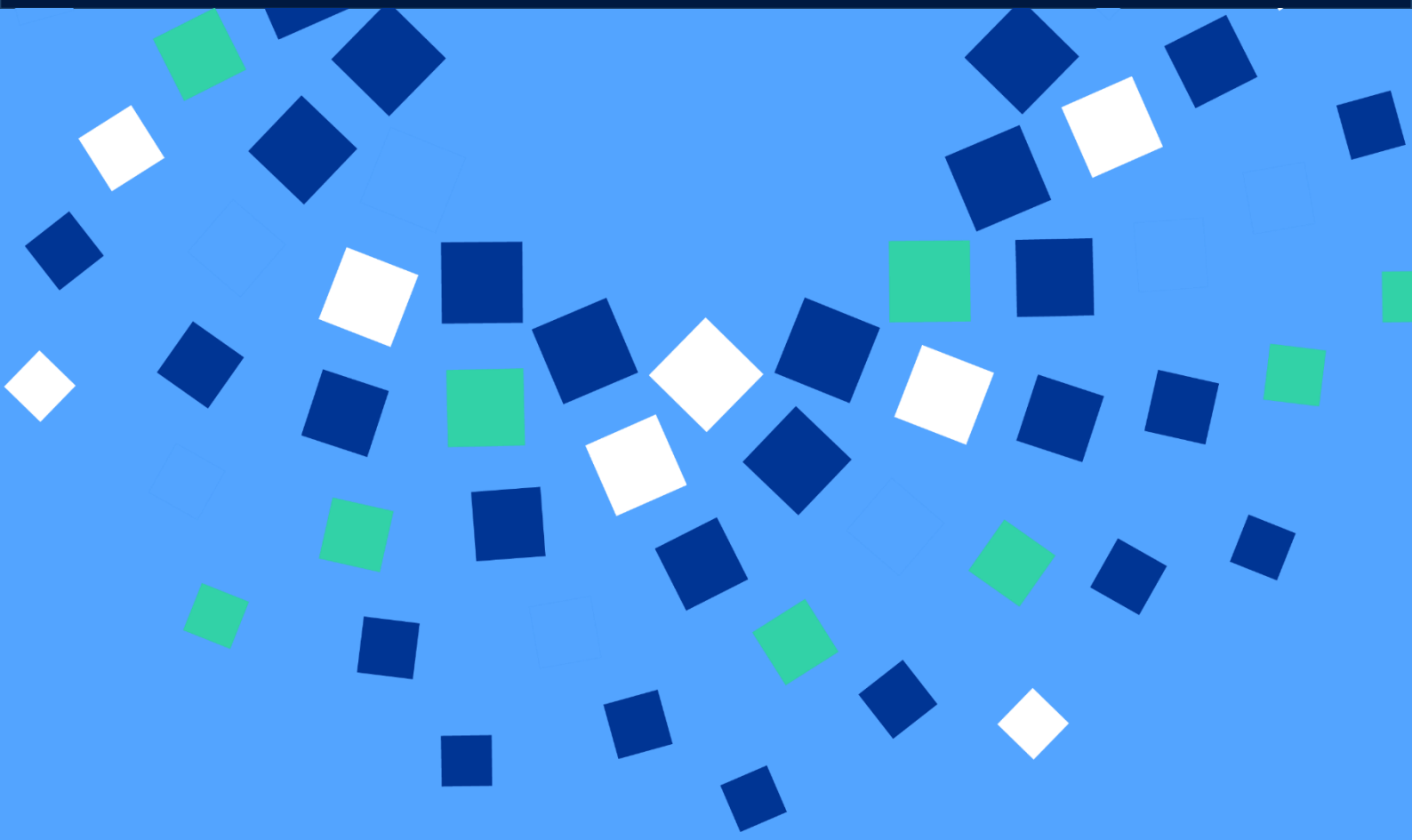
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Data Explained

National Community Child Health (NCCH)

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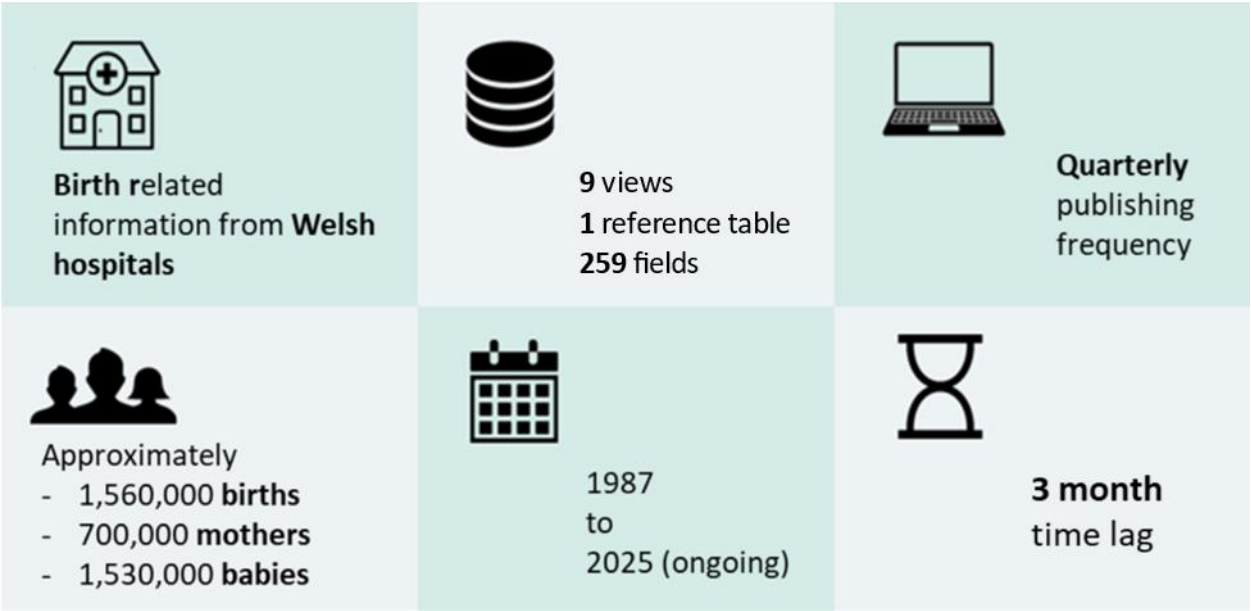


Summary

This Data Explained summarises experiences and learning from working with the National Community Child Health (NCCH) data. This publication is intended to help guide future researchers using this data and to provide feedback on future data development and documentation.

The administrative data discussed in this Data Explained was made securely available through an approved SAIL project via the independent Information Governance Review Panel (IGRP) – project 1934. The data used in this research project comes from Digital Health and Care Wales (DHCW) and was accessed through the Secure Anonymised Information Linkage (SAIL) Databank. The data were not originally collected for research, and gaps and inconsistencies in their recording are expected; some are detailed below.

Overview



Introduction

The National Community Child Health (NCCH) data (also known as NCCHD) is a comprehensive population-level data source that captures information related to the birth and early childhood health of children born in Wales.

It is a critical resource for healthcare providers, policymakers, and researchers seeking to understand and improve child health outcomes (Health and Data Research UK, n.d.). The NCCH is integrated within the SAIL Databank, facilitating robust, anonymised longitudinal research at the population scale.

The NCCH was established in 2004 and includes anonymised records for all children born, resident, or treated in Wales after 1987 (Figure 1) (Welsh Government 2013). It brings together data from local Community Child Health System databases held by Health Boards (HBs). The primary purpose of the NCCH is to provide an online, comprehensive record of a child's health and care journey from birth through to leaving school age (Welsh Government 2025).

While the data predominantly covers children in Wales, it also contains records for children not currently residing in Wales (e.g., Welsh residents born in England or non-residents treated in Wales). Official statistical releases derived from NCCH typically filter the data to include only children born in Wales to Welsh mothers (Welsh Government 2025); however this report presents a summary of the full NCCH without applying such filters.

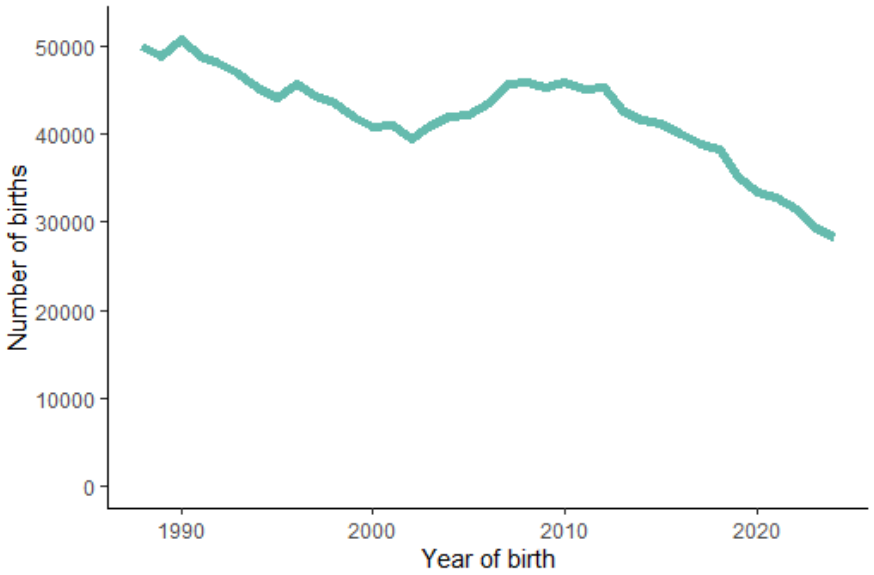


Figure 1 - The number of births recorded per year in NCCH.

How is the data collected?

NCCH data are routinely collected by community child health services in Wales as part of routine care. Key clinical and demographic information at birth and during early childhood is recorded at, or shortly after, birth and entered into local child health systems maintained by each of the seven HBs.

NCCH is updated regularly, with monthly extractions of immunisation data and quarterly extractions of the full data. Data is extracted from the HBs to Digital Health and Care Wales (DHCW), formerly known as the NHS Wales Informatics Service (NWIS). Once collected, relevant data from these local systems are extracted, anonymised, subjected to a series of validation checks, and finally integrated into the NCCH, which is held and maintained by DHCW (Welsh Government 2013). This national resource supports the production of official statistics and serves as the data source for published child health indicators.

Each April, DHCW produces and sends a pseudonymised extract of birth records from the previous calendar year to the Welsh Government. This extract undergoes further data cleaning, validation and de-duplication to ensure consistency and reliability (Welsh Government 2025b). This process supports the production of annual maternity and birth statistics and underpins other child health surveillance and research activities.

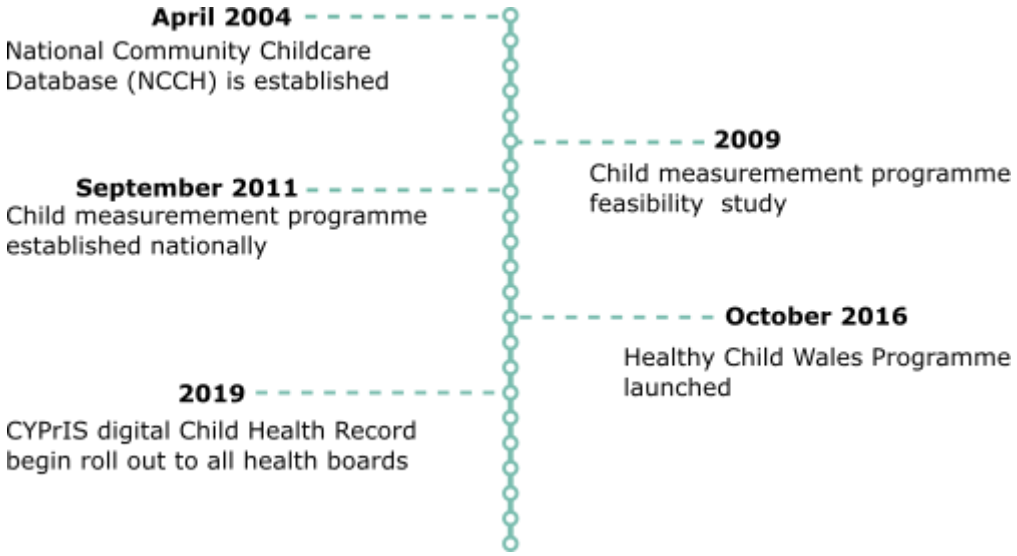


Figure 2 - Timeline of development of NCCH.

Data structure, linkage and coverage

At the point of publication, the NCCH contained records for over a million births between 1988 and 2024. It comprises ten interrelated tables, each capturing different aspects of a child's health and care journey. NCCH uses the Anonymous Linkage Field (ALF) within SAIL to identify unique children in the data (ALF_PE) and their mothers (MAT_ALF_PE); these fields link to other SAIL data sources. These tables also use a series of table-specific linkage fields, such as *CHILD_ID_PE*, *CLIENT_ID_PE*, and *PROV_UNIT_CD*, to refer to individuals and providers. Not all linkage fields are available in all tables, so users should consult the linkage guidance for how best to link these tables. In the NCCH, ALFs exist for both the child and, where available, the mother, enabling longitudinal and intergenerational analysis (Figure 3).

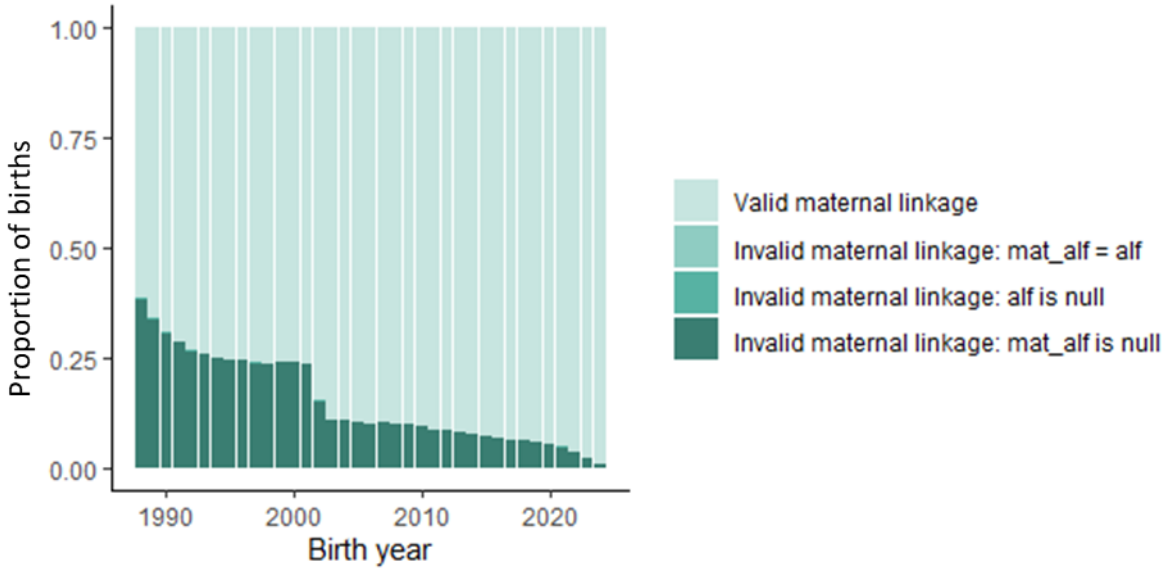


Figure 3 - ALF and Maternal ALF linkage quality for birth records in NCCH between 1988 and 2024. "mat_alf = alf" and "null mat_alf" are too small to distinguish on this scale.

Table 1 and Figure 4 provide a high-level summary of NCCH's structure and temporal coverage. The **ncch_child_births, ncch_child_trust**, and **ncch_imm** (immunisation) tables provide complete data throughout the coverage period. While the two pathology (PATH) tables also have data throughout, they are not fully representative until approximately 2004. The examination table provides excellent coverage from 1988 to 2019, with some coverage thereafter. This table applies to preschool examinations prior to the introduction of the Healthy Child Wales Programme (HCWP). For routine preschool

contacts post-2016, refer to the **ncch_che_healthychildwalesprogramme** table. The examination is undertaken in preschool, so this information is not available for young children. The child measurement programme is available from 2011 until the academic year 2023/24. It is not possible to provision further data until the annual statistical release by Public Health Wales. Breastfeeding information was introduced in 2009, and the Healthy Child Wales Programme in 2016 – both achieved good coverage within a couple of years.

Table name	Description	Key Linkage fields	Expected coverage
NCCH_CHILD_BIRTHS	Details of the birth, with linkage fields for the mother and child. Details include birth-related information such as birth weight, sex, APGAR scores, gestational age, etc.	alf child_id mat_alf	1988 - 2024
NCCH_CHILD_TRUST	This table contains similar information to the birth table but includes additional post-birth information, such as when breastfeeding was ceased.	alf, child_id, mat_alf, client_id & prov_unit_cd	1988 - 2024
NCCH_BREAST_FEEDING	Contains breastfeeding related data, where the time of data collection varies between the first feed and 2 years following birth.	alf child_id	2009 – 2024
NCCH_CHE_HEALTHY CHILDWALESPROGRAMME	Measurements and assessment values routinely collected during the Healthy Child Wales Programme check-in at 6-8 weeks, including indicators of infant growth, development and overall health.	client_id & prov_unit_cd	2016 – 2024
NCCH_EXAM	A Preschool Health check which schedules and monitors the child's subsequent development through systematic examination. This module includes screening for developmental examinations, any referrals, and the final diagnosis. All results are recorded, including any children's special needs.	client_id, child_id & prov_unit_cd	1988 – 2024
NCCH_PATH_BLOOD_TESTS	Details of blood tests performed on the children and their results – required to monitor the outcome of blood tests for genetic disorders such as cystic fibrosis.	alf, child_id, lab_no, client_id & prov_unit_cd	1988 – 2024
NCCH_PATH_SPCM_DETAIL	Contains pathology specimen-related details.	alf, child_id, lab_no, client_id & prov_unit_cd	1988 – 2024
NCCH_IMM	Details of the immunisations that the child receives (linkable to the reference table *NCCH_REF_IMM_VAC* via the course_cd).	child_id, client_id & prov_unit_cd, course_cd,	1988 - 2024
NCCH_CHILD_ MEASUREMENT_PROGRAM	The Child Measurement Programme (CMP) measures children aged 4-5 years in Wales.	alf, child_id, client_id & prov_unit_cd	2021 – 2024

Table 1 - Summary of the different views within NCCH, their linkage fields and coverage period.

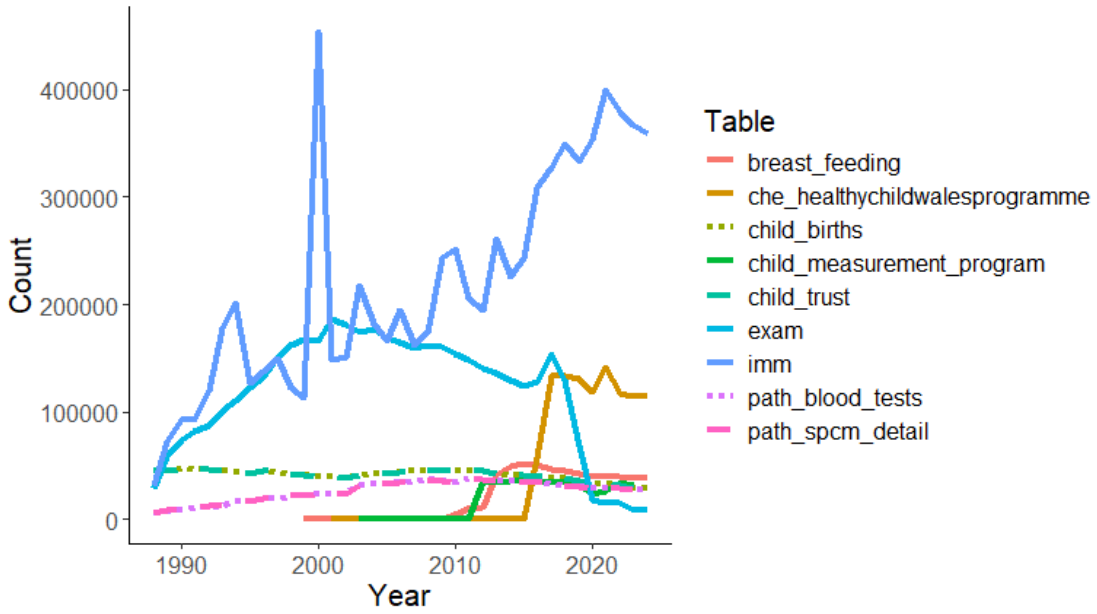


Figure 4 - The number of records in each dataset between 1987 and 2024.

Not all records appear in all tables. Figure 5 highlights the percentage overlap between each pair of tables.

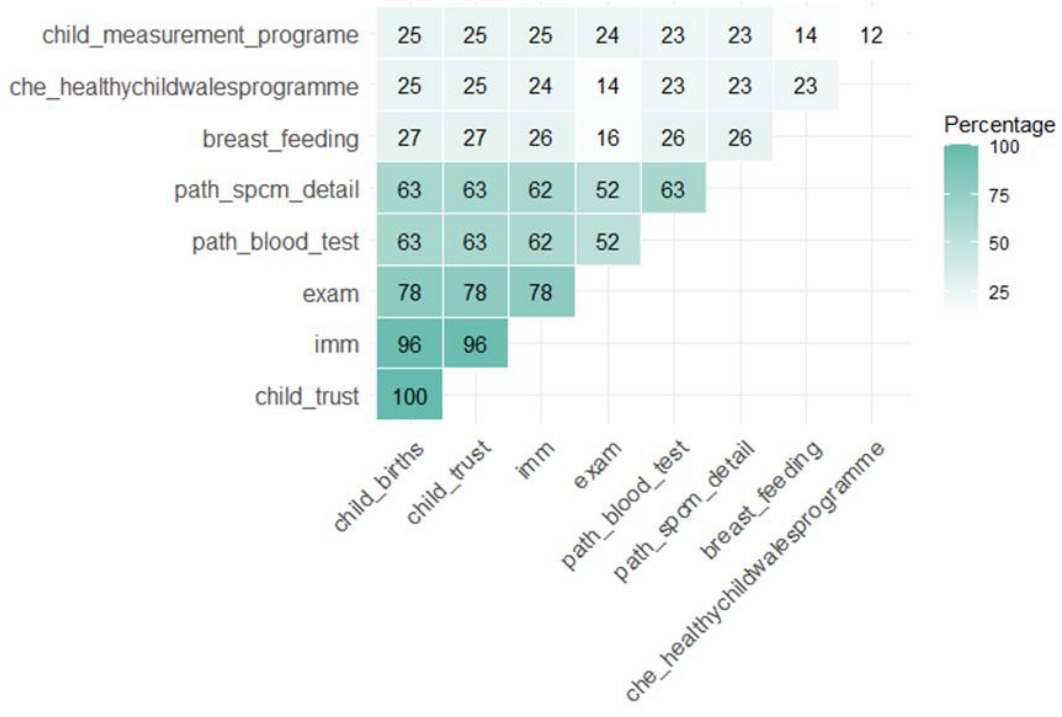


Figure 5 - The percentage of children found in each combination of tables. Linkages were made via ALF_PE where possible. Where unavailable, records are linked to CHILD_TRUST via CLIENT_ID_PE.

Key variables

Birth outcomes are recorded in the *STILLBIRTH_FLG* as 0 for live births and 1 for stillbirths. However, a stillbirth is only registerable as a birth if it occurs after a gestation of 24 weeks. Gestation is measured as complete weeks, e.g. 23 weeks and 6 days would be recorded as 23 weeks.

Status codes are frequently used throughout SAIL data to indicate linkage quality when linking events or information to an ALF; most commonly, values 1, 4, and 39 are used. When linking maternal ALFs, additional matching techniques are used that also achieve high linkage quality. A status code starting with 2 indicates that the NHS number was derived through linkage; code details are in Table 2. Full structural metadata is provided in metadata resources (Health and Data Research UK, 2025).

ALF status code	How the ALF was allocated
1	Matched using NHS number
2	NHS Number derived through external linkage, e.g. Case Record Number match to PEDW
4	Surname, first name, postcode, date of birth, and sex match exactly to WDSD
39	Fuzzy matching with a probability >= 0.9
21	Only 1 possible matching adult female cohabitee. “mother” has a maternity episode recorded as part of a hospital admission. “mother's” DOB in NCCH matched WDSD.
22	Only 1 possible matching adult female cohabitee. “mother” has **no** maternity episode recorded as part of a hospital admission. “mother's” DOB in NCCH matched WDSD.
23	Only 1 possible matching adult female cohabitee. “mother” has a maternity episode recorded as part of a hospital admission. No “mother” DOB in NCCH. Child cohabitee (i.e. potential children) <10 – this is to rule out the ‘boarding school effect’, where a person was incorrectly found to have >150 children.
24	Only 1 possible matching adult female cohabitee. “mother” has **no** maternity episode recorded as part of a hospital admission. No “mother” DOB in NCCH. Child cohabitee (e.g. potential children) < 10.

Table 2 - Values for ALF_STS_CD, which indicates how an Anonymous Linkage Field (ALF) was allocated to a record. DOB: date of birth, WDSD: Welsh Demographic Service Dataset, PEDW: Patient Episode Dataset for Wales in SAIL.

What can the data be used for?

The NCCH supports a diverse range of applications, from the production of official statistics to healthcare service planning and academic research. The data is particularly valuable for monitoring birth outcomes, early childhood health indicators, and public health trends at both national and local levels.

NCCH enables detailed analysis of key factors, including low birth weight, premature deaths, maternal age distribution, and breastfeeding initiation, across different population groups, supporting longitudinal and intergenerational studies. Researchers can investigate the impacts of perinatal, birth, and early-life exposures and conditions on health and social outcomes throughout the lifespan.

While registered births and infant mortality statistics are primarily sourced from the ONS and remain the authoritative figures for birth counts in Wales, the NCCH underpins the publication of numerous other important statistics in Wales. These include the annual statistical releases and quarterly updates on the Healthy Child Wales programme, as well as quarterly breastfeeding statistics published via StatsWales.

Using NCCH

A large proportion of birth records in NCCH do not include a provider health board, and many also contain other missing fields. The proportion of birth records without a health board has been decreasing (Figure 6). However, fields such as *BIRTH_WEIGHT* have near complete coverage throughout NCCH's history for birth records with a known health board (Figure 7).

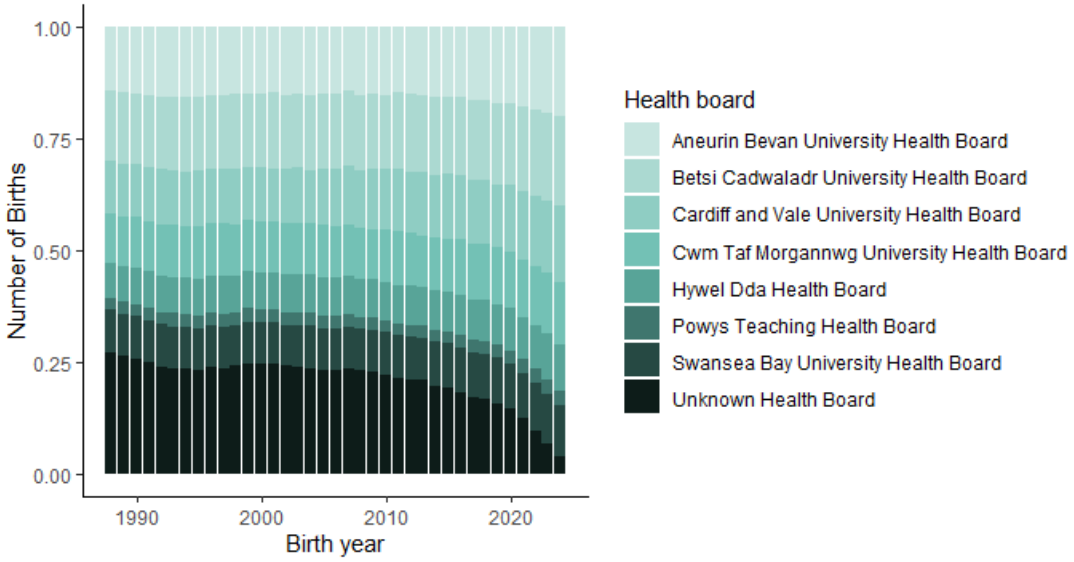


Figure 6 -The proportion of birth records in NCCH with a provider health board recorded between 1988 and 2024.

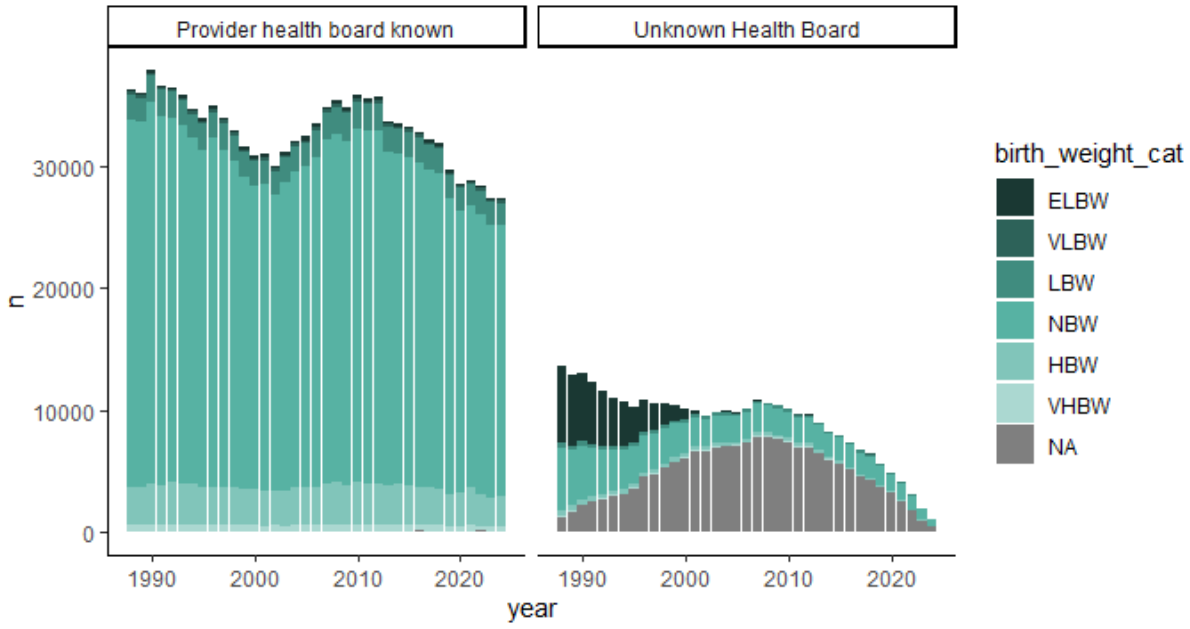


Figure 7 - The distribution of birth weights between 1988 and 2024, stratified by whether the health board was recorded. ELBW = Extremely Low Birth Weight, VLBW = Very Low Birth Weight, LBW = Low Birth Weight, NBW = Normal Birth Weight, HBW = High Birth Weight, VHBW = Very High Birth Weight.

Field completeness varies considerably between health boards. For example, Figure 8 shows the proportion of birth records with a non-null *DELIVERY_METHOD_DESC* by year and health board. This field shows inconsistent reporting both regionally and longitudinally.

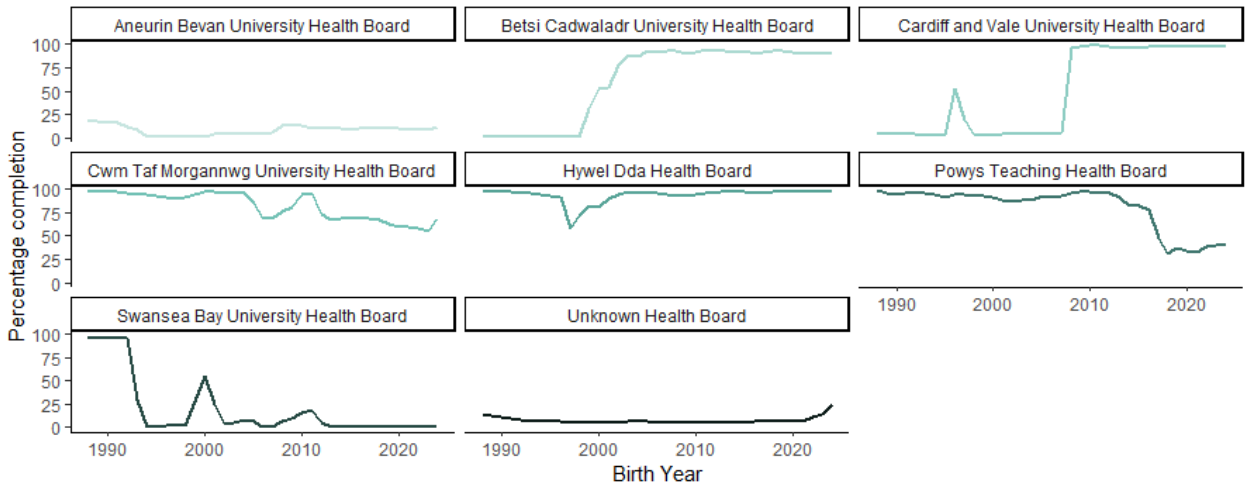


Figure 8 - The percentage completion of the field 'DELIVERY_METHOD_DESC' (birth delivery method description) in NCCH, between 1988 and 2024, stratified by health board.

Users may want to compare their NCCH analysis with analyses from other maternity data sources. Users should carefully consult the NCCH documentation and metadata when comparing data, as definitions of birth characteristics and data dictionaries can differ from other maternity data. When investigating birth mode, NCCH holds data on the mode of delivery onset and delivery method (
Figure ***9*** &
Figure ***10***).

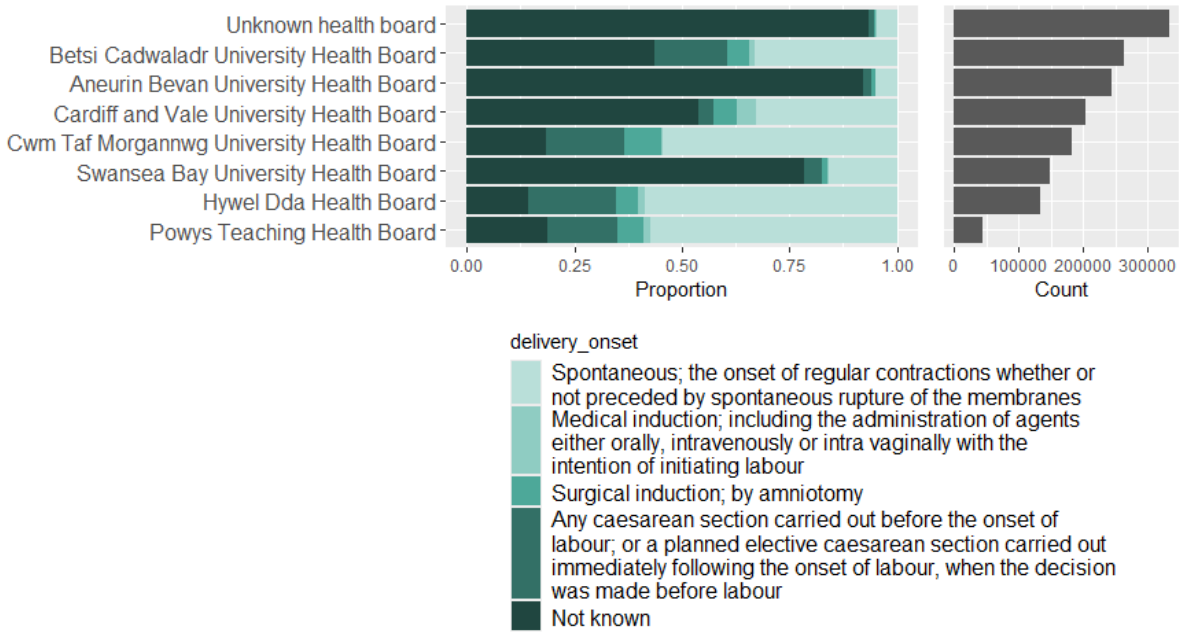


Figure 9 - The reporting consistency of DELIVERY_ONSET by health board.

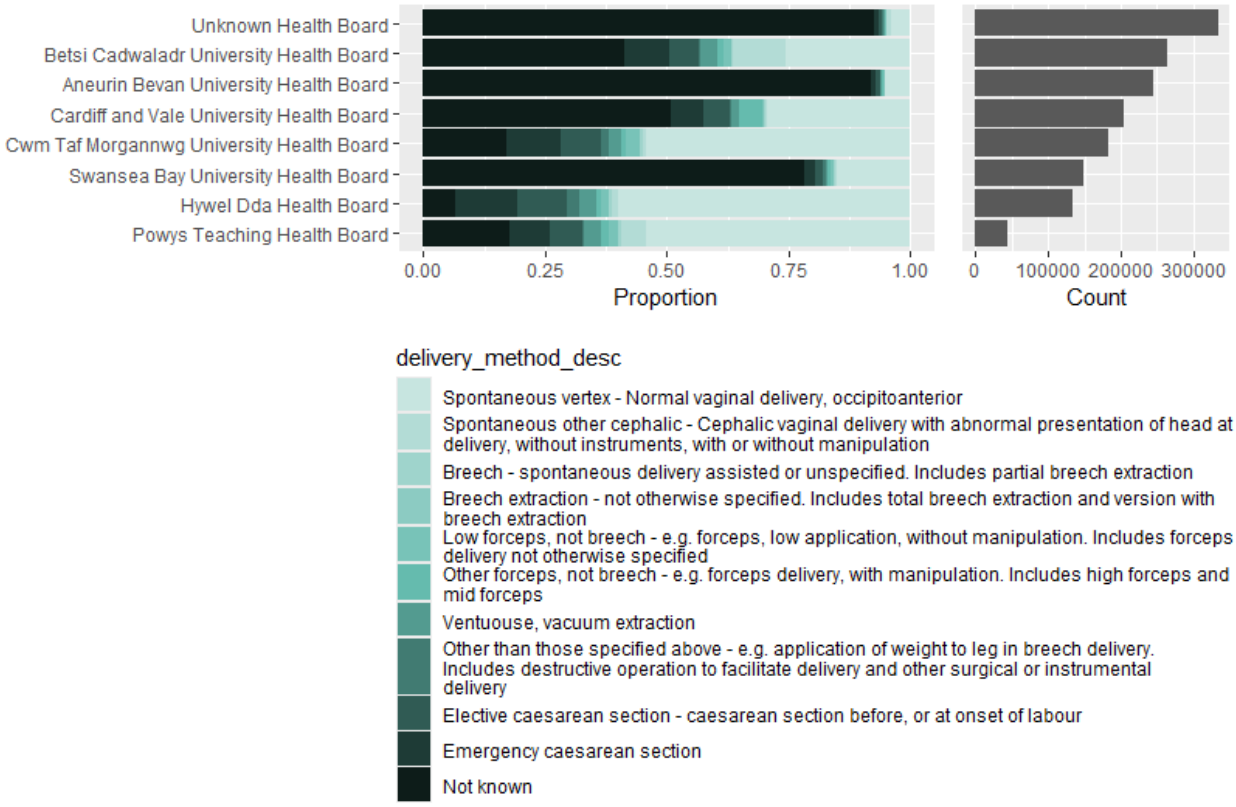


Figure 10 - The reporting consistency of DELIVERY_METHOD_DESC by health board.

Strengths

A key strength of the NCCH lies in its comprehensive, population-wide coverage, encompassing almost all births in Wales since 1987, including those of non-resident mothers. The level of detail available is another key advantage. The data captures a wide range of clinical and demographic variables, such as gestational age, birth weight, maternal age and initial feeding intentions.

The NCCH is updated regularly; monthly extractions from HBs are performed for immunisation data, and quarterly for the full data. Additionally, because DHCW standardises data collection and processes it centrally, reporting is highly consistent. This data has proven extremely valuable for both government and academic use. It supports public health monitoring, policy development, and service planning, and enables researchers to examine patterns and inequalities in early childhood health across Wales.

Data limitations encountered

The NCCH provides comprehensive data but has some limitations. Health board staff manually enter data, which can introduce errors. While most data items are highly complete, some have more missing information. Data quality and completeness can vary across HB and over time, particularly for nonmandatory fields or those that rely on manual data entry. For instance, variables such as maternal smoking status or breastfeeding intention are sometimes incomplete or inconsistently recorded. This is particularly seen in records with no health board associated with them. This can affect the reliability of indicators derived from these fields. We provide examples of field completeness in NCCH and advise users to check their relevant fields both temporally and by health board.

References

Health and Data Research UK. 2025. 'Dataset - Health Data Research Gateway'. Health Data Research Gateway. https://healthdatagateway.org/en/dataset/316.

Health and Data Research UK. n.d. 'Dataset - Health Data Research Gateway'. Accessed 17 December 2025. https://healthdatagateway.org/en/dataset/360.

Public Health Wales NHS Trust. 2017. *The Child Measurement Programme for Wales: History, Legislative Framework, and Technical Aspects*. https://phw.nhs.wales/services-and-teams/child-measurement-programme/cmp-2022-23/cmp-history-legislative-framework-and-technical-aspects/#:~:text=in%20the%20process.-,History%20of%20the%20programme%20in%20Wales,10/11%20in%20year%206.

Welsh Government. 2013. *Birth Statistics from the National Community Child Health Database (NCCHD), Quality Report*. https://www.gov.wales/sites/default/files/statistics-and-research/2018-11/birth-data-national-community-child-health-database-quality-report.pdf.

Welsh Government. 2018. *Healthy Child Wales Programme, October 2016 to June 2018: Experimental Statistics*.

Welsh Government. 2025a. *Breastfeeding Data: Quality Report*. https://www.gov.wales/breastfeeding-data-quality-report-html.

Welsh Government. 2025b. *Maternity and Birth Statistics: Quality Report*. https://www.gov.wales/sites/default/files/pdf-versions/2025/8/2/1754383675/maternity-and-birth-statistics-quality-report.pdf.

Glossary

Abbreviation	Description
ADR UK	Administrative Data Research UK
ALF	Anonymous Linkage Field
DHCW	Digital Health and Care Wales
HB	Health Board
IGRP	Information Governance Review Panel
NWIS	NHS Wales Informatics Service
SAIL	Secure Anonymised Information Linkage (SAIL) Databank

Disclaimer

This work was produced using administrative data accessed through the SAIL Databank. The use of the data in this work does not imply the endorsement of the SAIL Databank or data owners in relation to the interpretation or analysis.

This work uses research data which may not exactly reproduce National Statistics aggregates.

Acknowledgements

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This Data Insight has been produced by the ADR Wales Ymateb research team. It provides a snapshot of informative research currently underway at ADR Wales but is not intended to provide a complete picture of work undertaken within this field or the ADR Wales programme of work. The information presented in this Data Insight has been reviewed by ADR Wales colleagues with expertise within this thematic area and accepted to be accurate at the point of publication. Views expressed in this Data Insight are those of the researchers and not necessarily those of ADR Wales partner organisations.

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