



**Greater Manchester**  
Integrated care



# Child Death Overview Panel CDOP

Perinatal & Neonatal Events  
Oldham, Bury and Rochdale

Dr Sophie French  
Public Health ST1

# Overview

- **Background**
- **Introduction to CDOP**
- **Our research question**
  - Analysis of perinatal / neonatal events
  - Analysis of modifiable factors
- **Reflections**
  - Summary and recommendations

# Background

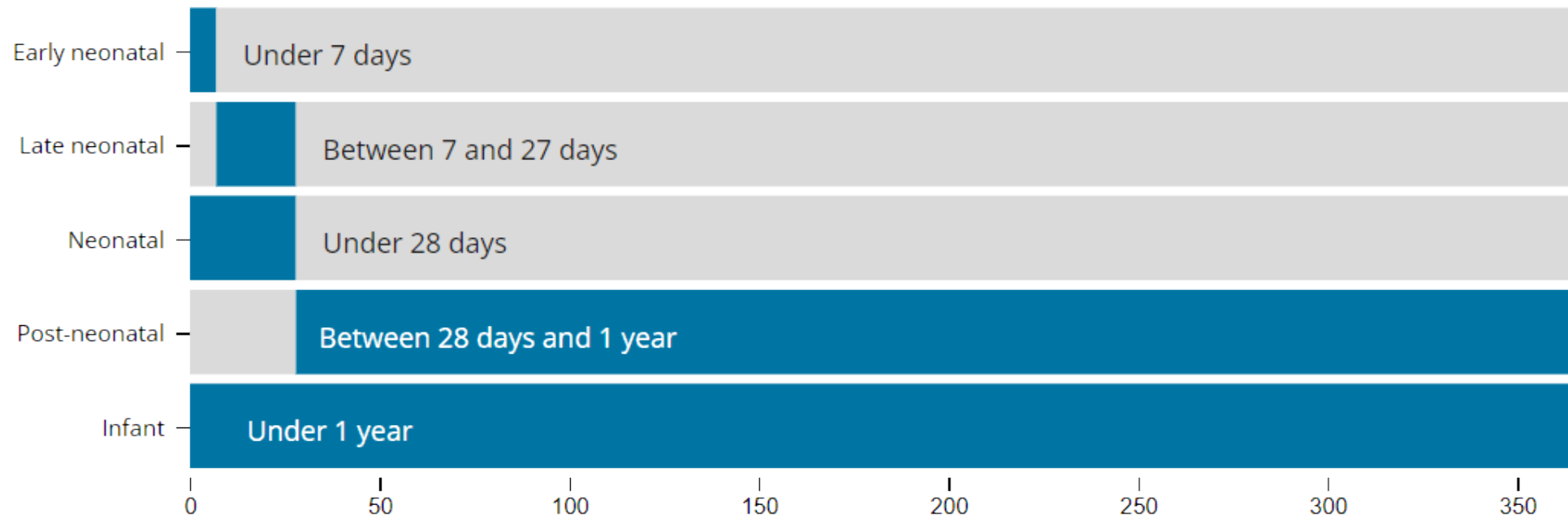
# Key terms and definitions

- **Early neonatal**

The first 7 days of a person's life

- **Neonatal**

The first 28 days of a person's life



## Key terms and definitions

### Perinatal mortality rate:

$$\frac{\text{Number of stillbirths} + \text{number of deaths at ages under 7 days}}{\text{Number of total births}} \times 1000$$

### Early neonatal mortality rate:

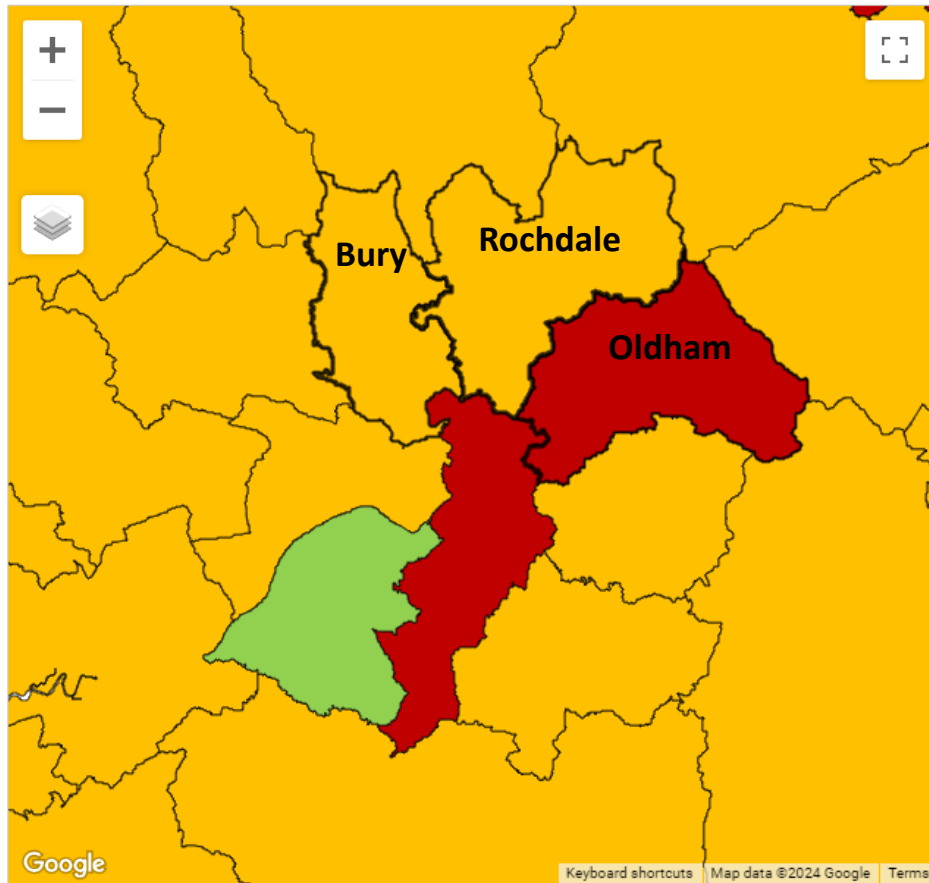
$$\frac{\text{Number of deaths at ages under 7 days}}{\text{Number of live births}} \times 1000$$

### Neonatal mortality rate:

$$\frac{\text{Number of deaths at ages under 28 days}}{\text{Number of live births}} \times 1000$$

# Neonatal mortality, crude rate per 1,000 live births 2019-2021

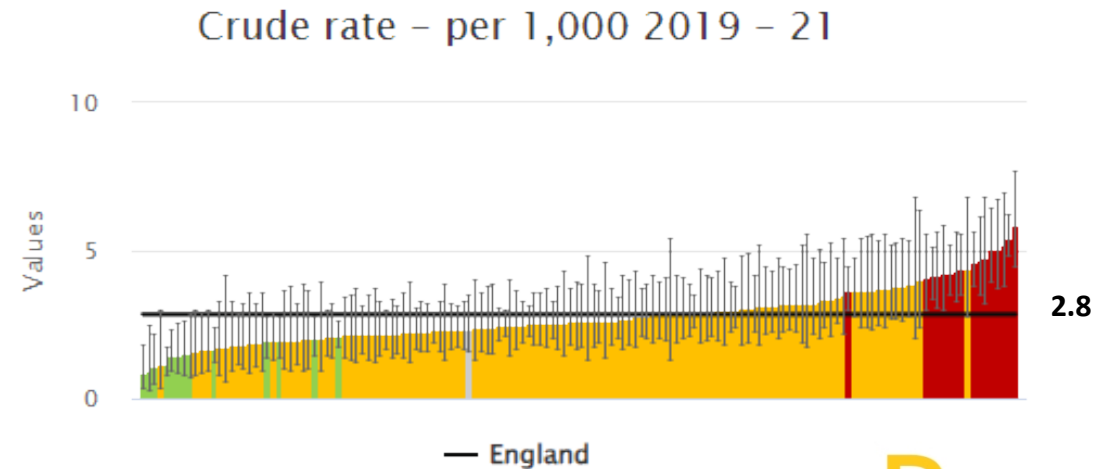
## Office for Health Improvement & Disparities



Better 95% Similar Worse 95% Not compared

Areas All in England

Area	Count	Value	Lower CI	Upper CI
Oldham	47	5.1	3.7	6.7
Rochdale	32	3.8	2.6	5.4
Bury	24	3.7	2.4	5.6



# Neonatal and infant mortality risk factors

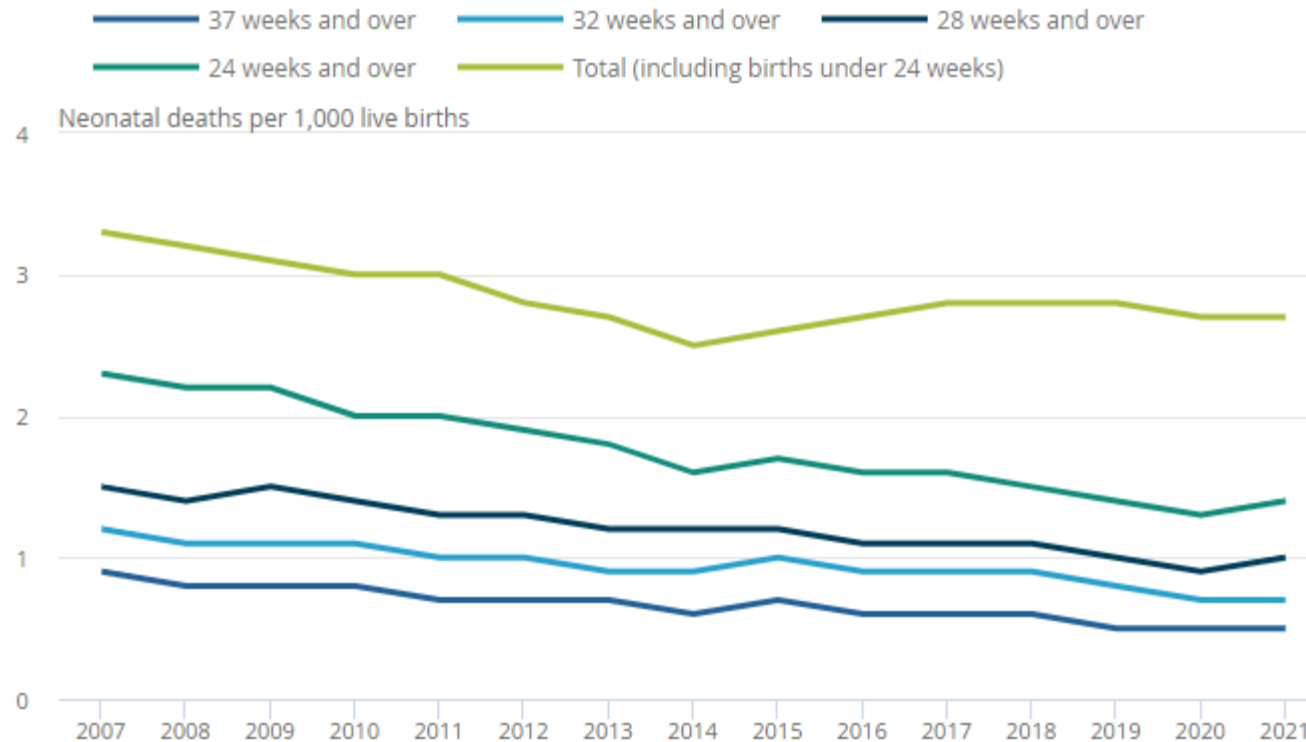
Office for National Statistics

- Gestational age
- Birthweight
- Ethnicity
- Deprivation
- Maternal age
- Maternal health
  - Smoking
  - Alcohol consumption
  - Obesity

# Neonatal and infant mortality risk factors

Office for National Statistics

Shorter gestational age associated with higher neonatal mortality



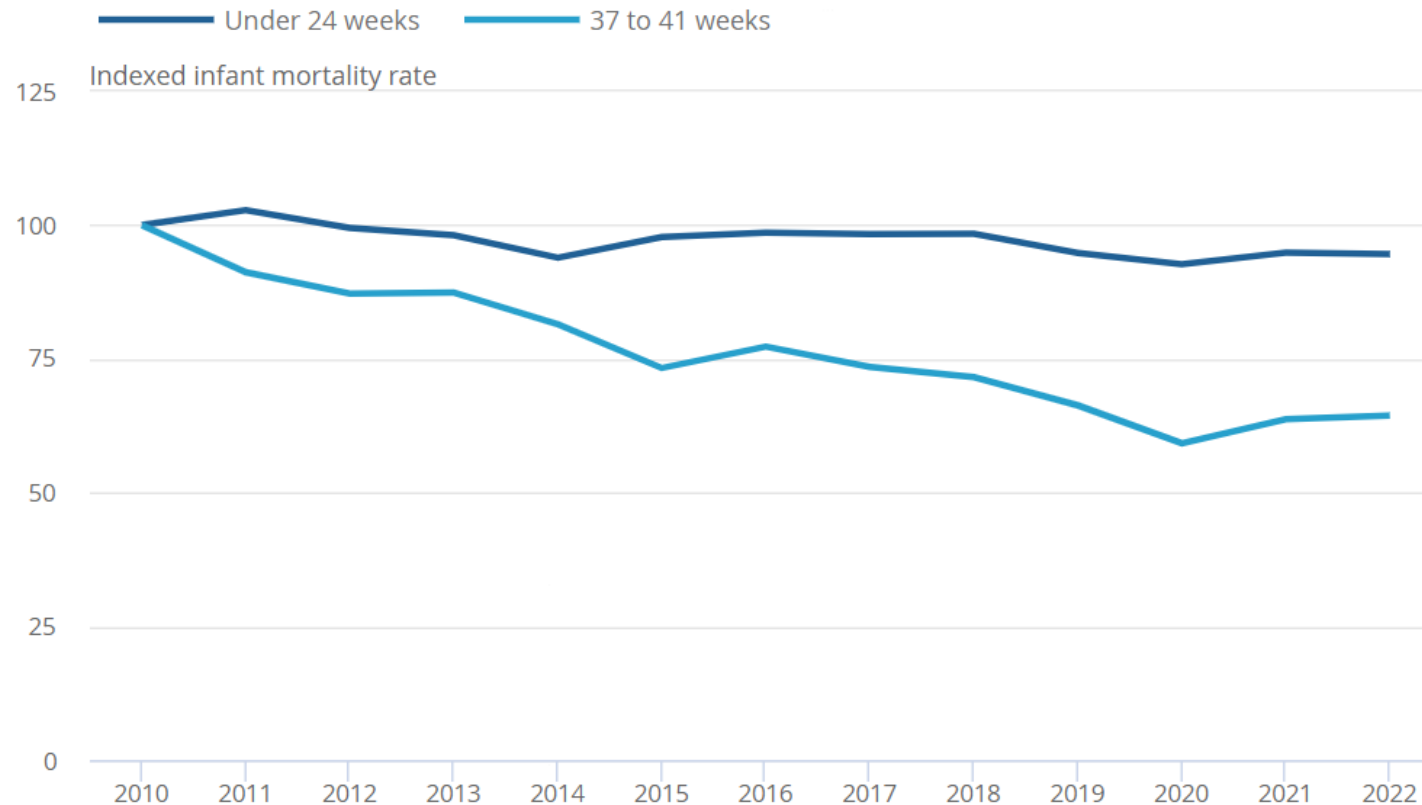
Neonatal mortality rates by gestational age, England and Wales, 2007 to 2021



# Neonatal and infant mortality risk factors

Office for National Statistics

Decrease in neonatal mortality differs by gestational age



Change over time in neonatal mortality rates by selected gestational ages  
England and Wales, 2010 to 2022

# Introduction to CDOP

# Introduction to CDOP

- **CDOPs analyse all deaths between 0-17 years of age**
  - Social and medical circumstances
  - Excludes stillbirth, late foetal loss or termination of pregnancy
- **There are 4 CDOP panels within Greater Manchester (GM)**
  - Oldham, Rochdale & Bury (ORB)
  - Bolton, Salford & Wigan (BSW)
  - Stockport, Trafford & Tameside (STT)
  - Manchester
- **The CDOP has a statutory requirement to prepare and publish a local report on:**
  - a) what has been done as a result of the child death review arrangements; and
  - b) how effective the child death review arrangements are in practice.

## Key terms and definitions

- **Notified case**

A death that has been legally registered

- **Closed case**

A case is defined as closed at the end of the CDOP review process

A case is not necessarily closed in the same year as notification of death

- **Modifiable factor**

A factor 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'

## Categories of death

- Deliberate inflicted injury, abuse or neglect
- Trauma and other external factors
- Acute medical or surgical condition
- Chromosomal genetic and congenital anomalies
- Infection
- Suicide or deliberate self-harm
- Malignancy
- Chronic medical condition
- Perinatal / neonatal event
- Sudden unexpected, unexplained death

# Perinatal / Neonatal event (P/N)

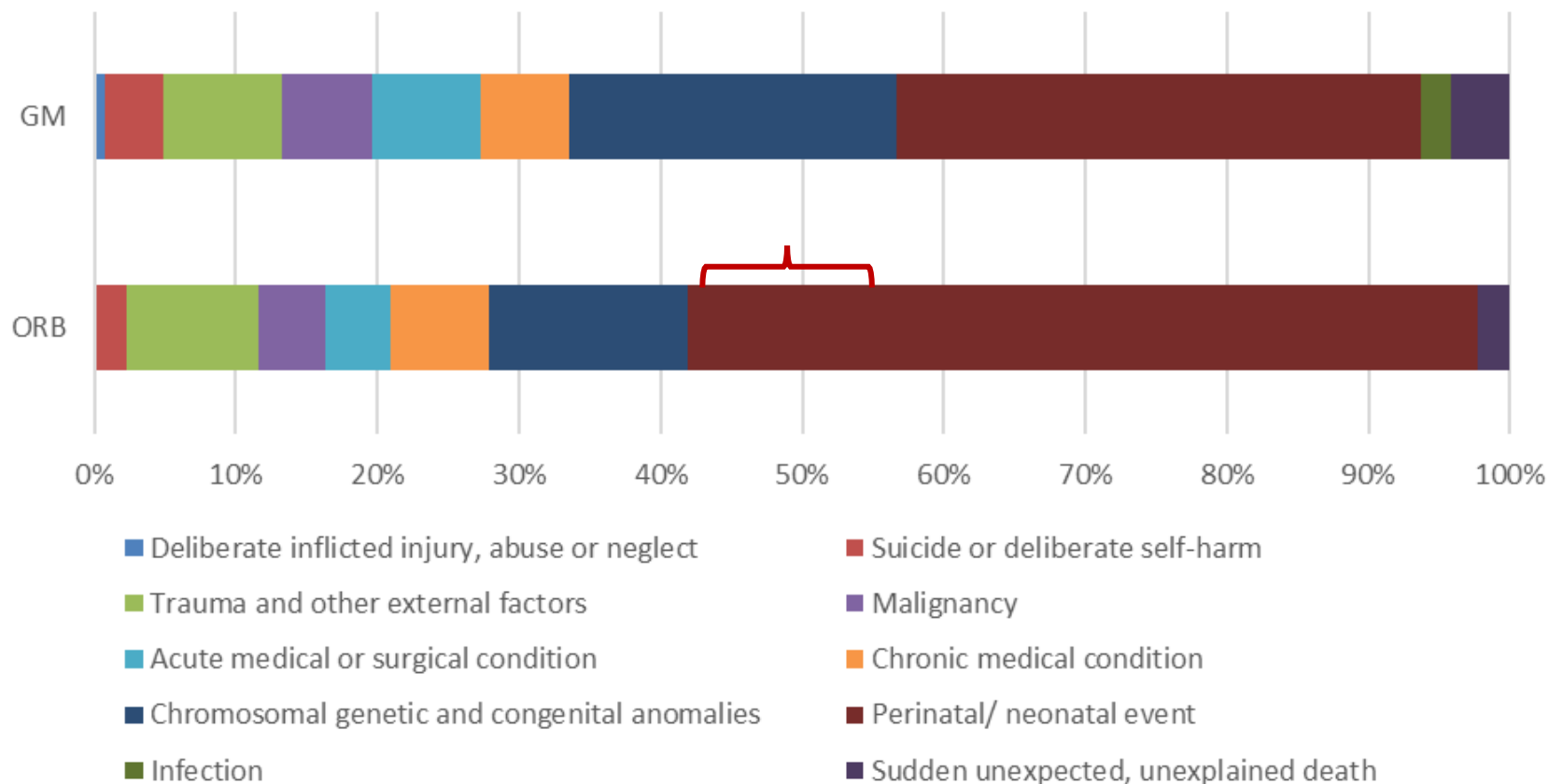
- Death ultimately related to perinatal events
  - irrespective of age at death
  - e.g. **sequelae of prematurity**, antepartum and intrapartum anoxia, bronchopulmonary dysplasia, post-haemorrhagic hydrocephalus
  - includes cerebral palsy without evidence of cause
  - includes congenital or early-onset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

Death occurred during perinatal / neonatal period

		Yes	No
Cause of death categorised as perinatal / neonatal event	Yes	✓	✓
	No	✗	✗

# Research question

# Research question



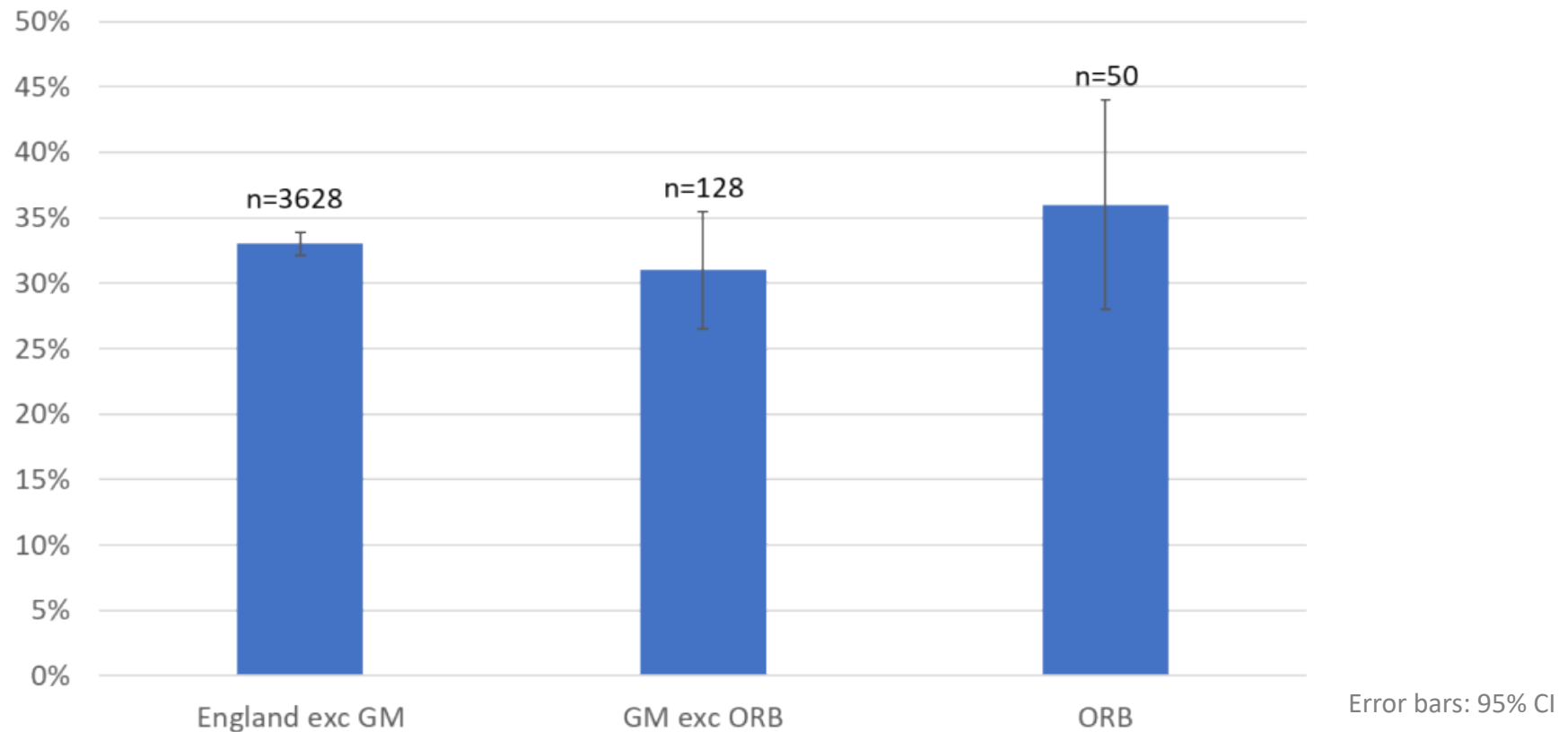
The primary category of death for CDOP cases closed in ORB and GM 2021-2022



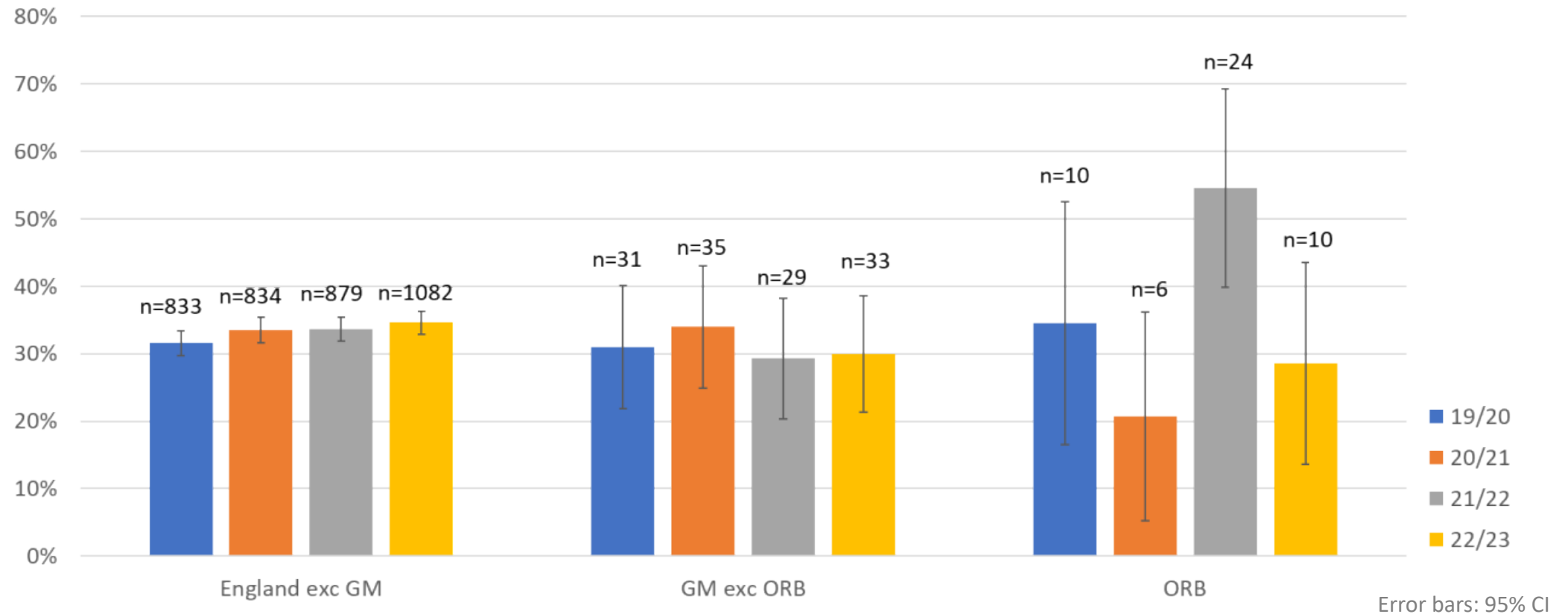
## Research question

- Is the mortality rate from perinatal / neonatal events in ORB higher than elsewhere in GM?
- Can we explain the difference between ORB and GM in terms of % of perinatal / neonatal events?

# % cases categorised as perinatal / neonatal event closed by CDOP April 2019 – March 2023 cumulative



# % cases categorised as perinatal / neonatal closed by CDOP per annum April 2019 – March 2023



# Modifiable factors

## Analysis of modifiable factors

- What are the actual causes of death, and which are most common?
- What is the distribution of these deaths by place, deprivation, ethnicity, sex etc.?
- What are the most common modifiable factors identified associated with this category of deaths?

# Modifiable factors

## Level of relevance

0: Information not available / not applicable

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

## Domain A: Factors intrinsic to the child

- **Child health history / medical conditions**
  - Low birth weight / prematurity
- **Risk factors in mothers during pregnancy / delivery**

Multiple pregnancy

Assisted conception

High Maternal BMI

Low maternal BMI

Smoking in pregnancy

Substance misuse in pregnancy

Alcohol misuse

Perinatal mental health condition

Maternal diabetes

Late booking

Concealed pregnancy

Maternal infection

Gestational diabetes

Maternal age

Other obstetric complications

Delivery complications

## Domain B: Factors in social environment including family & parenting capacity

- Challenges for parents with access to services
- Cultural factors
- Domestic or child abuse / neglect
- Household functioning, parenting / supervision
- Parent / carer's health
- Poverty & deprivation
- School / peer groups
- Smoking / alcohol / substance misuse by parent / carer
- Social care
- Other



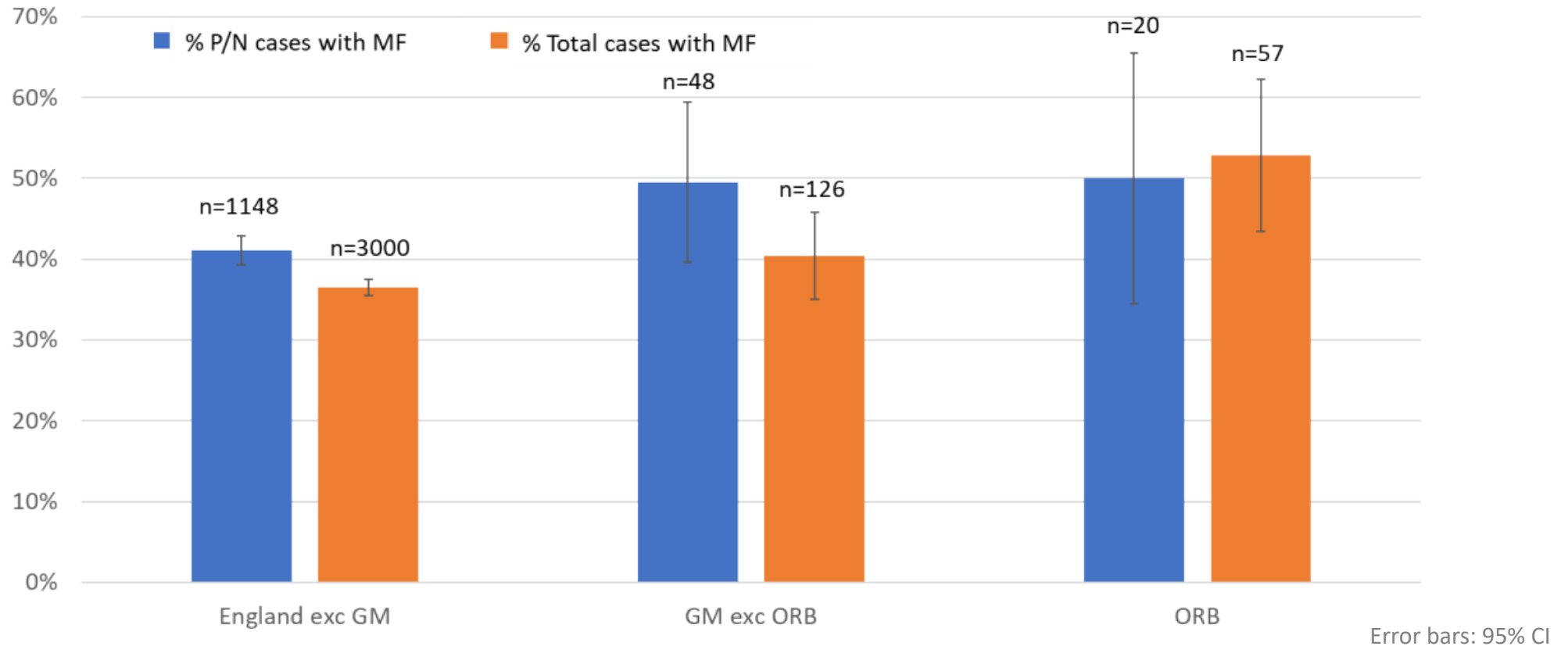
## Domain C: Factors in the physical environment

- **Home / safety conditions**
  - Overcrowded, dirty, mouldy, poor repair, unsafe appliances, attack by animals, homelessness
- **Public safety**
  - Availability of safety equipment, accessible water / railway tracks, absent / non-visible warning signs
- **Sleep environment**
  - Unsafe sleeping arrangements, co-sleeping
- **Vehicle collision**
  - Speeding / recklessness, not using appropriate safety equipment (car seat), unsafe road conditions
- **Other**

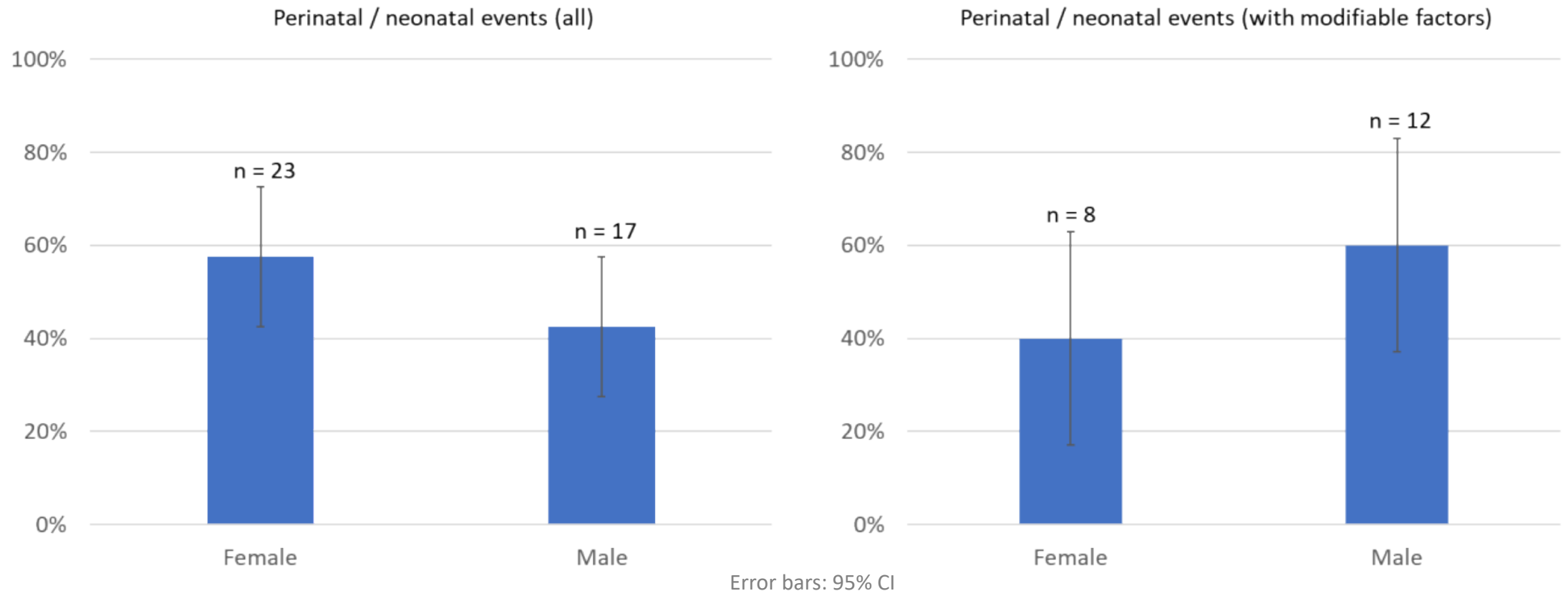
## Domain D: Factors in service provision

- Access to appropriate services
- Communication with family / between agencies
- Following guidelines / pathway / policy
- Initiation of treatment / identification of illness
- Staffing / bed capacity / equipment
- Other

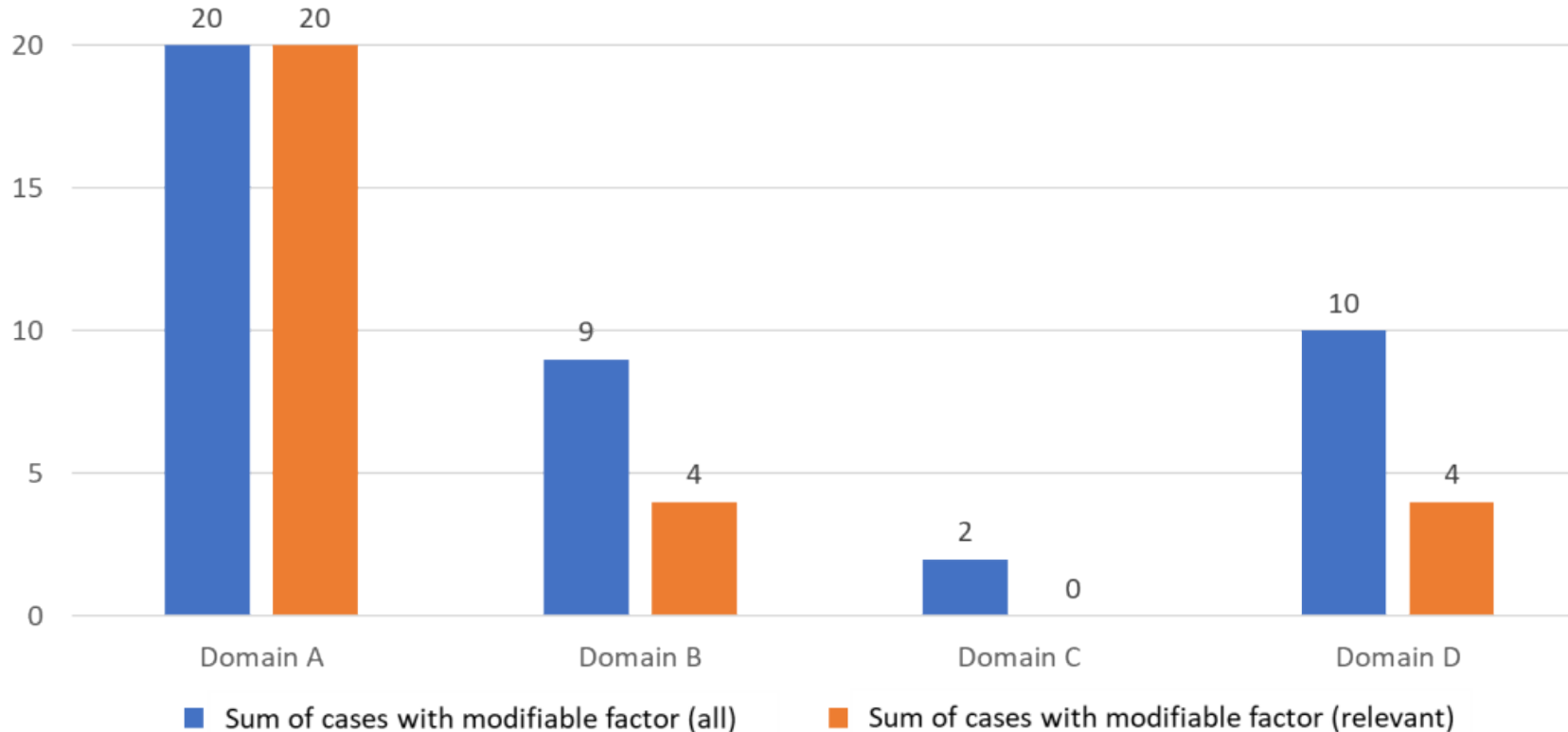
# % cases closed by CDOP with identified modifiable factors April 2020 – March 2023, all cases and perinatal / neonatal cases



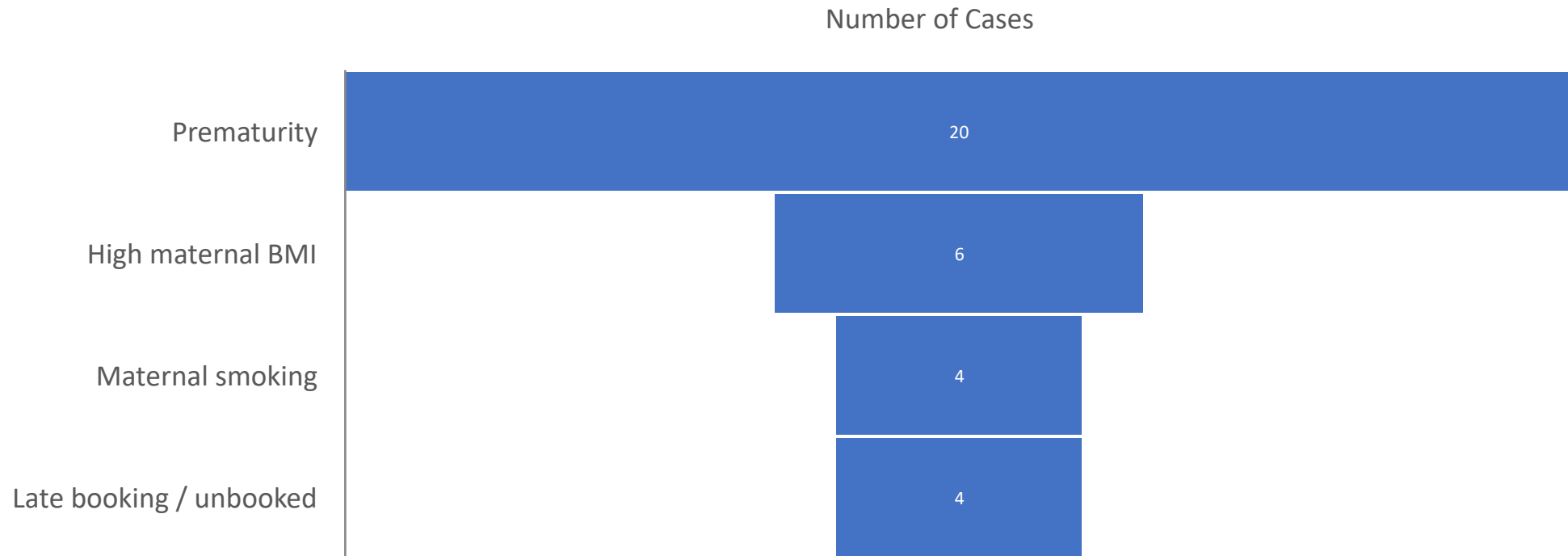
# % cases categorised as perinatal / neonatal closed by ORB CDOP April 2020 – March 2023, by sex & modifiable factors



# Number of cases categorised as perinatal / neonatal closed by ORB CDOP April 2020 – March 2023, with identifiable modifiable factors by Domain



# Domain A: Factors intrinsic to the child



Number of cases categorised as a perinatal / neonatal closed by ORB CDOP between April 2020 and March 2023 most common modifiable factors identified within Domain A

Modifiable factors attributed to <3 cases excluded

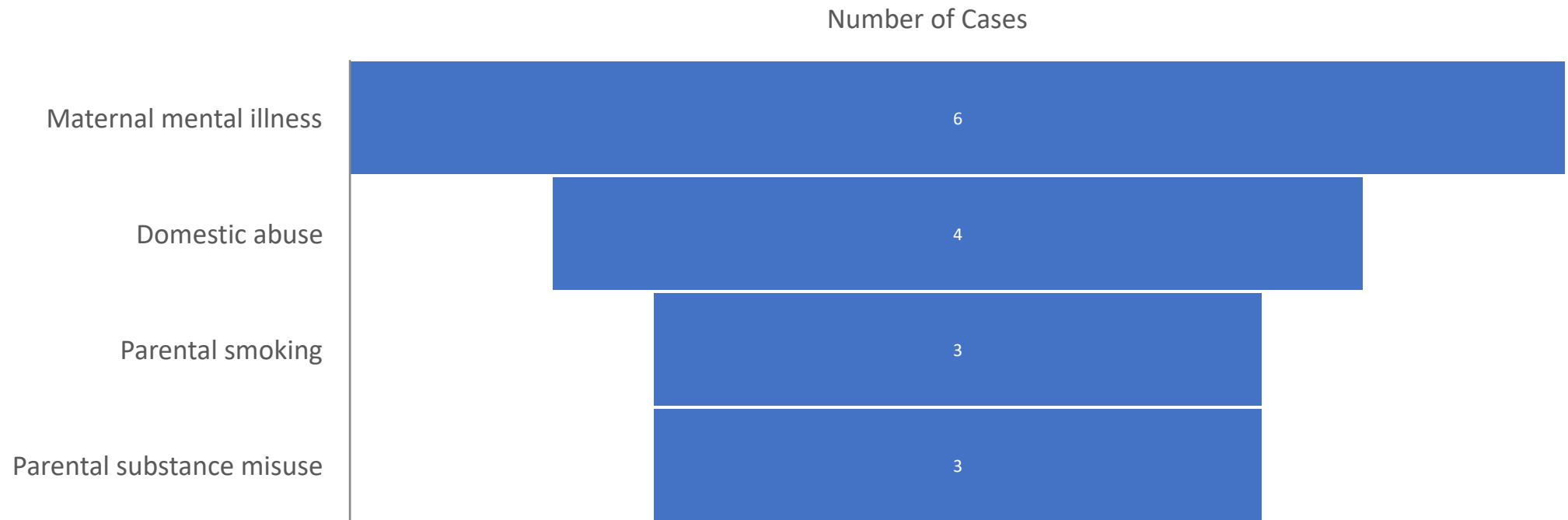
Factors directly attributable to prematurity, such as lung immaturity, also excluded



**Greater Manchester**  
Integrated care



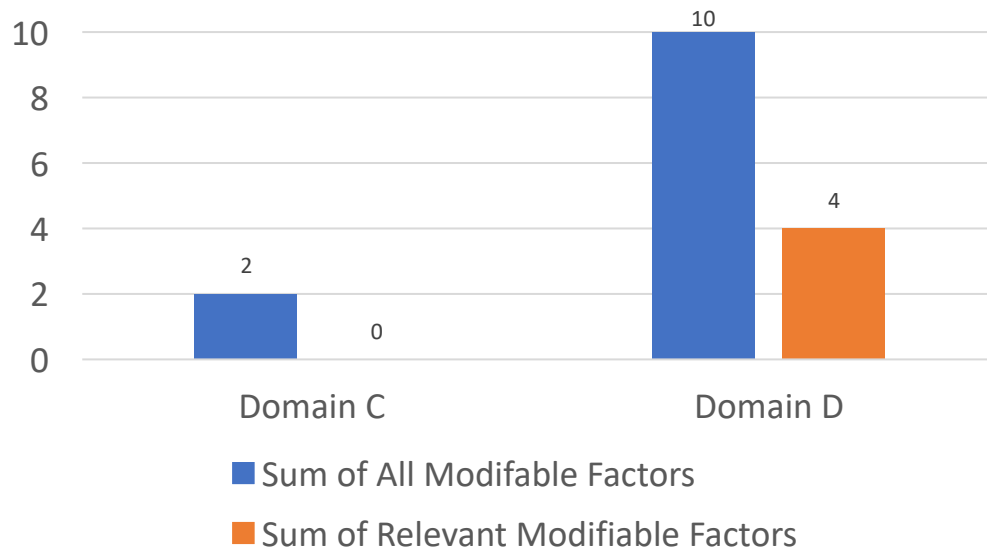
# Domain B: Factors in social environment including family & parenting capacity



Number of cases categorised as a perinatal / neonatal closed by ORB CDOP between April 2020 and March 2023 most common modifiable factors identified within Domain B

## Domain C: Factors in the physical environment

- Home / safety conditions
  - Overcrowding



Number of cases categorised as perinatal / neonatal closed by ORB CDOP  
April 2020 – March 2023, with modifiable factors identified in Domains C & D

## Domain D: Factors in service provision

- Access to appropriate services
- Following guidelines / pathway / policy
- Communication with family / between agencies
- Initiation of treatment / identification of illness



# Reflections

- Limitations due to data quality & small sample sizes
- Unable to draw generalisable conclusions
- Unlikely significant difference between ORB & GM
- More longitudinal studies required
- Clarity required for the recording modifiable factors

Many thanks to

- Public Health Consultant Steven Senior, CDOP administrator Denise Dawson & CDOP panel members for ORB

Questions?