MANCHESTER CHILD DEATH OVERVIEW PANEL (CDOP)

2022/2023 ANNUAL REPORT

1 April 2022 – 31 March 2023

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MANCHESTER CITY COUNCIL

NHS Greater Manchester Integrated Care

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1. WELCOME & INTRODUCTION

Welcome to the 2022/23 Manchester Child Death Overview Panel (CDOP) Annual Report which provides an overview of the deaths of children that are normally resident in Manchester City, aged 0 - 17 years of age (excluding stillbirth and legal terminations of pregnancy). The report focuses on the analysis of the number of cases closed between 1 April 2022 to 31 March 2023 (2022/23). Reporting on cases closed provides a full and complete data set, including the outcome of the final CDOP review.

During 2022/23 there were 73 child death notifications reported to the Manchester CDOP, which is the highest it has been since 2016/17. This has caused the 5-year average (2018/23) to rise to 61 notifications per year, compared to 59 (2017/22). The total cases reviewed increased to 35 in 2022/23 which is a significant increase compared to the two previous years- 27 (2021/22) and 29 (2020/21).

Following the publication of the HM Government Child Death Review: Statutory and Operational Guidance (England) in October 2018, changes were introduced to build on the interface between the hospital/community led mortality reviews (Child Death Review Meetings (CDRM) and the final CDOP review. The improvements to the revised child death review system have contributed to a reduction in the number of cases being reviewed, and closed, by Manchester CDOP.

The CDOP has a statutory requirement to prepare and publish a local report on:

a) what has been done as a result of the child death review arrangements; and
b) how effective the child death review arrangements are in practice.

The CDOP Annual Report is produced to advise Child Death Review (CDR) Partners on local patterns and trends in child deaths, any lessons learnt, and actions taken, and the effectiveness of the wider child death review process. The richness of the data and information collated assists in the identification of factors antenatally, postnatally and throughout the child's life. This report aims to highlight relevant factors and modifiable factors that are likely to contribute to Manchester's infant (under one year of age) and child (age 1-17 years) mortality rate.

I would like to thank those who have contributed to the child death review process including CDOP members, practitioners completing data returns and colleagues that have contributed to the content of this report.

Barry Gillespie
Assistant Director of Public Health
Manchester Child Death Overview Panel Chair

2. THE CHILD DEATH REVIEW PROCESS

In line with Working Together to Safeguard Children (2006)[1], the Child Death Overview Panel (CDOP) became a statutory function from 1 April 2008. Local Safeguarding Children Boards (LSCBs) were tasked with establishing a multi-disciplinary CDOP Subgroup to conduct a review into the death of all children 0-17 years of age, normally resident in their geographical area.

In October 2018, HM Government published the revised Child Death Review: Statutory and Operational Guidance (England)[2] for Clinical Commissioning Groups and Local Authorities as Child Death Review Partners (CDR Partners). CDR Partners are identified as Local Authorities and any Clinical Commissioning Groups for the local area as set out in the Children and Social Work Act 2017[3]. The guidance sets out the full process that follows the death of a child, who is normally resident in England and builds on the statutory requirements set out in Working Together to Safeguard Children (2018)[4]. The revised guidance clarifies how individual professionals and organisations across all sectors, involved in the child death review process, contribute to reviews to improve the experience of bereaved families and professionals involved in caring for children.

The publication of the revised guidance prompted significant changes to the way in which child deaths are reviewed. These changes include the expansion of the Department of Health and Social Care (DHSC) CDR dataset, the national templates used to collate information following a child death, the introduction of the Child Death Review Meeting (CDRM) and the implementation of local data management systems (eCDOP) to coincide with the National Child Mortality Database (NCMD).

2.1 DEPARTMENT OF HEALTH AND SOCIAL CARE (DHSC)

The DHSC have amended the data entry fields and national templates[5] used by CDOPs, to collate information following a child death. Year on year, the CDR dataset expands to collate multi-agency information to support CDOPs assess the causes of a child's death as part of the child death review process. Depending on the nature of the death, various templates are used to gather information regarding the circumstances leading to death, any underlying health conditions, the child's social and physical environment and details relating to service provision.

- A. Child death notification form
- B. Child death reporting form
- C. Child death analysis form

Supplementary Reporting Forms:

- Asthma and anaphylaxis
- Cardiac congenital or acquired
- Care pathway
- Chromosomal, genetic, or congenital anomaly excluding cardiac conditions

[1] https://webarchive.nationalarchives.gov.uk/20100408113130/http://www.dcsf.gov.uk/everychildmatters/resources-and-practice/IG00060/
[2] https://www.gov.uk/government/publications/child-death-review-statutory-and-operational-guidance-england
[3] https://www.legislation.gov.uk/ukpga/2017/16/part/1/chapter/2/crossheading/child-death-reviews/enacted
[4] https://www.gov.uk/government/publications/working-together-to-safeguard-children--2
[5] Child death reviews: forms for reporting child deaths - GOV.UK (www.gov.uk)

- Death as a result of fire, burns or electrocution
- Death of a child with an oncology condition
- Death as a result of injuries sustained from a falling object
- Death of a child with a life-limiting condition
- Deaths on a neonatal unit, delivery suite or labour ward
- Diabetic ketoacidosis
- Drowning
- Epilepsy
- Falls
- Infection
- Poisoning
- Sudden unexpected deaths
- Suicide or self-harm including alcohol or substance abuse
- Trauma or external factors
- Vehicle collisions
- Violent or maltreatment-related deaths

The completed forms help CDOPs collect information regarding child deaths in their area in a consistent way, assess the causes of child deaths to see if there are significant similarities between and recommend how to prevent similar deaths in future. CDOP areas were tasked with implementing arrangements to share the results of local CDRs with the NCMD, as a legal statutory requirement. Prior to the 1 April 2021, the DHSC templates were used by the Manchester CDOP to request child death information. As of the 1 April 2021, data is now captured electronically via the Greater Manchester eCDOP system which falls in line with the NCMD legal requirement, to submit CDR data at a national level.

2.2 CHILD DEATH REVIEW MEETING (CDRM)

The Child Death Review Meeting (CDRM) is a multi-professional meeting where all matters relating to an individual child death are discussed by the professionals directly involved in the care of the child during life and any investigation after death. The nature of the meeting varies according to the circumstances of the child's death and the practitioners involved. The CDRM can take place in the form of a final case discussion following a Joint Agency Response (JAR); a perinatal mortality review group meeting in the case of a baby who dies in a neonatal unit; a hospital-based mortality review meeting following the death of a child in a paediatric intensive care unit; or similar case discussion.

In all cases, the aims of the CDRM are:

- to review the background history, treatment, and outcomes of investigations, to determine, as far as is possible, the likely cause of death.
- to ascertain contributory and modifiable factors across domains specific to the child, the social and physical environment, and service delivery.
- to describe any learning arising from the death and, where appropriate, to identify any actions that should be taken by any of the organisations involved to improve the safety or welfare of children or the child death review process.
- to review the support provided to the family and to ensure that the family are provided with:
    - the outcomes of any investigation into their child's death.

    - a plain English explanation of why their child died (accepting that sometimes this is not possible even after investigations have been undertaken) and any learning from the review meeting.
- to ensure that the CDOP and, where appropriate, the Coroner is informed of the outcomes of any investigation into the child's death; and
- to review the support provided to staff involved in the care of the child.

Information, reports, and notes of the CDRM are shared with the appropriate CDOP.

2.3 CHILD DEATH OVERVIEW PANEL (CDOP)

CDR Partners have a legal responsibility to ensure that the deaths of children normally resident in their area are reviewed. This function is carried out by the Child Death Overview Panel (CDOP) to ensure that a review is undertaken for all infant/child deaths age 0-17 years, excluding babies who are stillborn, late foetal loss and planned terminations of pregnancy carried out within the law.

In reviewing the death of each child, the CDOP considers relevant factor and modifiable factors in the family environment, parenting capacity and service provision. The CDOP identifies what action could be taken locally, regionally or at a national level with the aim of preventing child deaths and to improve the health and safety of children and young people.

The functions of the CDOP are:

- to collect and collate information about each child death, seeking relevant information from professionals.
- to analyse the information obtained, including the report from the CDRM, in order to confirm or clarify the cause of death, to determine any contributory factors, and to identify learning arising from the child death review process that may prevent future child deaths.
- to make recommendations to all relevant organisations where actions have been identified which may prevent future child deaths or promote the health, safety, and well-being of children.
- to notify the Child Safeguarding Practice Review Panel (CSPR) and Local Safeguarding Partnership (LSP) when it suspects that a child may have been abused or neglected.
- to notify the Medical Examiner and the Doctor who certified the cause of death, if it identifies any errors or deficiencies in an individual child's registered cause of death. Any correction to the child's cause of death would only be made following an application for a formal correction.
- to provide specified data to the National Child Mortality Database (NCMD).
- to produce an annual report for child death review partners on local patterns and trends in child deaths, any lessons learnt, and actions taken, and the effectiveness of the wider child death review process.
- to contribute to local, regional and national initiatives to improve learning from child death reviews, including, where appropriate, approved research carried out within the requirements of data protection.

The Manchester CDOP membership is made up of senior multi-agency professionals who have knowledge and expertise in fields such as public health, children's social care, paediatrics, police, education etc. The panel consists of representation from a

range of organisations who can make a valuable contribution when undertaking a child death review. Each professional provides information and advice to enable a thorough review and analysis, with the aim of identifying relevant factors, modifiable factors, and emerging themes.

The purpose of a review and analysis is to identify any matters relating to the death(s), that are relevant to the welfare of children in the area or to public health and safety, to consider whether action should be taken. The aim of the child death review process is to ensure that information is systematically captured for every death to enable learning and prevent future deaths. The CDOP publishes an annual report which provides an overview of local patterns and trends.

2.4 MANCHESTER CDOP THEMED PANEL MEETINGS

Some child deaths are reviewed at a Themed Panel to discuss a particular cause or group of causes. The Manchester CDOP holds Themed Panel meetings to review perinatal/neonatal deaths (<28 days of life) and infant deaths (under 1 year of age), where the infant was never discharged from hospital. Such arrangements allow for the attendance of appropriate professional experts including the Manchester University NHS Foundation Trust Consultant Neonatologist and Designated Doctor for Child Death, to inform discussions and allow easier identification of themes. Deaths reviewed at the Themed Panel are pre-screened to highlight any relevant factors and/or modifiable factors during the antenatal/postnatal period, focusing on issues relating to service provision.

2.5 LEARNING DISABILITIES MORTALITY REVIEW (LeDeR) PROGRAMME

Once the Manchester CDOP is notified of the death of a child aged 4-17 years who has learning disabilities or is very likely to have learning disabilities but not yet had a formal assessment for this, information is shared, and the death is reported to the Learning Disabilities Mortality Review (LeDeR) Programme. The Manchester CDOP reports deaths to LeDeR via the online referral form and provides core information about the child which is submitted to the LeDeR Local Area Contact.

Once all investigations have concluded and sufficient information has been collated to ensure the CDOP can undertake a comprehensive review, the Manchester CDOP invites the LeDeR representative to attend the panel meeting at which the death is reviewed. During the CDOP meeting, the LeDeR Local Area Contact may offer advice and expertise about learning disabilities (if appropriate) and ensure that the CDOP provides sufficient core data to support the LeDeR Programme. Once the Manchester CDOP has conducted a review, documentation is submitted to the LeDeR Local Area Contact. This includes the final Analysis Form which highlights the:

- common contributory factors leading to deaths
- factors that may have contributed to the vulnerability, ill health, or death of the child
- modifiable factors that may reduce the risk of future child deaths
- learning points and issues identified in the review
- recommendations and actions that may inform and support local, regional, or national learning

2.6 GREATER MANCHESTER eCDOP

The eCDOP system operates in line with the statutory guidance to assist CDOPs and ensure compliance. The system is known for improving efficiencies throughout the multi-agency information gathering process. The eCDOP system automatically transfers multi-agency data at each relevant stage of the process into the NCMD therefore reducing the duplication of data entry. The information is then used to analyse data nationally to improve learning and implement strategic improvements in healthcare for children in England, with the overall goal to reduce infant/child mortality.

2.7 NATIONAL CHILD MORTALITY DATABASE

The National Child Mortality Database (NCMD) is a repository of data relating to all child deaths in England. The NCMD was commissioned by the Healthcare Quality Improvement Partnership (HQIP) on behalf of NHS England and is delivered by the University of Bristol, in collaboration with the University of Oxford, University College London (UCL) Partners and the software company QES. The NCMD enables more detailed analysis and interpretation of all data arising from the child death review process, to ensure that lessons are learned, that learning is widely shared and that actions are taken locally and nationally, to reduce child mortality. The introduction of the NCMD aims to learn lessons that could lead to changes to improve outcomes for children.

It is a statutory requirement that CDOPs across England submit data via the NCMD. For every child death, CDR Partners must ensure that:

1. A notification form is completed and sent to the CDOP secretariat or equivalent immediately after the death of a child
2. The details on the notification form are entered onto the NCMD within 24 hours of receipt of the form by the CDOP secretariat or equivalent
3. The CDOP gathers information from all agencies that were involved with the child during their life or after death through completion of a reporting form
4. The CDOP secretariat identifies the most appropriate agency to complete the relevant supplementary reporting forms, depending on the cause of death, and request for that agency to complete the relevant forms
5. When completed, reporting forms and supplementary reporting forms are returned to the CDOP secretariat or equivalent, and information is entered onto the NCMD
6. A local CDRM is convened, to include all professionals that were involved with the child during their life or after death
7. Anonymous versions of the completed CDOP templates (notification form, reporting form, supplementary reporting forms and draft analysis form) are presented to the CDOP, to conduct an independent review of the death
8. Following the CDOP review, the details are entered on the final analysis form and data is submitted to the NCMD.

3. MANCHESTER'S DEMOGRAPHICS

3.1 INDICES OF DEPRIVATION 2019

A key tool used in assessing deprivation is the Indices of Deprivation 2019 that combines data from across seven domains of deprivation to produce an overall relative measure of deprivation:

- Income: Measures the proportion of the population experiencing deprivation relating to low income
- Employment: Measures the proportion of the working age population in an area involuntarily excluded from the labour market
- Health Deprivation and Disability: Measures the risk of premature death and the impairment of quality of life through poor physical or mental health
- Education, Skills Training: Measures the lack of attainment and skills in the local population
- Crime: Measures the risk of personal and material victimisation at local level
- Barriers to Housing and Services: Measures the physical and financial accessibility of housing and local services
- Living Environment: Measures the quality of both the indoor and outdoor local environment

Each small area in England is ranked from 1 (most deprived) to 32,844 (least deprived)[6]. According to the 2019 Index of Multiple Deprivation (IMD), as an average score, Manchester ranks 6 out of 326 local authorities in England, 1 being the most deprived.

3.2 MANCHESTER'S CHILD HEALTH PROFILE 2023

The Manchester Child Health Profile 2023 provides a snapshot of child health across the city. Overall, comparing local indicators with England averages, the health and wellbeing of children in Manchester is worse than that of England. According to the ONS population estimate for mid-2021, children and young people aged 0-19 years account for 26.7% (140,047) of Manchester's total population. Children aged 0-4 years account for 6.2% (33,932) of the total population of the city. Manchester's infant mortality rate of 6.7 per 1,000 live births (2019-21), is worse than the England rate of 3.9, with an average of 47 infants dying before the age of one each year. This has increased from the previous years, where the rate was 6.1 and an average of 44 infant deaths per year (2018-20). Manchester's child mortality rate (2018-20) of 13.5 deaths per 100,000 children aged 1-17 years is worse than the England rate of 10.3, with an average of 15 child deaths each year. This is a decrease in comparison to previous years (2017-19) where the standardised rate of death was 16.2 per 100,000 children, with an average of 19 child deaths (aged 1-17 years) each year. 35.5% of Manchester children under 16 years of age are living in poverty in comparison to the England average of 27% (2020/21).

[6] https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019

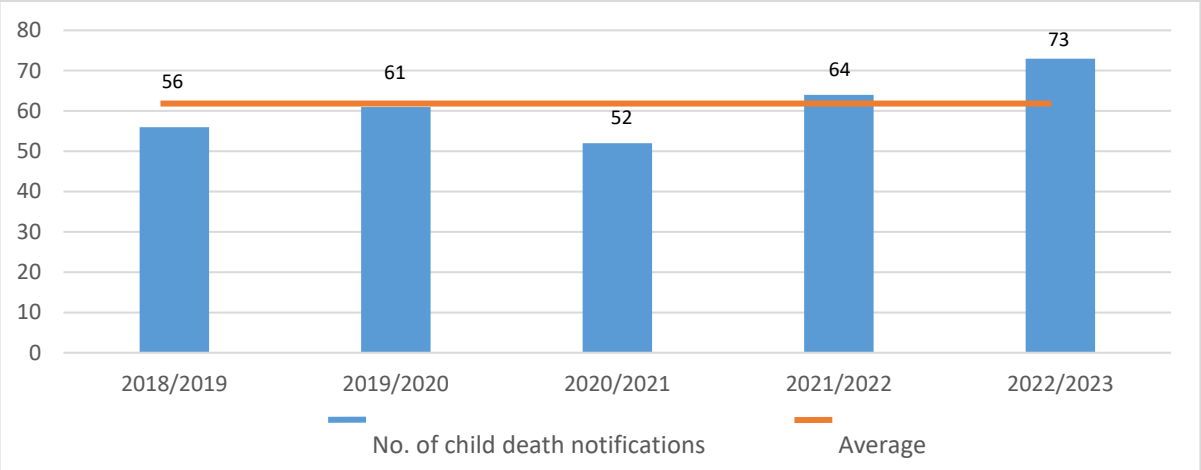
4. CHILD DEATH NOTIFICATIONS REPORTED TO THE CHILD DEATH OVERVIEW PANEL

There were 73 child death notifications reported to the Manchester CDOP from 1 April 2022 to 31 March 2023 (2022/23). At the end of the CDOP reporting year (31 March 2023) there was a total of 164 cases that remained open pending a CDOP review, 24 of which were historical child death notifications where the death occurred prior to 1 April 2021 and the remaining 140 where the death occurred during April 2021 – March 2022 period.

From 1 April 2018 to 31 March 2023 there were 306 child deaths reported to the Manchester CDOP. There has been a variation in the number of child deaths reported year on year, with an average of 61.2 notifications per year.

The latest Office of National Statistics (ONS) population estimate for mid-2021 suggests that there are 176,602 children aged 0-17 years living in Manchester. This is equivalent to 23.0% of the total resident population of the city (549,853). With a total of 73 child death notifications reported to the Manchester CDOP during the period 2022/23, this would indicate that Manchester's overall child death rate is 41.3 deaths per 100,000 children (aged 0-17 years), which is an increase in comparison to the previous year for 2021/22 of 36.2 child deaths per 100,000 population.

Diagram 1: Number of child deaths reported to the Manchester CDOP per CDOP year (2018/23)



Across the three-year period (2020/23), Manchester CDOP has received a total of 189 death notifications. In 2020/21, 52 notifications were received, and 35 (67%) were reviewed. In 2021/22, 64 notifications were received with all pending a review. In 2022/23, 73 notifications were received with all pending a review.

Diagram 2: Number of child deaths reviewed by year of death to the Manchester CDOP (2020/23)

Number of deaths notified by year of death				**Total**
Year	2020/21	2021/22	2022/23	
Deaths	52	64	73	**189**
% Reviewed	67%	0%	0%	**20%**

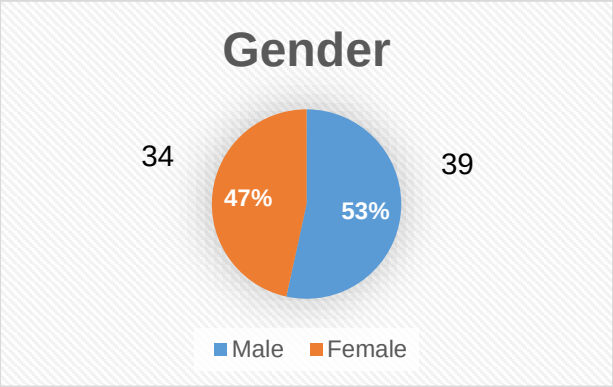
This is partly due to the publication of the revised guidance having a significant impact in terms of the operational aspects of the CDR process and the development of the new arrangements for CDOPs locally, which is far more complex in comparisons to previous requirements. This has resulted in an increase in case management functions, to ensure statutory requirements are adhered to.

There is a time lapse between a death being reported to the CDOP and the case being discussed and closed at panel. This depends heavily upon the circumstances leading to death, pending CDRMs and, for deaths subject to one or more forms of investigation, the CDOP must await the conclusion before conducting a review. Deaths subject to multiple investigations such as internal agency reviews, coronial investigations, criminal proceedings, and child safeguarding practice reviews, can take years before all have concluded and sufficient information is submitted to CDOP.

4.1 AGE, GENDER & ETHNICITY

Of the 73 cases notified, 34 (47%) children were female and 39 (53%) were male. 36 (49%) of the infants were neonatal deaths (<28 days). A further 18 (25%) deaths occurred before the first year of life (28-364 days), accounting for a total of 54 (74%) of cases closed.

Diagram 3: Cases notified to Manchester CDOP by gender and age at time of death (2022/23)



Age	Notified Cases[7]	
0-27 days	36	49%
28-354 days	18	25%
1-4 years	<5	0%
5-9 years	9	12%
10-14 years	5	7%
15-17 years	5	7%
Total	73	100%

Diagram 4: Cases notified to Manchester CDOP by ethnic grouping (2022/23)

Ethnicity	No. Cases Closed	
Asian or Asian British	24	33%
Black or Black British	16	22%
Mixed	<5	4%
Other ethnic group	<5	3%
White	25	34%
Not known or stated	<5	4%
Total	73	100%

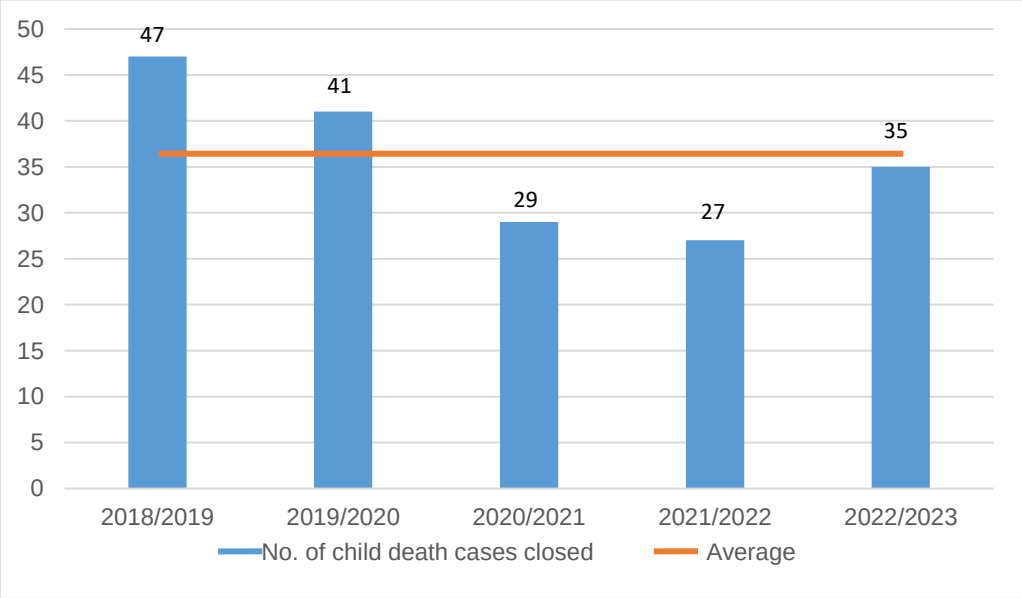
The ethnic breakdown of deaths follows the pattern of previous years with children who were Asian or Asian British (24, 33%) or White (25, 34%) being the groups experiencing the highest number of child deaths.

[7] Suppression of data to anonymise statistics: Personal data where the value is less than 5 has been removed (<5/1)

5. CASES CLOSED BY THE CHILD DEATH OVERVIEW PANEL (CDOP)

Once the CDRM has taken place, all investigations have concluded and sufficient information has been collated, the CDOP holds the final multi-disciplinary review. Examining deaths using the data of cases discussed and closed at panel, provides a full dataset to conduct analysis. This annual report focuses on data relating to the 35 cases discussed and closed by the CDOP from 1 April 2022 to 31 March 2023 (2022/23). Of the 35 cases closed during 2022/23, all were historical cases, where the death occurred prior to 1 April 2021.

Diagram 5: Number of cases closed by the Manchester CDOP per CDOP year (2018/23)



Following the publication of the revised Child Death Review: Statutory and Operational Guidance (England), it was anticipated that the CDOP would see a decrease in the number of closed cases per year due to additional national requirements. The national changes have drastically impacted upon the level of data as requested by the DHSC, the time taken to process case information and documentation during the CDOP review.

In previous years, the Manchester CDOP conducted timely reviews for expected child deaths, where the death was anticipated within 24 hours due to natural causes such as extreme prematurity and life limiting conditions. The Manchester CDOP operates in line with the current guidance, which stipulates that a CDOP review should not take place until the CDRM has concluded and information is shared for discussion at panel. Whilst the Manchester CDOP welcomes the new standardised approach to CDRMs, this impacts heavily on the timescale in which the panel undertakes a review, therefore resulting in fewer cases closed.

Information submitted following a CDRM is detailed and extremely useful in supporting the Manchester CDOP carry out a thorough review of the death. The CDOP utilises CDRM reports, assessing the care provided, to highlight any issues in relation to

service provision such as, the identification of illness, assessment, investigations, and diagnosis; treatment or healthcare management; communication or teamwork within or between agencies; and organisational or systemic issues. The Manchester CDOP identifies relevant factors including underlying staffing issues, equipment, work environment, education and training requirements and documents positive aspects of service delivery to record examples of excellent care.

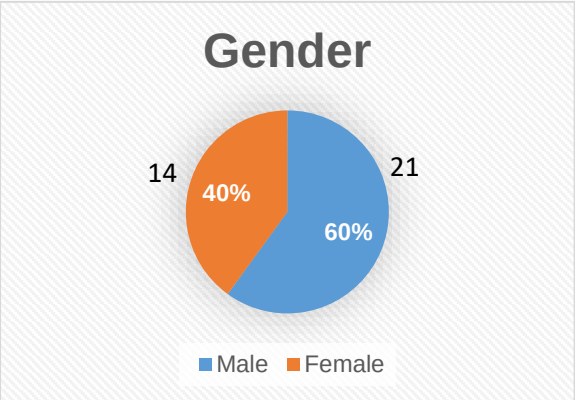
Whilst the number of child deaths reported to the Manchester CDOP varies year on year the average number has been around 60 deaths per year (2018/23 average is 61.2 notifications per year), it is anticipated that the panel will continue to see a lower number of cases closed over the coming years. It has been recognised by the NCMD programme team that the interface between the CDRM and CDOP process will impact the timescale of completed reviews due to operational aspects of the revised child death review process. The circumstances leading to death and the nature of the death also impact upon the number of cases closed by the CDOP. Deaths where the cause appears to be unnatural, sudden, and unexpected can be subject to multiple investigations that can remain ongoing for several years, which impacts on the timeliness of the CDOP review.

6. A SUMMARY OF 2022/23 CASES CLOSED

6.1 AGE, GENDER & ETHNICITY

Of the 35 cases closed, 14 (40%) children were female and 21 (60%) male. 17 (49%) of the infants were neonatal deaths (<28 days). A further 8 (23%) deaths occurred before the first year of life (28-364 days), accounting for a total of 25 (72%) cases closed. Of the 25 infant deaths (0-364 days), 13 (52%) had one or more modifiable factors identified in the review (see section 6.2).

Diagram 6: Manchester CDOP cases closed by gender and age at time of death (2022/23)



Age Group	No. Cases Closed[8]	
0-27 days	17	49%
28-364 days	8	23%
1-4 years	<5	3%
5-9 years	<5	0%
10-14 years	5	14%
15-17 years	<5	11%
Total	35	100%

Year on year, infants under the age of one account for the majority of cases with modifiable factors, with the most common factors occurring in the antenatal period such as maternal smoking in pregnancy.

Diagram 7: Manchester CDOP cases closed by ethnic grouping (2022/23)

Ethnicity	No. Cases Closed	
Asian or Asian British	11	31%
Black or Black British	10	29%
Mixed	<5	6%
Other ethnic group	<5	8%
White	9	26%
Total	35	100%

The largest number of cases closed were recorded in children who were Asian or Asian British (9, 31%) and Black or Black British (10, 29%). Breaking the data down further into specific ethnicities identifies the largest number of cases closed were children of Pakistani heritage (9, 25%) and children of African heritage (9, 26%). Comparing this data with 21/22, the largest number of deaths recorded was in children who were White (13, 45%) - children of English/Welsh/Scottish/Northern Irish/British heritage (10, 34%) and Asian or Asian British (9, 31%) - children from the Pakistani community (6, 21%).

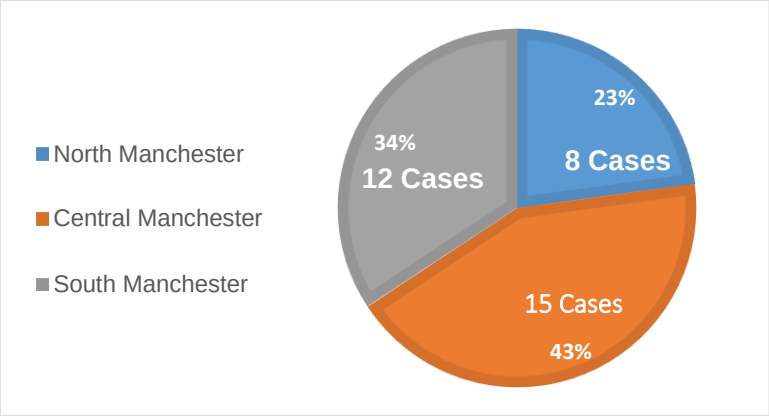
[8] Suppression of data to anonymise statistics: Personal data where the value is less than 5 has been removed (<5/1)

6.2 AREA OF RESIDENCE – DEPRIVATION AND POVERTY

The 2019 Index of Multiple Deprivation (IMD) ranked Manchester as 6 out of 326 local authorities in England (where 1 is the most deprived). 32.5 % of children (under 16 years of age) in Manchester are living in poverty (2020/21) which is higher than England (18.5%)[9]. The number of children (under 16 years of age) residing in relative low-income families have increased from 27.1%, 29,510 (2016) to 32.5%, 36,583 (2020/21). In 2021/22, the rate of households with dependent children owed a duty under the Homelessness Reduction Act in Manchester (34.7 per 1,000 households with at least one dependent child) is more than double the rate for England as a whole (14.4 per 1,000).

Within GM, Manchester has the highest proportion of residents (43%) residing in the most deprived 10% of neighbours in England[10]. Across GM, 6 of the 10 local authorities have a higher proportion of their population living in the most deprived areas of the country in comparison to the North-West average, with Manchester being the most deprived local authority. All GM local authorities but Trafford have deprivation scores above the national average. This emphasises that deprivation remains a significant public health concern and demonstrates a significant correlation between poverty and child death.

Diagram 8: Area of residence for closed cases by the Manchester CDOP (2022/23)



Of the 35 cases closed, the majority of children resided in areas of deprivation with 28 (80%) of families residing in quintile 1 (most deprived). A total of 15 (43%) of the children resided in Central Manchester[11]. Breaking the data down into neighbourhoods identifies Whalley Range having the largest number of deaths, accounting for 5 (14%) of the cases closed. Year on year, there continues to be a strong correlation with the higher rate of deaths in areas of deprivation where the Lower Layer Super Output Area (LSOA) are deemed most deprived.

A **position statement report** from the Royal College of Paediatrics and Child Health (*dated 21 Sep 2022*) focuses on poverty as a driver of health inequalities[12]. The report states:

The drivers of health inequalities are the social, economic, and environmental factors in which individuals live that have an impact on their health outcomes. This includes

[9] https://fingertips.phe.org.uk/profile/child-health-profiles
[10] https://secure.manchester.gov.uk/downloads/download/414/research_and_intelligence_population_publications_deprivation
[11] https://www.manchesterlco.org/howwework
[12] https://www.rcpch.ac.uk/sites/default/files/generated-pdf/document/Child-health-inequalities-driven-by-child-poverty-in-the-UK--position-statement.pdf

ethnicity, income, housing, climate change and being looked after by local authorities…. The influence of poverty on children's health and wellbeing is undeniable. Children living in poverty are more likely to have poorer health outcomes including low birth weight, poor physical health, and mental health problems. The health impacts of growing up in poverty are significant and follow children across their life. The current cost of living crisis will only exacerbate this by pushing more families into poverty. It is essential that health inequalities driven by poverty are addressed to improve child health outcomes, as well as reduce costs to the NHS in the long term.

Listed below are some of the findings from position statement:

Child poverty in the UK

- One in four (27%) children live in poverty in the UK, defined as living in a household with an income less than 60% of the median household income.
- The main drivers for child poverty are insufficient income and high living costs associated with raising children. However, employment does not necessarily provide a solution out of poverty; 75% of children in poverty have at least one parent working in at least one job.
- Children in specific family types are at higher risk of poverty. For example, lone parent families, the majority of which are headed by women, and having someone with long-term illness in the household increases the risk due to barriers to employment.
- There are stark ethnic differences in the rates of child poverty, and poverty is higher among certain ethnic minority groups. In England, 46% are living in poverty compared to 26% of children from white British families.
- *No recourse to public funds (NRPF) is a condition applied to those staying in the UK with any form of temporary immigration status. This prohibits migrant families from accessing most benefits, such as Universal Credit and free school meals, placing migrant children at increased risk of destitution.*

Evidence of how poverty drives health inequalities in the UK:

Mortality in childhood

- The UK has high rates of infant and child mortality when compared with other developed countries.
- The index of multiple deprivation (IMD) is an overall measure of deprivation based on factors such as income, employment, health, education, crime, the living environment and access to housing within an area. Infants in the 10% most deprived areas are twice as likely to die in infancy as those in the 10% least deprived. For each increase in decile of deprivation, the relative risk of mortality increases by 10%.
- There is a clear association between the risk of death and the level of deprivation for children who died in England between April 2019 and March 2020. Over a fifth of the 3,200 child deaths in the period examined might have been avoided if children living in the most deprived areas had the same mortality risk as those living in the least deprived.

Acute and long-term illness

- Children living in poverty are significantly more likely to suffer from acute and long-term illness. They are significantly more likely to require hospital admission and were 72% more likely than other children to be diagnosed with a long-term illness.

- Rates of obesity and severe obesity in children living in the most income deprived areas entering Reception and Year 6 are rising, while the rates are decreasing in the least income deprived areas in England.
- Children living in the poorest 20% of households in the UK are four times more likely to develop a mental disorder as those from the wealthiest 20%.

Indoor and outdoor air quality

- Air pollution exposure is highest in the most income deprived areas, and children are disproportionally exposed to the highest levels of pollution.
- Children in more income deprived families are three times more likely to be exposed to second-hand smoke.
- Children in income deprived areas are more likely to live in housing with poor ventilation and other features of substandard housing. Families in poverty may ventilate their house less because of problems such as fuel poverty.

How poverty affects child health outcomes

Paediatricians have told us how poverty has affected their patients, including the following:

- Parents in poverty are less able to afford healthy foods and offer their children a healthy lifestyle.
- Recent increases in household energy costs comes on top of food insecurity, which may mean families face a choice between paying energy bills and food. Living in a cold home has a negative impact on physical health by, for example, exacerbating respiratory illnesses.
- Low-income families may be unable to afford basic hygiene products due to financial constraints.
- Adverse childhood experiences, which are usually multiple, have a cumulative negative effect on physical and mental health in later life and are three times more common in the context of poverty than in affluence.
- Children in low-income families have less access to the medical care they need.
- Low-income families may also be experiencing digital exclusion, where households may not have a smartphone or internet access and are unable to benefit from digital health technologies as a result.

This position statement, alongside other articles such as ***What is the relationship between deprivation, modifiable factors and childhood deaths***[13] highlights that there is a clear gradient of increasing child mortality across England as measures of deprivation increase; with a striking finding that this varied little by area, age or another demographic factor. Over one-fifth of all child deaths may be avoided if the most deprived half of the population had the same mortality as the least deprived. Children dying in more deprived areas may have a greater proportion of avoidable deaths. Adult employment, and improvements to housing, may be the most efficient place to target resources to reduce these inequalities.

[13] What is the relationship between deprivation, modifiable factors and childhood deaths: a cohort study using the English National Child MortalityDatabase | BMJ Open

6.3 RELEVANT FACTORS & MODIFIABLE FACTORS

Information is collated using the Department of Health and Social Care (DHSC) national CDOP reporting forms[14]. Completed forms are presented during the CDOP meeting to assess the death. As part of the child death review process, the CDOP is responsible for analysing information to determine the categorisation of death (see appendix 2), relevant factors and modifiable factors.

Information is collated and categorised using the four domains:

Domain A: Factors intrinsic to the child:

Factors in the child (and in neonatal deaths, in the pregnancy) relating to the child's age, gender and ethnicity; any pre-existing medical conditions, developmental or behavioural issues or disability, and for neonatal deaths, the mother's health and wellbeing.

Domain B: Factors in social environment including family and parenting capacity:

Factors in family structure and functioning and any wider family health issues; provision of basic care (safety, emotional warmth; stimulation; guidance and boundaries; stability); engagement with health services (including antenatal care where relevant); employment and income; social integration and support; nursery/preschool or school environment.

Domain C: Factors in the physical environment:

Factors relating to the physical environment the child was in at the time of the event leading to death, and for neonatal deaths, the mother's environment during pregnancy including poor quality housing; overcrowding; environmental conditions; home or neighbourhood safety; as well as known hazards contributing to common childhood injuries (e.g. burns, falls, road traffic collisions)

Domain D: Factors in Service Provision:

Factors in relation to service provision or uptake including any issues relating to identification of illness, assessment, investigations and diagnosis; treatment or healthcare management; communication or teamwork within or between agencies; and organisational or systemic issues. Consider underlying staff factors, task factors, equipment, and work environment, education and training, and team factors.

For each of the four domains, the Manchester CDOP determines the level of relevance (0-2) for each factor, relating to the registered cause of death and to inform learning of lessons at a local, regional, and national level. The categories are:

0 Information not available

[14] https://www.gov.uk/government/publications/child-death-reviews-forms-for-reporting-child-deaths

1 No factors identified, or factors identified but are unlikely to have contributed to the death

2 Factors identified that may have contributed to vulnerability, ill health, or death

As part of the review, the CDOP is responsible for identifying modifiable factors, although categorising a death as having modifiable factors does not necessarily mean the CDOP regards the death in question as preventable, but that there may be emerging trends which could reduce the risk of future child deaths:

Modifiable factors identified: The review has identified one or more factors across any domain which may have contributed to the death of the child, and which might, by means of a locally or nationally achievable intervention, be modified to reduce the risk of future child deaths

No modifiable factors identified: The review did not identify any modifiable factors

Inadequate information upon which to make a judgement: The review was unable to identify if any modifiable factors were present.

Diagram 9: Categorisation of death for cases closed by the Manchester CDOP (2022/23)

Categorisation of Death	No. Cases Closed	
Deliberately inflicted injury, abuse or neglect	<5	5%
Suicide or deliberate self-inflicted harm	<5	6%
Trauma and other external factors, including medical/surgical complications/error	<5	0%
Malignancy	<5	3%
Acute medical or surgical condition	<5	8%
Chronic medical condition	<5	3%
Chromosomal, genetic and congenital anomalies	8	23%
Perinatal/neonatal event	15	43%
Infection	<5	6%
Sudden unexpected, unexplained death	<5	6%
Total	35	100%

Although the number of cases closed (35) is small, the largest number of deaths were categorised as chromosomal, genetic and congenital anomalies (8, 23%) and perinatal/neonatal event (15, 43%) reflecting a pattern experienced in previous years.

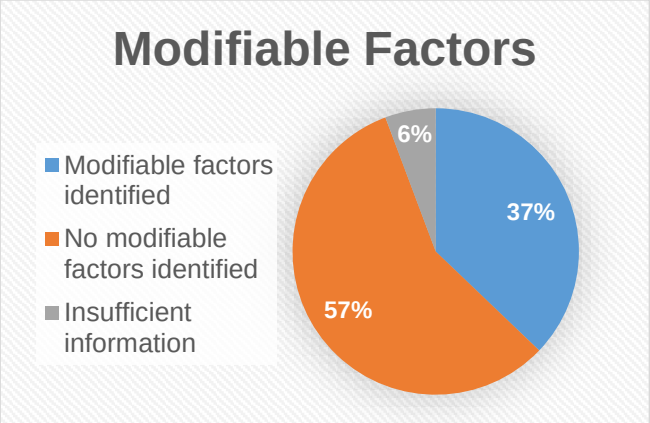
The majority of child deaths are due to medical causes which encompass multiple categories of death including acute medical or surgical, chronic medical, chromosomal, perinatal/neonatal event, malignancy and infection. Small numbers

were attributable to non-medical causes including trauma, deliberate harm/abuse/neglect, suicide/self-harm, and sudden unexpected/unexplained death.

Modifiable Factors	No. Cases Closed	
Modifiable factors	13	37%
No modifiable factors	20	57%
Insufficient information	2	6%
Total	35	100%

The Manchester CDOP identified one or more modifiable factors in 11 (41%) cases which is higher than the England average of 34% (as recorded by the NCMD). The highest number of modifiable factors were recorded in deaths categorised as a perinatal/neonatal event (<5).

Diagram 10: Modifiable factors identified in cases closed by the Manchester CDOP (2022/23)



Year on year, deaths categorised as a perinatal/neonatal event continue to have the largest number of modifiable factors identified in the review. Modifiable factors in perinatal/neonatal deaths mostly relate to antenatal maternal health and wellbeing, which can lead to poor outcomes for both mother and infant such as maternal smoking in pregnancy and maternal obesity in pregnancy. Factors also include engagement with health services in accessing antenatal care, social and environmental conditions during pregnancy.

The Manchester CDOP identified modifiable factors in 13 (37%) of the 35 deaths. These are factors where local or nationally achievable intervention could be modified to potentially reduce the risk of future child deaths. Of the 13 deaths with modifiable factors, 10 (29%) children died before the age of 1, 7 (20%) of which were during the neonatal period.

Some deaths feature multiple modifiable factors which vary depending on the circumstances leading to death and the cause of death ascertained. For example, deaths categorised as a perinatal/neonatal event, may exhibit more than one modifiable factor such as maternal smoking in pregnancy, maternal obesity in

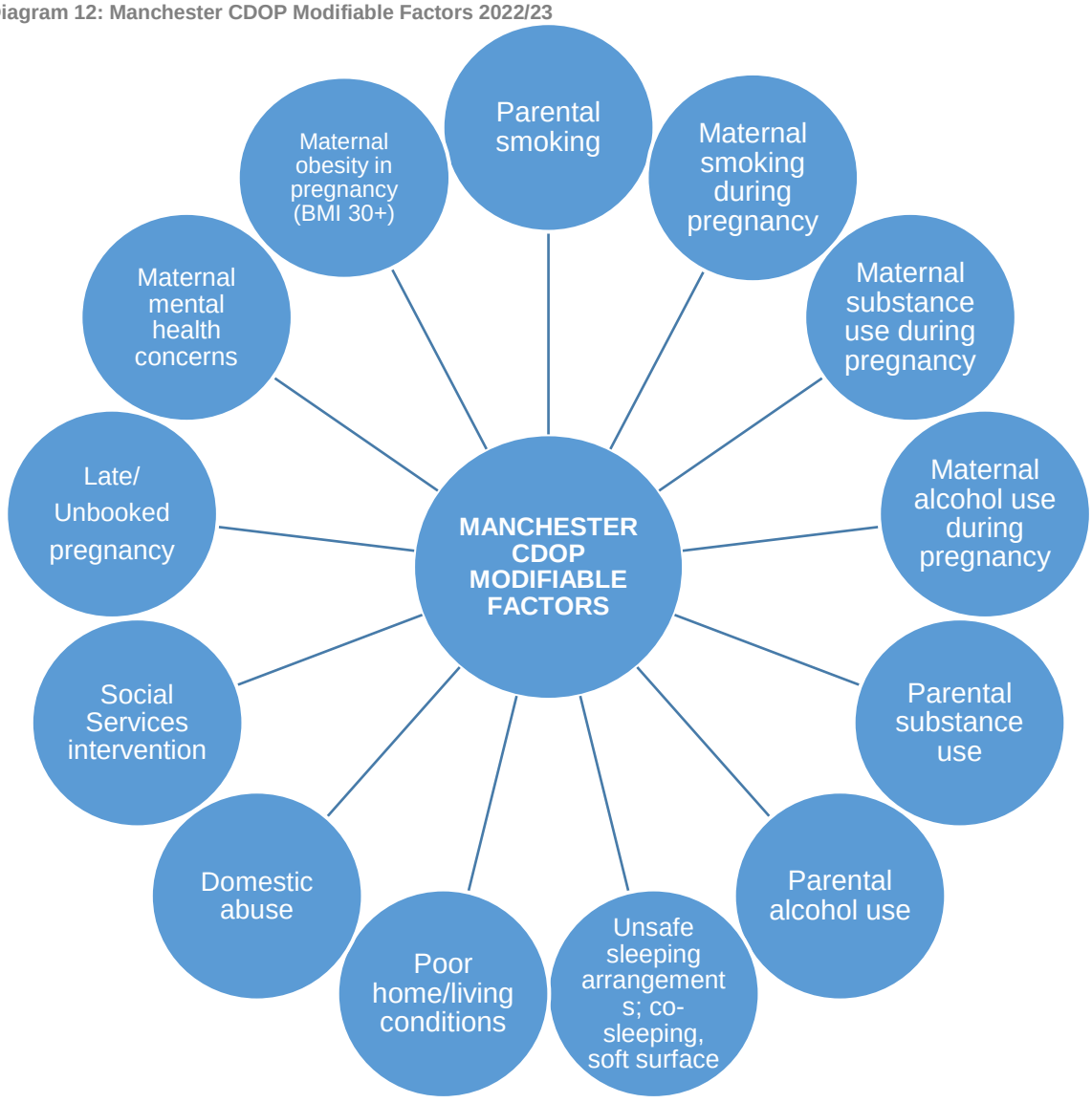
pregnancy and lack of antenatal care service uptake. Modifiable factors act as multiplier effect, increasing the child's vulnerability where multiple factors are present.

Diagram 11: Modifiable factors identified in cases closed by the Manchester CDOP and the CDOPs in the Northwest region (2020/23)

Year of Review	2020-2021			2021-2022			2022-2023		
CDOP	Number of reviews	Modifiable factors identified	%	Number of reviews	Modifiable factors identified	%	Number of reviews	Modifiable factors identified	%
Manchester	29	9	31	27	11	41	35	13	37
Northwest	318	136	43	341	138	40	415	213	51

Though attempts have been made to standardise the process of identifying and categorising modifiable factors, it is often a subjective matter which is decided on a case-by-case basis. The GM CDOPs continue to conduct reviews in line with an agreed GM set standard of modifiable factors, as developed by the GM CDOP Network. The standard ensures consistency across the four GM CDOPs when undertaking reviews and identifying modifiable factors.

Diagram 12: Manchester CDOP Modifiable Factors 2022/23



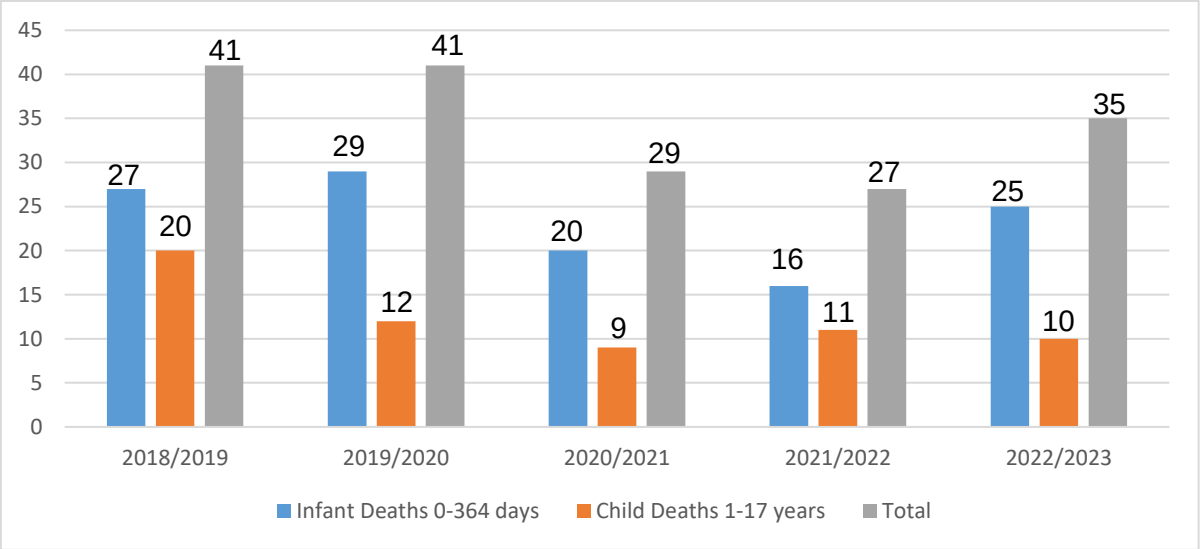
Across all categories of death, maternal obesity (where mother has a raised body mass index (BMI) of 30+ during pregnancy) has been identified as the most common modifiable factor identified by the Manchester CDOP. The second most common modifiable factor is smoking with maternal smoking in pregnancy and household smoking a factor in deaths categorised as a perinatal/neonatal event and sudden unexpected, unexplained death. This is followed by maternal alcohol and/or substance use during pregnancy. Multiple modifiable factors were also identified (antenatally and postnatally) in sudden unexpected, unexplained deaths, the most common being unsafe sleeping arrangements including parental alcohol and/or substance use.

Though the numbers involved are relatively small, it emphasises that factors relating to maternal obesity and smoking remain key modifiable factors for infant and child deaths. Despite ongoing efforts to reduce the rate of smoking, this continues to influence in the death of children and remains a steady modifiable factor. Further, the link between smoking and obesity strongly correlates with deprivation, meaning they represent a significant health inequality.

6.4 INFANT DEATHS (0-364 DAYS OF LIFE)

17 (49%) of the 35 cases closed occurred in the neonatal period (<28 days of life) whilst a further 8 (23%) infants died before the age of one (28-364 days of life). This total (25, 72%) remains to be a year-on-year trend highlighting infants under the age of one as the most vulnerable age group.

Diagram 13: Manchester CDOP cases closed by age at time of death (2018/23)



Of the 15 deaths categorised as a perinatal/neonatal event, 14 infants were delivered prematurely, with prematurity featuring as the registered cause of death. Many infant deaths were anticipated due to the death ultimately being related to perinatal/neonatal events and chromosomal, genetic, and congenital anomalies. This reflects those deaths in the first year of life are often due to the complications of prematurity or from underlying health conditions.

Babies are considered viable at around 24 weeks' gestation, meaning it's possible for them to survive at this stage. Infants delivered under 24 weeks' gestation, have a

significantly reduced chance of survival. The World Health Organization (WHO)[15] defines preterm birth as babies born alive before 37 weeks of pregnancy are completed, with sub-categories of preterm birth based on gestational age:

- extremely preterm (less than 28 weeks)
- very preterm (28 to 32 weeks)
- moderate to late preterm (32 to 37 weeks)

14 (56%) of the 25 infant deaths involved the babies being delivered preterm (<37 weeks). Babies born before full term (<37 weeks) are vulnerable to health problems associated with prematurity. The earlier in the pregnancy a baby is born, the more vulnerable they are. Preterm birth occurs for a variety of reasons. Most preterm births happen spontaneously, but some are due to early induction of labour or caesarean birth, whether for medical or non-medical reasons. Common causes of preterm birth include multiple pregnancies, infections, and chronic conditions such as diabetes, high blood pressure and genetic influence.

Around 8 out of 100 babies are born prematurely[16]. Using the WHO preterm birth sub-categorises highlights that 7 of the preterm infants were born extremely preterm (<28 weeks). Twins and triplets are often born prematurely with an average delivery date for twins at 37 weeks and 33 weeks' gestation for triplets. There were a number of infant deaths (<5) recorded as a twin pregnancy some of which also resulted in a late foetal loss (<24 weeks' gestation) or stillbirth (>24 weeks) although, in line with Child Death Review: Statutory and Operational Guidance (England), stillbirths and late foetal loss are not subject to CDOP reviews.

Low birth weight is defined by the WHO[17] as weight at birth less than 2500 g (5.5 lb). Low birth weight continues to be a significant health problem and is associated with a range of both short- and long-term consequences. Low birth weight is complex and includes preterm neonates, small for gestational age neonates at term and the overlap between these two situations. Typically, both preterm and small for gestational age neonates, have the worst outcomes.

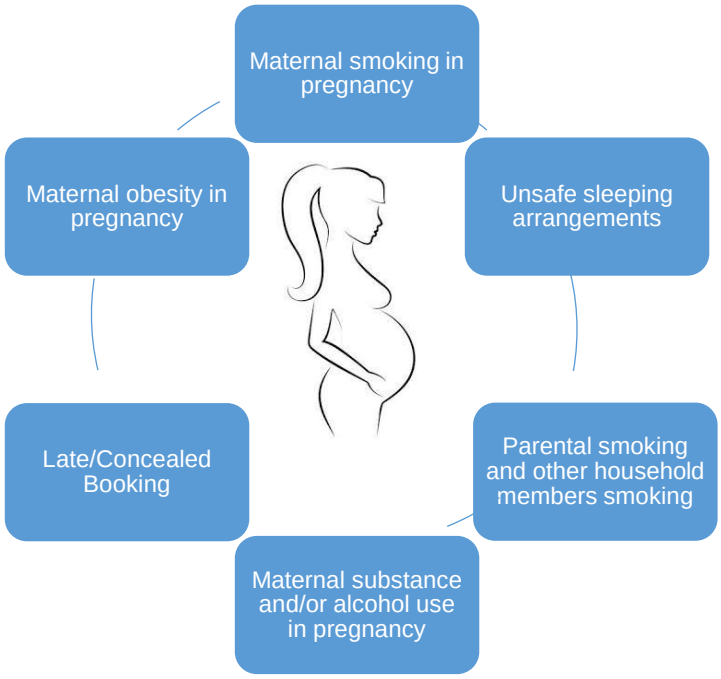
The Royal College of Obstetricians and Gynaecologists[18] defines small for gestational age to an infant born with a birth weight less than the 10th centile[19]. Historically small for gestational age at birth has been defined using population centiles. The use of centiles is customised for maternal characteristics (maternal height, weight, parity, and ethnic group) as well as gestational age at delivery and infant sex, identifies small babies at higher risk of morbidity and mortality than those identified by population centiles. Of the 20 infant deaths, 18 (90%) had a birth weight of less than 2500 grams, 16 of which were preterm deliveries (<37 weeks' gestation).

Whilst prematurity impacts the infant's birth weight, low birth weight is also influenced by maternal lifestyle such as smoking and wider maternal health including pre-eclampsia. When reviewing infant deaths, the Manchester CDOP identifies modifiable factors and relevant factors during pregnancy that increase the risk to both mother and baby. These factors may also contribute to an early onset of labour, leading to poorer

[15] https://www.who.int/news-room/fact-sheets/detail/preterm-birth
[16] www.nhs.uk/conditions/pregnancy-and-baby/premature-early-labour
[17] www.who.int/nutrition/publications/globaltargets2025_policybrief_lbw/en/
[18] www.rcog.org.uk/globalassets/documents/guidelines/gtg_31.pdf
[19] www.rcpch.ac.uk/resources/uk-who-growth-charts-neonatal-infant-close-monitoring-nicm

outcomes. All the associated factors act as a multiplier effect increasing the risk of prematurity, or that the infant may not be born in the best possible condition.

Diagram 14: Modifiable factors and/or relevant factors identified in infant death cases closed by the Manchester CDOP (2022/23)



7. LOCAL ACTIONS TO REDUCE CHILD DEATHS

7.1 MATERNAL OBESITY IN PREGNANCY

Maternal Obesity and infant mortality

Infants born to women who begin pregnancy obese have a higher risk of premature death than children born to mothers at a healthy weight. Children who are obese at reception age are more likely to become overweight or obese adults and have shorter life expectancy.

A modifiable and relevant factor highlighted by the Manchester CDOP is mother's raised body mass index (BMI) during pregnancy. Significant activity has been undertaken by Population Health to reduce obesity across the city following the launch of the five-year Healthy Weight Strategy[3] in 2021 The strategy advocates a population-wide, all-age, whole system approach which begins with pregnant women and babies. The strategy advocates equipping health professionals with the resources to begin sensitive conversations about weight in pregnancy, increasing breastfeeding and making healthy choices in weaning with infants.

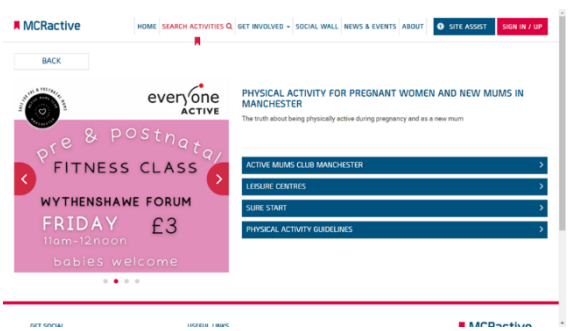
Physical activity and maternity

Earlier last year, a gap was identified in the physical activity provision available to pregnant women. A multi-agency group was established which endeavoured to map out current physical activity provisions across the city, and to engage with pregnant women and new mums to identify the barriers to accessing physical activity. A survey of 237 pregnant women / new mums highlighted only 17% of women were aware of the current physical activity guidance during pregnancy and as a new mum, and the barriers to accessing activities included time, cost, a lack of energy and difficulty finding suitable activities.

As a result, a 12-month pilot project is currently underway at three leisure centre locations across the city (North City, Moss Side and Wythenshawe Forum) where aqua natal and exercise classes are available for pregnant women and new mums to attend and are capped at £3 per visit.

An educational video has also been developed 'the truth about being physically active during pregnancy and as a new mum', that demonstrates different activities women can undertake when pregnant and with their baby to help them achieve 150 minutes of moderate activity a week.

A new landing page on the MCRactive website has also been created for pregnant and new mums to access resources and information to encourage them to be more physically active:



Further information about the different activities available for pregnant women and new mums is available at www.mcractive.com/activity/physical-activity-for-pregnant-women-and-new-mums-in-manchester

In 2023, Manchester launched the Manchester *Food Active! Healthy Weight Declaration.* This is a city-wide pledge signed by City-Leaders to emphasize and give leverage to our commitment to enabling residents to live healthy, physically active lives, and reduce obesity.

Healthy Weight Nurse Team & obesity safeguarding.

Manchester Department of Public Health commission a Healthy Weight Nurse Team. The team takes referrals of children aged 0-19 years, particularly under 5 years who are at the 96th centile (BMI) or above. The team puts the needs of children and families first, providing innovative, evidence-based intervention, and its work is now part of Manchester's Healthy Weight Strategy 2020–25. The team won the national *Nursing Times 'Public Health Nursing Team of the Year Award'* in December 2021.

The Healthy Weight Nurse Team manage the Childhood Obesity Safeguarding Pathway, which was established in response to rising levels of severe obesity and a Serious Case Review where a 13-year-old child (Child F1) died from a heart condition exacerbated by morbid obesity.

Manchester's Director of Public Health presented to the Coroners Court in January 2022 to demonstrate the measures Manchester had put in place and the work undertaken by numerous partners following the Serious Case Review to reduce childhood obesity.

Delivering on the healthy weight outcomes in maternity services and early years is a key outcome for the City's Start Well Board. Manchester City Council was one of only two authorities nationally to participate in a Public Health England pilot project in 2019/20, in which a maternal obesity resource was created for the benefit of Midwives and Health Visitors. After pandemic disruption, this resource has since been made available to a variety of health professional teams and partners across the city.

Healthy Weight Strategy

A dedicated Council Officer role in Public Health has been created to facilitate delivery of the Healthy Weight Strategy and increased access to commissioned services at a neighbourhood level, including partnership working between midwifery and weight

management services. A social prescribing service for pregnant women who have a BMI of 25 and over, offers a voucher to access a free local weight loss group, available through self-referral to Be Well FREE Slimming World vouchers - The Big Life group. A specialist service is also available for pregnant woman with a BMI of 35 or above, to encourage lifelong change by supporting pregnant women achieving a healthier lifestyle through education and personalised goal setting. Both programmes offer advice and support on nutrition, lifestyle, and behaviour change to enable women to be healthy throughout their pregnancy and beyond. Both services provide advice on nutrition in relation to breastfeeding and complementary feeding. Midwives can refer pregnant women into the tier three service from 12 weeks gestation which includes psychological therapy and, where appropriate, pharmacotherapy.

For most adults, an ideal BMI is in the 18.5 to 24.9 range (healthy weight range). The NHS defines the BMI categories[1] as:

- below 18.5 - underweight
- between 18.5 and 24.9 - healthy weight range
- between 25 and 29.9 - overweight range
- between 30 and 39.9 - obese weight range
- 40 and over - severely obese weight range

Being overweight increases the risk of complications for pregnant women and baby[2]. The higher a woman's BMI, the higher the chance of complications. Problems for baby can include being born prematurely and an increased risk of stillbirth (from an overall risk of 1 in 200 in the UK to 1 in 100 if mother has a BMI of 30 or more).

The increasing chances are in relation to:

- miscarriage - the overall chance of miscarriage under 12 weeks is 1 in 5 (20%); for women with a BMI over 30, the chance is 1 in 4 (25%)
- gestational diabetes - women with a BMI of 30 or above, are 3 times more likely to develop gestational diabetes than women who have a BMI below 25
- high blood pressure and pre-eclampsia - women with a BMI of 30 or above at the beginning of their pregnancy, have a chance of pre-eclampsia which is 2 to 4 times higher than that of women who have a BMI below 25
- blood clots - all pregnant women have a higher chance of blood clots compared to women who are not pregnant, for women with a BMI of 25 or above, the chance is increased further
- the baby's shoulder becoming "stuck" during labour (sometimes called shoulder dystocia)
- heavier bleeding than normal after the birth (post-partum haemorrhage)
- having a baby weighing more than 4kg (8lb 14oz) - the overall chance of this for women with a BMI of 20 to 30 is 7 in 100 (7%); for women with a BMI of above 30, the chance is doubled to 14 in 100 (14%)
- women are also more likely to need an instrumental delivery (forceps or ventouse), or an emergency caesarean section

Deaths categorised as a perinatal/neonatal event, where mothers BMI in pregnancy is recorded as underweight (BMI <18.5) or obese (BMI 30+), are deemed a modifiable factor by the Manchester CDOP. Obesity in the general population has increased, with

factors such as Covid lockdown and cost of living being a contributor. Maternal obesity in pregnancy continues to be a relevant factor and features as a modifiable factor for Manchester, and across GM, in deaths categorised as a perinatal/neonatal event.

Healthy Start Vitamins

The NHS Healthy Start Scheme aims to improve health and access to a healthy diet for families on low incomes across the UK. In addition to providing healthy food and milk, the scheme also includes Healthy Start vitamins. To support pregnant women and new mums access the Healthy Start Vitamin Scheme, Manchester Public Health provide free vitamins to a range of outlets in Manchester so that they can be given out free to women and children who reach the clinical criteria. Unlike the national scheme, there is a universal offer of Healthy Start vitamins in Manchester, so recipients do not have to be in receipt of benefits or have a low income.
The vitamins are free for pregnant women (from 10th week of pregnancy), new mums with a baby up to one year old, babies from birth, and children up to their 4th birthday. The women's vitamin tablets contain vitamins C and D, and folic acid. The children's vitamin drops contain vitamins A, C, and D. In Manchester Healthy Start vitamins are supplied by children's centres, health visitors, community midwives, and selected pharmacies. A full list of places which can supply women and families with Healthy Start vitamins is on Manchester City Council's website at:

https://hsm.manchester.gov.uk/kb5/manchester/directory/service.page?id=Qdk7i1o5uIE&directorychannel=0

7.2 SMOKING

Smoking affects mothers, the developing foetus and child health; doubling the chances of still birth and increasing the risk of sudden infant death threefold. (NHS)

Smoking continues to have a negative impact on the general health of children and remains a key modifiable factor for child deaths in Manchester. Depending on the nature of the death, the CDOP collates information regarding the smoking status of the child and during the antenatal period, maternal smoking in pregnancy and household members smoking, in order to monitor women who are exposed to harmful effects of Environmental Tobacco Smoke (ETS) during pregnancy.

Smoking in pregnancy has well recognised detrimental effects for the growth and development of the baby as well as the health of the mother. Smoking during pregnancy can cause serious pregnancy related health problems including complications during labour and an increased risk of miscarriage, premature birth, stillbirth, low birth weight and sudden unexpected death in infancy (SUDI). Maternal smoking in pregnancy or household smoking (in the main home or even in homes that a baby may stay in or visit) was the most common occurring modifiable risk factor which the Manchester CDOP deemed a “significant relevant factor” in relation to the child’s cause of death. Having a smoke free pregnancy and smoke free homes and cars is the best way of protecting babies and children. Children should not be exposed to tobacco smoke under any circumstances.

The National Tobacco Control Plan [1] includes an ambition to reduce smoking in pregnancy to 6% by the end of 2022, which is measured as Smoking At The Time of Delivery (SATOD). However, in Greater Manchester, there is an ambition to reduce

SATOD to 4%. The government has set an overarching target to reduce adult smoking prevalence nationally to under 5% by 2030.

Smoking in pregnancy and the number of babies and children living in smoke filled homes correlates with adult smoking prevalence in Manchester, which we know, correlates with socio economic disadvantage. Therefore, in some areas of the city, relatively high percentages of households contain a smoker. Adult smoking prevalence in Manchester averages at 16.8% (95% CI 13.1%-20.5%) and Manchester has the 4th highest smoking prevalence rate in Greater Manchester and the 14th highest in the list of Counties and Unitary Authorities in England. Whilst smoking prevalence is reducing, we do know that in some communities and people working in Routine and Manual Occupations, areas smoking prevalence will be much higher than 16.8% and that those communities may experience other risk factors which also impact on infant mortality potentially, such as poor housing. Making Manchester Fairer[20] is the over-arching strategy which describes how we will work to reduce socio-economic disadvantage in Manchester and as a consequence reduce smoking and smoking related health inequalities.

Making Manchester Fairer also describes how we will work to give children the best start in life, without being impacted by social and health inequality and having a smoke free pregnancy is one of the most important ways of doing this. SATOD in Manchester is 8.9%, which is slightly lower than the national average of 9.1%. However, this isn't low enough.

Manchester has been at the forefront of developing a Smoke Free Pregnancy Service since 2017, when the Public Health Team worked with Greater Manchester Partners to introduce an "in-house" maternity "stop smoking service" across Manchester hospitals. At that time, Manchester City Council part funded a Specialist Midwife and funded all Nicotine Replacement Therapy for pregnant women. In 2022-23 we saw the winding down of this offer because Smoking in Pregnancy will be delivered by NHS partners as part of the NHS Long Term Plan and NHS England Saving Babies' Lives initiative.[21]

Pregnancy and Other Forms of Tobacco Use

The Smoking in Pregnancy Service report that they see a significant number of women who also report using cannabis (which is mixed with tobacco to smoke), whilst pregnant, or being exposed to smoked cannabis. We know that the legal status of cannabis may well lead to under reporting of this issue too. Women who do disclose exposure to cannabis smoking are treated on the same pathway as general tobacco smokers and also referred to Drug and Alcohol Specialist Midwives.

Smoke Free Homes and Cars

Environmental Tobacco Smoke (commonly known as second hand smoke) is made up of the smoke that comes from a cigarette and the smoke that is breathed out by a smoker. All tobacco smoke contains toxins.

Carbon Monoxide breath tests provide an indication of whether a pregnant person smokes by measuring the concentration of Carbon Monoxide in exhaled breath. (Smokers have a higher concentration). However, people who are exposed to smoke

[20] https://www.manchester.gov.uk/makingmanchesterfairer
[21] https://www.england.nhs.uk/publication/saving-babies-lives-version-two-a-care-bundle-for-reducing-perinatal-mortality/

in homes, or cars may also have high Carbon Monoxide levels, indicating elevated risk to an unborn baby.

Second hand smoke has more than 50 chemicals that are known to cause cancer and other diseases in adults. Because babies and young children are still growing, the chemicals in second-hand smoke harm them more than adults. Breathing second-hand smoke for even a short time can harm your baby's or child's body.

Therefore, an important part of the Manchester Tobacco Plan is promoting Smoke Free Homes and indoor spaces. During 2022-23 we have engaged in more discussions with partners about how we might progress a programme of partnership working to persuade more people not to smoke around children in their homes. It is acknowledged that more work is needed.

Less often mentioned is the importance of not smoking in cars around pregnant women or children. Smoke-free (Private Vehicles) Regulations were introduced in 2015. This requires all private vehicles to be smokefree when they are enclosed, contain more than one person and a person under 18 is present in the vehicle. Unfortunately, this regulation is not enforced in Manchester and awareness is low. In any future work around smoke free homes in Manchester, smoke free cars should feature too.

7.3 SUDDEN & UNEXPECTED DEATH IN INFANCY/CHILDHOOD (SUDI/SUDC)

Deaths categorised as a sudden unexpected, unexplained death where the pathological cause of death was recorded as either 'sudden infant death syndrome (SIDS)' or remains 'unascertained', continue to feature multiple modifiable factors relating to forms of unsafe sleeping arrangements. Unsafe sleeping arrangements such as co-sleeping, are particularly dangerous if the parent/carer has consumed alcohol or ingested substances, which may limit their awareness. Other known risk factors include co-sleeping with babies born prematurely or those with a low birth weight, overheating, covering baby's face or head while sleeping, loose bedding and falling asleep with baby on a sofa or in an armchair.

In deaths categorised as sudden unexpected, unexplained death, the Manchester CDOP highlighted several modifiable factors identified including:

- Maternal alcohol use in pregnancy
- Maternal substance use in pregnancy
- Maternal smoking in pregnancy
- Parental smoking and/or other household smokers
- Unsafe sleeping arrangements
- Co-sleeping
- Baby placed to sleep on a soft surface (parental bed)
- Parental alcohol use
- Parental substance use

The Manchester CDOP also highlighted several relevant factors (relevance 2) which may have contributed to the vulnerability, ill-health or death of the infant such as parental mental health issues, housing conditions, domestic abuse, poor parenting/supervision, and child abuse/neglect. It should be noted that factors (in the antenatal and/or postnatal period) act as multiplier effect, where there is more than one present this increases the vulnerability of the child.

The Manchester CDOP continues to raise awareness of safer sleep messages via quarterly newsletters[22] to embed safer sleep advice into multi-agency practice. The Manchester CDOP promotes consistent safe sleep advice, published by the Manchester Local Care Organisation Safer Sleeping Practice for Infants[23].

The Manchester Reducing Infant Mortality Strategy Steering (RIMS) Group works to the objectives of the Manchester Reducing Infant Mortality Strategy 2019 -2024. The strategy is sectioned into five themes, twenty-four objectives and sixty eight individual eight workstreams.

Themes:

- Quality, safety and access to services
- Maternal and Infant Wellbeing
- Addressing the Wider Determinants of Health
- Safeguarding and Keeping Children Safe from Harm
- Providing support for those bereaved and affected by baby loss

The work described by the strategy is very varied. Some is about clinical care and some is about the wider determinants of health, which is why Infant Mortality correlates with socio-economic disadvantage and why, perhaps, the infant mortality rate in Manchester rose from 6.4 per 1000 in 2015-17 to 6.7 per 1000 in 2019-21. This is higher than the England average of 3.9 per 1000.

It is clear that many of the causes of infant mortality are modifiable and relate directly to the lifestyle or living conditions of the mother, baby and its family, such as smoking in pregnancy, babies living in smoke filled homes, parents living in inadequate housing leading to co-sleeping etc, as detailed above. Therefore, the response which is needed is a whole system and multi-agency approach. It can neither be solely clinical or solely social.

As we started to emerge from the pandemic, the RIMS steering group continued to meet quarterly.

Some of our priority work continued, such as Safe Sleeping and Smoking in Pregnancy work. However, new workstreams emerged, not least a collaboration between NHS commissioners, Manchester City Council and Manchester University NHS Foundation Trust to deliver COVID-19 vaccinations “in house” in a maternity

[22] https://www.manchestersafeguardingpartnership.co.uk/resource/cdop/
[23] https://www.manchestersafeguardingpartnership.co.uk/resource/safe-sleeping/

setting as part of routine maternity care. This is an approach which worked well for Smoking in Pregnancy Services probably because it reduces the number of services and places that a pregnant person has to engage with and midwifes and their teams are trusted professionals.

Nationally, Measles rates are increasing, and Measles can be fatal. Children aged under 12 months old are at particular risk. Measles can be prevented by the Measles, Mumps and Rubella (MMR) vaccination in the first year of life with a second dose by the age of 5. Very worryingly, the percentage of children who have received two doses of the MMR vaccine at 5 years old have fallen quite rapidly since 2018 and are now 77.3% in 2021-22 compared to an England rate of 85.7% in the same year. Both figures are concerning because vaccination rates of 95% are required to give “herd immunity” i.e. a level of protection from contagion at a population level. Manchester now has a locality plan for prevention and containment of Measles, as part of a Greater Manchester Protect and Contain plan.

In autumn 2022, the RIMS group became concerned about the cost-of-living crisis and particularly around the cost of energy. The specific concern was that if parents and carers of babies could not afford to heat their homes, they might wrap babies up to keep them warm and in doing so, inadvertently cause babies to overheat, which is a risk to life. A small, multi-agency group developed a local communications campaign of posters, social media messages and a film made by one of our own Health Visiting Team.

During 2022-23 the RIMS steering group began a piece of work around Genetic Literacy in conjunction with the Local Maternity and Neonatal Service, specifically aimed at the Pakistani population in Manchester. This work began after Manchester was identified as one of eight priority areas by NHSE. The Umeed Project, working alongside a Specialist Midwife aims to promote a healthy pregnancy for Pakistani women, whilst also educating, empowering and improving access for women, couples and families to Genetic Services in Manchester.

Our programme continues to develop, and priorities are to focus on a review of progress post pandemic, focus on more Smoke Free Homes promotion and developing an insightful and meaningful approach to maternal and infant health in communities experiencing racial inequalities in Manchester.

7.4 GREATER MANCHESTER RAPID RESPONSE (JOINT AGENCY RESPONSE)

The Greater Manchester Rapid Response Team was established in January 2009, to provide a rapid assessment of each sudden and unexpected death of an infant or child. The team is made up of Senior Paediatricians who provide a 24/7 on-call service across GM, working in close collaboration with partner agencies such as Greater Manchester Police (GMP), the GM Coroners, Health, and Children's Social Care.

Following changes to the national guidance, the service falls under the remit of a CDRM and is now known as a Joint Agency Response (JAR). Revisions to the national guidance meant that it was no longer a statutory requirement to investigate all sudden and unexpected deaths with a 'Rapid Response' Team. Instead, a JAR should occur in a more limited number of circumstances. The new guidance was discussed with the commissioners for the GM Rapid Response Service who requested that the on-call team continue to respond at the point of a child's death. It was agreed that there should not be a narrowing of the inclusion criteria for such a response, and that the on-call team continue to respond to all deaths that were not anticipated as a significant possibility 24 hours prior to the death, or when the collapse that precipitated death was similarly unexpected (as defined in the Working Together to Safeguard Children 2008). The decision to see the same cohort of children was strongly approved by the Steering Group, the GM CDOP Chairs, and the local Coroners.

An ongoing challenge to the service has been maintaining the on-call rota, as doctors have moved on to new posts or retired. There continues to be a national shortage of Paediatricians, and this has been reflected in difficulties recruiting into vacant posts. Despite the challenges, increased used of virtual meetings has had a very positive impact on attendance at both initial meetings and CDRMs.

Deaths subject to the JAR process usually remain open to the CDOP for a longer period due to pending coronial investigations. Until the Coroner has ascertained a cause of death, the CDOP is unable to confirm if the death was in fact a sudden and unexpected death in infancy (SUDI)/childhood (SUDC). Where the pathological cause of death is recorded as 'sudden infant death syndrome' or 'unascertained', at any age, these deaths are categorised by the Manchester CDOP as a sudden unexpected, unexplained death (excluding sudden unexpected death in epilepsy).

The GM JAR Lead continues to be an integral part of the Manchester CDOP, attending panel meetings to interpret medical terminology and supporting the implementation of the Child Death Review: Statutory and Operational Guidance (England).

7.5 CHROMOSOMAL, GENETIC & CONGENITAL ANOMALIES

Of the 35 cases closed, 8 deaths were categorised as chromosomal, genetic and congenital anomalies, majority of which were infant deaths (0-364 days of life) and 5 cases recorded Asian/Asian British. The Manchester CDOP continues to determine the relevance of consanguinity in deaths categorised as chromosomal, genetic and congenital anomalies. Consanguinity refers to a relationship in which a couple are blood relatives, for example first cousins, second cousins etc. Consanguinity increases the risk of genetic disorders known as autosomal recessive disorders. Parents who are both unaffected healthy carriers of a genetic disorder present a 1 in 4 (25%) chance that the child could be affected and a 50% chance that the child could be a healthy carrier with no sign of the disorder but could pass the unusual gene on to the

next generation. Unrelated parents have a 2% risk of having a child with a severe abnormality, whilst parents who are first cousins have a 5% risk and second cousins have a 3% risk. However, couples that are more closely related, such as a family with a history of cousin marriages going back generations, will have a higher risk of having a child with autosomal recessive disorders. The data evidenced the association of consanguineous relationships and an increased risk of autosomal recessive disorders, in correlation with Manchester's infant mortality rate, with Longsight being the most common ward of residence.

The Manchester University NHS Foundation Trust (MFT) provides one of the largest and most comprehensive multi-disciplinary clinical genetics units in UK and Europe providing integrated clinical and laboratory genetics services[24]. The aim of the regional genetic service is to provide a diagnostic, counselling and support service to individuals and their families with a genetic disorder affecting any body system at any age.

Practitioners can make referrals to the service for several reasons including:

- organisation of specialist prenatal diagnosis for a known familial genetic disorder
- diagnosis and counselling on diagnosis of foetal abnormality either on genetic testing or ultrasound
- investigation and diagnosis of congenital abnormality
- investigation and diagnosis of abnormalities of growth or development in childhood
- diagnosis of a metabolic disorder
- diagnosis if a possible genetic disease, including eye, renal, cardiac and neurological disorders with known or possible genetic basis
- strong family history of cancer
- concern regarding personal or family history of a genetic disease
- access testing of family members for carrier status for single gene (mendelian disorders) including presymptomatic or predictive gene testing when indicated.

The specialist genetic service which is an integrated clinical and laboratory genetics service, aims to provide diagnostic, counselling and support to families with a genetic disorder. The service also offers management, support and appropriate information for genetic conditions and offers pre-symptomatic diagnosis.

The Manchester CDOP works with the Specialist Geneticist to request information to review factors in relation to service provision. The Manchester CDOP reviews whether a referral to the genetic service was made and if the family engaged, to access additional support and counselling. There are health requirements regarding awareness raising amongst both practitioners and the community about the associated health factors and services available that can provide advice and support.

One of the key objectives of the Manchester Reducing Infant Mortality Strategy 2019-2024 included genetic literacy for individuals and communities, ensuring clear pathways and referral processes were in place to signpost families to genetic counselling support.

[24] https://www.mangen.co.uk/

Manchester's Department of Public Health will establish the Umeed* programme (volunteer peer support programme). Volunteers (Apis'*) will provide healthy pregnancy advice to Pakistani women at the early stages of their pregnancy (5-8 weeks) up to 28 days after delivery, with the aim to promote a healthy pregnancy and improve outcomes for women at increased risk of having a child with a genetic disorder. This project will be launched in Sept 2023 focusing on Cheetham Hill and Longsight wards.

**'Umeed' is an urdu word meaning Hope.*

**Api is an Urdu word to describe 'big sister'*

The Health Visiting Teams deliver a universal screening service which is key in in the identification and referral of congenital anomalies found in infants and children. Data from the Manchester CDOP highlighted clusters and hotspot wards cross the City, where infant deaths and factors relating to consanguineous relationships were identified. Close relative (consanguineous) marriage has recognised benefits for couples and families. However, this pattern is linked to an increased risk of genetic disorders. The Health Visiting Teams in these localities have been provided with specialist genetic literacy training, so that they can explore potential indicators in the community and refer families to genetic services, for individual assessment, genetic testing, and discussions regarding support available. This is a new speciality within the Health Visiting Teams and supports an improved understanding of how genetics is expected to impact positively on mortality and morbidly in the City.

8. 2022/2023 MANCHESTER CDOP RECOMMENDATIONS

CDOP INTEGRATION INTO THE DEPARTMENT OF PUBLIC HEALTH

Since the Manchester CDOP function was relocated into Public Health in 2020, there has been a greater connectivity to public health strategic priorities that underpin many of the potentially modifiable factors related to child deaths. These include housing/living conditions, domestic violence, unsafe sleeping arrangements, maternal and family smoking, family substance misuse, and maternal obesity. This has also given a greater focus on the CDOP data and the prevalence of deaths in under one-year olds in relation to the unacceptably high infant mortality experienced in the city.

RECOMMENDATION 1: The CDOP Manager will continue to work with Public Health colleagues in the development and delivery of the refreshed Reducing Infant Mortality Strategy.

GREATER MANCHESTER CDOP WORKFORCE

There has been a strong history of working together as a GM CDOP Network, however, there has been an increasing concern about the resilience of local systems which are viewed as a significant risk. The current CDOP workforce arrangements are fragmented with limited resilience with no consistency between job role, banding, terms and conditions, and responsibilities for the CDOP managers/co-ordinators.

The proposal to develop a single GM CDOP system and team to manage the death notifications, information collation, panel processes and outputs for each of the four-locality based CDOPs and thematic panels has not gained practical support, in part due to the re-organisation of the NHS across the GM footprint. The adoption of the national eCDOP notification system across the GM CDOPs in 2020 remains a solid component to enable a newly established team to work on a GM footprint.

RECOMMENDATION 2: Manchester CDOP continues to work with the other 3 GM CDOPs, GM Association of Directors of Public Health, and the broader integrated care system leadership – involving specialist human resource and finance expertise – to initiate a change programme to create a sustainable and flexible workforce model hosted by an appropriate organisation within GM.

9. APPENDICES

APPENDIX 1: MANCHESTER CDOP MEMBERSHIP

The Manchester CDOP membership includes:

1. Manchester CDOP Chair, Assistant Director of Public Health - Manchester Health and Care Commissioning, Manchester Population Health Team
2. Manchester CDOP Lay Representative, Therapy Services Team Leader - The Gaddum Centre
3. Deputy First Officer/Deputy Service Manager and Senior Paediatric Coroners Officer - Manchester City Coroner's Office *(ad hoc member)*
4. Detective Chief Inspector - Greater Manchester Police
5. Project Officer - Manchester City Council, Strategic Housing
6. Programme Lead - Manchester Health and Care Commissioning, Manchester Population Health Team
7. Head of Service Children's Community Nursing Team - Children's Community Palliative Care Team (STAR Team)
8. Senior Officer for QA of Safeguarding in Schools - Manchester City Council, Education
9. Head of Services Vulnerable Baby Service, Health Visiting South and Lead for Early Help and Prevention Manchester University NHS Foundation Trust Vulnerable Baby Service and Health Visiting Service - Manchester Local Care Organisation
10. Designated Nurse Safeguarding Children/Specialist Nurse Safeguarding Children - Manchester Health and Care Commissioning
11. Named Nurse for Safeguarding Children - Greater Manchester Mental Health Foundation Trust
12. Safeguarding and Quality Assurance Team Manager - Manchester Children's Social Care
13. Community Paediatrician, Designated Doctor for Child Death, GM Joint Agency Response Lead - Manchester University NHS Foundation Trust
14. General Manager - Child Adolescent Mental Health Services (CAMHS) *(ad hoc member)*
15. Bereavement Midwife - Manchester University NHS Foundation Trust, Saint Mary's Hospital
16. Consultant in Paediatric Emergency Medicine, Group Associate Medical Director - Manchester University NHS Foundation Trust
17. Consultant Paediatric Intensivist - North-West and North Wales Paediatric Transport Service Intensive Care Paediatric Transport Service
18. Clinical Nurse Lead- Learning Disabilities, Learning Disabilities Mortality Review (LeDeR) Programme - Manchester Health and Care Commissioning *(ad hoc member)*

APPENDIX 2: C. ANALYSIS PROFOMA CATEGORISATION OF DEATH

1. Deliberately inflicted injury, abuse, or neglect
This includes suffocation, shaking injury, knifing, shooting, poisoning & other means of probable or definite homicide; also, deaths from war, terrorism, or other mass violence; includes severe neglect leading to death.

2. Suicide or deliberate self-inflicted harm
This includes hanging, shooting, self-poisoning with paracetamol, death by self-asphyxia, from solvent inhalation, alcohol or drug abuse, or other form of self-harm. It will usually apply to adolescents rather than younger children.

3. Trauma and other external factors, including medical/surgical complications/error
This includes isolated head injury, other or multiple trauma, burn injury, drowning, unintentional self-poisoning in pre-school children, anaphylaxis & other extrinsic factors. Also includes proven medical and surgical complications or errors as the primary cause of death. Excludes Deliberately inflected injury, abuse, or neglect. (category 1).

4. Malignancy
Solid tumours, leukaemia's & lymphomas, and malignant proliferative conditions such as histiocytosis, even if the final event leading to death was infection, haemorrhage etc.

5. Acute medical or surgical condition
For example, Kawasaki disease, acute nephritis, intestinal volvulus, diabetic ketoacidosis, acute asthma, intussusception, appendicitis; sudden unexpected deaths with epilepsy.

6. Chronic medical condition
For example, Crohn's disease, liver disease, immune deficiencies, even if the final event leading to death was infection, haemorrhage etc. Includes cerebral palsy with clear post-perinatal cause.

7. Chromosomal, genetic, and congenital anomalies
Trisomies, other chromosomal disorders, single gene defects, neurodegenerative disease, cystic fibrosis, and other congenital anomalies including cardiac.

8. Perinatal/neonatal event
Death ultimately related to perinatal events, e.g., sequelae of prematurity, antepartum and intrapartum anoxia, bronchopulmonary dysplasia, necrotising enterocolitis, post-haemorrhagic hydrocephalus, irrespective of age at death. It includes cerebral palsy without evidence of cause and includes congenital or early-onset bacterial infection (onset in the first postnatal week).

9. Infection
Any primary infection (i.e., not a complication of one of the above categories), arising after the first postnatal week, or after discharge of a preterm baby. This would include septicaemia, pneumonia, meningitis, HIV infection etc.

10. Sudden unexpected, unexplained death
Where the pathological diagnosis is either 'SIDS' or 'unascertained', at any age. Excludes Sudden Unexpected Death in Epilepsy (category 5).

10. ACKNOWLEDGEMENTS

Thanks are due to Manchester CDOP and Themed Panel multi-agency members for their attendance and commitment, and colleagues in the Manchester Department of Public Health who have contributed to the content of this annual report.

The Manchester CDOP remains continually thankful for the support from the Manchester Child Health Department, Manchester City Coroner's Office, Manchester City Register Office, and Manchester University NHS Foundation Trust (MFT) in supplying the necessary information required to conducted a thorough CDOP review.

Finally, thanks to Eesha Naeem, who took up the role of CDOP Co-ordinator in September 2022 for all her hard work in ensuring the Manchester CDOP works effectively and efficiently to produce the reviews undertaken.