Drivers of activity in children's social care

Research report

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Peter Fitzsimons, Dareece James, Samantha Shaw, Benjamin Newcombe: Department for Education

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Executive summary

This report outlines changes in children's social care activity (the work done by children's social care organisations) since 2013. It outlines explanations for changes in activity, highlights children's journeys in social care, and quantifies the association of social care activity with specific factors including family income and local authority of residence. We use the term activity, rather than demand or need, to acknowledge that not all social care activity is demanded by children and families and to allow us to discuss concepts like social care thresholds and the extent to which needs are met.

Changes in activity since 2013

This report finds that whilst there were increases in all forms of children's social care activity between 2013 and 2018 (except adoptions), they have all plateaued or decreased since 2018, except looked-after children and Section 17 children in need assessments. The rise in activity between 2013 and 2018 was greatest for investigations: Section 47 enquiries, initial child protection conferences and Section 17 assessments, and numbers of child protection plans.

Rises in looked-after children rates and numbers since 2016 reflect a 12% fall in children leaving care, as numbers entering care have also fallen. This is driven by fewer children returning home to their families and fewer children leaving care before the age of 18. The increasing age of looked-after children appears to be caused by children being looked after for longer, rather than causing children to be looked after for longer.

Nearly three quarters (71%) of the increase in looked-after children between 2013-2021 occurred in a fifth of local authorities.

Population growth and an increase in the number of unaccompanied asylum-seeking children explain 56% of the increase in looked-after children since 2013.

Increases in child protection activity and children in care in England have broadly been mirrored in Wales and Northern Ireland over the last decade, but not in Scotland, although starting from different rates of activity. There have also been general long-term increases in activity prior to 2013 in multiple countries, including England.

Patterns of activity and need for individual children

More than 1 in 7 children were in need at least once in the past 8 years, and 1 in 52 children were looked after at least once.

Approximately 1 in 5 adults in England and Wales had experienced one or more forms of abuse before the age of 16 (ONS, 2020). While these figures are close to the proportion

of children who have ever been in need, they substantially exceed the number of children on child protection plans, which should be used in cases of significant harm.

A large proportion of those in social care enter and exit every year: a third of the children in social care in 2018 were not in social care in 2017. 4 in 10 children in need who were not on a child protection plan or looked after in 2017 were in need one year later, 6 in 10 children who were on a protection plan, and 8 in 10 children who were looked after were in need at least one year later. The proportion of children leaving each group has decreased between 2013 and 2017, and children who started to be in need in 2018 were less likely to have a child protection plan or be looked after than 2014.

Repeat experiences of social care are common. In total, 46% of children starting an episode of need in 2019/20 had previously been a child in need (in the previous 8 years) and 5% of children starting to be looked after in the same year had previously been looked after. 34% of children starting an episode of need in 2019/20 had a previous No Further Action referral in the past 8 years. 43% of children who became looked after in 2019/20 had previously had at least one child in need episode. This shows that a significant minority of children in care were previously known to children's social care.

Factors associated with activity

For children under the age of 13, domestic violence with a parent/carer subject is the most common factor identified at the end of assessment, with 45% of all assessments of children aged 1 citing this as a factor. For adolescents, children's mental health is the most common factor, reported in 27% of assessments for 17-year-olds, while domestic violence with a parent/carer subject is reported in 17% of assessments for this age group. After the age of 12 years old there is a sharp growth in the percentage of assessments which identify child alcohol and drug misuse, child sexual exploitation, trafficking, gangs, missing children, socially unacceptable behaviour and self harm.

Children who are more likely to receive a social care intervention than other children, after controlling for other differences, have lower family income, live in more deprived areas, are older, and are of Mixed Black/White Caribbean or Black Other ethnicity. However, children of Asian ethnicity are less likely to receive an intervention. Children in the highest earning fifth of families are between 81% and 89% less likely to experience a social care intervention compared to children in the lowest earning fifth of families.

Most variation in activity is due to the characteristics of children, families and the neighbourhoods they live in. Less than 4% of the variation in likelihood of individual children receiving a social care intervention can be explained by the local authority they live in. However, these differences are still significant – a typical child would have a probability of being in need ranging between 3.1% and 6.0% (a 94% difference) in 75% of local authorities, depending on the local authority they live in. The probability for a

typical child to be in social care in the highest 12.5% of local authorities by activity is around double those in the lowest 12.5% of local authorities.

Using the characteristics of children, their families and their neighbourhoods, the predicted rates of activity in local authorities differ from the average rate by an average of 20%, 26% and 20% for being in need at 31st March, on a protection plan and looked after in residential/foster care respectively. This difference increases to 24%, 27% and 27% when predictions are based on the local authority too. Whilst including local authorities increases the predicted level of variation, this shows a substantial part of local authority variation can be explained based on the characteristics of children, families and neighbourhoods alone.

However, we cannot interpret these results as causal, as unmeasured factors could drive differences in activity between children and local authorities. As such, this analysis cannot definitively explain why some children and local authorities have different rates of social care compared to others.

Background

In 2019, the Public Accounts Committee (PAC) report *Transforming Children's Services* concluded the Department for Education (DfE) "cannot explain why there is so much variation between local authorities in the activity and cost of children's social care" and recommended the department "set out the key factors contributing to the variation across local authorities".

The accompanying National Audit Office (NAO) report *Pressures on Children's Social Care* contained modelling suggesting 44% of variation in local authority demand could be explained by "local authority characteristics". The NAO recommended the Department commission further research into the factors that drive demand for children's social care, using the individual *child-level* data that it holds.

Local authority variation in activity was also discussed in the 2016 Public Accounts report *Child Protection* and accompanying NAO report *Children in need of help or protection*, and in the Independent Review of Children's Social Care's 2021 *Case for Change*.

This report quantifies the patterns of activity over time and models what contributes to increased activity. It is important the Department understands the drivers of children's social care activity to understand the funding implications for local authorities and improve outcomes for children. Understanding drivers of activity enables government to effectively respond to need and demand at a national level.

The Department separately commissioned research on variation in *costs* of children's social care in response to the PAC recommendation. The reports *Children's social care cost pressures and variations in unit costs* (Holmes, 2021) and *Research on fees paid by local authorities for children's homes in England* (Boxford et al., 2020) summarise the findings of that research.

We use the terms activity, demand and need in this report. This distinction acknowledges that not all social care activity is demanded by children and families and allows us to discuss concepts like social care thresholds and the extent to which needs are met. For the purposes of this report we define these terms as:

- Activity: the work done by children's social care organisations. Most of the Department's children's services statistics measure activity, and therefore this is the main language of the report.

- Demand: requests for children's social care investigation or intervention. Referrals are the primary measure of demand; investigations and assessments are secondary measures of demand.

- Need: the risks and harms faced by children which social care aims to manage or prevent. These needs are typically defined in legislation e.g. the "significant harm" threshold needed to trigger a Section 47 investigation in the Children Act 1989.

Key definitions

Under Section 17 of the Children Act 1989, a child is defined as being in need if:

- They are unlikely to achieve or maintain, or to have the opportunity of achieving or maintaining, a reasonable standard of health or development without the provision for them of services by a local authority.

- Their health or development is likely to be significantly impaired, or further impaired, without the provision for them of such services.

- They are disabled.

Specific groups of children in need (CIN) discussed in this report include:

- **Child in need but not CPP or looked after (CINO)**: children in need, excluding children on a child protection plan (CPP) and children looked after. This includes children on child in need plans (CINP) as well as other types of plan or arrangement such as contextual safeguarding or family support plans.

- **Child protection plan (CPP)**: children who are assessed as being at risk of significant harm.

- **Looked-after children (LAC)**: children who are placed in accommodation outside the home, for a continuous period of at least 24 hours. A child is also considered looked after if they are subject to a care or placement order.

- **Unaccompanied asylum-seeking children (UASC)**: asylum seekers aged under 18 who are receiving child services from a local authority as they have been separated from both parents and are not being cared for by an adult who by law has responsibility to do so. UASC are a specific group of looked after children.

Before entering social care, children are first assessed to determine their need:

- **Section 17 assessment (S17)**: a child is assessed against the criteria to consider them 'in need'. Under this assessment the local authority provides the child a range and level of services appropriate to meet their needs.

- **Section 47 assessment (S47)**: an investigation when there is reasonable cause to suspect that a child is suffering, or likely to suffer, significant harm. If concerns are substantiated an initial child protection conference will take place.

- **Initial child protection conference (ICPC)**: a decision will made as to whether a child needs to be placed on a child protection plan or, in the most severe cases, be taken into care by the local authority.

Section 1: Patterns of activity in children's social care

This strand of work was carried out to quantify the changing activity within children's social care observed since 2012-13.

Patterns of activity over time

Previous research has identified two main trends in children's social care activity over the past 15 years:

1. Local authorities are doing more activity on almost every measure. However, *rates* of activity per 10,000 children have only risen for some particular forms of activity.

2. This growth in activity is greatest for the most serious types of activity, particularly investigations and assessments of children's needs.

Many publications have noted rising numbers of children in children's social care. ADCS (2018) show more children in social care on every measure between 2008 (or the earliest year of data, where after 2008) and 2018, except numbers of 19-21 year old care leavers. Thomas (2018) highlights "generally rising" numbers of looked-after children and public care applications.

However, as the above authors and National Audit Office (2019) note, for some measures these rises are in line with or below population growth. Thus *rates* of some forms of social care activity per 10,000 children have stayed roughly constant or fallen. NAO observe this trend in referrals and children in need episodes 2010-11 to 2017-18. Absolute numbers are a good indication of the pressures on social workers and local authorities, but rates give a better sense of whether the way the social care system operates has changed.

NAO (2019) identify "significant increases" above population growth in the most serious cases, particularly child protection investigations (Section 47 enquiries), but also child protection plans and numbers of children looked after. Degli Esposti *et al.* (2019) note the increase in child protection plans/registrations between 1988 and 2016 were especially pronounced among children under 1 and for reasons of neglect and emotional abuse, which are now more common reasons for child protection plans than physical or sexual abuse.

Activity in England

In this section, we show trends in activity starting in 2012-13 as the current children in need data collection was introduced in 2009-10 and took some time to embed in local authorities' data systems (for example, see Department for Education (2011)), meaning it is possible that subsequent changes reflect improved data collection rather than changing activity. This is a conservative assumption to ensure highest confidence in the findings. Statistics on numbers of looked-after children since 1994 are available at Department for Education (2021b).

Children in need

Measuring the total number, and rate, of children in need provides an overview of how activity within children's social care has changed. Figure 1 indicates that activity has fluctuated since 2013. The number and rate of children in need peaked in 2018, after which both have consistently decreased, with the figures in 2021 the lowest in the last eight years. The total number of children in need is now 4% lower than in 2018 and the rate is 6% lower, although this figure has fluctuated within a narrow range for the past 8 years.

Figure 1: Children in need at 31st March.
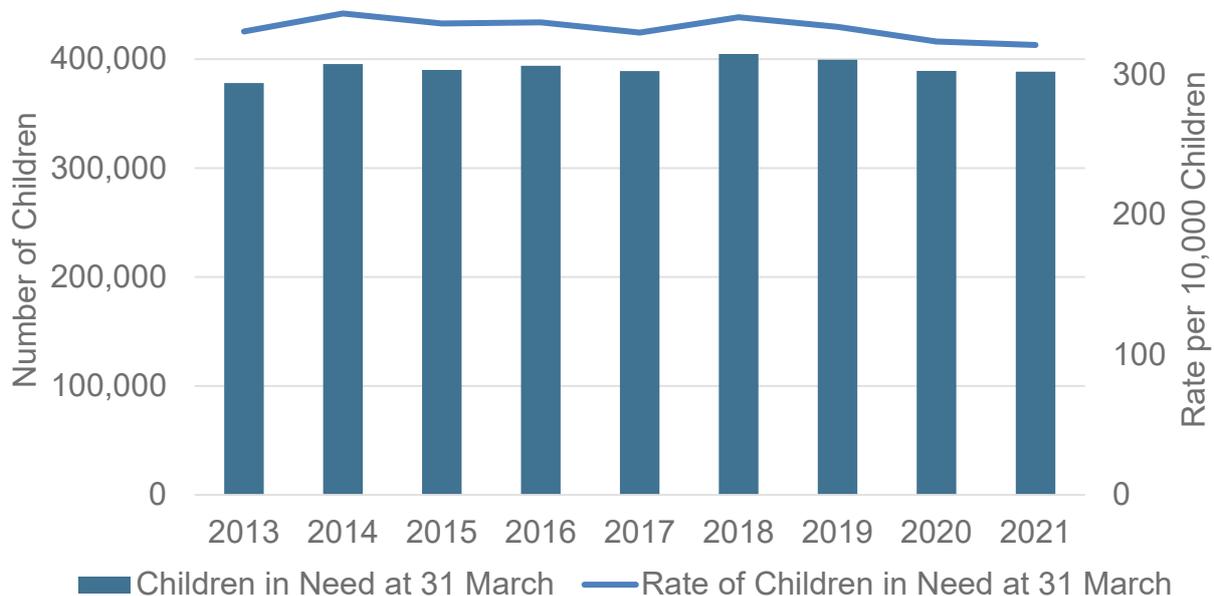
Source: Department for Education (2021) 'Characteristics of children in need'

Referrals

For a child to become a child in need they must first be referred to their local authority. Referrals can come from several different sources, including the police, schools, health services, local authority services and individuals. Referrals from police have risen by 25%

between 2014 and 2021 (see Figure 25). Figure 2 shows that referrals peaked in 2014 before falling and rising again until 2018, after which they have been consistently falling. They are currently 9% lower than in 2014.

Between 2014 and 2021, the number of referrals that resulted in no further action (NFA)[1] has fallen by 61%, whilst the number of children assessed as not in need has increased by 41% over the same period. This large fall in NFA referrals may be due to more children being triaged to other services, for example early help, before reaching the referral stage for children's services (Department for Education, 2021a). However, the rise in children assessed as not in need may indicate that more children could benefit from these services. Alternatively, it may reflect higher thresholds to access services.

Whilst the number of children referred and assessed as in need has fallen between 2014 and 2021, a sharp fall of 7% occurred between 2020 and 2021. This is likely largely due to the coronavirus (COVID-19) pandemic, which Ofsted (2020) argues led to a drop in referrals when not all children were physically attending school.

Figure 2: Referrals
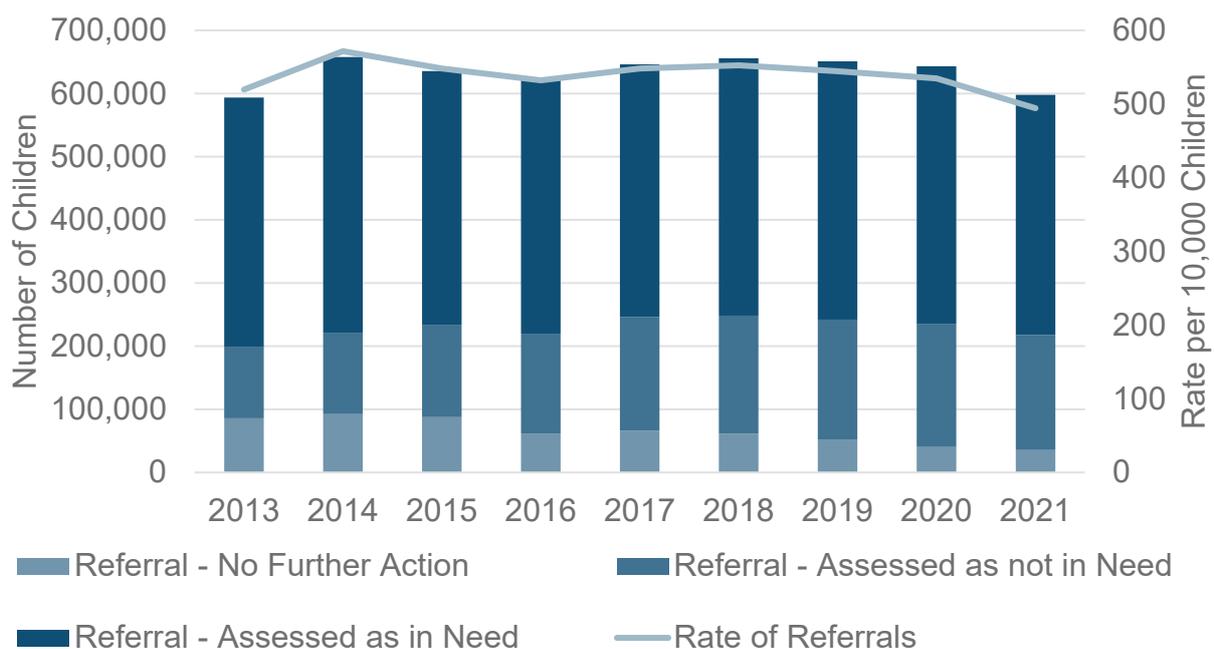
Source: Department for Education (2021) 'Characteristics of children in need'

Table 1: Referral outcomes as a % of all referrals

Referral Outcome	2013	2014	2015	2016	2017	2018	2019	2020	2021
Referral - Assessed as in need	67%	74%	68%	68%	67%	69%	69%	69%	64%

[1] NFA referrals are those that, after initial consideration by the local authority, the decision was taken not to undertake an assessment.

Referral Outcome	2013	2014	2015	2016	2017	2018	2019	2020	2021
Referral - Assessed as not in need	19%	20%	23%	25%	28%	28%	29%	30%	30%
Referral - no further action	14%	14%	14%	10%	10%	9%	8%	6%	6%

While the Department does not collect information on social care activity prior to referral, ADCS (2021) conducted a survey of local authorities. Extrapolating from responding local authorities to a national figure, the number of early help assessments increased from 105,100 in 2012/13 to 242,580 in 2019/20, with the rate of assessments per 10,000 children increasing from 94 to 202 per 10,000. The number of cases open to early help services increased from 164,000 to 197,850 over the same period, while the rate per 10,000 increased from 139 and 165. This increase in early help contrasts with the reduction in children in need shown in Figure 1.

Responding local authorities reported that of initial contacts, the proportion which lead to 'no further action (NFA)' remained fairly constant at 24% to 25%, whilst the proportion going on to a formal social care referral decreased from 30% in 2012/13 to 25% in 2019/20.

The number of Section 17 assessments rose by 21% between 2015 (the earliest year of comparable data) and 2020, before falling by 6% into 2021. Increasing proportions of children are ultimately assessed as not in need (see Table 1). The fall in assessments in 2021 is likely due to the COVID-19 pandemic as fewer children were referred (Department for Education, 2021b).

Child protection plans

Child protection plans (CPPs) are only be implemented once a child has undergone a Section 47 (S47) assessment and an initial child protection conference (ICPC) (see **Key definitions** for descriptions). These processes begin when local authorities suspect that a child is suffering, or likely to suffer, significant harm and therefore should be representative of children at substantial risk.

Figure 3 shows that between 2013 and 2018 the rate of S47s per 10,000 children increased faster (33%) than either ICPCs (26%) or CPPs (21%), but between 2019-2021 rates of S47s have remained constant, whilst they have dipped marginally for ICPCs and CPPs. This means the increase in investigations has not led to more children going on to receive additional support (CPPs). In addition, the number of children receiving a S47 assessment and then going on to attend an ICPC has fallen steadily from 47% in 2013 to 37% in 2021, whilst the rate of children being placed on a CPP after an ICPC has

remained relatively constant, averaging 87%, over the time period examined (see Table 2).

Figure 3: Rates of S47s, ICPCs and CPPs in each year
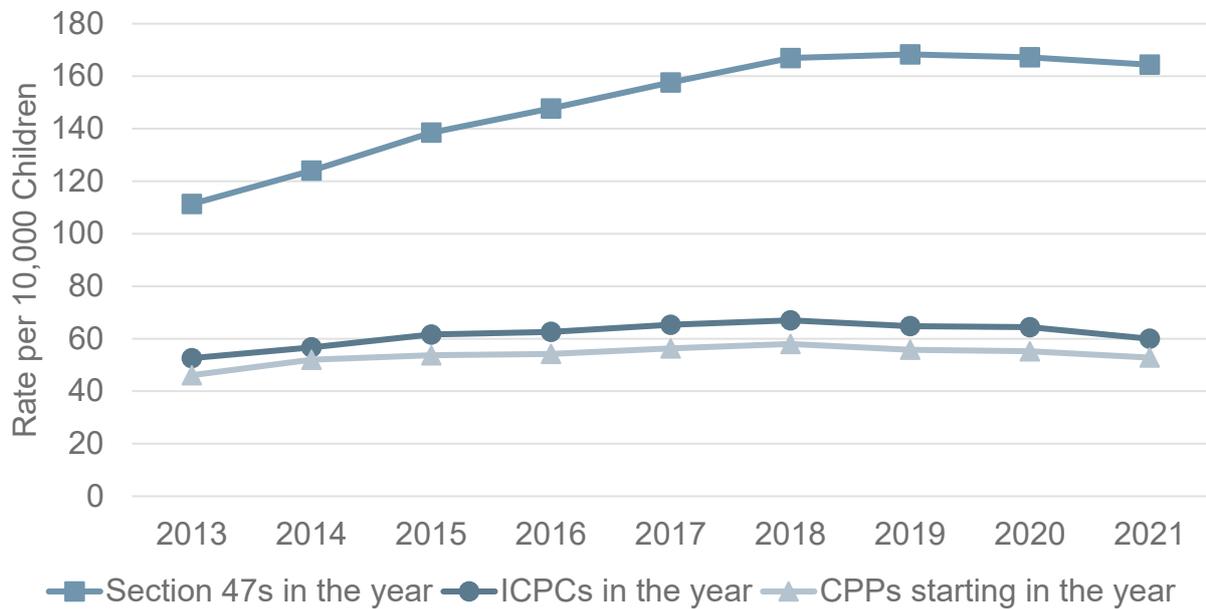
Source: Department for Education (2021) 'Characteristics of children in need'

Table 2: Proportion of children progressing between activity levels

Activity progression	2013	2014	2015	2016	2017	2018	2019	2020	2021
S47 to ICPC	47%	46%	44%	42%	41%	40%	38%	39%	37%
ICPC to CPP	88%	92%	87%	87%	86%	87%	86%	86%	88%

Figure 4 shows the number, and rates, of children on child protection plans on 31st March each year. Numbers of and rates of children on CPPs peaked in 2018 and have since fallen for three consecutive years. Rates in 2021 are 9% lower than 2018 and numbers are 7% lower. The falls in 2020 and 2021 may in part be attributed to COVID-19, not only

in a reduction in face-to-face contact with key workers but also family court backlogs (Institute for Government, 2021).

Figure 4: Child protection plans at 31st March
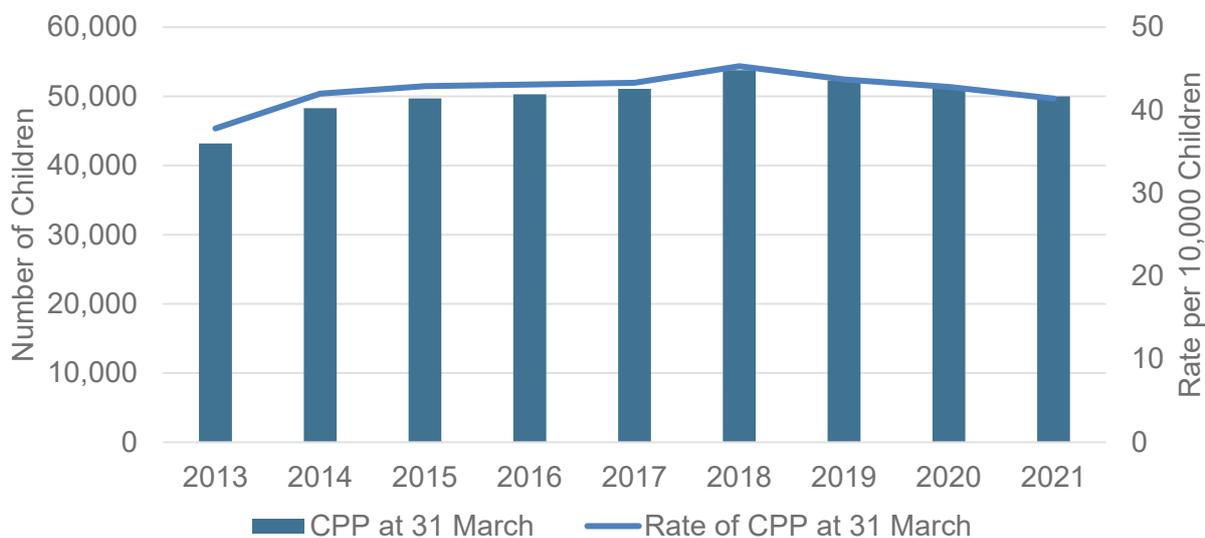
Source: Department for Education (2021) 'Characteristics of children in need'

Looked after children

Numbers of looked-after children are indicative of the children with the most acute needs. Figure 5 shows that the rates and number of looked-after children have risen continuously since 2013; numbers are currently 19% higher and rates 12% higher. To understand these rises it is useful to look at numbers of children starting and ceasing to be looked after.

Figure 5: Looked after children at 31st March
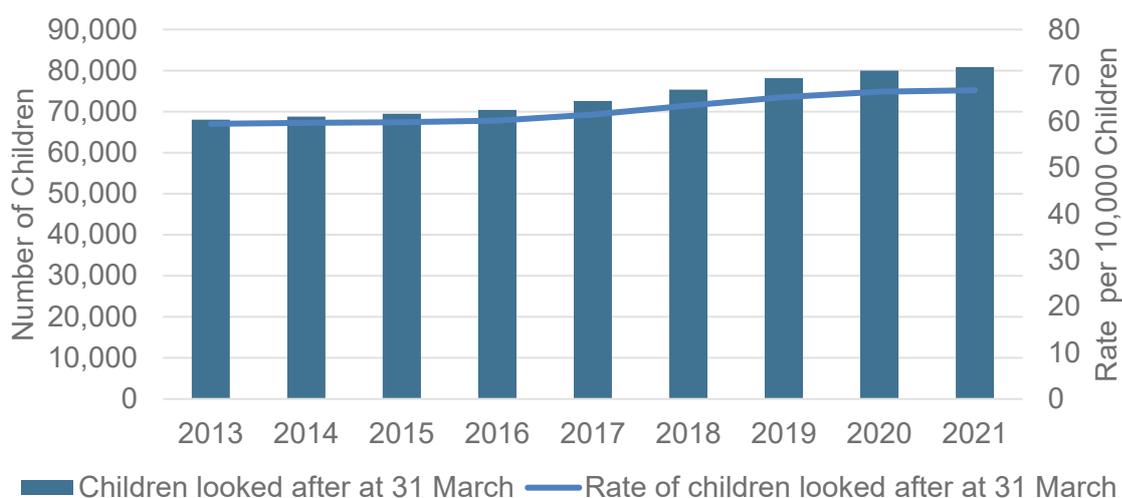
Source: Department for Education (2021) 'Children looked after in England including adoptions'

Figure 6 shows that whilst the number of children starting to be looked after has fallen since 2017, the number of children ceasing to be looked after has been falling since 2016, meaning that the total number of children in care has increased. Between 2016 and 2021, the number of children starting to be looked after fell by 11.6%, whilst the number of children ceasing to be looked after fell by 12.1%, although it should be noted that starts continued increasing until 2017. As fewer children are ceasing to be looked after, they are spending longer being looked after. The average duration of the latest period of care for children ceasing to be looked after increased from 829 days in 2019-20 to 908 days in 2020/21 – an increase of 79 days (Department for Education, 2021b).

Figure 6: Looked after starts and ceases in year
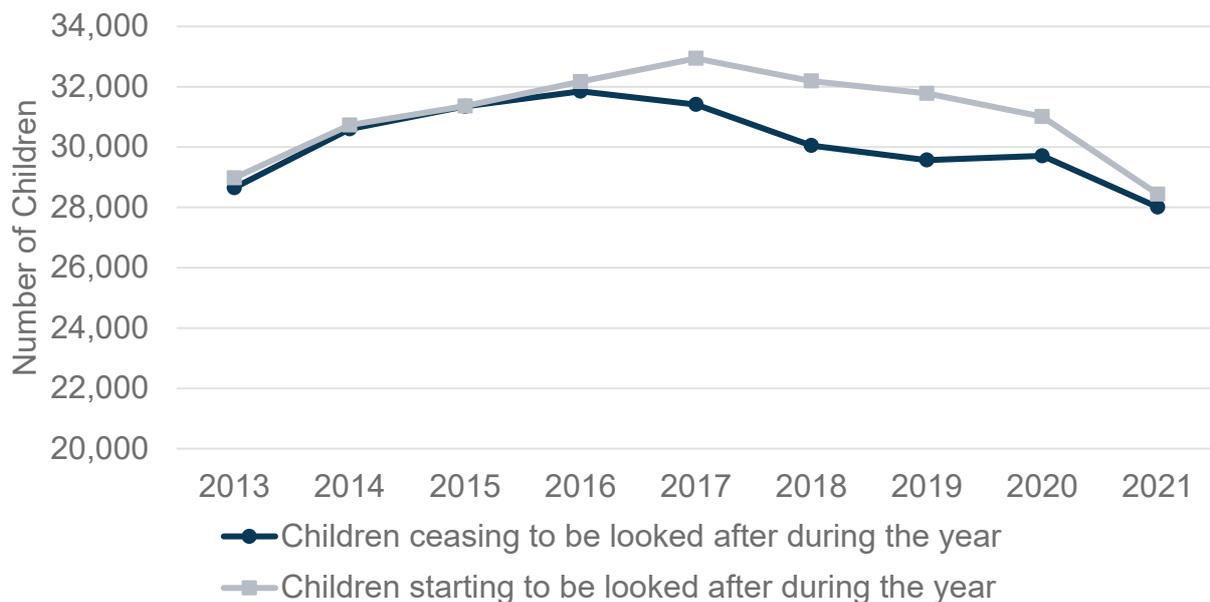
Source: Department for Education (2021) 'Children looked after in England including adoptions'

The fall in ceasing care since 2016 may be largely explained by fewer children returning home to their families (as shown in Figure 7) meaning they are spending longer in social care. The age profile of children leaving care has changed since 2013. Figure 8 shows the age of children when they left care. Between 2013 and 2015, the most common age for children to leave care was when they were aged between 1 and 4. However, since 2016, the most common age to leave is 18 years old. Between 2013 and 2018, the proportion of children leaving care in all age groups under 18 has decreased, whilst the proportion leaving care aged 18 has increased.

This changing age profile coincides with fewer children returning home to live with parents/carers, and fewer children being adopted, which becomes less likely as children get older. Figure 7 shows the five most common reasons for children ceasing care between 2013 and 2021. In 2013 returning home to live with parents/carers accounted

for 35% of all children leaving care, however in 2021 this proportion had fallen to 20%[2]. The proportion of children being adopted has also fallen over the same period, down by 4ppt. The decrease in adoptions follows two court rulings in 2013, which stated that adoption orders should be made only when there was no other alternative, such as placing a child with birth relatives (Department for Education, 2021b). On the other hand, the proportion of children ceasing care due to special guardianship orders and moves into independent living have increased by 4ppt and 2ppt respectively between 2013-2018.

Figure 7: Reason for ceasing care
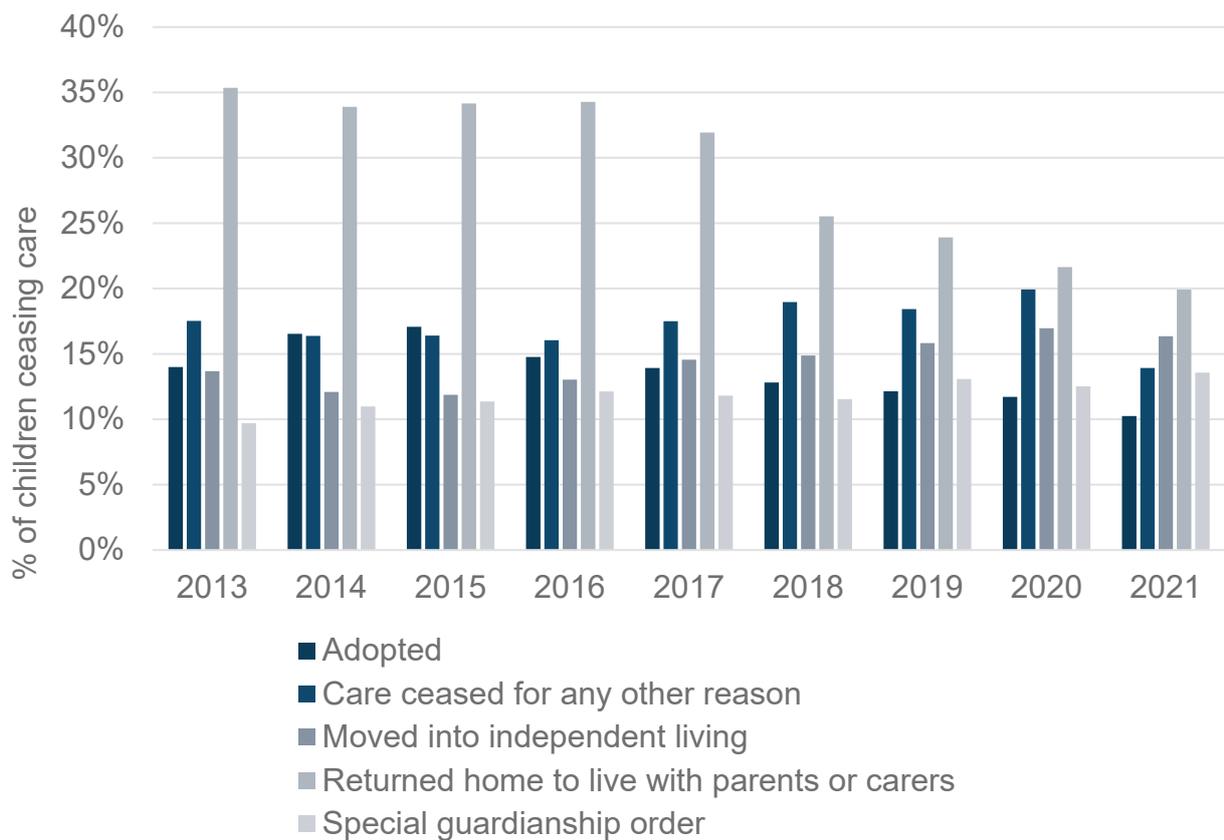
Source: Department for Education (2021) 'Children looked after in England including adoptions'

The age profile of children entering care has changed since 2013, with over 16s accounting for 20% of entrants in 2021, compared to 13% in 2013. Under 1s, children aged 1-4 and children aged 10-15 have all experienced falls (2-3 percentage points) in proportions of entrants. However, as will be discussed, Table 4 shows that changes in age on entry had a negligible effect on the length of time children spent being looked after.

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[2] Figures exclude children leaving care to live with person with no parental responsibility.

Increases in the number of Unaccompanied Asylum Seeking Children (UASC) are likely to contribute to the increasing age of children in care and reduction in the number of children returning home to live with their parents. UASC tend to be older: only 13% were aged under 16 in 2021 (Department for Education, 2021b). However, as we show later, the increase in numbers of UASC only accounts for 26% of the rise in looked-after children between 2013 and 2020 so this only partially explains these changes.

Figure 8: Age of children ceasing care
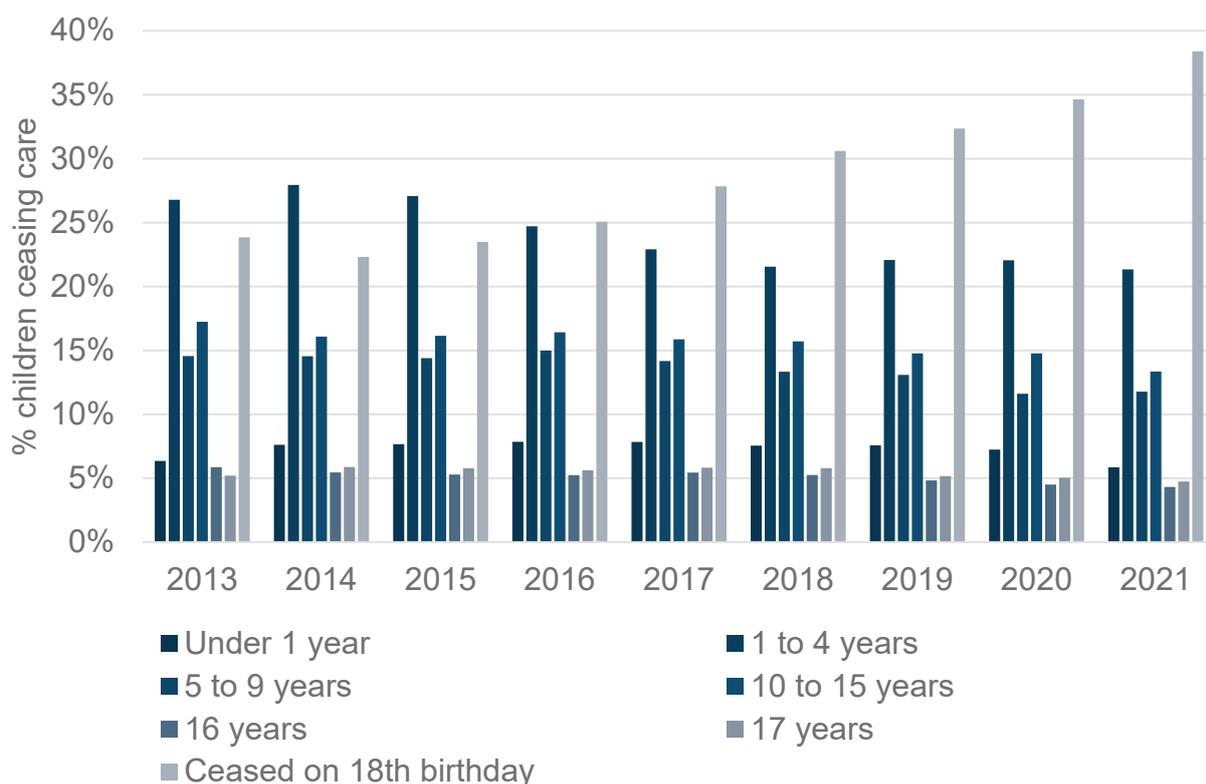
Source: Department for Education (2021) 'Children looked after in England including adoptions'

The fall between 2020 and 2021 (8% for starts and 6% for ceasing) was sharper than in previous consecutive years. This has partly been driven by continuing falls in adoptions and children returning home which is likely to be attributed to increased court backlogs resulting from the COVID-19 pandemic (see Figure 9 and Figure 10).

The increase in the number of looked-after children is also partly driven by population growth, which accounts for 30% of the observed increase between 2013-2020, and by an increase in unaccompanied asylum-seeking children (UASC), which accounts for 26% of the increase. These two factors combined account for just over half of the growth in looked-after children.

Care leavers and family courts

The number of care leavers (young people who were looked after for at least 13 weeks in total since the age of 14 including some time after their 16th birthday) have been increasing. Local authorities have responsibilities towards them until they are 21, or 25 if they are still in education or training, have a disability or if the care leaver requests continued support. As the care population is aging it follows that an increase in care leavers is also expected. Between 2018 and 2021, the number of care leavers aged 17-21 increased by 13% from 39,540 to 44,590 (Department for Education, 2021b). As shown in Table 3, the number of 17 year old care leavers fell by 21% between 2018 and 2021 but the number of 18-21 year old care leavers all rose, with older age groups rising the fastest.

Table 3: Care leavers by age between 2018 and 2021

	2018	2019	2020	2021
17 years	620	480	470	490
18 years	10,420	10,710	11,190	11,600
19 years	10,090	10,470	10,770	11,280
20 years	9,430	10,030	10,460	10,760
21 years	17,960	18,820	20,080	20,930
Total	39,540	41,100	42,930	44,590

Figure 9 shows the total number of public law cases starting and ceasing in the family courts in England and Wales in each quarter between 2015-2021, as reported by the Ministry of Justice. In 2020 Quarter 2 (April-June), which coincides with the first national lockdown, there was just a 4% drop in cases starting but a 30% drop in cases being resolved (disposals) compared to 2019 Q2. Between 2020 Q2 and Q3, disposals had increased by 40%, taking them back to pre-pandemic levels, but many cases were still left in court backlogs due to the large fall in disposals during the first national lockdown. Figure 10 shows that the average time between applying for a care order and the case being resolved (the mean case disposal time) for care proceedings rose sharply between Q2 and Q3 in 2020, increasing from 36 to 41 weeks. By 2021 Q3, the mean disposal time had risen to 45 weeks.

Figure 9: Family court public law case starts and disposals
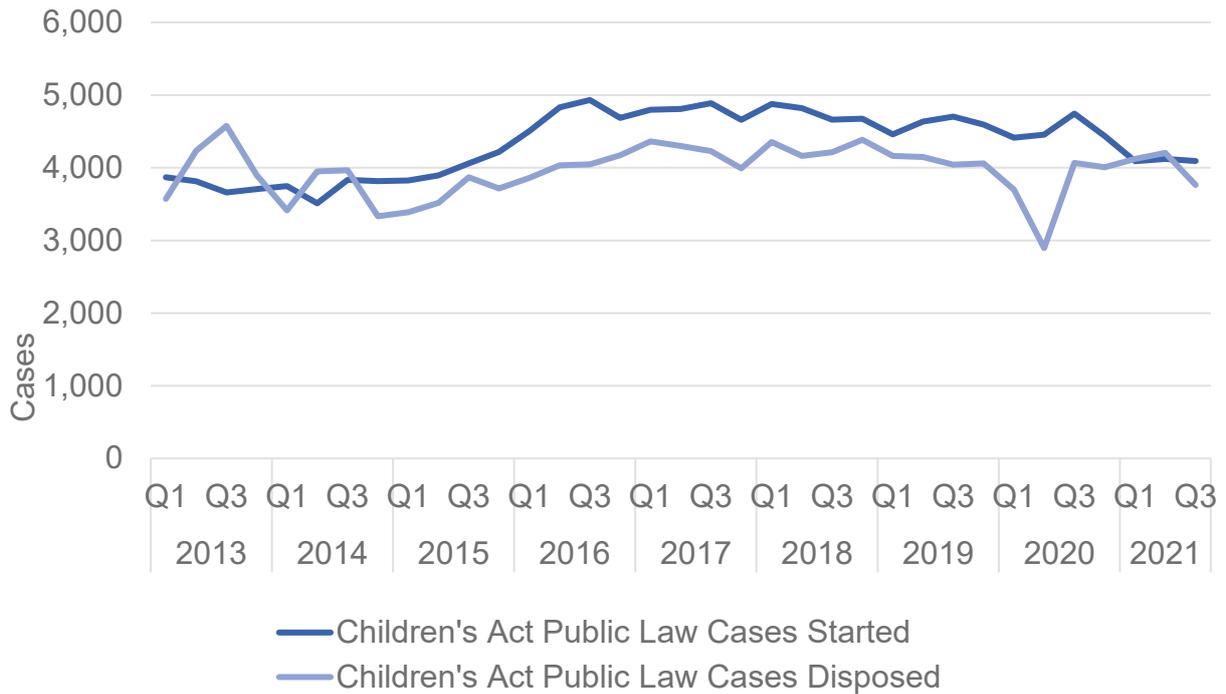
Source: Ministry of Justice (2021) 'Family Courts' (Family court - Courts data - Justice data)

Figure 10: Mean disposal time for care proceedings in Family courts

Source: Ministry of Justice (2021) 'Family Courts' (Family court - Courts data - Justice data)

Impact of age of looked-after children

As discussed above, 56% of the increase in numbers of looked-after children can be accounted for by population growth and UASC. As the children's social care population is becoming older (Department for Education, 2021a), and children of different ages spend

different lengths of time being looked after (Neil, Gitsels and Thoburn, 2019), we investigate whether the increasing age of children can explain the remaining increase in the number of looked-after children.

The results of an age-adjusted analysis[3] showing the proportion of children remaining looked after each year after starting to become looked after, is shown in Table 4. The proportion of children remaining in care a year after entering fell until 2014 before rising, and increasing rapidly in 2017, independently of children's age when they became looked after. In 2012, 53% of care entrants would be expected to be looked after a year later. By 2018, this proportion had risen to 56%. These changes are largely being driven by children aged 16, with the percentage of 16 year olds remaining in care after 1 year rising by 16 percentage points between 2012-2018. With more children spending longer in care, we would naturally expect the number of looked after children to increase.

If the increasing age of children becoming looked after was a key factor in increasing the length of time spent in care, and therefore increasing the number of children in care, we would expect age-adjusted persistence to be lower than the unadjusted rates in more recent years. However, we observe that age adjusted persistence rates are either equal to or, in a few cases, 1 percentage point higher than the non-age adjusted rates. Therefore, we conclude that the increase in older children does not explain why children are spending longer in care, but instead that the population is aging in part *because* children are spending longer in care.

Table 4 also indicates that a substantial proportion of children entered care several years ago and remain in care today. This picture is supported by the findings shown in Figure 16 and Figure 18 of the Repeat Interactions section.

Table 4: Age-adjusted analysis of looked-after children

Proportion still in social care after X years (age adjusted)

	0	1	2	3	4	5	6	7
2012	100%	53%	35%	25%	20%	17%	14%	12%
2013	100%	50%	33%	24%	19%	16%	14%	
2014	100%	49%	32%	23%	18%	15%		
2015	100%	49%	33%	24%	18%			
2016	100%	51%	36%	26%				
2017	100%	54%	38%					
2018	100%	56%						

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[3] Age-adjustment is a statistical technique to control for children's different ages on entering social care. We calculate the proportion of children who remain in social care for each age on entry and year of entry, and then calculate the expected proportion staying if each year of entry had the same age structure as in 2012.

Activity across the UK and internationally

Comparing rates of children's social care activity across the UK, and internationally, is useful as it offers insight into how widespread rising activity levels are and helps to put England's social care rates in perspective. Whilst child protection systems vary across the UK, measures of activity are broadly comparable (Scottish Government, 2021).

The Scottish Government, 2021 carried out a cross-UK comparison analysing data from 2004-2020 and found that England, Wales and Northern Ireland (NI) all experienced a large increase in the rates of children on child protection plans or the child protection register (which are broadly comparable) between 2007-2011, with the rate remaining largely stable since 2014. In comparison, Scotland has a notably lower rate of children on the child protection register and that rate has remained stable over the last decade.

In contrast, the rates of looked after children across all four nations has increased since 2004. England has consistently had the lowest looked after rate, whilst Scotland consistently has the highest. England, Wales and NI all follow the same trend of increasing rates between since 2008, with a notable increase after 2016. However, Scotland's rates have been falling since 2018 (Scottish Government, 2021). It should be noted that the definition of 'looked after children' varies across the UK so direct comparisons are difficult. To improve comparability Scottish Government (2021), used the Scotland figure on March 31st, rather than the published 31st July figure, as the other nations publish figures as at this date.

In addition, researchers have compared child protection data internationally, which allows England's rates to be benchmarked against other nations and offers insight into policies and practices which are effective at reducing rates, or alternatively, policies that may increase rates.

Munro & Manful (2012), carried out research examining child welfare data across England, Australia, Norway and the United States (US) between 1999-2010. They found the rate of children in care increased over this period in England, Australia and Norway whilst rates fell for the US, although US rates fell from a higher starting level (from roughly double the rate of children in care than the other 3 countries in 1999). Between 1999-2006 England had the second highest rate of children in care of the four countries analysed, but as its rate rose less than the other nations, it had the lowest rate from 2007-2009.

Similarly, Gilbert et al. (2012) found one or more child protection activity indicators had risen for children under the age of 11 since the 1990s/2000s in 5 of the six countries or states analysed (England, Sweden, New Zealand, Western Australia, and the USA; there was no significant rise in looked-after children in Manitoba (Canada)).

While activity rates have generally risen over the long term in several developed countries, there are exceptions, as noted above and in looked after rates in Denmark (Ubbesen, Gilbert and Thoburn, 2015).

These comparisons to other countries raise questions about the extent to which rises in England's social care rates are linked to England-specific causes or internationally-shared factors as other nations with different policies and practices have also seen rises. Featherstone *et al.* (2018) suggest similar factors are behind increased child protection activity in English speaking developed countries. This is worth further investigation although it is possible that different factors are responsible for increasing rates in England than in the other countries analysed.

Changing activity at local authority level

Determining whether changes in activity are concentrated in specific geographical areas can help reveal which policies will be most effective at managing activity. Analysis of the number of looked-after children at local authority level showed that nearly three quarters (71%) of the increase between 2013-2021 was driven by a fifth of local authorities. They accounted for 9,000 of the 12,700 total increase in children over the 8 year period examined. This is not due to their population sizes, as this fifth of local authorities contained only slightly more than a fifth (24%) of the total looked after population analysed. However, they were also mixed in terms of rurality, deprivation markers and regions in the UK, making it difficult to draw straightforward conclusions around a cause for the increase in looked-after children in certain local authorities. The analysis also found that a fifth of local authorities experienced a fall in looked-after children numbers between 2013-2021, amounting to a decrease of 2,000 children.

Analysis of the rate of looked-after children shows the trend excluding population size factors. Figure 11 shows the average (median) looked-after children rates between 2013-2021 for local authorities broken down by growth quintile. The 20% fastest growing (by looked after rate) local authorities have a median rate which has increased 67% over the period analysed, whilst the remaining 80% of local authorities have much more stable rates, with the bottom two fifths even experiencing falling median looked after rates. Of the local authorities included in the analysis, between 2013 and 2021, 97 had an increased rate, 47 had decreased looked after rates and 4 had the same rate.

Figure 11: Median looked-after children rates by growth quintile
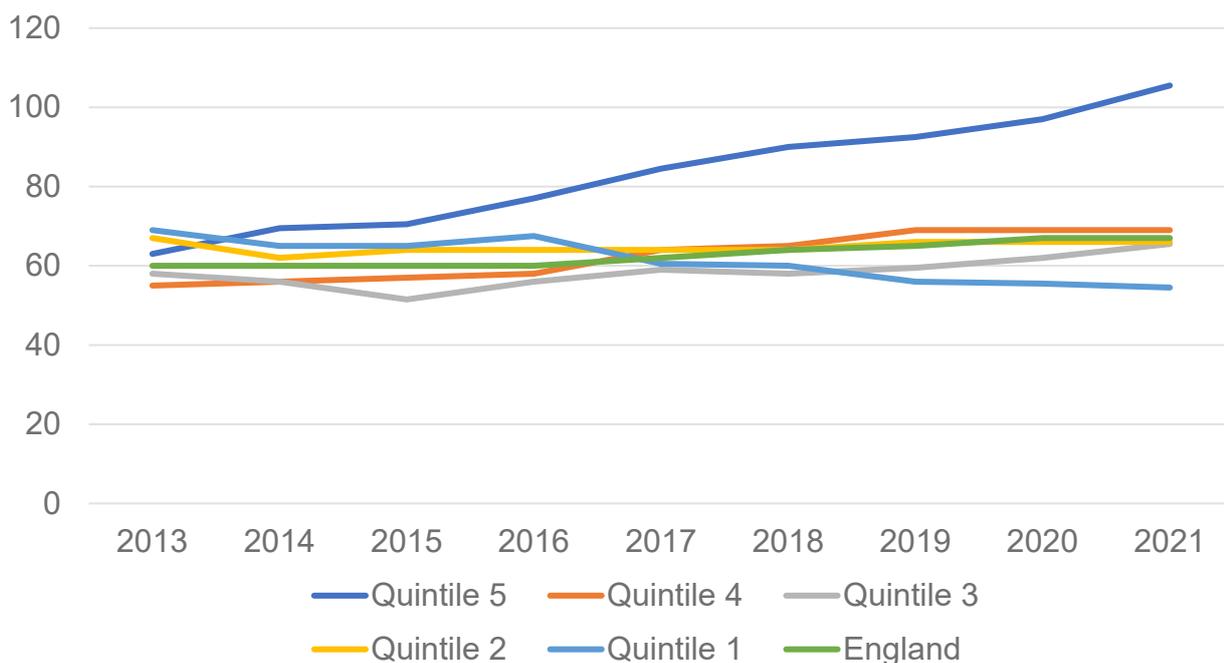
Source: Department for Education (2021) 'Children looked after in England including adoptions'

As we have grouped the local authorities by looked after growth, we would expect the top 20% to contribute more than 20% of the increase, particularly as approximately a third (47) of local authorities made a negative contribution to national looked after rates over the period. Additionally, some natural change in looked after rates of individual local authorities is expected over time. However, the concentration of looked after rate growth is still notable.

Bennett *et al.* (2020) note that local authorities with faster growing looked after rates were more likely to have higher unemployment rates and levels of deprivation. Differences in looked after growth rates between more and less deprived areas were primarily down to differences in growth in looked after rates for 16-17 year olds.

Wijedasa, Warner and Scourfeld (2018) analysed changes in looked after rates between 2012 and 2017. They found the fastest increase in looked after rates in the North East and North West of England, while London had the fastest decrease. They found that decreasing looked after rates were significantly more likely in local authorities with better Ofsted judgements and who participated in the DfE's Innovation Programme. No significant association was found between change in looked after rates and i) increasing spend per child in need; ii) changes in social worker turnover or agency social work staff over this period. However, Bennett, Webb, *et al.* (2021) did find an association between spend on preventative services and looked after rates among 16-17 year olds.

Bennett, Schlüter, *et al.* (2021) also found that increases in child poverty were linked to increased activity between 2015 and 2020. Conversely, Wijedasa, Warner and Scourfeld (2018) did not find a significant association between increasing deprivation and increasing looked after rates 2012-2017, although they did find such a link from 2008-2015. Bennett et al also note that local authority-level deprivation was not associated with faster growing CPP or CIN rates over 12 years.

We further explore the variation in local authorities' looked after rates in Section 3.

Changing needs with age

Factors identified at the end of assessment by age

It is important to understand what causes children to enter children's social care, and particularly how this varies for children of different ages, as age is an important factor in children's social care activity (Neil, Gitsels and Thoburn, 2019). After an assessment is carried out, social workers record any additional factors which are relevant to the case – these are a guide to which needs and issues which may have led them to receive a social care intervention. In this section, we show that the factors identified differ substantially for children of different ages.

Figure 12 shows the prevalence of the nine most common factors at assessment by child age in 2019/20. The chart shows that whilst certain factors become less prominent at assessment for older children, others become more common. As there are many factors it is a complex picture, however, pre-adolescence, parental domestic abuse, parental mental health and emotional abuse of the child are the most prevalent factors, whilst for teenagers the child's mental health is the most prominent factor.

Concerns about the child's parent/carer being the subject of domestic violence are the most common single factor at assessment for younger children. In 2019/20 45% of all assessments of children aged 1 cited this as a factor. It remains the most cited of the (most common) factors until children reach 12 years old, at which point the mental health of parents/carers is cited slightly more, in around 27% of assessments. Other factors which become consistently less prevalent with age include child neglect and parent/carer drug misuse.

Some factors do not show a consistent trend. For example, physical child abuse peaks among children aged 5-9 years old, being cited during 15% of assessments, before declining among adolescents. Alcohol misuse by a parent/carer follows a similar trend, rising in prevalence until the age of 9 and then falling steadily thereafter.

Most markedly, of the 9 most common factors at assessment, child mental health is the only factor that rises consistently as children age. It is cited as a factor for children under

1 year olds only 6% of the time, a figure that increases to 27% by the time a child reaches 17 years old. Despite falling across all ages up to 15, concerns about the child being subject to domestic violence begins to increase when a child reaches 16 and continues to increase for children who are 17 years old, at which point it is cited in 11% of all assessments.

Figure 12: Assessment factor prevalence by child age, 2019/20
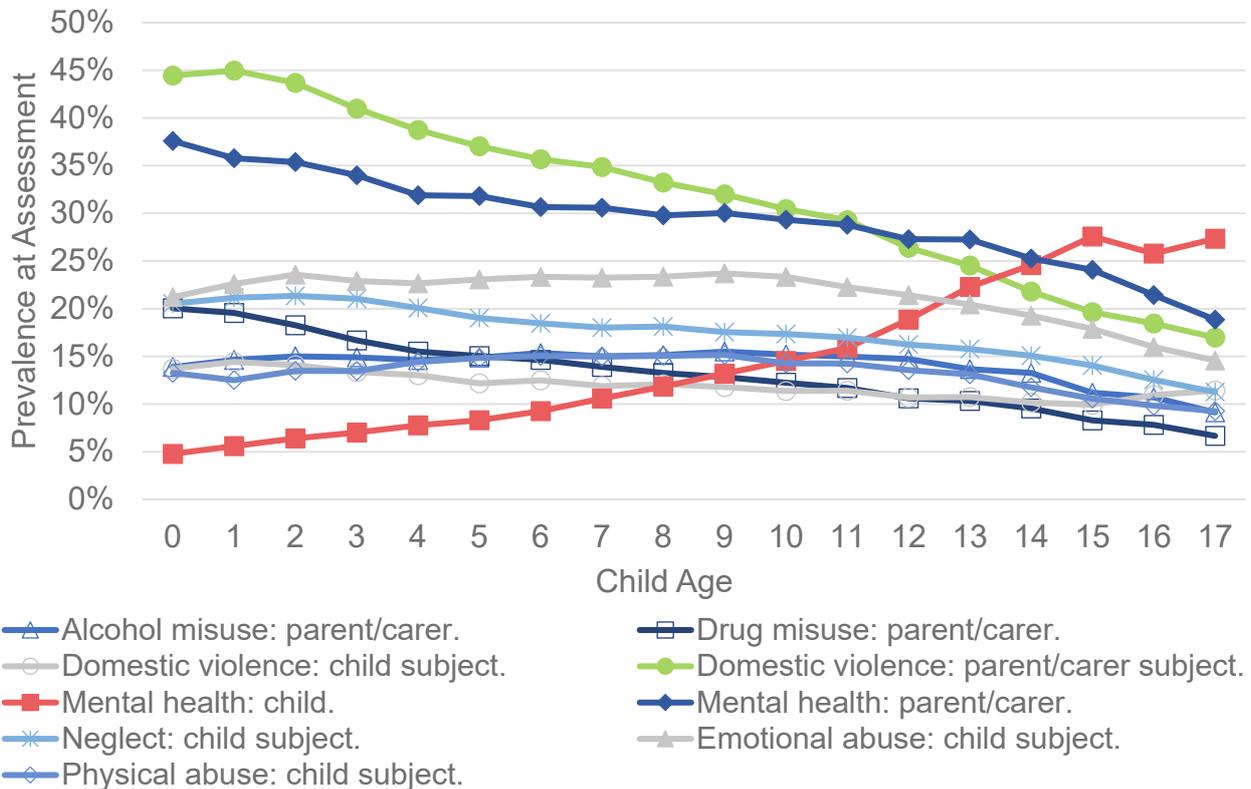
Source: Longitudinal children in need dataset (LCD)

As the CIN population is becoming older on average it is appropriate to examine how assessment factors differ for adolescents. Figure 13 shows the factors identified at the end of assessment which are more likely to be identified for older children. Child alcohol misuse, child drug misuse, Child Sexual Exploitation (CSE), trafficking, gangs, socially unacceptable behaviour and self-harm steadily become more common until a child reaches 11 years old.

After 12 years old until later teenage years there is a sharp growth in the percentage of assessments these factors are identified in. Socially unacceptable behaviour is the most prevalent of all the rising factors for teenagers until a child reaches 15 years old. Its identification at assessment grows faster than the other factors during pre-teenage years and it peaks when a child is aged 15, being reported at 17% of all assessments. Child drug misuse is the fastest, most consistently growing factor for teenagers, rising from being cited 5% of the time when a child is aged 12, to 17% when a child is aged 17. This

sharp increase in factors at assessment for adolescents suggests they face a highly complex picture and may also go some way to explain the increase in older children entering care. Although, it may also reflect increased focus by social workers on children's behaviour rather than conditions at home or parenting. 15% of assessments for adolescents in 2019/20 identified extra-familial threats[4].

Figure 13: Additional assessment factors that rise for teenagers, 2019/20
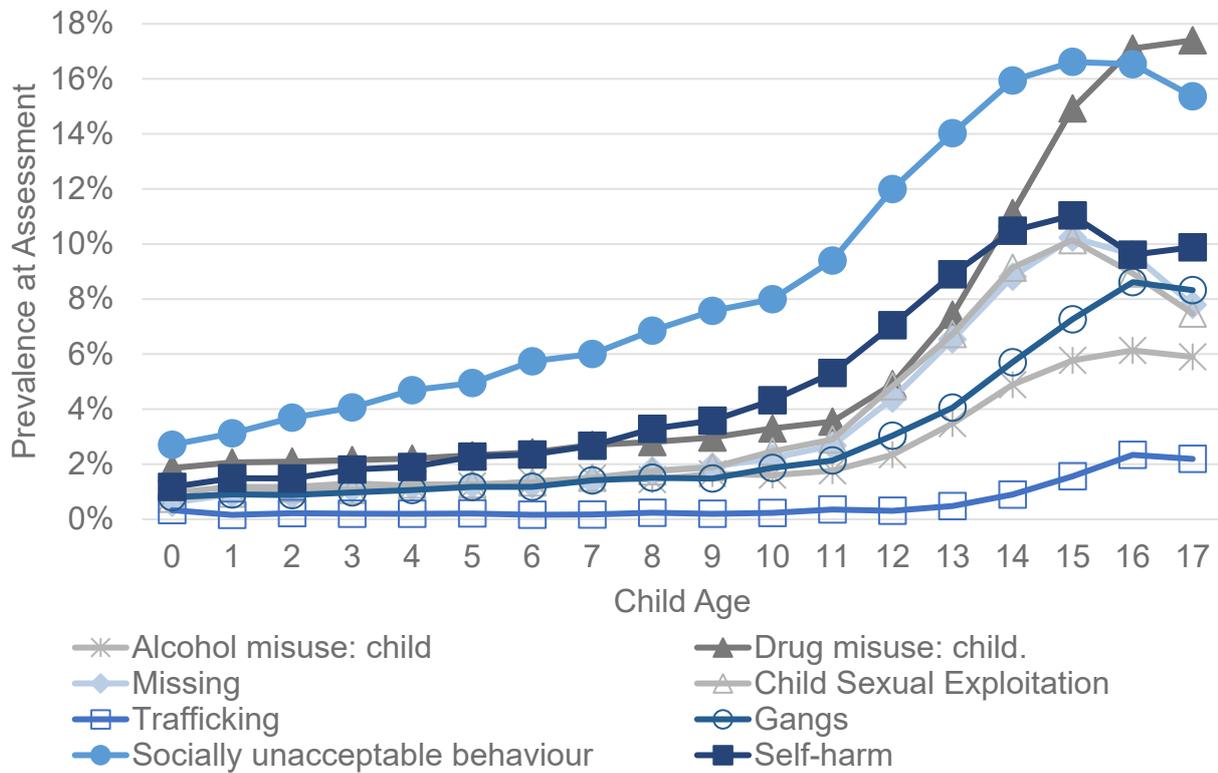
Source: Longitudinal children in need dataset (LCD)

Hood et al. (2021) analysed which *groups* of factors were most commonly identified within the assessments of children across six local authorities. They identified seven groupings of factors: three where a single factor was solely or primarily identified, and four where multiple factors were identified. Of these, the "neglect", "domestic violence" and "complex needs 1" [5] groups of factors were most strongly associated with younger children, particularly with children under 1, while "beyond parental control/highly vulnerable", "complex needs 2" [6] and "disability/mental health" groups of factors tended to become more prominent as children got older until the age of fourteen or fifteen, at which point they became less likely. Finally, the "physical abuse" grouping was

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[4] Extra-familial threats include children who are/at risk of going missing, child sexual exploitation, gangs and trafficking.
[5] A group of multiple factors including domestic violence, parental mental illness, parental alcohol or drug misuse and emotional abuse
[6] A group of multiple factors including domestic violence, parental mental illness, parental alcohol or drug misuse, emotional abuse, neglect, physical abuse and child's mental health

particularly associated with school-age children. However, all these "demand classes" were present to a significant extent among every age group. These groups were not especially predictive of the type of activity that these children would be placed in e.g. looked after or on child protection plans.

Over the past two decades the "trio" of assessment factors including domestic violence, parental mental health issues and/or learning disability, and parental alcohol and/or drug misuse have been recognised as important drivers of activity (Cleaver, Unell and Aldgate, 2011), as the most common individual factors at assessment as shown in Figure 12 and notable in Serious Case Reviews. However, Skinner et al., 2020 criticised the importance given to these factors in practice given the evidence base.

Our analysis finds that a substantial proportion of children in need are not assessed with any of these factors; and having 3 or more of these factors recorded affects a minority of children. For all age groups, under 12% of assessments have three trio factors recorded, with that percentage decreasing steadily as a child ages. By age 17, less than 4% of assessments have three of the trio of factors stated. These factors are more prevalent amongst younger children: whilst over 67% of all 1-year-olds have at least one of the trio of factors cited at their assessment, under 38% of 17-year-olds have one or more factors stated.

Prevalence of children in need or looked after by age

The figures in the report so far have shown the number of children in contact with social care at a specific point of time, or across a year. It is also instructive to look from the point of view of children and families and ask what proportion of children interact with the social care over a longer period, or if possible, over their childhood.

Figure 14 and Figure 15 show the proportion of children in England, by age, who in 2019/20, had been CIN or looked after in the previous 8 years[7]. Figure 14 shows around 17.5% (more than 1 in 6) of 8-17 year olds in England had been CIN at some point in the previous 8 years. The proportion rises from 17.5% among 13 year olds to 18.4% of 16 year olds. However, the largest increases by age happen when a child is under 10, suggesting that most first episodes of need occur when a child is in this age range.

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[7] 8 years was chosen as the Department's internal Longitudinal CIN Dataset (LCD) currently covers the past 8 years.

Figure 14: Probability that a child has been CIN in the last 8 years by age in 2019/20
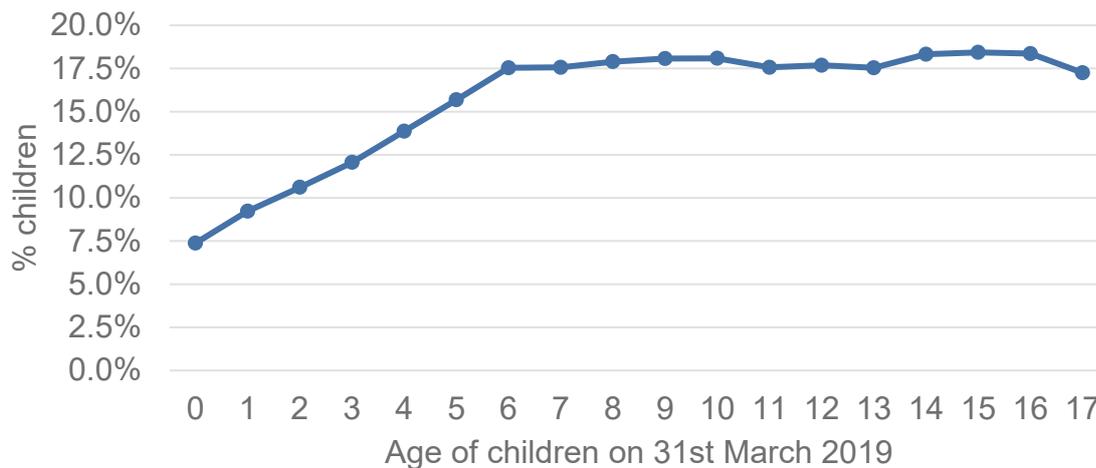
Source: Longitudinal children in need dataset (LCD)

The Department previously found 1 in 10 of all children in 2018 had been categorized as a 'child in need' at some point in the previous 6 years (Department for Education, 2019). Experimental analysis conducted by Jay et al. (pre-print) suggests that 25% (1 in 4) of all children are CIN at least once before their 16th birthday. Our analysis extends the findings of the Department in 2018 to look over 8 years, and broadly matches the assumptions of Jay et al. For example, we estimate 12.2% of children aged 4 have been in need at some point – this compares to 14.3% used in Jay et al. It is difficult to compare to the overall estimate of 25% by Jay et al. (pre-print) due to the different method used and different time frames examined; however, it is clear a significant proportion of children are known to children's social care at some point. Over the 8 years examined we found that, in total, 15.8% (more than 1 in 7) of all children were CIN at least once.

Figure 15 shows that over 2.5% of 16 and 17-year-olds in 2019/20 had been looked after at some point in the previous 8 years. This is the highest proportion for any age group and reiterates the finding that the number of older children being looked after is increasing. There is also secondary peak for 6-7 year olds, who have just under a 2% chance of having been looked after in the previous 8 years. This peak is likely a combination of an age and year effect. Under 1s account for a relatively high proportion of looked-after children and after age 8 this period of their lives is excluded from the analysis. Over the 8 years examined we found that, in total, 1.7% (1 in 52) of all children were looked after at least once. By comparison, Mc Grath-Lone et al. (2016) estimate 3.3% of children born in 1992-94 entered out-of-home care (a form of being looked after) at some point before the age of 18, and the rate of entering care increased for children born later.

Figure 15: Probability that a child had been looked after in the last 8 years by age in 2019/20
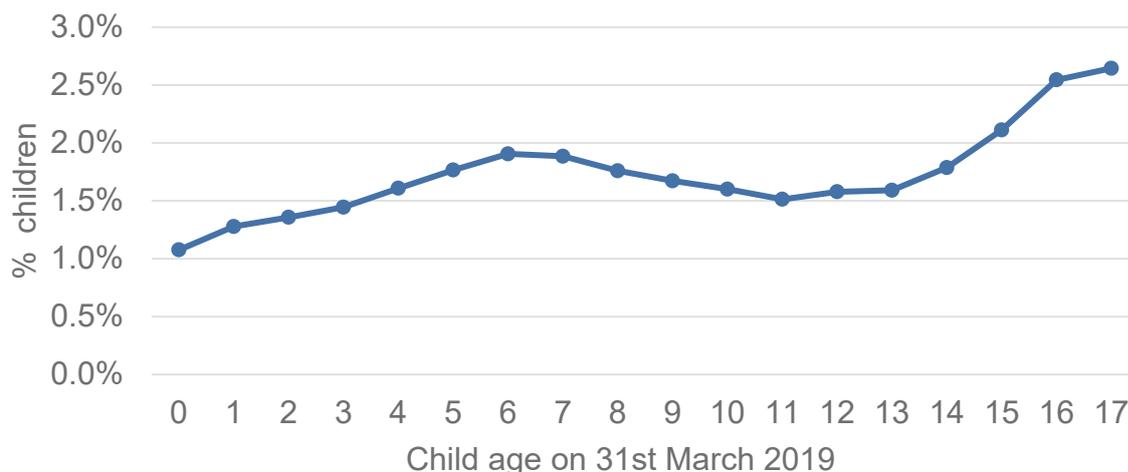
Source: Longitudinal children in need dataset (LCD)

Repeat interactions

ADCS (2021) note that repeat interactions with social care are a form of activity and hence it is useful to understand to what extent. As shown in Figure 14 and Figure 15 a significant proportion of children will be known to children's social care before reaching adulthood. However, many children have repeat interactions, particularly looked-after children. Repeat interactions may reflect the fact that need and risks to children can be temporary, and cases require appropriate escalation and de-escalation over time. However, they may also suggest that initial interventions are not sufficient to prevent children re-entering social care later (ADCS, 2018, p. 84). In addition, 34% of children starting to be in need have a previous referral which did not lead to a social care assessment, who potentially could have benefited from earlier support.

Figure 16 shows the proportion of children who started a CIN or looked after episode in 2019/20 that had also been CIN or looked after in the previous 8 years. In total, 46% of CIN starters had previously been CIN, whilst 43% of children starting to be looked after had previously been CIN and 5% had previously been looked after. This shows that a significant minority of children in care were previously known to children's social care.

Figure 17 shows that 34% of CIN starters in 2019/20 had received a previous No Further Action (NFA) referral within the last 8 years, that is, a referral which had not led to a formal social care assessment. Whilst this indicates that 66% of starters did not have a previous NFA referral, it also shows a significant minority were deemed not to meet the threshold for assessment just a few years earlier. This may reflect their changing needs over time. However, it may also suggest that, for some children, their needs are not fully

met during their first encounter with social care, or that their needs could be met with more appropriate early help or preventative support.

Figure 16: New CIN/looked after starters in 2019/20 with a previous CIN/looked after episode in the last 8 years
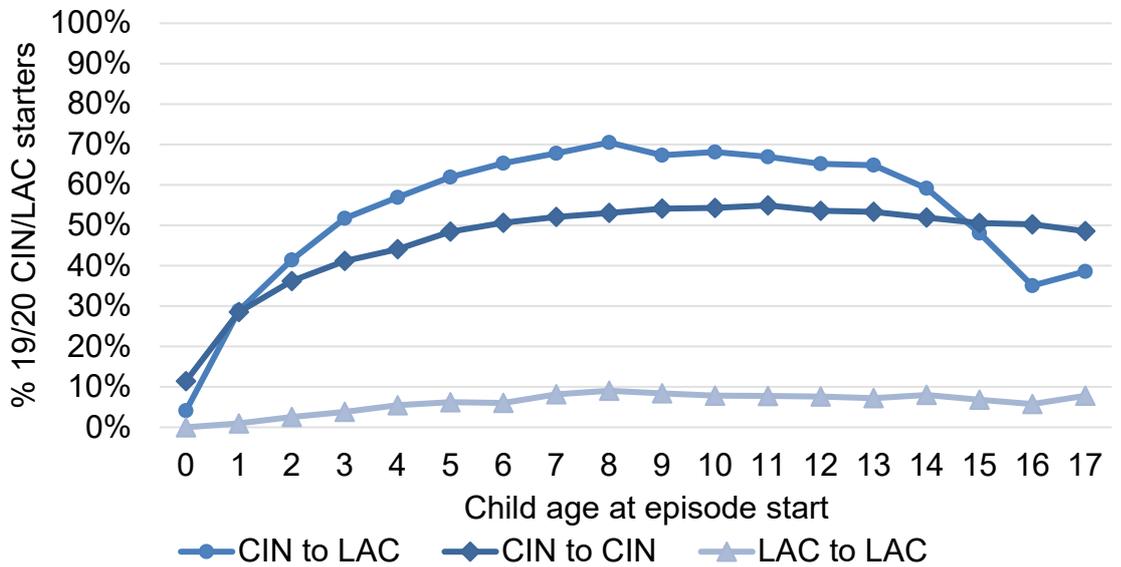
Source: Longtitudinal children in need dataset (LCD)

Figure 17: New CIN starters in 2019/20 with a previous NFA referral
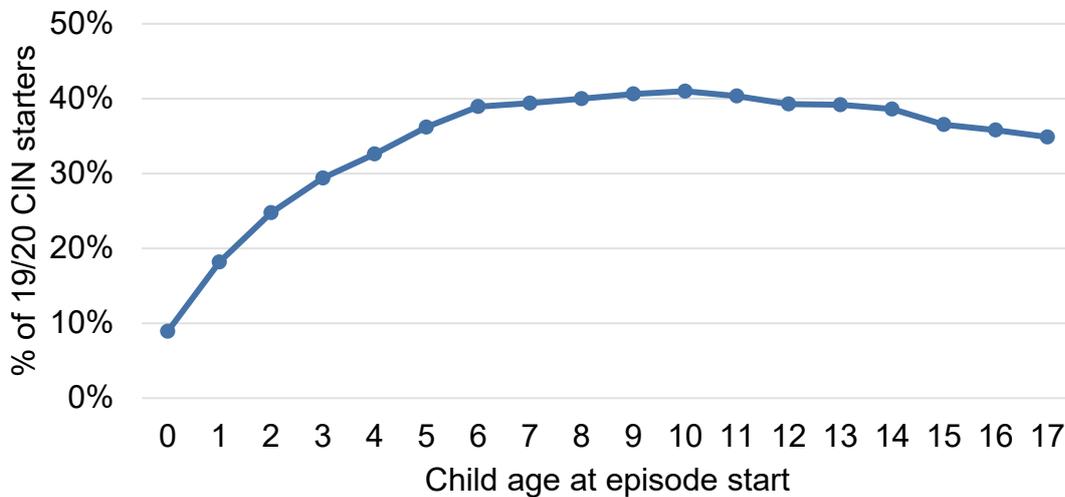
Source: Longitudinal children in need dataset (LCD)

Troncoso (2017) analysed causes of repeat referrals. He found that younger children, children with a previous referral which had led to no further action (as opposed to children whose previous referral had led to an assessment) and disabled children with a primary need were more likely to be re-referred than other children. Around 8% of the total variability in the probability of re-referral was due to variability between local authorities.

Children's journeys within children's social care

Analysing the journeys of children within children's social care is helpful to understand how activity in one year relates to activity later. The Sankey Diagram in Figure 18 shows the flows between social care groups at two points in time. The left-hand side nodes represent children's social care status at 31st March 2017 whilst the right-hand side nodes show social care status at 31st March 2018. The child protection plan (CPP) group below excludes children who are looked after.

Figure 18 shows that a third of the children in social care in 2018 were not in need ('notCIN') in 2017. Children starting new CIN episodes are more likely to enter at less acute levels – in 2018, nearly 80% of new entrants became CINO (CIN but not CPP or looked after), 15% went onto a CPP whilst just 6% became looked after. There is also high turnover at these less acute levels. Just 1 in 3 children remained CINO between 31st March 2017-18 whilst less than 1 in 5 children remained CPP in the same period. However, there is little movement in the looked after group. Over 7 in 10 children who were looked after on 31st March 2017 were also looked after on 31st March 2018.

Figure 18: Flows between CIN groups in 2017-2018
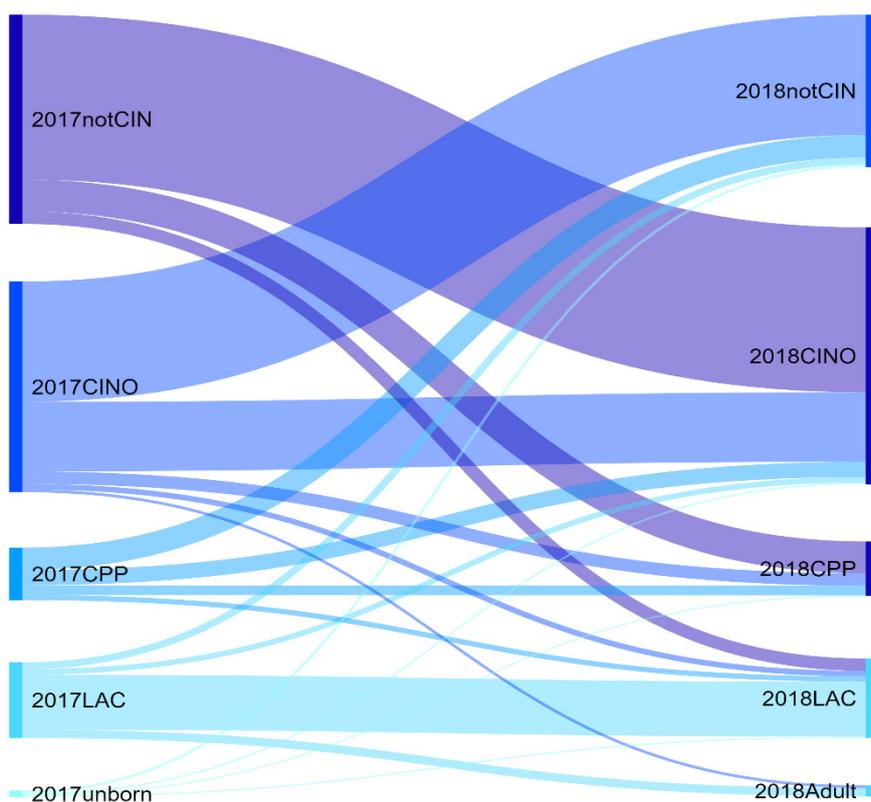
Source: Longitudinal children in need dataset (LCD)

Figure 18 also shows that children in more acute stages of care remain in social care longer. Whilst only 4 in 10 children who were CINO in 2017 were in need one year later, 6 in 10 children who were on a CPP, and 8 in 10 children who were looked after were in need at least one year later. However, it should be caveated that Figure 18 only examines a snapshot in time, therefore children may have moved, or left and re-entered, multiple times between 31st March 2017 and when their legal status was recorded on 31st March 2018.

Table 5 and Table 6 compare how children's journeys have changed over time by comparing the previous analysis to children's journeys between March 31st 2013 and March 31st 2014. Children's social care status in 2013 and 2017 are listed in the table rows whilst the columns represent those children a year later. The children in notCIN in the first year of the snapshot are those that then went on to enter social care in the following year.

Across all three CIN groups, CINO, CPP and LAC, the percentage of children leaving social care (becoming notCIN) in the following year has decreased between the two sets of years analysed. The percentage of children on a CINO that leave social care in the subsequent year is 0.4% lower in 2017-18 than it is for 2013-14. Similarly, for those on a CPP the proportion leaving reduced by 0.2% and for LAC the reduction was 3.6%.

Table 5: Transitions within children's social care between 2013 and 2014

Year/Group	2014notCIN	2014CINO	2014CPP	2014LAC	2014Adult	Total
2013notCIN		76.1%	17.2%	6.7%		100.0%
2013CINO	57.5%	33.6%	5.2%	2.5%	1.2%	100.0%
2013CPP	42.7%	28.1%	19.8%	9.4%	0.1%	100.0%
2013LAC	12.8%	8.1%	0.2%	71.2%	7.7%	100.0%
2013Unborn	45.4%	22.9%	13.7%	18.0%	0.0%	100.0%

Table 6: Transitions within children's social care between 2017 and 2018

Year/Group	2018notCIN	2018CINO	2018CPP	2018LAC	2018Adult	Total
2017notCIN		78.8%	15.3%	5.9%		100.0%
2017CINO	57.1%	33.0%	6.0%	2.6%	1.4%	100.0%
2017CPP	42.5%	29.0%	18.5%	9.9%	0.2%	100.0%
2017LAC	9.2%	7.5%	0.2%	72.3%	10.9%	100.0%
2017Unborn	42.9%	24.6%	12.4%	20.0%	0.0%	100.0%

The large reduction in looked-after children leaving social care contributes to the growing looked after population, as shown in Figure 5. In addition, the proportion of looked-after children who leave care because they have reached adulthood has increased from 7.7% in 2013-14 to 10.9% in 2017-18. This is likely in part due to the reduction in family

reunifications, as shown in Figure 7, meaning children remain in care longer, and also the increasing age of the looked after population (Figure 8) meaning it is more likely children will 'age-out' of children's social care.

Tables 5 and 6 also indicate that between 2013-14 and 2017-18 children starting to be in need are less likely to be on CPPs or looked after. The proportion of new children in need becoming CINO increased by 2.7 percentage points (ppts) whilst those starting a CPP or to be looked after have decreased by 1.9 ppts and 0.7 ppts respectively. The proportion of children who follow these journeys is likely to differ substantially for children of different ages, as Neil, Gitsels and Thoburn (2019) show that older children are more likely to stay in care long term, while younger children (under the age of 3) are more likely to be adopted.

Estimates of need

It is important to understand that the levels of activity within children's social care may not necessarily equate to the level of need. Data published by the Office for National Statistics suggests that there may be significant unmet need for social care. In 2019 ONS estimated that 20.7% of the population aged 18 to 74 in England and Wales had experienced one or more forms of abuse before the age of 16 (ONS, 2020). This was 1 in every 4 women, and 1 in every 6 men – contrasting with boys being more likely to be CIN than girls. They report that 9.8% of adults reported witnessing domestic violence or abuse as a child, whilst 9.3% experienced emotional abuse and 7.6% and 7.5% experienced physical and sexual abuse respectively. In addition, 1 in 100 adults reported experiencing physical neglect as a child, which includes not being taken care of or not having enough food, shelter or clothing.

The NSPCC estimated a similar level of need in 2011, with 25% of 18–24-year-olds reporting severe maltreatment as a child (Radford *et al.*, 2011). While these figures are close to the proportion of children who have ever been in need, they substantially exceed the number of children on CPPs, which should be used in cases of significant harm. Jay et al. (pre-print) estimate that 25% of children will have been CIN at least once before their 16th birthday. Our own estimates, shown in Figure 14, show that 16% of children in 2019/20 were CIN at least once in the previous 8 years.

This suggests that while roughly the right proportion of children are identified as in need, there is unmet need for protection from significant harm. This is consistent with evidence from a number of countries that roughly 10 times more children or parents report child maltreatment than are recorded by child protection agencies (Gilbert *et al.*, 2009). However, it is possible for unmet need and unnecessary intervention to *both* occur in children's social care.

One reason for this difference is that children do not always recognise or are unable to report maltreatment at the time. One meta-analysis found on average, 56% of individuals who later said they had been maltreated were not identifiable by researchers at the time (either through child protection/medical records or reports by children, parents or teachers) and a similar proportion of individuals who reported maltreatment at the time did not later report it to researchers (Baldwin *et al.*, 2019).

Section 2: Literature on key factors associated with children's social care activity

We briefly review existing evidence on factors associated with social care use, providing context for the subsequent analysis. Analyses of factors associated with social care use often use an "ecological" framework considering child, family and "system" factors (factors associated with how the social care system responds to children and families' needs, such as government legislation). For example, Thomas (2018) categorises factors into children, parents, socio-economic, legal and policy frameworks and professional practice. ADCS (2018) lists legislation and policy, demographic and economic, parental needs, workforce and finance factors associated with social care activity.

Factors which are associated with additional likelihood of being in social care are often termed "risk factors", with those associated with reduced likelihood termed "protective factors". This highlights that such factors are not necessarily causal and that they certainly are not deterministic – many or most children and families experiencing the risk factor do not enter children's social care. Such analyses typically focus on child and family level variables, as opposed to system-level or societal determinants, as they are often aimed at social workers working with individual children and families.

The factors in the below section may differ according to the type of social care activity or need; and be more nuanced than the broad categories outlined below (for example, Pearson *et al.* (pre-print)) shows that some types of maternal mental illness are more strongly associated with social care involvement and some less). It is also worth noting there is limited or no UK-based evidence for some of these factors. Finally, the emphasis on maternal risk factors in the cited studies does not mean that paternal or male factors do not affect children's probability of entering social care – on the contrary, Lee (2013) identifies paternal education and depression as risk factors, and Lindo, Schaller and Hansen (2018) suggest that unemployment may be a protective factor for mothers but a risk factor for fathers.

The risk factors identified include a number of risk factors commonly identified at end of assessment (see Figure 12) such as domestic abuse, mental illness, disability, and alcohol misuse, demographic variables such as age, ethnicity, marital status and income, and health measures such as low birthweight.

Factors which have been quantitatively associated with social care involvement include:

- Parents' socio-economic status and benefit receipt (Simkiss *et al.*, 2012; Simkiss, Stallard and Thorogood, 2013; Webb, Bywaters, Scourfield, McCartan, *et al.*, 2020)

- Single parenthood (Simkiss, Stallard and Thorogood, 2013)

- Ethnicity (Simkiss, Stallard and Thorogood, 2013; Webb, Bywaters, Scourfield, Davidson, *et al.*, 2020)

- Parents' age (Simkiss *et al.*, 2012; Simkiss, Stallard and Thorogood, 2013)

- Domestic abuse (Cleaver, Unell and Aldgate, 2011)

- Child's age (Biehal *et al.*, 2018)

- Disability – mothers and children (Jones *et al.*, 2012; Simkiss, Stallard and Thorogood, 2013)

- Mental illness – mothers and children (Cleaver, Unell and Aldgate, 2011; Simkiss *et al.*, 2012; Simkiss, Stallard and Thorogood, 2013)

- Alcohol misuse – mothers or parents (Cleaver, Unell and Aldgate, 2011; Simkiss, Stallard and Thorogood, 2013)

- Learning difficulties – mothers (Cleaver, Unell and Aldgate, 2011; Simkiss, Stallard and Thorogood, 2013)

- Drug misuse – mothers or parents (Cleaver, Unell and Aldgate, 2011; Simkiss *et al.*, 2012)

- Low birthweight and prematurity (Simkiss, Stallard and Thorogood, 2013)

- Children's injuries and attendance at Accident and Emergency departments (Simkiss, Stallard and Thorogood, 2013)

- Non-attendance of hospital appointments and not using primary care contraceptive services (Simkiss *et al.*, 2012)

One of the few UK-based studies with a validated measure of how severely children had previously been maltreated, Biehal *et al.* (2018) found the strongest predictor of whether children entered care as opposed to being placed on a child protection plan was the severity of the maltreatment they experienced, followed by being unborn or under the age of one at referral, being disabled and having experienced physical abuse. In this study, measures of parental substance misuse, mental ill health and ethnicity were not independently associated with entering care beyond their relationship with severity of maltreatment. This study was based on children under the age of 8 in a single local authority so some care should be taken with extrapolating the findings more widely.

Analysis of risk factors for child maltreatment can also shed some light on risk factors for social care activity, given that child protection records are often used to identify child maltreatment in such studies. For example, Mulder et al.'s (2018) meta-analysis of risk factors for child maltreatment includes 25 studies where child protection records were used as the sole type of assessment, with 10 using self-reported maltreatment and one

study combining both types of assessment. Their analysis found no significant differences between the results of studies relying on the different forms of assessment.

These factors include demographic variables, measures of family functioning such as quality of family relationships and level of conflict, parental experience of negative emotions such as stress, anger or low self-esteem, parental experience of abuse or neglect, and various other factors related to children, parents or the home environment.

Factors which have been associated with child maltreatment (not including factors included in the previous list) include:

- Parental experience of abuse or neglect (Stith *et al.*, 2009; Mulder *et al.*, 2018)

- Family size (Mulder *et al.*, 2018)

- Parental history of antisocial behaviour or criminal offending (Stith *et al.*, 2009; Mulder *et al.*, 2018)

- Unmarried parents (Mulder *et al.*, 2018) / living in a non-nuclear family structure (Assink *et al.*, 2019)

- Physical violence in the home environment (Mulder *et al.*, 2018; Assink *et al.*, 2019)

- Perinatal problems (Mulder *et al.*, 2018)

- Child's mental/physical/behavioural problems (Mulder *et al.*, 2018; Assink *et al.*, 2019)

- Parental education (Mulder *et al.*, 2018)

- Child social competence (Stith *et al.*, 2009)

- Parent-child relationship (Stith *et al.*, 2009; Assink *et al.*, 2019)

- Parent perceives child as problem (Stith *et al.*, 2009)

- Parent's level of stress (Stith *et al.*, 2009)

- Parent's level of anger (Stith *et al.*, 2009)

- Parent's self-esteem (Stith *et al.*, 2009)

- Parental depression and anxiety (Stith *et al.*, 2009)

- Family conflict and family cohesion (Stith *et al.*, 2009)

- Children's gender (Assink *et al.*, 2019)

IJzendoorn *et al.* (2020)'s review of meta-analyses of child maltreatment found the following factors were associated with child maltreatment, from most strongly to least

strongly: parental experience of child maltreatment, parental personality traits, parental experience of intimate partner violence, low socioeconomic status, and parental physiological reactivity.

Mulder *et al.* (2018)'s meta-analysis of risk factors for child neglect found the most important predictors of neglect were parental characteristics, such as a history of antisocial/criminal offending, a history of mental/psychiatric problems, and a low educational level. They also note child ethnicity was relatively strongly related to neglect.

Mulder *et al.* (2018) also found that the following risk factors were not significantly associated with neglect: the family experiencing low social support/having a small social network, occurrence of prenatal problems, parental substance use/misuse, adverse parental cognitions regarding pregnancy, child gender, and child age. However, they note that low numbers of studies and wide variation in results mean there is limited confidence that these factors aren't correlated with child neglect.

Assink *et al.* (2019)'s meta-analysis of risk factors for child sexual abuse found previous victimisation of the child or their family members (including sexual abuse, other forms of child abuse and victimization of the child other than child abuse) was most strongly associated with child sexual abuse.

Section 3: Analysis of factors associated with children's social care activity

Introduction

This section of the report describes the data, methodology and results of multilevel modelling of factors associated with indicators of social care activity – being a child in need at 31st March 2018, being on a protection plan in the year and being in residential or foster care in the year.

The National Audit Office (2019) recommended that the Department utilise its child-level data to reach a more detailed understanding of the factors which drive demand for children's social care. Whilst we cannot say that the factors we model *cause* social care activity, modelling association at the individual level does provide unique insights into social care activity in England. This analysis can also be built upon to look at activity over time and as new data on children and families becomes available. There are some important factors identified in the literature review that we were not able to include in modelling due to data availability such as family structures and domestic abuse.

This analysis also arises in the context of discussion as to the role played by local authority practice and policy in demand for social care. For this reason we dedicate a section of the results to detail our findings on local authority variation in the context of other research findings.

Data

This section explains the sources of data and methodology used to produce the dataset which is used in multilevel modelling. More detail can be found in Annex 2.

Brief description

The dataset used for multilevel modelling comprises 5.7 million records relating to pupils aged 6 to 15. The dataset includes variables relating to:

- Personal characteristics: Age, gender and ethnic group.

- Children's social care interactions: Referrals, children in need status, looked after child status and placement characteristics. Note: not all records can be matched to the school census. Recording social care activity is dependent on local authorities providing a unique pupil identifier. More detail can be found in the data matching section of the outcomes for children in need, including children looked after by local authorities in England (Department for Education 2021).

- Family income: As recorded by the pupil parent matched dataset. This is dependent on linkage with child benefit records which is not possible for all pupils.

- Neighbourhood (LSOA) characteristics: income deprivation affecting children scores, overcrowding, population density, parental qualification levels, child disability and a measure of remoteness (travel time to town centre by car). Lower Super Output Areas (LSOAs) are small areas which had populations of between 1,000 and 3,000 people in the 2011 census. For looked-after children pre-placement LSOA is derived from the school census; if one is not found the current LSOA is used.

The dataset includes all pupils aged 6 to 15 years old who have non-missing LSOA and gender and can be linked to the pupil parent matched dataset. The reason for not including children aged 0–5 is because the rate of pupil identifiers being provided for younger children is lower (18% and 26% of children in the children in need and looked after datasets have valid pupil matching references respectively, compared to 84% and 98% of children aged 6 to 15). Children aged 16 and 17 are excluded from the analysis because of the presence of duplicates in the income data for children in further education meaning we cannot determine which record of income is correct. We have excluded 3 local authorities with small populations (Isles of Scilly, City of London and Rutland).

Compared to ONS estimates of the child population, our dataset captures 84% of estimated 6-15 year olds in England. Approximately half of those missing from the dataset are due to missing data from children in the national pupil database (primarily due to missing income data due to parents/guardians not being able to be linked through child benefit records), with the other half composed of children in the 3 excluded local authorities, and those not in the national pupil database at all (likely to be pupils who are in private schooling or not in school for another reason).

Modelling methodology

This report contains the results of three multilevel binary logistic regressions which estimate how individual, familial and local characteristics are associated with children's social care outcomes. The outcomes are:

- Child in need at 31st March 2018

- In residential or foster care between April 1st 2017 and 31st March 2018

- On a child protection plan between April 1st 2017 and 31st March 2018

The results show association, not causation (i.e. this analysis does not show which factors cause children to have social care interventions). There are factors which are not included in these models which will likely impact on children's likelihood of receiving interventions, such as experience of domestic abuse. A small proportion of pupils have a social worker at a given point of time, so where results show increased likelihood of the modelled outcomes this does not mean that abuse or neglect is concentrated amongst people with particular characteristics.

All of the models use a local authority random intercept effect to capture variation in children's social care outcomes after controlling for individual and neighbourhood characteristics. The intercept is allowed to vary by local authority in this model structure to reflect that local authorities are responsible for delivering social care to individual children. The local authority random intercept effects reflect a variety of factors, including but not limited to:

- Local authority policy and practice, both directly and indirectly related to children's social care.

- Characteristics of local authorities not captured by the other variables in the model, including characteristics of families within the local authority and living costs associated with residing in particular local authorities.

Thus, the local authority coefficients should not be considered as indicative of the effectiveness of practice of individual local authorities.

Readers may wonder why we have not included variables related to special educational needs, given statistical releases on outcomes suggest that many children in need have special educational needs (children with disabilities are also considered to be children in need). The main reason for not including special educational needs variables is the risk of endogeneity. If a child is more likely to be identified as having special educational needs after being known to children's services we may draw a potentially incorrect conclusion that having special educational needs makes a child more likely to receive an intervention. In future this could potentially be addressed by focusing on children who

become known to children's services for the first time.

Model performance

The area under curve (AUC) measure is a way of measuring the ability of the model to correctly classify pupils who experienced the outcomes measured in the models. A score of 0.5 would suggest very poor classification performance and a score of 1 would indicate perfect predictive ability. Table 7 shows the AUC scores of each model as well as scores for the null model (with just the local authority random intercept and no control variables). The full model scores are well above 0.5 but could potentially be improved with the addition of more variables capturing the experiences of children and families, while the null models based on local authority alone are not good predictors of social care status.

Table 7. Area under curve scores for null and full models

Outcome/Model	CIN at 31st March	CPP in the year	In residential/foster care in year
Null	0.58	0.60	0.59
Full	0.72	0.76	0.76

Brier scores indicate the accuracy of models with binary outcomes, measuring the average squared difference between the predictions from the model and the actual outcomes. A score of 0 would mean the models were completely accurate whereas a score of 1 would indicate complete inaccuracy. The scores for the full CIN at 31st March, CPP in year and CLA (residential/foster care) models are 0.027, 0.005 and 0.006 respectively. All models have low Brier scores, although this is in part expected because the incidence of experiencing the interventions is low so the model will predict lower likelihood of the outcomes for most children.

R-squared values in a linear regression measure the amount of variation in an outcome explained by a model (0 being none, 1 being all). As these models use a multilevel binary logistic regression approach there is not an equivalent R-squared measure, though pseudo r-squared measures (Nakagawa) are provided in the model output (Table 8) and give r-squared measures for the fixed effects model (marginal, without the random effect) and full multilevel models (conditional). The pseudo r-squared is used to compare goodness of fit for the same model with an increase indicating an improvement in model fit. They vary between 0.19 and 0.31, depending on the outcome and whether marginal or conditional. We observe increases in the r-squared when including the local authority random intercept.

Limitations

As previously discussed, these models do not capture other factors which affect likelihood of having a children's social care intervention which if included might change the coefficients. Additionally, the model measures activity; there may be children experiencing abuse or neglect that did not receive support from children's services (or may have received support before or after the time period captured in this analysis). This analysis is limited to children aged 6 to 15 who attended state schools and alternative provision settings in the Spring term of 2018 and is unable to explore relationships relating to children in independent schools, aged under 6 or over 15.

Identifying that a child has had a social worker is dependent on local authorities recording the pupil identifier in the children in need census, which can then be linked to pupils in the national pupil database. Matching of all pupils is not complete for a variety of reasons (including becoming recently looked after or in need before the end of the collection period). It is higher for CLA pupils (98% of children aged 6 to 15 in the children looked-after dataset, 84% of children in the children in need dataset) and older pupils. It is possible that the results would change if we were able to include unmatched children in the analysis.

The inclusion of household income provides important information about the economic circumstances of families which may be lost in binary measures such as free school meal entitlement. The limitations of income data described in the data section and mean these models may lack insight on wealthier pupils who cannot be linked to child benefit claims. We are also unable to capture living costs which may constrain income for other costs and affect the wellbeing of families. It is possible that 2 families with the same number of children and adults may be in the same income bracket but have very different living costs. Future studies using longitudinal data may wish to explore this further.

Results

The results for individual and family characteristics (gender, age, ethnic group and income) are presented as predicted probabilities. Predicted probabilities range from 0 to 1, with 1 indicating very high likelihood that the event will occur and 0 indicating very low likelihood. For the charts we have converted the predicted probabilities to a percentage scale so 0% indicates very low likelihood and 100% indicates high likelihood. As a minority of pupils experienced these outcomes in the year predicted probabilities tend to be low. Another way to think about predicted probabilities would be that if the predicted probability of a hypothetical event was 16%, out of 100 people with the same characteristic we would expect 16 to experience the event.

The predicted probabilities for each variable are reported in this paper are calculated from average marginal probabilities, showing the average difference in probability

associated with a change in the variable across the different possible values of the other variables included in the model and the local authority random intercept effects.

The odds ratios for each variable, by contrast, show the odds of being in social care relative to the reference group for that variable (for example, the odds ratio for female children is relative to the reference group of male children). Odds ratios of more than 1 indicate higher odds compared to the reference group whereas values of less than 1 indicate lower odds. For example, an odds ratio of 2 indicates the group has twice the odds of the reference group, while an odds ratio of 0.5 means they have half the odds.

Odds ratios are included in the model results in Table 8. For LSOA variables they indicate the increase in odds associated with a 1 standard deviation increase in the variable (the standard deviations for each variable are available in Annex 2). Standard errors are included in the odds ratio table, which indicate uncertainty in estimates. Error bars in the predicted probability charts are included and indicate the 95% confidence intervals, this is a similar measure representing the range in which the true coefficient would lie in 95% of experiments if the experiment was repeated.

Table 8. Modelling results

Indicator	Child in need at 31st March		Subject of a child protection plan		In residential/foster care in the year	
	Odds ratio (OR)	Stand-ard er-ror (SE)	OR	SE	OR	SE
Female (ref: Male)	0.88 ***	(0.01)	1.00	(0.01)	0.90 ***	(0.01)
Asian Bangladeshi (ref: White British)	0.35 ***	(0.02)	0.29 ***	(0.06)	0.14 ***	(0.08)
Asian Indian	0.38 ***	(0.03)	0.37 ***	(0.06)	0.16 ***	(0.08)
Asian Other	0.75 ***	(0.02)	0.74 ***	(0.05)	0.37 ***	(0.06)
Asian Pakistani	0.39 ***	(0.02)	0.35 ***	(0.04)	0.14 ***	(0.05)
Black African	0.60 ***	(0.02)	0.39 ***	(0.04)	0.45 ***	(0.04)
Black Caribbean	1.15 ***	(0.02)	0.88 *	(0.05)	1.13 **	(0.04)
Black Other	1.43 ***	(0.02)	0.98	(0.06)	1.01	(0.05)
Chinese	0.30 ***	(0.07)	0.30 ***	(0.16)	0.28 ***	(0.15)
Mixed Other	1.14 ***	(0.02)	1.16 ***	(0.04)	1.24 ***	(0.03)
Mixed White and Asian	1.10 ***	(0.02)	0.98	(0.05)	1.32 ***	(0.04)
Mixed White and Black African	1.05 *	(0.03)	0.98	(0.06)	1.00	(0.06)
Mixed White and Black Caribbean	1.40 ***	(0.02)	1.41 ***	(0.04)	1.66 ***	(0.03)
Any other ethnic group	0.59 ***	(0.02)	0.45 ***	(0.06)	0.38 ***	(0.06)
Unknown	0.05 ***	(0.10)	0.01 ***	(0.51)	0.01 ***	(0.45)
White Irish	0.99	(0.05)	0.87	(0.13)	1.16	(0.10)
White Other	0.57 ***	(0.01)	0.54 ***	(0.03)	0.45 ***	(0.03)
White Irish Travel-ler/Gypsy/Roma	0.72 ***	(0.04)	0.76 ***	(0.08)	0.68 ***	(0.07)
Age 8 to 9 (ref: Aged 6 to 7)	1.13 ***	(0.01)	1.02	(0.02)	1.26 ***	(0.02)
Age 10 to 11	1.21 ***	(0.01)	1.01	(0.02)	1.57 ***	(0.02)
Age 12 to 13	1.31 ***	(0.01)	0.96 *	(0.02)	1.84 ***	(0.02)
Age 14 to 15	1.41 ***	(0.01)	0.89 ***	(0.02)	2.17 ***	(0.02)
Income quintile 2 (ref: quintile 1)	0.82 ***	(0.01)	0.83 ***	(0.01)	0.79 ***	(0.01)
Quintile 3	0.57 ***	(0.01)	0.50 ***	(0.02)	0.59 ***	(0.02)
Quintile 4	0.33 ***	(0.01)	0.23 ***	(0.02)	0.28 ***	(0.02)
Quintile 5	0.19 ***	(0.01)	0.11 ***	(0.03)	0.12 ***	(0.03)
Income deprivation affecting children score	1.31 ***	(0.00)	1.40 ***	(0.01)	1.28 ***	(0.01)
Parental qualifica-tions (% qualifica-tions L1 and below)	1.07 ***	(0.00)	1.10 ***	(0.01)	1.08 ***	(0.01)

Indicator	Child in need at 31st March		Subject of a child protection plan		In residential/foster care in the year	
	Odds ratio (OR)	Stand-ard er-ror (SE)	OR	SE	OR	SE
Proportion of children with limited activity	1.05 ***	(0.00)	1.05 ***	(0.01)	1.03 ***	(0.01)
Proportion of over-crowded households	1.10 ***	(0.01)	1.14 ***	(0.01)	1.09 ***	(0.01)
Population Density	1.01 ***	(0.00)	1.00	(0.01)	1.01	(0.01)
Travel time to town centre (car)	0.97 ***	(0.00)	0.94 ***	(0.01)	0.94 ***	(0.01)
Intercept	0.05 ***	(0.03)	0.01 ***	(0.04)	0.01 ***	(0.03)
Number of local au-thorities	149		149		149	
AIC	1363416.44		319901.91		377326.58	
BIC	1363877.06		320362.53		377787.20	
R-squared (fixed ef-fects only)	0.19		0.28		0.28	
R-squared (total)	0.21		0.31		0.29	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

Gender

Gender differences in predicted probabilities are most apparent for being a child in need at 31st March 2018 (males have a predicted probability of 1.7%, females have a predicted probability of 1.5%), with equal likelihood for being on a CPP (0.19% for both genders). Boys are more likely to be CIN at 31st March and in foster/residential care. The differences between genders are not as large compared to other factors such as being from some ethnic groups and household income.

Figure 19. Predicted probabilities by gender

Probability of CIN at 31st March 2018

Predicted probability of being on a CPP in 2017/18

Predicted probability of being in residential or foster care in 2017/18
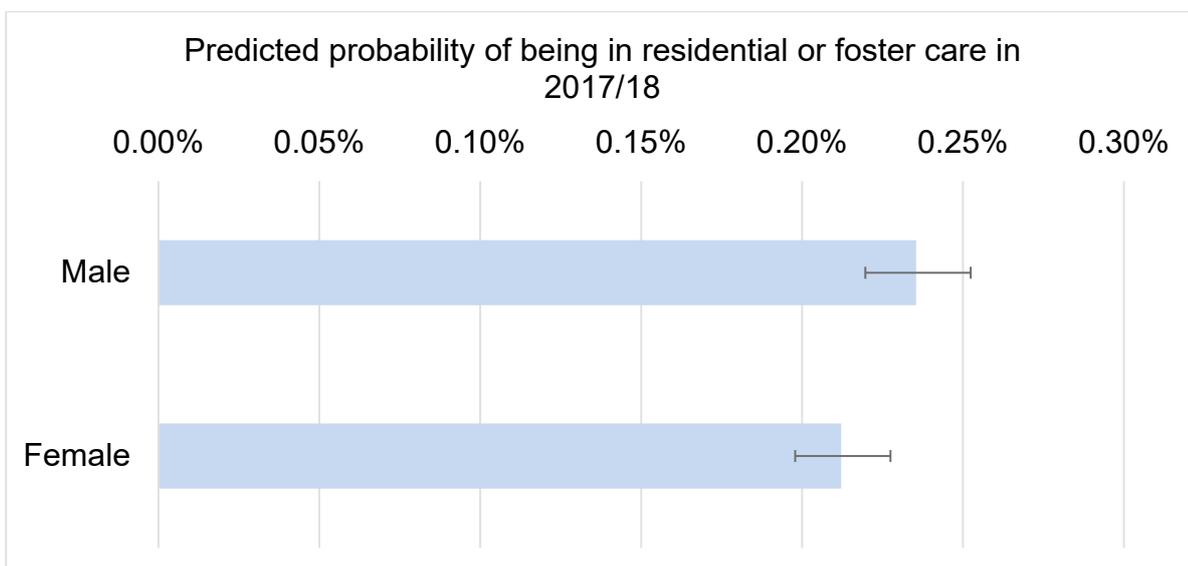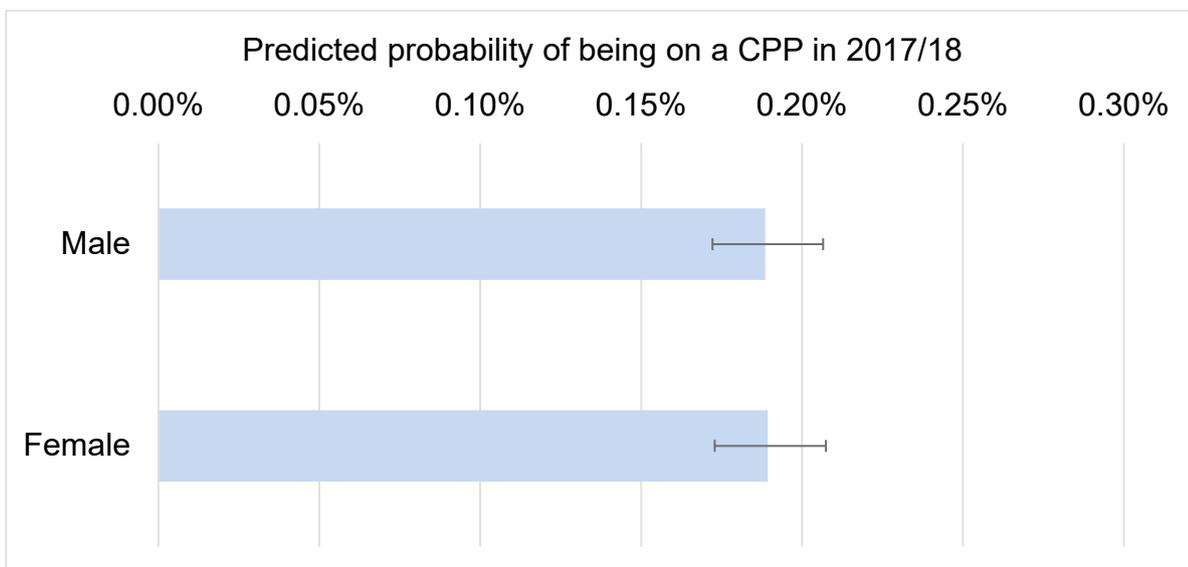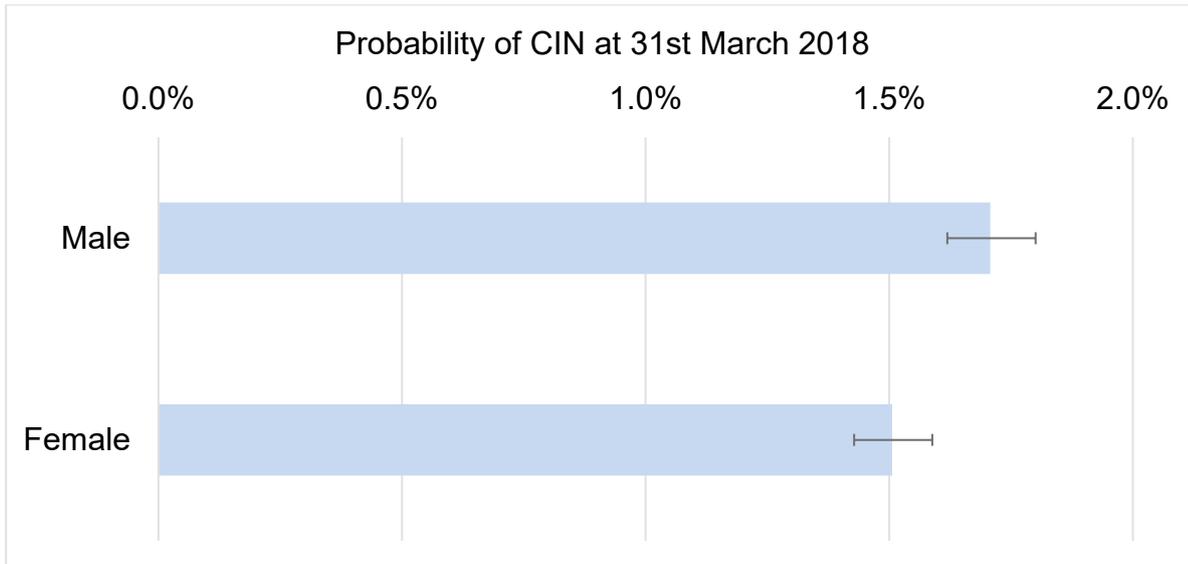
Age

Looking at the charts of predicted probabilities below (where the black lines indicate the 95% confidence interval) the central estimates suggest an age gradient for the likelihood of being looked after in residential or foster care, which is less strong for being in need (the confidence intervals overlap more). For being in residential/foster care the predicted probability is 0.15% for children aged 6 to 7, increasing to 0.32% for children aged 14 to 15. The central estimates (blue bars) suggest older children are more likely to experience these outcomes. By contrast, for being on a protection plan there is less evidence of a gradient, with younger children's predicted probability slightly higher than older children (children aged 14-5 have a predicted probability of 0.17% compared to 0.19-0.20% for children in the younger age groups).

Figure 20. Predicted probabilities by age group

Predicted probability of being on a CPP in 2017/18

	0.00%	0.05%	0.10%	0.15%	0.20%	0.25%
Age 6 to 7						
Age 8 to 9						
Age 10 to 11						
Age 12 to 13						
Age 14 to 15						

Predicted probability of being in residential or foster care in 2017/18

	0.00%	0.05%	0.10%	0.15%	0.20%	0.25%	0.30%	0.35%	0.40%
Age 6 to 7									
Age 8 to 9									
Age 10 to 11									
Age 12 to 13									
Age 14 to 15									
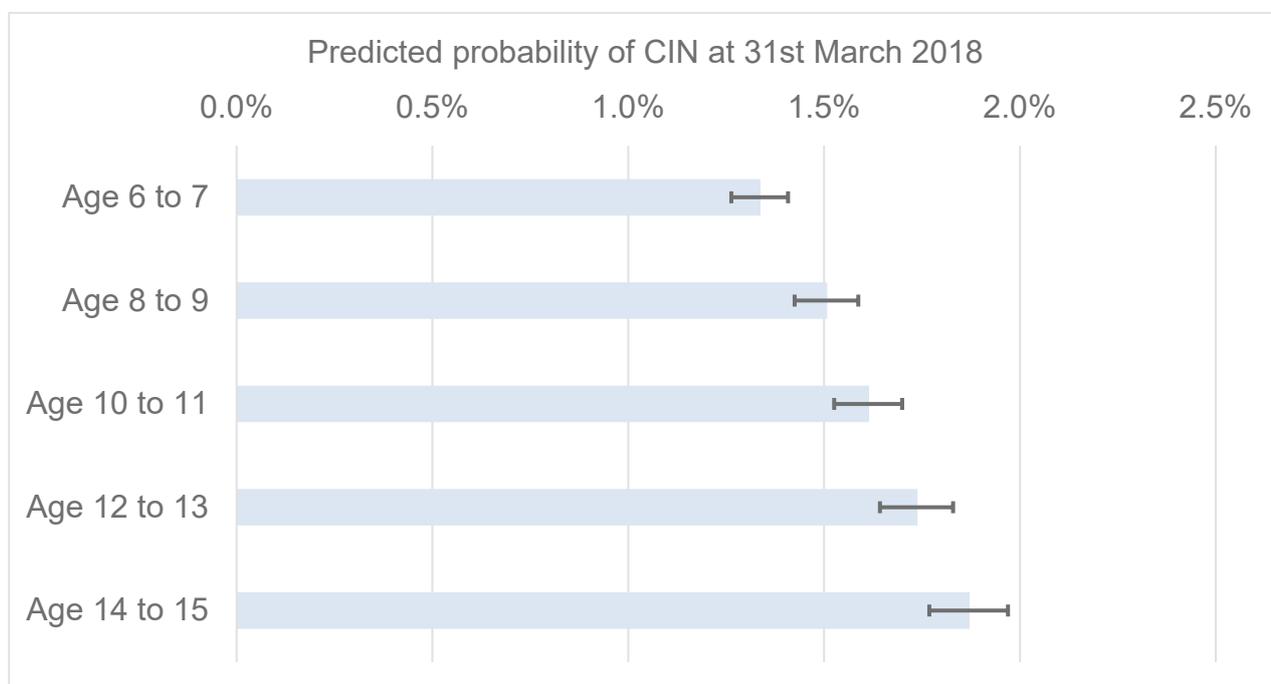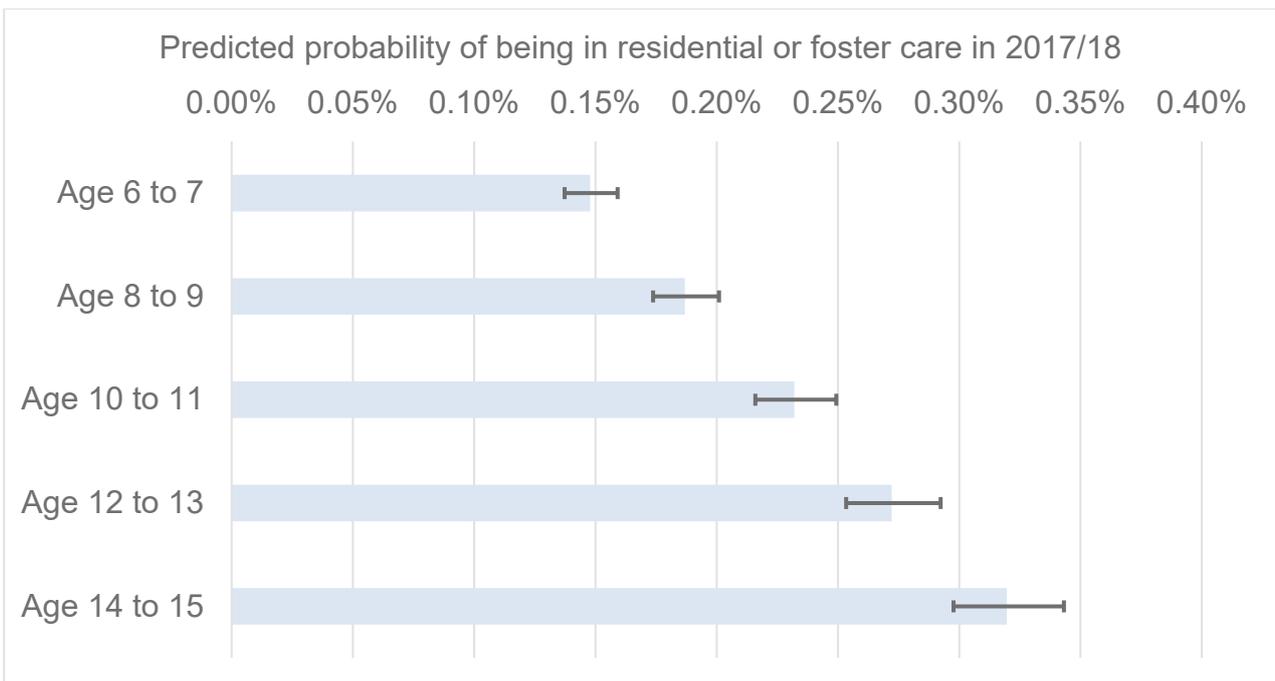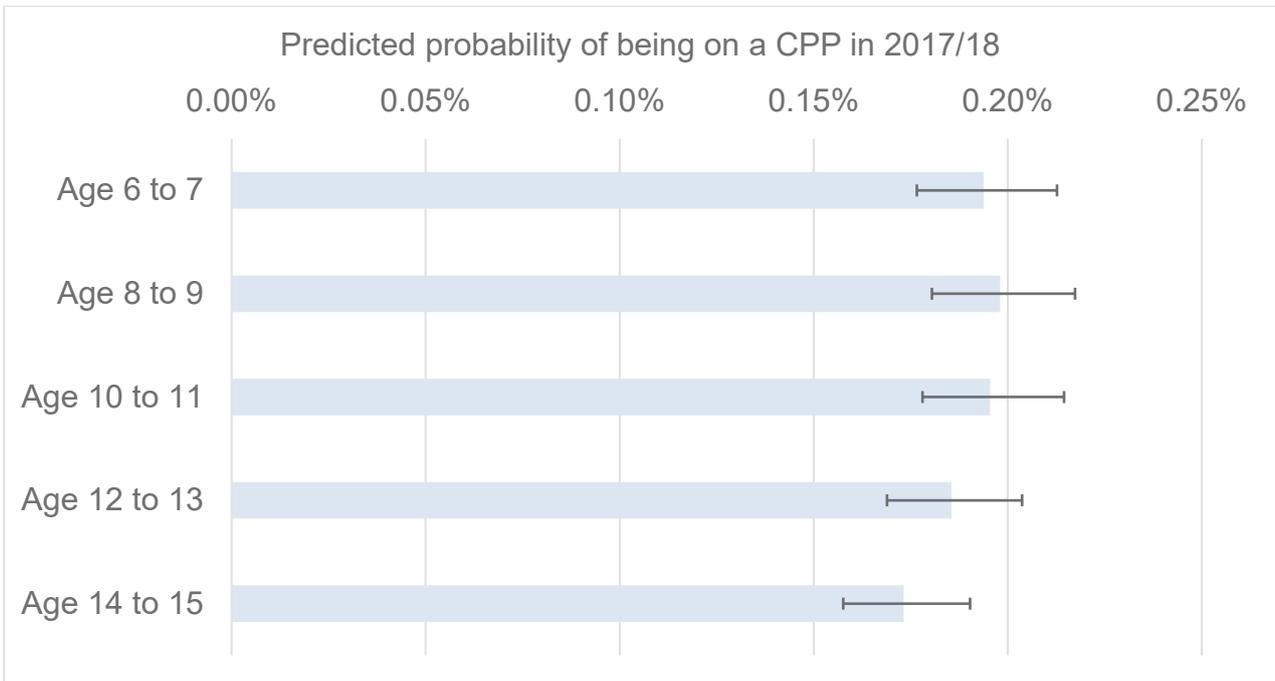
Ethnic group

Across ethnic groups we observe notable variation in predicted probabilities. For all of the outcomes children from Chinese, Asian Indian, Asian Pakistani and Asian Bangladeshi heritage show very low likelihoods of receiving an intervention in comparison to White British pupils and other ethnic minority groups. Children who are looked after or in need are more likely to have their ethnic group recorded which is likely informing the effect size

of unknown ethnicity being the lowest for any ethnic group. By contrast, across all outcomes children of Mixed White/Black Caribbean heritage tend to have amongst the highest predicted probabilities.

White British children tend to rank near or slightly above the middle for predicted probabilities. Black Caribbean, Mixed White/Asian, Mixed Other and Mixed White/Black African children tend to have similar or slightly higher likelihood of experiencing the outcomes compared to White British children apart from being looked after in residential/foster care where probabilities for Mixed White/Asian and Mixed other are higher. Children from the Black Other ethnic group have the highest predicted probability for being CIN at 31st March though have similar probabilities to White British children for the other outcomes.

These results may be affected by the exclusion of children aged 16 and over, who represent higher proportions of some ethnic groups amongst children in need and looked after. Different patterns may emerge if similar analysis was conducted on or including older children.

Figure 21. Predicted probabilities by ethnic group

Predicted probability of CIN at 31st March 2018

Predicted probability of being on a protection plan in 2017/8

Predicted probability of being in residential/foster care in 2017/8
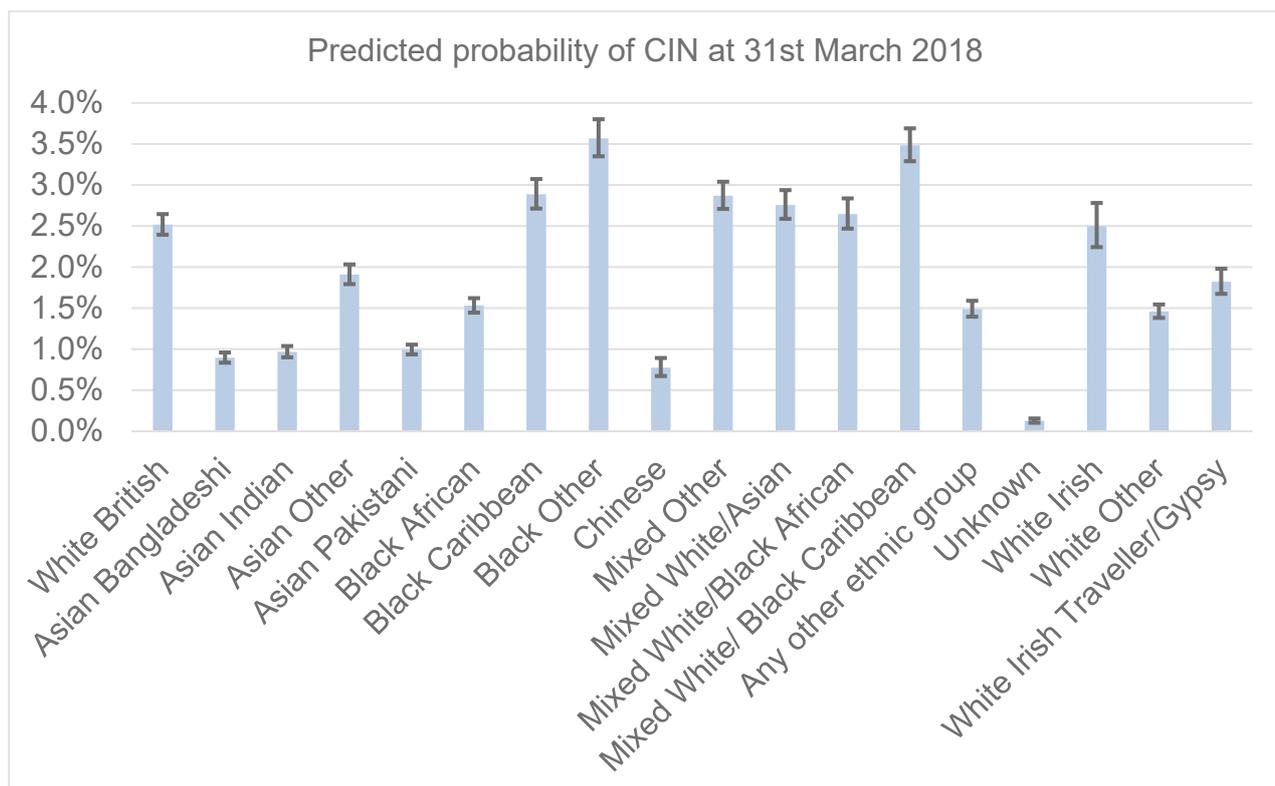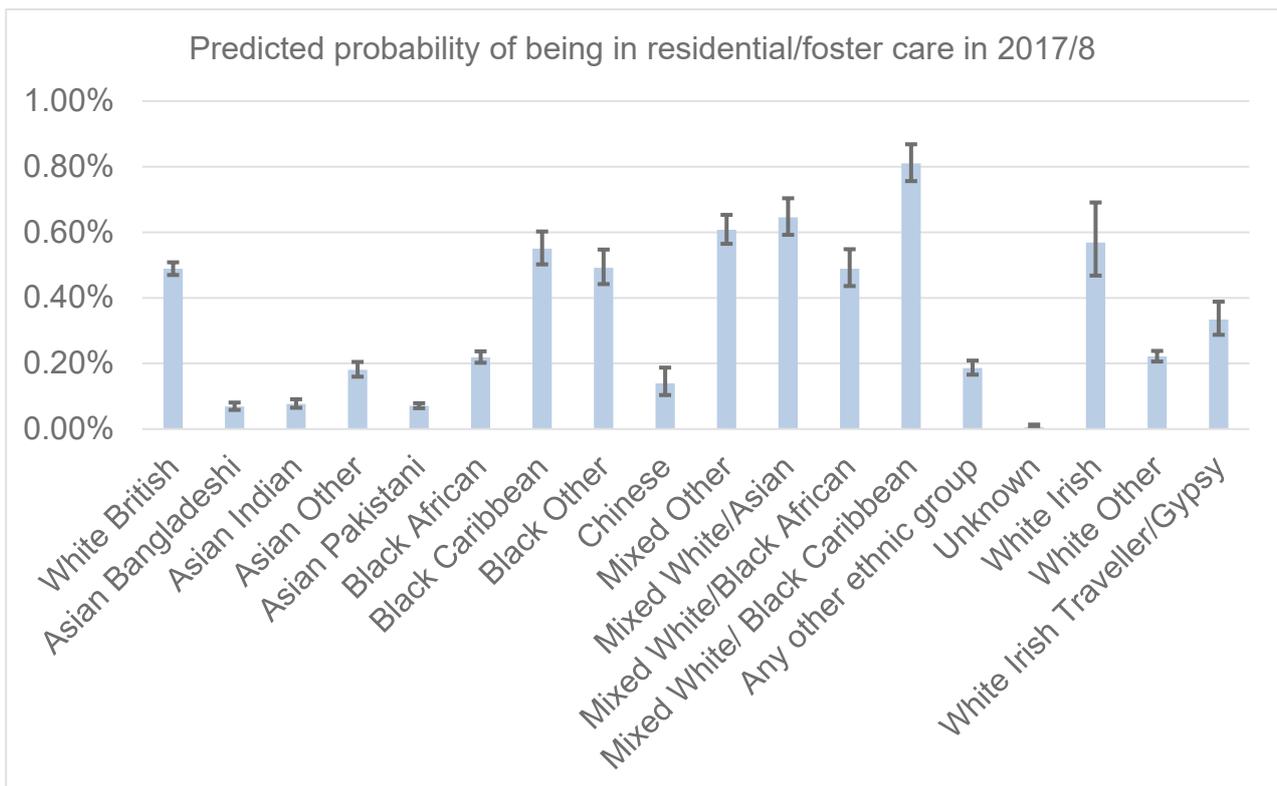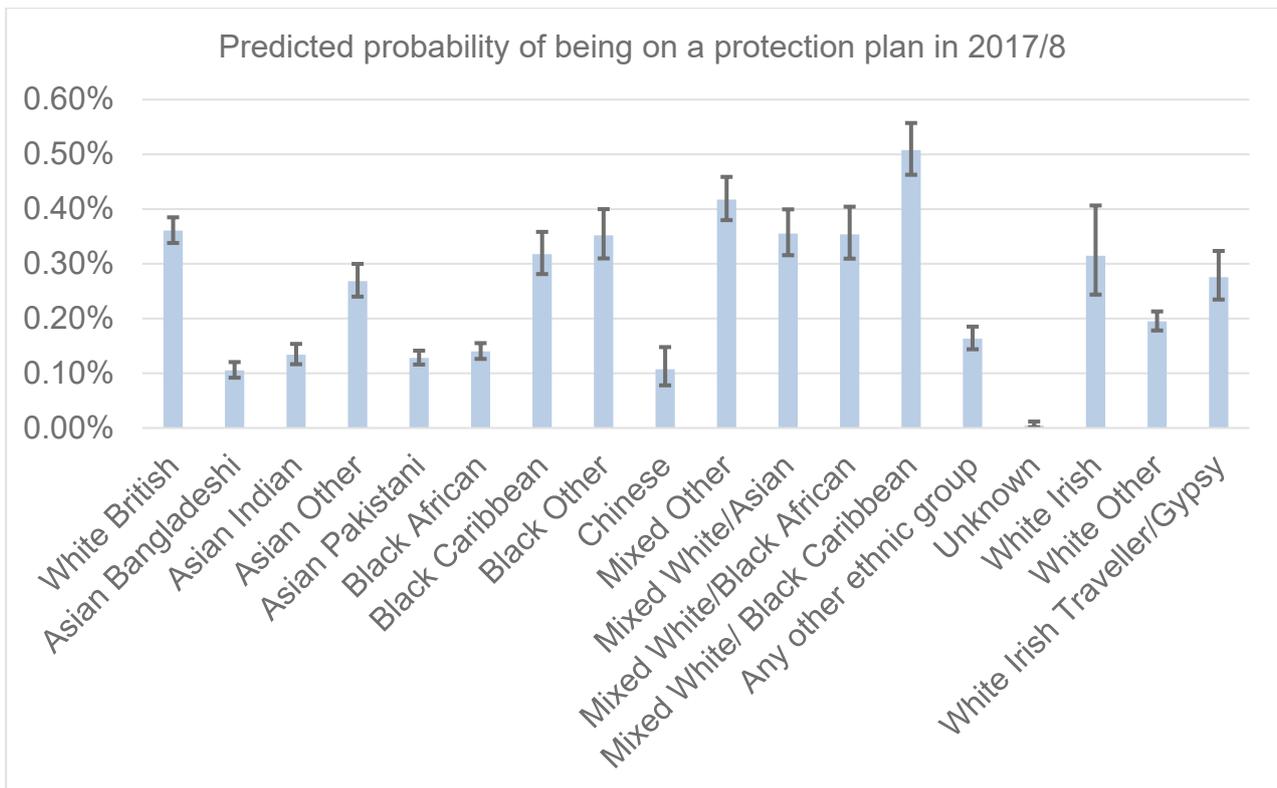
Whilst this analysis shows different probabilities of social care activity for children of different ethnicities at the same point in time, it doesn't necessarily mean that ethnicity explains changes in activity over time. McGrath-Lone *et al.* (2017) show that between 2001 and 2011 almost all the increase in rates of looked-after children under the age of 7

who were placed into out-of-home care (OHC) was due to increased probability of White children being taken into OHC; there were only small changes in the probability of children from other ethnic groups to enter OHC. Changes in the overall ethnic makeup of children in England over that time period were also assessed to make "little contribution" to changes in national rates.

Income

The effect of income is consistent across all the models. Children in the lowest household income quintiles have the highest predicted probabilities, reducing for every increase in income quintile. For example, the predicted probability of a child on a protection plan in the lowest income group is 0.47%, for children in the middle income bracket it reduces to 0.23% and for children with the highest household income it is substantially lower at 0.05%. Referring to the odds ratios in Table 8, children in the highest household income quintiles are between 81% and 89% lower likelihood of experience the social care interventions compared to the reference group (the lowest family income quintile).

Figure 22. Predicted probabilities by household income quintile

Predicted probability of being on a protection plan in 2017/8

Predicted probability of being in residential/foster care in 2017/8
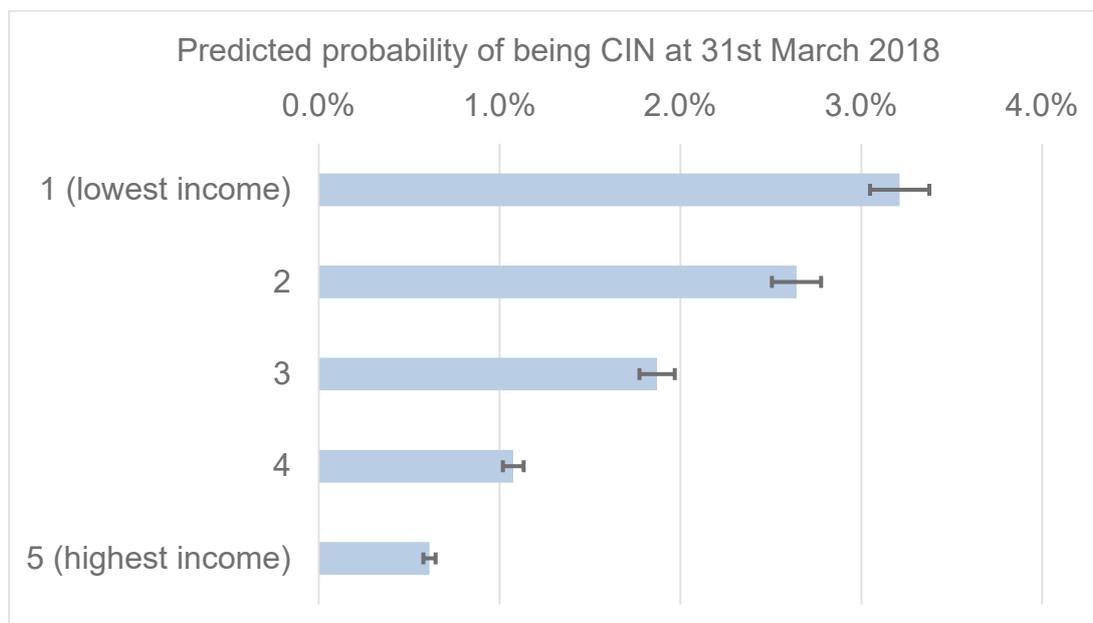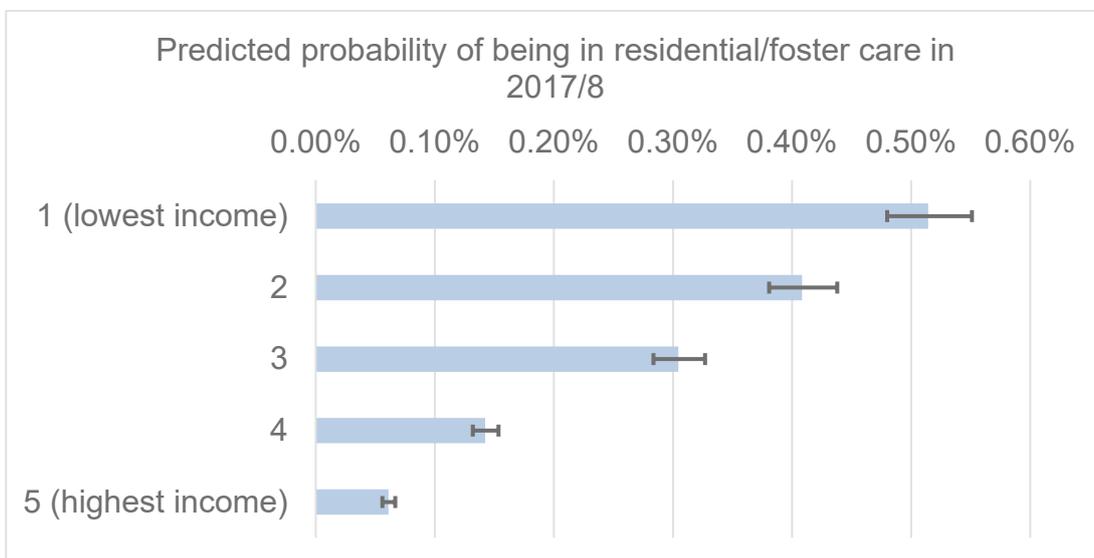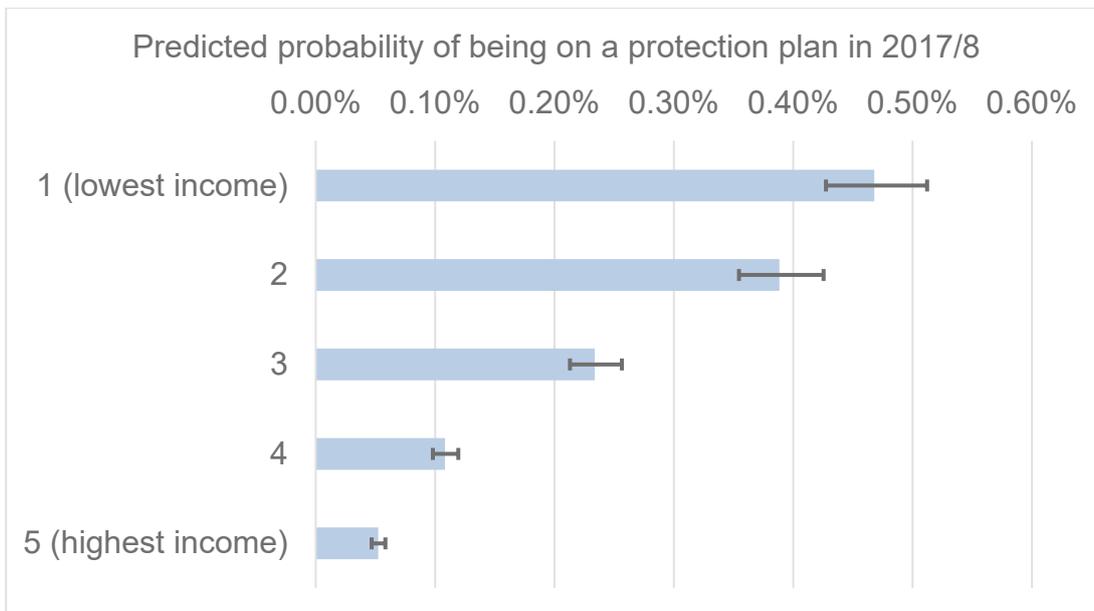
Neighbourhood factors

This section refers to effects in terms of the odds ratios, available in Table 8. Income deprivation affecting children score (IDACI) has the strongest association amongst the LSOA (small areas in which children live/lived before entering care) predictors. Table 8 shows a 1 standard deviation increase in LSOA IDACI score is associated with a 31, 40 and 28% increase in the odds of being a child in need at 31st March, on a child protection plan and being looked after in residential/foster care in 2017/8 respectively.

All of the LSOA factors have statistically significant effects. Smaller increases in the odds are observed for a one standard deviation increase in the other neighbourhood factors compared to income deprivation, apart from travel time to town centre where a 1 standard deviation increase in distance from town centre is associated with slightly lower odds of each outcome. Overcrowding has the second largest effect of the LSOA factors

with a one standard deviation increase associated with a 9-14% increase in likelihood of experiencing the outcomes measured.

Local authority variation

In the previous section we provided the odds ratios and predicted probabilities associated with individual, family and neighbourhood characteristics (fixed effects). In the current section, we discuss the size of the random intercept (local authorities) in comparison to the fixed effects. We show that specific local authorities are associated with children's social care activity even after controlling for individual, family and neighbourhood characteristics, but the association is much smaller than the fixed effects.

This is shown first at the level of individual children by comparing random intercept to neighbourhood level effects and examining the variation in rates for a child with the same characteristics in different local authorities. Variation between local authorities is then examined by comparing predicted local authority activity with and without the local authority random intercept effect, and looking at the impact on activity nationally if local authorities with higher intercept effects had lower effects.

We can compare the strength of neighbourhood (LSOA) fixed effects with random intercept effects because these variables have been standardised. This means that they have been adjusted to the same scale so that we can compare the effects of different variables. The coefficients refer to the effect of a one standard deviation increase. For the children in need model a one standard deviation increase would roughly equate to the difference between the 67th and 131st local authorities if they were ordered from the lowest to highest random intercept effect (there are 149 local authorities in the model). For being on a protection plan it would be approximately the difference between the 79th and 124th local authorities. Finally, for being in residential/foster care it would equate to the difference between the 73rd and 131st local authorities.

Living in a local authority with a one standard deviation higher random intercept effect is associated with 37%, 47%, and 24% higher odds of being in need at 31st March 2018, on a protection plan and in residential/foster care respectively, compared to the average local authority (this equates to odds ratios of 1.37, 1.47 and 1.24 respectively). This can be compared directly to the fixed effects odds ratios in Table 8. This is stronger than the association with gender and age (except for looked-after children), but less strongly associated than family income. For being a child in need and on a protection plan this is a stronger association than the highest neighbourhood effect (income deprivation affecting children score, associated with a 31% and 40% increase in likelihood). For being looked after, it is the second highest effect, with income deprivation affecting children scores having the strongest association (28% increase).

Figure 23 plots how the predicted probability for a typical child (male, aged 6-7, White British and in the lowest household income quintile) differs according to the local authority where they live. Each bar is the prediction for a single local authority. For example, the first chart shows that we would predict a child with those characteristics would have between a 1.4% and 8.6% probability of being in need on 31 March (a six-fold difference) depending on the local authority in which they live. Children living in the middle 75% of local authorities would have a probability between 3.1% and 6% of being in need, between 0.6% and 1.4% for child protection plans; and between 0.6% and 1% for being in residential or foster care. That is, the probabilities for a typical child to be in social care in the highest 12.5% of local authorities by random intercept effect are roughly twice those in the lowest 12.5% of local authorities.

Figure 23. Predicted probability for a typical child living in different local authorities

Predicted probability of CIN at 31st March 2018

Predicted probability of being on a CPP in 2017/18

Predicted probability of being in residential or foster care in 2017/18
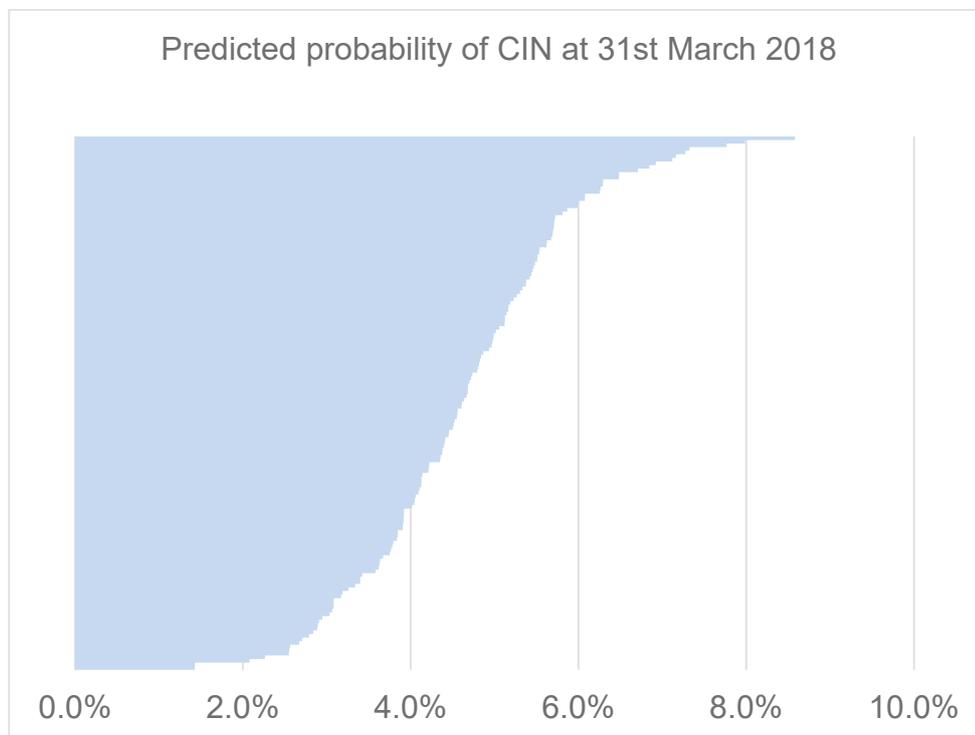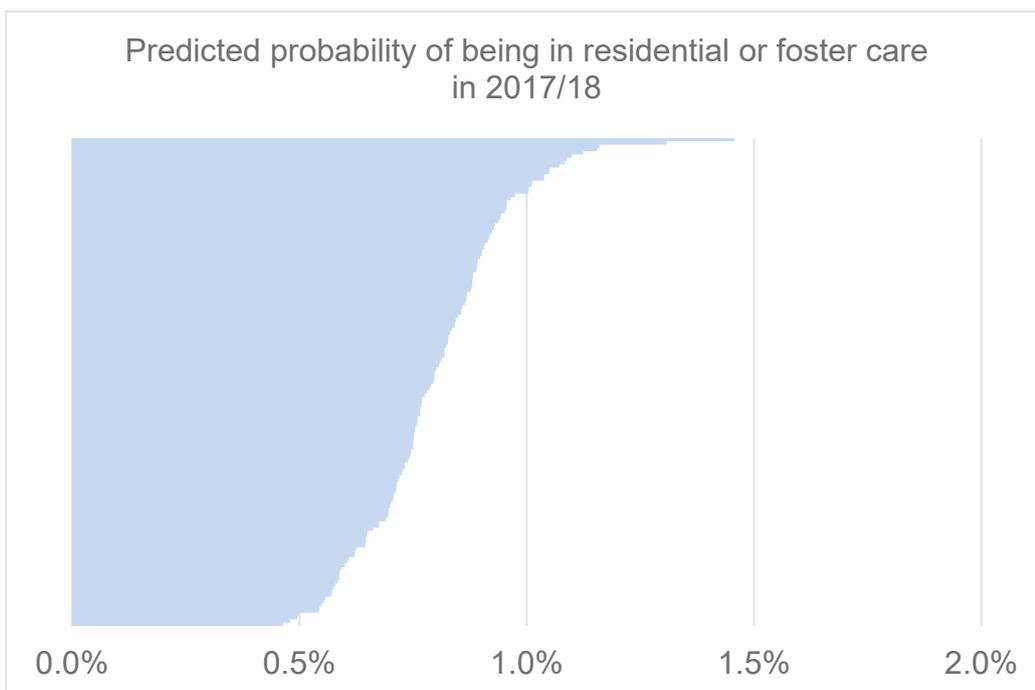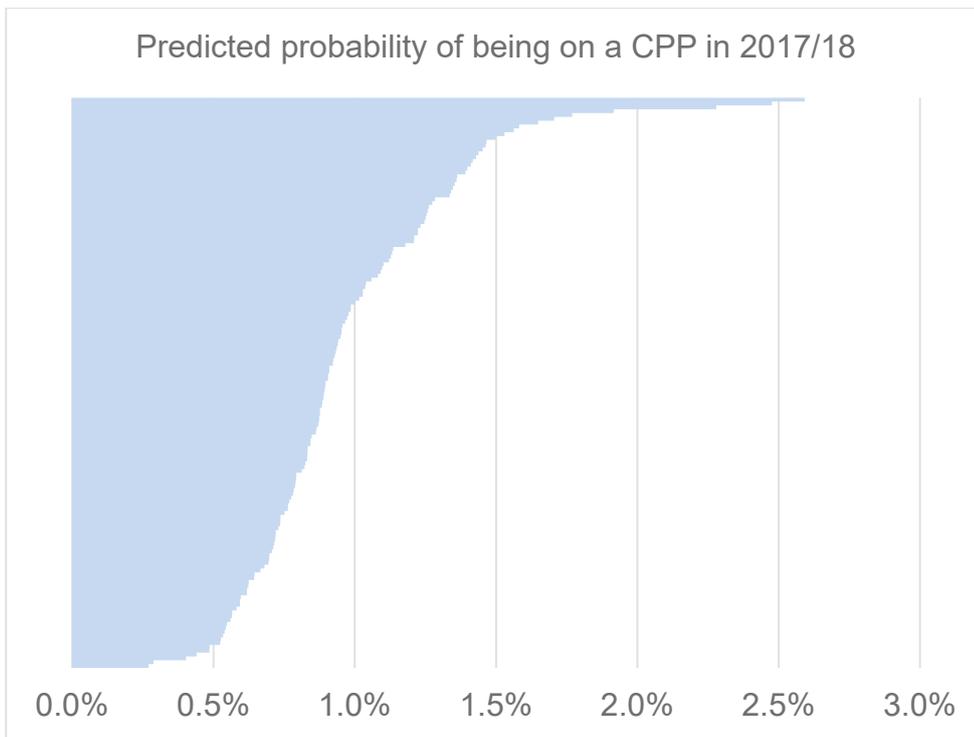
This shows that specific local authorities are associated with activity rates even after controlling for the child, family and neighbourhood characteristics included in the model. It is important to remember that these "effects" will include the impacts of factors not included in the model – such as differences in need between local authorities which we aren't able to measure (e.g. levels of substance misuse) and different impacts of non-social care services, such as quality of adult substance misuse services. Differences in local authority social care policy and practice will also contribute to the estimates.

While the random intercept effects are sizeable, substantially more variation in activity can be explained by individual, family and neighbourhood characteristics (fixed effects).

The variance partition coefficient (VPC) measures the proportion of the remaining variance in the likelihood of *individual* children receiving each social care intervention that can be attributed to differences between local authorities, after we have subtracted the variance associated with fixed effects. A VPC score of 100% means all the remaining variance was explained by differences between local authorities whereas a variance of 0% indicates no variation was explained. The VPC scores for being identified as CIN at 31st March, on a CPP and in residential/foster care were 3%, 4% and 1% respectively, showing only a small proportion of variation is explained by local authorities. This compares to VPCs of 3%, 4% and 4% when no fixed effects are included.

Looking at the range of probabilities for children can illustrate why the VPC is small despite the different probabilities of social care activity in different local authorities shown above. For example, an average White British boy aged 12-13 years old, with low family income and living in a relatively deprived neighbourhood in a typical local authority would have a 19% probability of being in need. An average Asian Indian girl aged 12-13 years old with high family income and living in a relatively non-deprived neighbourhood in the same local authority would have a 0.2% probability of being in need – there is a 113-fold difference in probability of activity between the two children. Whereas the probability of a typical child being in need varies between 1.4% and 8.6% depending on the local authority in which they live – this is a 6-fold difference in probability which is substantial but markedly less than that between children.

As such, it is important to note that the variance partition coefficient refers to variation between individual children, not local authorities, and we would expect VPC values to be low as a small proportion of children experience these social care interactions each year.

We can explore how the local authority effects contribute to variation between local authorities by looking at the difference between predicted rates per 10,000 children in each local authority for fixed effects only (predictions based only on individual, family and neighbourhood characteristics, the green points on the chart) compared to rates which include the local authority (random effects, the blue points on the chart). They are plotted, sorted according to the fixed effects predictions (from populations associated with lower to higher probability of the outcomes). Where the random and fixed effects predictions (blue points) are lower than fixed effects it shows that rates of activity are lower than would be expected if we only accounted for individual, family and neighbourhood characteristics; the reverse applies when the points are higher. The horizontal axis is the local authority, names have been removed.

Figure 24. Predicted rates per 10,000 for fixed effects only and full effects

Predicted rate per 10,000 of children in need at 31st March 2018

Predicted rate per 10,000 of children on a protection plan in 2017/18
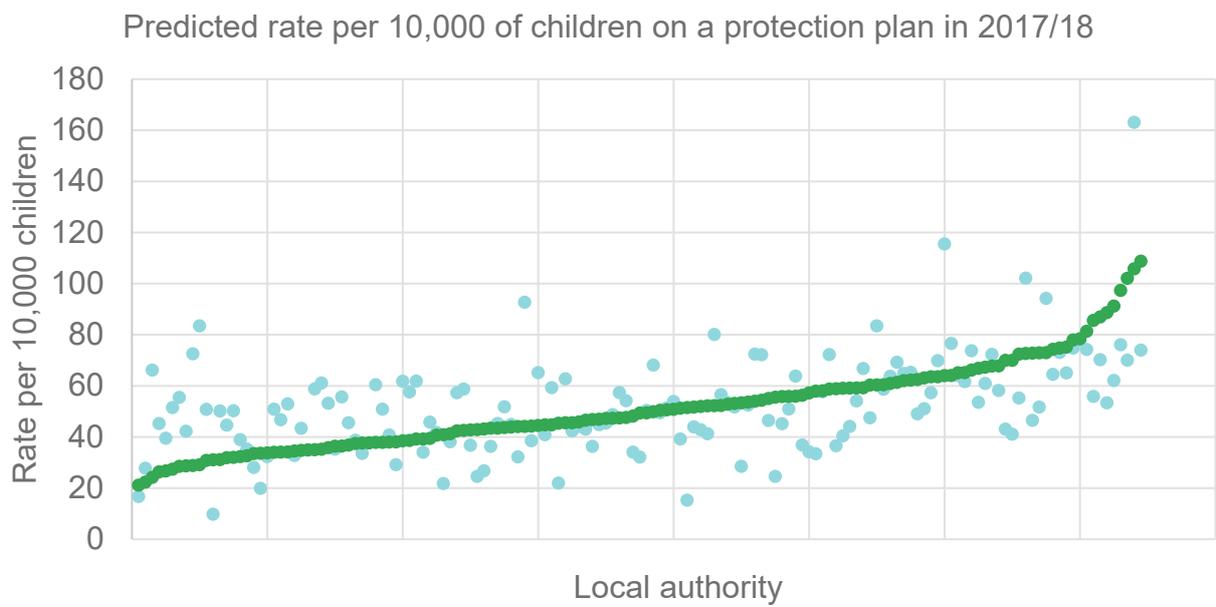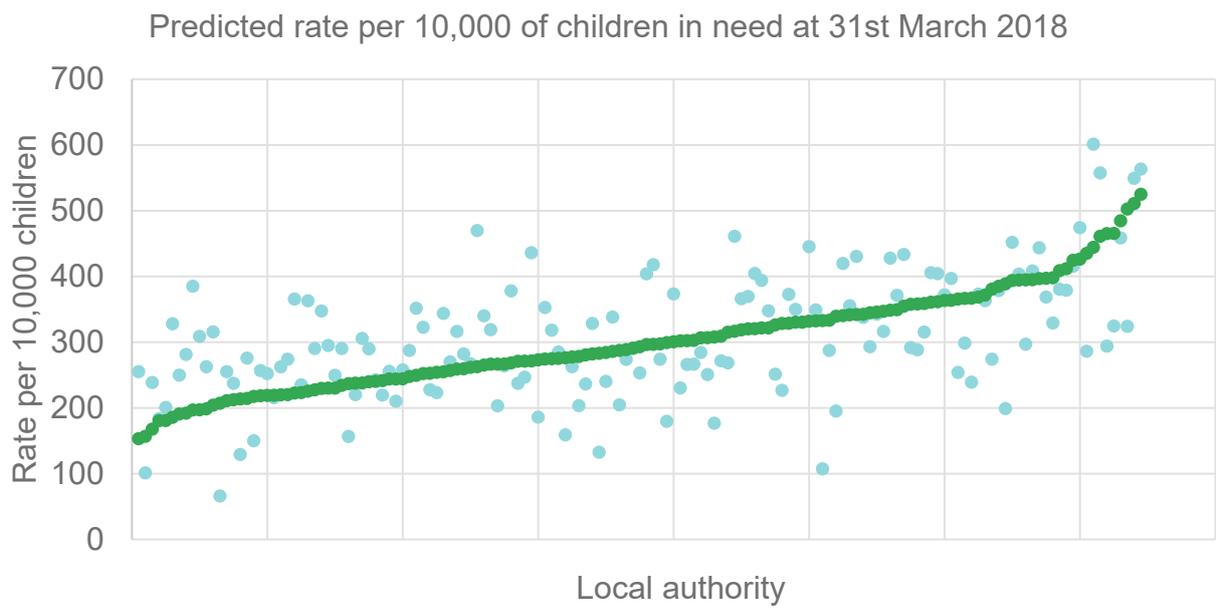
Predicted rate per 10, 000 of children in residential/foster care in 2017/18
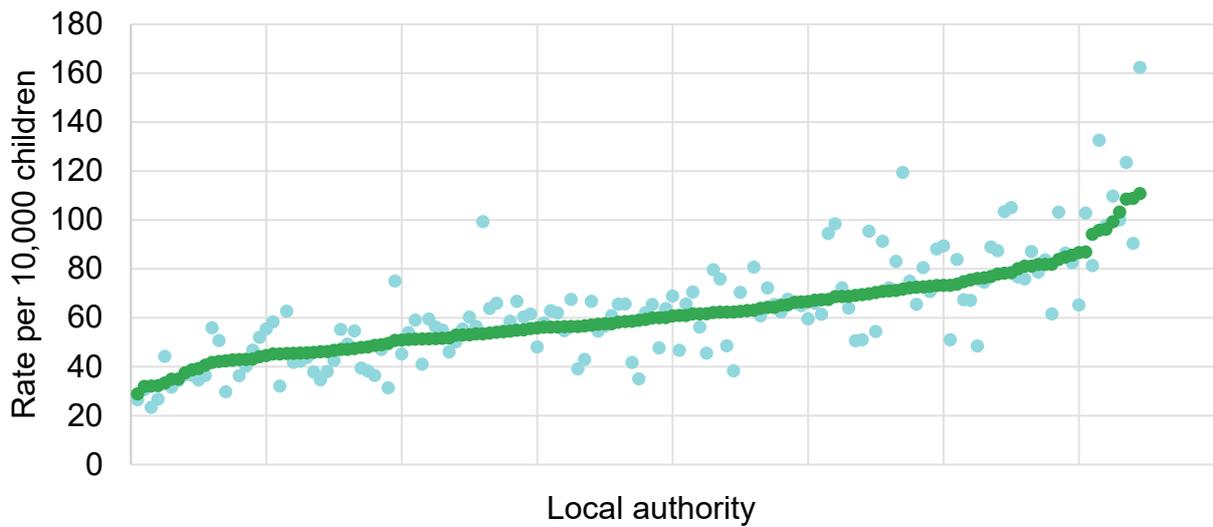
Table 9 shows the predicted level of variation in the activity rates per 10,000 based on the fixed effects only and full models (i.e. including the local authority random intercept effect). The mean absolute percentage deviation (MAPD) measures the average difference between the predicted local authority rates and the overall average predicted rate, where a higher value indicates we predict greater variation in local authority activity rates using the given model.

The fixed effects only predicted rates differ from the average rate by an average of 20, 26 and 20% for being in need at 31st March, on a protection plan and looked after in residential/foster care respectively. This increases to 24, 27 and 27% when including the local authority random intercept effect. Whilst we can observe that including the random intercept effects increases the predicted level of variation, the fixed effects only values demonstrate that a substantial part of local authority variation can be explained based on the characteristics of children, families and neighbourhoods alone.

This, combined with the variance partition coefficients, suggests that most of the variation in rates of activity is attributable to differing characteristics of children and families in local authorities.

Table 9. Mean absolute percentage deviation for fixed effects and full model predicted rates per 10,000 children

Outcome	Prediction type	Mean absolute percentage deviation (%)
Child in need at 31st March 2018	Fixed effects	20
	Full model	24
On a protection plan in 2017/18	Fixed effects	26
	Full model	27
In residential/foster care in 2017/18	Fixed effects	20
	Full model	27

Finally, to demonstrate the influence of the random intercept (local authority) effects we can consider what the impact would be the if three quarters of local authorities with the highest random intercept effects had a lower random effect (in this case, the lowest 25%) but retained the same children.

Reassigning the random intercept effects would result in a reduction in the rate of being in need at 31st March, on a protection plan and looked after in residential/foster care by 21%, 30% and 15% respectively (Table 10) compared to the actual rates of activity amongst children in the dataset. This shows that characteristics of local authorities which include but are not limited to policy and practice are influential in the rate of activity nationally.

Table 10. Comparison of rates per 10,000 compared to rates based on shuffled random effects

Outcome	Rate per 10,000 (A)	Rate per 10,000 with lowest 25% random effect (B)	Percent difference (A compared to B)
Child in need at 31st March 2018	284	235	-21%
On a protection plan in 2017/18	48	37	-30%
In residential/foster care in 2017/18	58	51	-15%

Research to date has drawn mixed conclusions about the contribution of local authorities to social care activity, although approaches with richer and more granular datasets have tended to attribute a larger proportion of variation to the characteristics of children and neighbourhoods within local authorities. The pupil-level dataset we have used is a significant advance upon previous research, although it is limited to 5- to 15-year-olds only.

The most similar work to our analysis is Webb, Bywaters, Scourfield, McCartan, et al. (2020). The authors created multilevel spatial regression models of the number of children in need, on child protection plans, and looked after in small local areas. After controlling for local area and local authority measures of demographic and socioeconomic variables and inequality, and the interactions between them, the remaining variation associated with local authorities was less than 1% for each of the three activity measures. This is similar to our findings. However, they did also note that more unequal and less deprived local authorities had a steeper "social gradient" – whereby relatively more of their activity took place in more deprived neighbourhoods.

National Audit Office (2019) broke down inter-local authority variation in rates of new child protection plans between 2010-2017 using local authority fixed effects models. They found 15% of variation was associated with deprivation, 10% explained by national changes over time, 50% explained by characteristics of the local authority unique to that authority (local authority fixed effects), and 25% of variation unexplained by their model. Including children's social care spending levels and social worker vacancy rates slightly reduced the fixed effects component to 44% of variation. The fixed effects incorporated multiple features of local authorities such as "custom and practice in children's social care; local market conditions; geographical peculiarities distinct to a particular local

authority; characteristics of children and their families within the local authority; historical patterns of demand for children's social care; community composition; and historical funding"; our analysis suggests that the characteristics of children and families within the local authority explain a substantial proportion of these fixed effects.

Pearson et al. (2020) used multilevel models to explore the association between local authority measures of maternal adversity (hospital admissions for substance misuse, mental health problems or violence-related admissions in the 3 years before birth) and rates of infant entry into care. The level of maternal adversity (ARA) accounted for 24% of inter-local authority variation after controlling for other local authority-level factors, which together with ARA explained 47%-60% of local authority variation in infant entries. This agrees with our finding that child and family characteristics are major drivers of activity, although it also suggests that if we could include maternal adversity in our model this would explain some of the local authority variation.

Emmott et al. (2021) used a multilevel model and found child poverty and overall referral rates explained 60% of variation in local authority health referrals to social care. The strongest predictor was overall referral rates in the local authority. They interpret child poverty as a measure of need and overall referral rates as a measure of local practice and systems; therefore that practice "does not seem to be strongly driven by local need". Our richer dataset suggests social care activity is in fact strongly associated with income and thus child poverty, although it is possible referrals are less strongly associated.

Section 4. Literature on other factors associated with activity in children's social care

Our work identifies important factors which are related with social care activity but does not comprehensively investigate every factor. Therefore, we briefly summarise research which investigates other factors which we could not include in our analysis.

Qualitative research identifies a wide set of potential contributors to changes in activity over the past decade. For example, ADCS (2018) links activity rises to "wider societal determinants linked to poverty, new and greater risks to children and young people such as County Lines and other contextual safeguarding risks, an increased number of UASC, more care leavers as a result of the increase in the number of children looked after and extended care leaver duties to age 25, growth in the overall child population, [and] additional new duties from legislation and policy". Evidence submitted to the All Party Parliamentary Group for Children (2017) included increasing risks to children from extra-familial harms, child poverty, provision of early intervention services, and better identification of risk, rather than an actual increase in the number of children at risk. Housing, Communities and Local Government Committee (2019) additionally identify risk aversion and culture in the children's social care system and societal expectations as potential factors behind increased activity.

Hood et al. (2016, 2020) explore how types of activity are associated with each other at the local authority level and why. They note local authorities with higher activity at particular thresholds had relatively lower levels of activity at the next most serious level of activity; for example, local authorities with more referrals had a lower ratio of assessments to referrals (i.e. a greater share of referrals led to No Further Action). Local authorities with higher demand spent less on safeguarding per child in need, and children in need in such local authorities were more likely to be in Need for less than 3 months and less likely to be in Need for more than a year. Finally, local authorities with greater demand had higher caseloads which were associated with higher turnover, vacancy rates and agency rates.

They posit three mechanisms explaining how local authority demand management contributes to such trends: screening, rationing and churn. These are: the tendency of local authorities to escalate (screen in) or filter (screen out) cases at particular thresholds in response to levels of demand; for higher demand local authorities to spend less on the children they work with; and for local authorities with higher demand to face higher workforce churn, respectively. These mechanisms are one hypothesis for why increases in some forms of demand have not led to equivalent increases in related activity (for example, why Section 47 investigations have risen more than child protection plans).

Some authors suggest that thresholds to access children's social care have risen (e.g. Hood *et al.*, 2016). However, there is limited direct evidence for this. One study (Trowler,

2018) of care proceedings cases in four local authorities found very similar difficulties faced by families in care proceedings over the five years analysed, and little evidence of increased complexity, which suggests similar thresholds for entering care proceedings.

On the other hand, a 2018 survey of social workers (All Party Parliamentary Group for Children, 2018) suggested that thresholds had risen, with 70% stating that children in need thresholds had risen in the previous three years, 50% stating child protection plan thresholds had risen, and 54% stating that thresholds for care order applications had risen. Conversely, the Directors of Children's Services surveyed in the same report were less likely to agree that thresholds had risen, with 19% citing increased children in need thresholds, and 10% or less citing increased CPP or care order application thresholds. Similarly, none of the 17 local authorities interviewed by Aldaba and Early Intervention Foundation (2016) claimed they had changed their thresholds for accessing social care between 2010 and 2014, although they had clarified them. The APPGC report explains this discrepancy by suggesting Directors of Children's Services are referring to threshold policies, while social workers are expressing perceptions of how the implementation of those policies may have changed on the ground.

Regardless of whether thresholds have changed, Biehal *et al.* (2018) note relatively high thresholds for out-of-home care and child protection plans, with 88% of children in care previously experiencing "high severity" maltreatment, and 74% of children on child protection plans.

Hood and Goldacre (2021) find rates of child protection activity increase at the time of Ofsted inspections, particularly for local authorities later judged to be Inadequate. This increase in activity rates was short-term, except for Inadequate local authorities.

Webb (2021) and Bennett, Webb, *et al.* (2021) have shown lower levels of local authority "preventative" spending are associated with increased rates of activity in subsequent years. Webb shows higher spending was associated with decreases in CIN rates between 2010/11 and 2014/15, but not from 2014/15 onwards; while Bennett et al show decreased local authority preventative spend was associated with more 16-17 year olds entering care in the following year, although not with care entries under the age of 5. However, identifying the underlying drivers of these relationships is difficult. National Audit Office (2019) in England and Scourfield *et al.* (2021) in Wales found higher levels of activity in areas where Sure Start/Flying Start early years services (a key element of the definition of preventative spend) were more widely offered.

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Annex 1: additional analysis on sources of referrals, extra-familial threats and time between referral and entering social care

Referrals by source

Referrals to social care can come from several different sources, including the police, schools, health services, local authority services and individuals. Figure 25 shows the changing trend of referrals from these key groups since 2013. Between 2013/14 and 2020/21 referrals from police have increased by 25%. Referrals from schools and other education services also grew by 24% between 2013/14 and 2019/20. However, the 46% fall in 2020/21 reflects the national lockdowns and resulting home schooling advice issued by the government. Referrals from local authorities and housing and health services also increased in the time period analysed, but by less at 6 and 4% respectively. Conversely, referrals from individuals and other sources have fallen by 26% and 51% respectively between 2013/14 and 2020/21.

**Figure 25: Number of referrals by source in the year ending 31 March**
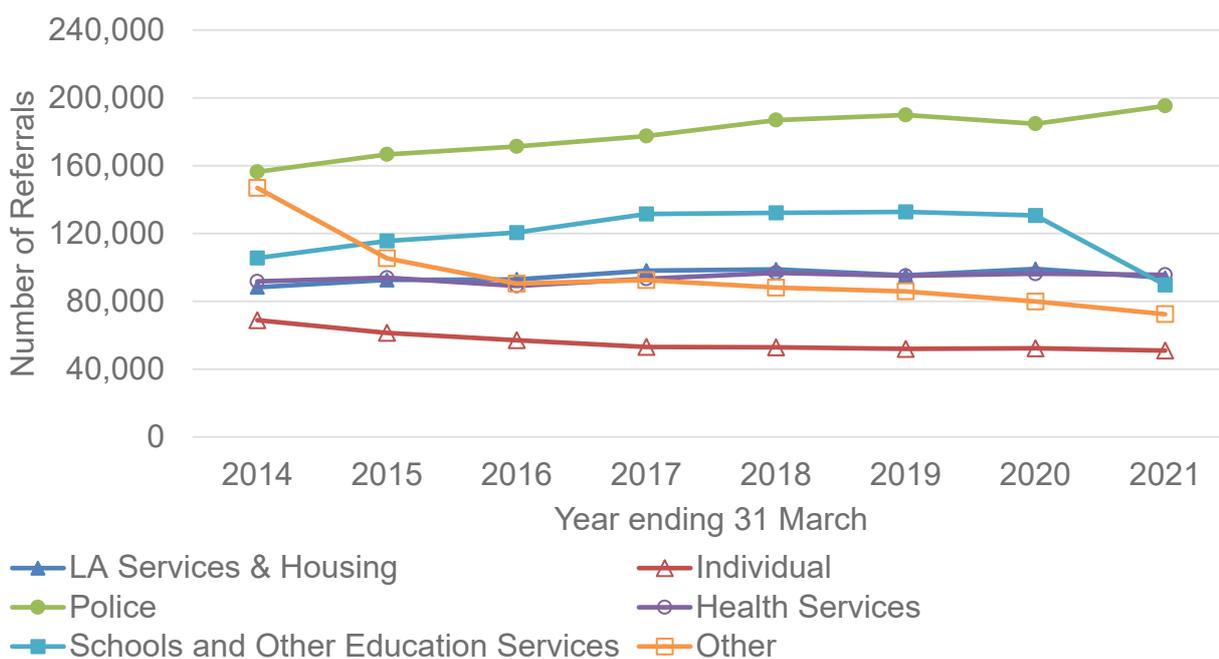
Source: Department for Education (2021) 'Characteristics of children in need'

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Extra-familial assessment factors for children in care

Figure 26 shows that 31% of adolescents who entered care in 2017/18 had an extra-familial threat[8] identified at an assessment in the previous or following 6 months. This was an increase from 24% of adolescent care entrants in 2014/15. We define adolescents as young people aged between 11 and 17.

Figure 26: Percentage of care entrants in 2014/15 and 2017/18 who had extra-familial threats identified at assessment by age
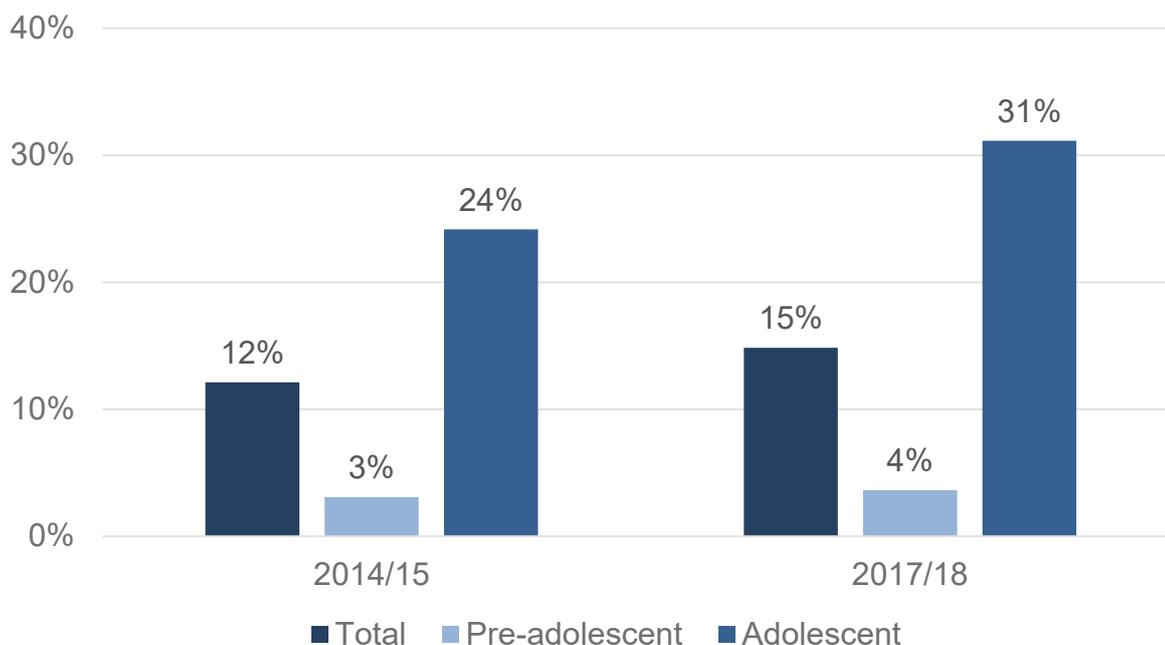
Time between referral and entering social care

Figure 27 and Figure 28 show the time taken between a child being referred in 2016/17 and being placed on a CPP or becoming looked after respectively. The charts show that 80% of referrals which lead to a CPP do so within 4 months, whilst 80% of referrals which lead to a child being looked after do so within 7 months. Whilst over 99% of referrals will have converted to a CPP within 13 months, this threshold is not reached for looked-after children within the 15 month timeframe analysed. However, a higher proportion of referrals for looked-after children are converted under 2 months than CPP referrals. This can be used to assist policy makers in understanding the implications of changes in referrals.

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[8] Extra-familial threats include children who are/at risk of going missing, child sexual exploitation, gangs and trafficking.

Figure 27: Conversion time for referrals in 2016/17 to CPPs

Months
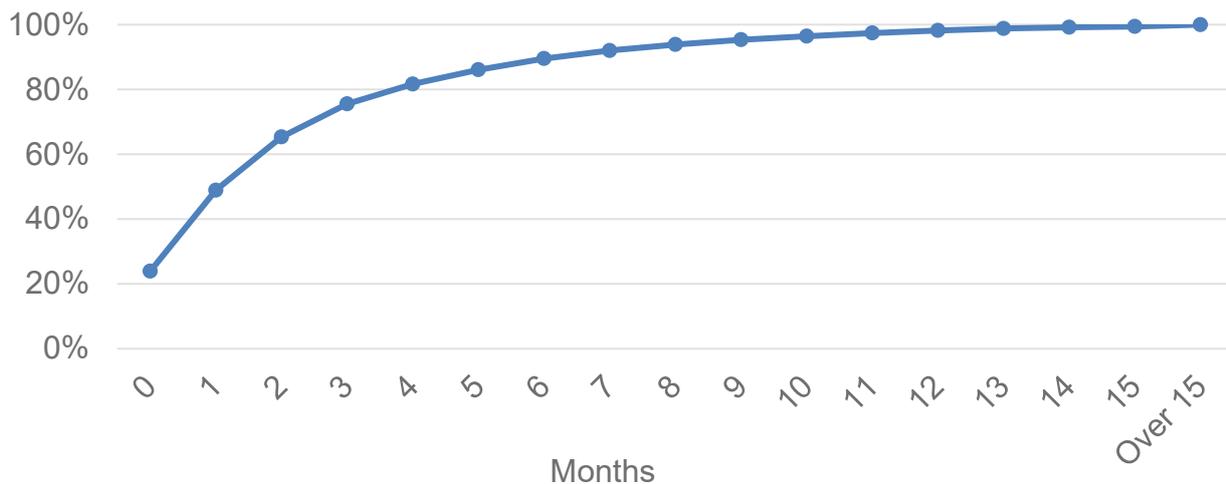
Source: Longitudinal children in need dataset (LCD)

Figure 28: Conversion time for referrals in 2016/17 to being looked after

Months
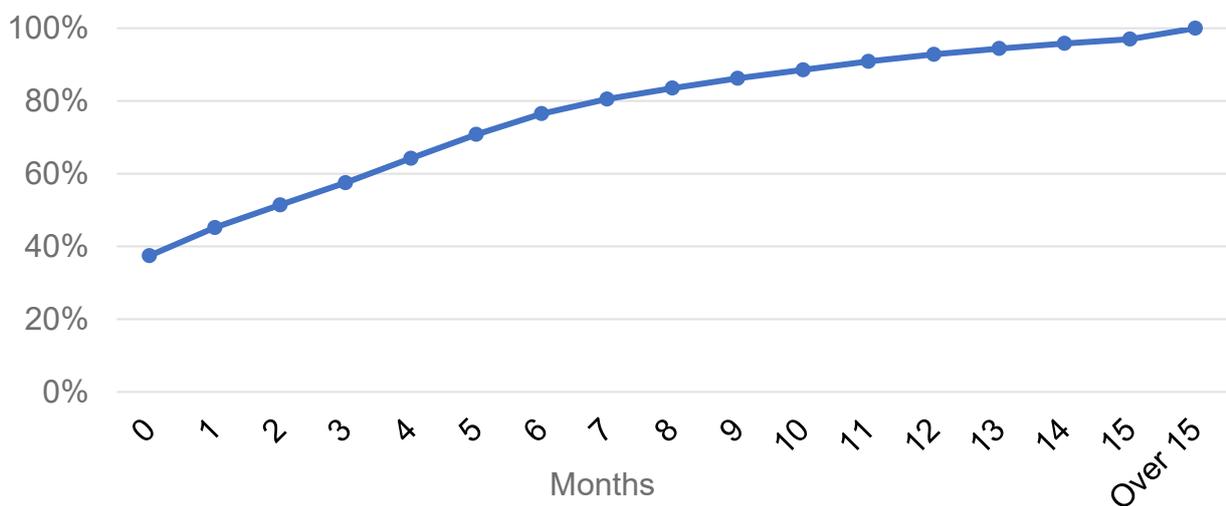
Source: Longitudinal children in need dataset (LCD)

Annex 2: data

Creation of the longitudinal children in need dataset for Section 1

Section 1 uses a combination of published statistics and child-level data. The child-level data used in section 1 is from the longitudinal children in need dataset. It contains data on 3.1 million children referred to or in need of support from children's social care services between April 2012 and March 2020. The dataset includes the demographics of children and dates of referrals, assessments, section 47 enquiries, initial child protection conferences, child protection plans and periods of being looked-after per child as reported in the CIN and CLA census. Some additional data such as referral sources, assessment factors and reasons for case closure are also included. Data on child in need and other plans (CINP) was not explicitly collected in the CIN census over this period and was therefore derived as a period of at least 30 days when the child was known to be in need but not recorded as either having a child protection plan or as being looked-after.

The dataset was created by linking together all the data from the CIN census between the years 2012-13 to 2019-20 using unique identifiers derived from local authority child identifiers. This linking took account of changing identifiers across years and local authority reorganisations. The linking accounted for children who moved across local authorities where the Unique Pupil Number (UPN) was recorded in both authorities, therefore cases where a child moved but the UPN was not known will appear as distinct children in the dataset. Data from the CLA census was also matched in for this eight-year period. A small proportion of children from the CLA census (c.1%) were not matched in due inconsistent reporting of identifiers across the two censuses.

Linking the annual censuses underlined a number of known data quality issues where information was inconsistent from one year to the next, or within a single year. These issues were flagged and where possible resolved, for example, if a child had more than one reported ethnicity over the years then the most recent record was used in the analysis. Where issues could not be resolved, sensitivity analysis was conducted to ensure inclusion of such data did not skew results.

Data sources and variables for Section 3

Schools census: Main records on pupils from the spring census 2018 provides information on the pupil population attending state-funded schools (independent schools are not included). This includes information on the month and year of children's births, gender, minor ethnic group and the neighbourhood (LSOA) in which children reside. For looked after children the school census is searched for all terms to return an LSOA which occurs before their episode of care commenced, if this is not successful the record from January 2018 is used.

Alternative provision (AP) census: Main records are obtained from the 2018 census.

Early years census: Used to derive pre-placement LSOA for looked after children.

Children in need census: This includes information on children who have interacted with social care. This may include being referred to children's social services, requiring a social worker, being on a child protection plan and looked after children. Not all children can be linked to the schools and AP census for reasons that include security and lack of information provided by the local authority. For more information refer to Department for Education (2021).

Looker-after children census: The looked-after children census includes information on looked-after children's characteristics and episodes of care. Not all records are able to be matched, for more information please see Department for Education (2021).

Pupil Parent Matched Dataset: This dataset combines pupil information with familial income measures (from work, self employment and benefits) provided from the Department for Work and Pensions and Her Majesty's Revenue and Customs.

The dataset was created to understand how educational attainment varies with household income, and the challenges faced by those pupils in families which are not currently identified as disadvantaged.

Further information on the matching process and legal basis for the data share are available in the published privacy notice and 2017 consultation document.

Index of Multiple Deprivation 2019: Income deprivation affecting children scores are used at LSOA level to indicate local deprivation.

Census 2011 data: The following variables are included in modelling at LSOA level

- Overcrowding

- Percentage of parents with qualifications at level 1 or below

- Percentage of children whose activities are significantly limited

Department for Transport: Journey times for town centres by car at the LSOA level indicates the remoteness of children's neighbourhoods.

Office for National Statistics: Population density.

Methodology

Step 1: Remove duplicates within each of the component datasets

Main records are used for the schools and AP census so there are no duplicates in these datasets. The PPMD income data is unique by pupil IDs so there are no duplicates in this dataset either.

Duplicates exist in the children in need and looked after children census due to repeated interactions with social care which can include in different local authorities. For children in need duplicates are removed by selecting age, gender and ethnicity information from the most recent referral where the record is not blank. The same information is derived for looked after children using the most recent episode.

Children's social care activity variables are derived prioritising records which show social care interaction (e.g. if the child was in need at 31st March in one record but not another they will be recorded as in need at 31st March in the dataset).

For looked after children the earliest date from the beginning of the period of care is selected as date commencing care, this is used to derive a 'pre-placement LSOA' from NPD data (schools census, AP census, early years census). If a pre-placement LSOA cannot be found, the LSOA from the current year is used.

Step 2: Combine the schools and alternative provision datasets

The school and alternative provision census datasets are combined to form the base pupil population. Where a pupil is registered in the school and AP census characteristics variables are prioritised from the schools census. Pupils only in the alternative provision census are appended to the schools dataset.

Step 3: Merge children's social care activity datasets to the base population dataset

Individual characteristics and social care activity variables are merged to the base population dataset by Pupil Matching Reference number. Where a child has conflicting individual characteristics information (e.g. different ethnicities), the children looked after record is prioritised, then children in need, school census and alternative provision census. The resultant dataset contains one record per pupil matching reference number. Of children who have valid pupil matching reference numbers in the children in need and in care datasets, 97 and 96% of children aged 6 to 15 respectively were matched to the schools census. The table below shows the rate of valid pupil matching references by age for the children in need (CIN) and children looked after (CLA) datasets.

Table 11. Valid pupil matching reference (PMR) rates by age

Age	CiN Dataset			CLA Dataset		
	Number of children	Number with valid PMR	% with valid PMR	Number of children	Number with valid PMR	% with valid PMR
0	41,758	0	0	5,159	0	0
1	47,401	7	0	5,633	28	0
2	45,475	790	2	4,237	181	4
3	44,584	4,717	11	3,585	1,048	29
4	45,823	15,675	34	3,375	2,434	72
5	47,594	29,172	61	3,342	3,015	90
6	48,526	37,601	77	3,457	3,348	97
7	48,498	38,978	80	3,640	3,550	98
8	49,557	40,776	82	3,917	3,859	99
9	48,900	40,979	84	4,237	4,171	98
10	48,407	41,078	85	4,584	4,533	99
11	47,159	40,568	86	4,990	4,928	99
12	45,854	39,783	87	5,151	5,106	99
13	46,922	40,415	86	5,716	5,635	99
14	48,418	41,558	86	6,455	6,324	98
15	49,251	42,022	85	7,531	7,167	95
16	49,135	40,789	83	9,264	8,042	87
17	45,682	36,764	80	11,057	8,755	79
Aged 0 to 5	272,635	50,361	18	25,331	6,706	26
Aged 6 to 15	481,492	403,758	84	49,678	48,621	98
Aged 16 to 17	94,817	77,553	82	20,321	16,797	83
All children	848,944	531,672	63	95,330	72,124	76

Step 4: Join family income data from the PPMD

Equivalised family income is merged from the pupil parent matched dataset using pupil matching reference numbers.

Step 5: Join LSOA and local authority level variables to the dataset

Area level variables are then combined and merged to the dataset by matching pupils LSOA (pre-placement for looked after children).

Step 6: Filter the dataset by age and include complete records only

For modelling the dataset is filtered to exclude children who do not have an English LSOA, a blank LSOA or missing information on age and gender. Unknown ethnicity (including refused and not obtained) is included as an ethnic group category. Pupils who do not have linked income information are then excluded from the dataset. The dataset is further filtered to include children aged 6 to 15. Of the 6,167,894 pupils aged 6 to 15 in the dataset, less than 1% of records are removed due to missing gender, age or LSOA data and 8% are removed due to missing household income data. Less than 1% (3, 463) records are then removed from local authorities that were excluded from the analysis due to their small populations (Isles of Scilly, City of London and Rutland).

Descriptive statistics

Table 12. Outcome variables

Indicator	Categories	Number of pupils	Percent of pupils (%)
Child in need at 31st March 2018	No	5,491,733	97.2
	Yes	160,812	2.8
On a child protection plan during the year	No	5,625,366	99.5
	Yes	27,179	0.5
Looked after in residential or foster care during the year	No	5,619,501	99.4
	Yes	33,044	0.6

Table 13. Categorical variables

Indicator	Description	Categories	Number of pupils	Percent of pupils (%)
Gender	Gender of pupil	Male	2,896,907	51.2
		Female	2,755,638	48.8
Age	Age of pupil	6 to 7	1,207,176	21.4
		8 to 9	1,188,925	21.0
		10 to 11	1,149,598	20.3
		12 to 13	1,079,030	19.1
		14 to 15	1,027,816	18.2
Ethnic group	Ethnic group of pupil	White British	3,873,033	68.5
		Asian Bangladeshi	97,466	1.7
		Asian Indian	150,595	2.7
		Asian Other	96,714	1.7
		Asian Pakistani	243,350	4.3
		Black African	207,209	3.7
		Black Caribbean	66,147	1.2
		Black Other	44,818	0.8
		Chinese	20,623	0.4
		Mixed Other	115,581	2.0
		Mixed White and Asian	73,885	1.3
		Mixed White and Black African	43,778	0.8

Indicator	Description	Categories	Number of pupils	Percent of pupils (%)
		Mixed White and Black Caribbean	88,960	1.6
		Any other ethnic group	97,546	1.7
		Unknown	56,851	1.0
		White Irish	14,848	0.3
		White Other	337,746	6.0
		White Irish Traveller/Gypsy/Roma	23,395	0.4

Table 14. Continuous variables

Statistic	Source	N	Mean	Standard deviation	Minimum	1st Quartile	3rd Quartile	Maximum
Income deprivation affecting children 2019 score	Ministry of Housing, Communities and Local Government	5,652,545	0.18	0.123	0.004	0.077	0.261	0.898
Proportion of parents with qualifications at level 1 and below - LSOA	Census 2011	5,652,545	0.28	0.095	0	0.212	0.346	0.633
Proportion of children whose activities are limited - LSOA	Census 2011	5,652,545	0.038	0.016	0	0.027	0.048	0.185
Proportion of overcrowded households - LSOA	Census 2011	5,652,545	0.136	0.121	0	0.051	0.177	0.909
Population density (2017)	Office for National Statistics	5,652,545	4,690.19	4,519.88	2.43	1,533.08	6,204.26	99,023.67
Travel time to town centre (2017)	Department for Transport	5,652,545	12.121	3.771	6	9	14	46
Household income (£)	Pupil Parent Matched Dataset	5,652,545	18,139	22,889	-470	7,614	23,101	13,636,747

Note: Household income data is divided into quintiles for modelling, all continuous variables are standardized for modelling.