Understanding health and care needs for babies and toddlers under two in Suffolk and North East Essex

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Acknowledgements

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Introduction

In Suffolk and North East Essex ICB, our segmentation model partitions the population into distinct groups based on a wide range of clinical criteria. As we further develop our segmentation model, we wanted to better understand health and care for our youngest patients.

With access to linked population health data, we looked to investigate:

- What are the main conditions affecting babies and toddlers under two in Suffolk and North East Essex and what is the impact on resource use?
- What is the impact of gestation length on a baby's healthcare journey in their first two years of life?

Methods

Cohorts of Suffolk and North East Essex registered patients aged under 2 years were identified for each birth year in 2020-2024 by linking civil registration of births with primary care registrations.

To help us understand the impact of gestation length on the health of babies and toddlers under two, we also linked maternity data to our cohorts. These patient cohorts were then connected to neonatal care, primary care and admitted patient care data.

All the activity data was then filtered to only include records for a consistent period of birth to two years for each cohort. This allowed comparison across years to identify any significant changes or trends.

With different clinical coding systems used across the different datasets, categorisation was applied to better understand the most prevalent and impactful condition groups for patients under two. This categorisation used mapping between SNOMED and ICD-10 coding but also required additional individual labelling to appropriately map a wide range of diagnoses and primary care observations to broad categories. Once categorised, the data could be used to understand the impact of condition categories on activity, length of stay and resource use.

What are the main conditions affecting babies and toddlers under two?

The impact of respiratory illness on babies and toddlers under two was clear from this analysis.

More than half of care contacts in primary care for babies and toddlers under two in every year studied were associated with a respiratory condition (see figure 1). These conditions ranged from more minor colds and respiratory symptoms to more significant respiratory infections. Disorders of the digestive or urinary system were the second most common category of conditions in primary care.

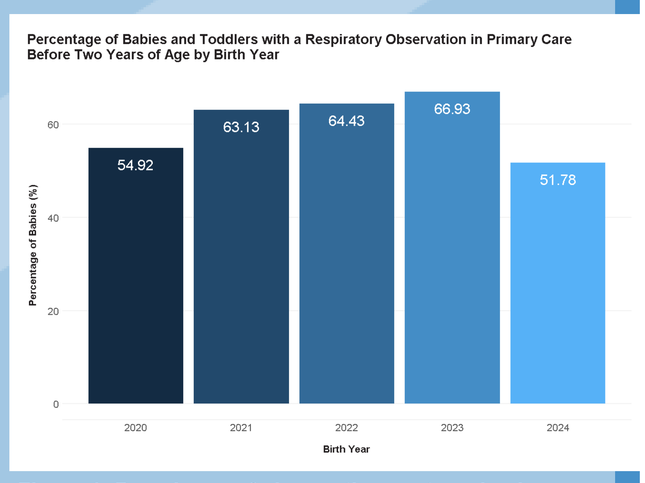

Figure 1: Prevalence of observations categorised as respiratory in primary care.

Respiratory conditions were also the most common primary diagnosis in emergency admissions for babies and toddlers under two (see figure 2). More than a third of these diagnoses were for acute bronchiolitis in every year studied. As in primary care, the second most common primary diagnoses from an emergency admission were disorders of the digestive or urinary systems.

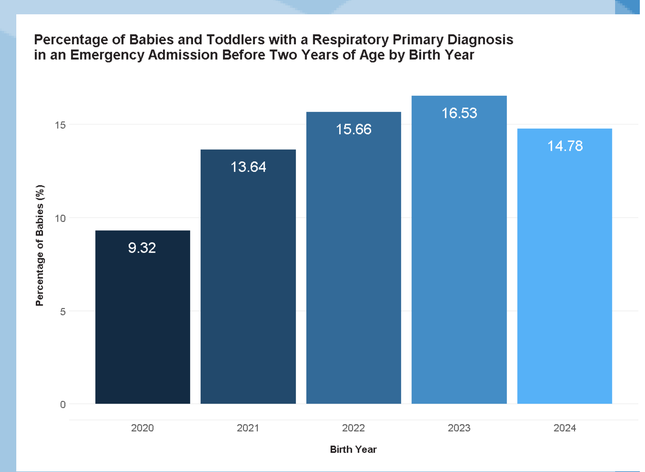

Figure 2: Prevalence of primary diagnoses categorised as respiratory in emergency admissions.

What is the impact of gestation length on a baby's healthcare journey?

Our analysis also showed that **prematurity is a significant driver of health events across the system** from neonatal care through primary care and into emergency admitted patient care. Analysis of our linked data showed that babies born before 37 weeks gestation needed more primary care appointments on average in their first two years than those born after 37 weeks.

Babies and toddlers under two who had been born before 37 weeks gestation also had 10% more emergency admissions during their first two years of life than those born at term. When we compared this to babies born before 28 weeks, the rate of emergency admissions in the first two years increased to more than double the rate of those born at term (see figure 3). Our data also showed that those born before 37 weeks were more than 4 times more likely to need critical care after an emergency admission.

Figure 3: Impact of gestation length on emergency admission rate in first two years of life.

Impact

- Our analysis shows the key conditions impacting health in babies and toddlers under two in both primary and secondary care.
- This intelligence has been directed to maternity programme leads to support our commissioning of services. It provides evidence of prevalent conditions and factors impacting resource use.
- Our improved understanding of babies and toddlers under two is now being incorporated into the improved Suffolk and North East Essex segmentation model. Within this we have now developed segments for children and young people, distinct from the adult segments.