

BURY, ROCHDALE & OLDHAM

Child Death Overview Panel

Annual Report

April 2019 – March 2020

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Contents

Key Findings in Oldham, Bury and Rochdale (ORB)	3
Introduction	5
Infant Mortality in the UK and comparisons with ORB.....	5
Overview of Oldham, Bury and Rochdale Population aged under 18yrs	7
Reviews of child death cases 2019/2020	7
Closed Cases 2019/2020	7
Notified cases 2019/2020	9
Duration of Reviews.....	9
Expected/ unexpected deaths	10
Location of Death.....	11
Causes/Category of Death	11
Socio-demographics of cases closed in 2019/2020	12
Gender	12
Ethnicity	13
Inequalities & Index of Multiple Deprivation (IMD)	14
Age at death.....	16
Low birth weight and Prematurity.....	17
Modifiable and other risk factors	19
Factors Identified that may have contributed to vulnerability, ill health or death	19
Modifiable Factors	20
Other Identified Risk Factors	21
Understanding Modifiable Risk Factors and Local Initiatives	22
Maternal Raised BMI	22
Maternal Smoking in Pregnancy	23
Risk factors associated with Sudden, Unexpected, Unexplained Deaths: Parental Smoking & Unsafe Sleeping.....	23
Parental Alcohol/Substance Misuse	24
Consanguinity.....	25
Access to Appropriate Health/Social Care	25
Saving Babies Lives.....	25
Emotional/behavioural/mental/physical health condition in a parent or carer	26
Accidents and Trauma	26
Other Risk Factors:.....	27
Recommendations and Actions	28

Executive Summary:

This is an annual review of the Child Death Overview Panel (CDOP) data for Oldham, Rochdale and Bury (ORB), which combine to make one of the four CDOPs in Greater Manchester (GM). The CDOP reviews all child deaths under 18 years, but not including still births, late foetal loss or termination of pregnancy. The panel do not determine the cause of death but instead explores all the factors surrounding the death of the child. This learning enables required actions to be taken to protect the welfare of children and prevent future deaths.

Every year, each CDOP collates information on the cases that have been closed in the last 12 months in order to review for themes. This enables each area to identify any lessons learnt and recognise where population level interventions are required to reduce future child deaths. The report is supported by a GM report which gives an overview of patterns across all four CDOPS. In view of the relatively small numbers, and consequent difficulties with data analysis, this can be helpful when analysing for themes.

Key Findings in Oldham, Bury and Rochdale (ORB)

In 2019/2020 there were 79 notified cases and 29 closed cases. It is pertinent to note that this report looks in detail at the 29 closed cases, however these deaths did not necessarily occur in the last 12 months. Only once a case is closed is there the level of detail required to develop a narrative surrounding the death and therefore draw out themes. The duration of the review process can vary meaning that not all cases are closed in the same year that they are notified. The 79 notified cases in 2019/2020 are children that have died in the last 12 months, however at the time of writing this report these cases have not yet been reviewed. It is important to hold this in mind when interpreting the results of this report. This year closed cases numbers have been low across GM, and nationally, due to the introduction of new guidance and the additional workload associated with this change in practise. In addition, local factors such as a period of vacancy in the CDOP officer role and an organisational restructure of the local acute care provider, have created a backlog of cases which the team are currently working through.

The closed cases for the ORB CDOP equate to 33% of the total closed cases across GM, and ORB has a higher rate of notified cases, 5.09 per 10,000 compared to GM at 3.74 per 10,000. This is a consequence of the high rates of notified cases in Oldham, 7.22 per 10,000. The duration of review of cases was on average 579 days across ORB, this is longer than the average duration across GM which is 391 days. This is due the review duration in Oldham (633 days) and Rochdale (618 days), the highest in Greater Manchester. Many factors can affect the duration of the review process for example if a case requires a serious case review or Coroner's Inquest, the case will be delayed.

66% of the closed cases across ORB were expected deaths and 69% occurred within a hospital setting, with home setting being the second most common location. Males were overrepresented in closed cases at 62%, this is consistent with GM and national findings year on year, the reason for this is unclear.

Children are at the highest risk of death in the first year of life, and this is identified within the ORB data, 34% of cases were in the neonatal period and 58% in the first year of life. In relation to this, perinatal and neonatal events continue to be the most common cause of death, this is consistent with GM and national findings. Across ORB 35% deaths were caused by a perinatal/neonatal event, the leading cause of child death locally and nationally. The second most common cause of death was chromosomal/genetic/congenital abnormalities equating to 18% of the closed cases.

It is important to note that all the closed cases related to chromosomal, genetic and congenital abnormalities were children of BME ethnicity, and overall, there were higher rates of child deaths in BME groups across Bury and Oldham, but not Rochdale. This was consistent across GM and it is important that this inequality is addressed. Consanguinity is a known risk factor for congenital abnormalities and therefore an important risk factor when addressing child deaths. However, in the closed cases in this report where chromosomal, genetic and congenital causes were identified as the cause of death, consanguinity was not found to be a factor associated with the deaths.

Oldham and Rochdale also have higher rates of deprivation when compared to the North West and nationally. In relation to child deaths, there is a clear trend that as levels of deprivation increase, so do the number of child deaths. In ORB 31% of cases were in the most deprived decile and 79% were in the 5 lowest deciles, where decile 1 equate to the 10% most deprived of the population.

Modifiable risk factors are areas which may contribute to an increased risk of child death, and if addressed at a population level can reduce the risk of future child deaths. 31% of closed cases had modifiable risk factors identified. Modifiable factors recognised by GM that were identified in ORB cases included: Maternal obesity, maternal smoking in pregnancy, parental smoking and unsafe sleeping. Other factors identified included drug and alcohol use, hospital and clinical factors and housing issues. Maternal obesity was the most common risk factor identified followed by maternal smoking in pregnancy. In 59% of the child deaths occurring in children under the age of 1, the mother was classified as obese or overweight. Until recent years this factor was not documented by the CDOP. This data highlights the risks associated with maternal obesity, and that this modifiable factor is becoming increasingly common. This is also reflected in the GM data.

Introduction

The aim of this report is to analyse the child deaths within Oldham, Bury and Rochdale (ORB), to make observations on the causes and modifiable factors, in order to identify recurring themes. This helps guide population level interventions to reduce childhood mortality within the area. This annual report is presented to the Health and Wellbeing board to inform on the findings, the current interventions in place and future recommendations.

When a child dies a review process occurs to enable learning and to identify where changes could be made to prevent similar child deaths in the future. The Child Death Overview Panel (CDOP) will review the child deaths of all children under 18-years, but not including still births, late foetal loss or termination of pregnancy. Oldham, Bury and Rochdale combine to make one of the four CDOPS in GM.

The four CDOPs in Greater Manchester are split as follows:

- Manchester North – Oldham, Bury, Rochdale, CDOP
- Manchester South -Tameside, Trafford, Stockport CDOP
- Manchester West -Bolton, Salford, Wigan CDOP
- Manchester City -Manchester CDOP

Every year, each CDOP collates information on the child death in the last 12 months to enable thematic learning to guide decision making on population level interventions. The report is supported by a GM report which gives an overview of patterns across all four CDOPS. In view of the relatively small numbers, and subsequent difficulties with data analysis, this can be helpful when analysing themes.

This report includes information for cases closed between 1st April 2019 and 31st March 2020. During this time there were 129 closed cases and 241 notified cases of child death across GM. Within the ORB CDOP there were 29 closed cases and 79 notified cases. A case is defined as closed at the end of the CDOP review process.

Infant Mortality in the UK and comparisons with ORB

Over recent decades the UK's infant mortality rates has fallen, however the rate of improvement has slowed when compared to other European countries. After three years of slight increases in infant mortality between 2014 and 2017, a small decrease was noted in national data in 2018¹.

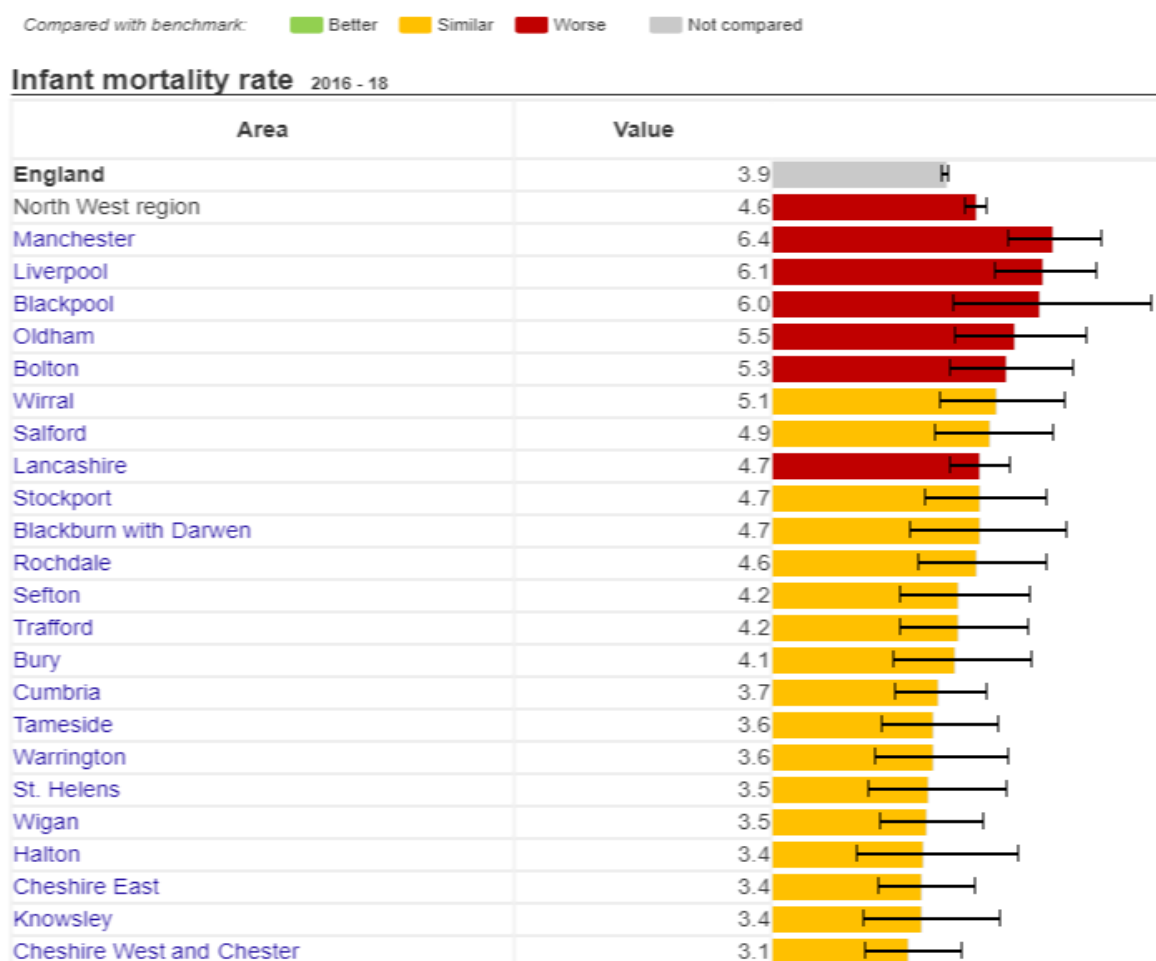
Across the UK, there are inequalities in child deaths and factors such as geography, deprivation and ethnicity affect rates of childhood mortality. For example, infant mortality rates are significantly higher in the 10% most deprived areas compared with the 10% least deprived areas in England. In

¹<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/childhealth/articles/ukdropsineuropeanchildmortalityrankings/2017-10-13>

addition, infant mortality rates are highest among babies of Pakistani ethnicity and lowest in babies of white ethnicity². These themes are reflected within this report.

The crude rate Infant mortality (2016-2018) across England is 3.9 per 1000 births, across the North West it is higher than nationally at 4.6 per 1000 births. Whilst Bury and Rochdale have a similar infant mortality rate to the rest of England, Oldham performs worse at 5.5 per 1000, this is demonstrated in figure 1.

Figure 1: Infant Mortality Rate, per 1000 births, by local authority, 2016-2018



Source: Office for National Statistics (ONS).
https://fingertips.phe.org.uk/search/Infant%20mortality#page/3/gid/1/pat/6/par/E12000002/ati/202/are/E08000002/iid/92196/age/2/sex/4/cid/4/tbm/1/page-options/ovw-do-0_cin-ci-4_car-do-1

²<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/childhoodinfantandperinatalmortalityinenglandandwales/2018#:~:text=1.-,Main%20points,of%203.6%20recorded%20in%202014>

Overview of Oldham, Bury and Rochdale Population aged under 18yrs

Across ORB there are approximately 153,288 children under the age of 18, equating to 24% of the total population of the area. There is minimal difference and when comparing the percentage of the population under 18 years of each local authority to GM and national population data. One thing to note is that Oldham has a slightly higher percentage of under 18 years within its population at 25%, as seen in Table 1.

Table 1: Number of children aged under 18 in Oldham, Bury and Rochdale			
Area	Under-18 Population size	Total Population	% population under -18
Bury	43,289	190,990	23%
Oldham	59,592	237,110	25%
Rochdale	50,407	222,412	23%
Bury, Oldham, Rochdale (ORB)	153,288	650,512	24%
Greater Manchester (GM)	644,540	2,835,686	23%
England	12,642,441	56,286,961	22%

Source: Mid-2019: April 2020 local authority district codes version of this dataset <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

Reviews of child death cases 2019/2020

Closed Cases 2019/2020

In 2019/2020 there were 29 closed cases across the ORB CDOP. As seen in table 2, the closed cases in ORB account for 23% of GM closed cases. Oldham has the highest rate of closed cases, 2.35 per 10,000 of the population.

Table 2: Number and percentage of deaths (cases closed) across ORB 2019/20			
Area	Total Deaths (Closed Cases)	Percentage of overall GM deaths (Closed cases)	Rate of Closed cases per 10,000 population
Bury	7	5%	1.62
Oldham	14	11%	2.35
Rochdale	8	6%	1.59
ORB	29	23%	1.89
GM	129	100%	2.00

Source: GM CDOP Data 2019/2020

It is important to note that whilst these cases were closed during this time, the deaths did not necessarily occur in the same 12-month time frame, due to the variable duration for a case to be closed. Seven of the closed cases were deaths that were notified in the 2019/2020 time period, equating to 24% of the closed cases reviewed in this paper, this compares to 15% average across GM, see table 3. For the purpose of the CDOP annual report, the closed cases are discussed, as these offer the level of detail required to identify themes. It is important that this is kept in mind when interpreting the findings of this report.

Table 3: Notified cases closed in the same year (2019/20)				
Area	Total Number Notified Cases 2019/20	Total Number of Closed Cases 2019/20	Number of cases notified and closed in 2019/20	% Cases notified and closed in 2019/20
ORB	79	29	7	24%
GM	255	129	38	15%

Source: GM CDOP Data 2019/2020

This year the number of closed cases has fallen across both ORB and GM, table 4 demonstrates these trends. This is the lowest number of closed cases seen for the last 8 years. This issue has been seen nationally, due to the introduction of new guidance and the increase in workload that this has created. In addition, locally the CDOP Officer role has been vacant, and the local acute care provider has been going through a major organisational restructure. As part of this restructure a new IT data collection system has been introduced, this means that data has been archived which has slowed down the recovery of information requested by CDOP. Previous drops in ORB closed cases in 2013/14 and 2016/17 are also due to the CDOP officer role not being covered.

Table 4: Number of Closed Cases compared by year across each area								
Area	Number of Closed Cases per year							
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Bury	20	13	17	17	11	14	12	7
Oldham	27	24	36	29	25	31	14	14
Rochdale	25	20	28	28	15	26	27	8

ORB	72	57	81	74	51	71	53	29
GM	267	216	262	236	231	274	204	129

Source: ORB CDOP report 2017/2018 & GM CDOP data analysis 2019/2020

Notified cases 2019/2020

Between 1st April 2019 and 31st March 2020 there were 79 notified child deaths across ORB, this equates to 33%, an over representation of the child deaths in GM, this is consistent with previous years. Whilst Bury and Rochdale have a similar rate of notified cases compared to GM, Oldham has a higher rate at 7.22 per 10,000 of the population and equates to approximately half of the child deaths in the ORB CDOP, see table 5.

Table 5: Number, percentage and rate per 10,000 of notified deaths across ORB, 2019/20				
Area	Number of Notified Deaths	Percentage of overall GM deaths	Population 0-17 yrs	Rate of Notified cases per 10,000 population
Bury	16	7%	43289	3.7
Oldham	43	18%	59592	7.22
Rochdale	20	8%	50,407	3.37
ORB	79	33%	153288	5.15
GM	241	100%	644540	3.74

Source: GM CDOP Data 2019/2020

Duration of Reviews

The duration of review can be described as the number of days from the notification of death to closing the case following the CDOP review. In 2019/20 the range for duration of review of ORB closed cases was 1855 days. The average duration of review across ORB was 597 days, higher than the GM average at 391 days. Oldham and Rochdale had the longest average duration of review compared to all other local authorities across GM at 633 days and 618 days respectively, see table 6. There may be a number of explanations for this range, for example factors such as the cause of death or when additional investigations such as coroner's inquest or serious incident investigations are required, which can delay a case from reaching CDOP. The factors discussed as reasons for a reduction in the number of closed cases, are also likely to have contributed to delays in the review process.

Table 6: Average Duration of Review by Area	
Area	Duration of Review (Days)
Bury	425
Oldham	633
Rochdale	618
ORB	579
GM	391

Source: GM CDOP Data 2019/2020

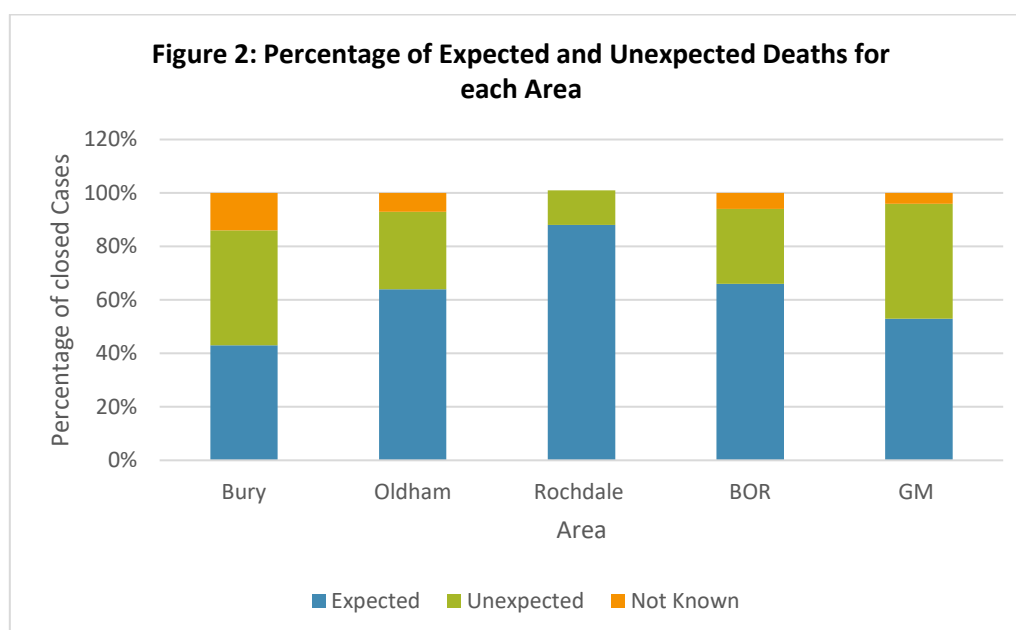
Expected/ unexpected deaths

Table 7 shows that 66% of ORB deaths were expected and only 28% were unexpected. This is less unexpected deaths when compared to GM. This may represent a greater burden of childhood chronic disease.

Table 7: Comparing Expected and Unexpected Deaths by Area (2019/2020)							
Area	Expected		Unexpected		Not Known		Total
	No	%	No	%	No	%	No
ORB	19	66%	8	28%	<5		29
GM	69	53%	55	43%	5	4%	129

Source: GM CDOP Data 2019/2020

Figure 2 shows the proportion of expected deaths compared to unexpected deaths for each local authority area. Of the three local authorities Bury appears to have the highest percentage of unexpected deaths, however this more likely to be due to the small number of deaths, rather than a significant finding.



Source: GM CDOP Data 2019/2020

Location of Death

The majority of deaths occurred in a hospital setting across all three localities. Table 8 shows that ORB had a higher percentage of deaths in hospitals when compared to GM. This year GM had a higher percentage of deaths in other locations compared to previous years, this is not reflected in the ORB data. Deaths in hospital are more likely to do due to a perinatal or medical cause, rather than sudden unexpected death which would be more likely to occur in the home environment.

Table 8: Comparison of Location of Death 2019/2020						
Area	Hospital		Home		Other	
	No	%	No	%	No	%
ORB	20	69%	7	24%	<5	
GM	60	47%	34	26%	35	27%

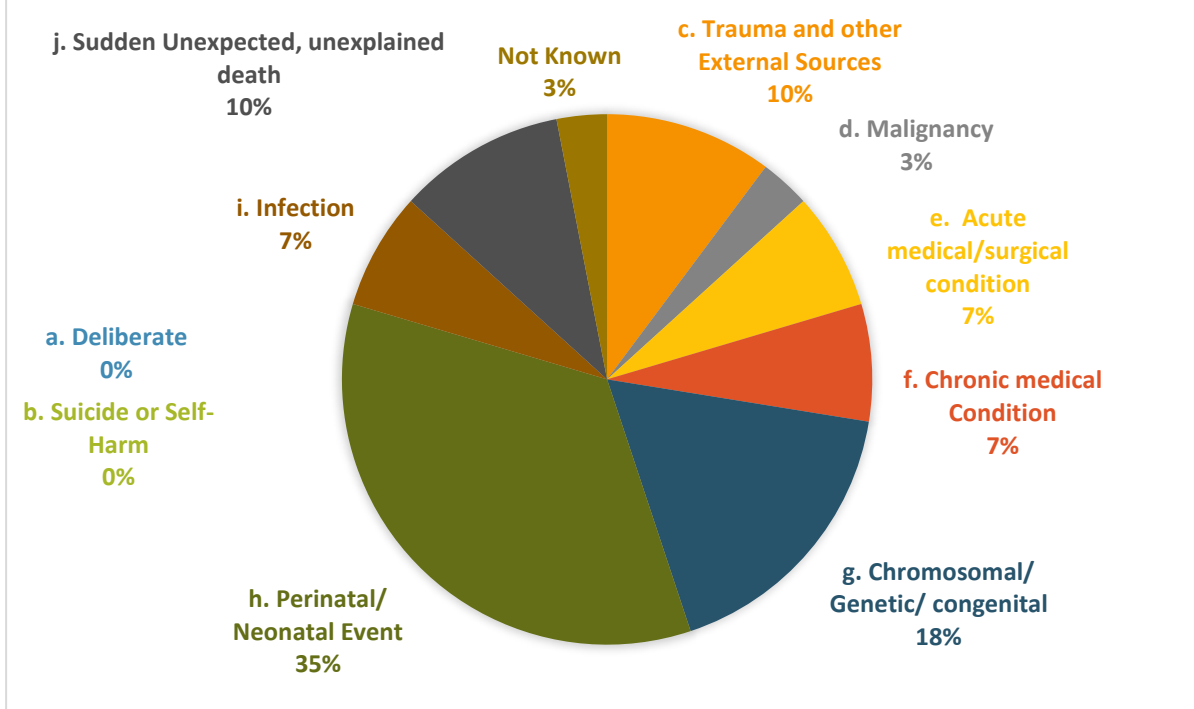
Source: GM CDOP Data 2019/2020

Causes/Category of Death

As part of the CDOP process each case is assigned a category of death from 10 defined options. The classification system is hierarchical therefore the category of death with the most relevance will be recorded as the primary category and cause of death, and others as secondary categories. The nationally defined categories of death as follows:

- a. Deliberate inflicted injury, abuse or neglect
- b. Suicide or deliberate self-harm
- c. Trauma and other external factors
- d. Malignancy
- e. Acute medical or surgical condition
- f. Chronic medical condition
- g. Chromosomal genetic and congenital anomalies
- h. Perinatal/neonatal event
- i. Infection
- j. Sudden unexpected, unexplained death

FIGURE 3: PIE CHART TO SHOW CAUSES OF DEATHS ACROSS ORB AS PERCENTAGE OF ALL CLOSED CASES



Source: GM CDOP DATA 2019/2020

Figure 3 clearly demonstrates that perinatal and neonatal events were the most common cause of death, followed by chromosomal, genetic and congenital abnormalities. When combined, these two categories equate to half of the child deaths in ORB. This is consistent across GM, in line with national trends and the same as previous years. There were no deaths classified as deliberate or suicide and self-harm. All other categories equate to a small number of deaths.

Due to the small number of cases it is difficult to compare causes of deaths by local authority. However, perinatal/neonatal events and chromosomal/genetic/congenital causes are the leading category of death across all three local authorities.

Socio-demographics of cases closed in 2019/2020

Gender

When comparing deaths across the local authorities by gender, males appear to be over-represented at 62% when compared to females 38%, as seen in table 9. This is consistent with GM findings and national trends. The reason for this discrepancy is unclear.

Table 9: Number of cases closed by Gender in ORB and GM				
Area	Female		Male	
	No	%	No	%
ORB	11	38%	18	62%
Greater Manchester	61	47%	68	53%

Source: GM CDOP DATA 2019/2020 *Note that 1 closed case in GM where Gender was not determined

Ethnicity

In all three areas, White British is the predominant ethnicity, with 68% of the child population across ORB classified as white and 32% as BME. This is similar to the variance in ethnicity across GM. Of note, Oldham BME child population is 40% compared to 28% GM, see table 2. Both are substantially higher than the UK national figures, which according to 2011 census data, 13% of the UKs population belong to BME groups³, see table 10.

Table 10: Child Population Ethnicity across Oldham, Bury and Rochdale, using mid 2019 population estimates.					
Area	Total under 18 population	White		BME	
		No	%	No	%
Bury	43289	34631	80%	8658	20%
Oldham	59592	35755	60%	23837	40%
Rochdale	53299	36243	68%	17056	32%
ORB	156180	106629	68%	49551	32%
GM	629278	451275	72%	178003	28%

Source: GM CDOP Data analysis 2019/2020. Based on mid-2019 population estimates

Table 11 shows that ORB and GM figures are similar when comparing child deaths by ethnicity. Both show a higher percentage of child deaths in the white population which is to be expected in view of higher proportion of the population of this ethnicity. However, both have a higher rate of closed cases in the BME population, suggesting that although numbers are small that BME child deaths are over-represented. This is most striking in Oldham where the rate of child deaths is 3.36 per 10,000 in BME children compared to 1.68 per 10,000 in white children, exactly double. Clearly there is a health inequality associated with ethnicity. Rochdale does not show this trend, however this may be due to the small number of total cases.

³ <https://www.ethnicity-facts-figures.service.gov.uk/>

Table 11: Cases Closed by Ethnicity for Each Area						
Area	White			BME		
	No	%	Rate/10,000	No	%	Rate/10,000
Bury	<10		1.44	<5		2.31
Oldham	6	43%	1.68	8	57%	3.36
Rochdale	<10		1.93	<5		0.59
ORB	18	62%	1.69	11	38%	2.22
GM	79	61%	1.75	50	39%	2.81

Source: GM CDOP data analysis 2019/2020

When comparing the cause of death and ethnicity, difficulty arises due to the small number of cases. The one clear finding is that all the closed cases with chromosomal, genetic and congenital causes were in children of BME ethnicity. This corresponds with national data that identified that whilst prematurity related conditions were the main cause of infant mortality overall, in Pakistani and Bangladeshi ethnic groups more infant deaths were caused by congenital anomalies⁴. Having consanguineous parents is a known risk factor for congenital abnormalities, and potential explanation for this variation nationally. However, the closed cases in this report where the category of death was chromosomal, genetic and congenital causes were not found to be related to consanguinity.

Inequalities & Index of Multiple Deprivation (IMD)

Deprivation is known to be a contributing factor to many of the risk factors associated with child deaths. The index of multiple deprivation 2019 (IMD) is an overall measure of deprivation taking into account not only income deprivation, but also key resources needed for an individual to meet their basic needs, such as education, employment, health and disability, housing and living environment.

All three local authorities have higher rates of deprivation when compared to both GM and nationally. Oldham and Rochdale in particular, are categorised as being in the 'most deprived' quintile, as demonstrated in table 12. Both have a higher percentage of people living in the 20% most deprived areas in England, when compared to Bury, GM and nationally.

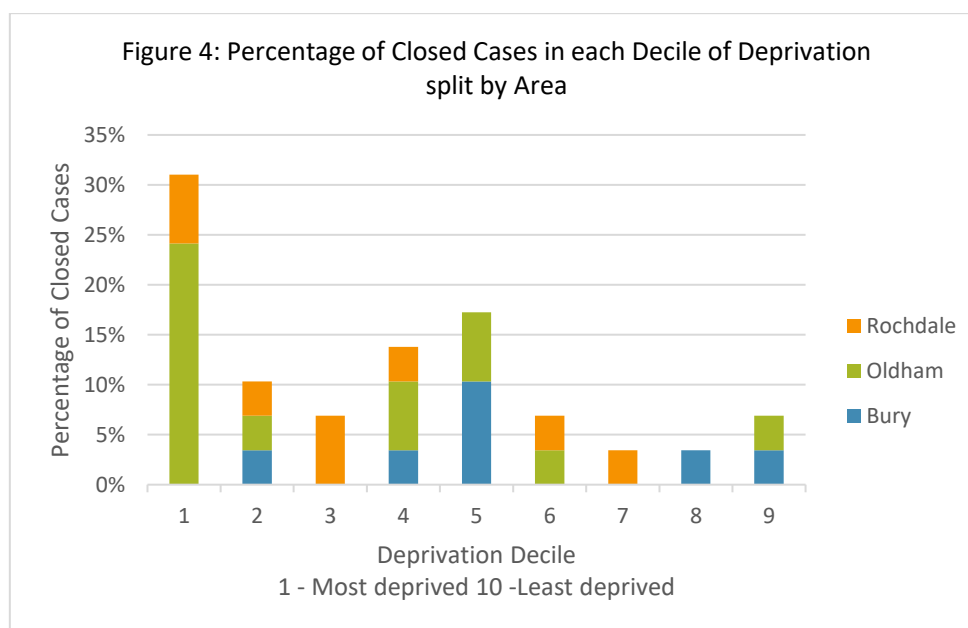
⁴<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/childhoodinfantandperinatalmortalityinenglandandwales/2018#:~:text=1.-,Main%20points,of%203.6%20recorded%20in%202014>

Table 12: Comparison of Deprivation, by IMD 2019 and percentage of people living in the 20% most deprived areas in England, for Oldham, Bury and Rochdale.

Area	IMD 2019	Percentage of people living in the 20% most deprived areas in England
Bury	23.7	20.5%
Oldham	33.2	43.6%
Rochdale	34.4	44.5%
North West	28.1	31.9%
England	21.7	20.2%

Source: https://fingertips.phe.org.uk/search/deprivation#page/3/gid/1/pat/6/par/E12000002/ati/102/are/E06000008/iid/93553/age/1/sex/4/cid/4/page-options/ovw-do-0_car-do-0

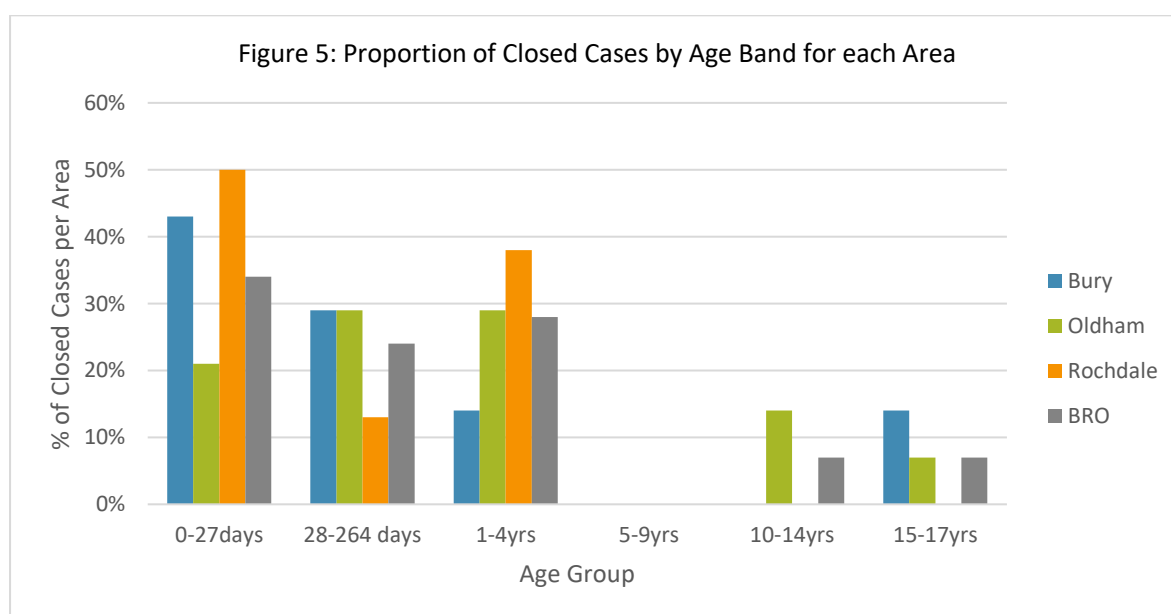
IMD scores can be split into deciles to enable comparisons to be made, where decile 1 equates to the most deprived 10% of the population and decile 10 is the least deprived 10%. Figure 4 shows a clear trend between deprivation and the risk of child deaths, with 31% of closed cases in ORB being in the most deprived decile, and 79% of cases in the lowest 5 deciles. As deprivation falls so does the number of child deaths, this is in keeping with national trends. Oldham appears to have the highest numbers of death in the most deprived decile, despite similar deprivation levels to Rochdale. This may be due to the higher number of closed cases within Oldham.



Source: GM CDOP Data 2019/2020

Age at death

Younger children have the highest risk of childhood mortality, and the highest risk of death is during the neonatal period⁵. Figure 5 demonstrates that as age increases the number of deaths falls. In ORB 34% of closed cases were in the neonatal period and 58% within the first year of life. This is consistent with GM and national trends. The percentage of closed cases in the neonatal period is less than previous years, for example in 2016/2017 neonatal deaths accounted for 59% of the deaths. Across all three local authorities most closed cases are before the age of 5 years.



Source: GM CDOP Data 2019/2020

Figure 5 shows that whilst Bury follows the expected trend, both Oldham and Rochdale have a higher proportion of closed cases in the 1-4 years category than previous years. It is important to note that numbers are small, with a total of 8 closed cases in this category, therefore it is difficult to identify a reason for this and may be due to chance. Deaths in this age group appear to fall into three main categories:

- A health condition that subsequently led to the death
- Trauma and external factors
- Sudden unexpected unexplained death

Interestingly, 50% of these cases had modifiable risk factors, higher than average across the CDOP area. Table 13 summaries the number of child deaths and percentages for ORB and GM. Due to the small number of cases, individual areas are not included in this table.

⁵ https://www.who.int/maternal_child_adolescent/documents/levels_trends_child_mortality_2019/en/

Table 13: Closed Cases by Age Band for Bury, Oldham, Rochdale and Greater Manchester												
Area	Age Category											
	0-27days		28-264 days		1-4yrs		5-9yrs		10-14yrs		15-17yrs	
	No	%	No	%	No	%	No	%	No	%	No	%
ORB	10	34%	7	24%	8	28%	0	0%	<5		<5	
Greater Manchester	47	36%	36	28%	19	15%	9	7%	13	10%	5	4%

Source: GM CDOP Data 2019/2020

Low birth weight and Prematurity

Preterm delivery is defined as any birth before 37 weeks of pregnancy and can be subdivided depending upon gestational age⁶:

- Extremely preterm -less than 28 weeks
- Very preterm -28-32 weeks
- Moderate to late preterm -32-37 weeks.

Preterm delivery and the associated complications are the leading cause of infant mortality⁵. The earlier the gestation at which a baby is born, the higher the risk of infant death⁷. Preterm delivery is associated with risk factors such as poverty and maternal smoking⁸. 76% of all deaths in children under 1 year were born prematurely across ORB. This was consistent across all three localities ranging from 71% -80%.

Low birth weight, defined as under 2500 grams, is often caused by a premature birth, and whilst some risk factors are unavoidable others include maternal smoking, drug and alcohol use, poor pregnancy health and nutrition, pregnancy related complications and mothers young age⁹. Birth weight for closed cases under the age of 1 have been compared across the localities in table 14. Across ORB 59% of closed cases under 1 year were associated with a low birth weight.

Table 14: Birth weight of closed cases for babies under 1 year only							
Area	<2500g		>2500g		Not recorded		Total
	Low Birth Weight		Healthy Birth weight				
ORB	10	59%	<10		<5		17
GM	46	56%	28	34%	8	10%	82

Source: GM CDOP Data 2019/2020

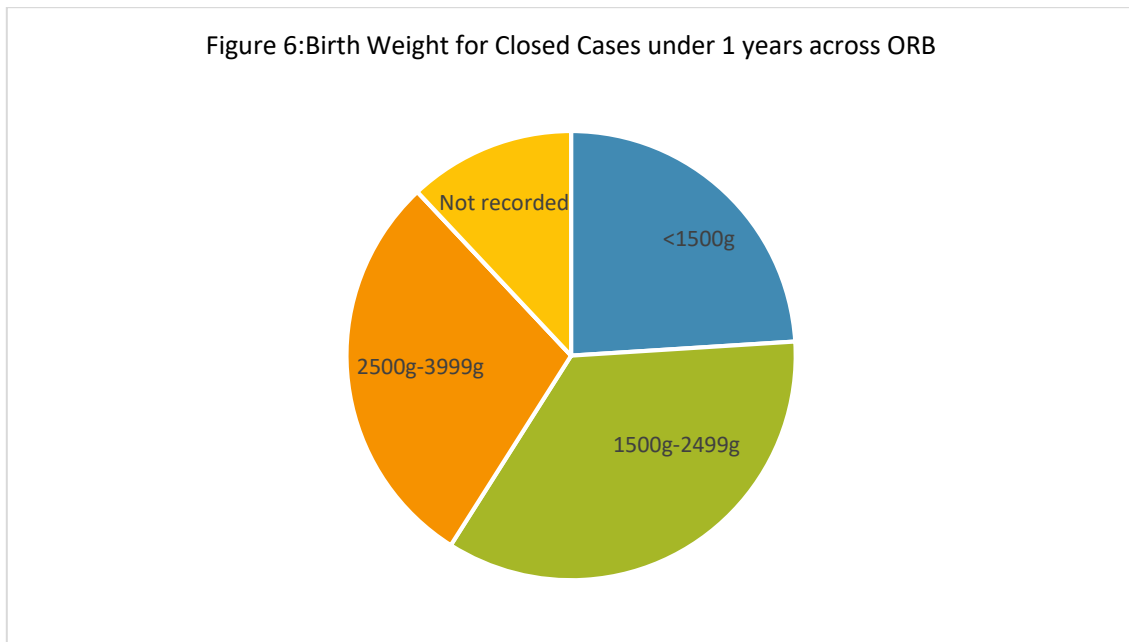
⁶ <https://www.who.int/news-room/fact-sheets/detail/preterm-birth>

⁷ <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/childhoodinfantandperinatalmortalityinenglandandwales/2018#:~:text=1.-%20Main%20points,of%203.6%20recorded%20in%202014>

⁸ https://www.rcpch.ac.uk/sites/default/files/2018-10/child_health_in_2030_in_england_report_2018-10.pdf

⁹ <https://www.nuffieldtrust.org.uk/resource/low-birth-weight>

Figure 6 demonstrates the further breakdown of birth weights in closed cases under 1 years. 1500g-2499g was the most common weight category, but 24% were less than 1500g, known as 'very low birth weight'. A low birth weight, particularly below 1500g is associated with higher mortality rates¹⁰. All three localities had closed cases where birth weight was less than 1500g.



¹⁰ <https://www.who.int/bulletin/volumes/95/8/16-180273/en/#:~:text=Compared%20with%20other%20infants%2C%20low,to%20the%20nearest%20health%20of%20facility.>

Modifiable and other risk factors

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

Form C, the child death review analysis form, is used by CDOP. All available information, gathered from different agencies, is reviewed in order to develop an understanding of the circumstances of the child's death and whether there were any associated modifiable factors. Through this process lessons can be learnt and shared, and local level action can be taken in order to reduce the risk of child death.

As part of the review, any factors that may have contributed to the child's death are identified.

These are split into four domains:

- Domain A: Factors Intrinsic to the Child
- Domain B: Factors in Social Environment including Family and Parenting Capacity
- Domain C: Factors in the Physical Environment
- Domain D: Factors in Service Provision

The level of influence is then determined, given one of the following:

- 0: Information not available
- 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

Factors identified in closed cases in ORB that may have contributed to vulnerability, ill health or death

Domain A: Factors Intrinsic to the Child
<ul style="list-style-type: none">• Acute Sudden onset illness• Other Chronic long- term illness (excluding Asthma, epilepsy and diabetes)• Learning disability• Motor Impairment• Sensory Impairment• Other disability or impairment
Domain B: Factors in Social Environment including family and parenting Capacity
<ul style="list-style-type: none">• Emotional/behavioural/mental/physical health condition in a parent or carer
Domain D: Factors in Service Provision
<ul style="list-style-type: none">• Prior medical Intervention

89% of the factors identified were in domain A, factors intrinsic to the child, which are unavoidable. The most common was acute sudden onset of illness identified in 23 cases, 79%.

Modifiable Factors

Some factors associated with a child’s death are modifiable, these are important as targeted interventions can be used to reduce risk where factors reoccur. A set standard of modifiable factors has been agreed by the GM CDOP Network to ensure consistency when categorising the preventability of child deaths. This is to reduce the subjectivity surrounding these matters.

The agreed definition of Modifiable Factors Identified is:

‘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’

The Modifiable Factors are categorised and defined as:

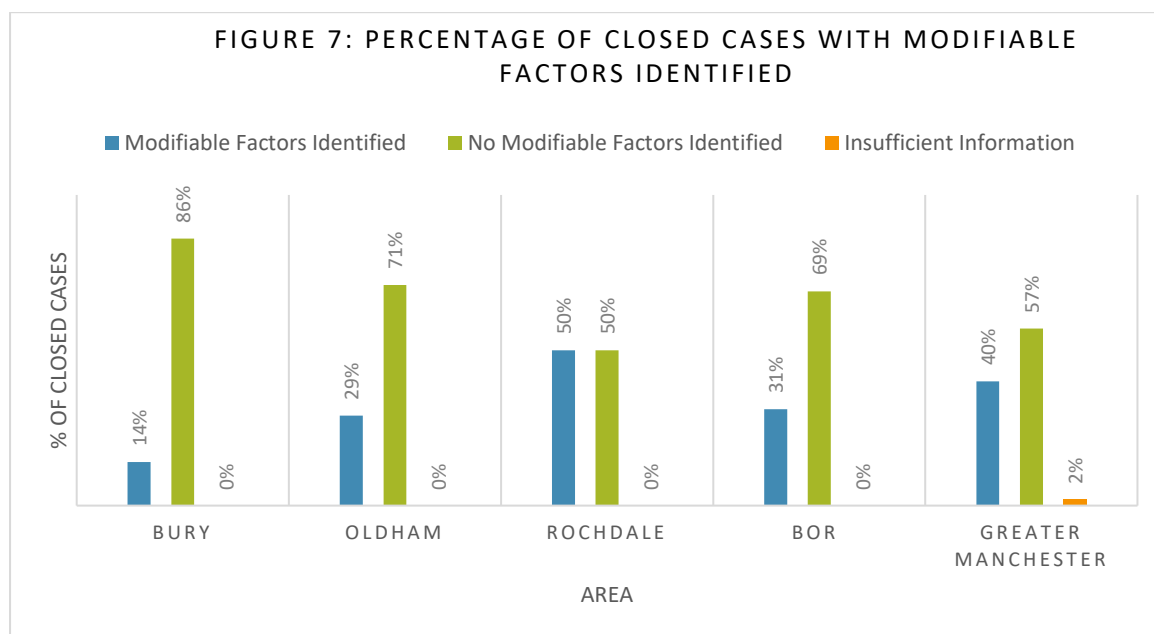
Modifiable Factors in Perinatal / Neonatal Deaths
<ul style="list-style-type: none"> • Maternal smoking in pregnancy • Maternal Obesity (BMI 30 +) • Mothers who are Underweight (BMI < 18.5) • Unbooked pregnancies • Concealed pregnancies • Necrotizing Enterocolitis (NEC) where the baby was not fed expressed breast milk
Modifiable Factors in Sudden Unexpected, Unexplained Deaths
<ul style="list-style-type: none"> • Unsafe sleeping arrangements (co-sleeping bed/sofa) • Parental smoking
Modifiable Factors in Consanguineous Related Deaths
<ul style="list-style-type: none"> • Where there has been an older sibling who has died or is affected by the same genetic autosomal recessive disorder

Across ORB 31% of cases had modifiable factors identified, ORB had a lower proportion of cases with modifiable factors when compared to GM demonstrated in table 15. All cases across ORB had sufficient information to identify modifiable factors.

Table 15: Modifiable and Non-Modifiable Factors Contributing Towards Child Deaths in Oldham, Bury and Rochdale							
Area	Modifiable Factors Identified		No Modifiable Factors Identified		Insufficient Information		Total
	No	%	No	%	No	%	No
ORB	9	31%	20	69%	0	0%	29
GM	52	40%	74	57%	3	2%	129

Source: GM CDOP Data 2019/2020.

When comparing the three localities, using Figure 7, Rochdale appears to have the highest proportion of modifiable factors, however, the actual number of cases with modifiable factors is equivalent to Oldham. Of the cases where modifiable risk factors were identified 78% had more than one factor, suggesting that modifiable factors are less likely to be found in isolation and in fact multiple factors combined are more likely to put a child's life a risk.



Source: GM CDOP 2019/2020

Modifiable Risk Factors identified by the ORB CDOP in the closed cases of 2019/20 included:

- Maternal Obesity
- Maternal Smoking in Pregnancy
- Parental Smoking
- Unsafe Sleeping arrangements

It is important to note that whilst these factors were identified as modifiable factors, they were not felt to be factors that may have contributed to vulnerability, ill health or death of the child, and therefore not allocated a 2 when scored. Across GM maternal obesity has been recorded for the last three years, however, is not yet assessed to see whether this contributed to the child's death. Data was not recorded for un-booked pregnancy or concealed pregnancy, two of the modifiable risk factors defined by GM.

Other Identified Risk Factors

Other issues raised within the closed cases across ORB that are not defined within the GM CDOP Network:

- Modifiable factors in sudden, unexpected, unexplained deaths such as drug and alcohol use and housing

- Factors in service provision
- Consanguinity
- Window Blind Cord Injury

Understanding Modifiable Risk Factors and Local Initiatives

The following section will explore the modifiable risk factors that have been raised in further detail, and provide examples of what is being done to reduce the risk of child deaths through targeted interventions across the three localities.

Maternal Raised BMI

Preventing perinatal child deaths begins with a healthy pregnancy. Maternal obesity is a risk factor associated with many complications around birth and increased morbidity and mortality for baby. It is also known that social deprivation is associated with maternal obesity¹¹.

24% of closed cases in children under the age of 1 had maternal obesity identified. In 18% of closed cases in children under the age of 1, maternal obesity was felt to be a modifiable factor. Also, in this group 59% of mothers were overweight or obese, consistent with GM findings. Across GM obesity has overtaken smoking as the largest modifiable risk factor in child deaths, although numbers are small it would appear that a similar trend is emerging across ORB. In 29% of the child deaths under the age of 1, maternal BMI was not recorded. In view of the increasing concerns surrounding this issue, it is important that going forward this is recorded to enable review and understanding of the scale of the issue.

Health visitors across the three boroughs promote healthy eating particularly at times where infant feeding, weaning and child health promotion is carried out.

Oldham

A new Health Improvement and Weight Management service brings two previously separate services together to deliver a jointly commissioned, integrated service to Oldham. The new service will go-live on 1st January 2021. This new model of delivery will be family-centred and aligns with the wider work being undertaken within the Oldham's CCG's long-term conditions portfolio. The objectives for the new service model will contribute to:

- Reducing the proportion of adults who smoke
- Reducing the proportion of adults and children who are overweight or obese
- Reducing the proportion of adults who are physically inactive
- Provide advice regarding drinking alcohol within safe limits
- Reducing the proportion of adults that have a high vascular risk score through post NHS Health Check support
- Reduce the level of health inequalities.

¹¹ <https://www.publichealth.hscni.net/sites/default/files/Maternal%20obesity%20in%20the%20UK.pdf>

Maternal Smoking in Pregnancy

Maternal smoking in pregnancy is known to double the risk of preterm delivery¹². In 2018/19, nationally 10.6% of mothers were known to smoke at the time of delivery, this was higher in Oldham (13.6%) and Rochdale (16.1%)¹³. In this report maternal smoking during pregnancy was identified in 10% of cases, however maternal smoking was felt to be a modifiable risk factor and related to a perinatal/neonatal event in 3% of cases. In 13% of cases maternal smoking was not documented.

Health visitors make smoking enquiries at the first contact with the family and brief interventions are carried out using health promotion/motivational interviewing techniques. Smoking risks are discussed in relation to pregnancy at antenatal contacts and in relation to safe sleep/ongoing health of children. A smoke free home is promoted to support reduction of risks for pregnant women and/or other children from passive smoking. They also signpost to smoking cessation services, such as Lifestyle Service, and GP services.

Oldham and Rochdale

Since 2018 as part of the Saving Babies Lives requirements, Royal Oldham Hospital has used Babyclear, the GM smoke free pregnancy programme. This is funded up until March 2021. It is a midwifery led model, providing mothers with behavioural support, nicotine replacement therapy (NRT) and risk perception interviews with women who do not engage with services. Mothers from Rochdale will usually access Oldham or North Manchester for delivery, as there is no delivery unit in Rochdale, so would access the services provided within Northern Care Alliance.

Oldham have recently appointed a new midwife who, alongside maternity support workers, will delivery of this service. In order to reduce barriers to accessing NRT, the maternity unit are also piloting a service where NRT can be supplied directly to mums from the hospital. With recent COVID restrictions the team have not been able to use carbon monoxide monitoring, an important part of their service, however it is hoped that it will be reintroduced in the coming months. The team collect and review monthly data to look at trends, they have noted that across both Oldham and Rochdale the number of women smoking at the time of delivery is starting to decline. It is hoped that the recent changes will help to further this decline. The other elements of Saving Babies Lives are explored further in a later section of this report.

Risk factors associated with Sudden, Unexpected, Unexplained Deaths: Parental Smoking & Unsafe Sleeping

Whilst the exact cause for a sudden and unexpected child death is not known, a number of risk factors are likely to contribute, making a child more vulnerable to death. 300 infants die suddenly and unexpectedly in England and Wales each year, these deaths often occur in families where

¹² <https://www.england.nhs.uk/wp-content/uploads/2019/07/saving-babies-lives-care-bundle-version-two-v5.pdf>

¹³ https://fingertips.phe.org.uk/search/smoking#page/3/gid/1/pat/6/par/E12000002/ati/102/are/E08000004/iid/93085/age/1/sex/2/cid/4/page-options/ovw-do-0_car-do-0

circumstances put the child at an increased risk¹⁴. Safe sleeping advice is known to significantly reduce the risk of child death, and around 60% of sudden infant deaths could be avoided if no baby was exposed to smoke¹⁵.

10% of closed cases were identified as sudden, unexpected and unexplained deaths in ORB. Two thirds of these were felt to have modifiable factors including smoking, safe sleeping, housing, drugs and alcohol. Information regarding prone sleeping, co-sleeping and overheating was not routinely collected, and only mentioned when identified as a modifiable risk factors or issue.

Across ORB safe sleeping guidance is discussed by health visitors at contacts from the antenatal period through the first year of life. Guidance from the Lullaby Trust and Basis is promoted. Risk assessments based on a family's individual circumstances are made where the checklist in a child's Red Book (PCHR) is checked, this has usually been completed by the midwife. Conversations are tailored to the individual family using motivational interviewing techniques, for example if risk factors are present these are discussed to support parental decision making. The health visiting teams receive regular updates from Lullaby Trust and utilise their parent information resources to provide information.

Rochdale

Rochdale Local Safeguarding Partnership have developed an initiative 'Keep Baby Safe', their current focus is on safe sleeping and coping with crying/abusive head trauma. These areas have been informed by local safeguarding reviews. They have developed multiagency sleep guidance and risk assessments which will be launched at a sleep training event in October 2020. These are underpinned by the findings of the national safeguarding panel review of Sudden Unexpected Death in Infancy. The Lullaby trust campaign materials are used during the antenatal and postnatal journey in order to raise awareness with parents, this includes events, information in antenatal packs, discussion with families and briefing professionals across multiple agencies to give the same clear message. The team have Public Health for one year to provide room thermometers which contain the key sleep safe messages.

Parental Alcohol/Substance Misuse

Parental drug and/or alcohol misuse was identified as an issue in 7% of closed cases. Across GM 8% of cases were identified as having drugs and alcohol as a factor which may have contributed to the child's death.

Routine enquiry is made at first contacts with the health visiting service and ongoing support is provided if this becomes or is an ongoing need for the family. Brief interventions are provided in terms of risks and dangers of drug/alcohol misuse around children. A referral to other services is made when a risk of potential significant harm is identified.

¹⁴ <https://www.gov.uk/government/publications/safeguarding-children-at-risk-from-sudden-unexpected-infant-death>

¹⁵ <https://www.lullabytrust.org.uk/safer-sleep-advice/what-is-sids/>

Consanguinity

Under the GM definitions of modifiable risk factors consanguinity is only recognised as a modifiable risk factor if the parents have had a previous child who has died from, or is affected by a genetic abnormality. Although consanguinity came up as an issue, no cases had a previous death related to the genetic abnormality and therefore was not formally identified as a modifiable risk factor. However, consanguinity remains a concern in view of the fact that child deaths are overrepresented in ethnic minority groups, particularly in Oldham, and the higher representation of deaths related to chromosomal and genetic disorders.

Health visitors provide supportive discussion around this and signpost families to the appropriate services such as genetics, this referral would likely be done by the GP. Health visitors would promote the importance of accessing national screening programmes to support the family in future pregnancies.

Oldham

In 2016 a Genetic outreach service in Oldham was established. The service works with local communities on genetic literacy and improving access to services. Aims of the service include reducing the prevalence of genetic disorders in the borough, empowering affected families in their decision making and providing support to affected families.

Access to Appropriate Health/Social Care

There were clinical concerns raised in 10% of cases with regards to hospital systems and the approach to care. Themes such as lack of early recognition of warning signs and appropriate escalation, poor record keeping, and the following of procedures were seen in the cases. However, each case occurred in a different departments and teams. When problems with the delivery of healthcare are identified these are managed before the CDOP review. They are discussed during the child death review meeting where professionals who have been directly involved in the child's care meet to discuss how things can be improved. Where patient safety is felt to have been compromised an NHS serious incident investigation will also be carried out. CDOP therefore acts as safety net, or a fresh pair of eyes, at the end of the process to ensure that nothing has been missed. In these cases, the panel sought assurance that the action plans initiated following on from Serious Incidents had been implemented.

Saving Babies Lives

Saving Babies Lives is a national evidence-based care bundle that aims to reduce perinatal mortality. The care bundle has recently been updated to version two and brings together five elements including: reducing smoking in pregnancy, improved detection and management of babies who are

small for gestational age, raising awareness of reduced fetal movements, effective fetal monitoring during labour and reducing preterm births.¹⁶

At Royal Oldham Hospital the maternity service is fully compliant across all areas apart from fetal monitoring, where a few minor amendments are being made, and preventing premature births, once a premature clinic is set up in November, all requirements will be met. Recent changes have been made to ensure compliance with version 2 of saving babies lives, and to improve the service offered. This has involved many areas of work including improved training packages for midwives, sonographers and clinicians, developing a competency tool around fetal growth, regular auditing of notes, computerised CTGs for reduced fetal movements (particularly for small babies and other at risk pregnancies), and a new prematurity clinic to start in November. Changes to the smoking service are discussed earlier in this report.

Emotional/behavioural/mental/physical health condition in a parent or carer

The emotional, behavioural, mental or physical health condition of a parent or carer may have an effect upon the health of a child and the care they receive. In 10% of cases a parent or carers health was felt to have contributed to vulnerability, ill health or the death of the child, however in two thirds of these cases no modifiable factors were identified. It is important that in situations where parents have their own health difficulties appropriate support is available to ensure that the health and welfare of the child is not compromised.

Accidents and Trauma

Trauma and other external sources accounted for 10% of closed cases, these included accidents such as blind cord injury and road traffic collision. The Royal Society for the Prevention of Accidents works across the UK to help prevent accidents occurring in view of their devastating consequences. As part of this work they have a specific campaign for blind cord injuries. They report that at least 33 young children across the UK have died due to blind cords since 2001. Their work includes working with manufacturers to make products safer and also providing education and campaign materials.

Health visitors across ORB address the accidents and trauma reports from the local A&E and Children's hospital departments via the 'Duty' process. A&E/Hospital admissions are reviewed on receipt via the service and documented on the chronology for the child. The review is provided in the context of the child's records and the risk factors present are considered. If the child has a named health visitor they will be informed and appropriate follow up provided. If the child is 'universal' and attends A&E, the incident is reviewed and follow up provided if needed. If the child attends for 3 or more incidents within one year this will also be reviewed and follow up provided. A&E and hospital attendance information will be shared with the Multi-agency Safeguarding Hub

¹⁶ <https://www.england.nhs.uk/wp-content/uploads/2019/07/saving-babies-lives-care-bundle-version-two-v5.pdf>

(MASH) and safeguarding/child protection multi-agency if required. Health visitors may challenge cases and escalate to the Safeguarding Team if the acute settings have not followed procedures for potential non-accidental injuries in children. Support is also provided for parents in regards to 'coping with crying'. Health visitors can signpost to relevant resources such as the Institute of Health Visiting (iHV) Parent Tips 'Coping with a Crying Baby During the Covid-19 Pandemic'¹⁷ and ICON¹⁸.

Other Risk Factors:

Other Risk factors that can be associated with child deaths, but not identified in the cases discussed in this report:

- Domestic Violence
- Statutory Intervention
- Suicide or self-harm
- Late Booking or concealed pregnancies.

These risk factors were not identified in the closed cases discussed in this report.

¹⁷ <https://ihv.org.uk/wp-content/uploads/2020/04/PT-Coping-with-a-crying-baby-during-COVID19-FINAL-VERSION-14.4.20.pdf>

¹⁸ <https://iconcope.org/parentsadvice/>

Recommendations and Actions

The following recommendations and actions are based upon the findings of this report.

Actions

- This year a reduction in closed cases has been seen across GM. ORB CDOP have reflected on potential reasons for this and the reasons for the increase in the length of the review process. The team are working hard to access the information required to work through the backlog of cases.

Recommendations

- Whilst the CDOP process is extremely thorough in its review of potential modifiable risk factors, there are several additional factors that could be considered. CDOPs could consider looking at factors such as a maternal age, as a risk factors, and breastfeeding as protective.¹⁹ These may help to identify other areas where intervention may be required such as young mothers services, or breast feeding education and services.
- Data for unbooked pregnancy and concealed pregnancy was not recorded in the ORB data set, these are modifiable risk factors recognised by GM and therefore there may be benefit from reviewing these. Note that these may not have been included because these factors did not arise in the cases this year.
- Be aware that maternal obesity is of growing concern as a risk factor for neonatal death. It is becoming increasingly common across Greater Manchester, and the ORB CDOP. It is important to record maternal obesity in child deaths under the age of one, where it may be relevant, in order to observe for trends in the data. GM could consider inclusion of obesity as a risk factor to review whether it contributed to the child death using the standardised review system.
- Children living in deprived neighbourhoods or who are BME ethnicity continue to be over-represented in the child deaths, this needs continued acknowledgement and address. This knowledge should be embedded within services, and teams educated, in order to raise awareness for these discrepancies and to ensure that work is done wherever possible to reduce child deaths.
- It is advised that this report is disseminated to the relevant departments, within the health and wellbeing partnership organisations, in order to share learning.

¹⁹ https://www.rcpch.ac.uk/sites/default/files/2018-10/child_health_in_2030_in_england_-report_2018-10.pdf