



The social gradient in English child welfare services: an analysis of the national children's social care datasets

Full report

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Contents

1.	Intro	oduct	tion	7
	1.1.	Back	kground	7
	1.2.	UK e	evidence for welfare inequalities	8
	1.3.	Inte	rnational context	10
	1.4.	Aim	s and objectives	11
2.	Met	hods		11
	2.1.	Ethi	cs and data management	12
	2.2.	Data	asets and data linkage	12
	2.3.	Coh	ort description and inclusion criteria	14
	2.4.	IMD) and social gradients	15
	2.5.	Stat	istical models	16
3.	Find	ings .		18
	3.1.	Soci	al gradient of intervention	18
	3.2.	The	inverse intervention effect (Simpson's paradox)	20
	3.3.	Reg	ression models for social gradients	21
	3.4.	Inte	rvention pathways	24
	3.5.	Child	d characteristics	25
	3.5.2	1.	Gender	25
	3.5.2	2.	Age	25
	3.5.3	3.	Ethnicity	26
	3.6.	Epis	ode characteristics	27
	3.6.1	1.	Factors at assessment	27
	3.6.2	2.	CP plan categories	
	3.6.3	3.	Referral source	
	3.6.4	1.	Repeat episodes	29
	3.6.5	5.	Cease times	
	3.7.	LSO	A indicators	
	3.7.1	1.	Urban / rural classification	
	3.7.2	2.	Population density	
	3.8.	LA ir	ndicators	
	3.9.	Sum	nmary of findings	
4.	Disc	ussio	on and implications	
				3

4.1.	Limitations	40
4.2.	The social gradient of referral	41
4.3.	Neglect and the threshold to child protection	43
4.4.	Rural poverty and inequality	44
4.5.	Outcomes and the cost of inequality	46
5. Con	clusion and recommendations	47
Reference	es	51
Appendi	×	57

List of Figures

Figure 1. Extract from the CIN Census	13
Figure 2. Referral rate against income deprivation for all LSOAs in England	19
Figure 3. Referral rate against income deprivation for all LAs in England	20
Figure 4. Referral rates within each LA stratified by LSOA deprivation	21
Figure 5. Relationship between LA deprivation and the social gradient for referrals	22
Figure 6. Relationship between LA deprivation and the social gradient for CP plans	23
Figure 7. Referral rates for urban and rural areas stratified by LSOA deprivation	32
Figure 8. Referral rates for sparsely and densely populated areas stratified by LSOA deprivation	33

List of Tables

Table 1. Summary of indicators used for analysis	13
Table 2. Intervention rates and social gradients at different thresholds	24
Table 3. Gender and the social gradient of referral	25
Table 4. Age and the social gradient of referral	25
Table 5. Ethnicity and the social gradient of referral	26
Table 6. Factors at assessment and the social gradient of assessment	27
Table 7. CP plan categories and the social gradient of CP plans	28
Table 8. Referral source and the social gradient of referral	28
Table 9. Comparative social gradients for re-referrals and repeat CP plans	29
Table 10. Percentage of re-referrals within 12 months (as a proportion of total referrals)	29
Table 11. Percentage repeat CP Plans (as a proportion of total CP Plans)	30
Table 12. Comparative social gradient scores for CIN and CP cease times	30
Table 13. Comparative social gradient scores for CP cease times	31
Table 14. Percentage of CIN episodes ceasing within 3 months	31
Table 15. Percentage of CP plans ceasing within 6 months	31
Table 16. The effect of LA deprivation and urban/rural classification on the social gradient (referr	als).
	33
Table 17. The effect of LA deprivation and population density on the social gradient (referrals)	34
Table 18. The effect of different LA contexts on referral rates (adjusted and unadjusted)	36
Table 19. The effect of different LA contexts on the social gradient of referral (adjusted and	
unadjusted)	37

Acronyms

CIN	Child(ren) in Need
CLA	Child(ren) Looked After
CSC	Children's Social Care
СР	Child protection
DV/DA	Domestic violence / Domestic abuse
DfE	Department for Education
DHCLG	Department for Housing, Communities and Local Government
IMD	Index of Multiple Deprivation
LA	Local Authority
LSOA	Local Layer Super Output Area
MASH	Multi Agency Safeguarding Hub
MSOA	Middle Layer Super Output Area
NPD	National Pupil Database
ONS	Office for National Statistics
PHE	Public Health England
PMR	Pupil Matching Reference
UPN	Unique Pupil Number

1. Introduction

This report presents findings from a quantitative study of the national children's social care datasets (CSC) from 2015-19. It follows up on a two-year mixed-methods project, funded by the Nuffield Foundation, examining the link between system conditions and welfare inequalities in CSC (Hood *et al.*, 2020a). The work was carried out by researchers based at Kingston University and St Georges, University of London, in collaboration with the CSC data team from Ofsted, the inspectorate for children's social care. In this introductory section we discuss the background to the study, outline its aims and objectives, and summarise the existing evidence base for child welfare inequalities.

1.1. Background

Previous work carried out by Hood *et al.* (2020a) showed how the design and organisation of children's social care (CSC), combined with external constraints and pressures, gave rise to systematic inequalities in provision. The study identified some of the circumstances and contextual effects associated with rates of referrals and statutory CSC interventions. The analysis showed that rates of statutory CSC interventions were different for different groups of children. Children's chances of being referred to CSC and receiving an assessment or intervention varied systematically according to how deprived their neighbourhood was. To investigate this further, individual case-level data from six English local authorities (LAs) was used to calculate the *social gradient* of services for different groups of children.

Social gradient – the tendency for higher levels of deprivation to be associated with higher rates of intervention. Children living in more deprived neighbourhoods have a higher chance of a CSC intervention than children living in the less deprived neighbourhoods. The gradient itself refers to the upward slope in intervention rates when measured against deprivation. The steepness of the social gradient varies between different local authorities, and among different groups of children.

The analysis carried out by Hood et al. (2020a) found that social gradients tended to be lower or higher depending on children's demographic characteristics, their assessed needs, and the characteristics of neighbourhoods and LAs. The research contributed new evidence on the varying steepness of social gradients for different groups of children. Social gradients tended to be steeper in less deprived LAs, which also had higher intervention rates than more deprived LAs when similarly deprived neighbourhoods were compared. Other researchers have referred to this phenomenon as the 'inverse intervention law' (Bywaters *et al.*, 2015; Keddell *et al.*, 2019; Webb *et al.*, 2020b). In this report, we prefer the term inverse intervention effect.

Inverse intervention effect – the tendency for less deprived LAs to have higher intervention rates than more deprived LAs when the comparison is between neighbourhoods that are equally deprived, but lower intervention rates when the comparison is between all neighbourhoods combined. Less deprived LAs also have a steeper social gradient, so inverse intervention particularly affects children from more deprived backgrounds.

Hood et al. (2020a) found that both the social gradient and the inverse intervention effect tended to increase as children progressed through the system from the point of referral and were particularly prominent at the stage of a child protection conference or child protection plan. The social gradient was also found to be steeper for younger children (compared to older children) and for White British children (compared to all other ethnic groups), and particularly high for children assessed with Neglect.

Both the social gradient and the inverse intervention effect reflect avoidable inequalities in the system. They are not due to a random 'postcode lottery' but reflect systematic differences in the interaction between demand and provision, i.e. how services identify, assess, and respond to welfare concerns among children from similar socio-economic backgrounds. Because they stem from structural and systemic issues, inequalities cannot be observed in a decision to intervene (or not) in a single case. Child protection plans and accommodation in care will always be necessary for some children. What inequalities tell us is that services – and the institutional context in which they operate - are struggling to address the social context of demand. This includes families' material circumstances, which impact on every aspect of parenting and family functioning (Cooper and Stewart, 2013, 2017) but often remain in the background when social workers are assessing risk (Jack and Gill, 2003). Families living in poverty also rely more on community assets and resources, many of which have suffered from government spending cuts. These and other factors have produced a shift towards 'late intervention' in CSC, so that referrals are much more likely now to be met with a protective intervention than they would ten years ago (Hood et al., 2019). A vicious circle has ensued, with increasing rates of high-cost late intervention (particularly accommodation in care) paid for by yet more cuts in universal and preventative services, including youth and community work (Action for Children et al., 2017).

1.2. UK evidence for welfare inequalities

Previous reviews (Dyson, 2008; Bywaters *et al.*, 2016b) have noted the surprising dearth of UK research into social inequality in the provision of child welfare services. Deprivation has long been known to be an important driver of rates of CP interventions and admissions to care (Oliver *et al.*, 2001; Dickens *et al.*, 2007) while prevalence studies have also indicated the presence of a social gradient for child abuse and neglect (Radford *et al.*, 2011). However, more detailed investigation of the social gradient has been relatively rare until recently. A longitudinal study by Sidebotham *et al.* (2006) concluded that poverty was a strong risk factor for CP investigations and registrations in England, while two studies carried out in Scotland (Gillham *et al.*, 1998; Mok *et al.*, 2010) examined the association between levels of substantiated abuse and measures of locality or neighbourhood level deprivation. In Northern Ireland, socio-economic circumstances were among the factors

considered by Hayes and Spratt (2009), although their data was insufficient to draw conclusions about the link to intervention pathways. Most of this research has taken a demand-side approach, treating poverty as a driver of demand for services and potential risk factor for maltreatment, without necessarily considering the role of supply-side factors. Moreover, there has been comparatively little investigation of the intersection between deprivation and other child characteristics, such as age and ethnicity, or in connection with disability. This is surprising, given that significant disparities have been identified in rates of CP interventions among different ethnic groups (Owen and Statham, 2009), and child disability is known to be a significant risk factor for maltreatment (Stalker and McArthur, 2012).

The Child Welfare Inequalities Project (CWIP), which ran from 2015-19, has provided the most substantial body of evidence on welfare inequalities in the UK (Bywaters *et al.*, 2015; Bywaters *et al.*, 2016a; Featherstone *et al.*, 2017; Bywaters *et al.*, 2018; Morris *et al.*, 2018; Bywaters, 2020; Bywaters *et al.*, 2020; Webb *et al.*, 2020a). As part of this work, quantitative analysis was carried out on a representative sample of LAs from each of the 4 UK nations (England n = 18, Scotland n = 10, Wales n = 22, Northern Ireland n = 5). The team also carried out qualitative case studies to investigate perceptions of poverty and their impact on casework and decision-making.

Some key findings from this programme of research were:

- There was a steep social gradient for both child protection plans and accommodation in care, which varied in degree both within and between the constituent countries of the UK.
- The social gradient was steeper for younger children than for older children, while the intersection of deprivation with other factors, particularly ethnicity, was found to play a key role in unequal rates of intervention.
- There was an 'inverse intervention law' (the term used within CWIP), which means that less deprived LAs had higher rates of intervention than more deprived LAs when comparing similarly deprived neighbourhoods.
- More affluent LAs tend to spend more on children's services relative to the level of need, which may lead them to intervene more readily using more high-level protective interventions such as CP plans and CLA.
- Professional practice often does not address families' material circumstances in assessment, planning and intervention.
- Patterns of local income inequality had an impact on the social gradient, which was found to be steeper in LAs that were comparatively unequal.
- There were significant differences in national patterns of inequality; for example, Northern Ireland had a lower social gradient of intervention and lower rates of children in care compared with England, Scotland, and Wales.

The CWIP research showed that systematic inequalities have profound implications for the lives of children and families and are associated with long-term consequences as well as economic costs for society. The social context of children's welfare, such as household income, debt, food poverty, and housing conditions, is generally known to social workers but is rarely seen as a risk factor or priority

for service planning. This often leads to a gap between what families want (or need) from services and what services prioritise in their work with families. This in turn hinders relationship-building and partnership working. The research also suggested that more affluent LAs tend to have more resources relative to the level of need in their area, and so are more interventionist in their approach, i.e. are more likely to use protective interventions (which are more expensive) to deal with child welfare issues compared to more deprived LAs (see also Hood et al., 2019). This tendency has been aggravated by austerity measures since 2010, which have disproportionately impacted more deprived areas leading to acute financial pressures. In addition, the CWIP studies also highlighted the need for more systematic data on parents' socio-demographic characteristics, which are not collected by CSC services, and on children with disabilities in the child protection system.

1.3. International context

Research in a number of different countries has found that families living in poverty (measured in various ways) are disproportionately likely to come into contact with child welfare services (Sedlak et al., 2010; Cancian et al., 2013; Doidge et al., 2017; Lefebvre et al., 2017; Slack et al., 2017; Witte et al., 2019). The usual way to frame this finding is that socio-economic disadvantage is a risk factor for non-optimal development as well as for maltreatment, while recognising that the causal relationships between poverty, child abuse and neglect are complex and multi-faceted (Cancian et al., 2013; Bywaters et al., 2016b). Similarly, research has found some (not all) minority ethnic groups to be over-represented in the child protection system; which groups are over-represented may reflect the social and cultural context of different countries, as well as the history of immigration and colonisation (Roberts, 2014; Bywaters et al., 2016b; Blackstock et al., 2020; Dettlaff and Boyd, 2020; Harnett and Featherstone, 2020). Recognition of structural disadvantage and discrimination against minority ethnic groups has been important when interpreting disparities in intervention rates, which may be viewed in the context of institutional racism in the child welfare system (Hill, 2004; Roberts, 2009) and its often-overlooked links to the criminal justice system (Cunneen, 2019). In the United States, efforts to disentangle the effect of racial bias from other factors, such as family income and caseworker perceptions, on the substantiation of CP concerns have had inconclusive results (Dettlaff et al., 2011; Font et al., 2012). Webb et al. (2020a) conclude that child welfare interventions are bound up with multiple, overlapping forms of structural disadvantage, so it is often necessary to study overlapping ethnic and socioeconomic inequalities together rather than separately.

Studies of child welfare inequalities contribute to a wider research agenda examining health inequalities (Wilkinson, 2005; Marmot *et al.*, 2010; Scambler, 2012; Marmot *et al.*, 2020) and, more generally, the association between income inequality and a range of social and developmental outcomes including educational attainment (Campbell *et al.*, 2005), crime (Rufrancos *et al.*, 2013), mental health (Layte, 2012), and various other indicators of health and wellbeing (Pickett and Wilkinson, 2015). In the United States, Eckenrode *et al.* (2014) found that child maltreatment rates were higher in counties with greater income inequality, as measured by the Gini coefficient, an effect that was more pronounced in poorer counties than in richer ones (see also Schenck-Fontaine and Gassman-Pines, 2020; Zhang *et al.*, 2021). Webb *et al.* (2021) replicated Eckenrode's methodology for LAs in England and Wales, finding that rates of state care (children looked after)

were higher in more unequal LAs but rates of CP plans/registrations were not. Keddell *et al.* (2019) used a health inequalities approach similar to the CWIP (see Section 1.3) in order to examine children's social services in New Zealand, finding strong evidence of a social gradient although limited evidence of an inverse intervention effect. As a result of these studies, an inequalities perspective seems to be assuming greater prominence in the international literature on child welfare.

1.4. Aims and objectives

This study builds on the existing evidence base on child welfare inequalities. It tests the results obtained from earlier studies of LA samples on a national all-England dataset, providing a comprehensive picture of the social gradient in CSC and the phenomenon of inverse intervention. It provides robust evidence that the steepness of social gradients is systematically different for different groups of children living in different geographical areas in ways that give rise to avoidable inequalities. The study extends the findings from previous work to a range of thresholds within CSC and considers the role of contextual variables such as urban/rural classification and population density. It is also the first study to explore the impact of differing levels of inequality on service outcomes such as re-referrals and repeat CP plans.

The overall aim of the research was to investigate the social gradient in child welfare services through an analysis of the national datasets for children in need (CIN), as defined in the 1989 Children Act. These data comprise all local authorities (LAs) in England.

Specific objectives were to:

- 1. Build a data extract from national CIN Census returns to allow an equivalent and extended analysis to those used for smaller samples of LAs.
- 2. Test and refine previous models examining the social gradient of intervention, in order to validate a range of findings.
- 3. Extend the analysis to include more LSOA-level and LA-level contextual indicators, such as CSC expenditure, CSC workforce indicators, public health indicators, and other demographic indicators such as population density, and urban/rural classification.
- 4. Extend the analysis to include episode-level outcomes, such as repeated episodes (rereferrals and repeat CP Plans), and episode cease times (CIN episodes and CP Plans ceasing)

2. Methods

The research was designed as a quantitative analysis of secondary data from the Children in Need (CIN) Census. The CIN Census is an administrative dataset on children referred to social care services in England. The CIN Census includes individual case-level information on the assessed needs of children, and whether they received social care support. In England, each LA is responsible for providing CSC services. All 152 LAs record event-level information as part of their case management process. The CIN Census is treated as sensitive, personal data and is held by the Department for Education (DfE). Ofsted, the national inspectorate for CSC, has an arrangement with the DfE to hold

a limited number of years of CIN Census and CLA returns for analysis to support its statutory remit. For this study, access to the data was agreed with Ofsted and the DfE.

2.1. Ethics and data management

Ethical permission for the research was obtained from the Faculty Research Ethics Committee (Faculty of Health, Social Care and Education) of Kingston University and St Georges, University of London. The main ethical and research governance issues concerned data protection and data privacy in relation to case-level data from the CIN Census and CLA returns. A data protection impact assessment (DPIA) was undertaken and reviewed by the Department for Education (DfE). A data processing agreement was signed with Ofsted (and also reviewed by the DfE) to enable a named analyst based at Kingston University access to an anonymised extract from the CIN Census and CLA returns. Access was via a secure encrypted Ofsted laptop, so that the data was stored and retained on Ofsted servers and any processing remained within the Ofsted environment. Outputs were checked to ensure that they were at a sufficiently high level of aggregation to make it impossible for individuals to be identified, e.g. through a combination of geographical and personal characteristics.

2.2. Datasets and data linkage

The CIN census comprises multiple tables based on a relational model of the data. The census includes tables on referrals, assessments, Section 47 enquiries, child protection plans, and individual child characteristics. The analysis considered all CSC events experienced by each child, i.e. any point of contact in the system, which included all start dates and end dates. A limited extract from the CIN census covering a single year was created to investigate the research questions. The data was accessed by specifying queries in Microsoft SQL Server. The tables were linked using unique LA identifiers, child identifiers, and episode identifiers, all of which are recorded by LAs as part of their case management process.

The CIN census is part of a set of child and pupil-level data collections held by the DfE. The spine of this collection is the National Pupil Database (NPD), which contains information about children attending state-funded schools. The CIN census can be linked to other collections in the NPD using the Pupil Matching Reference (PMR), which is derived from the unique pupil number (UPN). For this study, a link was made with the School Census in order to append Lower Layer Super Output Area (LSOA) codes, which are not recorded in the CIN census, to enable analysis of small-area level data on deprivation. This link was only possible for school-aged children in the CIN census.

LSOA codes were used to link additional administrative data, including the Index of Multiple Deprivation (IMD) scores and estimates of the population size by age and gender. They were also used to link data on urban/rural classification and population density. Middle Layer Super Output Area (MSOA) codes were used to link data on population ethnicity. LA codes were used to link LAlevel contextual variables, including the average IMD scores for each LA. A variety of fixed and timevarying LA-level measures from the Department for Education (DfE), the Department for Housing, Communities and Local Government (DHCLG), the Office of National Statistics (ONS), and Public Health England (PHE) were appended to the CIN census data extract. A summary of the indicators used in the analysis is shown in Table 1, and a diagram showing how the administrative data was linked is illustrated in Figure 1.

Category of data	Indicators	Data source
	Age	CIN census
Category of data Child Characteristics CIN Episode characteristics LSOA characteristics	Ethnicity	CIN census
	Gender	CIN census
	Service provision (e.g. CIN, S47, CPP)	CIN census
	Factors at assessment	CIN census
CIN Epicodo charactoristics	CP Plan category of abuse	CIN census
	Re-referrals / Repeat CP Plans	CIN census
	Episode cease times	CIN census
	Source of referral	CIN census
	IMD scores	DHCLG
LSOA characteristics	Urban rural classification	ONS
	Population density	ONS
	CSC Expenditure (251 outturn)	DfE
	CSC Workforce (CSWW data)	DfE
LA characteristics	Educational attainment	DfE
	Public health indicators (various)	PHE
	Demographic indicators (various)	ONS

Table 1. Summary of indicators used for analysis

Figure 1. Extract from the CIN Census



2.3. Cohort description and inclusion criteria

The annual CIN census covers the financial year (1 April to 31 March) and includes information about every episode that was open during the 12-month period. It includes information on all children who were referred to CSC during the year (even if no action is taken), as well as children who received a CSC service during any part of the year. After a referral is made an assessment is usually carried out to identify if the child is in need of statutory services, which LAs have an obligation to provide under section 17 of the Children Act 1989 (DfE, 2020). A child in need is defined under the Children Act 1989 as a child who is unlikely to reach or maintain a satisfactory level of health or development, or their health or development will be significantly impaired, without the provision of services, or if the child is disabled (Children Act, 1989). The majority of children included in the census are under 18 but it can also include individuals aged 18+ if they are still receiving care or support from children's services.

All LAs submit data through the DfE's online data collection portal COLLECT, which specifies automatic validation rules (Department for Education, 2018a). This validation process reduced the amount of data cleaning required before the linkage of data could begin. Only very minor recodes were required, for example, the conversion of upper- and lower-case characters, and excluding implausible values e.g. for age or episode start dates.

In England, there are 152 LAs with a responsibility for providing children's services. The Isles of Scilly and the City of London were omitted from the analysis due to very small population sizes. To answer the research questions the data extract only included children who could be matched to PMR numbers in the NPD. The match rates (i.e. the proportion of PMR numbers in the Schools Census that matched to PMR numbers in the CIN census) were highest for school-aged children between 5 and 15. The total match rate for the 5 to 15 cohort was 81%. Although UPN / PMR numbers can be allocated to younger children, the study omitted data for unborn children, children aged 0 to 4, and children aged 16 and over. This was due to poor match rates and to minimise the potential risk of under- and over-representation in the cohort profile before and after the compulsory school age. Crosstabulation and correlation analysis were carried out in order to identify any systematic differences between the matches and non-matches. The non-matches were found to be similar amongst males and females. The match rate was found to be slightly higher amongst White children (85%) compared with all other ethnic groups. The match rates were also found to vary between LAs, but they were not correlated with differences in LA rates of activity (referrals, CIN or CPP), levels of average LA deprivation, LA spend on children's services, or CSC workforce indicators. Limitations including those stemming from the age profile of children included in the study are discussed in Section 4.1.

Using the England data, we calculated episode-based rates and person-based rates per 10,000 child population. The figures are generally reported on in terms of prevalence rates (e.g. CP plans at March 31st) or incidence rates (e.g. CP plans starting during a single year). In the absence of information on children not already known to children's services we used population estimates published by ONS in order to calculate population-level rates of service. The data was analysed at different geographical levels of aggregation, including 34,753 LSOAs, 7,201 MSOAs, and 152 LAs.

This report focuses on episode-based and person-based rates from the 2018/19 census return. Overall, the data covered 300,000 referrals, 186,000 CIN episodes (starting during the year), and 34,000 CP Plans (starting during the year) for children aged 5 to 15. Each child can experience multiple CSC episodes in a single year; for example, the number of children referred during the year was 260,000. The rates per 10,000 children aged 5 to 15 were calculated at different levels of aggregation (LSOA, MSOA, and LA), using the 2019 mid-year population estimates published by ONS (ONS, 2019).

2.4. IMD and social gradients

LSOA codes were used to link the individual case-level data to Index of Multiple Deprivation (IMD) scores. IMD is calculated as a weighted score for LSOAs, which are based on seven domains: income deprivation (22.5%); employment deprivation (22.5%); education, skills and training deprivation (13.5%); health deprivation and disability (13.5%); crime (9.3%); barriers to housing and services (9.3%); and living environment deprivation (9.3%) (DHCLG, 2016). LSOAs vary in size and population but on average each is comprised of approximately 1,500 individuals and 650 households. On average each LSOA comprised 230 children aged 5 to 15 (ONS, 2019).

IMD scores are relative measures of deprivation for each LSOA. In this study each of the IMD domains were considered individually. The domain for income deprivation is expressed as the proportion of the population in each LSOA experiencing deprivation relating to low income. It includes individuals on income support, income-based jobseekers' allowance, and income-based employment and support allowance. LSOAs that have different proportions of income deprived families can be compared with one another. Similarly, the employment deprivation domain measures the proportion of working age adults in each LSOA who are unable to work due to unemployment, sickness or disability, or caring responsibilities. LSOAs that have different proportions of working age adults unemployed can also be compared with one another. All IMD domains are expressed on a relative scale, although some are easier to interpret than others. Throughout most of the study, the income domain of IMD is used as the main measure for socioeconomic status, for three reasons: i) it was found to be the strongest determinant for a social care intervention, ii) it is a measure of local area poverty that is relatively easy to interpret, and iii) it has better potential for international comparability compared with other domains. Many of the IMD domains are highly correlated with one another (i.e. correlation coefficients that were greater that 0.8), meaning the results from statistical analysis when switching between different domains of IMD were often very similar. IMD is based around the LSOA measures of relative deprivation, although it can also be summarised at the LA level based on averages of LSOA scores. These were used throughout the analysis to describe levels of deprivation for LAs as a whole.

The term social gradient has its origins in the academic and political work on health inequalities (Donkin, 2014; Marmot, 2017). It is usually used to describe the graded relation between social and economic conditions and health. In this study, the socio-economic circumstances of children's families were measured using IMD scores for LSOAs. The social gradient in CSC refers to the association between socioeconomic status (measured using IMD scores) and rates of statutory CSC interventions. The gradient itself refers to the phenomenon that children living in the least deprived

stratum (i.e. level of deprivation) tend to have a lower chance of a CSC intervention than children living in the more deprived strata above who, in turn, have a lower chance of a CSC intervention than children living in the more deprived strata above them, and so on in a continual upward gradient until the most deprived stratum is reached. The steepness of the social gradient is different in different areas, and amongst different groups of children. A variety of quantitative techniques were used to show how socioeconomic status, as defined using IMD, contributes to the unequal provision of CSC services. This included calculating measures of absolute and relative social gradients in order to show how the steepness of social gradients varied depending on the circumstances and needs of children, the demographics of children, and the characteristics of local neighbourhoods and LAs. The analysis was designed to test the hypothesis that the steepness of social gradients is systematically different for different groups of children living in different geographical areas in ways that give rise to avoidable inequalities.

2.5. Statistical models

To begin with, simpler and more descriptive analysis was carried out in order to compare the effects of deprivation for different children living in different neighbourhoods and LAs. The association between levels of deprivation and rates of provision were presented visually in scatterplots. In each scatterplot a line of best fit was added with linear regression coefficients to show the absolute relation between deprivation and rates of provision. The linear slope coefficient represents the additive change in rates of provision per one unit increase in IMD. Since the unit of measurement for income IMD was expressed as the percentage of families in income deprivation the slope coefficient represents the additive increase in rates of provision for every 1% increase in income deprivation. In general, the problem with absolute measures is that they are sensitive to mean-level population changes which makes relative comparisons between different groups problematic. For example, if rates of provision increase by an equal amount across all levels of deprivation then the relative differences would remain the same, but the absolute differences would increase. Therefore, in order to compare different populations a relative index was required.

In order to calculate relative social gradients, the rates needed to be transformed to a logarithmic scale. The effect of a variable that is linear after logarithmic transformation is called loglinear. An analysis based on log transformations enables the rates to be expressed as multiplicative changes rather than additive changes. Decisions around which type of loglinear regression model to use were guided by the level of aggregation for the analysis, the distribution of the data, the model fit statistics, and the ability to make reliable comparisons across many different models.

The decision was taken to carry out Poisson regression models for modelling rate outcomes. These models were chosen over negative binomial models, even though there was some evidence of overdispersion in the analysis. The reason for not carrying out negative binomial models, which would adjust for the overdispersion, was that the level of dispersion differed depending on the model outcome and the population (or strata), meaning that relative comparability between multiple models was potentially problematic. The consequences for not adjusting was that the Poisson models might have slightly underestimated the standard errors (Lundy and Dean, 2018). However, differences in the effect sizes were found to be negligible and, generally speaking, both

models produced very similar results. For most models, the sample size is so large (n > 7,000) that even very large differences in standard errors would not have changed the interpretation of statistical significance.

In the health inequalities literature, the distinction is made between absolute inequality measures and relative inequality measures (Regidor, 2004). The absolute slope index using linear regression expressing additive change with every unit increase in deprivation is equivalent to the slope index of inequality (SII), whilst the relative index using loglinear regression expressing multiplicative change is equivalent to the relative index of inequality (RII) measure used in health. The main difference is that, in this study, the scale for income IMD was already on an interpretable relative scale meaning it did not need to be transformed into a rank scale (e.g. deciles or percentiles) in order to investigate relative and absolute change in provision. This was ideal because the proportion of families in income deprivation holds real-world meaning and interpretation.

Poisson regression models were estimated within a multilevel framework to adjust for LAmembership and account for clustering within LAs; this controls for the fact that individuals in the same LA are more likely to be similar to one another, or that they are more likely to receive a similar service, compared with children from a different LA (Robson and Pevalin, 2015). LSOA-level IMD indicators were group-mean centered and the LA-level IMD indicators grand-mean centered. This was done in order to separate the within- and between-LA effects in the multi-level models (Enders, 2007). Group-mean centering means that LSOA-level IMD describes only the relative differences in deprivation between children within each LA, i.e. the social gradient score within a single LA shows the effect of relative levels of deprivation (the within-LA variation) on the chances of a referral or social care intervention. One of the advantages of centering variables is that it reduces problems of multicollinearity when interaction terms are introduced. It also makes the variables easier to interpret compared with models where the intercept for the slope starts at the lowest values (i.e. it is more desirable to interpret the average intercept and variance around the mean of the 'main effects').

In general, the regression models are used to describe multiplicative changes in rates based on either a 10% increase or decrease in income deprivation. As described earlier income deprivation is the proportion of individuals on income-based jobseekers' allowance, income-based employment and support allowance, or who have a household income below 60% of the national median. The regression models therefore show the predicted changes in rates of provision for every 10% increase or decrease in the proportion of individuals experiencing deprivation relating to low income. This forms the main part of the analysis, which involves comparing relative social gradients for different children living in different geographical areas to identify the circumstances and contextual effects that attenuate or exacerbate these differences. Each contextual indicator was considered in turn. The main reason for reporting the effects of each contextual indicator in turn rather than including all indicators within a single model was, in part, due to the limitations of the data. The absence of data on children not known to CSC (i.e. the absence of a reference category) meant that count regression models had to be carried out to estimate population-level rates and rate ratios. The population denominators for LSOAs, MSOAs, and LAs published by ONS do not include all possible permutations of every child characteristic. This means, for example, it was not possible to investigate the effects of ethnicity by gender and age. In general, each model considers a different

rate outcome (for example rates of referrals or rates of CP Plans), and just two or three exposure variables. Interaction terms were used to formally test the effect of each indicator on the social gradient, for example the effect of LA-level deprivation on the social gradient (i.e. the inverse intervention effect), or the effect of urban/rural classification on the social gradient. Some of the models included multiple interaction terms in order to show the effect of one indicator on the social gradient adjusted for the effect of another indicator on the social gradient. Further details on what each analysis shows are described in the findings.

In some cases, slightly different types of analysis were required. The analysis on ethnicity was based on MSOAs rather than LSOAs, because the breakdown on ethnicity was not available at LSOA level. This means that the social gradient analysis on ethnicity is not directly comparable with the other social gradient analysis. Multilevel binary logistic regression was carried out to look at repeat episodes and cease times. This is because the analysis was based around within-category differences rather than rates per 10,000 children e.g. the number of re-referrals within 12 months expressed as a proportion of all referrals. For some of the descriptive analysis income IMD is regrouped into a larger rank scale. For example, in Section 3.2 LSOA-level income IMD is grouped into quintiles to illustrate the inverse intervention effect, and in Section 3.7 it is grouped into deciles in order to illustrate the contextual effect of urban/rural classification and population density.

3. Findings

Findings from the analysis of the national datasets for CSC are reported below. The social gradient and inverse intervention effect are illustrated using scatterplots. Following this, comparisons are made between different subgroups using regression analysis.

3.1. Social gradient of intervention

The social gradient in CSC refers to the tendency for rates of intervention to increase for children living in more deprived areas. It may also be seen as the difference that being poor (or getting poorer) makes to a child's chances of being referred to CSC or receiving a statutory service. For example, a child living on a deprived housing estate is much more likely to be on a CP plan or taken into care than a child living in an affluent suburb. This study used population-based rates of intervention, which were calculated for small neighborhoods (LSOAs) nested within whole LAs. Types of service provision included in the analysis ranged from a referral to CSC to the provision of a CP plan, as well as re-referrals and repeat CP Plans. IMD income deprivation was used as the basis for calculating the social gradient and inverse intervention effects.

In the data there were 32,837 LSOAs. Figure 2 shows rates of referrals per 10,000 population on the y-axis and each LSOA IMD income score on the x-axis (where income score refers to the percentage of income deprived families in each neighbourhood, ranging from 0-65%). The upward slope with a best-fit line illustrates the social gradient. The predicted rates of referrals ranged from 100 per 10,000 children in small neighbourhoods with less than 1% of families living in income deprivation, to more than 1,340 per 10,000 children in small neighbourhoods with 64% of families living in income deprivation. This positive social gradient is seen across all CSC thresholds and was found to be steeper for statutory interventions such as CP plans (see Section 3.4).



Figure 2. Referral rate against income deprivation for all LSOAs in England

LSOAs are nested within 150 LAs. Figure 3 shows rates of referrals per 10,000 population on the yaxis and each LA IMD income score on the x-axis (where income score refers to the percentage of income deprived families in each LA, ranging from 0-30%). Perhaps unsurprisingly a similar pattern was seen with an upward slope illustrating a social gradient in the larger geographical LA-level. It shows that rates of referrals for children living in the most deprived LAs were higher than those in the least deprived LAs.



Figure 3. Referral rate against income deprivation for all LAs in England

One of the problems with calculating social gradients on the basis of LA-level rates is the risk of an ecological fallacy. This is when false conclusions are made about individuals based only on the analyses of grouped data, or when false conclusions are made about the averages of smaller groups nested within larger groups. An ecological fallacy can occur when a trend disappears or reverses when the data from smaller groups is combined into larger group averages. This particular phenomenon is called Simpson's paradox (Hernán *et al.*, 2011).

3.2. The inverse intervention effect (Simpson's paradox)

Figure 4 shows three sets of datapoints on the diagram (blue crosses, green squares, and orange triangles). The blue crosses represent the least deprived strata of LSOAs in England, the green squares represent the mid deprived strata of LSOAs in England, and the orange triangles represent the most deprived strata of LSOAs in England. The position of each data point on the y-axis represents the referral rate per 10,000 within each LA, for each strata of LSOA-level deprivation, whilst the position of each data point on the x-axis shows the level of income deprivation for each LA.



Figure 4. Referral rates within each LA stratified by LSOA deprivation

The graph shows that the relationship between rates of referrals and LA-level IMD reverses when partitioned by LSOA IMD. This relationship is even more pronounced for statutory interventions such as CP plans (see Section 3.4). Bywaters et al. (2018) have termed this the 'inverse intervention' effect. It refers to the tendency for less deprived LAs to have lower overall intervention rates compared with more deprived LAs, but higher intervention rates when comparing neighborhoods that are equally deprived. The graph also shows that there is heterogeneity of effect between each stratum. This can be seen from the orange line (most deprived stratum of LSOA deprivation) having a steeper slope than the green line (middle stratum), which in turn is steeper than the blue line (least deprived stratum). This means that the greater interventionism of less deprived LAs does not really affect children living in affluent neighbourhoods but has a significant effect on children living in deprived affluent LA (such as Kingston upon Thames) could lower their children's chances of being referred to CSC simply by moving to a similarly deprived neighbourhood in a more deprived LA (such as Blackpool); for a family living in an affluent neighbourhood, however, such a move would make only a slight difference to the chances of a referral.

3.3. Regression models for social gradients

The next step in the analysis was to derive a single number indicator of the social gradient for referrals, assessments and interventions. This was done using loglinear regression models (see

Section 2.5), which consider the multiplicative changes in intervention rates per decile increase in LSOA-level income IMD. In other words, the model shows how much rates can be expected to go up for every 10% increase in neighbourhood deprivation. The measure is formally known as an 'incidence rate ratio' (IRR) but is referred to here as a social gradient score. Social gradient scores can be calculated for each individual LA in order to show the effect of LSOA-level neighborhood within each LA. The social gradient score for a single LA effectively shows the effect of relative levels of deprivation (within-LA variation) on the chances of a referral or social care intervention. The analysis in Figure 5 shows the multiplicative changes in rates of referrals per 10% increase in LSOA-level income IMD for all 150 LAs in England. The average social gradient score for referrals across all LAs was 1.62. This means that referral rates were, on average, 1.62 times higher (or 62% higher) in local areas that were 10% more deprived. The social gradients ranged from 1.2 to 2.4. When we plot social gradient scores with LA level IMD, there was an association whereby social gradient scores increased as LA level IMD decreased. This means that local area deprivation was a stronger determinant for a CSC referral in more affluent LAs compared with more deprived LAs, i.e. the gap in rates of referrals between less and more deprived neighbourhoods was greater in more affluent LAs.



Figure 5. Relationship between LA deprivation and the social gradient for referrals

A similar pattern was seen for assessments and interventions following referral to CSC. Figure 6 shows the social gradient for CP Plans. The average social gradient score for CP Plans was 1.8. The

social gradients ranged from 1.1 to 3.1. Similarly, when we plot social gradient scores with LA level IMD, there was an association whereby social gradient scores increased as LA level IMD decreased. It shows that neighborhood deprivation was a much stronger determinant for a CP Plan in more affluent LAs compared with more deprived LAs, i.e. more affluent LAs tended to be more interventionist in the more deprived neighbourhoods relative to the less deprived neighbourhoods.



Figure 6. Relationship between LA deprivation and the social gradient for CP plans

The next part of the analysis formally tests the relationship between LSOA IMD and LA IMD by including an interaction term between LSOA IMD and LA IMD in the regression models (see Section 2.5). The interaction term shows the multiplicative change on the social gradient per 10% increase in LA-level IMD and allows for predicted social gradient scores to be calculated for children living in different LA contexts; for example where LA-level IMD is 10% lower or 10% higher. The analysis carried out in the next section takes this approach in order to look at the differences in social gradients across different strata, including the characteristics of episodes, children, and the geographical characteristics of LSOAs and LAS.

3.4. Intervention pathways

The analysis in Table 2 compares social gradients for different pathways following referral to CSC:

- Completion of a child and family assessment ('Assessment')
- Child assessed to be in need and receiving support under a CIN plan ('CIN')
- Section 47 investigation carried out ('S47')
- CP conference held ('CP conference')
- Child made subject to a CP plan ('CP plan')

Table 2 shows that social gradient scores were similar for referrals and assessments but they then increased at each subsequent threshold. The average social gradient score for CP plans was 1.80. This means that each 10% increase in the proportion of low income households in a small area was associated with an 80% increase in the CP plan rate for the averagely deprived LA (i.e. when LA-level deprivation is at the mean level). An increase in the social gradient is mirrored by a decrease in the interaction effect shown in the final column. The interaction coefficient shows the multiplicative decrease in the social gradient per 10% increase in LA-level IMD. In other words, it shows the degree to which moving to a more deprived LA makes the social gradient shallower (this is why the coefficient is less than 1). We can derive social gradient scores for children living in different LA contexts by combining the social gradient coefficient with the interaction coefficient. This is illustrated by the social gradient scores for children living in 'Low IMD' and 'High IMD' LA contexts, which are derived using the interaction effect between LSOA IMD and LA IMD. In the following sections, these results are presented in tables for easy interpretation of the interaction effect. For instance, in a less deprived LA context a 10% rise in LSOA deprivation was associated with a predicted 2.33 times increase in rates of CP plans. In a more deprived LA context, a 10% rise in LSOA deprivation was associated with a predicted 1.39 times increase in rates of CP plans. The interaction effect was found to be statistically significant (p<0.001) at all thresholds and therefore highly unlikely to be a chance result.

Measure	N (% of episodes referred)	Rate per 10,000	Social gradient (IRR) scores	Social gradient (IRR) scores in different LA contexts		Interaction effect
				Low IMD	High IMD	
Referral	300,830 (100.0%)	400.3	1.62 (1.62 to 1.63)	2.03	1.29	0.80***
Assessment	295,591 (98.3%)	393.3	1.62 (1.61 to 1.63)	2.06	1.27	0.79***
CIN	186,112 (61.9%)	247.6	1.64 (1.63 to 1.64)	2.05	1.31	0.80***
S47	98,517 (32.7%)	131.1	1.69 (1.68 to 1.70)	2.16	1.32	0.78***
CP Conference	33,685 (11.2%)	44.8	1.80 (1.78 to 1.82)	2.38	1.36	0.76***
CP Plan	31,380 (10.4%)	41.8	1.80 (1.78 to 1.82)	2.33	1.39	0.77***

Table 2. Intervention rates and social gradients at different thresholds

*** indicates p-value < 0.001

3.5. Child characteristics

3.5.1. Gender

The statistics for gender showed that rates of referrals (per 10,000 population) were slightly higher for female children. Regression analysis found no significant gender differences in the social gradient score, or incidence rate ratio (IRR). Table 3 shows that the average IRR of referrals for both genders was 1.62. Similar results obtained for other types of provision, including CIN and CP plans.

Table 3. Gender and the social gradient of referral

Measure	Total population (column %)	N (rate per 10,000)	Social gradient (IRR) scores	Social gradient (IRR) scores in different LA contexts		Social gradient (IRR)Social gradientscores in different LA(IRR) scorescontextsefferent	Interaction effect
				Low IMD	High IMD		
Males	3,851,406 (51.2%)	152,945 (397.1)	1.62 (1.62 to 1.63)	2.03	1.30	0.80***	
Females	3,664,378 (48.8%)	147,554 (402.7)	1.62 (1.61 to 1.63)	2.03	1.29	0.80***	

*** p-value < 0.001

3.5.2. Age

The analysis on age is illustrated in Table 4 below. It shows that rates of referrals were lower for younger children and increased linearly with age. In contrast, the social gradient score for referrals was higher for younger children and decreased linearly with age. A similar pattern in the social gradient was found in CIN episodes and CP plans.

Table 4. Age and the social gradient of referral

Measure	Total population	N (rate per 10,000)	Social gradient (IRR) scores	Social gradient (IRF radient scores in different I scores contexts		Interaction effect
				Low IMD	High IMD	
Age 5	690,987 (9.2%)	22,540 (326.2)	1.67 (1.64 to 1.69)	2.09	1.33	0.80***
Age 6	706,617 (9.4%)	26,966 (381.6)	1.65 (1.64 to 1.67)	2.02	1.36	0.82***
Age 7	727,796 (9.7%)	28,431 (390.6)	1.64 (1.62 to 1.66)	2.02	1.33	0.81***
Age 8	712,064 (9.5%)	28,642 (402.2)	1.64 (1.62 to 1.66)	2.07	1.30	0.79***
Age 9	700,084 (9.3%)	28,634 (409.0)	1.62 (1.60 to 1.64)	2.01	1.30	0.80***
Age 10	689,618 (9.2%)	28,434 (412.3)	1.65 (1.63 to 1.66)	2.12	1.28	0.78***
Age 11	695,642 (9.3%)	27,776 (399.3)	1.63 (1.61 to 1.65)	2.03	1.31	0.80***
Age 12	673,685 (9.0%)	27,158 (403.1)	1.63 (1.61 to 1.65)	2.07	1.28	0.79***
Age 13	660,846 (8.8%)	27,298 (413.1)	1.61 (1.59 to 1.63)	1.99	1.30	0.81***

Age 14	633,942 (8.4%)	27,826 (438.9)	1.60 (1.58 to 1.61)	2.00	1.27	0.80***
Age 15	624,503 (8.3%)	27,125 (434.3)	1.61 (1.59 to 1.63)	2.03	1.28	0.79***

*** p-value < 0.001

3.5.3. Ethnicity

The analysis on ethnicity shows that White children accounted for 78% of the child population. Of these children, 95% were White British. The next largest groups were Asian (9.8%), and Black (5.2%). These are broad and heterogenous categories; there is considerable difference between the backgrounds and experiences of, for example, Black British children from African or Caribbean backgrounds, or Asian children from Indian or Pakistani backgrounds. As shown in Table 5, rates of referrals were highest amongst the Mixed Heritage (576) category, which again is a very heterogenous group, and lowest amongst Asian (318) and White (368). Similar disparities in rates were found for CIN and CPP. CIN rates were higher amongst Mixed Heritage children (364) and lowest for Asian children (209), whilst CP Plan rates were highest amongst Mixed Heritage children (70), and much lower amongst Asian children (30).

The social gradient of referral was steepest for White children (1.91), followed by Other backgrounds (1.71), and Mixed Heritage (1.63) children; they were lowest for Black (1.27) and Asian (1.29) children. White children also had the steepest social gradients for CIN episodes (1.93) and CP Plans (2.20). The interaction effect – that is, the extent to which overall LA-level deprivation exacerbates the social gradient – was strongest for Mixed Heritage, Other, and White children (0.74 for all groups).

Measure	Total population (column %)	N (rate per 10,000)	Social gradient (IRR) scores	Social gra scores in d cont	dient (IRR) lifferent LA texts	Interaction effect
				Low IMD	High IMD	
Asian	736,865 (9.8%)	23,423 (317.9)	1.29 (1.25 to 1.32)	1.54	1.07	0.83***
Black	390,289 (5.2%)	20,823 (533.5)	1.27 (1.23 to 1.31)	1.60	1.01	0.79***
Mixed	375,954 (5.0%)	21,659 (576.1)	1.63 (1.60 to 1.66)	2.21	1.20	0.74***
Other	133,247 (1.8%)	6,426 (482.3)	1.71 (1.63 to 1.78)	2.31	1.26	0.74***
White	5,879,430 (78.2%)	216,225 (367.8)	1.91 (1.90 to 1.92)	2.57	1.42	0.74***

Table 5.	Ethnicity	and the	social	gradient	of referral

*** p-value < 0.001

** p-value < 0.01

3.6. Episode characteristics

3.6.1. Factors at assessment

The most prevalent factor at assessment was domestic violence concerning the parent, i.e. concerns about the child's parent(s)/carer(s) being the subject of domestic violence (30.2%), followed by parental mental health (26.8%), emotional abuse (22.4%, and neglect (17.9%).

Table 6 shows that the social gradient of assessment was highest for children who were assessed with neglect (1.84), followed by Parental drug misuse (1.80), and Parent's learning disability (1.78). The factors with the lowest social gradients were child's physical disability (1.47) and child's learning disability (1.51). These factors also had the strongest interaction effects, which means that social gradients were significantly higher in less deprived LAs.

Measure	N (% column)	Rate per 10,000	Social gradient (IRR) scores	Social gradient (IRR) scores in different LA contexts		Interaction effect
				Low IMD	High IMD	
Child's alcohol misuse	5,109 (2.3%)	6.8	1.63 (1.59 to 1.67)	2.21	1.21	0.74***
Parent's alcohol misuse	33,153 (14.7%)	44.1	1.63 (1.61 to 1.64)	2.11	1.26	0.77***
Child's drug misuse	9,046 (4.0%)	12.0	1.67 (1.64 to 1.70)	2.21	1.26	0.76***
Parent's drug misuse	27,685 (12.3%)	36.8	1.80 (1.78 to 1.82)	2.46	1.33	0.73***
DV concerns (child)	26,681 (11.8%)	35.5	1.66 (1.64 to 1.68)	2.16	1.27	0.77***
DV concerns (parent)	68,179 (30.2%)	90.7	1.67 (1.65 to 1.68)	2.17	1.28	0.77***
Child's mental health	29,671 (13.1%)	39.5	1.56 (1.54 to 1.57)	1.96	1.24	0.80***
Parent's mental health	60,564 (26.8%)	80.6	1.66 (1.65 to 1.68)	2.11	1.31	0.79***
Child's learning disability	23,792 (10.5%)	31.7	1.51 (1.49 to 1.53)	1.92	1.19	0.79***
Parent's learning disability	4,776 (2.1%)	6.4	1.78 (1.73 to 1.82)	2.38	1.33	0.75***
Child's physical disability	11,822 (5.2%)	15.7	1.47 (1.44 to 1.50)	1.76	1.22	0.83***
Parent's physical disability	12,020 (5.3%)	16.0	1.68 (1.66 to 1.71)	2.21	1.28	0.76***
Young carer	9,627 (4.3%)	12.8	1.73 (1.70 to 1.76)	2.06	1.45	0.84***
Going/being missing	6,979 (3.1%)	9.3	1.66 (1.62 to 1.69)	2.13	1.29	0.78***
Child sexual exploitation	8,683 (3.8%)	11.6	1.63 (1.60 to 1.66)	2.15	1.23	0.76***
Gangs	4,240 (1.9%)	5.6	1.76 (1.70 to 1.81)	2.27	1.36	0.78***
Soc. unacceptable behav.	19,763 (8.8%)	26.3	1.70 (1.68 to 1.73)	2.19	1.33	0.78***
Self-harm	10,792 (4.8%)	14.4	1.53 (1.50 to 1.56)	1.79	1.31	0.85***
Neglect	40,485 (17.9%)	53.9	1.84 (1.82 to 1.86)	2.51	1.35	0.73***
Emotional abuse	50,475 (22.4%)	67.2	1.64 (1.62 to 1.65)	2.10	1.28	0.78***
Physical abuse	33,951 (15.0%)	45.2	1.63 (1.61 to 1.64)	2.02	1.31	0.80***
Sexual abuse	15,120 (6.7%)	20.1	1.58 (1.56 to 1.61)	1.96	1.28	0.81***
Other	42,663 (18.9%)	56.8	1.60 (1.58 to 1.61)	2.01	1.27	0.79***

Table 6. Factors at assessment and the social gradient of assessment

*** indicates p-value < 0.001

3.6.2. CP plan categories

Rates per 10,000 were highest amongst children on a CP Plan for neglect (18.3), followed by children on a CP Plan for emotional abuse (17.0). As shown in Table 7, social gradient scores were highest for children who were on a CP Plan for neglect (1.98), followed by children on a CP Plan for physical abuse (1.72).

Measure	N (% column)	Rate per 10,000	Social gradient (IRR) scores	Social gra scores in LA co	dient (IRR) different ntexts	Interaction effect
				Low IMD	High IMD	
CPP Category: Emotional	12,798 (40.8%)	17.0	1.67 (1.64 to 1.70)	2.12	1.31	0.79***
CPP Category: Neglect	13,780 (43.9%)	18.3	1.98 (1.95 to 2.01)	2.57	1.52	0.77***
CPP Category: Physical	2,287 (7.3%)	3.0	1.72 (1.66 to 1.79)	2.14	1.39	0.81***
CPP Category: Sexual	1,530 (4.9%)	2.0	1.62 (1.54 to 1.70)	1.74	1.50	0.93
CPP Category: Multiple	985 (3.1%)	1.3	1.65 (1.56 to 1.75)	2.38	1.15	0.69***

Table 7. CP plan categories and the social gradient of CP plans

*** indicates p-value < 0.001

3.6.3. Referral source

The most prevalent source of referrals were police (29%) and schools (26%) and the least common was from individuals (8%). As shown in Table 8, the social gradient was highest for children referred by LA or housing services (1.66), and lowest amongst children referred by individuals (1.50).

Table 8. Referral source and the social gradient of referral

Measure	N (column %)	Rate per 10,000	Social gradient (IRR) scores	Social gradient (IRR) scores in different LA contexts		Interaction effect
				Low IMD	High IMD	
Individuals	25,408 (8.4%)	33.8	1.50 (1.49 to 1.52)	1.90	1.19	0.79***
Schools & education	77,264 (25.7%)	102.8	1.65 (1.64 to 1.66)	2.07	1.31	0.80***
Health services	34,053 (11.3%)	45.3	1.55 (1.53 to 1.57)	1.88	1.28	0.83***
LA and housing serv.	39,697 (13.2%)	52.8	1.67 (1.66 to 1.69)	2.08	1.34	0.80***
Police	86,868 (28.9%)	115.6	1.65 (1.64 to 1.66)	2.10	1.29	0.79***
Other	37,620 (12.5%)	50.1	1.61 (1.60 to 1.63)	2.01	1.29	0.80***

*** indicates p-value < 0.001

3.6.4. Repeat episodes

24.5% of re-referrals were made within 12 months of a prior referral, and 28.4% of CP Plans started where the child had a known prior CP Plan. The following regression models compare re-referrals with all other referrals, and repeat CP Plans with all other CP Plans. The analysis in Table 9 shows comparative social gradient scores for re-referrals and prior CP plans as odds ratios. They show that the social gradient of re-referrals was 10% higher when compared with other referrals, and that the social gradient for repeat CP Plans was 13% higher when compared with other CP Plans.

Measure	N (% column)	Comparison of social gradient	Comparison of social gradient scores in different LA contexts		Comparison of Interaction
		scores	Low IMD	High IMD	effect
Re-referral within 12 months					
No	227,002 (75.5%)	1.00	1.00	1.00	1.00
Yes	73,828 (24.5%)	1.10 (1.09 to 1.11)	1.14	1.06	0.97***
Prior CPP (ever)					
No	22,473 (71.6%)	1.00	1.00	1.00	1.00
Yes	8,907 (28.4%)	1.13 (1.10 to 1.16)	1.21	1.06	0.94**

Table 9. Comparative social gradients for re-referrals and repeat CP plans

*** p-value < 0.001

** p-value < 0.01

In order to interpret these findings, Table 10 shows the percentage of re-referrals associated with different LSOA and LA contexts. The low deprivation context refers to a 10% decrease in income deprivation, whilst high deprivation context refers to a 10% increase in income deprivation (for both LSOA and LA contexts). It shows three patterns: i) that the percentage of re-referrals rises as LSOA IMD rises, ii) that the % of re-referrals is higher amongst more affluent LAs when LSOA IMD is partitioned, and iii) an interaction effect whereby the social gradient was significantly steeper (p<0.001) for the more affluent LAs compared with the more deprived LAs. These patterns mean that the highest levels of re-referrals were found in the poorest neighbourhoods in the most affluent LAs. This is the same mechanism as inverse intervention but relates to the outcome of provision rather than rates.

Table 10. Percentage of re-referrals withir	12 months (as a	a proportion of total	referrals)
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-		LSOA (small neighbourhoods)			
		Low dep.	Mid dep.	High dep.	
	Low dep.	22.8%	25.9%	29.6%	
Local Authority	Mid dep.	22.3%	24.5%	27.0%	
	High dep.	21.8%	23.1%	24.6%	

Similarly, the following grid in Table 11 shows the predicted percentage of repeat CP Plans in different LSOA and LA contexts. It also shows three patterns: i) that the percentage of repeat CP Plans rises as LSOA IMD rises, ii) that the % of repeat CP plans is higher amongst more affluent LAs

when LSOA IMD is partitioned, and iii) an interaction effect whereby the social gradient was significantly steeper for the more affluent LAs compared with the more deprived LAs. These patterns mean that the highest levels of repeat CP Plans were found in the poorest neighbourhoods in the most affluent LAs.

		LSOA (small neighbourhoods)			
		Low dep.	Mid dep.	High dep.	
	Low dep.	26.6%	32.1%	38.8%	
Local Authority	Mid dep.	25.1%	28.4%	32.2%	
	High dep.	23.6%	25.1%	26.7%	

Table 11. Percentage repeat CP Plans (as a proportion of total CP Plans)

3.6.5. Cease times

Cease times refer to a defined period of statutory involvement, such as a CIN plan or CP plan. As shown in Table 12, nearly half (46%) of all CIN episodes that ceased within three months. Table 12 shows the results of a regression model comparing the CIN episodes ceasing within three months with a reference group consisting of all other CIN episodes that ceased during the year (i.e. CIN cases still open on 31 March 2019 were not included). The comparative social gradient (in bold) is relative to the reference group. The model shows that social gradient scores for CIN episodes ceasing within three months were 4% lower (0.96) compared to episodes with other cease times (1.00). In other words, there was a tendency for longer CIN episodes to have a higher social gradient.

Table 12. Comparative social gradient scores for CIN and CP cease times

Measure	N (% column)	Odds ratio	Social gra scores in c con Low IMD	dient (IRR) lifferent LA texts High IMD	Interaction effect
CIN ceased within 3 months					
No	81,493 (53.7%)	1.00	1.00	1.00	1.00
Yes	70,208 (46.2%)	0.96 (0.94 to 0.98)	0.93	1.00	1.04***

*** indicates p-value < 0.001

Table 13 shows the equivalent analysis for CP plans. The findings show that 23.5% of all CP Plans ceased within 6 months. The regression model compared these episodes with a reference group consisting of all other CP Plans that ceased during the year. Again, the comparative social gradient (in bold) is relative to the reference group. It showed the social gradient for CP Plans ceasing within 6 months was 12% lower (0.88) compared with all other cease times (1.00). In other words, there was a tendency for longer CP plans to have a higher social gradient.

Measure	N (% column)	Comparative social gradient	Social gradient (IRR) scores in different LA contexts		Interaction effect
		(IKK) scores	Low IMD	High IMD	
CPP ceased within 6 months					
No	24,990 (76.5%)	1.00	1.00	1.00	1.00
Yes	7,657 (23.5%)	0.88 (0.86 to 0.91)	0.85	0.92	1.04

Table 13. Comparative social gradient scores for CP cease times

In order to interpret the findings, Table 14 shows the predicted percentage of CIN episodes ceasing within 3 months in different LSOA and LA contexts. It shows three patterns: i) that the proportion of episodes ceasing within 3 months is higher amongst children living in more affluent LSOAs compared with more deprived LSOAs, ii) the proportion of episodes ceasing within 3 months is higher amongst children living in more deprived LSOAs, and iii) an interaction effect whereby the difference in proportion of episodes ceasing within 3 months between least and most deprived neighbourhoods was greater in more affluent LAs (p = 0.02). The finding that shorter cease times are higher in more deprived LAs has previously been reported by Hood et al. (2019). The additional finding on the social gradient means that children in more affluent neighborhoods tend to have the shortest CIN episodes.

Tuble 14. Tercentage of enveptodes ceasing within 5 months	Table 14.	Percentage	of CIN	episodes	ceasing	within 3	months
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		LSOA (small neighbourhoods)			
		Low dep.	Mid dep.	High dep.	
	Low dep.	47.7%	44.2%	40.9%	
Local Authority	Mid dep.	47.9%	46.2%	44.6%	
	High dep.	48.1%	48.3%	48.6%	

The next grid in Table 15 shows the equivalent analysis for CP plans, a breakdown of the predicted percentage of CP Plans ceasing within 6 months in different LSOA and LA contexts. It shows two patterns: i) the predicted percentage of CP Plans ceasing within 6 months was higher amongst more affluent LSOAs compared with more deprived LSOAs, and ii) the percentage of shorter CP Plans was slightly higher amongst more deprived LAs. The interaction effect was found to be non-significant (p = 0.09), which means that the social gradient was similar at all levels of LA deprivation. The main finding therefore was that of a strong social gradient in CP plan cease times, whereby children in an LA's more affluent neighborhoods tended to have shorter CP Plans than children in more deprived neighborhoods.

Table 15. Percentage of CP plans ceasing within 6 months

		LSOA (small neighbourhoods)			
		Low dep.	Mid dep.	High dep.	
	Low dep.	26.4%	22.4%	19.0%	
Local Authority	Mid dep.	26.6%	23.5%	20.8%	
	High dep.	26.7%	24.6%	22.7%	

3.7. LSOA indicators

3.7.1. Urban / rural classification

LSOA urban/rural classification is a binary category that indicates whether the majority of constituent Output Areas (OAs) in the LSOA are either urban or rural, based on information about land-use from the Ordnance Survey (ONS, 2011). ONS data shows that 84% of LSOAs were urban and 16% rural; the total 0 to 15 child populations were 6.3 million in the urban areas, and 1.2 million in the rural areas. Figure 7 shows referral rates in LSOA deciles (1-10) as well as the overall average for referrals, all broken down by urban/rural classification. The final two columns show that overall average rates of referrals were higher in urban LSOAs compared with rural LSOAs (425 and 269 respectively). The other columns compare similarly deprived LSOAs partitioned into urban and rural areas, showing that referral rates in both categories were quite similar except for the most deprived LSOAs (columns 9 and 10), where referral rates were noticeably higher in rural areas than in urban areas. The figure also illustrates the higher social gradient of referral for children living in rural neighbourhoods, i.e. a greater difference between rates in the most deprived vs the least deprived areas.





Next, regression-based models were used to show the size of the social gradient conditional on both local authority level deprivation and urban / rural context. Social gradients in different combinations of these contexts are described in Table 16. It shows two patterns: i) the social gradients were higher amongst children living in more affluent LAs, and ii) the social gradients were higher in more rural areas. Both effects were found to be statistically significant at p-value < 0.001 for referrals, CIN, and CP Plans.

	Referrals			CIN			СРР		
	Low dep.	Mid dep.	High dep.	Low dep.	Mid dep.	High dep.	Low dep.	Mid dep.	High dep.
Rural	2.31	1.88	1.53	2.30	1.87	1.52	2.78	2.20	1.74
Urban	1.96	1.59	1.30	1.98	1.61	1.31	2.23	1.76	1.40

Table 16. The effect of LA deprivation and urban/rural classification on the social gradient (referrals).

3.7.2. Population density

Population density is defined as the number of individuals per square kilometre (ONS, 2020); LSOAs with fewer than 2,000 people per square km are described as sparsely populated, and LSOAs with greater than 5,000 people per square km are described as densely populated. The total 0 to 15 child populations were 2.4 million in the more sparsely populated LSOAs, and 2.7 million in the more densely populated LSOAs. The analysis on population density shows a similar pattern to that of urban / rural classification (which is to be expected as built-up areas also tend to be more densely populated). This pattern can be illustrated by comparing rates of referrals per 10,000 living in sparsely populated and densely populated areas, partitioned into LSOA IMD deciles. Figure 8 illustrates that the social gradient is steeper in more sparsely populated areas. It also illustrates the Simpson's paradox effect whereby rates of intervention are lower in more densely populated areas on average, but higher in more sparsely populated areas when the rates are partitioned into LSOA deciles.



Figure 8. Referral rates for sparsely and densely populated areas stratified by LSOA deprivation

The regression-based model shows the change in the size of the social gradient conditional on both local authority level deprivation and population density. The different combinations of these

contexts are transcribed in Table 17. It shows two patterns: 1) that the social gradients were higher amongst children living in more affluent LAs, and 2) that the social gradients were higher in more sparsely populated areas. Both effects were found to be statistically significant at p-value < 0.001 for referrals, CIN, and CP Plans.

	Referrals			CIN			СРР		
	Low dep.	Mid dep.	High dep.	Low dep.	Mid dep.	High dep.	Low dep.	Mid dep.	High dep.
Low density	2.18	1.71	1.35	2.18	1.72	1.35	2.55	1.93	1.47
Mid density	2.08	1.64	1.29	2.09	1.65	1.30	2.40	1.82	1.38
High density	1.98	1.56	1.23	2.01	1.58	1.25	2.27	1.72	1.30

Table 17. The effect of LA deprivation and population density on the social gradient (referrals)

3.8. LA indicators

The final part of the analysis tests the extent to which other LA indicators influence rates of service and the social gradient. All LA indicators were converted into standardized z-scores in order to make the coefficients comparable with one another in the regression analysis. This analysis comes with several caveats. In general, the main role of regression is to show the predicted change in one indicator when another indicator is held constant. Many of the extra LA indicators are correlated with LA IMD, meaning that variation will be suppressed when LA IMD is held constant. The problem with collinearity is that it becomes difficult to disentangle the independent roles of each indicator, for example the independent roles of income IMD and employment IMD on predicting rates of service. In many cases, the problem persists even after variables have been centered and standardized. For this reason, we decided to report the effect of each LA indicator one at a time (rather than include all LA indicators within a single model), and only report on a selection of relevant indicators that had correlation coefficients with LA income IMD of less than 0.7. Finally, we acknowledge that there are complex dynamics with all the variables considered, and that many of the indicators reflect consequences of much larger, and usually unmeasurable, things that are the basis of collinearity (e.g. income deprivation and employment deprivation are both the result of policies, labour markets, histories, economic systems etc.). The data and the meaning behind the findings, particularly when we are considering the larger LA units of analysis, do not lend themselves to unequivocal interpretation.

Table 18 shows associations with rates of referrals i.e. the multiplicative change in rates of referrals per 1 standard deviation (SD) unit increase in each indicator. The first column shows the bivariate relationship between LSOA rates of service and LA contextual indicators. The second column shows the effect of each indicator adjusted for LA IMD – i.e. whether variables such as spend and CSC workforce are associated with higher or lower rates of service after controlling for LA IMD. The third column shows the effect of LA IMD adjusted for the LA indicator in question – i.e. whether variables such as spend or CSC workforce magnify or attenuate the effect of IMD on rates of service. The bivariate analysis (plus the adjustments) is carried out for each indicator in the relevant row in the

indicator list. The unadjusted and adjusted RRs are shown for comparison purposes. If an indicator remains significant after adjustment, the association cannot be 'explained', in statistical terms, by the effect of confounding with the other indicators.

In the unadjusted analysis, higher rates of referral were significantly associated with high LA income deprivation, high total spend on children's services per LA child, high spend on children's safety per LA child, high spend on CLA per LA child, high spend on early help per LA child, low spend on children's safety per CIN, and low spend on CLA per CLA child. Higher rates of referral were also associated with a higher ratio of CIN per social worker, higher caseloads, and with the contextual indicators of the LAs' infant mortality rate, sickness absence rate, adults in contact with mental health services, prevalence of depression, and suicide rates. After controlling for deprivation, higher rates of referrals were significantly associated with lower spend on children's safety per CIN child, and with lower spend on CLA per CLA child. Higher rates of referrals (after controlling for deprivation) were also significantly associated with a higher ratio of CIN per social worker. Other contextual LA variables associated with higher rates of referrals (after adjustment for deprivation) include higher infant mortality, lower proportion of the population with a level 4 qualification, higher estimated prevalence of depression, higher suicide rate, and a lower proportion of ethnic minority groups. The third column shows the associations between referral rates and deprivation after adjusting for each indicator in the relevant row in the indicator list. The associations that remain significant with deprivation (as measured by the IMD score) are those where the association cannot be 'explained', in statistical terms, by the effect of confounding with the other indicators. In general, similar patterns were found for CIN and CPP. The rate of CIN and CP Plans were higher when caseloads were higher, and the rate of CP Plans was higher in more rural LAs (% rural LSOAs in each LA), after controlling for LA IMD.

The next part of the analysis tests the extent to which each additional indicator changes the social gradient by including an interaction term between LSOA IMD and each LA indicator. The results are shown in Table 19. The first column shows the multiplicative change on the social gradient per 1SD in each LA indicator without any adjustments. The second column shows the same effect adjusted for LA IMD – i.e. whether variables such as spend and CSC workforce are associated with higher or lower social gradients after controlling for LA IMD. The third column shows the effect of LA IMD on the social gradient adjusted for each other LA indicator – i.e. whether variables such as spend or CSC workforce magnify or attenuate the effect of IMD on the social gradient.

The main purpose of this part of the analysis was to test the degree to which other LA indicators might confound the inverse intervention effect. The changes to the social gradient with each indicator (after the adjustment of income IMD) were relatively small, despite being statistically significant; the changes to the social gradient ranged from -2.2% to +2.3%. The final column shows that changes to the interaction effect between LSOA IMD and LA IMD after adjusting for each indicator in the relevant row in the indicator list were also small; the RR ranged from 0.88 to 0.90. Given the relatively small effect size, we do not regard the extra LA indicators as confounders to the inverse intervention effect, i.e. the interaction between LA-level and neighbourhood-level deprivation in the prediction of rates of referrals cannot be 'explained', in statistical terms, by the effect of confounding with the other indicators.

	Associations with referral rates: multiplicative change on rates of referrals per unit increase (1 SD) in each indicator					
Indicator	RR of each indicator unadjusted	RR of each indicator adjusted for LA IMD	RR of LA IMD adjusted for the indicator			
LA income IMD [z-score]	1.15 (1.07 to 1.23)		1.15 (1.07 to 1.23)			
Total spend children's services (per LA child)	1.12 (1.05 to 1.20)	1.06 (0.97 to 1.15)	1.10 (1.00 to 1.21)			
Spend children's safety (per LA child)	1.12 (1.05 to 1.20)	1.07 (0.99 to 1.15)	1.11 (1.03 to 1.21)			
Spend children looked after (per LA child)	1.15 (1.08 to 1.23)	1.10 (1.02 to 1.20)	1.07 (0.98 to 1.17)			
Spend early help (per LA child)	1.01 (0.95 to 1.08)	0.95 (0.88 to 1.01)	1.18 (1.09 to 1.28)			
Spend children's safety (per CIN child)	0.89 (0.83 to 0.95)	0.91 (0.85 to 0.97)	1.13 (1.05 to 1.21)			
Spend children looked after (per CLA child)	0.87 (0.81 to 0.92)	0.90 (0.84 to 0.96)	1.11 (1.03 to 1.19)			
CSC workforce: CIN per social worker	1.10 (1.03 to 1.19)	1.09 (1.02 to 1.17)	1.12 (1.04 to 1.20)			
CSC workforce: Vacancy rate	0.99 (0.93 to 1.07)	0.99 (0.93 to 1.06)	1.13 (1.05 to 1.22)			
CSC workforce: Turnover rate	1.03 (0.96 to 1.10)	1.03 (0.96 to 1.11)	1.13 (1.05 to 1.22)			
CSC workforce: Agency worker rate	1.03 (0.96 to 1.10)	1.03 (0.97 to 1.10)	1.13 (1.06 to 1.22)			
CSC workforce: Caseloads	1.09 (1.03 to 1.16)	1.06 (1.00 to 1.13)	1.11 (1.03 to 1.19)			
Infant mortality rate	1.15 (1.07 to 1.24)	1.10 (1.01 to 1.19)	1.10 (1.02 to 1.20)			
% level 4 qualification	0.81 (0.75 to 0.86)	0.84 (0.78 to 0.90)	1.08 (1.01 to 1.16)			
Sickness absence rate	1.08 (1.01 to 1.17)	1.06 (0.99 to 1.14)	1.14 (1.06 to 1.23)			
DV related incidences / crimes	1.07 (0.99 to 1.15)	1.00 (0.92 to 1.09)	1.15 (1.06 to 1.25)			
Adults in contact with mental health services (16+)	1.11 (1.03 to 1.19)	1.05 (0.97 to 1.14)	1.12 (1.03 to 1.22)			
Utilisation of outdoor space for exercise / health	1.00 (0.93 to 1.07)	1.00 (0.93 to 1.07)	1.14 (1.05 to 1.22)			
Estimated prevalence of depression (all ages)	1.11 (1.04 to 1.20)	1.10 (1.03 to 1.18)	1.13 (1.06 to 1.22)			
Suicide rate (persons aged 1%+)	1.14 (1.06 to 1.23)	1.12 (1.04 to 1.21)	1.13 (1.05 to 1.22)			
% population aged 65+	0.99 (0.92 to 1.07)	1.08 (1.00 to 1.18)	1.20 (1.10 to 1.30)			
% population from ethnic minorities	0.96 (0.90 to 1.03)	0.90 (0.84 to 0.97)	1.19 (1.10 to 1.28)			
% Rural neighbourhoods (% rural LSOAs)	0.94 (0.87 to 1.01)	1.02 (0.94 to 1.11)	1.16 (1.07 to 1.26)			

 Table 18. The effect of different LA contexts on referral rates (adjusted and unadjusted)

	Multiplicative change on the social gradient (IRR) per unit increase (1 SD) in each indicator				
Indicator	RR of each indicator unadjusted	RR of each indicator adjusted for LA IMD	RR of LA IMD adjusted for each other indicator		
LA income IMD [z-score]	0.89 (0.89 to 0.90)		0.89 (0.89 to 0.90)		
Total spend children's services (per LA child)	0.95 (0.94 to 0.95)	1.02 (1.02 to 1.03)	0.88 (0.87 to 0.88)		
Spend children's safety (per LA child)	0.96 (0.95 to 0.96)	1.02 (1.01 to 1.02)	0.89 (0.88 to 0.89)		
Spend children looked after (per LA child)	0.95 (0.95 to 0.96)	1.02 (1.01 to 1.02)	0.88 (0.88 to 0.89)		
Spend early help (per LA child)	0.96 (0.96 to 0.96)	1.01 (1.01 to 1.02)	0.89 (0.88 to 0.89)		
Spend children's safety (per CIN child)	1.02 (1.02 to 1.03)	1.01 (1.01 to 1.01)	0.89 (0.89 to 0.90)		
Spend children looked after (per CLA child)	1.06 (1.06 to 1.06)	1.01 (1.00 to 1.01)	0.90 (0.89 to 0.90)		
CSC workforce: CIN per social worker	1.00 (0.99 to 1.00)	1.00 (1.00 to 1.01)	0.89 (0.89 to 0.90)		
CSC workforce: Vacancy rate	1.01 (1.01 to 1.01)	1.01 (1.01 to 1.02)	0.89 (0.89 to 0.90)		
CSC workforce: Turnover rate	1.01 (1.01 to 1.01)	1.02 (1.01 to 1.02)	0.89 (0.89 to 0.90)		
CSC workforce: Agency worker rate	1.02 (1.01 to 1.02)	1.01 (1.01 to 1.01)	0.89 (0.89 to 0.90)		
CSC workforce: Caseloads	0.98 (0.98 to 0.98)	1.01 (1.00 to 1.01)	0.89 (0.89 to 0.89)		
Infant mortality rate	0.94 (0.94 to 0.94)	0.99 (0.99 to 1.00)	0.90 (0.89 to 0.90)		
% level 4 qualification	1.07 (1.07 to 1.08)	1.01 (1.00 to 1.01)	0.89 (0.89 to 0.90)		
Sickness absence rate	0.98 (0.98 to 0.98)	1.01 (1.00 to 1.01)	0.89 (0.89 to 0.90)		
DV related incidences / crimes	0.95 (0.95 to 0.96)	0.99 (0.99 to 0.99)	0.90 (0.89 to 0.90)		
Adults in contact with mental health services (16+)	0.96 (0.96 to 0.96)	1.00 (1.00 to 1.01)	0.89 (0.89 to 0.89)		
Utilisation of outdoor space for exercise / health	1.02 (1.01 to 1.02)	1.01 (1.01 to 1.01)	0.89 (0.89 to 0.90)		
Estimated prevalence of depression (all ages)	0.99 (0.99 to 1.00)	1.00 (1.00 to 1.01)	0.89 (0.89 to 0.90)		
Suicide rate (persons aged 1%+)	0.98 (0.98 to 0.99)	1.00 (0.99 to 1.00)	0.89 (0.89 to 0.90)		
% population aged 65+	1.08 (1.08 to 1.08)	1.02 (1.01 to 1.02)	0.90 (0.90 to 0.91)		
% population from ethnic minorities	0.93 (0.93 to 0.94)	0.98 (0.97 to 0.98)	0.90 (0.90 to 0.90)		
% Rural neighbourhoods (% rural LSOAs)	1.07 (1.07 to 1.08)	1.00 (1.00 to 1.01)	0.90 (0.89 to 0.90)		

Table 19. The effect of different LA contexts on the social gradient of referral (adjusted and unadjusted)

3.9. Summary of findings

Social gradients in England

- There was a strong social gradient for referral to children's social care when comparing the rates per 10,000 child population across all 32,837 LSOAs (small neighbourhoods) in England. This ranged from 100 per 10,000 children in the least deprived neighbourhoods (less than 1% of families living in income deprivation), to more than 1,340 per 10,000 children in the most deprived neighbourhoods (64% of families living in income deprivation).
- The social gradient was identified both within and between the local authorities. An ecological fallacy was identified whereby more affluent local authorities (overall) tended to have lower overall intervention rates compared with more deprived LAs, but higher

intervention rates when comparing neighbourhoods that are equally deprived. This phenomenon is known as the 'inverse intervention effect' or 'inverse intervention law'.

- When the data is partitioned into individual local authorities the social gradient score (or index) for referrals ranged from 1.2 to 2.4. This single number indicator represents the multiplicative increase (i.e. the times increase) in rates per 10,000 children for every 10% increase in the proportion of families on low incomes.
- The social gradient score correlated negatively with overall levels of local authority deprivation. This means that more affluent LAs tended to be more interventionist in the more deprived neighbourhoods relative to the less deprived neighbourhoods, although they had lower rates overall. The relationship between the steepness of the social gradient and the overall levels of LA deprivation was statistically significant across all thresholds of provision.
- When LA-level deprivation was at the mean (averagely deprived) the social gradient was found to be 1.62; this is equivalent to a 62% rise in referral rates for every 10% increase in the proportion of families on low incomes in the local neighbourhood. When the local authority was 10% less deprived the social gradient was found to be higher (2.33). When the local authority was 10% more deprived the social gradient was lower (1.39).
- For children who received statutory services following referral, the social gradient was found to increase at every subsequent threshold of intervention. In other words, inequalities found at the point of referral were gradually exacerbated as children moved through the system. The social gradient score for child protection (CP) plans was 1.80. This means rates of child protection plans increased on average by 80% for every 10% increase in the proportion of families on low incomes in the neighbourhood.

Factors affecting the social gradient

Demographics:

- There were no significant gender differences in the social gradient scores for referrals or other interventions.
- Social gradients for referrals, as well as subsequent interventions, were steeper for younger children and decreased gradually with each successive year group.
- Using broad categories of ethnicity, the social gradient was steepest for White children (1.91) and lowest for Black children (1.27). However, these figures will mask differences between people of distinct ethnicities within those broad categories.

Social work assessments:

- Based on factors identified in social work assessments, social gradient scores were highest for children who were assessed with neglect (1.84 at the stage of assessment) and lowest for children with a physical disability (1.47).
- Based on categories of CP plans, social gradient scores were highest for children who were on a CP Plan because of neglect (1.98), and lowest for children under a CP plan because of sexual abuse (1.62).

Outcomes of provision:

- After controlling for neighbourhood deprivation, the highest rates of re-referrals and repeat CP plans were found in more affluent local authorities. The interaction effect in the regression analysis showed that re-referrals and repeat CP Plans were significantly higher for children living in the more deprived areas of more affluent local authorities.
- More deprived LAs tended to have shorter cease times for CIN episodes and CP plans. In other words, more affluent LAs tended to hold CIN and CP cases open for longer periods. However, children from the more deprived neighbourhoods within each LA had longer CIN episodes and longer CP plans. This means statutory services were provided for longer periods of time with children from more deprived backgrounds.

Other geographical indicators:

- Social gradients were higher amongst children living in rural and sparsely populated areas. This effect was found to be statistically significant after controlling for LA-level deprivation.
- Some other LA-level indicators, such as expenditure and workforce stability, also affected the social gradient; however, after adjusting for LA-level deprivation, these effects were relatively small.
- The evidence did not suggest that other LA-level indicators confounded the inverse intervention effect, i.e. the interaction between LA-level and neighbourhood-level deprivation in predicting rates of referrals and statutory interventions.

4. Discussion and implications

Socioeconomic status contributes to the unequal provision of CSC services. The study shows this by comparing the effects of income deprivation for different children living in different neighbourhoods and LAs. The national CSC datasets were used in order to calculate relative social gradients for different children and different geographical areas. The results show how socioeconomic inequality shapes and determines who is more or less likely to receive a referral or statutory CSC intervention. For example, they demonstrate that a child living in a deprived part of an affluent LA is more likely to receive a social care intervention than a child living in an equally deprived part of a less affluent LA. The findings also identify some of the circumstances and contextual effects that attenuate or exacerbate these differences. In other words, they show how socioeconomic inequality shapes the interaction between demand and provision, and how this is affected by other variables, such as the circumstances and needs of children, the demographics of children, the characteristics of local neighbourhoods, and the characteristics of areas for which LAs are responsible. To a large extent, social inequalities were found to be embedded in demand for child welfare services, yet the provision of a service also seemed to make them worse. The key question is whether the system can be made more equitable within its current political and institutional context. After considering limitations to the approach taken, this section will focus on four main issues for policy and practice:

- The social gradient of referral
- Neglect and the threshold to child protection
- The significance of rural poverty and inequality

• Does the social gradient affect outcomes for children?

4.1. Limitations

Before considering the implications of the research, some limitations should be pointed out that affect the validity and generalisability of findings for CSC services in England, as well as their transferability to other jurisdictions. The first was the lack of systematic data on the socio-economic circumstances of individual children and parents receiving CSC services. This meant that the social gradient was measured on the basis of IMD scores for small neighbourhoods, which might lead to ecological fallacy, i.e. findings might obscure differences for children living in areas where they have been grouped together for the analysis. For example, as Bywaters et al. (2016) point out, it is possible that neighbourhood deprivation may reflect more closely the socio-economic circumstances of White British families than those of Black and minority ethnic families, e.g. because the latter are less inclined, or have fewer possibilities, to move to less deprived neighbourhoods when their income rises. Resolving such issues will be difficult until such a time that CSC services begin collecting (or linking their records to) valid and reliable data on the socio-economic circumstances of families.

The reliance on neighbourhood-level data was relevant to other limitations. One was the inability to measure social gradients for children under five years old and 16/17 year-olds, because the link with LSOA IMD scores could only be made for children attending state school provision in the 5-15 age range (see Section 2.2). These exclusions matter because Under 5s are more likely to receive protective interventions than older children, while entries to care among 16/17 year-olds have increased sharply since 2010. Another limitation was the lack of a reference group for children who were not referred to CSC, i.e. the study only had data about children who received a service. This meant that count regression was necessary to compare variations in population characteristics at the level of LSOAs, which imposed a limit to the range of predictive analysis and the ability to disentangle effects. Further research into this area would undoubtedly benefit from access to a nointervention reference group of children from the various datasets linked to the NPD. Another limitation of the NPD link was that children looked after could not be included in the analysis, since the available data did not include details of the LSOA where children were living before they went into care. Since neighbourhood deprivation where children are placed (e.g. their foster home) may well differ from where they lived with their birth family, it was not considered suitable for analysing the social gradient of services for children in state care. Finally, the analysis of ethnicity was limited to the broad categories recorded by the DfE, as a condition of accessing and reporting on case-level data where there may be only small numbers of children in some areas from particular backgrounds. This means that we could not report on substantial differences in the experiences of children from minority groups, including White children who are not White British.

A limitation of the analysis looking at LA-level indicators was that it considered only a selection of variables, i.e. it did not include every possible indicator that could affect rates of service provision. As pointed out in the analysis, it is also difficult to disentangle these effects. For example, in England, there are no official statistics for measuring income inequality between LAs, i.e. an equivalent to Gini coefficient scores that measure income distributions and wealth inequality between different

populations (Gastwirth, 1972). Webb *et al.* (2020b) used CACI Ltd's 'Paycheck' data on income bands to look at the effect of income distribution within LAs on rates of intervention, replicating work in the United States (Eckenrode et al., 2014). Their findings suggested that income inequality as measured by the Gini coefficient had a significant effect on the social gradient for CLA within LAs, which was separate from – and potentially stronger than – the effect of LA-level deprivation. Future analysis of the national CSC data would therefore benefit from linkage with local area data on income bands to further investigate the effect of income distributions and income inequality on differential rates of intervention.

4.2. The social gradient of referral

Research into child welfare inequalities has mainly focused on the provision of child protection interventions and accommodation in public care (Bywaters *et al.*, 2018; Webb *et al.*, 2020b). Up to now it has not been possible to examine equivalent data on referrals. The findings from this study show that the majority of inequality in the child welfare system is already present at the point when a child is referred to CSC and is then exacerbated by subsequent decisions (see Section 4.3). For example, the results in Table 2 (Section 3.4) show that a 10% increase in LSOA deprivation produced a 62% increase in a child's chances of being referred to CSC, a 69% increase in the chances of a CP investigation and an 80% increase in the chances of receiving a CP plan. In other words, statutory CSC services start off with steep inequalities in demand and then see them increase at each threshold of provision.

Before considering the implications of this, it is worth highlighting some of the context to referrals to CSC. First, a referral is not the same as a contact with services. LAs do not report information on contacts to the Department for Education, although they may be recorded separately by LAs as part of their own case management systems. Many LAs now triage calls to CSC through an 'initial point of contact', separating potential referrals, or situations demanding an immediate response, from other types of call (e.g. calls that relate to already open cases, or fall within the remit of another service or department). Many LAs have also set up a Multi-Agency Safeguarding Hub (MASH) to pick up work from initial triage and, if necessary, undertake further checks and assess risk, with the help of information held by other agencies such as the police (Golden, 2011). Depending on the outcome of these processes, referrals may be immediately escalated for a response (e.g. a CP investigation under Section 47), passed on to a statutory social work team for formal assessment, transferred to Early Help services for additional support, or closed with no further action. A 'referral' can therefore be the outcome of various layers of screening that are not reported in the official statistics and may accentuate or alleviate the social gradient of demand. Findings on thresholds elsewhere in the system would seem to suggest that additional layers are likely to increase the social gradient from the point of contact, but this could not be tested with currently available data.

The social gradient of referrals reflects the cumulative impact of social inequality. Demand for health and social care services is unevenly distributed in the community due to the pressure exerted by structural factors, such as poverty, discrimination and social exclusion, on children's developmental pathways (McLoyd *et al.*, 2014; Marks *et al.*, 2015; Stenseng *et al.*, 2015; Dickerson and Popli, 2016). Universal provision, such as education and primary health, may alleviate some of the effect of socio-

economic inequalities, and indeed there is evidence from a number of countries to suggest that it does (Veugelers and Yip, 2003; Asaria *et al.*, 2016; Johnson and Jackson, 2019). However, this literature also points to the need for sustained investment across a range of public services to ensure that universal access translates into an eventual narrowing of longitudinal gaps in outcomes. As Marmot (2020) has shown, disinvestment in public services during periods of fiscal tightening can quickly lead to a widening of such gaps. Indeed, the risk that public services might reinforce inequalities was pointed out fifty years ago by Tudor Hart (1971), who argued that even when it was universal and free at the point of access, healthcare provision tended to be inversely proportionate to the level of need in the community, and better-off citizens would generally secure advantageous care for themselves and their families. In the health sector, counteracting these tendencies has required a sustained effort to reduce inequalities by strengthening primary care (Asaria *et al.*, 2016).

In CSC, such issues were pertinent to the development and evaluation of the Sure Start programme in the early 2000s. Originally established as an open-access resource for families in disadvantaged areas, Sure Start was initially found to be providing more benefit to children from less disadvantaged backgrounds (Belsky *et al.*, 2006). This prompted changes in its second phase to ensure that services were also reaching the most vulnerable households (Melhuish *et al.*, 2010). During this period, it was also decided to roll out children's centres as a universal service across the country; as a result, Sure Start became an emblem of the government's social investment strategy and its focus on children and the early years (Fawcett *et al.*, 2004). In much the same way, the fate of children's centres after 2010 has become emblematic of the post-2010 shift in social policy for children's services, with the onset of austerity prompting huge cuts in community-based services accompanied by a renewed focus on child protection in statutory CSC (Parton, 2014). Numbers of children's centres have declined steadily, with some surveys estimating that up to 30% have been closed since 2009 (Smith *et al.*, 2018). The remaining services are more thinly spread, often no longer 'in pram-pushing distance' of the families they serve, and their focus has changed to providing targeted interventions to referred families with high levels of need.

A similar picture has emerged in Early Help and youth services. Early Help refers to a range of preventative services that provide support to children and families at the stage when needs are identified, in order to pre-empt intervention at a later stage when problems have escalated (Hood et al., 2020a; Lucas and Archard, 2021). Examples of Early Help include family hubs, children's centres, family support work, parenting groups and courses, mentors and positive activities for young people, and relationship support. Over the past decade, most LAs have sought to integrate Early Help as an additional layer of CSC just below the threshold for referral to statutory services (Hood et al., 2020a). In a replica of the triage and assessment processes common to CSC, referrals to Early Help are screened for eligibility before being allocated on a short-term basis for targeted casework. Although national data are not available for these services, qualitative reports from within the sector consistently point to an increase in the quantity and complexity of referrals to Early Help. As a result, Early Help services now deal with the type of complex needs that twenty years ago might have come under the purview of CIN teams. It is therefore debatable how 'early' this help really is, particularly when open-access services for children and families have been hollowed out. The steep social gradient of referrals to CSC arguably reflects this cumulative shift from prevention to intervention, and from open-access universal services to targeted Early Help (Hood et al., 2020a). It also suggests

that adding layers of targeted prevention might exacerbate inequalities and encourage a disproportionate focus on poorer families. There is evidence for this in the statutory system, particularly at the threshold to CP interventions, as will be shown below.

4.3. Neglect and the threshold to child protection

In his overview of child welfare inequalities in the UK, Bywaters (2020) argues that inequalities arise from the interaction of demand and supply factors. Demand factors include the psychosocial determinants of children's wellbeing, such as the characteristics and circumstances of parents, families and communities, as well as broader socio-economic and political drivers (see also Hood et al., 2020b). Supply factors affect the way services are organised and delivered, and include legislation, statutory guidance, procedures, resources, workforce, inspections, organisational culture, practice models, and so on. Hood et al. (2020a) referred to these factors as 'system conditions' and drew attention to the effects of differential screening and rationing. Their analysis of aggregated data for all English LAs showed that the higher demand pressures experienced in more deprived LAs were associated with more rationing, earlier screening out and a tendency to work for shorter time periods with children in need (Hood et al., 2016, 2019). In the past decade, demand pressures have been exacerbated by deteriorating economic conditions, in part due to austerity policies in the wake of the 2008-09 financial crisis. Studies have shown that these economic and political trends disproportionately affected more deprived LAs (Hastings et al., 2017; Webb and Bywaters, 2018). While affluent LAs have also been affected, their CSC services have tended to be more interventionist because they have more resources relative to the level of demand. Across the country, differing concentrations of deprivation, when combined with utilitarian strategies to manage demand, contribute to the systematic inequalities examined in this study.

One of the effects of demand management is that services experiencing higher rates of referrals tend to 'convert' fewer of those referrals into CP interventions (Hood et al., 2019). Because deprivation is such an important driver of demand, this means that referrals in more deprived LAs are more likely to be treated as child protection concerns than in less deprived LAs. In other words, thresholds for CP are likely to be lower in affluent LAs. This must be qualified by other considerations, however, as will be argued below. One of the findings from this study pointed to another feature of the CP threshold, namely that the transition to CP was associated with a noticeable steepening of the social gradient. This applied to all LAs, whether they were deprived or not. It means a sharp rise in the difference that living in a poorer neighbourhood makes to children on a CP plan, compared to children assessed as not 'in need', or compared to children receiving a CIN plan without any CP involvement.

It is worth highlighting that the threshold to CP interventions marks a legal step-change in the relationship between the state and the family. This is encapsulated by the distinction in the 1989 Children Act between Section 17 (the duty to provide support to children in need) and Section 47 (the duty to investigate concerns about significant harm to a child). It is the point at which the 'policing' role of CSC (surveillance, investigation and enforcement) takes over from the provision of a service by mutual consent, paving the way in some cases to the explicitly adversarial environment of

court proceedings (Devine and Parker, 2015). This is not to say that interactions between social workers and family members necessarily become antagonistic after the threshold to CP is reached, and indeed the statutory guidance emphasises the need to work in partnership with families to safeguard children's welfare (Department for Education, 2018b). However, the threshold marks a decisive shift in the balance of power – as well as in what is at stake for children and their families. It is here that the social gradient of intervention becomes much steeper. In other words, the point at which the state decides that family life needs policing is also the point at which it decides more than ever to concentrate its attention on poorer families.

The main driver of this process is neglect. In the eight years from 2013-2020, numbers of CP plans in England increased by almost 20% (Department for Education, 2020). In 2019-20, over half of these were for neglect (50.5%), with emotional abuse the next most common category (35.7%). Coinciding with the rise in poverty and inequality across the country since 2013, the proportion of CP plans under neglect and emotional abuse has steadily increased whereas the proportion recorded under physical and sexual abuse have decreased (Department for Education, 2020). The findings from this study show that interventions for neglect had the highest social gradient of any type of assessed need or category of CP plan. Previous work (Hood *et al.*, 2020a) has suggested that identifying neglect can often make the difference between children whose needs are addressed under a CIN plan and those who end up with a CP plan, something that contributes to the large proportion of CP plans under this category. The identification and substantiation of neglect is therefore closely bound up with the systematic focus on children from poor backgrounds within the child protection system. This phenomenon is evident across all LAs but becomes particularly visible in affluent, rural areas.

4.4. Rural poverty and inequality

England is a densely populated country with a centralised political economy dominated by London, the country's capital and largest city. Like many other areas of social policy, child protection has often been associated with the most problematic features of large towns and cities, such as slums, homelessness, unemployment, and the concentrated effects of deprivation and social exclusion in pockets of public (i.e. state subsidised) housing. Urban poverty has been at the forefront of social planning since the late 19th century surveys of Rowntree and Booth (Linsley and Linsley, 1993), while periodic child abuse scandals have also tended to draw attention to the social landscape of large cities, particularly London (Munro, 2004; Jones, 2014). In contrast, rural areas are associated with wealth and are often perceived in idealised terms (by city dwellers) as a haven from the social problems afflicting cities (Butler, 2020). Although understandable in some respects, such perceptions can obscure the real problems experienced by vulnerable groups, including people on low incomes, who live in the countryside (LGA, 2017). This means that child protection in rural areas attracts relatively little attention in England, unlike many countries with a comparable welfare system (Crocker, 1996; Flaherty and Cooper, 2010; Maguire-Jack *et al.*, 2020).

The findings from this study suggest that rural poverty and the problems experienced by families in sparsely populated areas contribute significantly to inequalities in the child welfare system and should be a higher priority for policymakers. The systematic effects of deprivation on the chances of

a referral and subsequent intervention were found to be significantly greater in rural areas, which are more sparsely populated and where families may have greater difficulties in accessing community resources and support (LGA, 2017). The underlying problems are evident in the government's own statistics, which show that families living in rural areas live much further away from basic amenities and services (Department for Environment, 2016) and have higher living and food costs (Office for National Statistics (ONS), 2017) than families in urban areas. Moreover, rural areas have been badly affected by austerity in recent years (May *et al.*, 2020) and by the erosion of the infrastructure for family support including the mass closure of children's centres (Smith *et al.*, 2018). Indeed, the fact that rural areas are more affluent on the whole than urban areas itself throws a spotlight on the greater inequalities in provision that are evident in less deprived LAs. As May et al. (2020) point out, the stigmatising effects of poverty are acutely experienced in rural areas, where the 'cultural politics of the rural idyll' heighten the visibility of financial hardship and its impact on family life:

'The resultant reluctance on the part of many rural people to declare themselves, or to be recognised by others as, poor or needy begs important questions about the functioning of care, welfare and justice in rural settings' (May et al., 2020: 421).

The intersection of social and economic realities underlying rural poverty also underpin the statistical finding of a steep social gradient in rural child welfare interventions. The disproportionate focus on poorer families in generally affluent LAs conveys a picture of families in pockets of deprivation in otherwise well-off communities, who have become increasingly isolated from both official and informal sources of support. These conditions arguably contribute to the escalation of social problems that are among the drivers of demand for CSC (Hood *et al.*, 2020b). As noted above, the shift to late intervention over the past decade means that the state's response to such problems is increasingly likely to take the form of a CP plan for child neglect.

The difficulties experienced by poorer families in rural areas also highlight differences in the organisation and delivery of CSC. In part, this reflects the complicated structure of local government in England. The LAs providing these services broadly fall into four categories: unitary authorities, London boroughs, metropolitan district councils, and non-metropolitan county councils. The first three of these mainly cover the cities, urban areas and larger towns. The non-metropolitan county councils, on the other hand, tend to be the larger, more rural areas of England. Most of them are 'two-tier' authorities, meaning that the county is further subdivided into district councils. The county council is responsible for some local government services, including education and social services (including CSC), while others, such as rubbish collection or planning applications, are devolved to district councils. Given the acute fiscal pressures on LAs and the widespread closure of local facilities such as children's centres (see Section 4.1 above), it is reasonable to suppose that county councils, which are generally large, sparsely populated jurisdictions, have found it increasingly difficult to deliver effective coverage of preventative services. Findings from the study show that such challenges are implicated in the disproportionate focus on low-income families for CP interventions, particularly around neglect and emotional abuse. As will be shown below, such inequalities have a significant cost in terms of outcomes for children.

4.5. Outcomes and the cost of inequality

The case against inequalities in child welfare provision is primarily made on moral grounds, on the basis that intervening in private family life in a way that is avoidable and unfair runs contrary to fundamental principles of social justice, including the commitment to uphold human rights (Keddell and Davie, 2018; Bywaters, 2020). Although of secondary importance, questions of efficiency and effectiveness must also be considered, particularly in the current era of performance management and risk regulation (Rothstein et al., 2006; Van Dooren et al., 2015). The logic of inequalities accumulating through successive thresholds of intervention is that reducing inequalities would require a rebalancing and reinvestment of resources as early as possible in the causal chain of demand and provision. While the 'refocusing' debate in CSC has been ongoing ever since implementation of the Children Act in the early 1990s (Department of Health, 1995; Dartington Social Research Unit, 2004), it has often focused on the balance of work within statutory child safeguarding services (Davies and Ward, 2012), as well as the increasingly complex remit of Early Help. Yet he finding of a steep social gradient at the point of referral to services strongly suggests that the most important levers of change lie outside of statutory CSC as well as Early Help, both of which are targeted services – they react to, but do not act on, the social structures that result in differential levels of need across socio-economic strata. Since 2010, government policy has been to cut broad-based community services and instead to target the most vulnerable children and families for remedial interventions. In this sense, whether such interventions are labelled 'Child Protection', 'Children in Need' or 'Early Help' is perhaps less important than the fact that they are an edifice of targeted support and intervention built on a foundation of rising poverty and chronic underinvestment in universal provision for children and families. In making this connection, it is important to recognise that targeting has long been argued to be the most effective way of organising prevention and family support (Hardiker et al., 1991; Frost et al., 2015). The wider institutional context of managerialism and risk regulation is also relevant here. Information on the 'three Es' – effectiveness, economy and efficiency – is easier to obtain and evaluate when services target individuals for a defined period of time. The impact of investment in universal public services benefits entire communities over the longer term and is correspondingly harder to measure and model (Jack, 2005).

Since targeted services in the current system have become synonymous with multiple layers of screening and assessment, and since social gradients tend to increase at each threshold of provision following referral and assessment, it is important to understand what happens to children's pathways and outcomes when the social gradient is higher (Section 3.6). Unfortunately, as has been noted elsewhere (Hood *et al.*, 2016b; Hood, 2019), there is a dearth of good outcome measures in CSC. As a result, perceptions of quality are mainly dependent on Ofsted judgements, which require an inspection. On the whole, less deprived LAs tend to do better in inspections (Webb and Bywaters, 2017; Wilkins and Antonopoulou, 2019) although no relationship has been found between an LA's deprivation and the likelihood of an inadequate judgement (Ofsted, 2017). Other relevant factors include variations in spending (Webb and Bywaters, 2018) and effective leadership (Ofsted, 2015). Other than Ofsted judgements, the performance measures used by English LAs mainly revolve around quantity indicators such as rates of CP plans, process indicators such as assessment timescales, and indicators of 'repeat' demand: re-referrals within 12 months and CP plans for

children who previously had a CP plan (Hood *et al.*, 2016b). These are 'negative' measures in the sense that higher rates of re-referrals are generally seen as undesirable because they suggest that CSC interventions often do not lead to sustained improvement and that cases may have been closed prematurely.

The findings from Section 3.6 showed that more affluent LAs not only had a higher social gradient but they also tended – after adjustment for deprivation – to have a higher ratio of re-referrals per referral and repeat CP plans per CP plan. The highest levels of re-referrals were found in the poorest neighbourhoods in the most affluent LAs. In some respects, these results are surprising (although fairly conclusive given the comprehensiveness of the data). Previous research has established that more affluent LAs have greater resources relative to the level of demand, so that they tend to screen out fewer referrals and work with CIN cases for longer periods (Hood et al., 2016a; Hood et al., 2019). Additional confirmation of this can also be found in Section 3.6, which reported differences in the length of CIN plans (between high and low deprivation LAs) that were significant even after adjusting for LSOA-level deprivation. The results also showed that children in more deprived neighbourhoods (irrespective of which LA) tended to have longer CIN and CP plans. Since, on a national level, the most deprived neighbourhoods are clustered in the most deprived LAs, the combination of results suggests that the affluent LAs deploy a highly interventionist approach that particularly affects children from poorer neighbourhoods. In other words, compared to more deprived LAs, they are able to deploy more in the way of statutory resources on families (see also Children England, 2020), yet despite this end up with *higher* levels of re-referrals and repeat CP plans when comparing children from similarly deprived neighbourhoods. In conclusion, there was evidence that a higher social gradient of intervention was associated with *less effective* service provision.

5. Conclusion and recommendations

This report has presented the methods and findings from a study of the national datasets for children in need, which set out to identify where inequalities in provision were most concentrated in the child welfare system. Results showed that a steep social gradient of demand already existed at the point of referral to CSC and was subsequently magnified for children who are subject to CP conferences and CP plans. Higher social gradients, meaning even more disproportionate intervention rates for children from low-income families, were found to be higher for younger children, White (effectively White British) children, and children assessed with concerns about neglect. The 'inverse intervention' effect was found to be statistically significant across all thresholds and most subgroups, meaning there were higher social gradients in more affluent LAs, with very little evidence of confounding from other LA-level contextual indicators. Higher social gradients were found in areas that were more rural, and sparsely populated. There was some evidence that inequalities in provision were associated with less effective services, as measured by rates of rereferrals and CP plans.

Overall, these findings suggest a need to reexamine the problem of over-representation in the child protection system, particularly in the current context of chronic under-investment in universal and non-statutory children's services. The steep social gradient of referrals to CSC indicates that services

in their current form are ill-equipped to understand and respond to the social context of demand. Instead, a reliance on targeted interventions to promote and safeguard children's welfare, whether undertaken by statutory CSC or Early Help, seems to be exacerbating the problem of inequality. One result is a proliferation of CP plans to address child neglect in deprived neighbourhoods. The findings raise questions about whether such an approach is desirable or effective.

Based on the findings and their implications for children's social care, the following suggestions and recommendations are made for policy, management and practice:

A public health approach to child welfare

Statutory CSC services are in a difficult position, given their duties and responsibilities under the law and the acute budgetary constraints they face. Under current funding arrangements for local government, LAs do not have substantial resources to invest in community services and universal provision for children and families. Moreover, a substantial part of the social gradient in referrals reflects wider social inequalities that services (however 'preventative' their design) cannot really be expected to address in the absence of social policies to address, for example, the crisis in public housing, burgeoning food poverty, and the precarity of employment in many sectors of the economy. Nonetheless, the existence of such adverse socio-economic conditions does have strategic implications. The individualisation of social problems alongside the shift to late intervention means that child welfare is now seen largely in terms of identifying and addressing risk factors in the child's immediate environment, which usually boils down to parenting practices for younger children and/or the risk-taking behaviour of older children. It is an individualistic approach to child welfare that ignores the social context of demand and contributes to the escalation of inequality once children are inside the system.

Addressing inequalities will therefore require a realignment of services away from current reliance on targeted interventions with high-risk cases and towards what might be broadly termed a 'public health' approach to child welfare. This means putting at the heart of policy and practice the social and economic conditions that lead to disproportionate identification of child abuse and neglect in deprived neighbourhoods. The strategic aim should be to bring down the historically high rates of CP plans and out-of-home care, particularly in the poorest parts of the country, and to do so in a way that reduces the social gradient of intervention everywhere. A public health approach is designed to act on the underlying drivers of demand for specialist 'acute' services rather than to improve efficiency and effectiveness of those services. It requires a cross-cutting strategy across government to create social policies that will improve all children's welfare, recognising that the benefits will be felt across a range of public services and not just CSC.

The key planks of this approach should be to:

- 1. Create a framework of cross-departmental policies to address the major social problems which impact on children's wellbeing and healthy development.
- 2. Promote a reorientation of social care services towards supporting children, families and communities and sustaining relationships rather than identifying risk; and
- 3. Restrict child protection interventions to a relatively small number of cases where damage to children is evident and serious.

Target problems not people

Targeted services have the potential to be an engine of social inequality, if the operation of tiers and thresholds serve to magnify the social divisions underlying differential risk and need. This has been found to be the case with CSC. Current thinking on child welfare is dominated by the idea that the prevention and protection are essentially about targeting, and that effectiveness is about improving the standard of provision to targeted groups, e.g. through integrated Early Help, social work practice models, corporate reorganisation, or computer algorithms to aid risk assessment and decision-making. An inequalities perspective requires a whole-systems approach to organisational learning, which in this case means questioning the current reliance on multiple layers of assessment and intervention to manage demand. A system geared around understanding and tackling child welfare problems, in which tailored support and intervention is allied to a coherent multi-agency strategy to address the root causes of issues such as child neglect, would stand a better chance of reducing inequality.

Review implementation of Section 17

Section 17 of the 1989 Children Act provides the legislative underpinning for local government services to children in need and their families. The first paragraph reads as follows:

17 Provision of services for children in need, their families and others.

(1) It shall be the general duty of every local authority (in addition to the other duties imposed on them by this Part)—

(a) to safeguard and promote the welfare of children within their area who are in need; and

(b) so far as is consistent with that duty, to promote the upbringing of such children by their families, by providing a range and level of services appropriate to those children's needs.

As noted above (Section 4.1), there has been debate ever since the Children Act was implemented as to whether statutory CSC services have focused excessively on child protection at the expense of their more general duty to promote the welfare of children under Section 17. One of the features of investment in children's services under the New Labour government of the 2000s was its focus on universal and preventative programmes, such as Sure Start, which were outside statutory CSC and therefore Section 17. In 2011, as austerity policies began to take effect, the Munro Review used the term 'Child Protection System' to refer to statutory CSC services; in the intervening years, social work caseloads have arguably become even more concentrated on CP as demand and the complexity of need have escalated. Replacement of initial and core assessments with the single child and family assessment in 2013 may also have contributed to some blurring of the operational distinction between CIN and CP. Although in legal and procedural terms the invoking of Section 47 is clearly defined and has important implications for families involved in the system, it is likely that for

most families the allocation of a social worker conveys overtones of a child protection intervention even when the basis for involvement is under Section 17.

Given these developments, and in light of the steep inequalities identified in CSC interventions, there is a case for reviewing how statutory services are currently designed to fulfil their duties under Section 17. This is not to say that the legislation needs to be changed, nor that more children should be referred to CSC in order to have their needs assessed. In fact, as argued above, the duty of LAs to provide services to promote the welfare of children in need does not have to mean an array of thresholds designed to identify the small numbers of children eligible for specialist help. It is also consistent with a public health approach aimed at ameliorating the social conditions – including poverty, social exclusion, precarious housing, inadequate support networks and lack of community assets – that drive demand and elevate the risk of maltreatment. A more generous – and less stigmatising – definition of who 'counts' as a child in need could underpin a strategic approach to producing a fairer and more equitable system.

Better data on the socioeconomic circumstances of families

A better knowledge base is needed for governments and services to understand the social context of child welfare and develop an evidence-informed strategy. Currently the available evidence is restricted by the lack of systematic data on parents' socio-demographic characteristics, which are neither collected by CSC services nor are easily available to them. Proxy measures for child poverty, such as free school meals or neighbourhood deprivation, are insufficiently robust or accurate to serve as an evidence base for social policy in such a key area. In fact, many of the datasets needed to bridge this knowledge gap already exist but are held in separate administrative siloes by both central and local government. Technical advances in <u>secure analytics platforms</u> are making it possible to interrogate such datasets without the need for researchers to access or extract any personal, sensitive data. Building an appropriate infrastructure to leverage such advances should be a key priority to support evidence-based policy and is vital for addressing the problems examined in this report.

Further information

To find out more about the study, please visit the project website or contact:

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References

Action for Children, National Children's Bureau and The Children's Society (2017) *Turning the Tide*, available online: <u>https://www.childrenssociety.org.uk/what-we-do/resources-and-</u>

publications/turning-the-tide, Last accessed Last accessed 26 July 2018

Asaria, M., Ali, S., Doran, T., Ferguson, B., Fleetcroft, R., Goddard, M., Goldblatt, P., Laudicella, M., Raine, R. and Cookson, R. (2016) 'How a universal health system reduces inequalities: lessons from England', *J Epidemiol Community Health*, **70**(7), pp. 637-643.

Belsky, J., Melhuish, E., Barnes, J., Leyland, A.H. and Romaniuk, H. (2006) 'Effects of Sure Start local programmes on children and families: early findings from a quasi-experimental, cross sectional study', *BMJ*, **332**(7556), p. 1476.

Blackstock, C., Bamblett, M. and Black, C. (2020) 'Indigenous ontology, international law and the application of the Convention to the over-representation of Indigenous children in out of home care in Canada and Australia', *Child Abuse & Neglect*, **110**, p. 104587.

Butler, P. (2020) *City dwellers idealise Britain's countryside, but there's no escaping rural poverty,* Community Care, available online: <u>https://www.theguardian.com/society/2020/oct/13/city-</u> <u>dwellers-idealise-britains-countryside-but-theres-no-escaping-rural-poverty</u>, Last accessed 17/03/10 Bywaters, P. (2020) *The Child Welfare Inequalities Project: Final Report,* Coventry, Child Welfare Inequalities Project and Nuffield Foundation.

Bywaters, P., Brady, G., Bunting, L., Daniel, B., Featherstone, B., Jones, C., Morris, K., Scourfield, J., Sparks, T. and Webb, C. (2018) 'Inequalities in English child protection practice under austerity: A universal challenge?', *Child & Family Social Work*, **23**(1), pp. 53-61.

Bywaters, P., Brady, G., Sparks, T. and Bos, E. (2016a) 'Child welfare inequalities: New evidence, further questions', *Child & Family Social Work*, **21**(3), pp. 369-380.

Bywaters, P., Brady, G., Sparks, T., Bos, E., Bunting, L., Daniel, B., Featherstone, B., Morris, K. and Scourfield, J. (2015) 'Exploring inequities in child welfare and child protection services: Explaining the 'inverse intervention law', *Children and Youth Services Review*, **57**, pp. 98-105.

Bywaters, P., Bunting, L., Davidson, G., Hanratty, J., Mason, W., McCartan, C. and Steils, N. (2016b) 'The relationship between poverty, child abuse and neglect: an evidence review', York, Joseph Rowntree Foundation.

Bywaters, P., Scourfield, J., Jones, C., Sparks, T., Elliott, M., Hooper, J., McCartan, C., Shapira, M., Bunting, L. and Daniel, B. (2020) 'Child welfare inequalities in the four nations of the UK', *Journal of Social Work*, **20**(2), pp. 193-215.

Campbell, M., Haveman, R., Sandefur, G. and Wolfe, B. (2005) 'Economic inequality and educational attainment across a generation', *Focus*, **23**(3), pp. 11-15.

Cancian, M., Yang, M.-Y. and Slack, K.S. (2013) 'The effect of additional child support income on the risk of child maltreatment', *Social Service Review*, **87**(3), pp. 417-437.

Children England (2020) *Comprehensive Spending Review 2020: Children England's representation*, available online: <u>https://www.childrenengland.org.uk/comprehensive-spending-review-2020-children-englands-representation</u>, Last accessed 25/3/21

Cooper, K. and Stewart, K. (2013) 'Does money affect children's outcomes?', London, Centre for Analysis of Social Exclusion, The London School of Economics and Political Science.

Cooper, K. and Stewart, K. (2017) 'Does money affect children's outcomes? An update', London, Centre for Analysis of Social Exclusion, The London School of Economics and Political Science. Crocker, D. (1996) 'Innovative models for rural child protection teams'. *Child Abuse & Neglect*. **20**(2)

Crocker, D. (1996) 'Innovative models for rural child protection teams', *Child Abuse & Neglect*, **20**(3), pp. 205-211.

Cunneen, C. (2019) 'Institutional racism and (in) justice: Australia in the 21st century', *Decolonization of Criminology and Justice*, **1**(1), pp. 29-51.

Dartington Social Research Unit (2004) 'Refocusing Children's Services Towards Prevention: Lessons from the Literature: Research Report RR510', Annesley, Department for Education and Skills (DfES). Davies, C. and Ward, H. (2012) *Safeguarding Child Across Services: Messages from Research*, London, Jessica Kingsley.

Department for Education (2018a) 'Children in need census 2019 to 2020: Guide for local authorities ', London, TSO.

Department for Education (2018b) 'Working Together to Safeguard Children: A guide to inter-agency working to safeguard and promote the welfare of children ', London, TSO.

Department for Education (2020) *Characteristics of children in need: 2019 to 2020 (England),* available online: <u>https://www.gov.uk/government/statistics/characteristics-of-children-in-need-2019-to-2020</u>, Last accessed Last accessed: 5 February 2021

Department for Environment, F.a.R.A. (2016) *Percentage of people in rural and urban areas that live within a certain distance from a range of services*, available online:

https://www.gov.uk/government/statistical-data-sets/rural-services-series, Last accessed Department of Health (1995) 'Messages from Research', London, HMSO.

Dettlaff, A.J. and Boyd, R. (2020) 'Racial disproportionality and disparities in the child welfare system: Why do they exist, and what can be done to address them?', *The ANNALS of the American academy of political and social science*, **692**(1), pp. 253-274.

Dettlaff, A.J., Rivaux, S.L., Baumann, D.J., Fluke, J.D., Rycraft, J.R. and James, J. (2011) 'Disentangling substantiation: The influence of race, income, and risk on the substantiation decision in child welfare', *Children and Youth Services Review*, **33**(9), pp. 1630-1637.

Devine, L. and Parker, S. (2015) 'Rethinking child protection strategy: Learning from trends', Bristol, Centre for Legal Research, University of the West of England.

Dickens, J., Howell, D., Thoburn, J. and Schofield, G. (2007) 'Children starting to be looked after by local authorities in England: An analysis of inter-authority variation and case-centred decision making', *British Journal of Social Work*, **37**(4), pp. 597-617.

Dickerson, A. and Popli, G.K. (2016) 'Persistent poverty and children's cognitive development: evidence from the UK Millennium Cohort Study', *Journal of the Royal Statistical Society. Series A (Statistics in Society)*, pp. 535-558.

Doidge, J.C., Higgins, D.J., Delfabbro, P., Edwards, B., Vassallo, S., Toumbourou, J.W. and Segal, L. (2017) 'Economic predictors of child maltreatment in an Australian population-based birth cohort', *Children and Youth Services Review*, **72**, pp. 14-25.

Donkin, A.J. (2014) 'Social gradient', *The Wiley Blackwell Encyclopedia of Health, Illness, Behavior, and Society*, pp. 2172-2178.

Dyson, C. (2008) 'Poverty and child maltreatment', *NSPCC child protection research briefing. London: National Society for the Prevention of Cruelty to Children (NSPCC).*

Eckenrode, J., Smith, E.G., McCarthy, M.E. and Dineen, M. (2014) 'Income inequality and child maltreatment in the United States', *Pediatrics*, **133**(3), pp. 454-461.

Fawcett, B., Featherstone, B. and Goddard, J. (2004) *Contemporary Child Care Policy and Practice*, Basingstoke, Palgrave Macmillan.

Featherstone, B., Morris, K., Daniel, B., Bywaters, P., Brady, G., Bunting, L., Mason, W. and Mirza, N. (2017) 'Poverty, inequality, child abuse and neglect: Changing the conversation across the UK in child protection?', *Children and Youth Services Review*.

Flaherty, R. and Cooper, R. (2010) 'Piloting a parenting skills program in an Australian rural child protection setting', *Children Australia*, **35**(3), pp. 18-24.

Font, S.A., Berger, L.M. and Slack, K.S. (2012) 'Examining racial disproportionality in child protective services case decisions', *Children and Youth Services Review*, **34**(11), pp. 2188-2200.

Frost, N., Abbott, S. and Race, T. (2015) *Family support: Prevention, early intervention and early help*, London, John Wiley.

Gastwirth, J.L. (1972) 'The estimation of the Lorenz curve and Gini index', *The review of economics and statistics*, pp. 306-316.

Gillham, B., Tanner, G., Cheyne, B., Freeman, I., Rooney, M. and Lambie, A. (1998) 'Unemployment rates, single parent density, and indices of child poverty: Their relationship to different categories of child abuse and neglect', *Child Abuse & Neglect*, **22**(2), pp. 79-90.

Golden, S., Aston, H. and Durbin, B. (2011) 'Devon Multi-Agency Safeguarding Hub: Case-Study Report. ', Slough, NFER.

Hardiker, P., Exton, K. and Barker, M. (1991) *Policies and Practices in Preventive Child Care*, Aldershot, Ashgate.

Harnett, P.H. and Featherstone, G. (2020) 'The role of decision making in the over-representation of Aboriginal and Torres Strait Islander children in the Australian child protection system', *Children and Youth Services Review*, **113**, p. 105019.

Hastings, A., Bailey, N., Bramley, G. and Gannon, M. (2017) 'Austerity urbanism in England: The 'regressive redistribution' of local government services and the impact on the poor and marginalised', *Environment and Planning A*, **49**(9), pp. 2007-2024.

Hayes, D. and Spratt, T. (2009) 'Child welfare interventions: Patterns of social work practice', *British Journal of Social Work*, **39**(8), pp. 1575-1597.

Hernán, M.A., Clayton, D. and Keiding, N. (2011) 'The Simpson's paradox unraveled', *International journal of epidemiology*, **40**(3), pp. 780-785.

Hill, R.B. (2004) 'Institutional racism in child welfare', *Race and Society*, **7**(1), pp. 17-33. Hood, R. (2019) 'What to Measure in Child Protection?', *The British Journal of Social Work*, **49**(2), pp. 466-484.

Hood, R., Goldacre, A., Gorin, S. and Bywaters, P. (2019) 'Screen, Ration and Churn: Demand Management and the Crisis in Children's Social Care', *The British Journal of Social Work*, **50**(3), pp. 868-889.

Hood, R., Goldacre, A., Gorin, S., Bywaters, P. and Webb, C. (2020a) 'Identifying and understanding the link between system conditions and welfare inequalities in children's social care services', Kingston Upon Thames, Kingston University and St Georges, University of London.

Hood, R., Goldacre, A., Grant, R. and Jones, R. (2016a) 'Exploring Demand and Provision in English Child Protection Services', *British Journal of Social Work*, **46**(4), pp. 923-941.

Hood, R., Gorin, S., Goldacre, A., Muleya, W. and Bywaters, P. (2020b) 'Exploring drivers of demand for child protection services in an English local authority', *Child & Family Social Work*.

Hood, R., Grant, R., Jones, R. and Goldacre, A. (2016b) 'A study of performance indicators and Ofsted ratings in English child protection services', *Children and Youth Services Review*, **67**, pp. 50-56.

Jack, G. (2005) 'Assessing the impact of community programmes working with children and families in disadvantaged areas', *Child and Family Social Work*, **10**(4), pp. 293-304.

Jack, G. and Gill, O. (2003) *The missing side of the triangle: assessing the importance of family and environmental factors in the lives of children*, Barkingside, Barnardo's.

Johnson, R.C. and Jackson, C.K. (2019) 'Reducing inequality through dynamic complementarity: Evidence from Head Start and public school spending', *American Economic Journal: Economic Policy*, **11**(4), pp. 310-349.

Jones, R. (2014) The story of Baby P: Setting the record straight, Bristol, Policy Press.

Keddell, E. and Davie, G. (2018) 'Inequalities and child protection system contact in Aotearoa New Zealand: Developing a conceptual framework and research agenda', *Social Sciences*, **7**(6), p. 89. Keddell, E., Davie, G. and Barson, D. (2019) 'Child protection inequalities in Aotearoa New Zealand: Social gradient and the 'inverse intervention law'', *Children and Youth Services Review*, **104**, p. 104383.

Layte, R. (2012) 'The association between income inequality and mental health: testing status anxiety, social capital, and neo-materialist explanations', *European Sociological Review*, **28**(4), pp. 498-511.

Lefebvre, R., Fallon, B., Van Wert, M. and Filippelli, J. (2017) 'Examining the relationship between economic hardship and child maltreatment using data from the Ontario Incidence Study of Reported Child Abuse and Neglect-2013 (OIS-2013)', *Behavioral Sciences*, **7**(1), p. 6.

Linsley, C.A. and Linsley, C.L. (1993) 'Booth, Rowntree, and Llewelyn Smith: a reassessment of interwar poverty', *The Economic History Review*, **46**(1), pp. 88-104.

Local Government Association (LGA) (2017) *Health and Wellbeing in Rural Areas*, London, Local Government Association.

Lucas, S. and Archard, P.J. (2021) 'Early help and children's services: exploring provision and practice across English local authorities', *Journal of Children's Services*, Advance Access,

https://www.emerald.com/insight/publication/issn/1746-6660#earlycite Lundy, E.R. and Dean, C. (2018) 'Analyzing heaped counts versus longitudinal presence/absence data

in joint zero-inflated discrete regression models', *Sociological Methods & Research*, p. 0049124118782550.

Maguire-Jack, K., Jespersen, B., Korbin, J.E. and Spilsbury, J.C. (2020) 'Rural child maltreatment: a scoping literature review', *Trauma, Violence, & Abuse*, p. 1524838020915592.

Marks, A.K., Ejesi, K., McCullough, M.B. and Coll, C.G. (2015) 'Developmental implications of discrimination', *Handbook of child psychology and developmental science*, pp. 1-42.

Marmot, M. (2017) 'Social justice, epidemiology and health inequalities', *European journal of epidemiology*, **32**(7), pp. 537-546.

Marmot, M., Allen, J., Boyce, T., Goldblatt, P. and Morrison, J. (2020) *Health equity in England: The Marmot Review 10 years on*, London, Institute of Health Equity.

Marmot, M.G., Allen, J., Goldblatt, P., Boyce, T., McNeish, D., Grady, M. and Geddes, I. (2010) *Fair society, healthy lives: Strategic review of health inequalities in England post-2010,* available online: <u>http://www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review</u>, Last accessed

May, J., Williams, A., Cloke, P. and Cherry, L. (2020) 'Still bleeding: The variegated geographies of austerity and food banking in rural England and Wales', *Journal of Rural Studies*, **79**, pp. 409-424. McLoyd, V., Mistry, R.S. and Hardaway, C.R. (2014) 'Poverty and children's development', *Societal contexts of child development: Pathways of influence and implications for practice and policy*, pp. 109-124.

Melhuish, E., Belsky, J. and Barnes, J. (2010) 'Evaluation and value of Sure Start', *Archives of Disease in Childhood*, **95**(3), pp. 159-161.

Mok, J.Y., Jones, P.A., Myerscough, E., Shah, A.R. and Minns, R.A. (2010) 'Non-accidental head injury: a consequence of deprivation?', *Journal of Epidemiology & Community Health*, **64**(12), pp. 1049-1055.

Morris, K., Mason, W., Bywaters, P., Featherstone, B., Daniel, B., Brady, G., Bunting, L., Hooper, J., Mirza, N. and Scourfield, J. (2018) 'Social work, poverty, and child welfare interventions', *Child & Family Social Work*, **23**(3), pp. 364-372.

Munro, E. (2004) 'The impact of child abuse inquiries since 1990', in Stanley, N. and Manthorpe, J. (eds), *The Age of the Inquiry: Learning and Blaming in Health and Social Care*, London, Routledge, pp. Office for National Statistics (ONS) (2011) *The 2011 Rural-Urban Classification For Small Area Geographies: A User Guide and Frequently Asked Questions*, available online:

https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomea ndwealth/methodologies/livingcostsandfoodsurvey, Last accessed 10 May 2021 Office for National Statistics (ONS) (2017) *Living costs and food survey*, available online: <u>https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomea</u> <u>ndwealth/methodologies/livingcostsandfoodsurvey</u>, Last accessed

Office for National Statistics (ONS) (2020) *Lower layer Super Output Area population density* (*National Statistics*), available online:

https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationesti mates/datasets/lowersuperoutputareapopulationdensity, Last accessed 10 May 2021 Ofsted (2015) Joining the dots... Effective leadership of children's services, available online: www.gov.uk/government/organisations/ofsted, Last accessed 25 February 2019

Ofsted (2017) *Annual report into children's social care 2016-17*, London, Ofsted, available online: www.gov.uk/government/organisations/ofsted, Last accessed

Oliver, C., Owen, C., Statham, J. and Moss, P. (2001) *Figures and Facts: local authority variance on indicators concerning child protection and children looked after*, London, Thomas Coram Research Unit.

Owen, C. and Statham, J. (2009) 'Disproportionality in child welfare: the prevalence of black and minority ethnic children within'looked after'and'children in need'populations and on child protection registers in England', London, Thomas Coram Research Institute.

Parton, N. (2014) 'Social Work, Child Protection and Politics: Some Critical and Constructive Reflections', *The British Journal of Social Work*, **44**(7), pp. 2042-2056.

Pickett, K.E. and Wilkinson, R.G. (2015) 'Income inequality and health: a causal review', *Social Science & Medicine*, **128**, pp. 316-326.

Radford, L., Corral, S., Bradley, C., Fisher, H., Bassett, C., Howat, N. and Collishaw, S. (2011) 'Child abuse and neglect in the UK today', London, National Society for the Prevention of Cruelty to Children (NSPCC).

Regidor, E. (2004) 'Measures of health inequalities: part 2', *Journal of Epidemiology and Community Health*, **58**(11), p. 900.

Roberts, D. (2009) *Shattered bonds: The color of child welfare*, New York, Civitas Books. Roberts, D.E. (2014) 'Child protection as surveillance of African American families', *Journal of Social Welfare and Family Law*, **36**(4), pp. 426-437.

Robson, K. and Pevalin, D. (2015) *Multilevel modeling in plain language*, London, Sage. Rothstein, H., Huber, M. and Gaskell, G. (2006) 'A theory of risk colonization: The spiralling regulatory logics of societal and institutional risk', *Economy and Society*, **35**(1), pp. 91-112.

Rufrancos, H., Power, M., Pickett, K.E. and Wilkinson, R. (2013) 'Income inequality and crime: A review and explanation of the timeâ series evidence', *Sociology and Criminology-Open Access*. Scambler, G. (2012) 'Health inequalities', *Sociology of health & illness*, **34**(1), pp. 130-146.

Schenck-Fontaine, A. and Gassman-Pines, A. (2020) 'Income inequality and child maltreatment risk during economic recession', *Children and Youth Services Review*, **112**, p. 104926.

Sedlak, A.J., Mettenburg, J., Basena, M., Peta, I., McPherson, K. and Greene, A. (2010) 'Fourth national incidence study of child abuse and neglect (NIS-4)', *Washington, DC: US Department of Health and Human Services*, **9**, p. 2010.

Sidebotham, P., Heron, J. and Team, A.S. (2006) 'Child maltreatment in the "children of the nineties": A cohort study of risk factors', *Child Abuse & Neglect*, **30**(5), pp. 497-522.

Slack, K.S., Berger, L.M. and Noyes, J.L. (2017) 'Introduction to the special issue on the economic causes and consequences of child maltreatment'.

Smith, G., Sylva, K., Smith, T., Sammons, P. and Omonigho, A. (2018) *Stop Start: Survival, Decline or Closure? Children's Centres in England, 2018*, London, Sutton Trust.

Stalker, K. and McArthur, K. (2012) 'Child abuse, child protection and disabled children: A review of recent research', *Child Abuse Review*, **21**(1), pp. 24-40.

Stenseng, F., Belsky, J., Skalicka, V. and Wichstrøm, L. (2015) 'Social exclusion predicts impaired selfregulation: A 2-year longitudinal panel study including the transition from preschool to school', *Journal of Personality*, **83**(2), pp. 212-220.

Tudor Hart, J. (1971) 'The inverse care law', *The Lancet*, **297**(7696), pp. 405-412.

Van Dooren, W., Bouckaert, G. and Halligan, J. (2015) *Performance management in the public sector*, Abingdon, Routledge.

Veugelers, P.J. and Yip, A.M. (2003) 'Socioeconomic disparities in health care use: Does universal coverage reduce inequalities in health?', *Journal of Epidemiology & Community Health*, **57**(6), pp. 424-428.

Webb, C. and Bywaters, P. (2017) 'There is clear evidence that links deprivation, expenditure and quality in children's services', *Community Care*.

Webb, C., Bywaters, P., Scourfield, J., Davidson, G. and Bunting, L. (2020a) 'Cuts both ways: ethnicity, poverty, and the social gradient in child welfare interventions', *Children and Youth Services Review*, **117**, p. 105299.

Webb, C., Bywaters, P., Scourfield, J., McCartan, C., Bunting, L., Davidson, G. and Morris, K. (2020b) 'Untangling child welfare inequalities and the 'Inverse Intervention Law' in England', *Children and Youth Services Review*, **111**, p. 104849.

Webb, C.J.R. and Bywaters, P. (2018) 'Austerity, rationing and inequity: trends in children's and young peoples' services expenditure in England between 2010 and 2015', *Local Government Studies*, **44**(3), pp. 391-415.

Webb, C.J.R., Bywaters, P., Elliott, M. and Scourfield, J. (2021) 'Income inequality and child welfare interventions in England and Wales', *Journal of Epidemiology and Community Health*, **75**(3), pp. 251-257.

Wilkins, D. and Antonopoulou, V. (2019) 'Ofsted and children's services: what performance indicators and other factors are associated with better inspection results?', *The British Journal of Social Work*, Advance Access, <u>https://doi.org/10.1093/bjsw/bcy134</u>

Wilkinson, R. (2005) *The Impact of Inequality: How to Make Sick Societies Healthier*, Abingdon, Routledge.

Witte, S., Miehlbradt, L.S., van Santen, E. and Kindler, H. (2019) 'Preventing child endangerment: Child protection in Germany', in Merkel-Holguin, L., Fluke, J. and Krugman, R. (eds), *National systems* of child protection, Cham, Switzerland, Springer, pp. 93-114.

Zhang, L., Nepomnyaschy, L. and Simmel, C. (2021) 'So close yet so different: Neighborhood inequality and child maltreatment', *Child Abuse & Neglect*, p. 104988.

Appendix

Appendix A: Factors at Assessment

Factors at assessment (Department for Education, 2018a: 41-43)

Code	Description
1A	Alcohol misuse: concerns about alcohol misuse by the child.
1B	Alcohol misuse: concerns about alcohol misuse by the parent(s)/carer(s).
1C	Alcohol misuse: concerns about alcohol misuse by another person living in the
	household.
2A	Drug misuse: concerns about drug misuse by the child.
2B	Drug misuse: concerns about drug misuse by the parent(s)/carer(s).
2C	Drug misuse: concerns about drug misuse by another person living in the
	household.
2.4	Demostic violences concerns chevit the child being the symbols of demostic
3A	violence
38	Notefice.
50	subject of domestic violence
3C	Domestic violence: concerns about another person living in the household
	being the subject of domestic violence.
4A	Mental health: concerns about the mental health of the child.
4B	Mental health: concerns about the mental health of the parent(s)/carer(s).
4C	Mental health: concerns about the mental health of another person in the
	family/household.
5A	Learning disability: concerns about the child's learning disability.
5B	Learning disability: concerns about the parent(s)/carer(s) learning disability.
5C	Learning disability: concerns about another person in the family/household's
	learning disability.
6A	Physical disability or illness: concerns about a physical disability or illness of
<u></u>	the child.
6B	Physical disability or illness: concerns about a physical disability or illness of
60	the parent(s)/carer(s).
00	another person in the family/beusehold
70	Young carer: concerns that services may be required or the child's health or
/~	development may be impaired due to their caring responsibilities
	development may be implified due to their caring responsionities.
8B	Privately fostered: concerns that services may be required or the child may be
	at risk as a privately fostered child - overseas children who intend to return
8C	Privately fostered: concerns that services may be required or the child may be
	at risk as a privately fostered child - overseas children who intend to stay
8D	Privately fostered: concerns that services may be required or the child may be
	at risk as a privately fostered child - UK children in educational placements
8E	Privately fostered: concerns that services may be required or the child may be
	at risk as a privately fostered child - UK children making alternative family

	arrangements
8F	Privately fostered: concerns that services may be required or the child may be
	at risk as a privately fostered child - other
9A	UASC: concerns that services may be required or the child may be at risk of
	harm as an unaccompanied asylum-seeking child.
10A	Missing: concerns that services may be required or the child may be at risk of
	harm due to going/being missing.
11A	Child sexual exploitation: concerns that services may be required or the child
	may be at risk of harm due to child sexual exploitation.
12A	Trafficking: concerns that services may be required or the child may be at risk
	of harm due to trafficking.
13A	Gangs: concerns that services may be required or the child may be at risk of
	harm because of involvement in/with gangs.
14A	Socially unacceptable behaviour: concerns that services may be required or
	the child may be at risk due to their socially unacceptable behaviour.
15A	Self-harm: concerns that services may be required or due to suspected/actual
	self-harming child may be at risk of harm.
16A	Abuse or neglect – 'NEGLECT': concerns that services may be required or the
	child may be suffering or likely to suffer significant harm due to abuse or
	neglect.
17A	Abuse or neglect – 'EMOTIONAL ABUSE': concerns that services may be
	required or the child may be suffering or likely to suffer significant harm due to
101	abuse or neglect.
18A	Abuse or neglect – 'PHYSICAL ABUSE': concerns that services may be
	required or the child may be suffering or likely to suffer significant harm due to
10.1	abuse or neglect.
19A	Abuse or neglect – 'SEXUAL ABUSE': concerns that services may be required
	or the child may be suffering or likely to suffer significant harm due to abuse or
20	neglect.
20	Other
21	No factors identified - only use this if there is no evidence of any of the factors
224	above and no further action is being taken.
	the shild may be at risk due to female genital mutilation
220	Abuse linked to faith or belief, concerns that services may be required or the
228	child may be at rick due to abuse linked to faith or belief
	Child hay be at fisk due to abuse liftked to faith of belief.