Technical Appendix

Homelessness policy in the UK is devolved to the individual nations and, as such, each has independent policies, which inform differing data collection processes. England collects the most limited data on youth homelessness centrally. Therefore data for the Youth Homelessness Databank is collected from local authorities in England and from central housing teams in the three devolved nations.

This year a record number of English councils responded to Centrepoint's Freedom of Information request, helping to create the most complete picture to date on the scale of youth homelessness and the nature of support. However, in a continuing trend from last year, though data on acceptances is collected in all local authorities for reporting to MHCLG, not all were able to respond to this element of the request. In the majority of cases this was due to councils anticipating the entire request would exceed the 18 hours allocated to Freedom of Information requests. Furthermore, data on presentations, assessments and prevention and relief cases is patchy with some local authorities not collecting the data by age and others not collecting the data at all.

Some local authorities were not able to provide data on the number of 16 to 17 year olds approaching them for help. This was in cases where these young people were supported by Children's Services, but the council were only able to direct the Freedom of Information request to the housing department.

The table below shows the response rates across each question in the Freedom of Information request in England. In total there are 326 local authorities in England.

% of local authorities	Data provided
91%	responded any part of the Freedom of Information request
79%	young people *presenting* as homeless or at risk to their local authority
82%	young people *assessed* by the local authority under the Housing Act 1996
88%	young people *accepted* as statutorily homeless by the local authority
73%	young people provided with *prevention and relief* support from the local authority
68%	**Responded to all parts of the Freedom of Information request**

Estimating the scale of youth homelessness

Centrepoint's annual estimate of the scale of youth homelessness in the UK is based on responses to the Freedom of Information request query about the number of young people presenting to each local authority in England as they were homeless or at risk, in addition to the same measure across the devolved nations. The calculation uses data from the 79 per cent of councils in England who provided this data and uses this as the basis of an estimate of the number of young people presenting in the local authorities which did not respond.

A data quality audit was carried out on each local authority that provided data. This review resulted in 17 councils' data being removed from this estimate as their data. These councils were removed if their presenting figure did not represent the complete number of young people approaching them and, instead, reflected only those who were assessed, accepted or some other subset.

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A selection of variables related to homelessness, including house prices and access, benefit uptake, poverty indicators and education measures, were used to create a prediction model for the councils with known and verified presenting figures. These variables were all sourced from government data publications and needed to be available at a local authority level so that they could be appended to the presenting data.

A log-transformed multiple linear regression model was chosen, meaning that the natural logarithm was taken of all variables before modelling the relationships. This had multiple benefits, primarily it ensured that the data met all the assumptions of linear regression and, secondly, it improved the linearity of the relationships between the presenting data and the significant predictor variables.

A train/test method was enlisted, with the data split into 80:20 subsets. The model was created on the training data and then run on the test data to assess the accuracy of the predictions.

The final model is made up of those variables that were statistically significant.

Intercept	-3.72 *
Log(House Affordability)	0.82 *
Log(Children in Low Income Families)	0.65 *
Log(Apprentice Starts)	0.74 *
Log(Deaths due to Drugs Misuse)	0.36 *
	* $p < 0.001$
Adj. R^2	**0.54**
Num. obs.	**183**
RMSE	**0.65**

House affordability: This measure, compiled annually by the Office for National Statistics, compares median income in the local authority to the median house price.[i]

Children in Low Income Families: The children in low income families predictor measures the percentage of children (under 16 years old) who are in families with an income at less than 60 per cent of the median. The data is produced by HM Revenue and Customs.[ii]

Apprenticeship Starts: This counts the number of starts to apprenticeships in each local authority in Q3 2016. This is a measure of apprenticeships undertaken as opposed to the number of apprentices taking part, so may include duplicate individuals who enrolled on multiple courses within the timeframe.[iii]

Deaths due to drugs misuse: This measure is the Office for National Statistics estimate of the number of deaths due to drugs misuse in each local authority over 2015-2017.[iv]

The final model was then run on those local authorities who had not provided a (valid) presenting figure in response to Centrepoint's Freedom of Information request. This process output a prediction for the log transformed presenting figure for all local authorities. This was then back-transformed to create a presenting figure in the correct units, i.e as a count of people. The back transformation exponentiated the original output, taking into account also a correcting term to account for any bias in the error terms.

The final estimate of the scale of youth homelessness in England was calculated by summing the known presenting figures in local authorities that responded to the request with usable data, and the estimated presenting figure for those local authorities that did not. This produces the estimate of 84,000 young people who presented to their council as they were homeless or at risk, with a confidence interval of +/- 6 per cent.

Equivalent data collected in previous years (the Databank holds data dating back to 2012/13) allows for a comparison over time to understand any changes in the scale of youth homelessness at a local and national level. These calculations consider those local authorities that have provided comparable data for multiple years. Due to a number of councils changing the definitions of what data is returned, or their internal processes, only data from 2016/17 and 2017/18 is included in this analysis. This ensures that the comparisons made are valid and reflect only actual change in the scale of youth homelessness. In total, data from 174 councils was used in assessing change over time.

For the UK wide estimate of youth homelessness, the England figure was added to the total number of young people presenting in Scotland, Wales and Northern Ireland. This data was obtained from central sources in each of the nations. All nations here reported that all young people who were presented were also assessed and therefore this data is reflective of assessments. In Northern Ireland, a slightly different reporting structure means that the data represents all young people aged 16-25 years old, as opposed to the age band of 16-24 years old used throughout the rest of this research.

Calculating support given to young people in England

The data collected for the Youth Homelessness Databank helps to map the journey each young person takes through the council. Before the enactment of the Homelessness Reduction Act, the only duty owed to young people was to those who were assessed and subsequently accepted as statutorily homeless. As such, any additional assessments and any prevention and relief support was at the discretion of the local authority and not carried out with all those who presented. By looking at councils who responded to all four elements of the Freedom of Information request, it is possible to map the proportion of young people receiving different levels of support.

Though 68 per cent of councils responded to all parts of the Freedom of Information request, for some of these responses it was not possible to directly compare the data for all four questions as, for example, it may not be possible to account for double counting or the number of young people presenting but not assessed may not have been documented at all. These cases were removed from the calculations, leaving 63 per cent of local authorities (204) with data that could be used to map the journey of young people through the council.

i. House Affordability statistics can be found at
https://www.ons.gov.uk/peoplepopulationandcommunity/housing/datasets/ratioofhousepricetoresidencebasedearningslowerquartileandmedian

ii. Data on children in low income families can be found via PHE's interactive data tool at
https://fingertips.phe.org.uk/profile/wider-determinants/data#page/9/gid/1938133045/pat/6/par/E12000004/ati/102/are/E06000015/iid/11401/age/1/sex/4

iii. Data on apprenticeships across the UK can be found at https://www.gov.uk/government/statistical-data-sets/fe-data-library-apprenticeships

iv. Data on deaths due to drugs misuse, and further information on the definitions and methodology used to calculate the estimates can be found at
https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/drugmisusedeathsbylocalauthority

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