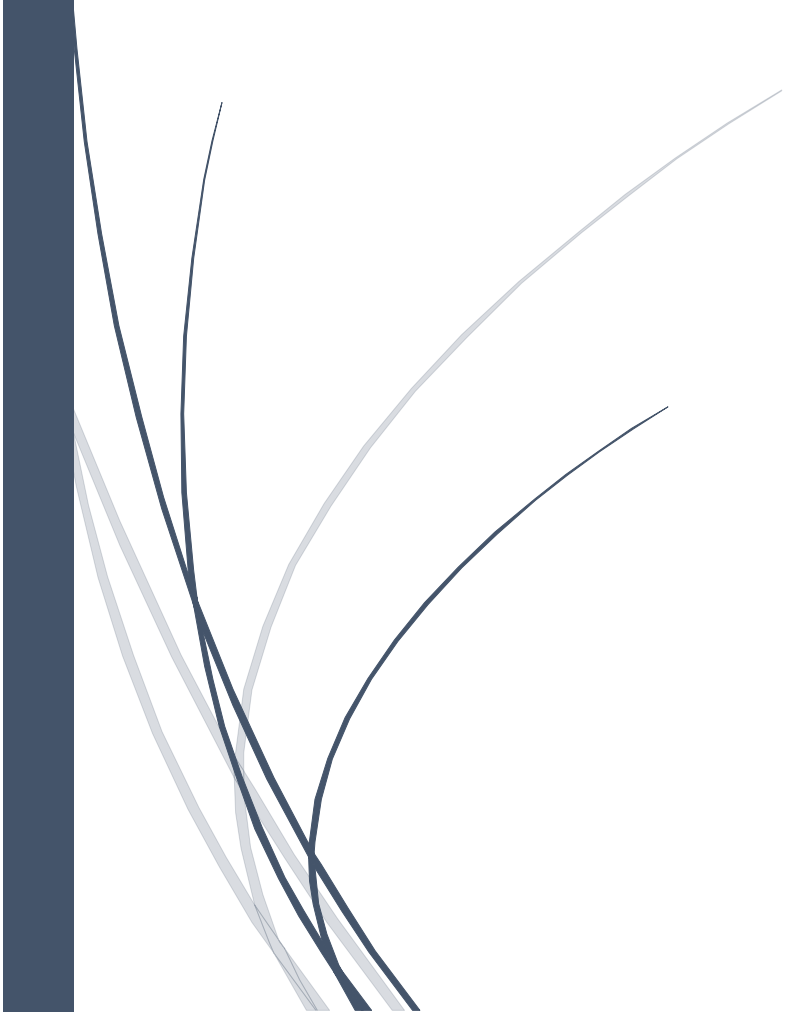
MSCB
MANCHESTER SAFEGUARDING CHILDREN BOARD

Manchester Child Death Overview Panel

2017 – 2018 Annual Report



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1. WELCOME & INTRODUCTION

Welcome to the tenth annual report of the Manchester City Child Death Overview Panel (CDOP), reviewing the deaths of children that are normally resident in the area of Manchester City, aged 0 - 17 years of age (excluding stillbirth and legal terminations of pregnancy). In line with Chapter 5 of Working Together to Safeguarding Children 2015 the CDOP has a statutory requirement to produce a local annual report based upon cases closed and the findings. This report bases its analysis on the number of cases closed between 1st April 2017 and 31st March 2018. The report aims to give some indication of the potential risk factors that are likely to contribute to Manchester's child death rate and suggest action that could be taken to address this.

Year on year the CDOP continues to strengthen the aggregated data to highlight key emerging themes and trends across the city. The Manchester CDOP has expanded its dataset outside the Department for Education (DfE) national requirement to gather additional information such as deprivation, ward, maternal body mass index (BMI), maternal age at time of delivery and breastfeeding. The richness of the data assists in the identification of any potential risk factors antenatally, postnatally and throughout the child's life, with the aim of reducing infant mortality across the City.

The Manchester City Coroner's Office and Register Office continue to provide excellent support in notifying the CDOP of all child deaths. The Manchester City Coroner's Office continues to work closely with the CDOP and provide regular updates at every stage of coronial investigations. This enables the CDOP to close cases in a timely manner and undertake a thorough review of the death.

The four Greater Manchester (GM) CDOPs continue to work together to improve consistency across the CDOPs and to produce an annual GM report. In addition, the GM Rapid Response Team, an on-call team of paediatricians available to attend unexpected child deaths 24 hours a day, 365 days a year, work with the local CDOPs and also produce an annual report. The CDOP continues to supply information and data to support the University of Bristol Learning Disabilities Mortality Review (LeDeR) Programme and The University of Manchester National Confidential Inquiry into Suicide and Homicide by People with Mental Illness (NCISH).

Barry Gillespie

Consultant in Public Health

Manchester Child Death Overview Panel Chair

2. ROLES & RESPONSIBILITIES OF THE CHILD DEATH OVERVIEW PANEL (CDOP)

The CDOP operates in line with the Department for Education statutory guidance Working Together to Safeguarding Children 2015 (Chapter 5: Child Death Reviews) as a Subgroup of the Local Safeguarding Children Board (LSCB). The LSCB functions in relation to child deaths are set out in Regulation 6 of the Local Safeguarding Children Boards Regulations 2006, made under section 14(2) of the Children Act 2004. The LSCB is responsible for:

(a) collecting and analysing information about each death with a view to identifying

(i) any case giving rise to the need for a review mentioned in regulation 5(1)(e)

(ii) any matters of concern affecting the safety and welfare of children in the area of the authority

(iii) any wider public health or safety concerns arising from a particular death or from a pattern of deaths in that area

and

(b) putting in place procedures for ensuring that there is a coordinated response by the authority, their Board partners and other relevant persons to an unexpected death.

The functions of the CDOP include:

- reviewing all child deaths, excluding those babies who are stillborn and planned terminations of pregnancy carried out within the law
- collecting and collating information on each child and seeking relevant information from professionals and, where appropriate, family members
- discussing each child's case, and providing relevant information or any specific actions related to individual families to those professionals who are involved directly with the family so that they, in turn, can convey this information in a sensitive manner to the family
- determining whether the death was deemed preventable, that is, those deaths in which modifiable factors may have contributed to the death and decide what, if any, actions could be taken to prevent future such deaths
- making recommendations to the LSCB or other relevant bodies promptly so that action can be taken to prevent future such deaths where possible
- identifying patterns or trends in local data and reporting these to the LSCB
- where a suspicion arises that neglect or abuse may have been a factor in the child's death, referring a case back to the LSCB Chair for consideration of whether a Serious Case Review (SCR) is required
- agreeing local procedures for responding to unexpected deaths of children
- co-operation with regional and national initiatives to identify lessons on the prevention of child deaths e.g. National Clinical Outcome Review Programme.

In reviewing the death of each child, the CDOP considers modifiable factors in the family environment, parenting capacity or service provision, and considers 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 aggregated findings from all child deaths inform local strategic planning, including the local Joint Strategic Needs Assessment (JSNA), on how to best safeguard and promote the welfare of children in the area.

3. MANCHESTER'S CHILD HEALTH PROFILE 2018

A key tool used in assessing deprivation is the Indices of Deprivation 2015 which ranks Manchester 5th out of 326 local authorities in England, 1 being the most deprived area. The Manchester Child Health Profile (2018)[1] provides an annual snapshot of child health in Manchester. Overall, comparing local indicators with England averages, the health and wellbeing of children in Manchester is worse than England. Children and young people aged 0 – 19 years account for 25.6% (138,700) of Manchester's total population. Children aged 0 – 4 years account for 7.2 % (39,200) of the total population.

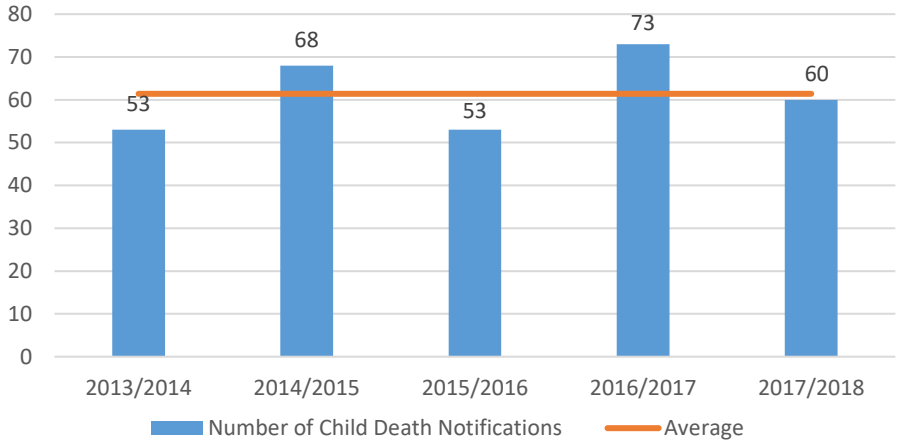
- Life expectancy at birth was recorded as 75.5 for boys and 79.4 for girls, which is lower than the national average (boys 79.5, girls 83.1).
- Manchester's infant mortality rate (6.3 per 1,000 live births) was worse than the England average (3.9 per 1,000 live births) with an average of 50 Manchester infants dying before age 1 each year.
- On average (2014 – 2016), there were 17 child deaths aged 1 – 17 years (16.2 per 100,000 children) which is higher than the England average (11.6 per 100,000 children).
- The Manchester teenage pregnancy rate (0.7) is worse than England (0.8), with 207 girls becoming pregnant in a year.
- 11.6% of women smoke while pregnant which is worse than England (10.7).
- The rate of mothers initiating breastfeeding in Manchester (66.6%) are worse than England (74.5%). By 6 to 8 weeks after birth, 42.4% of mothers are still breastfeeding which is worse than England (44.4%).
- Dental health is worse in Manchester than England (23.3%). 43.0% of 5 year olds have one or more decayed, filled or missing teeth.
- Levels of childhood obesity are worse than England (4-5 years 9.6%, 10-11 years 20%). 11.7% of children in Reception (4-5 years) and 25.4% of children in Year 6 (10-11 years) are obese.
- The rate of child inpatient admissions for mental health conditions at 74.3 per 100,000 is similar to England (81.5 per 100,000). The rate for self-harm at 303.1 per 100,000 is better than England (404.6 per 100,000).
- Manchester has the worst rate of emergency hospital admissions for asthma with a rate of 497.5 per 100,000 children (0 – 18 years) in comparison to the England average 202.8 per 100,000 children.

[1] https://fingertips.phe.org.uk/profile/health-profiles

4. 2017/2018 CHILD DEATH NOTIFICATIONS REPORTED TO CDOP

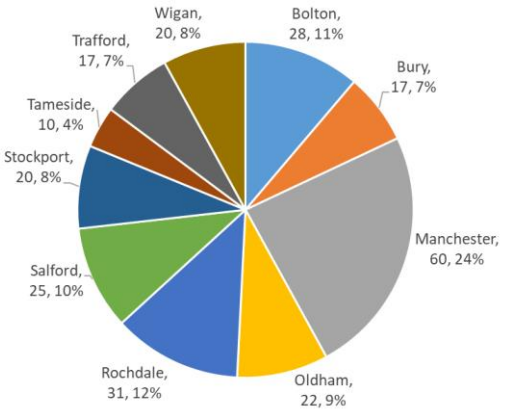
There was a total of 60 child death notifications reported to CDOP from 1st April 2017 to 31st March 2018. Owing to the Child Death Overview Panel (CDOP) review process, there is a time lapse between a death being reported and the case being discussed and closed at panel. This depends heavily upon the circumstances leading to death and the death being subject to investigations. From 1st April 2013 to 31st March 2018 there have been a total of 307 child deaths reported to the CDOP. There has been a slight variation in the number of child deaths reported to the panel year on year, with the average number of notifications being 61.4 deaths per year.

Table/Figure 1: Number of child deaths reported to the Manchester CDOP per year (2013/2018)



The child population in Manchester rose by over 20% between 2006 and 2016. The latest ONS 2017 mid-year estimates projects Manchester's child population (0 – 17 years) as 121,182, accounting for 22% of the total population (545,501). With a total of 60 child death notifications reported to CDOP during 2017/2018, this would indicate Manchester's overall child death rate as 4.95 per 10,000 children aged 0 – 17 years. A total of 250 deaths were notified to the four Greater Manchester CDOPs in 2017/18, of which 24% of the children resided in Manchester City.

Table/Figure 2: Number of 2017/2018 child deaths reported to Greater Manchester CDOPs



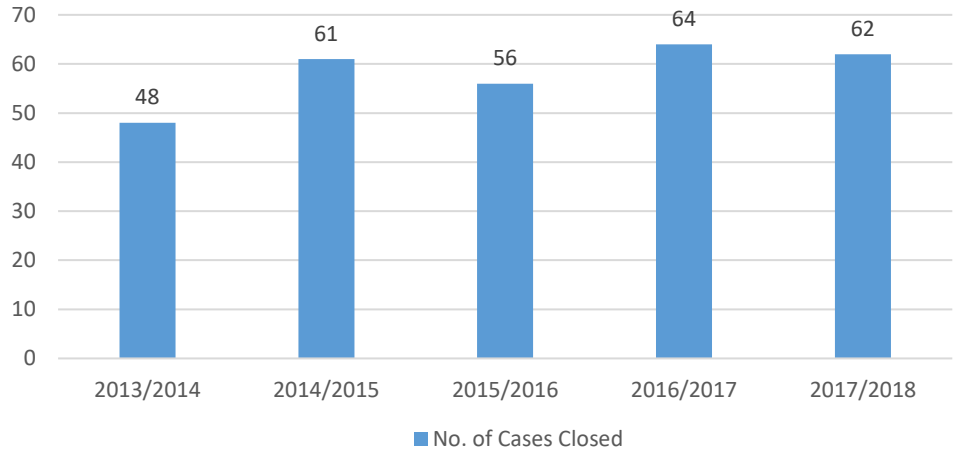
Child Death Overview Panel	No. of child death notifications	
Bolton, Salford, Wigan CDOP	73	29 %
Bury, Oldham & Rochdale CDOP	70	28 %
Manchester CDOP	60	24 %
Stockport, Tameside & Trafford CDOP	47	19 %
Greater Manchester	250	100 %

5. 2017/2018 CASES CLOSED BY CDOP

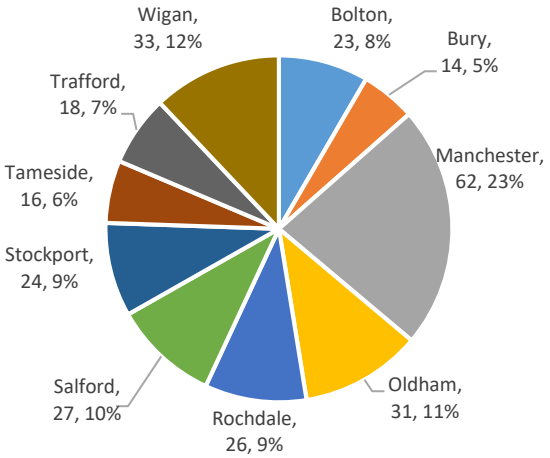
5.1 A Summary of Cases Closed by CDOP (April 2017 – March 2018)

This annual report contains data regarding the 62 cases discussed and closed by the CDOP from 1st April 2017 to 31st March 2018. 33 (53%) of the deaths occurred in 2017/2018 and the remaining 29 (46%) are historical cases where the death occurred prior to 1st April 2017. For deaths that occurred during 2017/2018, it would appear that there has been an increase in the number of cases subject to coronial investigations, criminal proceedings and other reviews such as Serious Case Reviews. Depending on the circumstances leading to death and the nature of the death, this impacts on the number of cases closed by the CDOP. To undertake a comprehensive review of the death, the CDOP will not review a case until all investigations have concluded and the necessary reports have been submitted to panel for consideration. Cases that are subject to investigations may remain open for a number of years thus impacting on the timescale of which the CDOP closes the case. There was a total of 274 cases closed across Greater Manchester in 2017/18, 109 (44%) of those notified in the same period.

Table/Figure 3: Number of death closed by the Manchester CDOP per year (2013/2018)



Table/Figure 4: Number of 2017/2018 Greater Manchester CDOP cases closed



Child Death Overview Panel	No. of cases closed	
Bolton, Salford, Wigan CDOP	83	30 %
Bury, Oldham & Rochdale CDOP	71	26 %
Manchester CDOP	62	23 %
Stockport, Tameside & Trafford CDOP	58	21 %
Greater Manchester	274	100 %

Table/Figure 5: Cases closed by age at time of death (2017/2018)

Age Group	No. Cases Closed	
0 - 27 days	25	40 %
28 - 364 days	16	26 %
1 - 4 years	8	13 %
5 -9 years	7	11 %
10 - 14 years	<5	<5 %
15 - 17 years	5	8 %
Total	62	100%

Of the 62 cases closed, 29 (47%) cases were female and 33 (53%) male. 25 (40%) infants were neonatal deaths (babies who died under 28 days of life). A further 16 (26%) died before their first birthday (28 - 364 days), highlighting infants under the age of 1 as the most vulnerable group, accounting for 66% of the cases closed. Of the 25 neonatal deaths, 11 of these had one or more modifiable factors identified in the review that contributed to vulnerability, ill-health or death of the infant.

Table/Figure 6: Cases closed by ethnicity (2017/2018)

Ethnic Grouping	No. Cases Closed	
White	23	37 %
Mixed / Multiple ethnic groups	6	10 %
Asian / Asian British	18	29 %
Black / African / Caribbean / Black British	14	23 %
Other ethnic group	<5	<5 %
Total	62	100%

Reviewing the child's ethnicity highlights the largest number of deaths were White children (23, 37%). There was a total of 39 cases closed from the BME community. 29% (18) of these children were of Asian/Asian British heritage and 23% (14) were Black/African/Caribbean/Black British. Breaking the data down into specific BME ethnic groups identifies deaths being most prevalent in the Pakistani (16, 25%) and African (14, 22%) communities.

A total of 41 (66%) deaths were classified as 'expected' (22 of which were neonatal deaths) and 21 (33%) classified as 'unexpected'. An unexpected death is defined as the death of a child which was not anticipated as a significant possibility 24 hours before the death or where there was a similarly unexpected collapse leading to or precipitating the events which led to the death.

Of the 62 cases closed, 3 cases were subject to a Serious Case Review. 1 child was subject to a Child Protection Plan at the time of death and 1 child had previously been subject to a Plan prior to death.

The CDOP is responsible for reviewing each child death to categorise the cause of death. This classification is hierarchical, where more than one category could reasonably be applied, the highest up the list is selected (see Appendix 3 description of each category). The CDOP identifies modifiable factors in the review, although categorising a death as modifiable 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:

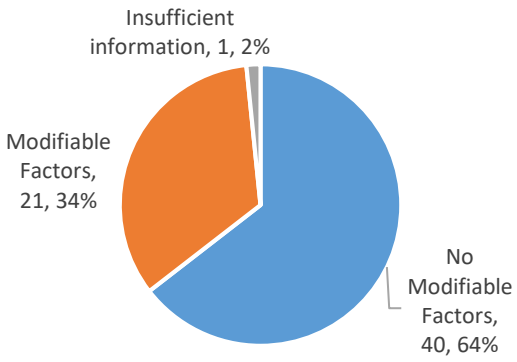
1. **Modifiable factors identified:** *The panel have identified one or more factors, in any domain, which may have contributed to the death of the child and which, by means of locally or nationally achievable interventions, could be modified to reduce the risk of future child deaths*
2. **No Modifiable factors identified:** *The panel have not identified any potentially modifiable factors in relation to this death*
3. **Inadequate information upon which to make a judgement**

Table/Figure 7: Greater Manchester CDOP 2017/2018 categorisation of death compared to Manchester 2017/2018 and 2013/2018 5 year snapshot data

	Category of Death	GM 2017/2018 Cases Closed		Manchester 2017/2018 Cases Closed		Manchester 2013/2018 Cases Closed	
1	Deliberately inflicted injury, abuse or neglect	<5	<5 %	-	0 %	<5	<5 %
2	Suicide or deliberate self-inflicted harm	10	4 %	<5	<5 %	<5	<5 %
3	Trauma and other external factors	15	5 %	<5	5 %	11	4 %
4	Malignancy	20	7 %	6	10 %	17	6 %
5	Acute medical or surgical condition	11	4 %	4	6 %	12	4 %
6	Chronic medical condition	16	6 %	3	5 %	15	5 %
7	Chromosomal, genetic and congenital anomalies	67	24 %	19	31 %	84	29 %
8	Perinatal/neonatal event	102	37 %	20	32 %	118	41 %
9	Infection	12	4 %	-	-	<5	<5 %
10	Sudden unexpected, unexplained death	19	7 %	6	10 %	24	8 %
	Inadequate information to make a judgement	-	-	-	-	<5	<5 %
	Total	274	100 %	62	100 %	291	100 %

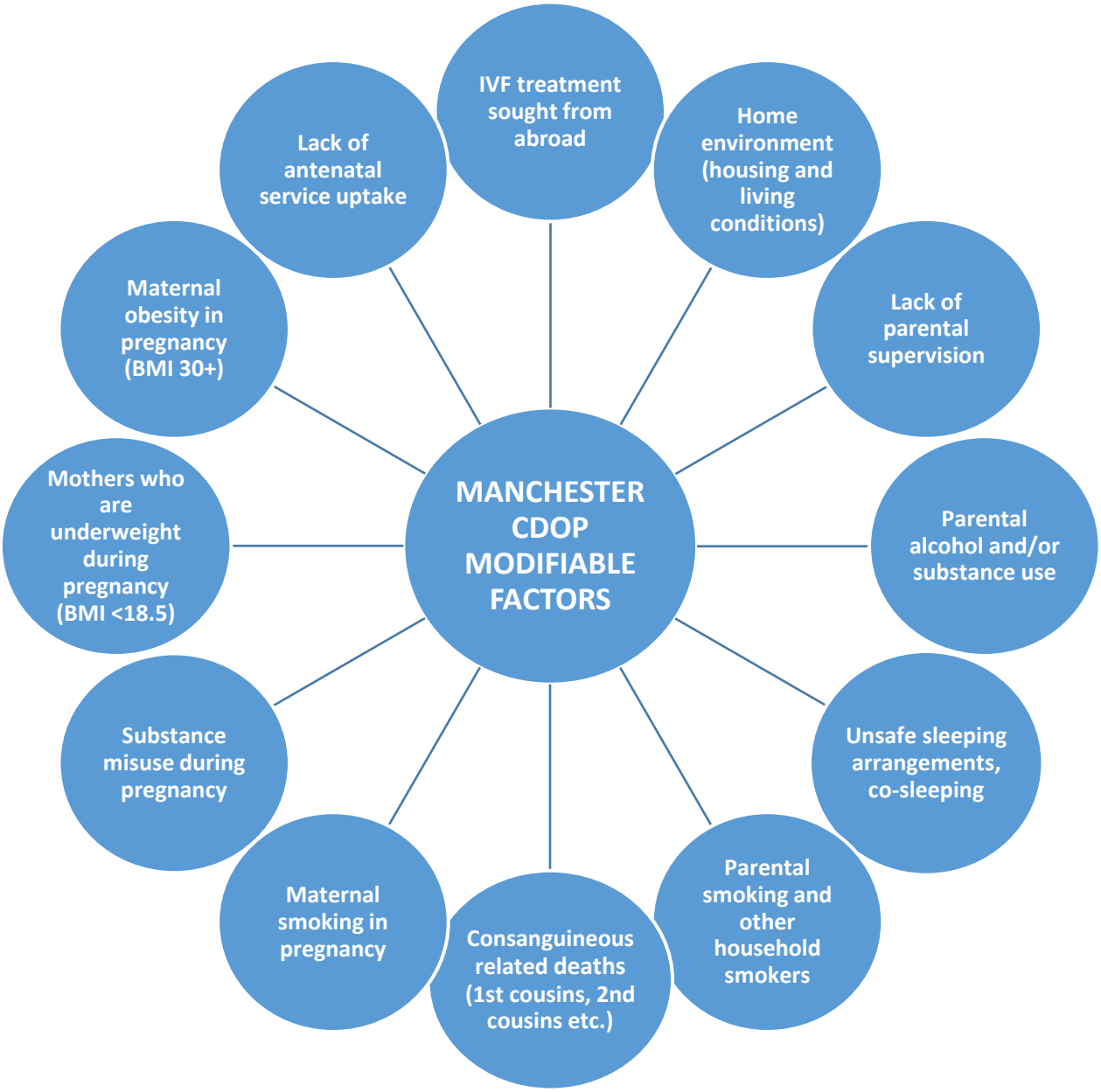
Of the 62 cases, the largest number of deaths were categorised as perinatal/neonatal event (20, 32%) and chromosomal, genetic and congenital anomalies (19, 31%). These categories have remained fairly stable over time across Greater Manchester, with the largest proportions always being classified as resulting from perinatal/neonatal event or from genetic and congenital anomalies. These two categories also had the largest number of modifiable factors identified in the review. There was a total of 21 cases where the CDOP identified modifiable factors, which were recorded in deaths categorised as perinatal/neonatal event (9, 43%), chromosomal, genetic and congenital anomalies (5, 24%), sudden unexpected, unexplained death (19%), acute medical or surgical condition (10%) and trauma and other external factors (5%).

Cases categorised as chromosomal, genetic and congenital anomalies are often expected deaths due to the nature of the child's condition however, issues within service provision and whether or not families have accessed appropriate genetic counselling can be highlighted as a modifiable factor. The same applies for deaths categorised as a perinatal/neonatal event, as the majority of deaths are expected although there may be a number of risk factors both antenatally and postnatally, which increase the likelihood of infant death.



5.2 A Summary of Modifiable Factors Identified in the Review

Of the 62 cases closed, the CDOP identified modifiable factors in 21 (34%) child deaths, where one or multiple risk factors contributed to the vulnerability, ill-health or death of the child:



Of the 21 deaths with modifiable factors, 19 (90%) of the children died before the age of 1, 11 (52%) of which were neonatal deaths (<28 days of life). The most common modifiable factors identified was smoking in pregnancy and maternal obesity (BMI 30+) in pregnancy. Modifiable factors act as multiplier effect, where there are two or more factors present, the vulnerability of the child increases.

Of the 274 cases closed across Greater Manchester in 2017/2018, modifiable factors were identified in 110 (40%) cases. In these 110 cases, 175 modifiable factors were cited; the most common being smoking (in the household or in pregnancy), high BMI of mother, alcohol/substance misuse by parent, access to or uptake of health/care services and unsafe sleeping (in that order). This is an increase from previous years in keeping with the national trend. Greater Manchester is consistently above the national average for modifiable factors identified but this is a somewhat subjective decision so can be hard to compare. The Manchester CDOP continues to review cases in line with the agreed set standard of modifiable factors as developed by the Greater Manchester CDOP Network. To ensure consistency the four CDOPs have developed a standard of identifying modifiable factors when categorising cases:

Modifiable Factors in Perinatal/Neonatal Deaths

- Maternal smoking in pregnancy
- Maternal Obesity (BMI 30 +)
- Mothers who are Underweight (BMI < 18.5)
- Unbooked pregnancies
- Concealed pregnancies
- Necrotizing Enterocolitis (NEC) where the baby was not fed expressed breast milk

Modifiable Factors in Sudden Unexpected, Unexplained Deaths

- Unsafe sleeping arrangements (co-sleeping bed/sofa)
- Parental smoking

Modifiable Factors in Consanguineous Related Deaths

- Where there has been an older sibling who has died or is affected by the same genetic autosomal recessive disorder

6. CDOP TRENDS & EMERGING THEMES

6.1 Neonates & Infant Deaths (0 – 364 Days of Life)

Of the 62 cases closed, a large proportion of the deaths occurred in the neonatal period (<28 weeks gestation) accounting for 40% (25) of the total child deaths. A further 16 (25%) infants died before their first birthday, highlighting 66% (41) of the total child deaths occurred in the first year of life making children under the age of 1 the most vulnerable age group. Figures were the same for Greater Manchester, with under 1s making up 65% of the cases closed and 45% under 28 days.

Table/Figure 8: Comparing the impact of gender, ethnicity and deprivation of infants under the age of 1 in Manchester (2017/2018)

Characteristic		Manchester Infant Deaths Aged 0 - 364 days		* Manchester Child Aged 0 - 4 Population	
Sex	Male	21	51 %	19,685	51 %
	Female	20	49 %	18,779	49 %
Ethnicity	White	15	37 %	17,344	48 %
	Mixed/Multiple ethnic groups	5	12 %	4,038	11 %
	Asian/Asian British	11	27 %	8,237	23 %
	Black/African/Caribbean/Black British	10	24 %	4,952	14 %
	Other ethnic group	-	-	1,842	5 %
Deprivation	Quintile 1 (most deprived)	32	78 %	-	72.1%
	Quintile 2	7	17 %	-	-
	Quintile 3	<5	5 %	-	-
	Quintile 4	-	-	-	-
	Quintile 5 (least deprived)	-	-	-	-

* Source: Sex: ONS 2017 Mid-year estimates. Ethnicity: ONS 2011 Census. Deprivation: 2015 IMD

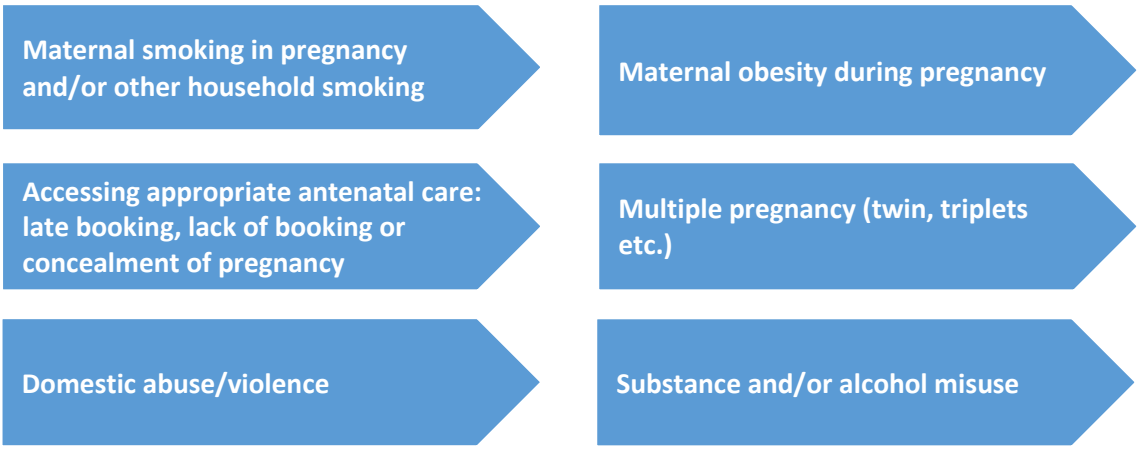
Of the 25 neonatal deaths, the majority of infants were born prematurely. Babies born under 24 weeks gestation have a significantly reduced chance of survival. The NHS determines births at the gestation of 37 weeks and over as full term pregnancies. Any delivery under 37 weeks gestation is classified as a premature birth, with those delivered under 26 weeks gestation classified as extremely premature[2].

Table/Figure 9: Neonatal deaths and the gestation at time of delivery (2017/2018)

Neonatal Deaths (<28 days)	No. Cases Closed	
Extremely Premature (<26 weeks)	14	56 %
Premature (26 weeks to <37 weeks)	4	16 %
Full Term (37+ weeks)	6	24 %
Not Known	1	4 %
Total	25	

[2] http://www.nhs.uk/conditions/pregnancy-and-baby/pages/premature-early-labour.aspx

Prematurity can also significantly reduce the infant's birth weight. Low birth weight (less than 2500g) is also a contributing factor for both deaths in infancy and poor health outcomes in later life. Of the 25 neonatal deaths, 19 (76%) infants were born with a low birth weight and 5 (20%) had a birth weight of over 2500 grams (there was 1 death where birth weight was not known). When reviewing infant deaths, a number of contributing risk factors relating to the mother's pregnancy may be relevant such as:



All of these associated factors either increase the risk of prematurity, or that the infant will not be born in the best possible condition.

Smoking in Pregnancy

Of the 41 infant deaths under the age of 1, 8 (20%) mothers stated that they smoked during pregnancy. A further 7% of mothers stated that they did not smoke in pregnancy but smoked postnatally. In terms of smoking in pregnancy, Manchester has benefitted from major investment from the Greater Manchester Health and Social Care Partnership whereby a gold standard smoking cessation programme is being rolled out across Greater Manchester specifically for women who smoke in pregnancy. This programme is called Baby Clear. Part of the programme is an enhanced model for those women most likely to smoke and those who may find it most difficult to stop. Rolling Baby Clear out across Manchester is challenging for various reasons, but the Tobacco Control Lead of Population Health and Wellbeing Team is working closely with the Greater Manchester Baby Clear Team to achieve a successful roll out.

The Tobacco Control Lead has also initiated a multi-agency workstream, as a Subgroup to the Manchester Tobacco Alliance, which will specifically work on Smoke Free Homes. The ambition is that all children in Manchester will grow up in a smoke free environment. The Manchester Tobacco Alliance, with the backing of the Manchester Health and Wellbeing Board will oversee the programme described in the new Tobacco Plan to ensure that all workstreams are taken forward.

Maternal Obesity in Pregnancy

Another risk factor is mother's body mass index (BMI) during pregnancy, where mother has a BMI under 18.5 (underweight) or a BMI of 30+ (obese/morbidly obese). Maternal obesity in pregnancy can lead to increased health risks for the mother (e.g. miscarriage, high blood pressure) and the baby (e.g. still-birth and problems such as diabetes and obesity in later life). To ensure consistency, the four Greater Manchester CDOPs have agreed to categorise mothers with a BMI recorded as underweight, obese and morbidly obese as a modifiable factor in deaths that are categorised as perinatal/neonatal event. Of the 20 deaths categorised as a perinatal/neonatal event, the following maternal BMIs were recorded at time of booking:

Table/Figure 10: Deaths categorised as Perinatal/neonatal event and mothers BMI at time of booking (2017/2018)

Perinatal/neonatal event: Mothers BMI at Time of Booking	No. Cases Closed	
Underweight (BMI Under 18.5)	<5	5 %
Healthy (BMI 18.5 - 24.9)	6	30%
Overweight (BMI 25 - 29.9)	5	25 %
Obese (BMI 30 - 39.9)	6	30 %
Morbidly Obese (BMI 40+)	<5	10 %
Total	20	100%

There was a total of 8 (40%) mothers with a BMI of 30+ (obese, morbidly obese), of which 5 mothers were aged 30+ at the time of delivery. Whilst figures are small, it would appear that there is an emerging theme in mothers aged 30+ with an increased BMI in comparison to mothers who delivered in their twenties.

Manchester City Council Population, Health and Wellbeing (Public Health) commissions ABL Health to deliver Tier 2 (BMI >25) and Tier 3 (BMI >30) weight management services which pregnant women (18 years and over) who are overweight/obese are eligible to access. Both services include support on healthy eating, increasing physical activity and behaviour change. The Tier 3 service includes psychological therapy and (where appropriate) pharmacotherapy. Midwives can refer pregnant women to the Tier 3 specialist service following the 12th week of pregnancy, and the provider maintains contact until six weeks post birth for onward referral.

6.2 Sudden & Unexpected Death in Infancy/Childhood (SUDI/SUDC)

Of the 62 cases closed, 6 (10%) deaths were categorised as a sudden unexpected, unexplained death where the pathological cause of death remains unascertained. There are a number of common risk factors that contribute to sudden and unexpected deaths in infancy (SUDI) such as, unsafe sleeping arrangements, co-sleeping (with adults or other children), overheating, smoking and alcohol/substance misuse. It should be noted that these risks act as multiplier effect where two or more are present. Unsafe sleeping arrangements can also increase risk of overheating which is a contributing factor in a number of SUDI cases. Co-sleeping is particularly dangerous if the

carer has consumed alcohol or ingested substances, which may limit their awareness. Undertaking a 5 year snapshot of cases closed from 1st April 2013 to 31st March 2018, highlights 24 SUDC deaths, 15 (62%) of which had modifiable factors identified in the review which contributed to the vulnerability, ill-health or death of the infant, such as:

- Maternal smoking in pregnancy
- Substance misuse during pregnancy
- Parental smoking and other household smoking
- Unsafe sleeping arrangements, co-sleeping (bed and/or sofa)
- Overheating (temperature of the home)
- Alcohol and/or substance use on the evening of the event
- Home conditions and environment (damp, cluttered)

Safer Sleeping

The CDOP continues to endorse the Manchester University NHS Foundation Trust Safer Sleeping Practice for Infants message:

> ***'The safest place for a baby to sleep is on their back, in a Moses basket or cot, in a room with the parent or carer for the first six months (DoH 2009, NICE 2014). This advice is the same for all times of the day and night when the baby is sleeping (Lullaby Trust 2009)'***

Work remains ongoing to raise awareness of the safer sleep messages via MSB training events and the supply of materials from The Lullaby Trust to embed the advice in multi-agency practice. Guidance and further information on how to reduce the risk of SUDI/SUDC is available via the Manchester Safeguarding Board (MSB) website www.manchestersafeguardingboards.co.uk/resource/safe-sleeping/.

Infant Feeding

Infants that are breastfed generally experience a lower risk of SUDI but it will not necessarily offset the risk of the factors listed above. The Manchester Infant Feeding Group meet bi-monthly and has membership from the city's CCGs (midwifery, health visitors and other nursing staff) and Population Health and Wellbeing. They have developed an action plan and communications campaigns to target key areas of intervention, including: increase the number of 'breastfeeding-friendly' venues and businesses across the city; ensure groups most in need (e.g. young mothers) are targeted; held an inaugural forum to expand joint working across the city; encourage businesses to have clear and visible breastfeeding policy; influence the education sector; and increase peer support provision. A specialist and peer infant support package recently established for north Manchester secures additional capacity to support more women to continue to breastfeed longer.

6.3 Smoking

Household smoking continues to have a negative impact on the general health of children, and it is probable that some of the infant deaths in Manchester may have been prevented if we reduced smoking rates in our population. Smoking remains the main contributing risk factor for child death in Manchester. Of the 21 cases with modifiable factors, smoking was recorded as the key risk factor in 10 (48%) deaths. Maternal smoking in pregnancy and parental smoking in the home environment were highlighted as a key risk factors in deaths categorised as perinatal/neonatal event and sudden unexpected, unexplained death.

Smoking was also a contributing risk factors in deaths categorised as chromosomal, genetic and congenital anomalies and acute medical or surgical condition, where the child had an underlying health condition such as chronic lung disease, respiratory failure, asthma etc. which can be exacerbated by exposure to tobacco smoke. Manchester has the worst rate of asthma related hospital admissions with 497.5 admissions[3] per 100,000 children (under 19 years of age). Children and young people with asthma are at an increased risk of suffering an asthmatic attack when exposed to tobacco smoke and there continues to be links between smoking and asthma related deaths in Manchester.

Manchester Tobacco Control Plan

Manchester has finalised the new Tobacco Control Plan for 2018/2021. The plan outlines a whole system, multi-agency approach to reducing smoking rates in the city but also preventing children from starting smoking and protecting people of all ages, from the harm associated with exposure to tobacco. There is a major programme of investment and action around Tobacco Control taking place on the Greater Manchester footprint, including major new programmes for women who smoke in pregnancy and patients who receive hospital treatment. The work is the result of the Greater Manchester Tobacco Plan, "Making Smoking History". The new Manchester plan aligns fully with the Greater Manchester plan whilst localising some of the issues for the city. The Tobacco Control Plan sets out the target of reducing adult smoking prevalence from 21.7% to 15% by 2021 and reducing Smoking at the Time of Delivery (smoking in pregnancy) from 10.6% to 6%.

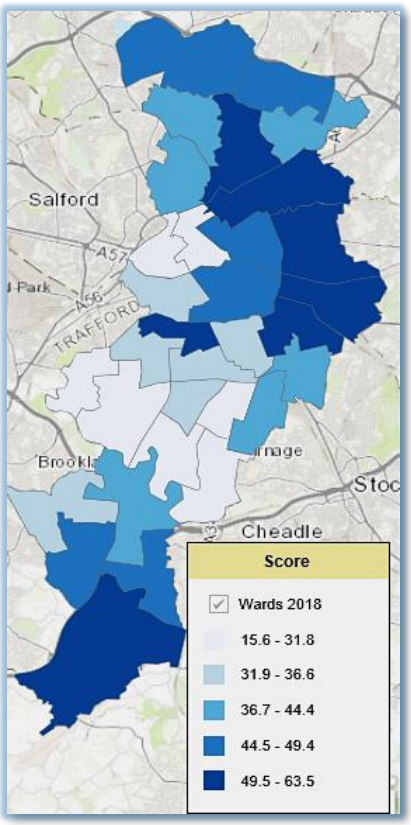
Reducing smoking in pregnancy and promoting Smoke Free homes have been identified as important priorities for Manchester's Tobacco Control Plan 2018/2021. Nationally, smoking is highlighted as the single most important modifiable risk factor in pregnancy in terms of preventing infant mortality. We know that children who grow up in homes where adults smoke will be three to four times more likely to smoke as adults. Children may also suffer other health issues if the home is not "smoke free," meaning that they breathe "secondary" or "environmental" tobacco smoke. As the average adult smoker spends £2000 a year on cigarettes, smoking often increases family

[3] 2015 Public Health England Profile: https://fingertips.phe.org.uk/profile-group/child-health/profile/child-health-overview/data#page/1/gid/1938132992/pat/42/par/R1/ati/102/are/E08000003/iid/10501/age/233/sex/4

poverty. Clearly, a further benefit of mothers being supported not to smoke in pregnancy is that they will have improved health outcomes themselves.

6.4 Deprivation

Deprivation continues to be a strong theme in Manchester child deaths and remains a year on year trend. Of the 62 cases closed, the majority of families resided in areas of deprivation with 51 (82%) families residing in quintile 1 (most deprived) and 9 (15%) families residing in quintile 2. There is a strong correlation with the higher rates of deaths in areas of deprivation across Manchester City and also Greater Manchester. The largest number of deaths occurred where the child/family resided in wards Longsight (6, 10%) and Moston (5, 8%).



28.2% of Manchester children (under 16 year) are living in poverty which is higher than figures across the North West (18.7%) and England (16.8%). 72.1% of Manchester children (under 18 year of age) live in the most deprived 20% of areas nationally (as measured by the 2015 Index of Multiple Deprivation (IMD). This contrasts with 37% of children in the North West living in the most deprived quintile.

Table/Figure 11: Comparing gender, ethnicity and deprivation of Manchester and Greater Manchester cases closed (2017/2018)

Characteristic		Manchester Deaths 0-17 Years		* Manchester Population 0-17 Years		GM Deaths 0-17 Years	
Sex	Male	33	53 %	61,967	51 %	157	58 %
	Female	29	47 %	59,215	49 %	115	42 %
	Indeterminate	-	-	-	-	<5	<5 %
Ethnicity	White	23	37 %	54,842	51 %	156	57 %
	Mixed/Multiple ethnic groups	6	10 %	10,494	10 %	18	7 %
	Asian/Asian British	18	29 %	23,807	22 %	69	25 %
	Black/African/Caribbean/Black British	14	23 %	14,165	13 %	25	9 %
	Other ethnic group	<5	<5 %	4,844	4 %	<5	<5 %
	Not Known		-	-	-	<5	<5 %
Deprivation	Quintile 1 (most deprived)	51	82 %	-	72.1%	168	61 %
	Quintile 2	9	15 %	-	-	52	19 %
	Quintile 3	<5	<5 %	-	-	26	9 %
	Quintile 4	-	-	-	-	9	3 %
	Quintile 5 (least deprived)	-	-	-	-	13	5 %
	Not Known	-	-	-	-	6	3 %

* Source: Sex: ONS 2017 Mid-year estimates. Ethnicity: ONS 2011 Census. Deprivation: 2015 IMD

For Greater Manchester 6 out of the 10 local authorities have higher IMD scores than the North West average, i.e. are more deprived than the average. These local authorities also have a higher proportion of their population living in the most deprived areas of the country than the North West average. Manchester ranks as the most deprived local authority and Trafford the least, with 41% and 3% of their respective populations living in the most deprived areas of the country.

6.5 Deaths within the Black and Minority Ethnicity (BME) Community

Reviewing the number of child deaths from the BME community, in comparison to the ONS 2011 Census highlights a higher levels of deaths from BME communities which reflects the patterns seen in previous years, although there is year to year fluctuations. Asian/Asian British (18, 29%) and Black/African/Caribbean/Black British (14, 22%) children continue to be overrepresented, in total accounting for 32 (52%) of the 62 cases closed. Overall Manchester's child population is made up of 22% Asian/Asian British and 13% who are of Black/African/Caribbean/Black British heritage.

Breaking the data down into specific BME ethnic groups identifies an overrepresentation in deaths of children who are Pakistani (child deaths 16, 25% / child population 14,465, 13%) and African (child deaths 14, 22% / 9,087, 8%). In previous annual reports the difference between ethnic groups and the causes of death have been noted, particularly for the category chromosomal, genetic and congenital anomalies which, in 2017/2018, accounted for 30% of the total deaths and 50% of the deaths in the Asian/Asian British category.

The same trend is mirrored across Greater Manchester with White British children making up roughly 80% of the GM population but only 52% of the cases closed. The next most common ethnicity of children whose deaths were reviewed are Pakistani (16%) and Black African (8%), who are significantly over-represented compared to the population.

6.6 Chromosomal, Genetic & 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 healthy carriers, of a genetic disorder present a 1 in 4 (25%) chance that the child could be affected. 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.

Of the 62 cases closed, there was a total of 11 cases where consanguineous relationships were identified as a contributing factor to vulnerability, ill-health or death of the child. Conditions such as Epidermolysis Bullosa,

Mitochondrial Metabolic Disorder, Polycystic Kidney Disease, Ataxia-telagiectasia, Aicardi-Goutieres Syndrome, Thalassemia, Complex Congenital Heart Disease and other congenital abnormalities were identified. 10 (91%) children were of Pakistani heritage and 6 (55%) infants died under the age of 1 (most common ward of residence Longsight). A number of the families also suffered from previous child deaths and/or have siblings who are affected by the same autosomal recessive disorder. It would appear that proportion of consanguineous related deaths indicate a link to the overrepresentation of child deaths from the Asian/Asian British community. This was also highlighted across Greater Manchester with just under half of the deaths of Pakistani children closed (20 / 44) being due to chromosomal or genetic anomalies, 16 of which recorded consanguinity as a risk factor.

Manchester University NHS Foundation Trust (MFT) Genetic Service

The Manchester University NHS Foundation Trust (MFT) provides a specialist Genetic Service which is an integrated clinical and laboratory genetics services. The aim of the service is to provide a diagnostic, counselling and support to families with a genetic disorder. Professionals can refer families to the service which offers diagnosis and risk estimation for individuals, pregnancies and the extended family. The service also offers management, support and appropriate information for genetic conditions and offers pre-symptomatic diagnosis. The CDOP reviews factors in relation to service provision, whether the family was referred to the service and if the family engaged to access additional support and counselling. There are health requirements regarding awareness raising amongst professionals and the community about the associated health risks. We need to start a conversation about inherited disorders within communities and raise understanding of genetics in the population, by encouraging conversations on inherited disorders and integrate messages on genetics into mainstream health promotion via the Manchester Infant Mortality Strategy.

6.7 Housing & Living Conditions

Across England 16.8% of children (under the age of 16) are from low income families. This figure is much higher for children residing in Manchester with 28.2% of children being from low income families[4]. While it is difficult to ascribe the cause of death directly to housing and living conditions, it is clear that where housing is inadequate for the needs of families, this can contribute to the risk and the vulnerability of children. Issues such as overcrowding living arrangements and damp home conditions affect the health and wellbeing of those residing in the property. In addition, the levels of hygiene and cleanliness in homes may provide indicators about the quality of care for children living there. Modifiable factors in relation to housing arrangements and living conditions were identified in cases categorised as a sudden unexpected, unexplained death and an acute medical or surgical condition. Risk factors identified included

- damp within in the property
- unsafe sleeping arrangements

[4] 2015 Public Health England Profile: https://fingertips.phe.org.uk/profile-group/child-health/profile/child-health-overview/data#page/1/gid/1938132992/pat/42/par/R1/ati/102/are/E08000003/iid/10501/age/233/sex/4

- smoking in the home environment
- overheating (temperature of the home)
- cluttered living space
- homelessness
- multiple moves/residence in a number of properties
- pets and poor personal hygiene

6.8 Domestic Violence & Abuse

The recognition of the extent of domestic violence and abuse and its impact on families and children is a key factor to be considered in addressing neglect and abuse in families with a view to preventing child deaths. There was a total of 10 cases where domestic abuse was known and a further 5 where domestic abuse was previously known. Whilst domestic abuse was noted in these cases there was no record that the incident(s) contributed to vulnerability, ill-health or death of the child.

6.9 Greater Manchester Rapid Response Team

Since January 2009 there has been an agreed Greater Manchester protocol for the rapid assessment of each sudden and unexpected death of a child (SUDC). A team of Senior Paediatricians provide cover via an on-call rota (24 hours per day, every day of the year) across Greater Manchester, working in close collaboration with partner agencies such as Greater Manchester Police, Greater Manchester Coroners, Health and Children's Social Care. Between 1st April 2017 – 31 March 2018, the Greater Manchester Rapid Response Service received a total of 56 SUDI referrals, 15 (27%) of which were Manchester children. Of the 60 2017/2018 CDOP child death notifications, 15 were reported to the Rapid Response Service for investigation:

- 5 children were under the age of 1
- 7 children were female and 8 male
- 8 children were White British
- 11 children resided in quintile 1 (most deprived)
- 14 cases remain open pending Coronial investigations, Serious Case Reviews (SCRs) and/or criminal proceedings.

Until the Coroner has ascertained a cause of death the CDOP is unable to confirm if the death was in fact a SUDI. Where the pathological cause of death is either 'sudden infant death syndrome' or 'unascertained', at any age, these deaths are categorised by the CDOP as Sudden unexpected, unexplained death (category 10) excluding Sudden Unexpected Death in Epilepsy (category 5). In line with national data and consistent with findings from previous years, the majority of cases occurred in children under 1 year of age with a peak in children aged between one month and six months of age. There is a second smaller peak in older teenagers who exhibit risk-taking behaviours. The proportion of cases in each age category has stayed relatively constant since 2009.

7. 2018/2019 RECOMMENDATIONS TO THE MANCHESTER SAFEGUARDING CHILDREN BOARD (MSCB)

Recommendation 1: Reducing Infant Mortality Strategy

The Population Health and Wellbeing Team within Manchester Health and Care Commissioning (MHCC) is to lead the development of a collaborative strategy and plan to take action to address infant mortality. Infant mortality is an indicator of the general health of an entire population. It reflects the relationship between causes of infant mortality and upstream determinants of population health such as economic, social and environmental conditions. Reducing infant mortality is a key priority within Manchester's Population Health Plan which will encompass key factors such as:

A steering group is to be established to oversee the development of a new strategy and plans to engage partners in its creation and implementation. The steering group will include partners from services such as Maternity Services, Health Visiting Services, Population Health, Strategic Housing, the CDOP and children's health services commissioning. The CDOP is to support the Population Health and Wellbeing Team in undertaking statistical analysis and highlight the key modifiable factors linked to infant mortality to enable partners to address the wider determinants.

Recommendation 2: CDOP Messages, Training & Development

As part of the 2016/2017 CDOP Annual Report, the CDOP produced a recommendation for the MSCB to '*develop a training event delivered to frontline practitioners to disseminate emerging themes and CDOP learning. The event will highlight the potential risks to children under the age of one, factors which may contribute to the vulnerability of infants, and will address key intrinsic factors'.*

The CDOP has worked with the Learning and Development Subgroup to progress this recommendation to host the Protecting Vulnerable Babies and Preventing Child Deaths Conference. The event will be held October 2018 to coincide with baby loss awareness week and will include a range of speakers covering subject matters such as sudden and unexpected deaths, abusive head trauma, safe sleeping arrangements and bereavement. The CDOP/MSCB will evaluate the course feedback and consider if the event should be delivered on an annual basis to multi-agency practitioners.

Recommendation 3: CDOP Newsletter & Communication

The CDOP is to produce a quarterly newsletter containing seasonal safety messages, aimed at parents, carers and members of the public, to raise awareness of the emerging CDOP trends. The newsletter will provide advice and information regarding services available with the aim of preventing future deaths of children and young people. This will be made available (size A4 leaflet format and A3 poster format) for CDOP members to disseminate within their agency and encourage staff to promote the use of the newsletter with service users and display in public waiting areas. The newsletter will also be made available via the Manchester Safeguarding Board website.

Alongside the newsletter, the CDOP is to continue the distribution of The Lullaby Trust Safer Sleep advice, to partners via CDOP members and MSB training events. The CDOP will establish links with the Serious Case Review Subgroup and provide quarterly updates on how work is progressing to reduce duplication and ensure consistency.

8. ACKNOWLEDGEMENTS

Thanks are due to everyone who has contributed to this work including those on the review panel, those completing the data returns and those that have advised/contributed to the content of this report.

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Manchester Population Health and Wellbeing Team
Manchester Health and Care Commissioning

Stephanie Davern
Child Death Overview Panel Co-ordinator
Manchester Safeguarding Boards

9. APPENDICES

Appendix 1: CDOP Membership

Name	Position	Agency / Department
Barry Gillespie	CDOP Chair, Consultant in Public Health	Manchester Health and Care Commissioning
Allison Jones	HM Senior Coroners Officer and Paediatric Coroners Officer	Manchester City Coroner's Office
Catherine Atkins	Project Officer	Manchester City Council, Strategic Housing
Chris Navin	Specialist Midwife, Rainbow Clinic (Bereavement)	Manchester Foundation Trust, Wythenshawe Hospital
Ethna Dillon	Head of Services / Lead for Early Help & Prevention	MFT Vulnerable Baby Service/Health Visiting South, Safeguarding
Joanna Heath	Designated Nurse Safeguarding Children	Manchester Health and Care Commissioning
Lis Meates	Advanced Nurse Practitioner	Children's Community Palliative Care Team
Lizzy Dierckx	SUDC Lead for Greater Manchester	Manchester Foundation Trust, Rapid Response Team
Louise Burcham	Specialist Midwife, Safeguarding	Manchester Foundation Trust, Wythenshawe Hospital
Maria Slater	General Manager	Child Adolescent Mental Health Services
Maria Strickleton	Safeguarding & Quality Assurance Manager	Manchester City Council, Social Care
Ngozi Edi-Osagie	Consultant Neonatologist	Manchester Foundation Trust
Rebecca Boyce	Detective Chief Inspector	Greater Manchester Police
Ruth Denton	Safeguarding Lead for Early Years	Education
Sarah Doran	Strategic Lead Children and Young People	Manchester Health and Care Commissioning
Suzy Emsden	Consultant	NWTS Intensive Care Paediatric Transport Service
Tina Moors	Postnatal Unit Ward Manager	Manchester Foundation Trust, Wythenshawe Hospital

Appendix 2: 2017/2018 CDOP Attendance

Agency	June 2017	September 2017	December 2017	March 2018
CDOP Chair, Public Health	✓	✓	✓	✓
Manchester City Coroner's Office	✗	✓	✗	✗
Manchester City Council, Housing	✓	✗	✓	✓
Wythenshawe Hospital, Midwifery	✗	✗	✗	✗
Vulnerable Baby Service/Health Visiting	✗	✓	✗	✓
Children's Community Palliative Care Team	-	-	-	✓
Rapid Response Service	✓	✓	✓	✓
Wythenshawe Hospital, Safeguarding Team	✗	✓	✓	✗
CAMHS	✗	✗	✗	✓
Manchester City Council, Social Care	✗	✓	✗	✗
CCG, Citywide Safeguarding Team	✓	✓	✓	✗
Early Years, Education	✗	✗	✓	✓
Intensive Care Paediatric Transport Service	✓	✗	✗	✓
Wythenshawe Hospital, Postnatal Unit	✗	✓	✗	✗
Greater Manchester Police	✓	✓	✓	✓

✓ In attendance

✗ Apologies or did not attend

Appendix 3: Categorisation of Death

The CDOP categorises the likely/cause of death using the following schema. This classification is hierarchical, where more than one category could reasonably be applied, the highest up the list is marked:

1 Deliberately inflicted injury, abuse or neglect

This includes suffocation, shaking injury, knifing, shooting, poisoning and 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

This includes isolated head injury, other or multiple trauma, burn injury, drowning, and unintentional self-poisoning in pre-school children, anaphylaxis and other extrinsic factors. Excludes deliberately inflected injury, abuse or neglect. (Category 1).

4 Malignancy

Solid tumours, leukaemias and 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

Trisomy's, 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, 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).