



Department for  
Communities and  
Local Government

# Estimating the number of families eligible for the expanded Troubled Families Programme



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# Estimating the number of families eligible for the expanded Troubled Families Programme

## Background

In April 2012, the Government launched the Troubled Families Programme, a £448 million scheme to turn around the lives of 120,000 troubled families by May 2015. The current programme works with families where children are not attending school, young people are committing crime, families are involved in anti- social behaviour and adults are out of work.

In June 2013, the Government announced plans to expand the Troubled Families Programme for a further five years from 2015/16 and to reach up to an additional 400,000 families across England. £200 million has been committed to fund the first of an anticipated five year investment in 2015/16.

The Government announced in the Budget 2014 that it would offer the highest performing areas the opportunity to start delivery of the expanded Troubled Families Programme early – during 2014/15. Fifty-one such areas signed up to be part of the first wave of ‘early starter’ areas. These areas began delivery in September 2014. A second wave of 62 early starters will commence work on the expanded programme in January 2015.

This paper details the analytical work undertaken to estimate the number of families across England who have the problems which the expanded Troubled Families programme aims to address. This work took place ahead of the Government’s Spending Round 2013 and was based on a secondary analysis of available survey data.

This analysis was then followed by a process of consultation and joint work with local authorities and other government departments to design the detail of the programme’s operating model, including the suggested indicators and information sources used to identify families. Following this process, the Department for Communities and Local Government revisited this analysis in September 2014 to validate the original findings. This included the use of data provided by local authorities to calculate the prevalence of troubled families in those areas. Established statistical techniques were then applied to extrapolate from these local totals to provide a national estimate.

Based on these two exercises, undertaken at different points in time, using different data sources and methodologies, the Department has reached a consistent conclusion that approximately 400,000 families in England are likely to be eligible for the expanded Troubled Families Programme.

# Estimating the national number of troubled families from secondary sources

As set out in the [Financial Framework](#) for the expanded Troubled Families Programme, to be eligible each family must have at least two of the following six problems:

1. Parents and children involved in crime or anti-social behaviour.
2. Children who have not been attending school regularly.
3. Children who need help: children of all ages, who need help, are identified as in need or are subject to a Child Protection Plan.
4. Adults out of work or at risk of financial exclusion or young people at risk of worklessness.
5. Families affected by domestic violence and abuse.
6. Parents and children with a range of health problems.

In 2013, the Department undertook initial analysis based on a range of secondary data sources to estimate the number of families who might be eligible for an expanded Troubled Families Programme, targeting families affected by the six problems (above) that the programme aims to address.

Taking account of matters of affordability and available timescales, the best and most suitable methodology was to consider secondary sources of information. There was no single major population survey of families that included information on all the problems targeted by the expanded Troubled Families Programme. However, surveys did exist that captured many of the problems. In particular, the Families and Children Study (FACS)<sup>1</sup> provided information on the majority of these.

## Background: The Family and Children Study (FACS)

Although FACS was discontinued in 2008, it remains the only known survey that was specifically aimed at families with dependent children. It had a robust design and provided a nationally representative sample. FACS was a refreshed panel study of approximately 7,000 families in Britain<sup>2</sup>, investigating the circumstances of all families with dependent children. The FACS sample was selected from Child Benefit records and was one of the most detailed sources of information on families. It provided nationally representative cross-sectional estimates for all households with dependent children<sup>3</sup>, as well as panel data for annual waves between 1999 and 2008.

<sup>1</sup> FACS data available from the ESDS website: <http://www.esds.ac.uk/longitudinal/access/facs/14427.asp>

<sup>2</sup> A refreshed panel design means that as sample member's drop out of the study they are replaced by new families, with the overall characteristics of the sample remaining representative of families in the population. This means that FACS can be used for both cross sectional and longitudinal analysis.

<sup>3</sup> The survey defines a family with dependent children as a married, civil partnered or cohabiting couple with children, or a lone parent with at least one child. Dependent children are those aged less than 16 years, living with at least one parent, or aged 16 to 18 in full-

The FACS survey covered a range of topics including: health; disability and caring; education; income; benefits and tax credits; childcare; child maintenance; housing; material deprivation; transport; labour market activity and some questions on criminality among young people. The only gaps in the data provided by FACS included data on parental offending, domestic abuse and information on vulnerable children. However, these gaps were addressed by supplementing FACS with data from other surveys:

- The Millennium Cohort Study (MCS) was used to estimate the number of families that might be eligible for the programme because of domestic violence.
- While FACS had good information on juveniles cautioned or convicted by the police, it did not include any information on parental offending. A separate analysis was therefore undertaken using Ministry of Justice (MoJ) data to improve the estimate of offending within families.
- FACS also does not cover Children In Need. Alternatively, data from the Department of Education (DfE) Children in Need Census and National Pupil Database (NPD) were used to estimate the number of families that might be eligible for the programme on this basis.

**Table A** sets out the data sources that have been used to estimate the number of families who will be eligible for the expanded Troubled Families Programme. The indicator variables were those in the source data that related to the high level problems set out in the programme’s Financial Framework, and represented the best available data that was available at the time.

**Table A: Proxy indicators used to estimate prevalence of those with problems targeted by the expanded Troubled Families Programme**

| Expanded Troubled Families Programme - Indicators analysis  |  |   |
|---|--|---|
| High level criteria used in the expanded programme  | Proxy risk factor/indicator used in analysis   | Source  |
| Parents and children involved in crime or anti-social behaviour.  | Any child in family in last 12 months had formal warning, fine or conviction?              | FACS  |
|   | Adult offenders with parenting responsibilities  | MoJ surveys                                       |
| Children who have not been attending school regularly.  | Any child in the family Suspended from school in last year                                 | FACS  |
|   | Any child in the family Expelled from school in last year                                  | FACS  |
|   | Any child in the family Truant from school in last year                                    | FACS  |
| Children who need help: children of all ages, who need help, are identified as in need or are subject to a Child Protection Plan. | Any child in the family has a Statement of Educational Need (SEN) for behavioural problems | FACS  |
|   | Mother smoked during pregnancy and youngest child is less than 2 years old                 | FACS  |
|   | Children in need i.e. referred to and assessed by children’s social services               | Children in Need Census & National Pupil Database |
| Adults out of work or at risk of financial exclusion or young people at risk of worklessness.                                     | Any parent is on benefits and no parent is in work   | FACS  |
|   | A child in the family has taken GCSEs etc. and has no qualifications                       | FACS  |
| Parents and children with a range of health problems.   | Mother: Suffers from mental health problem or depression                                   | FACS  |
|   | Mother drinks more than 35 units a week  | FACS  |
|   | Any child in the family has a SEN for a mental health problem                              | FACS  |
| Families affected by domestic violence and abuse.   | Either partner reports that their partner has ever used physical force against them        | MCS   |

The following sets out in more detail the information sources and assumptions we have used to approximate each of the programme criteria.

## 1. Parents and children involved in crime or anti-social behaviour.

FACs asked parents whether their children had been in trouble with the police within the last 12 months and whether or not that police contact had resulted in some form of formal sanction<sup>4</sup>. This provided good data on youth offending. However, the criminality indicators used for the expanded Troubled Families Programme also include parental offending in the last 12 months. FACS did not include any questions on the offending behaviour of parents. To overcome this, the Department derived an estimate of parental offending from other sources.

Ministry of Justice data indicates that there were around 300,000 unique adult offenders<sup>5</sup> convicted of indictable offences in 2010<sup>6</sup>. Previous survey research indicates that around 54% of convicted offenders in prison had children<sup>7</sup>.

No survey data could be found regarding all offenders convicted of indictable offences and whether they had children. We therefore assumed that offenders convicted of indictable offences were as likely to have children as convicted prisoners. As a result, the proportion of 54% was applied to all offenders convicted of an indictable offence to indicate the possible number of offenders with children. On this basis we estimated that around 150,000 offenders convicted in 2010 were also parents. We also know from the same prison survey data that only one-third of those prisoners with children said that they lived with their children prior to entering custody. This suggests that 53,000 adult offenders had children and lived as a family with those children before they were convicted.

We assumed a relatively high probability that the 53,000 parent offenders would also be experiencing some of the other problems targeted by the Programme and therefore a significant proportion of the 53,000 parent offenders would meet at least two of the criterion for the programme. For instance:

- Offenders are less likely to be in employment. Statistics show that 26% of welfare benefit claims open on 1st December 2010 were by offenders with a conviction or caution in the past decade<sup>8</sup>. If we discount those parent offenders that were cautioned, this suggests that around 20% of benefit claims were by ex-offenders convicted of an indictable or more serious summary offence<sup>9</sup>.
- Offenders are likely to have health problems: Over one-third (37%) of convicted offenders had a current problem with alcohol use<sup>10</sup>; and in a study covering all stages

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<sup>4</sup> i.e. a final warning, fine or conviction

<sup>5</sup> In this context a 'unique offender' means an individual convicted of an offence in 2010. Using a measure of 'unique offenders' ignores the fact that the same person may be convicted more than once in any 12 month period, and could be convicted of multiple offences at each sentencing occasion.

<sup>6</sup> The 2010 statistics are used in this estimate because the data from that year is consistent with the analysis of offenders and benefit claimants in December 2010.

<sup>7</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/162361/prisoners-childhood-family-backgrounds.pdf.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/162361/prisoners-childhood-family-backgrounds.pdf.pdf)

<sup>8</sup> Offending, employment and benefits – emerging findings from the data linkage project

<sup>9</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/162393/offending-employment-benefits-emerging-findings-1111.pdf.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/162393/offending-employment-benefits-emerging-findings-1111.pdf.pdf)

<sup>9</sup> The 20% rate is derived from the fact that in 2010 around 76 per cent of indictable and non-motoring summary offences resulted in a conviction therefore the relative % of offenders on benefits on 1st December 2010 is deflated to 20% (26% \* 0.76).

See [www.justice.gov.uk/downloads/statistics/...stats/conviction-tables.xls](http://www.justice.gov.uk/downloads/statistics/...stats/conviction-tables.xls)

<sup>10</sup> see <http://www.ias.org.uk/resources/factsheets/crime.pdf>



of the criminal justice system, 7% of offenders were reported as having a serious mental illness<sup>11</sup>.

It is possible that all 53,000 offenders and their families could have at least one other problem that would make them eligible for the programme, and the evidence above suggests that a high proportion of offenders could certainly meet one other criteria, even without taking into account problems among other members of their family. However, we do not have evidence on the exact proportion of offenders that live in families with other problems. We have therefore made the assumption that only 37% of the 53,000 had at least one other problem, based on the fact that survey data shows that 37% of offenders also have alcohol problems and, therefore, this is a conservative estimate. Based on this assumption we have assumed that an additional 20,000 families would fall within the proposed programme as a result of the parents being convicted of an offence within the last year.

## **2. Children who have not been attending school regularly**

FACS included a measure on the number of children suspended, excluded or identified as truant from school within the last 12 months. We have used the prevalence rates for these variables to give estimates on the number of children not regularly attending school.

## **3. Children who need help: children of all ages, who need help, are identified as in need or are subject to a Child Protection Plan.**

FACS records information on children who had a Special Educational Need for behavioural problems at school, which could be a risk factor for a range of adverse outcomes for the child in later life.

The expanded Troubled Families Programme aims to reach families who include children who are considered 'in need', under Section 17, Children Act 1989. The prevalence of children 'in need' was not captured by FACS. Alternatively, our estimate was based on Department for Education (DfE) analysis of the Child in Need Census and National Pupil Database. This analysis broke down the number of children identified as 'in need' in 2011-12, according to whether they were also classified as having a Special Educational Need, a permanent exclusion, a record of persistent absence, or receiving a Free School Meal. These variables were recorded on the National Pupil Database and came closest to other indicators used in the expanded Troubled Families Programme. For instance, a child being eligible for a Free School Meal was taken as a proxy for the family being on out of work benefits. This would mean that the family would meet at least two of the programme criteria because the child is considered 'in need' by social services/ social workers and the child's parents are not working.

According to the DfE data, there were 94,000 children 'in need' who were also affected by one of the other problems covered by the expanded Troubled Families Programme (e.g. permanent exclusion or persistent absence from school and worklessness). This was then converted into an estimate of families by using the average number of children per

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<sup>11</sup> (see <http://www.ohrn.nhs.uk/OHRNResearch/MIviolence.pdf>)

troubled family<sup>12</sup>. This produced an estimate of 53,000 families with children 'in need' who were also likely to meet one other problem targeted by the expanded Troubled Families Programme.

#### **4. Adults out of work or at risk of financial exclusion or young people at risk of worklessness.**

FACS provides an estimate of the number of workless families. It is likely that the figures will fluctuate with the economic cycle. As the FACS data relates to 2008, the prevalence rate will be determined by the economic circumstances at the time and it is likely that the number of workless families may have changed since 2008. The latest statistics show that the proportion of workless households has fallen slightly from 17.3% in April 2008 to 17.1% in April 2013<sup>13</sup>.

We also derived an estimate of the number of children at risk of worklessness from FACS, by assuming that those children who gained no GCSEs are at greatest risk of becoming 'not in education, training or employment' (NEET). This is consistent with research by Bristol University which showed that 70 per cent of the NEET group in their study had no GCSEs<sup>14</sup>.

#### **5. Parents and children with a range of health problems**

We used FACS to estimate the proportion of children and parents with health problems. This analysis is based on the results from questions asking whether or not the mother suffers from mental health problems or depression; whether the mother drinks more than 35 units of alcohol per week; and whether any child in the family has a Special Educational Need for a mental health problem. FACS also records whether or not the mother smoked during pregnancy. This variable is included in our analysis as a risk factor for a range of child health related problems because research shows that parental smoking during pregnancy impacts on development in the uterus and has long-term consequences for child development such as low birth weight, development of asthma and other respiratory problems<sup>15</sup>.

#### **6. Families affected by domestic violence and abuse.**

FACS does not include a question on domestic violence or abuse. Alternatively, the Millennium Cohort Study (MCS) was used as this includes questions on domestic violence within a family.

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<sup>12</sup> At the time of the analysis it was assumed that troubled families had 1.78 children per family. This was based on further analysis of the FACS data and was slightly higher than for the population as a whole (1.7 children per family)

<sup>13</sup> ONS (2013) Statistical bulletin: Working and Workless Households, 2013 - Statistical Bulletin, 28 August 2013 (see [http://www.ons.gov.uk/ons/dcp171778\\_325269.pdf](http://www.ons.gov.uk/ons/dcp171778_325269.pdf))

<sup>14</sup> Britton, J., Gregg, P., Macmillan, L. and Mitchell, S. (2011). The Early Bird... Preventing Young People from becoming a NEET statistic. Department of Economics and CMPO, University of Bristol (see <http://www.bristol.ac.uk/media-library/sites/cmipo/migrated/documents/earlybirdcmipo.pdf>)

<sup>15</sup> Sabates, R. and Dex, S. (2012). Multiple risk factors in young children's development. CLS Cohort Studies Working paper 2012/1.

## Millennium Cohort Study (MCS)

**The MCS is a large-scale longitudinal survey of 18,818 babies in 18,552 families who were born at the turn of the new century. It was first carried out in 2001 to 2002 by interviewing the parents of the cohort members when they were aged around nine months. There have been four further follow-up surveys of MCS cohort members carried out so far, at three years, five years, seven and eleven years<sup>16</sup>.**

The relationship between the mother and her partner was the subject of a number of questions in the MCS. Respondents were asked whether they had experienced domestic violence at any time, for any reason, with their current partner or spouse (this was asked only if the spouse or partner was resident full-time). This was defined in terms of the 'use of force' between either partner - a narrow definition of domestic abuse.

In a recent analysis of the MCS by Bunting and Galloway (2012) for the NSPCC<sup>17</sup>, 3.8% of mothers said that their partner or spouse had used force towards them at some point and for any reason, defined as 'grabbing, pushing, shaking, hitting, kicking etc.' A further 2.7% explicitly declined to answer the question. A total of 93.6% of respondents definitely answered that they had not been a victim of domestic violence, as defined by the survey.

Bunting and Galloway suggest that the MCS figures for use of force within intimate relationships are in a range similar to those reported by other national crime surveys for abuse experienced within the past 12 months. Lifetime experience of physical force within a relationship is considerably higher, as is the incidence of wider forms of abuse – for example, the wider definition of partner abuse used in the British Crime Survey covers emotional and financial abuse, threats, force, sexual assault and stalking. This puts the prevalence of lifetime domestic abuse, using this broader definition, at 16.1%. The MCS asks about use of force only and overlooks these wider forms of partner abuse<sup>18</sup>.

Under reporting is also a widely recognised issue with domestic abuse. As a highly sensitive issue, respondents may be unwilling to reveal details in a survey. The full extent of under-reporting in survey data is impossible to quantify but Bunting and Galloway suggest that deliberate non-response to a survey (i.e. making an explicit decision not to answer a question on domestic violence) might give some insight into the levels of under-reporting. For instance in the Northern Ireland Crime Survey 2008/09, around one-fifth of the sample refused to complete the domestic violence module. In the MCS, as noted above, almost as many as reported violence declined to answer the question on domestic violence.

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<sup>16</sup> Detailed information on the sampling strategy and response rates for the surveys can be found in Plewis et al. (2004) and Plewis (2007). Full details on the survey, its origins, objectives, sampling and content of the surveys are contained in the documentation attached to the data deposited with the UK Data Archive at Essex University.

<sup>17</sup> Bunting and Galloway (2012). What The Millennium Cohort Study Can Tell Us About The Challenges New Parents Face - Statistics For England, Scotland, Wales & Northern Ireland (See [http://www.nspcc.org.uk/Inform/resourcesforprofessionals/underones/millienium-cohort-study\\_wdf88684.pdf](http://www.nspcc.org.uk/Inform/resourcesforprofessionals/underones/millienium-cohort-study_wdf88684.pdf))

<sup>18</sup> It is also difficult to make comparisons between surveys on this issue because of differences in question wording, differences in terms of sampling methodology, patterns of response, questionnaire design and coding.

We have replicated the analysis of the MCS by Bunting and Galloway. However, in order to address the issue of under-reporting, we have also included respondents who explicitly refused to answer the question on domestic violence as possible cases. In the MCS, the inclusion of this category increases the estimate of families affected by domestic violence to around 6.3%, with 93.6% stating definitely that they had not been a victim of domestic violence.

In estimating the number of troubled families, we need to know both the number of families with domestic violence; and the number of these families who might experience one or more of the other problems targeted by the expanded Troubled Families Programme. The MCS includes a number of questions that could act as a proxy for these other problems. **Table B** sets out the problems targeted by the Programme and the proxy variables that have been used from the MCS for estimation purposes.

**Table B: Troubled Families criteria and MCS variables**

| <b>Problems targeted by the expanded Troubled families Programme</b>  | <b>MCS proxy variables</b>  |
|---|---|
| Parents and children involved in crime or anti-social behaviour.  | Self-reported stealing from shops or carrying out acts of criminal damage at age 11 and teacher claiming that the child steals.   |
| Children who have not been attending school regularly.  | Teachers reporting that the child at age 11 regularly truants from school and has previously been suspended.  |
| Children who need help: children of all ages, who need help, are identified as in need or are subject to a Child Protection Plan. | A Special Educational Need (SEN) for behavioural problems.  |
| Adults out of work or at risk of financial exclusion or young people at risk of worklessness.                                     | Both parents out of work at one point in time.  |
| Families affected by domestic violence and abuse.   | Either partner reports that their partner has ever used physical force against them.  |
| Parents and children with a range of health problems.   | Either parent reports a depressive illness that is not receiving treatment by the GP or the mother smoked during pregnancy or either parent abuses alcohol or recreational drugs. |

Based on the MCS, around 7.9% of families in the sample had at least two of the above issues. When domestic violence is removed from the analysis, the proportion of families who meet at least two of the remaining criteria falls from 7.9% to 5.7%. This would imply that the focus on domestic violence in the expanded Troubled Families Programme will increase the proportion of families eligible for the programme by around 2 percentage points<sup>19</sup>.

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<sup>19</sup> Due to the complex cluster sampling used in the MCS the data was weighted to be made representative of the general population, and to take account of non-response rates between waves. This was done using the SPSS Complex Sampling Module, following the procedure detailed by Jones and Ketende (2010). Weighted percentages, univariate and adjusted analyses were calculated using survey and non-response weights.

## Prevalence estimates based on the secondary sources

In the table below (**Table C**), we report the estimates derived from FACS, the MCS, DfE Children in Need data, and other sources to indicate the number of families in the population of England who meet each of the indicators that we have used in the analysis to approximate the criteria for the expanded troubled families programme.

**Table C: Indicator analysis and estimates on the proportion of families in England meeting proxy indicators for problems targeted by the expanded Troubled Families Programme**

| <b>Expanded Troubled Families Programme - indicators analysis</b>   |   |                               |  |
|---|---|-------------------------------|--|
| <b>High level programme criteria</b>  | <b>Proxy risk factor/indicator</b>  | <b>Estimate from FACS/MCS</b> |  |
|   |   | <b>% of families</b>          | <b>No. of families with Dependent Children</b> |
| Parents and children involved in crime or anti-social behaviour.  | Any child in family in last 12 months had formal warning, fine or conviction?                                 | 0.4%                          | 25,000   |
|   | Adult offenders with parenting responsibilities <sup>4</sup>  | -                             | 20,000   |
| Children who have not been attending school regularly.  | Any child in family Suspended from school in last year  | 1.8%                          | 115,000  |
|   | Any child in family Expelled from school in last year   | 0.2%                          | 11,000   |
|   | Any child in family Truant from school in last year   | 1.1%                          | 71,000   |
| Children who need help: children of all ages, who need help, are identified as in need or are subject to a Child Protection Plan. | Any child has a Special Educational Need for behavioural problems   | 2.0%                          | 130,000  |
|   | Child in Need <sup>3</sup>  | -                             | 53,000   |
| Adults out of work or at risk of financial exclusion or young people at risk of worklessness.                                     | Any parent is on benefits and no parent is in work  | 11.4%                         | 743,000  |
|   | Child in the family has taken GCSCs etc. and has no qualifications  | 2.4%                          | 155,000  |
| Parents and children with a range of health problems  | Mother: Suffers from mental health problem or depression  | 3.7%                          | 242,000  |
|   | Mother drinks more than 35 units a week   | 0.7%                          | 46,000   |
|   | Any child in the family has a SEN for a mental health problem   | 0.2%                          | 15,000   |
|   | Mother smoked during pregnancy (if pregnancy in the last 5 years) and youngest child is less than 2 years old | 1.8%                          | 119,000  |
| Families affected by domestic violence and abuse.   | Either partner reports that their partner has ever used physical force against them                           | 6.3%                          | 410,000  |

To be eligible for the expanded Troubled Families Programme, each family must have at least two of the six problems, for which the analysis above has derived an estimate. **Table D** shows the estimated number of families who have two or more of the problems targeted by the expanded Troubled Families Programme. This is calculated by using the indicator variables that can be derived from FACS and using the FACS sample to estimate how many families would meet one or more of the criteria. This method though does not take into account the additional number of families who have only one of the indicators in the FACS sample but might meet the threshold of 2 or more criteria had data on domestic violence, parental offending and children in need also been available in the FACS data.

As described earlier in this document, we attempted to address this by trying to replicate the indicator variables we used in FACS in other surveys. For instance, in the MCS we found that the inclusion of the domestic violence criteria increased the prevalence estimate on the proportion of families who will meet two or more of the programme criteria by around 2 percentage points. This gives us a basis for increasing the prevalence estimates we derive from FACS by 2 percentage points to account for FACS not having an indicator variable for domestic violence. We repeated a similar exercise to adjust the FACS prevalence rates for children in need and parental offending.

After making these calculations, we then deducted from our estimate the 120,000 families who are being supported as part of the current Troubled Families Programme to give the additional number of families who will meet the criteria for the expanded programme.

Overall our final analysis suggested that around 6.5% of families in England will be eligible for the expanded programme. This is after adjusting the prevalence rate to deduct the 120,000 families on the current Troubled Families programme. A prevalence rate of 6.5% is equivalent to around 420,000 families. This is an estimate and is subject to statistical error, although it is not possible to calculate a confidence interval directly because the estimates come from a combination of different surveys and sources. The estimate is also dependent on the reliability of the assumptions that we have made in the analysis to account for gaps in the data and when we have combined data from different surveys and sources.

**Table D: Proportion and estimated number of families in England expected to meet 2 or more of the proxy indicators for the programme.**

| Number of proxy indicators | Estimated proportion of families | Estimated number of families |
|----------------------------|----------------------------------|------------------------------|
| 2 or more of high level    | 6.5%                             | 420,000                      |
| 3 or more of high level    | 2.5%                             | 201,000                      |
| 4 or more of high level    | 2.2%                             | 179,000                      |

## Estimating the national number of troubled families from local data

Our analysis of FACS and other surveys suggested that around 400,000 families might be eligible for the expanded Troubled Families Programme. This was based on an analysis of various surveys, made a number of assumptions and was only able to approximate the programme criteria from a limited number of questions asked in surveys. In response, following our consultation with local authorities to design the detail of the programme and the early roll out of the programme by 51 local authorities in September 2014, we refreshed our analysis by validating it against actual data from local areas.

Some of these 'early starter' local authorities provided data that was based on their work to identify families eligible for the expanded programme locally, using a range of local information sources and based on the criteria set out in the Financial Framework for the expanded programme<sup>20</sup>. The Department then used this information to derive a national estimate.

A number of the 'early starters' areas were able to provide aggregated statistical information on the number of families expected to be eligible for the expanded Troubled Families Programme for each ward, and have not already received support as part of the current programme. Taking the total number of families in each ward and dividing this number by the total number of families with dependent children recorded in the Census 2011 for the sample areas, suggested that 6.4% of all families in the sample areas meet two or more of the problems targeted by the expanded programme. An extrapolation of this rate implies that 416,000 families will be eligible for the programme across England, as there are around 6.5 million families in England with dependent children<sup>21</sup>. This is close to our original estimate based on the secondary analysis of FACs and other sources.

However, this extrapolation does not take into account the fact that our sample areas may not be representative of the country as a whole. To correct for biases in the sample, we used regression analysis to take into account factors that may be related to the total number of troubled families in the sample ward areas. The model used the total number of Troubled Families in each ward as the dependent variable and used a range of locally available statistical information from the 2011 Census and the latest employment, unemployment and crime statistics as independent variables. The final model included variables based on the latest available statistics on the number of workless households.

This model gave the best fit to the data and had an R-squared statistic of 0.65, suggesting that the model was able to predict the local totals with a high level of precision (an R-square statistics of 1 would imply that the model was 100% accurate). Applying this model to estimate the number of troubled families in each ward and then aggregating them to give a national total for England indicates the total number families eligible for the new

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<sup>20</sup> Financial Framework for the Expanded Troubled Families Programme (November 2014, see [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/375427/Financial\\_Framework\\_for\\_the\\_Expanded\\_Troubled\\_Families\\_Programme.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/375427/Financial_Framework_for_the_Expanded_Troubled_Families_Programme.pdf))

<sup>21</sup> Statistical bulletin: Families and Households, 2013 (see <http://ons.gov.uk/ons/rel/family-demography/families-and-households/2013/stb-families.html>) reports that there were 7.7 million families with dependent children in the UK. England level data is not available but data on Population Estimates for UK, England and Wales, Scotland and Northern Ireland, Mid-2013 (see <http://ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcn%3A77-322718>) shows that 84% of the UK population lives in England. The equivalent number of families would therefore be 6.5million.

programme will be around 405,000 families, representing a rate of 6.2%. This was slightly lower than the estimate of 6.4%, suggesting that our local sample was biased towards areas with problem families. However, this bias was only small.

This analysis rests on the assumption that all local authorities will interpret the programme criteria and have access to the same data and use the same systems as the local authorities in our sample areas. Our sample is not necessarily representative of all areas.

## Conclusions

This paper sets out the work undertaken to develop and refine our estimate of the number of families eligible for the expanded Troubled Families Programme.

Two different estimation methods have been described. The first method was based on a secondary analysis of available survey data and the work was undertaken in 2013. Following the start of the expanded programme in 'early starter' areas in September 2014, we validated our earlier estimates by using actual data from local areas to calculate the prevalence of Troubled Families in those areas, and then applying well established statistical techniques to extrapolate from these local totals to give a more representative national estimate.

This is an estimate based on the best available evidence. It is subject to all the usual caveats associated with any statistical estimate in that it is only as valid as the data on which it is derived, it is subject to error and is based on a number of assumptions. We have tried to cancel out some of these issues by undertaking two estimation exercises. These have been undertaken at different points in time, using different data sources and methodologies. These two separate exercises have both concluded that around 400,000 families in England will be eligible for the expanded programme.