Technical report

Technical report accompanying Infants Born into Care in Scotland: Initial findings

(*Main report can be found on website - https://www.scadr.ac.uk/new-report-infants-born-care-scotland)* .
This report contains some details of the methods used as well as some additional Tables and Figures.

Note: The main section headings in this technical report correspond, broadly, to the sections in the main report. Also references cited in this report are listed in the main report.

2. Looked after Children (LAC) in Scotland and England

2.2 Data sources

The LAC-S data analysed here were extracted from longitudinal files derived from cross-sectional returns by the 32 Local Authorities (LAs) to the Scottish Government (SG), from 1st April 2008 to 31st July 2017. The collection years were 1st April – 31st March for the year ending in 2009, from 1st April 2009 to 31st July for 2010 and thereafter 1st August to 31st July. In each year the local authorities return to SG records of placements and corresponding legal reasons for all episodes for each looked-after child during the period. These data had been linked by SG staff to produce records indexed by child and date along with an anonymized child identifier. Details of the checks and edits required to create consistent longitudinal records from these data are given in the Appendix.

The following definitions are used:

- **Episode of care:** The period of time from the time of entering care to leaving care
- **Placements:** the settings in which a child is in care during an episode. Each episode will consist of one or more placement
- **Reasons:** the legal reason or reasons applying to each child during an episode.

Note that, although we have records for placements and for legal reasons for each episode of care, the dates at which a legal reason changes do not always correspond to the dates for a change of placement, and vice versa.

Small differences and inconsistencies are inevitable when using longitudinal administrative data because subsequent returns may correct previous data. The data have been checked for consistency, and corrected where that was possible, to ensure it satisfies all the conditions shown in Appendix 1. The original data consisted of over 59 thousand episodes from over 53 thousand children with over 124,000 placements and over 154,000 legal reasons (**Table T1**). Fewer than 2% of children were excluded because the inconsistencies in their data could not be resolved. All data cleaning and analysis was carried out with the R software.

The numbers of children, episodes (a continuous period of time when a child is in care), placements (period of time when a child is cared for in a specific setting) and reasons (legal basis of care) are given in Table T1.

Table T1: Number of records in cleaned data for children of all ages

What	Number	% of records originally supplied
children	53540	98.5%
episodes	59420	97.2%
placements	124180	96.5%
reasons	154860	93.4%

NOTE: All numbers are rounded to the nearest 10

The analyses of children in this report is restricted to all children who started care during their first year after 31st March 2008. After data cleaning we had data from 6,190 children, comprising 13,340 placements and 21,690 legal reasons.

3. Rates and trends in numbers of LAC under 1 year in Scotland and England

3.1 Summary of rates and trends

Tables in the accompanying spreadsheet gives the numbers of children and the number of live births used to calculate the rates given in **Figures 1 and 2** of the main report. The numbers of children in earlier years for England was taken from the 3-year averages in McGrath-Lone et al (2016). It may differ from the Figures in the annual reports because it excludes the small percentage of children in care but at home with parents (see below). The Scottish rates from the Annual Reports are a slightly higher than those in Figure1 because the data in the Annual Reports includes children more than once if they started care more than once during the year.

3.2 Differences between LAC-S and LAC-E data

Table T2: Children of all ages starting care between 1st April 2008 and 31st July 2017, by age starting care and whether starting care with their parents.

Age at starting care	Number	% with parents
a1 Newborn <1 week	2010	1.9
b 1-3 weeks	840	2.4
c 4-12 weeks	740	4.0
d 13-25 weeks	940	20.6
e 26_38 weeks	850	35.0
f 39-52 weeks	800	39.0
1 to 4 years	9070	44.1
5 to 12 years	13460	51.2
13 years and over	10100	59.6

When children start to be looked after under Section 20 in England they will not have their episode of care recorded by the family courts in England. The analysis by the Nuffield Family Justice Centre (NFJO) used the Cafcass data to look at trends in the numbers of children being born into care in England (Broadhurst et al. 2018) and thus define entry into care as the first contact with the family courts, excluding all children who start care under section 20, although they may subsequently be included in the data if they have contact with the courts at a later time. We can thus use the longitudinal data to recreate Scottish data to represent the first contact with the children's hearing system and excluding previous periods under S25. This gives rates that should parallel the NFJO study for England[1]. This analysis uses a slightly different groups of children from those used in Figure 1. This arises because, for some children entering care under S25 or S20, the date of their first CPO or CSO will be in a later year than the year they started to be looked after. Those who are only S20 or S25 will be excluded. These complications make the data in **Table T1** difficult to interpret.
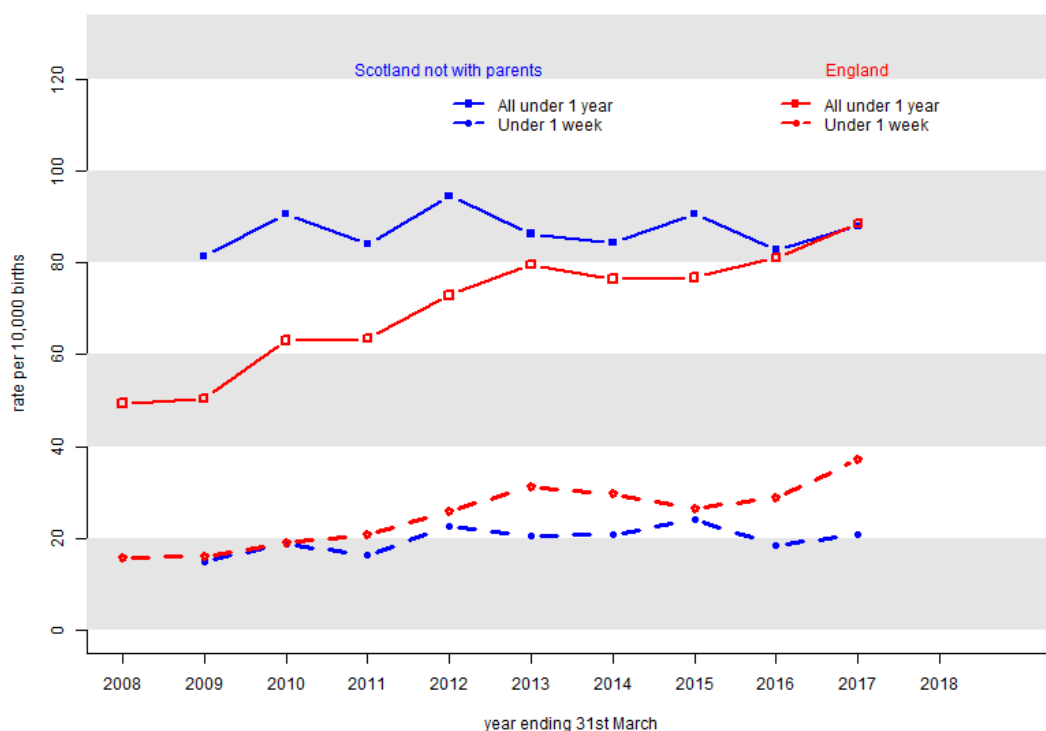

Figure T1: Number of children by year of first legal ruling by the children's hearings system or courts in Scotland compared to first ruling from family courts in England.

4. Care experience of looked after children under 1 year in Scotland

4.1 First placements

The four commonest placements for children under 1 year were foster care, care with friends/relatives with parents and with prospective adopters. Other types of care included "other community" as well as several types of residential placement. The latter may refer to mothers and babies in residential care together. When a newborn child was taken into care there was some

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[1] Note that the rates in Figure T1 are slightly different from those given in the NFJO report, because the NFJO report calculated rates for calendar years, whereas Figure T2 use years to 31st March with adjusted denominators.

problems with coding the type of stay when the mother and baby were still in hospital. Some LA's coded this as "other community" or "other residential", while others did not include this time at all. To adjust for this, any babies with short first placements in these categories in their first week had their first placement replaced by their second one.

Figure T2 shows the location of children's first placement by year of starting care. There is little evidence of any trends over the 9 year period.
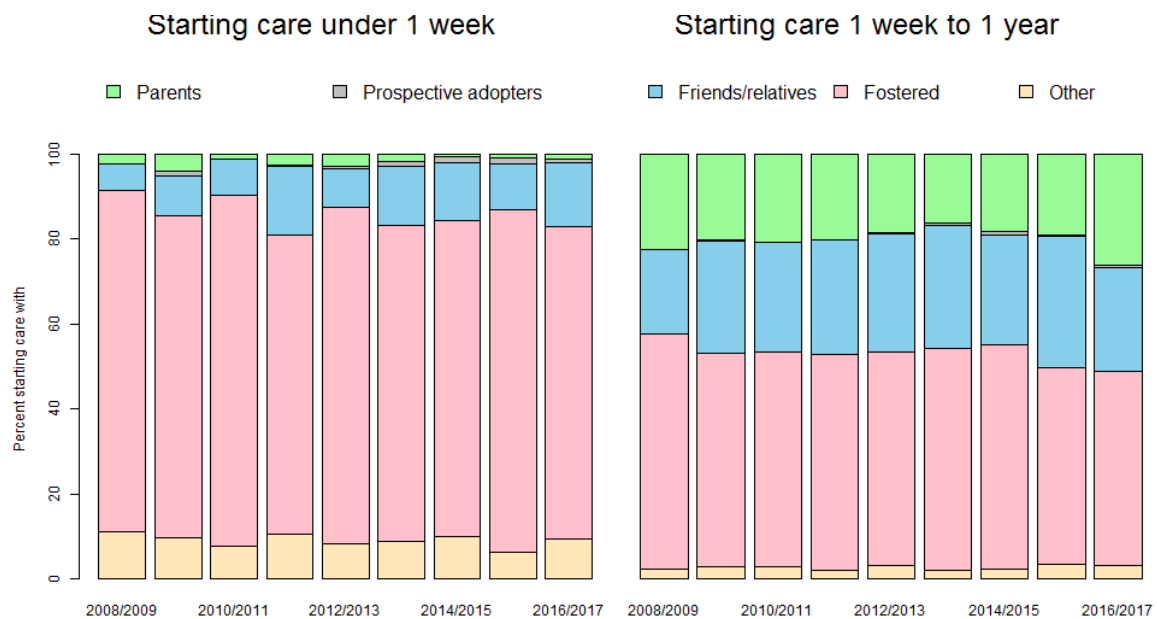

Figure T2: Percentage of location of first placement by year starting to be looked after. The left hand figure is for those starting care under 1 week and the right one for those starting care later in period between the first week or later.

4.2 Length of first episodes

To allow for uncompleted episodes, survival analysis methods were used to analyse the lengths of episodes. Kaplan Meier curves were calculated and plotted for subgroups. They are presented as the estimated proportion NOT surviving (in survival analysis terminology) and the term "leaving care curves" is used to refer to them. Cox proportional hazard models were used to understand the relative rates of leaving care in different groups. To allow the relative hazards to be different over the follow-up period, as can be seen in Fig 1 of the main report, time dependent covariates were used. Only a brief summary of the results is presented in these reports.

For leaving care curves by destination, a competing-risks analysis was used. This method calculates the rate of leaving care to one destination as a proportion of those who have not left care for any reason. The slope of these curves estimates the rate of leaving care to that destination for all children still being looked after at each time after starting care. Smoothed hazard estimates are presented as estimates of this slope. The interpretation of these curves is discussed below in relation to the figures in the main report.
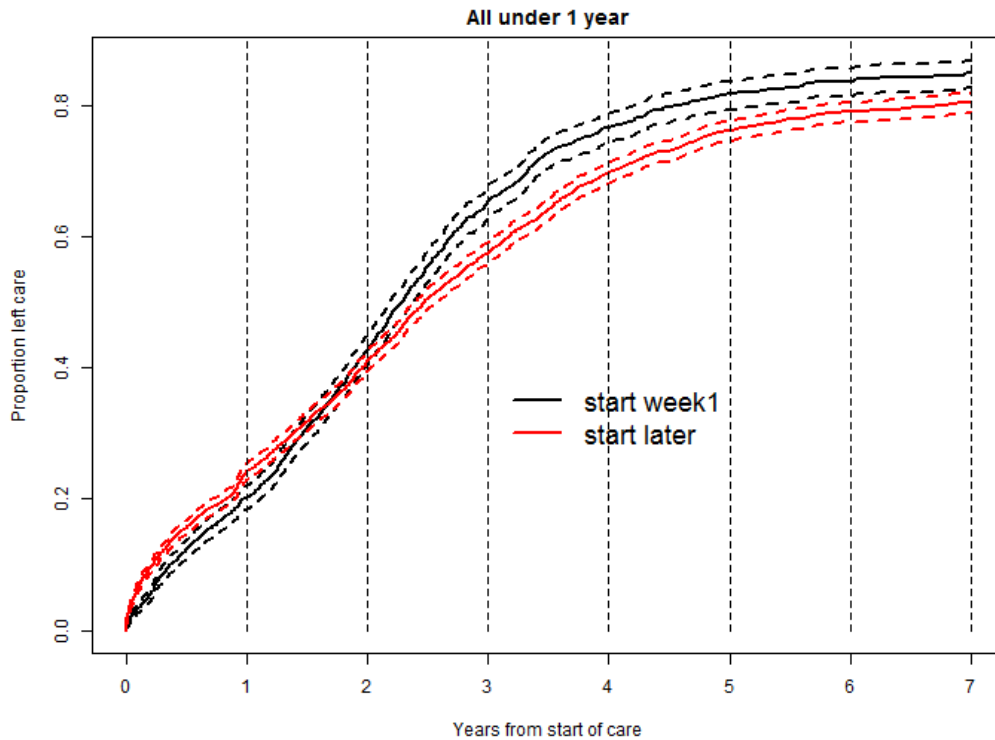
All under 1 year

Figure T3 *Leaving care curves for all children entering care under 1 year by starting care in first week or later in the first year.*

Figure T3 shows the leaving-care curves for all children by age at start. **Figure 3** in the main report shows this broken down by location of first placement.

4.3 Care experience of looked after children under 1 year in Scotland

Leaving-care curves by destination

To analyse lengths of episode by destination, it is necessary to calculate the proportion of children leaving care at each destination at each time as a proportion of those who have not left care by to any destination up to that time. The results are shown in **Figure T4:**
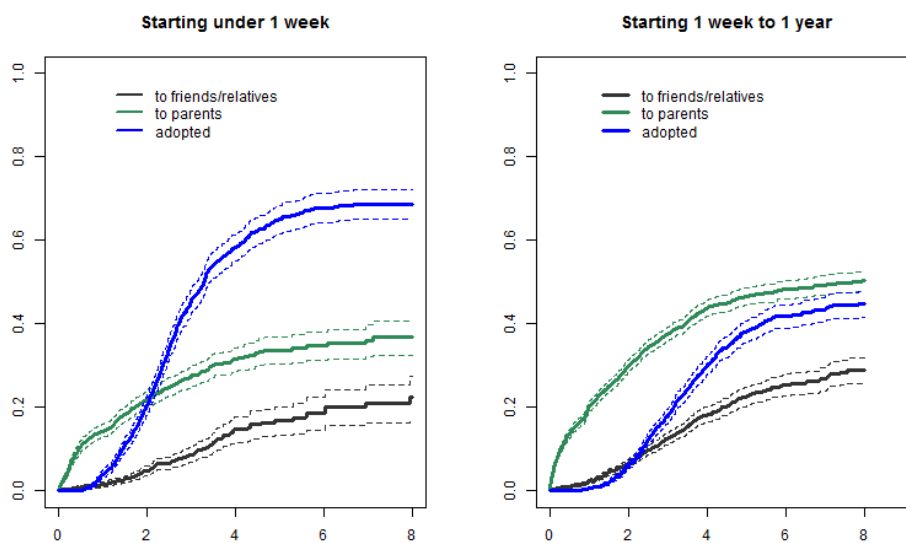

Figure T4 Leaving care curves by destination

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In figure T4 the estimated proportion left in care at each time can be read from the leaving care curve. But this is not the case for **Figure T5**. This is because the denominators used to calculate the proportions who have left care in Figure T4 are not the whole group of children or even the whole group of children who may eventually be adopted. However, the slope of these curves is meaningful. For any short period of time they will be based on small numbers and a crude plot looks very irregular. Thus, the rates require to be smoothed to understand patterns over time.

To take an example, consider the rate of children leaving care for adoption. This is initially low, but gradually increases, most steeply for the youngest children. But this rate of adoption applies to the group who are still in care at any point in time. Those returning to their parents do so at the highest rate in the early months of care. Thus, as time in care increases, the denominator for adoptions includes a decreasing proportion of those who return to their parents. This feature has led to a competing risks analysis being criticised as a method of understanding disease risks[2]. But, for these data the smoothed slope estimates provide a useful description of a child's chances of leaving care over time. These are shown in **Figures 4 and 5** of the main report.

5 Legal reasons affecting looked after children in Scotland

5.1 Number and pattern of legal reasons

Figure T5 shows how the first legal reasons have changed over the period of the study.
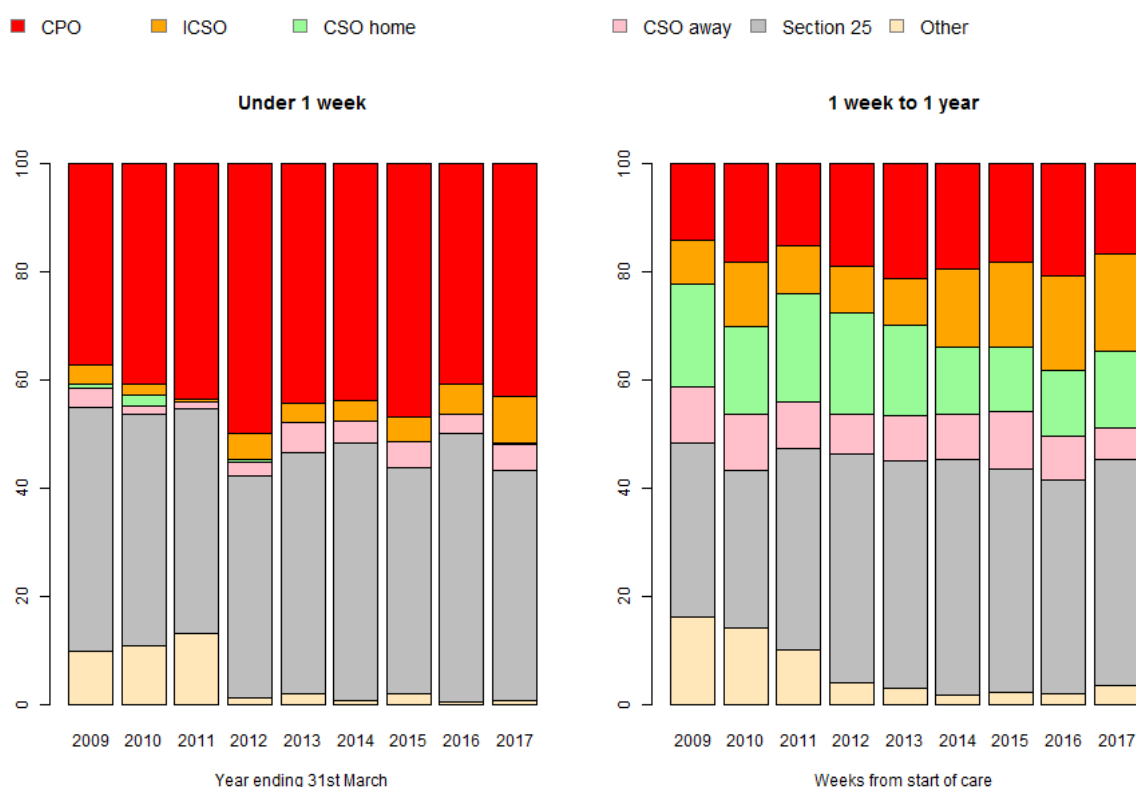

Figure T5: Percentage of first legal reasons by year ending 31st March

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[2] See for example Austin P et al. (2016) Introduction to the Analysis of Survival Data in the Presence of Competing Risks Circulation: 133(6): 601–609 available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4741409/

Appendix

Data were supplied as two files, one file of placements and one of legal reasons. See accompanying spreadsheet for a list of the variables in each. Each placement or reason was assigned to an episode defined by the anonymized child identifier and the start date of the episode. Placements and episodes were thus grouped into episodes. The data were checked to ensure they conformed to the following rules. Where possible obvious errors in the data were corrected to make the rules apply. For example, missing end dates of placements within episodes were replaced by the start of the next and overlapping placements or reasons were rationalized. Where inconsistencies could not be resolved all records for a child were removed.

Placement data
- Start of first episode must be after or equal to date of birth
- Start of each placement should not be missing
- Start of first placement must be equal to start of episode
- End of each placement must equal start of next placement within episodes
- Only last placement within an episode can be have a missing end date
- Destination accommodation must be the same value for all placements in an episode
- Within episodes, end of each placement must equal start of next.
- The end of each episode should agree with the end of the last placement in the episode, including both missing.

Episodes
- Start of episodes after first must be after end of previous, within ids. Where these dates were equal the episodes were combined.
- End of each episode can only be missing for last one
- Destination accommodation must be missing if and only if the end of last placement in an episode is missing.

Legal data
- Start of each reason should not be missing
- End date of each reason must be after or equal to start date of reason
- The episodes for legal reasons must correspond to those for placements
- No legal reason should start after the end of the episode from the placement file.

Approximately 13% of children had problems with the legal reason data that meant they had to be corrected to make them consistent. This compared with under 1% of children for whom placement data required correction.

The following requirements were checked but were not changed for the legal data where inconsistent because this would exclude too many records where it was impossible to make corrections.

- Start of first reason must be equal to start of episode
- The last reason in an episode must finish at the same time as end of the episode
- Start of reasons after the first must equal end of previous, within child identifiers.