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Children in care or in need: Educational progress at home and in care

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Children in Care or in Need: Educational Progress at Home and In Care

By the age of 16 the attainment of most children in or on the edge of out of home care has fallen well behind the average for their age. This paper uses the English National Pupil Database to examine how much of this falling behind occurs before the age 7, and how any subsequent decline relates to time in care as against time outside it. To do this we compare the previous progress of three groups of 16-year-olds: 5,175 looked after by the state (CLA), 17,392 in need but not in care (CIN), and 22,567 children exactly matched with the CLA or CIN on initial attainment, special educational needs and eligibility for free school meals. We found that the attainment of the CIN and those CLA not yet in care was approximately one SD below the cohort average at age 7. It then fell relative to their peers while their rate of unauthorised absences and exclusions grew. Removal from home to care appeared to halt or greatly reduce this decline but did not, on average, reverse it. We conclude that educational interventions for CLA should also include CIN, start before 7, target problems associated with both school and family, and exploit the educational opportunity which care provides.

Keywords: ‘out of home care’; ‘children in need’; education; attainment; exclusions; attendance

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Introduction

In developed countries children who are looked after by the state (CLA – also termed 'jn care') do not, on average, do well in education (O'Higgins, Sebba, & Luke, 2015). Those in need (CIN) and often 'on the edge of care' seem to have equally poor (Berger, Bruch, Johnson, James, & Rubin, 2009; Berger, Cancian, Han, Noyes, & Rios-Salas, 2015; Cage, 2018; Font and Maguire-Jack, 2013; Piescher, Colburn, LaLiberte, & Hong, 2014; Smithgall, Gladden, Howard, Goerge, & Courtney, 2004) or even worse educational outcomes than those in care (Fletcher, Strand, & Thomas, 2015; Heath, Colton, & Aldgate, 1994, McClung & Gayle, 2010). These findings seem internationally established. There is, however, less certainty about how far this low attainment has to do with the quality of care (Jackson & McParlin, 2006) or the experience at home that precedes it (Berridge, 2007). This debate is contested in England (Berridge, 2007; Jackson & McParlin, 2006) and internationally (Luke & O'Higgins, 2018), and is the central issue for this article.

Overall the effects of care depend on the removal of a child from a potentially damaging situation, the good or bad quality of care itself, and the ability of the child to respond to what may be offered. The well-known studies of Romanian orphans (Rutter et al., 2007; Smyke et al., 2012) have suggested that cognitive deficits acquired during early extreme deprivation can be ameliorated if children are moved into supportive adoptive or foster homes. These studies, however, relate to children in severely damaging situations, who are then removed at a young age when they may be more responsive, and to special schemes likely to provide high quality care. This paper is, in part, an attempt to see how far these results generalise to a different population, facing different, if also potentially damaging situations, and given different support.

In the United Kingdom, arguments for the negative effects of care are based partly on the very low level of educational attainment achieved, but mainly on assertions about the quality of care. In particular it is stated that CLA are often living in unstable placements, living with carers who are usually not university graduates, subject to low expectations from teachers and social workers, and too often excluded, or placed in schools which are not geared to academic success (Jackson & McParlin, 2006). Contrary to these arguments, the attainments of CLA seem to be better if they have entered care early (DfE, 2018; McClung & Gayle 2010) and if they are looked after away from home rather than being at home on supervision (McClung & Gayle, 2010). Two other studies have found that children discharged from long-term care tend to do 'worse' on a variety of criteria than similar children who remained looked after (Sinclair, Baker, Lee, & Gibbs, 2007; Wade, Biehal, Farrelly, & Sinclair, 2011).

The main argument against the negative impact of care comes from the evidence cited above that children in need and those on the verge of care seem to do equally badly in education. The most obvious explanation for this would be that they are similar children in similar situations. In England children are deemed CIN for reasons of disability, or problems in achieving reasonable standard of health and development, or because they are being actually or potentially harmed, and are therefore legally entitled to a local authority service. CLA are a sub-group of CIN who need the service of 'accommodation'. According to official statistics (DfE 2018a; DfE 2018b), the main reason for both groups receiving a service was abuse or neglect (CIN 52%, CLA 63%) or family stress and dysfunction (CIN 25%, CLA 23%). The main differences related to small groups: child's disability (CIN 9%, CLA 3%), abandonment (CIN 3%, CLA 7%) or 'other reasons' (CIN 10%, CLA 4%). While the two groups are clearly not identical, there is a substantial overlap between them.

The broad similarity between the characteristics and educational outcomes of CLA and CIN suggest the key hypothesis underlying this paper. This is that both groups fall behind educationally when living in difficult family situations, and that CLA benefit from being removed from them. The home situations of CIN may not be so severe or damaging as to require removal from home, but are likely to be negatively related to our current focus, education. Testing these hypotheses requires that we allow for acknowledged differences between the groups in disability and severity of need. It then requires measuring *both* the harm that may be done by remaining at home *and* the good that may be done by entering care.

Methods

Database

Our analysis is part of a mixed methods study whose initial results have already been reported (Sebba et al., 2015). This used a longitudinal data set covering the education of all children in England, and identifying those who were CLA or CIN. The Main Cohort comprised 642,805 school children, appearing on the English National Pupil Database (NPD), and eligible to take the national GCSE examinations in 2013 when aged 16. An anonymised identifier linked this cohort to a further database giving the date of any entry to care and the reason for it. The cohort included:

- CLA (n = 6,236), children looked after in out of home care on 31st of March 2013
- CIN (n = 20,383), children deemed in need (but not in care) in 2012 or 2013

Legally the CLA are CIN. From now on, however, we will treat the groups as mutually exclusive with ‘CIN’ denoting children who are, on a given date, ‘CIN but not CLA’. A

proportionately small number of the CIN and Main Cohort will have spent some time in care at an earlier age but not been in care at 16, and could not be identified in our dataset.

Primary and intermediate outcomes

The NPD contains measures of attainment at the end of four 'Key Stages' (KS) of schooling: KS1 (at age 6/7), KS2 (at age 10/11), KS3 (at age 13/14) and KS4 (at age 16). Each Key Stage test uses different attainment measures and progress was measured by standardising the KS1 to KS4 scores across the Main Cohort of 642,805 school children, so that each score had a mean of 0 and standard deviation of 1. Changes in this score over time reflect changes in the child's educational attainment relative to their peers. The final (KS4) measure is based on the best 8 examination subjects taken by the children with 6 points added to the score for each grade (e.g. an advance from grade C to grade B in English would add 6 points). A difference of 1 standard deviation (SD) on these measures is substantial (at KS4 an average of 2 higher grades [e.g. A not C or C not E] in each of 8 subjects.).

Explanatory variables

These were created from data available in the NPD and found in earlier reviews (O'Higgins et al., 2015; O'Higgins, Sebba, & Gardner, 2017) or analyses (Luke, Sinclair, & O'Higgins, 2015) to relate to educational outcomes. The variable set used comprised:

- Demographic characteristics: gender, ethnicity (reclassified White British or Irish or not White British or Irish for analytic purposes) and language spoken at home (whether ever in a home where English was not the first language)

- Early family poverty (as indicated by the proxy measure, eligibility for free school meals (EFSM) when aged 7 in 2004)

- Special educational needs (SEN) – whether the child was ever recorded as having Autism Spectrum Disorder (ASD), Behavioural, Emotional or Social Difficulty (BESD), Severe or Multiple Learning Difficulty (SMLD), Moderate Learning Difficulty (MLD), or had no recorded SEN

- School type attended at time - whether at a non-mainstream state (NMS) schools (i.e. special schools, pupil referral units, alternative provision, secure provision and further education colleges) or not

- Unauthorised absences from school (absences lasting half a day expressed as a percentage of possible half-day attendances in a given year). We chose unauthorised absences as having higher face validity than authorised absences, even though the latter may sometimes be authorised without good reason

- Exclusions from school (whether recorded as excluded on a fixed term or permanent basis) within a given year

Explanatory variables: CLA entry groups

Date of entry to care was central to our analysis and we sub-divided the CLA into five Entry Groups based on the Key Stage during which they first entered care:

- KS1 – April 1996 to September 2004
- KS2 – October 2004 to September 2008
- KS3 – October 2008 to September 2011
- KS4a – October 2011 to March 2012

- KS4b – April 2012 to March 2013

The rationale for sub-dividing the KS4 group was that it was unreasonable to expect care to affect the educational outcomes of those looked after for a very short time. Both these groups were admitted during the official 'KS4' stage but we use the titles 'KS4a entry group' and 'KS4b entry group' to distinguish them.

The data allowed a similar but cruder division of the CIN according to whether they:

- Ceased to be deemed CIN after the 2012 census (CIN 2012 only)
- Became CIN after the 2012 census but before the 2013 census (CIN 2013 only)
- Were CIN in both 2012 and 2013 (Persisting CIN)

Analytical strategy

The current paper exploits the data on when, if at all, children in the Main Cohort entered care, and controls for differences through matching as well as regression. It uses descriptive analyses, and ordinary and multilevel regressions, to compare the educational progress of: CIN, CLA before and after their entry to care, and a matched comparison group who were neither CLA nor CIN at age 16, but who were similar at age 7 in terms of educational attainment, special educational needs, and socio-economic status. All results were analysed using SPSS v.24 or MlWiN v2.36.

Matched sample

Our main analyses used a matched sample (45,134). This comprised 5,175 CLA, 17,392 CIN, and 22,567 matched pupils from the Main Cohort who were neither CLA nor CIN. Matching was without replacement and cases with missing information (n = 3,527) or without exact matches (n = 525) were excluded. We used exact matching as the best

available basis for establishing plausible causal inference, and matched the groups on educational attainment and EFSM status at 7, and on whether child was identified *at any time* as having a special educational need or, specifically, Severe or Multiple Learning Difficulties.

All four matching variables were related both to outcome and to the probability of becoming CLA or CIN (see Iacus, King, & Porro, 2011, for a relevant methodological discussion). As will be seen later, attainment at age 7 is by far the most powerful predictor of final attainment in our data, accounting for 88 percent of the estimated individual variance in a multilevel model predicting attainment at different stages. An identified SMLD was the next most powerful predictor of this outcome. No special need, followed by attainment at age 7, were the most powerful predictors of being CIN. Finally, EFSM was selected because we wished to match on socio-economic status, and this also proved a strong predictor of being CIN or CLA when added to the other three variables. In these ways we allowed, as far as we could, for the known and unknown differences between groups which might affect the outcome.

Our decision to match on 'SEN at any point' reflected our perception that problems such as learning difficulties were probably present throughout a child's care career but might not be noted till a relatively late stage. By allowing matches to be made on information not available at KS1 we reduced this inaccuracy but risked masking real changes. Against this possibility, our decision to match on both 'No SEN' and SMLD meant that the groups were exactly matched on SMLD but only 'coarsely matched' on other SEN (for example, a child with BESD might be matched with one with MLD; cf. Iacus et al., 2011). In practice this allowed the matched groups to diverge sharply in attainment and other characteristics (see Table 1 below).

Missing data

SEN, other binary variables and exclusions were counted as absent unless recorded. In the Main Cohort all children had a KS4 attainment score. Some other attainment scores were missing (12% at KS1, 10% at KS2, 12% at KS3). We used the SPSS multiple imputation procedure to predict missing values from other available data and the pooled results from five iterations have been used in the descriptive data presented in Table 1.

Children with missing data on EFSM or KS1 attainment score (14% in total) were excluded from the matched sample. Within this sample, 14% were missing information on at least one of the following: KS2 attainment (5%), KS3 attainment (9%), unauthorised absences in at least one of the years used (5%). We compared the results of our regressions when using a listwise deleted data set (the default option in our analysis packages) and imputed data sets, and these yielded almost identical coefficients. In the interests of consistency, therefore, all analyses on the matched sample use listwise deletion.

Normality

The outcome variables used in these analyses were bimodal with a marked spike on the left where a number of children scored 0. To verify our results against the assumption of a normally distributed outcome, we transformed the outcome variable using the MlWiN NSCO (normalising scores) command. This normalised the score except for the 'spike'. If the spike or lack of normality had been a serious problem, it would be expected that regressions run with normalised scores and/or with cases in the spike excluded would yield substantially different results to regressions run before normalisation and with all cases included; however, this was not the case. Our results are therefore based on the standardised but untransformed score.

Ethical approval

Approval to obtain the anonymised data and to use them for the specified purposes was granted by the United Kingdom Government's Department for Education. Ethical approval for this secondary analysis was obtained from the University of Oxford.

Results

Attainment and related variables at different stages

Table 1 sets out similarities and differences between the key groups in our analysis. Beginning with an examination of the Main Cohort, the table reveals that the key differences are:

- The low educational starting point of CIN and CLA at around 1 standard deviation below the mean for the cohort as a whole
- Their subsequent deterioration to around nearly 1.5 standard deviations below the cohort mean at KS4
- Their much more unfavourable situations in terms of poverty (eligibility for free school meals in 2004) and special educational needs both in 2004 and over the course of their schooling
- The increasing disparity between them and those who were neither CLA nor CIN in terms of BESD (behavioural, emotional and social difficulties) and attendance at non-mainstream schools

The low starting point of CIN and CLA does not reflect the effects of care. At this point none of the CIN and only 1 in 5 (21%) of the CLA were known to be in care. The variables in Table 1 account for some but not all of this low initial attainment. Much of

the remainder probably reflects the very difficult home circumstances of CLA and CIN (Sinclair et al., 2018).

[Insert Table 1 around here]

Moving on to examine the matched sample, the most striking feature of Table 1 is the divergence in the attainment of CIN and CLA as against their controls. The latter improved their performance (from -.82 *SD* to -.56 *SD*) despite being more likely to be assessed as having 'moderate learning difficulties' at some point in their school career (17% v 11%), a fact which might have suggested greater difficulties with education. Improvement among the controls may have reflected regression to the mean, a tendency found in many distributions for those at the bottom to tend rise towards the centre. In the Main Cohort, those with attainment of -1 *SD* or less compared with their peers improved their average attainment from -1.85 to -.92 *SD*. Such improvements may represent positive factors (such as encouraging parents) or chance ones (e.g. they were ill during the initial assessment), which are not included in the data.

Over the same period the performance of CIN and CLA declined (from -.82 *SD* to -1.36 *SD*), a fall accompanied by a sharp rise in the proportions of CLA or CIN attending an NMS school at KS4 (6% to 28%) or identified as BESD (6% to 25%). All subsequent analyses use this matched sample and represent an attempt to understand these trends.

Changes in trajectory and the timing of entry to care

The rise in the proportions of CLA and CIN identified as BESD or admitted to NMS schools suggests a link between their behavioural and emotional difficulties, their social situations and their academic performance. If so, indices of all these variables might be affected by admission to care. Figures 1 to 3 relate the trajectories of attainment and two more direct indices of difficulties with schooling – unauthorised absences and

exclusions – to the timing and duration of care.

[Insert Figure 1 around here]

The left-hand panel in Figure 1 describes the growth in rates of unauthorised absence among those who never entered care (Controls and CIN). These increase from year to year but much more sharply among CIN (top three lines) than controls (bottom line).

The picture in the right-hand 'care panel' is much more complex. The early entrants groups (KS1 and KS2 Entry) entered care in or before primary school and were either entering it or already in it throughout the period covered by Figure 1. Their rates of unauthorised absence were similar to those of the controls but much lower than those of CIN, even though the latter are expected to have less severe difficulties.

The absence trajectories of the later entrants (KS3, KS4a and KS4b Entry) resemble those of CIN as long as they are outside care. When a group starts to enter care, its trajectory falls or becomes less steep and subsequent falls mean that all but one of the CLA groups has a final absence rate lower than that of any CIN group (for similar findings see DfE, 2018b; Wijedasa, 2017).

[Insert Figure 2 around here]

Figure 2 gives the trajectories of exclusion. These are proportions of students excluded permanently or for a fixed period over the course of a year. (The vast majority of exclusions are for a fixed period which explains why we amalgamated these variables.) The overall pattern is 'hump-backed', rising rapidly from a low beginning, peaking, with the exception of two groups, in 2011, and then falling rapidly. The exclusion rates of CLA are not, on average, lower than those of CIN. They do, however, rise more sharply while they are outside care, peak at much higher point outside care, and then fall more sharply within it.

Finally, Figure 3 gives the standardised attainment rates for comparison groups over the same period. (Our data set only contained attainment scores for 2004, 2008, 2011 and 2013. The use of straight lines between these points in the figure assumes that changes between these scores occurred at an even rate.) As can be seen the attainment of the controls rises, steadily at first and then more sharply. By contrast the attainment for CIN falls. (Those CIN in 2012 and 2013 include many children with severe impairments and they fall from a low base.) The relative attainment of CLA also falls over the periods they are not in or entering care. With the two strong exceptions of the KS4a and KS4b entry groups, it rises or holds steady for all CLA groups over the time they are in care.

[Insert Figure 3 around here]

Figures 1 to 3 describe similar processes. The situation of the vulnerable groups (CIN and CLA) deteriorates while they are out of care. On entry to care, deterioration ceases or becomes less pronounced. Nevertheless, the children enter care with the relationships with school or schooling and the attainments they acquire in the community. In this way, progress from then on, while appearing to be better than would otherwise have been the case, still reflects what has gone before. And this effect may be particularly pronounced with the KS4 entry groups.

Trajectories: Controlling for individual differences and changes over time

The comparisons made in Figure 3 did not take account of variables other than attainment. Differences in the trajectories might also reflect other differences between individuals. Table 2 therefore takes additional known variables into account. Its three regressions predict attainment at the end of a Key Stage in terms of the child's situation at the end of the previous Key Stage. As can be seen, the amount of variance explained is extremely high and the influence of 'unknown variables' must be lower than might

have been feared.

[Insert Table 2 around here]

The key numbers in Table 2 are the 7 group coefficients (these are separated by blank rows from the constant and other variables). These coefficients record 'adjusted improvements' – the estimated amount in standard deviations by which the group improves over or falls behind the comparator group over the course of a stage when taking account of the other variables in the equation. The comparator group was the CIN 2012, selected as our primary focus is in comparing the 'vulnerable groups'. As the relative attainment of this group is declining, a coefficient of 0 also implies a decline. The coefficients in bold type are those which apply to a group in their entry or post-entry period relative to care. As explained later, the figures in brackets are the adjusted coefficients with absences and exclusions removed from the equation.

In general, these data mirror the Figure 3 graphs. Compared with the comparator group (CIN 2012) the controls progress strongly at all stages. So too do the KS1, KS2 and KS3 groups over the stages in which they enter care or are in it. By contrast the KS3, KS4a and KS4b groups mirror or fall behind the comparator over the stages before they enter care. The same is true of the two remaining CIN groups.

The key divergence occurs during KS4. At this point the controls, previously progressing less strongly than those in care, now made a rapid advance, while the KS4a and KS4b groups fall rapidly behind and this despite their entry into care. As with the graphs these groups again provide the exception to the apparent rule that the attainment of 'at risk' groups tends to decline outside care and improve within it.

The declining performance of the KS4 groups in care partly reflects the association of pre-entry absences and exclusions on the KS4 outcome. If these variables are excluded the coefficients of the KS4 groups become even more negative (see figures

in brackets). By contrast excluding these variables appears to improve the coefficients of those in care during the previous stage. These changes would be expected if the positive impact of care on outcomes is partly mediated by its tendency to reduce exclusions or unauthorised absences or the poor relationships with school they may represent. Irrespective of this explanation, the independent variables in our equations (most obviously attainment) are themselves likely to be influenced by care so that our 'adjusted coefficients' almost certainly underestimate its impact.

Time in and time outside care: The impact on vulnerable children

Table 2 has shown that outcomes at each Key Stage can be predicted by fixed 'individual variables' such as SMLD and by input variables that change over time (e.g. absences during the previous year or stage). Table 3 adds a third set of 'time variables'. These are concerned with:

- The passing of time – considerations of regression to the mean together with the performance of the controls led us to expect that attainment should naturally increase over time
- Time at risk but out of care – the previous analyses suggest that this should have a negative impact
- Time in care – we expected this to have a neutral effect – in other words the benefit of care for all children should arise because they are no longer at risk out of it

Multi-level models 1 to 3 in Table 3 are designed to test these hypotheses. The Table includes all but 5 of the variables from Table 2, omitting these for simplicity and because together they explained minimal variance (.005). The models are built sequentially with each model including all the variables included in the previous one.

An initial variance model (not shown in Table 3) suggested that 64% of the variance in outcomes (Key Stage attainment scores) at Key Stages 2, 3 and 4 was accounted for by differences between individuals and 36% by differences in their response at different Stages. Just three variables – Key Stage 1 attainment, MLD, and SMLD – accounted for 92% of the estimated individual variance, with Key Stage 1 attainment explaining 88% when entered on its own.

[Insert Table 3 around here]

The individual model provides a sobering reminder of how much of a child's future attainment is predictable at age 7. The time model shows that, other things being equal and at this average level of attainment, children will tend to improve with 'years' having a positive coefficient of .026. Time in care and time at risk (i.e. being in the CIN or CLA group but not yet in care) both had negative coefficients with the time at risk being more negative (-.065) than time in care (-.026). As we have seen these children can be expected to decline educationally and particularly so while out of care.

Adding the input variables allows for the poor relationships with school and other bad experiences the child may take with them into care. Allowing for these changes the time coefficients positively (years to .075, years at risk to -.045 and years in care to -.010). On this evidence removal of a child to care would, over 10 years, result in an improvement of around .35 of a standard deviation over what would have happened if they had been left where they were – an equivalent of roughly 1 grade in each of six subjects. This calculation almost certainly understates the impact of care since it itself appears to influence some input variables such as absence and this would tend to lower coefficients when children spend more than one stage in care. If we had included time before age 7 it would have been expected to have a strong influence on initial attainment and thus an even stronger influence on subsequent ones.

The last model reflects our expectation that in general CIN and CLA would do less well at KS4 than in earlier stages and that the KS4 entry groups would not do well. As predicted both the KS4 Stage and being a member of a KS4 entry group were negatively associated with outcome. We expected that the KS4 entry groups would do particularly badly at KS4. However, further investigation showed that interactions between KS4 entry group and KS4 stage were positively, not negatively, associated with outcome. In addition these entry groups were more negatively associated with outcome if the model was restricted to the KS2 and KS3 Stages (KS4a -.049; KS4b -.18). All this suggests that time in care has much the same positive effect on the KS4 groups as on others. Their negative results as shown in the previous analyses therefore seem to reflect the particular difficulties of these groups and the poor relationships with school and other experiences that they take with them into care.

Even with the additional variables added in the Stage 4 model, this explains only 13 percent of the 'situational variation' associated with Key Stages. Other variables not included in the model – variations in the quality of care (Sinclair, 2006a, 2006b), the arrival or departure of violent cohabitees, interest taken by a particular teacher and so on – must determine the bulk of the variation. A child's setting in care or out of it does not determine these things but may provide an opportunity for them to take effect.

In summary, the modelling suggests that the low attainment of CLA and CIN is heavily determined by their attainment at age 7. Subsequently it declines relative to the cohort but more sharply outside than inside care. If account is taken of the situation at entry to care, progress in care at least comparable to that of the cohort as a whole. It is, however, progress from a lower starting point, and also influenced by relationships with school that built up before entry to care. What, on average, care does not do is enable children to catch up. It should, however, provide the opportunity for this to occur.

Conclusion

Our article examines the progress of CLA and CIN both in and out of care. Our results strongly suggest that care benefits the attainment of those who enter it before the age of 14. Later entrants may have benefited in the same way as their improved attendance and our multi-level model suggests. They had, however, very little time to make good their previous poor progress. In addition, they had a major disruption to their lives at a time leading up to their main examinations. For them, educationally at least, it may well have been a case of too little, too late. Younger entrants to care appear to benefit through removal from situations which have held them back and would have continued to do them educational harm. By contrast the CIN who remain at home continue to fall behind their peers.

In considering these results it is useful to draw on the broader, mixed-methods study of which our analysis was part (Sebba et al., 2015). The 26 young people interviewed as part of this study were adamant that being at home had been bad for their education and that entry to care had benefited it (Berridge, Bell, Sebba, & Luke, 2015). The young people described their parents' alcohol and substance misuse or mental ill health; their feelings of fear and experience of shouting, violence, hunger and abandonment; and their difficult relationships with new male cohabitees. They saw the effects on their education as including an inability to concentrate, anger and aggression, disciplinary problems and lack of confidence, difficulties with which some teachers dealt better than others. In contrast, admission to care resulted in a safer and more settled existence which, for most, benefitted their schooling.

Complementing these interviews, a previous paper (Sinclair et al., 2018) gave statistical reasons for thinking that the low attainment of the CIN and CLA at age 7 cannot be fully explained by their poverty or special needs and is strongly influenced by

family situations. The latter are also the most obvious explanation for the continuing decline of CIN and CLA after age 7 and outside care discussed above. Care removes children from situations that appear to damage their education, and allows space for the 'regression to the mean'. Nevertheless, they enter care with levels of attainment and relationships with school that have been formed outside it and which powerfully determine their final attainment, and, in some cases, their continuing educational decline. Allowing for previous history increases the degree to which care appears to halt or greatly reduce decline. On average it does not reverse it.

How this 'average effect' is achieved cannot be determined by studies such as ours. Very probably the impact of care is underestimated in our equations. In these we treat 'learning difficulties', initial attainment and absences as independent variables whose impact has to be discounted before we estimate that of the environment. In truth, however, disorganised and troubled families are likely to affect the variables we treat as independent, just as the strains of looking after a troubled child can further disorganise the family itself. Nor are the children passive actors in these situations. Being absent without authorisation is, for example, an action they take. They shape their environments as well as being shaped by them. Thus the imperative is not to attribute blame for a complex and highly interactive situation, but rather to develop interventions that can shift what is going on.

Two final caveats may help to explain our suggestions for policy and practice. First, removal from home may be one way of altering the situation for the better. For most of the CIN. however, this option will not be affordable, available or appropriate. For them other ways must be found for dealing with similar difficulties. Second, our equations explain very little (13 per cent) of the situational variance. Care is almost

certainly not the only potentially effective intervention, nor on its own, may it be adequate to enable children to catch up.

These findings have broad implications for practice. They suggest that programmes tackling these issues should be:

- Preventive – these problems start before 7 and should be tackled early – we estimate that around 90 percent of the individual element in attainment is fixed by age 7
- Inclusive – at age 7 most of those who are CLA at age 16 are not yet in care and difficult to identify. It is more equitable and practical to include CIN. Despite their challenging background and low attainments, they have prior to the current CIN review (DfE, 2018c) received much less policy attention than the CLA
- Responsive to problems that arise later, particularly those associated with disaffection with, and unsatisfactory experiences of, secondary school. Teachers need to be better equipped and supported to deal with these very vulnerable children
- Adaptive – there are a variety of different correlates of low attainment: interventions need to be adapted to the different causes of low attainment they suggest
- Multi-disciplinary to assure appropriate assessment and to enable social interventions to remove barriers to learning and educational ones to exploit the resulting opportunity
- Optimistic – care at least for the earlier entrants appears, on average, to avoid further educational damage, but not to remedy the damage already done. How to do this is the urgent task

Interventions in keeping with these requirements would include any developed for the SEN (e.g. ASD) common among CLA and CIN; those involving parents (e.g. Scott, Sylva, Doolan, Price, & Landau, 2010) or removal (not necessarily total) from the stress associated with them; and those based on learning theory and targeting behaviours such as unauthorised absence (such as Treatment Foster Care Oregon; see, for example, Leve, Fisher, & Chamberlain, 2009). There are also broader policy concerns about the high rates of exclusion from some schools and the tendency to 'off roll' lower attaining pupils to improve overall results (House of Commons Education Committee, 2018; Ofsted, 2018).

These and similar hypotheses should provide a way to tackle the methodological limitations of this research. We cannot use randomisation to assess the long-term effects of care, nor can we be sure that an account based on children known to be in trouble at 16 will generalise to children who have been CIN or CLA but are not so at 16. The latter issue is being addressed in a follow-on to this research which will collect data on children who became and ceased to be CLA or CIN at earlier dates. This, however, will not overcome the limitations associated with any observational study.

Notwithstanding these limitations, we can, however, develop interventions which fit our findings and the explanations we have given. These can be trialled on an experimental basis and with a variety of groups. Educational interventions which include a family component can test our assumption that family troubles lie at the root of the downward slide of the CLA and CIN. If carried out in foster and residential care they would test the assumption that care provides a chance to make up for a lack of past progress. Such steps would provide both an indirect test of our interpretation and, hopefully, a direct way of improving both our model and – more importantly – the education of both CLA and CIN.

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Table 1. Distribution of main variables between CIN, CLA and other pupils.

		Main Cohort				Matched Sample	
	Period applies	Not CIN or CLA (616,186)	CIN Not CLA (20,383)	CLA (6,236)	CIN or CLA 26,619	CIN or CLA (22,567)	Controls (22,567)
Mean standardised imputed attainment	KS1 (2004)	.04	-.93	-1.04	-.95	-.82	-.82
	KS2 (2008)	.04	-.99	-1.05	-1.00	-.88	-.77
	KS3 (2011)	.05	-1.24	-1.22	-1.23	-1.08	-.77
	KS4 (2013)	.06	-1.43	-1.52	-1.45	-1.36	-.56
CIN	2012/13	0%	100%	0%	77%	77%	0%
CLA	2013	0%	0%	100%	23%	23%	0%
EFSM in 2004	Invariant	16%	45%	55%	49%	50%	50%
Female	Invariant	49%	51%	46%	50%	51%	41%
White British or Irish	Invariant	70%	75%	71%	74%	78%	68%

English spoken at home	Invariant	88%	90%	92%	90%	94%	84%
No Special Need	2004	82%	65%	61%	64%	71%	71%
	Ever	80%	44%	30%	41%	42%	42%
SMLD	2004	0%	5%	4%	5%	3%	2%
	Ever	0%	7%	4%	4%	4%	4%
MLD	2004	2%	6%	8%	7%	7%	9%
	Ever	4%	11%	13%	11%	11%	17%
ASD	2004	0%	3%	2%	3%	3%	2%
	Ever	1%	6%	4%	5%	5%	4%
BESD	2004	1%	4%	10%	6%	6%	4%
	Ever	4%	20%	36%	24%	25%	15%
KS1 NMS School	2004	0%	8%	6%	7%	6%	3%
KS4 NMS school	2013	3%	30%	38%	32%	28%	12%
KS1 attainment Score missing	2004	12%	12%	15%	13%	0%	0%
EFSM status at KS1 Missing	2004	12%	7%	8%	7%	0%	0%
Special Need ever code missing	Ever	12%	9%	7%	8%	0%	0%

Table 2. Attainment at end of each Key Stage as a function of previous attainment and other predictors.

Dependent variables	KS2 attainment		KS3 attainment		KS4 attainment	
	Beta	S.E	Beta	S.E	Beta	S.E
(Constant)	-.49	.02	-.07	.02	.13	.02
Controls	.10	.01	.12 (.13)	.01	.31 (.40)	.01
KS1 entry	**.01**	**.02**	**.17** **(.19)**	**.02**	**.22** **(.33)**	**.03**
KS2 entry	**.24**	**.02**	**.19** **(.21)**	**.02**	**.28** **(.42)**	**.03**
KS3 entry	-.02	.02	**.15** **(.15)**	**.02**	**.22** **(.26)**	**.03**
KS4a entry	.04	.03	.03 (.04)	.03	**-.13** **(-.20)**	**.04**
KS4b entry	.01	.02	-.01 (-.00)	.02	**-.40** **(-.46)**	**.03**
CIN 2013	.00	.01	-.02 (-.01)	.01	-.10 (-.06)	.02
CIN both Years	-.05	.01	-.12 (-.12)	.01	-.07 (-.04)	.02
Male	.11	.01	-.07	.01	-.08	.01
EFSM in 2004	-.07	.01	-.07	.01	-.04	.01

English spoken at home	-.04	.01	-.05	.01	-.13	.02
White British or Irish	-.03	.01	-.00	.01	-.10	.01
No Special Educational Need	.34	.01	.13	.01	.05	.01
Autism Spectrum SEN	-.05	.02	-.25	.02	-.03	.02
Moderate Learning SEN	.12	.02	-.06	.02	-.16	.03
Multiple/Severe Learning SEN	-.13	.01	-1.00	.01	-.22	.02
Behaviour/emotional/social SEN	-.06	.02	.07	.01	-.00	.02
Non-mainstream school	-.16	.02	-.99	.02	-.69	.02
Attainment score	.71	.00	.69	.00	.52	.01
Excluded			-.07	.02	-.47	.01
Unauthorised Absences			-.67	.06	-2.38	.05
Variance explained	70%		.80%		59%	

Table 3. Multi-level models predicting Key Stage attainment with variable sets.

Fixed Part of Model	Individual model	Time model	Input model	Stage 4 model
	Coefficient	Coefficient	Coefficient	Coefficient
Constant	-.158	-.137	-.486	-.481
Individual Variables				
Attainment at age 7	.724	.728	.658	.657
Severe/Multiple Learning difficulties	-.894	-.874	-.605	-.602
Moderate learning difficulties	-.330	-.275	-.152	-.087
Time variables in years since 2004				
Years		.026	.075	.082
Years at risk but not in Care		-.065	-.045	-.043
Years in care		-.026	-.010	-.011
Input Variables				
Autism Spectrum Disorder			-.219	-.221
Behavioural Emotional Social Difficulty			-.139	-.138
Non-mainstream School			-.798	-.805
Excluded			-.584	-.622

Absence rate			-1.198	-1.278
Stage 4 variables				
KS4 Stage				-.139
KS4a entry				-.051[1]
KS4b entry				-.130
Random Part of Model				
Individual Level Variance	.089	.073	.022	.023
Individual Variance Explained	92%	94%	98%	98%
Stage Level Variances	.620	.594	.546	.540
Stage Level Variance Explained	0%	4%	12%	13%
IGLS Deviance Measure	317,752	310,375	290,959	289,955
Individuals in model	44,678	44,678	44,678	44,678
Stages by Individuals in model	128,142	128,142	128,142	128,142

[1] This is the only coefficient in the Table that is significant at a level below .001 (Its SE is .020). All other coefficients are 5 to many 100 times greater than their SEs.

Figure 1. Rate of unauthorised absences by year, group and entry to care.

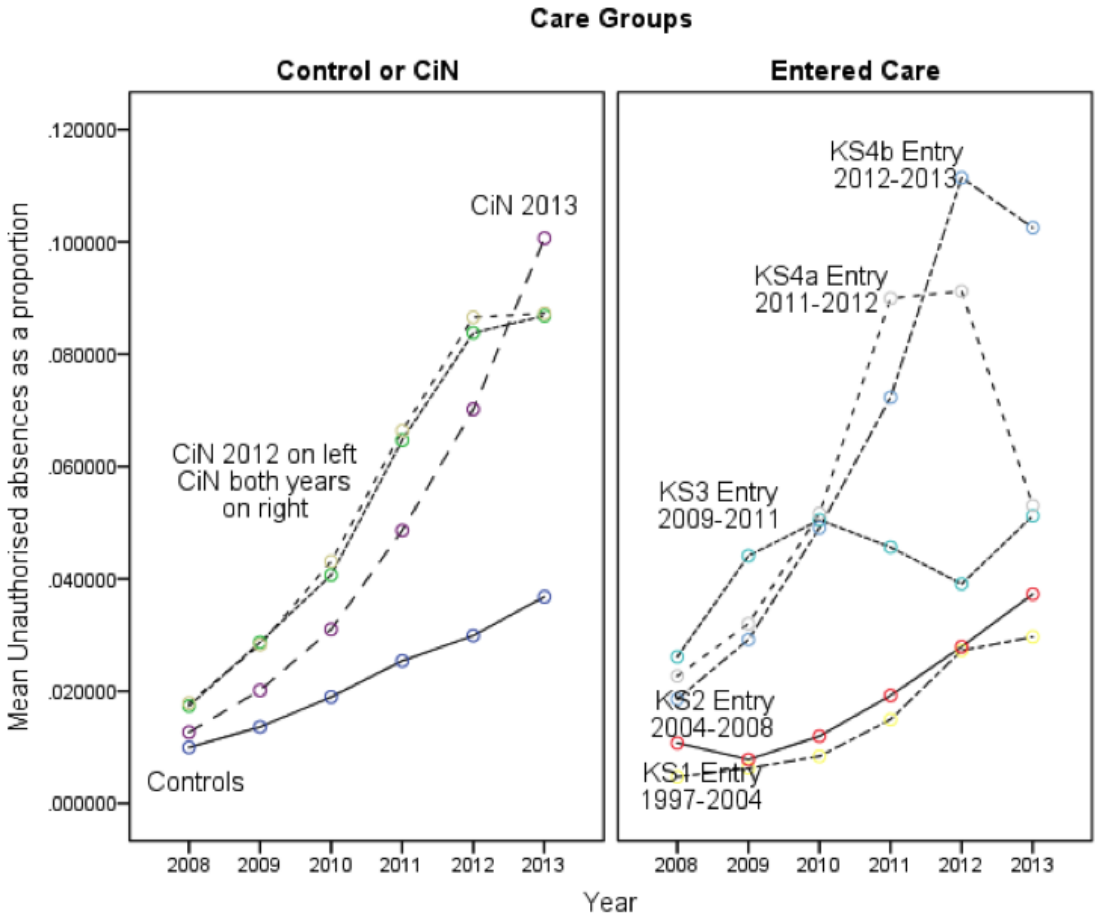

Figure 2. Rate of exclusions by year, group and entry to care.

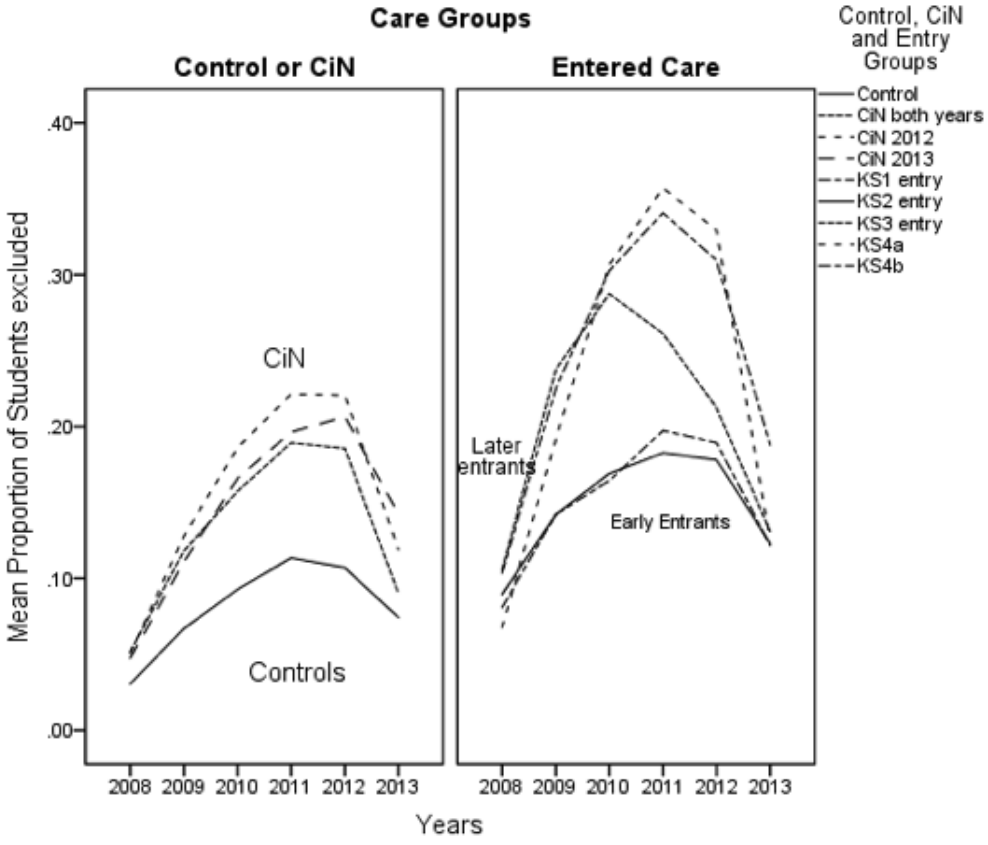

Figure 3. Mean standardised attainment by year, group and entry to care.