



Calculating the impact of unintended pregnancies on public sector budgets beyond health: explanatory note of methodology

Introduction

Bayer has created a modelling tool to estimate the public sector spend – beyond healthcare costs – on children who are born as a result of unintended pregnancies. This includes spend on education, housing, personal social services and social welfare.

This note summarises the methodology for the calculations used to arrive at these estimates.

The main data sources used in this piece of work are:

- Office for National Statistics (ONS) data on local authority populations
- ONS birth summary tables for each local authority
- Findings from the National Survey of Sexual Attitude and Lifestyles (Natsal-3) on the prevalence of unplanned pregnancy
- The Family Planning Association (FPA)'s 2015 report *Unprotected Nation 2015: An Update on the Financial and Economic Impacts of Restricted Contraceptive and Sexual Health Services*
- ONS data on indices of multiple deprivation

It is important to note that there is not an exhaustive amount of data on non-health spending associated with a child's life. The financial implications identified, therefore, should be treated as estimates based on the data and literature available rather than definitive projections.

Wherever a scale of estimated cost is presented in source material, the most conservative figure has been used, so it is likely that total costs are in fact higher.

Phase 1: estimating the number of full term unplanned pregnancies

1) Estimating the number of full term unplanned pregnancies

There are no official statistics for the number of unintended pregnancies resulting in live births. The figure used in the modelling tool is calculated using:

- The most recent data from the ONS on the number of live births by area of usual residence of motherⁱ
- Findings from Natsal-3 on the outcome of unplanned pregnanciesⁱⁱ

Natsal-3 findings suggest that 5.7% of unplanned pregnancies result in a live birth. The modelling tool applies this measure to ONS data on the number of live births by area of usual residence of the mother to arrive at an estimated number of live births from unplanned pregnancy per local authority.

Step 2: estimating the public sector spend on children born as a result of unintended pregnancies

This section uses the modelling outlined in the FPA *Unprotected Nation 2015ⁱⁱⁱ* report as its foundation to arrive at the expected public expenditure associated with education, housing, personal social services and social welfare, based on existing levels of services continuing and the expected number of children born due to unintended pregnancy between 2015 and 2020.



*1) Estimating the total annual spend on **education** for all children born from unintended pregnancies*

Under the current access scenario, the estimated education expenditure associated with children from unintended pregnancy in the five years between 2015 and 2020 is £12,712m. To estimate education expenditure per live birth, the estimated expenditure (£12,712m) is divided by the expected number of children born due to unintended pregnancy between 2015 and 2020.

From this, it is possible to calculate the annual spend on each child's education between 2015 and 2020 by dividing this number by 5. Education expenditure in our tool relates to the cost of pre-primary education and primary school education aged up to 10 and therefore does not reflect costs associated with secondary or tertiary education.

*2) Estimating the total annual spend for **housing** for all children born from unintended pregnancies*

Under the current access scenario, the estimated housing expenditure associated with children from unintended pregnancy between 2015 and 2020 is £3,049m. To estimate housing expenditure per live birth, the estimated expenditure (£3,049m) is divided by the expected number of children born due to unintended pregnancy between 2015 and 2020.

From this, it is possible to calculate the annual spend on each child's housing between 2015 and 2020 by dividing this number by 5. Housing expenditure relates to the housing benefits paid to qualifying households with additional children due to unintended pregnancy. As such, this estimate does not reflect expenditure associated with the management and investment in housing stock.

*3) Estimating the total annual spend on **personal social services** for all children born from unintended pregnancies*

Personal social services relate to statutory public expenditure on care, support, guidance and regulation for children who experience circumstances such as abuse, neglect, disability, low income or absence of parents. As such, expenditure on personal social services is closely linked to household circumstances and deprivation.

Unprotected Nation 2015 provides a minimum and maximum range of public expenditure associated with personal social services, with the lower end estimated on the basis of children born into average circumstances. The tool uses the most conservative estimate of personal social services expenditure associated with children from unintended pregnancy born between 2015 and 2020, which is £1,441m.

To estimate personal social services expenditure per live birth, the estimated expenditure (£1,441m) is divided by the expected number of children born due to unintended pregnancy between 2015 and 2020. From this, it is possible to calculate the annual spend on personal social services for each child between 2015 and 2020 by dividing this number by 5.

*4) Estimating the total annual spend on **social welfare** for all children born from unintended pregnancies*

Three aspects of social welfare associated with children are considered in *Unprotected Nation 2015*: child benefit, child tax credit and the childcare component of working tax credit.

Unprotected Nation 2015 provides a minimum and maximum range of public expenditure associated with these areas, based on current levels of entitlements and rules. The tool uses the



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most conservative estimate of social welfare expenditure associated with children from unintended pregnancy between 2015 and 2020, which is £10,118m. To estimate social welfare expenditure per live birth, the estimated expenditure (£10,118m) is divided by the expected number of children born due to unintended pregnancy between 2015 and 2020.

From this, it is possible to calculate the annual spend on social welfare per live birth between 2015 and 2020 by dividing this number by 5.

Step 3: estimating the total public sector spend and spend per capita on children from unintended pregnancies

The total public sector cost is calculated by totalling the sum of the education, housing, personal social services and social welfare spending for each local authority. The model provides costs at local authority, regional and national levels.

It also calculates, for each local authority, the public sector spend on unintended pregnancy per head of their total population. This is calculated by dividing their estimated public sector spend by the most recent (mid-2014) ONS population estimates for each local authority.^{iv}

Step 4: illustrating the impact of deprivation on local authorities

Many of the areas of expenditure set out above are strongly associated with deprivation including, for example, personal social services spending and social welfare spending. In order to illustrate the impact of deprivation on local authorities, the model ranks local authorities based upon indices of multiple deprivation.^v This is an overall measure of multiple deprivation experienced by people living in an area reflecting income, education, employment and health deprivation amongst other indicators.

In the model, local authorities were listed in order of their index of multiple deprivation – rank of average rank. Those ranked 1 to 108 have been classed as ‘red’, those ranked 109 to 217 have been classed as ‘amber’, while those ranked 218 to 326 have been classed as ‘green’.

ⁱ ONS, Birth Summary Tables, England and Wales 2014, released 15 July 2015 (latest). Available here: <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-370345>

ⁱⁱ Wellings K et al, 'The prevalence of unplanned pregnancy and associated factors in Britain: findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3)', Lancet 2013; 382: 1807-16. Available here: [http://dx.doi.org/10.1016/S0140-6736\(13\)62071-1](http://dx.doi.org/10.1016/S0140-6736(13)62071-1)

ⁱⁱⁱ Family Planning Association, *Unprotected Nation* 2015, November 2015. Available here: <http://www.fpa.org.uk/sites/default/files/unprotected-nation-2015-full-report.pdf>

^{iv} ONS, Annual Mid-Year Population Estimates, 2014, June 2015. Available here: <http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-uk-england-and-wales-scotland-and-northern-ireland/mid-2014/stb---mid-2014-uk-population-estimates.html>

^v ONS, The English Indices of Deprivation 2015. Available here: <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>