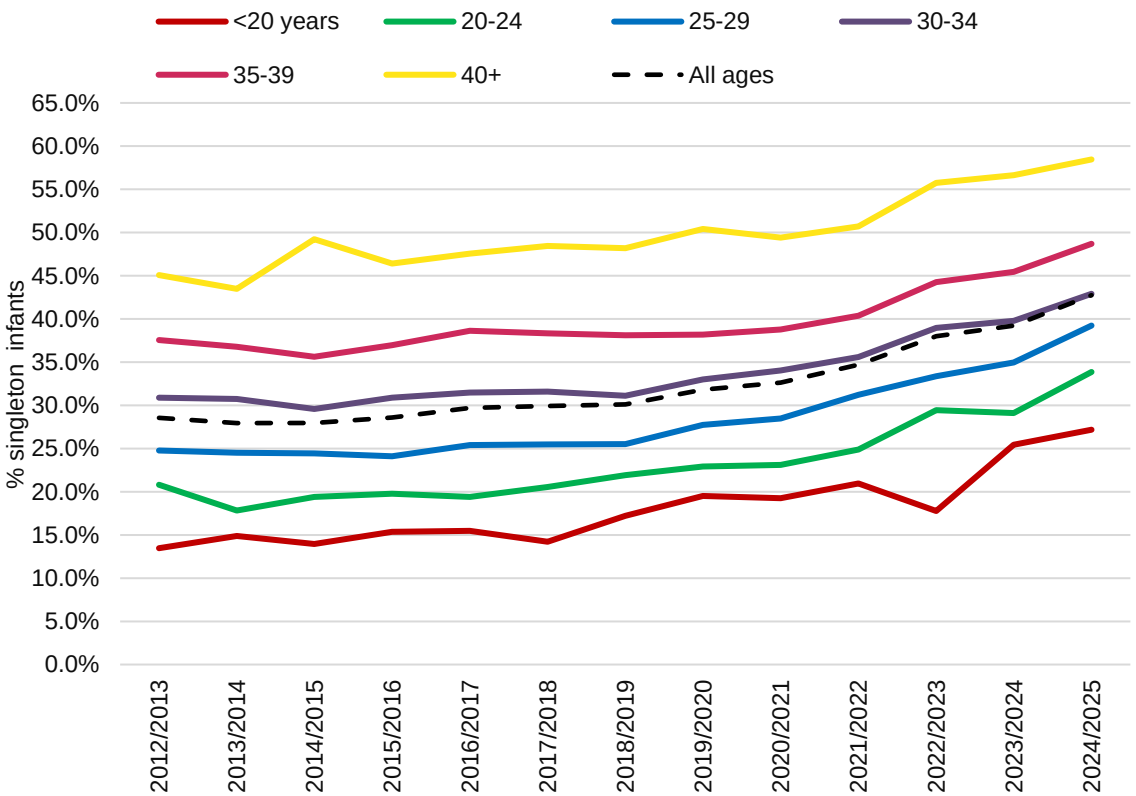

Figure 8.1. Percentage of singleton live births delivered by Caesarean section, by age of mother, Northern Ireland, 2012/13-2024/25. Source: See Table 8.3 in the accompanying Excel file.

In some pregnancies where help is needed at birth, or in cases where a vaginal birth would pose a risk to mother or her unborn infant, a Caesarean Section may be necessary. However, there are risks associated with a Caesarean Section. These may include:

- Wound infection [53,54];
- Blood clots or excess bleeding, during and after the Caesarean Section [53];
- Damage to other organs e.g. bladder [54];
- Longer recovery time [54];
- Maternal death [53,54].

Section 9: Infant Birth Weight

Low birth weight

Low birth weight is defined as weight at birth of less than 2,500 grammes (or 5.5 pounds), irrespective of gestational age [55]. In NI, in 2024/25, 6.3% of all infants were born with a low birth weight (6.1% live, 66.1% still).

Typically, a baby might have a lower birth weight because they were born earlier than expected (<37 weeks gestation), where growth has been restricted (small for gestational age), or both.

Low birth weight is an important determinant of child development and survival; however, it can be prevented, with the following risk factors associated with low birth weight

- Younger (<17) / older mothers (>35) [56,57,58];
- Low maternal BMI / poor maternal diet / over-exercising by mother [56,59];
- Maternal smoking (heavy) / substance misuse / alcohol consumption (heavy) [56,57,60];
- Previous pregnancy with a low birth weight baby [56];
- Multiple pregnancy [57,58];
- Maternal conditions e.g. diabetes, anaemia, chronic hypertension [56,57,58,61];
- Time since last pregnancy equal to less than one year [57,58];
- Certain medications e.g. for high blood pressure, epilepsy, anti-depressants [57];
- Non-attendance at antenatal care, potentially causing poorer health care in pregnancy [58].

A birth weight below 2,500g contributes to a range of poor outcomes for the infant i.e. still birth and infant mortality, respiratory problems, infections, difficulty eating/gaining weight [56,58]. In later life - diabetes, high blood pressure, heart disease, obesity, lower educational achievement as a result of intellectual and developmental disabilities [58,62,63].

In 2024/25, 6.3% of all infants had a low birth weight (less than 2,500 g). The proportion was significantly higher among infants born to mothers living in the most deprived areas of Northern Ireland than among those living in the least deprived areas (7.9% vs 5.0%; p <0.001).

High birth weight

In NI, in 2024/25, 12.7% of live infants were born with a birth weight of 4,000g+ and of these 1.5% with a birth weight of 4,500g+. The proportion of infants with low birth weight remained broadly stable between 2010/11 and 2024/25, fluctuating between 5.9% and 6.5%, with no statistically significant temporal trend (p_{trend} = 0.49). In contrast, the proportion of infants with high birth weight decreased significantly over the same period, from 15.1% to 12.6% (p_{trend} = 0.003).

In 2024/25, the proportion of infants with high birth weight (≥4,000 g) was significantly higher among those born to mothers of White ethnicity than among those born to mothers from non-White ethnic groups (13.3% vs 6.3%; p <0.001).

Section 10: Breastfeeding

10.1 Breastfeeding at discharge from hospital

Breastmilk is widely recognised as the ideal source of nutrition for infants [64,65]. Breastmilk is dynamic, adapting to an infant's changing needs, not only providing age-appropriate nutrition but a range of other bioactive components and beneficial microbes which support immune protection, growth and development [66,67].

Breastfeeding has many health benefits for both infants and mothers [68,69]. Recent systematic and umbrella reviews have shown associations with a reduced risk of infant morbidity and mortality, including otitis media, asthma, obesity, childhood leukaemia, respiratory and gastrointestinal infections, allergic rhinitis, malocclusion, inflammatory bowel disease, type 1 diabetes, rapid weight gain and growth, cardiovascular outcomes, and Sudden Infant Death Syndrome (cot death) [70,71,72]. Early breastmilk feeds are particularly important for preterm and low birth weight infants, for example in reducing the risk of necrotising enterocolitis (NEC) [73,74].

In addition to benefits for infants, breastfeeding offers important advantages for maternal health with evidence supporting reduced risk of breast and ovarian cancer, hypertension and type 2 diabetes [69,72,75,76].

However, despite the recognised benefits of breastfeeding, rates in NI remain low (2024/25 = 53.5%). The World Health Organisation promotes breastfeeding as the best source of nourishment for infants and young children, and is working to increase the global rate of exclusive breastfeeding for the first 6 months to at least 60% by 2030 [77,78].

WHO and UNICEF recommend that children initiate breastfeeding within the first hour of birth and be exclusively breastfed for the first 6 months of life – meaning no other foods or liquids are provided, including water. Infants should be breastfed on demand – that is as often as the child wants, day and night. They also state that no bottles, teats or pacifiers should be used. From the age of 6 months, children should begin eating safe and adequate complementary foods while continuing to breastfeed for up to two years of age or beyond [79].

Breastfeeding provides substantial health benefits across the life course for both mothers and children and remains a key public health priority in NI [80].

In 2024/25, just over half of live infants (53.5%) were breastfed (total (33.6%) or partial (19.8%) feeding) at discharge (where feeding status was known) (Figure 10.1). Note that only 87% of infants had a feeding status at discharge recorded. This data shows that an older mother is more likely to breastfeed her infant at discharge, compared to younger mothers (mothers under 20 = 30.6%, mothers aged 40 and over = 62.0%; $p < 0.001$). The proportion breastfeeding was markedly lower in mothers from more deprived areas ($p < 0.001$), infants born to mothers of a white ethnic grouping ($p < 0.001$), infants born to mothers who have given birth previously ($p < 0.001$).

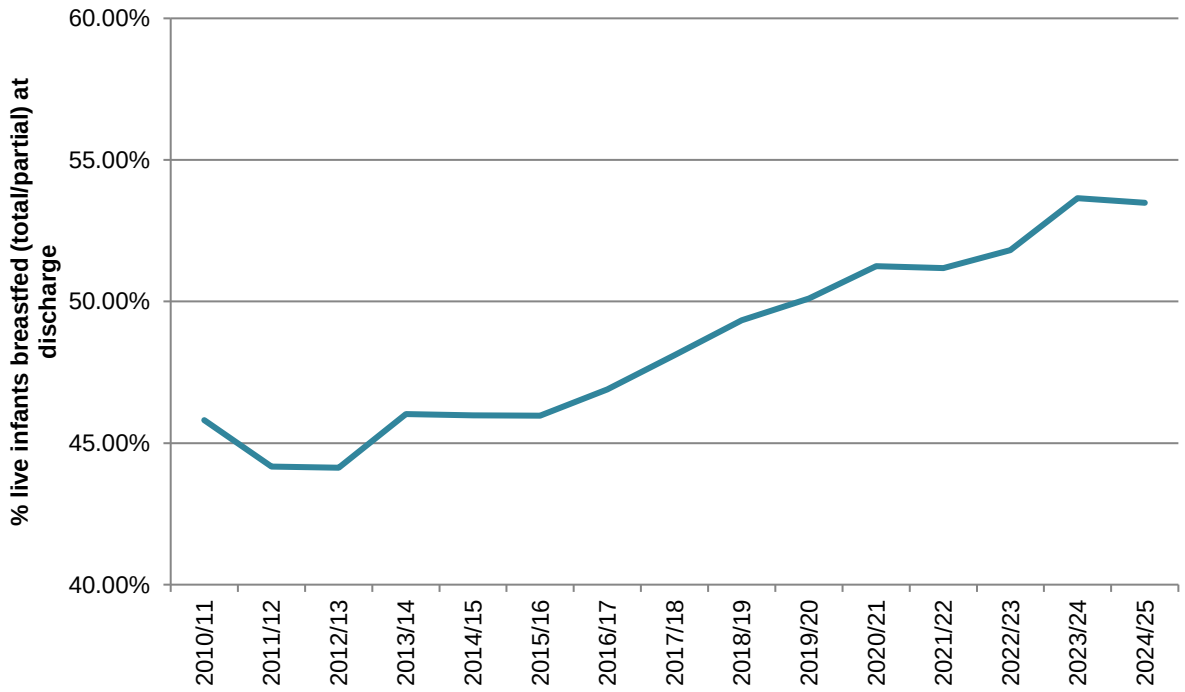

Figure 10.1. Percentage of live infants breastfed (total or partial) at hospital discharge, Northern Ireland, 2010/11-2024/25. Source: See Table 10.1 in the accompanying Excel file.

10.2 Breastfeeding duration

In NI, infant feeding status is recorded at time of discharge from hospital, 10-14 days old, 6 weeks old, 3 months old, 6 months old and 12 months old (Figure 10.2). Of infants delivered live in 2023/24, the proportion breastfed gradually decreased with time. 53.6% of infants were breastfed at discharge (total/partial), falling to 19.2% of infants at 12 months old. The proportion of infants breastfed at 12 months differed by age of mother (mothers aged less than 20 years old = 5.2%, aged 40+ = 23.2%. At all stages where breastfeeding was recorded, the

rate was substantially higher in those infants born to mothers who lived in less deprived areas, when compared to those from more deprived areas. While first time mothers are more likely to breastfed at discharge and at primary visit, data for 2023/24 shows that this position changes, in that from 6 weeks of age onwards, a first-time mother is less likely to breastfeed her infant, compared to those mothers who have given birth before. Note that there will be children where breastfeeding status is not known (2023/24: 6.7% blank at discharge, 3.9% at first visit, 3.3% at 6 week visit, 4.7% at 3 month visit, 8.6% at 6 month visit and 11.5% at 12 month visit).

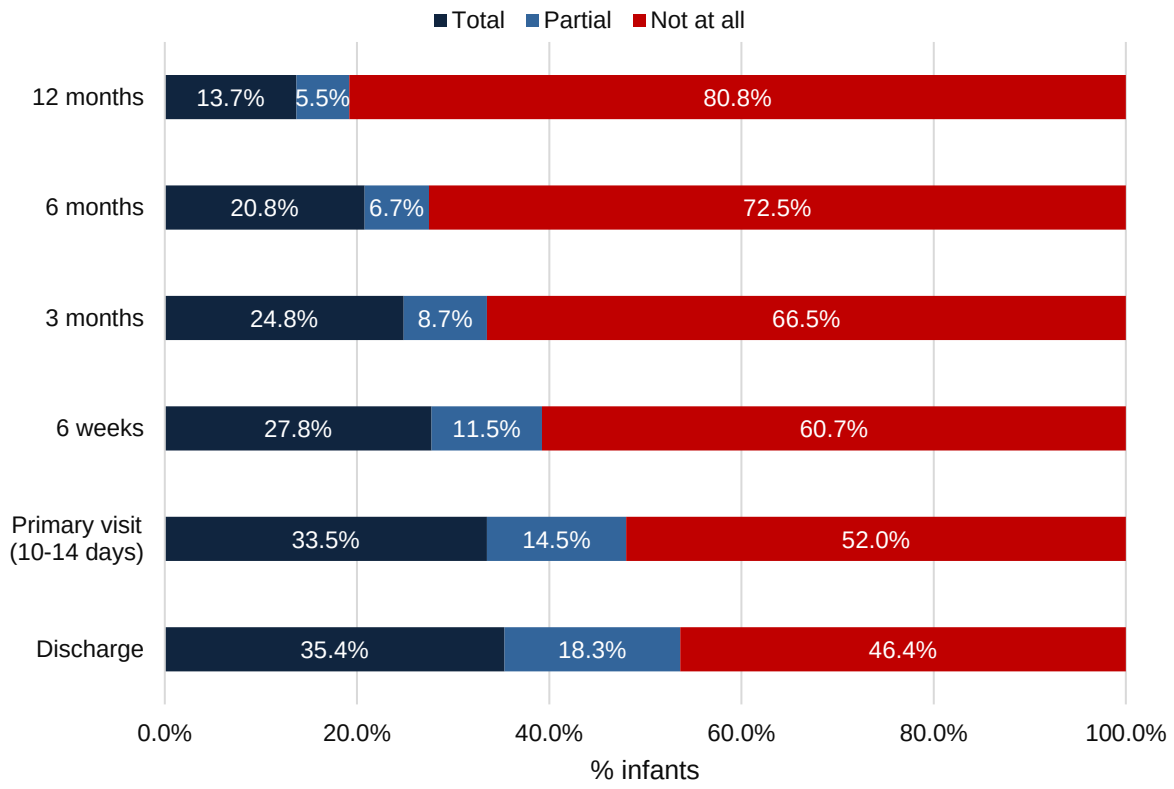

Figure 10.2. Live infants by feeding status at different ages, Northern Ireland, 2023/24. Source: See Table 10.6 in the accompanying Excel file.

Section 11: Childhood Immunisations

The COVER (Cover of Vaccination Evaluated Rapidly) programme monitors childhood immunisation coverage in the UK among children reaching their first, second and fifth birthdays during each evaluation year [81].

Vaccination statistics for NI are published by the PHA [82,83]. Corresponding statistics for the rest of the UK are published by the UK Health Security Agency for UK-wide reporting and by the relevant national organisations, including NHS England, Public Health Scotland, and Public Health Wales [84-87].

Section 12: Childhood Growth Measurements (BMI)

Data shows that almost 24% of Primary 1 children and 27% of Year 8 children were measured as overweight or obese in 2024/25 (IOTF).

A child who is overweight or obese may have a greater risk of cardiovascular disease, Type 2 diabetes, liver disease, musculo-skeletal problems, and poorer mental health in later life [88,89]. An obese child is more likely to become an obese adult [90,91].

In this report, growth measurement data is available using the International Obesity Task Force Classification (IOTF) and the British 1990 (UK90) Growth Reference (see Methods section). This report section will concentrate on the International Obesity Task Force Classification (IOTF) classification, although comparisons with other UK nations will be provided using the British 1990 (UK90) classification.

Primary 1

Based on the UK90 classification, in 2024/25, 28.0% of children in NI measured in Primary 1 were considered overweight or obese. This compares to 23.5% in England and 24.4% in Scotland and 27.3% in Wales.

Of those children measured in Primary 1 during 2024/25 school year (IOTF), 17.1% were considered overweight and 6.6% were considered obese, therefore 23.7% were either overweight or obese. The proportion of children overweight/obese has been fluctuating over the 2008/09-2024/25 period, with no statistically significant temporal trend (p_{trend} = 1.0). In 2024/25, prevalence reached the highest recorded level since data collection began in 2008/09.

In 2024/25, the prevalence of overweight and obesity was 28.3% among females and 19.4% among males. Among Primary 1 children living in the most deprived areas of NI, prevalence was 27.0%, while the corresponding figure for children living in the least deprived areas was 20.2% (Figure 12.1).

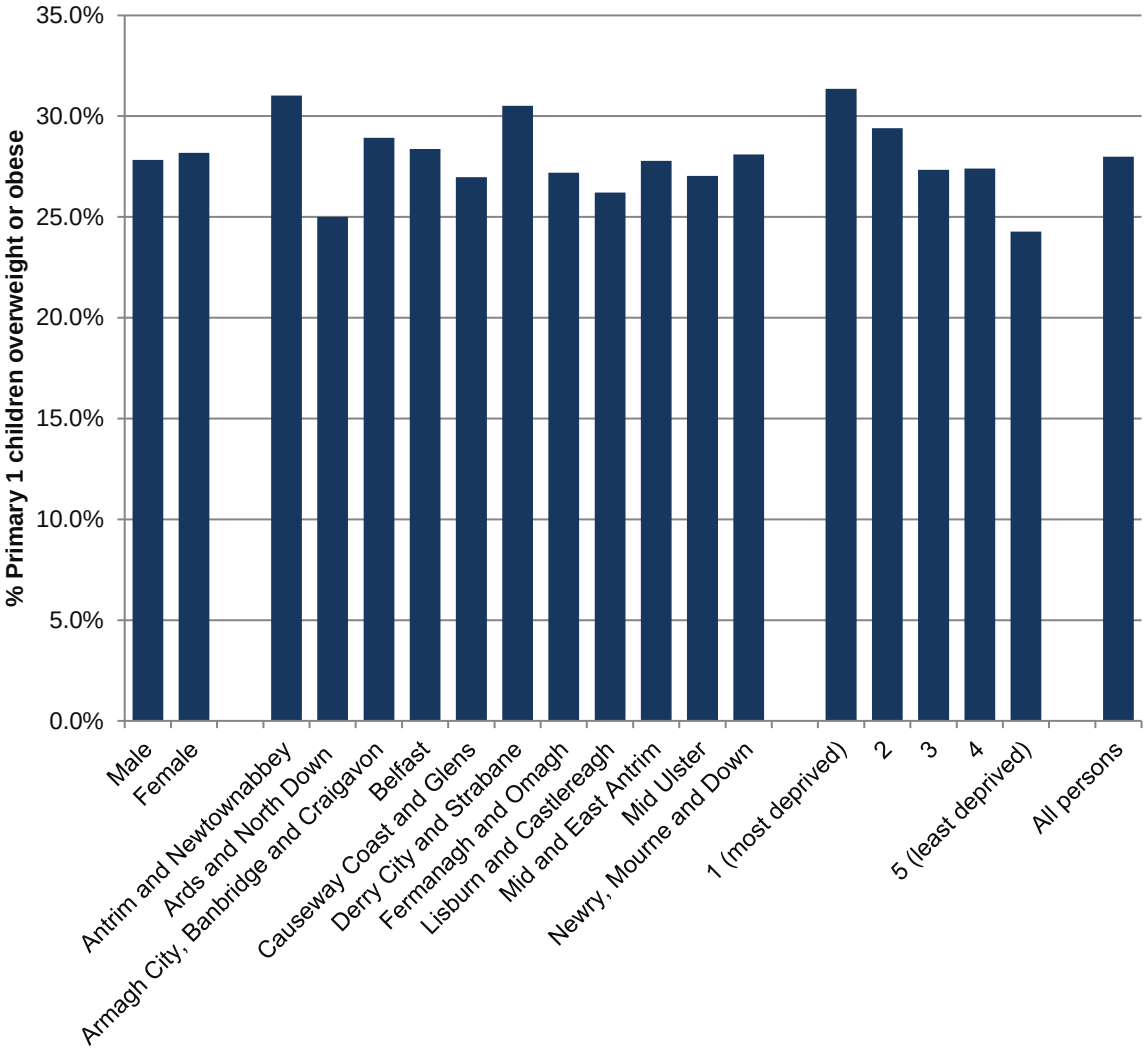

Figure 12.1. Percentage of Primary 1 children classified as overweight or obese by child's gender, Council of residence, and deprivation quintile, Northern Ireland, 2024/25. Deprivation quintiles are based on the Northern Ireland Multiple Deprivation Measure (NIMDM) 2017, with quintile 1 representing the most deprived areas and quintile 5 the least deprived areas. Source: See Table 12.2 in the accompanying Excel file.

Year 8

In 2024/25, more than a quarter (26.7%) of Year 8 children with recorded growth measurements were classified as overweight or obese, comprising 20.5% classified as overweight and 6.2% as obese (Figure 12.2). Across the years for which data were available, the combined prevalence of overweight and obesity fluctuated between 26.4% and 28.2% (p_{trend} = 0.064).

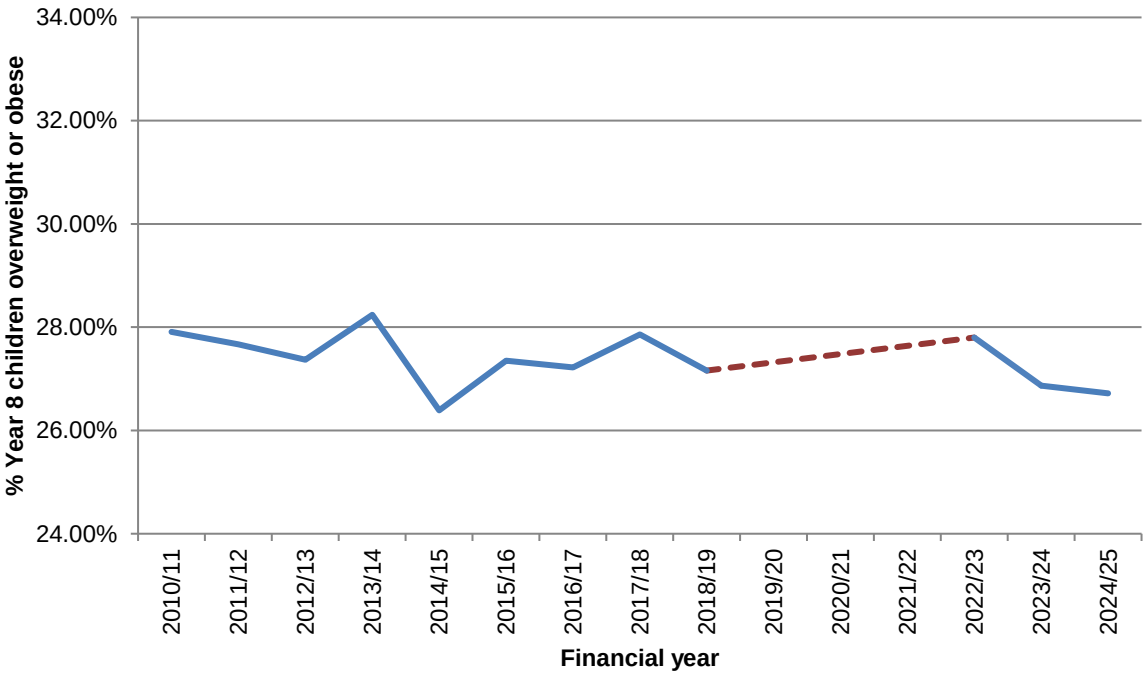

Figure 12.2. Percentage of Year 8 children classified as overweight or obese, Northern Ireland, 2010/11-2024/25. Data for 2019/20, 2020/21 and 2021/22 are not presented because of insufficient recording of growth measurements during the COVID-19 pandemic. The dashed line indicates the period for which data are unavailable. Source: See Table 12.4 in the accompanying Excel file.

In 2024/25, the prevalence of overweight and obesity among Year 8 children was 28.0% in males and 25.5% in females. Among children living in the most deprived areas of Northern Ireland, prevalence was 32.0%, while the corresponding figure for children living in the least deprived areas was 22.2%.

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