



Official Statistics in Development: Estimates of children with a parent in prison

Executive Summary

Introduction

This report presents the results of linking His Majesty's Prison and Probation Service (HMPPS) data and the results from a data-matching pilot with His Majesty's Revenue and Customs (HMRC) to produce an estimate of the number of children with a parent in prison in England and Wales.

Children with a parent in prison are considered to be a hidden population, with data on these children held in multiple places across a number of government services. This report takes steps to bring this data together and to identify the scale of parental imprisonment, building collective understanding of the estimated number of children with a parent in prison.

This work has been completed by the [Better Outcomes through Linked Data \(BOLD\) programme](#).

Methodology

This is the first time HMPPS data covering the entire prison population for England and Wales has been linked together to produce aggregate numbers of **prisoners with children** on a national scale and a corresponding estimate for the number of **children with a parent in prison**.

These statistics have been compiled by extracting information from five different HMPPS data sources which relate to whether an individual has children. In addition to extracting information from structured data, data science techniques have been used to extract information from free-text case notes which contain information from prison and probation officers during contact with an individual. To validate our findings, we established a data-matching pilot with HMRC who linked a sample of HMPPS data to Child Benefit records.

The data sources we have used to produce these statistics capture parents as well as those who disclose having wider parental responsibility, legal guardianship, or primary care for a child. Throughout the report, and in our findings, we refer to all of these groups as 'parents', to capture all prisoners with a parental relationship to a child.

Our methodological approach involved three steps:

- 1) we perform a direct **count** of prisoners with children in at least one of the 5 linked HMPPS administrative data sources;
- 2) we then adjust for **undercount** to create an **estimate of prisoners with children**;
- 3) finally, we convert this to an **estimate of the number of children with a parent in prison** based on a simple multiplier.

'Undercount' is the number of prisoners with children estimated to be missing from the direct count and is identified based on the results of analysing the free-text case notes and the HMRC data-matching pilot. Statistics are in aggregate form only, providing overall figures on prisoners and children, and were not used to identify individual children or prisoners.

As this is an official statistics in development publication, we are consulting on this methodology with further discussion in the accompanying Technical Guide. Feedback should be provided to RR-pilot-BOLD@justice.gov.uk.

Findings

Using data from five HMPPS data sources, **we directly counted 74,275 prisoners with children** who spent time in prison during the period 1 October 2021 and 1 October 2022 - equivalent to 53% of the 139,562 prisoner cohort between these dates.

After making adjustments for prisoners with children expected to be missing from the direct count, **we estimate the number of prisoners with children to be 108,990** - equivalent to 78% of the prisoner cohort.

Taking our estimate of the number of prisoners with children and combining this with the average number of dependent children per family,¹ **we estimate that between 1 October 2021 and 1 October 2022 there were 192,912 children with a parent in prison.**

Limitations

The HMPPS data used to produce these statistics relies largely on self-disclosure, meaning that some information may be missing or incorrect. Our estimate of children with a parent in prison also relies on an extrapolation from the number of prisoners with children, due to HMPPS data sources providing information primarily focussed on the prisoner rather than their children.

Despite these limitations, these statistics are intended to provide a direct and more reliable count based on linked data from administrative sources rather than relying on survey estimates.

¹ Taken from the latest published Labour Force Survey results: Official for National Statistics (ONS), released March 2023, ONS website, .xlsx spreadsheet, [Average number of dependent children per family in England and Wales, 2020 and 2021](https://ons.gov.uk/people-in-work/dependent-children/average-number-of-dependent-children-per-family-in-england-and-wales-2020-and-2021) - Office for National Statistics (ons.gov.uk)

Readers of these statistics should, however, consider the limitations and assumptions when interpreting the results.

Official Statistics in Development

[Official statistics in development](#) are official statistics that are undergoing development. They may be new or existing statistics and will be tested with users, in line with the standards of trustworthiness, quality, and value in the [Code of Practice for Statistics](#). Official statistics in development were previously referred to as 'experimental statistics'. Users should be aware that official statistics in development may have a wider degree of uncertainty and require extra caution when interpreting results.

1. Introduction

1.1 The Better Outcomes through Linked Data (BOLD) programme

BOLD is a four-year cross-government programme led by the Ministry of Justice (MoJ). It was created to show how people with complex needs can be better supported by linking and improving the government data held on them in a safe and secure way.

The BOLD programme will demonstrate the value of linking data to improve our evidence on what works in four main areas: supporting victims, reducing homelessness, tackling substance misuse, and reducing reoffending.

You can find more information on the BOLD programme on GOV.UK at [Ministry of Justice: Better Outcomes through Linked Data \(BOLD\)](#).

This publication has been produced as part of the BOLD programme's Reducing Reoffending demonstrator pilot.

1.2 Background

Previous research suggests that children who experience parental imprisonment are at an increased risk of offending themselves.² We also know that children impacted by parental imprisonment experience numerous difficulties across health and social outcomes and therefore it is vital to work across government to address this issue.³

The Farmer Review on *The Importance of Strengthening Prisoners' Family Ties* (2017) highlighted the issue of intergenerational offending,⁴ referencing a landmark study which found that 63% of prisoners' sons went on to offend themselves.⁵ The Farmer Review also pointed to significant gaps in official data on the scale or impact of parental imprisonment, noting that there was not a process within the MoJ to centrally record the number of children affected.⁶

In England and Wales, ministerial responsibility for supporting children who may be vulnerable due to parental incarceration sits with the Department for Education in England and with the Welsh Government in Wales. However, strengthening family ties is a vital aspect of the work of MoJ and His Majesty's Prison and Probation Service to enable positive rehabilitation and desistance from crime, particularly where the best interest of the child is maintaining a strong relationship with their parent.

² Besemer S, Ahmad SI, Hinshaw SP, and Farrington DP (2017). '[A systematic review and meta-analysis of the intergenerational transmission of criminal behavior](#)', *Aggression and Violent Behavior*, Volume 37, pages 161 to 178

³ Murray J, Farrington F (2008), 'The effects of parental imprisonment on children', *Crime and Justice: A Review of Research*, Volume 37, pages 133 to 206

⁴ Ministry of Justice (MoJ), Farmer M (2017), '[The Importance of Strengthening Prisoners' Family Ties to Prevent Reoffending and Reduce Intergenerational Crime](#)

⁵ Farrington DP, Barnes G, and Lambert S. (1996), '[The concentration of offending in families](#)', *Legal and Criminal Psychology*, Volume 1, pages 47 to 63

⁶ MoJ, Farmer (2017), *The Importance of Strengthening Prisoners' Family Ties...*

The challenge of collecting data on this group means there is a lack of evidence on the number of children experiencing parental imprisonment and how this may affect their wellbeing and future outcomes. The lack of reliable data creates a challenge when designing policy. Building the evidence base and improving our collective understanding of the scale of the issue is a critical step towards developing an effective cross-government approach and ensuring that the right support can be provided to the children who need it.

1.3 Previous estimates

Historically, robust estimates of the number of children with a parent in prison have been difficult to develop because they have not been calculated directly from operational or administrative records relating to the entire prison population, but instead using survey data from a sample of the prison population. Various estimates have been produced that range from 100,084 to 312,000 children with a parent in prison, all of which depend on data from a 2009 Surveying Prisoner Crime Reduction (SPCR) survey (see Table 1).

In comparison to other estimates, this report is the first time an estimate has been produced using operational data systems that provide records relating to the entire prison population of England and Wales. Given this different approach, the estimates are not directly comparable to previous estimates, meaning we are unable to draw conclusions about the overall change in the number of children with a parent in prison over time.

Table 1: Survey-based estimates of the number of children with a parent in prison and the percentage of prisoners with children

Estimate (number of children with a parent in prison)	Estimate (percentage of prisoners with children)	Source
200,000	54%	MoJ (2009) - based on multiplying the prison population with the average number of children per prisoner (1.14) from the Surveying Prisoner Crime Reduction (SPCR) survey of nearly 4,000 prisoners (2009, published 2012). ⁷
312,000	45% to 65%	Crest Advisory (2019) - estimate based on the Surveying Prisoner Crime Reduction (SPCR) survey in England and Wales (2009) and the US Bureau of Justice Statistics survey of inmates, carried out in 2004. ⁸
100,084	N/A	Prison Advice and Care Trust (PACT) (2023) - based on daily MoJ prison population statistics for September 2023 and the average number of children per male prisoner taken from the 2009 SPCR survey. ⁹

1.4 Self-disclosure

Unlike the previous estimates, which rely on survey data, the findings detailed in this report use administrative data sources detailed in section 2.1. These contain information collected during an individual’s interaction with prison and probation staff. This is useful because data are available for all prisoners for the period selected. However, there may be multiple reasons prisoners may be reluctant to disclose information to staff about their children such as fear of involvement from social services.¹⁰

⁷ MoJ, Williams K, Papadopoulou, and Booth N (2012), [Surveying Prisoner Crime Reduction Survey: Prisoners’ childhood and family backgrounds](#)

⁸ Crest Advisory (Crest), Kincaid S, Roberts M, and Kane E (2019), [Children of Prisoners: Fixing a broken system](#) (PDF)

⁹ Prison Advice and Care Trust (2023), [‘Number of children with a parent in prison right now tops 100,000’](#)

¹⁰ Crest, Pitman J, Hull J (2021), [Counting the Cost of Maternal Imprisonment](#)

2. Methodology

This report analyses a cohort of individuals who had been in prison for any length of time between 1 October 2021 and 1 October 2022, referred to here as the prisoner cohort.¹¹ This includes all individuals in custody, whether they were on remand, sentenced, on recall or held for a civil offence.¹²

This cohort was used to develop aggregate statistics on the number of prisoners with children and was not used to identify individual prisoners or children.

To create the final estimate of children with a parent in prison, our methodological approach involved the following steps:

- 1) Count adult prisoners (of all ages) with children in structured data fields (see section 2.1 below).
- 2) Count adult prisoners (aged 35 and under) with children in free-text fields (section 2.1.2).
- 3) For adults aged 35 and under, find the ratio of children under 18 identified in free-text versus structured data (section 2.2.1).
- 4) To address undercount of children in adults aged over 35 in the free text, apply ratio from step 3 (section 2.2.1).
- 5) Address overall undercount identified in HMPPS-HMRC matching exercise by further inflating estimate from step 4 (section 2.2.2).
- 6) The above 5 steps are used to derive a final estimate of prisoners with children. Multiplying this by the average number of children gives an estimate of the number of children with a parent in prison (section 3.4).

This approach is described in more detail in the Technical Guide.

2.1 Counting prisoners with children

Administrative HMPPS data sources containing information relating to whether an individual has children were linked together using the [Splink](#) algorithm. This enabled a count of prisoners with children in the cohort to be produced in order for a final estimate to be developed (further information is provided in section 4 of the Technical Guide).

2.1.1 Data sources

Information on whether prisoners have children was extracted from 5 different HMPPS data sources (Table 2) for the 139,592 unique individuals in the cohort. These are prison contact lists, the Basic Custody Screening Tool (BCST) and personal circumstances flags, as well as unstructured free-text fields from two additional HMPPS data sources (prison and probation case notes).

¹¹ This provides a cumulative prevalence of prisoners and is therefore not comparable with prison population statistics (published as part of the '[Offender management statistics](#)' series), which measures a snapshot of the number in prison on one day.

¹² Further information on these categorisations is available in MoJ's 2016 [Guide to Offender Management Statistics](#) (PDF).

The data sources capture parents as well as those who disclose having wider parental responsibility, legal guardianship, or primary care for a child. We refer to all these groups as ‘parents’ in order to capture all prisoners with a parental relationship to a child.

Table 2: HMPPS data sources used to count prisoners with children

Data source	Description	Known limitations
Structured data		
Prison contact lists (p-NOMIS)	Contacts who were under the age of eighteen on 1 October 2022 and listed as son, daughter, stepson or stepdaughter.	Relies on the prisoner having contact with the child while in prison.
Basic Custody Screening Tool (BCST), Part 1 (OASys)	Conducted within 72 hours of arrival into custody for those remanded into custody or sentenced to custodial penalty. Asks how many children under eighteen the prisoner has caring responsibilities for.	All BCSTs for the prisoner cohort have been included. This includes those conducted prior to the cohort period and therefore children may no longer be under 18. Relies on the prisoner’s disclosure and interpretation that this describes their current situation, as well as the capacity of operational staff to conduct the assessment.
Personal circumstances flags (nDelius)	Personal circumstances flags can be added to an individual’s probation record to indicate whether they have caring responsibilities under the category “Has dependents”.	A small number of flags may relate to an adult dependant. Relies on the prisoner’s disclosure.
Unstructured free-text data		
Prison contact notes (p-NOMIS)	Notes recorded in free-text fields by prison officers following interaction with prisoners or information received from local services.	Unstructured data fields do not have a mandated structure or information. Reliant on staff judging information on dependants as relevant to record.
Probation contact notes (nDelius)	Notes recorded in free-text fields by probation officers following interaction with people on probation or information received from local services.	Unstructured data fields do not have a mandated structure or information. Reliant on staff judging information on dependants as relevant to record.

We have taken steps in our methodology to counteract the limitations of the data sources available (see 2.1.2 and 2.2).

2.1.2 Free-text data

On average an individual has around 600 probation and 300 prison case notes written about them. While these free-text notes do contain information based on self-disclosure on the part of the prisoner, they may also contain information on dependants picked up from multi-agency contact e.g. via social services.

To extract information from the unstructured case notes relating to the prisoner cohort, we used Natural Language Processing (NLP) and inference techniques to pull out cases where there is an implication that the individual has children.

The structured data sources used for this analysis contain information to identify prisoners with children that are under 18, but information on whether a child is under 18 is more difficult to extract from the free-text notes. To mitigate against the risk of counting children aged 18 and over, we applied an age restriction to the free-text analysis so that only case notes on individuals in the prisoner cohort aged 35 and under were included. The assumption was a parent aged 35 and under would be less likely to have children aged 18 or over. This is supported in part by the Labour Force Survey statistics, which show that of all parents living with children in years 12 and 13 (i.e. whose children are 16-18), only 1% of those parents are aged under 35.¹³

2.2 Adjusting for undercount

There are some prisoners with children that are likely to be missing from the count of prisoners with children. This is due to the limitations of the structured data fields which mainly rely on self-disclosure, and the limitations on the free-text analysis to those aged 35 and under.

This undercount has been calculated by adjusting the results of the free-text analysis for the age restriction (section 2.2.1) and by conducting a data-matching pilot with HMRC (section 2.2.2).

The undercount has then been adjusted for in order to develop an **estimate** of the number of prisoners with children (see section 3.3).

2.2.1. Adjusting for age restriction

The free-text analysis has only been applied to case notes of individuals aged 35 and under in the prisoner cohort. Applying this same restriction to the structured data allows for a comparison of the number of prisoners with children identified in each type of data source. The additional prisoners with children identified in the free text, not already identified in the structured data, can be represented as a ratio. We have assumed that this ratio is independent of age group, i.e. it is no more likely that an individual aged 20-25 will disclose having children in the free-text data as opposed to

¹³ ONS, released June 2021, ONS website, .xlsx spreadsheet, [Age distribution of people living in households and families containing children in primary, secondary education and years 12 and 13, England, October to December 2020 - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk/people/population/familiesandhouseholds/articles/agedistributionofpeoplelivinginhouseholdsandfamiliescontainingchildreninprimarysecondaryeducationandyears12and13englandoctobertodecember2020)

the structured data, compared to an individual aged 30-35. Therefore, we have applied this same ratio to individuals aged 36 and over to adjust for undercount. The Technical Guide section 4.3.2 provides further clarification.

2.2.2 HMRC data-matching pilot

As part of the work for this project, HMPPS data has been linked to HMRC Child Benefit data to explore how other data sources can improve our understanding of children with a parent in prison. Child Benefit data was chosen as it has very high coverage, with 90% of all children eligible for Child Benefit being claimed for,¹⁴ and provides accurate information on children connected to a claimant, their ages, and their residence. We note that Child Benefit is claimed by the legal guardian so in some cases the claimant may not be the parent.¹⁵

A pilot data-linking exercise using a probabilistic matching method was carried out to understand the match-rate between the two data sources and the extent of undercount of prisoners with children in the prisoner cohort. In analysing the match-rate only prisoners with children that had been directly counted in the structured data fields were included.

We provided a sample of 1,000 records from the prisoner cohort to HMRC which was then linked to 7.8 million Child Benefit records from the period November 2017 to November 2022. Further detail can be found in the Technical Guide.

3. Findings

This section presents our findings on the number of prisoners counted as parents and includes breakdowns by parental sex and sentence length (sections 3.1.2 and 3.1.3). These figures are then used to estimate the number of children with a parent in prison (section 3.4). Validation of the data via the HMRC data-matching pilot is discussed in section 3.2.

3.1 Count of prisoners with children

Of the 139,592 in the prisoner cohort, 74,275 prisoners (representing 53% of the cohort) were counted as parents.

Of those, 25,373 (34%) were identified from structured data fields only, 27,967 (38%) were identified from free-text notes only, and 20,935 (28%) were found in both structured and free-text notes.

Table 3a breaks down how many prisoners with children were counted in the structured and/or free-text fields.

¹⁴ HM Revenue and Customs, released April 2024, GOV.UK, [Child Benefit Statistics: annual release, data at August 2023](#)

¹⁵ See guidance provided on GOV.UK: <https://www.gov.uk/child-benefit/eligibility>.

Table 3a: Count of prisoners with children by data source type¹⁶

Data source type	Count of prisoners with children	Percentage of prisoners with children
Structured data fields only	25,373	34%
Free-text notes only ¹	27,967	38%
Both structured and free-text¹	20,935	28%
Total prisoners with children	74,275	53%

¹Note: the free-text model was only applied to adults aged 35 and under.

Table 3b presents the number of prisoners with children counted in each data source.

The greatest number of parents were identified in probation contact notes (46,901 prisoners aged 35 and under). A large number of parents were also identified via the Basic Custody Screening Tool (25,423 prisoners) and also in contact lists (24,629 prisoners). Despite only including free-text notes for individuals aged 35 and under, probation contact notes identified the greatest number of parents not picked up in the other data sources (14,076 prisoners aged 35 and under). We can assume that if this model was applied to all ages this number would be greater.

The counting of prisoners with children through different sources suggests that prisoners disclose this information at different times and for different reasons throughout their criminal justice journey.

Table 3b: Count of prisoners with children by data source¹⁷

Data source	Count of prisoners with children	Count of prisoners with children identified only in data source
Contact lists	24,629	6,725
Basic Custody Screening Tool	25,423	7,801
Personal Circumstance Flags	11,639	3,727
Prison free-text notes ¹	30,594	1,567
Probation free-text notes ¹	46,901	14,076

¹Note: the free-text model was only applied to adults aged 35 and under.

¹⁶ Data for a cohort of prisoners who have spent time in prison between 1 October 2021 and 1 October 2022 in England and Wales. Categories with conflicting records for the same individual have been removed (see section 2.4 of the accompanying Technical Guide for further detail).

¹⁷ Data for a cohort of prisoners who have spent time in prison between 01 October 2021 and 01 October 2022 in England and Wales. Categories with conflicting records for the same individual have been removed (see section 2.4 of the accompanying Technical Guide for further detail).

3.1.1 Sex breakdown of prisoners with children

Table 4 breaks down the count of prisoners with children by sex. A slightly higher proportion of female prisoners were counted as having children (55%) when compared to male prisoners (53%).

This finding of women being more likely to report having dependent children than men is consistent with the 2003 Resettlement survey.¹⁸

Analysis of the male and female parents identified in the different data sources (see Table A3 in the Technical Guide) shows that 19% of female parents included children on their contact lists compared to 34% of male parents. This suggests that females may be less likely to be visited or in contact with their dependants.

Table 4: Count of prisoners with children by sex¹⁹

Sex	Total number in prisoner cohort	Count of prisoners with children	Percentage of prisoners with children
Female	7,676	4,208	55%
Male	131,894	70,067	53%
Total	139,592	74,275	53%

3.1.2 Sentence length breakdown of prisoners with dependants

Table 5 breaks down the count of prisoners with children by sentence length.

Indeterminate sentences in this analysis include those on life sentences, those Imprisoned for Public Protection (IPPs) and those on recall from an indeterminate sentence (for example license recall from an IPP sentence). Figures also include individuals on remand, with most (68%) of those on remand categorised as having sentences lasting 6 months or less.²⁰

The proportion of prisoners with children serving up to and including 6-month sentences is 50%. A higher proportion of prisoners with children were serving sentences of longer than 6 months but less than 12 months (59%), as well as in those serving 12 months to 4-year sentences (60%).

¹⁸ Home Office (2005), [Findings: Resettlement outcomes on release from prison in 2003](#)

¹⁹ Data for a cohort of prisoners who spent time in prison between 1 October 2021 and 1 October 2022 in England and Wales. Categories with conflicting records for the same individual have been removed (see section 2.4 of the accompanying Technical Guide for further detail).

²⁰ Prison Reform Trust (2023), [Prison: the facts – Summer 2023](#) (PDF)

Table 5: Number of prisoners with children, broken down by sentence length²¹

Sentence length	Total number in prisoner cohort	Count of prisoners with children	Percentage of prisoners with children
Up to and including 6 months	45,656	22,880	50%
More than 6 months to less than 12 months	5,831	3,429	59%
12 months to less than 4 years	30,525	18,239	60%
4 years or over	44,347	25,559	58%
Indeterminate	11,559	4,168	36%
Total	139,592	74,275	53%

²¹ Data for a cohort of prisoners who spent time in prison between 1 October 2021 and 1 October 2022 in England and Wales. Categories with conflicting records for the same individual have been removed (see section 2.4 of the accompanying Technical Guide for further detail).

3.2 HMRC data-matching pilot

Table 6 presents a summary of the linkage exercise of 1,000 sample records from the prisoner cohort to 7.8 million Child Benefit records from between November 2017 and November 2022.

The pilot sample identified 417 parents in total. Of the 1,000 prisoners in the sample, only **4% (41 parents)** had not already been identified by HMPPS data. In contrast, 24% (240 parents) were identified by HMPPS data and not through Child Benefit data. The 240 parents unmatched to Child Benefit data in Table 6 were either male prisoners (84%) or did not have partner details listed (75%).

Table 6: Results of a sample of (unique) HMPPS prisoners and partners matched to HMRC Child Benefit records between 2017 and 2022

Match type	Number of prisoners in sample	Percentage of prisoners in sample
Not identified as a parent in either HMPPS or HMRC data	583	58%
Identified as a parent in HMPPS data only	240	24%
Identified as a parent in HMRC data only	41	4%
• Prisoner	11	
• Partner	29	
• Prisoner and partner	1	
Identified as a parent in both HMPPS and HMRC data	136	14%
• Prisoner	20	
• Partner	115	
• Prisoner and partner	1	
Total	1,000	100%

We note that the parents identified in the HMPPS data were based on the structured data fields only. This is due to concurrent phases of the analytical work.

3.3 Estimates adjusting for undercount

Findings from the HMRC data-matching pilot suggested an undercount of 41 parents for every 1,000 prisoners (as 41 parents were identified in the HMRC data who did not appear in the HMPPS data).²²

Findings from the free-text analysis indicated a ratio of 1 prisoner aged 35 and under with children in the structured data to every 2.24 prisoners aged 35 and under with children identified in the free-text data.

²² Since the HMRC data-matching exercise was only compared to results from the structured data, it is worth noting that there may be a possible overlap between the increase added from the free-text-identified undercount and the increase from the HMRC-identified undercount.

Based on the above two findings, the adjusted estimate of prisoners with children is **108,990** (78% of the prisoner cohort), as shown in Table 7a. This is 34,715 higher than the direct count of prisoners with children which is based on HMPPS structured data and free-text data for individuals under aged 35 and under. Refer to Technical Guide for further detail.

The high proportion of prisoners estimated to have children (78%) is likely a reflection of the prisoner cohort, which is relatively young with 70% of the prisoner cohort aged between 25 and 49 compared to 41% in the general population.²³

Table 7a: Estimates of prisoners with children, adjusted for undercount²⁴

Methodological steps	Prisoners with children
Count of prisoners with children	74,275 (53% of cohort)
Adjusted for undercount:	
Applied ratio to inflate structured data count of parents aged over 35 (see Technical Guide)	103,266 (74% of cohort)
Adjusted estimate of prisoners with children to include those missed in HMPPS data (based on HMRC findings of 41 missed parents in every 1,000 prisoners applied to prisoner cohort)	108,990 (78% of cohort)

3.4 Number of children with a parent in prison

The data sources provide information on prisoners with children. To estimate the number of children with a parent in prison from the number of prisoners with children, the average number of dependent children per family across all family types in England and Wales for 2021 (1.77)²⁵ has been used.

Using our direct count of 74,275 prisoners with children and using the 1.77 multiplier indicates that there were 131,467 children with parents in prison between 1 October 2021 and 1 October 2022 (Table 7b). Based on adjustment for expected undercount, our estimate is that there were 192,912 children with a parent in prison.

²³ ONS, March 2021, Nomis web, [TS007 - Age by single year, Census 2021 - Nomis - Official Census and Labour Market Statistics](#)

²⁴ Data for a cohort of prisoners who spent time in prison between 1 October 2021 and 1 October 2022 in England and Wales.

²⁵ ONS, released March 2023, ONS website, [Average number of dependent children per family in England and Wales, 2020 and 2021 - Office for National Statistics \(ons.gov.uk\)](#)

Table 7b: Estimates of prisoners with children, adjusted for undercount, and estimates of children with a parent in prison²⁶

Methodological steps	Prisoners with children	Children with a parent in prison (based on 1.77 multiplier)
Count of prisoners with children (includes count from structured and unstructured notes)	74,275 (53% of cohort)	131,467
Adjusted for undercount:		
Applied ratio to inflate structured data count of parents aged over 35 (see Technical Guide)	103,266 (74% of cohort)	182,781
Adjusted estimate of prisoners with children to include those missed in HMPPS data (based on HMRC findings of 41 missed parents in every 1,000 prisoners applied to prisoner cohort)	108,990 (78% of cohort)	192,912

4. Limitations

As outlined earlier in this report, there are limitations and assumptions that need to be considered when interpreting the findings.

4.1 Methodological limitations

Removed records

There were a small number of records where the values for prisoners either mismatched or were incorrect based on comparison between records in different data sources (e.g. non-viable or inconsistent dates of birth). These records (affecting around 6% of the prisoner cohort) were therefore removed from the analysis.

Free-text analysis

HMPPS free-text fields do not contain complete or consistent information on the ages of prisoners' children. The free-text model was therefore restricted to prisoners aged 35 and under, the assumption being that, if parents, this group of individuals would be less likely to have children over 18. For the purposes of this analysis, we have then assumed the ratio of parents identified in free-text versus structured data is independent of age group, i.e. it is no more likely that a prisoner aged 20-25 will disclose having children in the free-text as opposed to the structured data, compared to a prisoner aged 30-35.

²⁶ Data for a cohort of prisoners who spent time in prison between 1 October 2021 and 1 October 2022 in England and Wales.

Bias in data sources

Prison and probation officers are trained in their roles to write detailed case notes that clearly and impartially document information on individuals' risks and needs. However, because these notes are recorded in free-text fields, they do not follow a mandated structure, with style, length and content varying dependent on the type of case note and the salient information disclosed and requested. There may therefore be risks of bias when taking data from fields where questions and answers are not mandatory or strictly defined as certain groups may be more likely to answer than others.

Impact of the Covid-19 pandemic

The prisoner cohort used for this analysis consisted of individuals who had been in prison for any length of time between 1 October 2021 and 1 October 2022. Changes in operational delivery in response to the Covid-19 pandemic until spring/summer 2022 may have impacted data recording as well as trends in prison population during this period. However, all the data sources used hold data going back several years which will partially mitigate the impact of this.

4.2 Data source limitations

Self-disclosure of parental status

The structured data on prisoners with children is dependent on self-disclosure. As such, we recognise the limitations of these data sources for identifying prisoners with children. Questions and assessment processes conducted with prisoners are under continuous review by the MoJ to reflect learning from operational colleagues and people with lived experience of prison.

Coverage of data sources

HMRC Child Benefit data has been used to validate the prisoners identified as parents where possible. Although coverage is high at around 90% for the periods the data are matched to, there remain some individuals not in the Child Benefit data; it is therefore not known whether this may disproportionately affect families of prisoners.

In the p-NOMIS contact lists where age is referenced, we have defined a child as anyone aged under 18 on the last day of the cohort period (i.e. as of 1 October 2022), this means that we have excluded children over the age of 18 on that date but who were aged under 18 during the period of the cohort.

Estimating undercount

The results of this exploratory exercise to understand undercount are partly based on the sample used in the HMRC pilot and may change if a different sample is used. There were disproportionately more females in this sample (in order to understand who matches well). This is a risk which may reduce the accuracy of the findings. Given indications that matching works well for female prisoners and prisoners' female partners, successfully matching to the entire prisoner cohort is therefore limited by reliance on the presence of female partner data within prisoner records.

Definitions of parent

Finally, there are differences in the way parents and dependants are defined in the different data sources, which may impact the overall estimate. For example, HMRC Child Benefit data captures information on the legal guardians of children, while p-NOMIS contact lists capture information on both children and step-children of prisoners. Multiple data sources have been used in this analysis in acknowledgement of this and to capture the breadth of parental relationships.

5. Further development

These statistics are labelled as official statistics in development because they are new statistics and are produced using new sources and methods.

Improving the methodology

The Technical Guide explains in detail how the Natural Language Processing methodology can be improved to enable a direct count of prisoners with children. These suggested improvements can be summarised as (1) improvements to the training of the free-text model so that it both correctly identifies prisoners with children and correctly picks up all prisoners with children (2) addressing the age restriction in the free-text model so that all prisoners with children aged under 18 are identified. Ideally any improvements should result in minimal adjustment for undercount.

Level of certainty in our estimate

Our best estimate of children with a parent in prison is 192,912, based on the data sources and methodology we have used. There is, however, a degree of uncertainty within this estimate of children with a parent in prison, particularly given these are data sources and analytical methods that have not previously been used for the purposes of estimating children with a parent in prison.

An initial examination has been conducted so as to present a broad range within which our best estimate of the number of children with a parent in prison may lie. This range is based on the two following key considerations underpinning the development of the estimates:

- **Technical modelling choices based on analysis of the free text:** A high threshold set at 0.99 (i.e. the minimum level of confidence the model must have to declare a prisoner has a child) resulted in a predicted 60% of prisoners aged 35 and under with children; whilst a lower threshold of 0.95 suggested 76% of prisoners with children. This led to variation in estimates from 176,000 children to 199,000 children. See the Technical Guide section 4.2.5 for more details.
- **Average number of dependent children:** The analysis assumes that the average number of dependent children (1.77 children) based on the wider population equally applies to the prisoner cohort. If we use the SPCR estimate for the average number of children per parent in prison (2.1 children) from the 2009 survey sample used in previous estimates, this would result in an estimated 229,000 children with a parent in prison.

Based on the above, we would therefore expect the true value of children with a parent in prison to sit within the range of 176,000 and 229,000. This is an illustration of how we might produce a range around our true estimate. However, further work would need to be carried out to produce a more accurate range; this would include varying the parameters in relation to the other assumptions underpinning this work, e.g. the ratio of parents identified in free-text versus structured data or the sampling error from the HMRC data linking exercise. More broadly though, it must be noted that there will be a high level of uncertainty overall in relation to the data sources used given these sources do not directly record parental status.

Sensitivity analysis

Although we have not carried out a formal sensitivity analysis, we have explored the impact of varying the likelihood of correctly identifying a parent within the free-text analysis and varying the average number of children per prisoner. Additionally, we have run the text analysis model multiple times during its fine-tuning. However further development of this work would benefit from a full sensitivity analysis to increase our understanding of the impact of varying parameters on the overall estimates and increase the robustness of the estimates.

Coverage of data sources

While the case notes in p-NOMIS and nDelius are the main sources of free-text information in HMPPS databases, there are additional free-text fields, for example in courts data, that could be used to expand the number of data sources used to produce the aggregate statistics.

Linking to data from other government departments

The data sources used currently enable us to count prisoners with children. To be able to directly count *children* with a parent in prison requires data sources held by other government departments that record administrative data on children. This exercise can also be used to validate and augment information on parents and their children such as their local authority of residence. However, our work exploring the usability and availability of cross-government data to measure the number of children with a parent in prison has shown how difficult this measurement is on a national scale.

6. Further information

This report is [official statistics in development](#) because this is the first time HMPPS data covering the entire prison population for England and Wales has been linked together to produce aggregate numbers of prisoners with children on a national scale and a corresponding estimate for the number of children with a parent in prison.

Official statistics in development are not yet fully developed, so users should be aware that they may have a wider degree of uncertainty and require extra caution when interpreting results. These statistics are in their testing phase and we invite all users to provide feedback. Further details regarding specific points on methodology

which we would particularly like feedback on are included in section 5 of the accompanying Technical Guide.

Please direct any enquiries or feedback to RR-pilot-BOLD@justice.gov.uk.