Department of Health

Assessment of termination of pregnancy on grounds of the sex of the foetus

Response to Serious Crime Act 2015

Title:

Assessment of termination of pregnancy on grounds of the sex of the foetus - Response to Serious Crime Act 2015

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Document Purpose:

The Serious Crime Act 2015 contains a requirement that an assessment be carried out into evidence of gender abortions occurring in England, Wales and Scotland. This report responds to that requirement and sets out the actions and evidence that have been considered in undertaking the assessment.

The Department will continue to monitor this issue closely through repeating the analysis of birth ratios annually, and working with other Government Departments and researchers.

Publication date:

August 2015

Target audience:

CCGs, NHS Trusts, Foundation Trusts, independent sector abortion providers, GPs and all those responsible for commissioning, providing and managing abortion service provision

Contact details:

Sexual Health Team
Richmond House
79 Whitehall,
London
SW1A 2NS

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Assessment of termination of pregnancy on grounds of the sex of the foetus

Response to the Serious Crime Act 2015

Prepared by
Sexual Health Team, Department of Health

Contents

Executive Summary

The Serious Crime Act 2015 contains a requirement that the Secretary of State (SoS) must arrange for the publication of an assessment "of the evidence of termination of pregnancy on the grounds of the sex of the foetus in England, Wales and Scotland". The report must be published on or before 3rd September 2015. In addition, the SoS should consider the assessment and within a further six months "publish a strategic plan to tackle substantiated concerns identified in the assessment" or publish a statement and explanation" as to why a plan is not required.

The issue of gender abortions is of worldwide concern. The general consensus is that a male to female birth ratio of around 105 (that is 105 male births per 100 female) is normal. However, a number of factors can influence the sex of the child including maternal and paternal age, coital rates, number of children and sex of previous children. Some experts consider that ratios above 107 cannot occur naturally, and we have used a birth ratio of 107 as the threshold in this assessment.

The assessment includes updated birth ratio analysis for the period 2009 to 2013. This is the third year we have published data on this. Between 2009 and 2013 there were 3.9 million births registered in Great Britain (GB) and the ratio of boys to girls was 105.2.

It is important to bear in mind that this analysis covers nearly 171 countries and 13 ethnic groups. So we can expect to see some apparently very high birth ratios for some groups simply as a result of random variation. Statistical techniques have been used to reduce the risk of this leading to "false positive" results, however these risks cannot be entirely eliminated. Analysis by mother's country of birth found no group to be statistically significantly higher than 107; the only exception to this was in relation to Nepalese-born mothers giving birth to their third or more child in GB. We have carefully considered the importance of this finding and have concluded that it could be the result of random variation as it was the only significant result from over 500 statistical tests. A further statistical test assessing homogeneity between the birth ratios for 3rd born or more across all countries, including Nepal, did not achieve a significant result. The two previous reports on gender ratios we have published found no evidence of gender abortions in this or any other group.

Some limited information was submitted through stakeholder engagement and we will work with the relevant organisation to explore whether further information is available. However, we have found no substantiated concerns of gender abortions occurring in England, Wales and Scotland.

We do take the issue of gender-selective abortions very seriously, for example guidance was issued to doctors and providers by the Department in May 2014 which sets out our view of the legal position. We will continue to keep all information and evidence under careful review.

Serious Crime Act 2015

The Serious Crime Act 2015 contains a requirement that:

"(1) The Secretary of State shall arrange for an assessment to be made of the evidence of termination of pregnancy on the grounds of the sex of the foetus in England, Wales and Scotland.

(2) The arrangements made under sub-section (1) shall be such as to enable publication of the assessment by the Secretary of State within 6 months of the date of Royal Assent to this Act.

(3) The Secretary of State shall consider the assessment made under sub-section (1) and—

(a) determine and publish a strategic plan to tackle substantiated concerns identified in the assessment made under sub-section (1), or

(b) publish a statement and explanation in relation to why a plan under sub-section (3)(a) is not required."

The full text of the amendment is at **Annex A**.

This document contains both the assessment of evidence of terminations of pregnancy (TOP) being undertaken on the grounds of the sex of the foetus and the statement and explanation of why we consider a formal plan under sub-section (3)(a) of the clause is not required.

Background

The issue of gender ratios of new born babies is the subject of numerous academic articles. There is a general consensus that a male to female birth ratio of around 105 (that is 105 male births per 100 female) is normal. Evidence suggests that a number of factors can influence the sex of a child, including maternal and paternal age, coital rates, number of children and sex of previous children however some consider that a birth ratio above 107 cannot occur naturally.

Concern has been raised in some countries about the occurrence of gender selective abortions[12].

[1] Hesketh, T. and Xing, ZW. (2006)Abnormal sex ratios in human populations: Causes and consequences. Proceedings of the National Academy of Sciences

Gender is not itself a lawful ground for abortion in England, Wales and Scotland (Abortion Act 1967). DH guidance, in May 2014, states that abortion on the grounds of gender alone is illegal.

Under the Abortion Act, it is lawful to abort a foetus where two registered medical practitioners (RMPs) (i.e. doctors)) are of the opinion, formed in good faith, "that there is a substantial risk that if the child were born it would suffer from such physical or mental abnormalities as to be seriously handicapped". There are some serious conditions which are known to be gender-related.

[2] Chahnazarian, A. (1988). "Determinants of the sex ratio at birth: review of recent literature". Bioemography and Social Biology 35 (3-4): 214-235

Assessment of Evidence

A number of actions have been undertaken to assess evidence of TOP on grounds of the sex of the foetus. These are as follows:

Birth Ratio Analysis

The analysis of male to female birth ratios in England, Wales and Scotland has been repeated and now includes data from the period 2009 to 2013. The latest analysis includes:

- All mothers (2009 to 2013) for Great Britain.
- Mother's country of birth (2009 to 2013) for Great Britain.
- Ethnicity of child (2008 to 2012) for England and Wales (data are not available for Scotland).

In each case, the analysis looked at (a) overall birth ratios and (b) birth ratios by birth order, that is for the first born children, second born children etc.

Key Findings:

Considering all mothers, in the period 2009 to 2013, there were 3.9 million births registered in Great Britain and a ratio of boys to girls of 105.2.This is lower than the expected upper limit of 107.

Considering mother's country of birth, no group was found to have a birth ratio statistically significantly higher than 107 with the exception Nepalese-born mothers giving birth to their third of more child in Great Britain. Finding one statistically significant result out of over 500 statistical tests performed is not unexpected and can happen by chance. Although we have taken steps to reduce the likelihood of finding false positive results, this can still not be ruled out. A further statistical test assessing homogeneity between the birth ratios for 3rd or more born across all countries, including Nepal, did not achieve a significant result. DH will continue to monitor and update the birth ratio analysis.

Considering ethnicity, no ratio was found to be significantly higher than 107 for both the overall birth ratio and birth ratios by birth order.

A copy of the full analysis is at **Annex B**.

Review of technologies

Officials undertook a review of what technologies are available to identify the pre-natal gender of a foetus, the gestations they can be used at and their associated effectiveness. The main finding is the emergence of non-invasive pre-natal testing (NIPT) blood tests which are available from 7 weeks gestation and which can identify fetal sex. We do not know how widespread the use of these tests are in England, Wales and Scotland as they are usually offered privately within clinics or via the internet. The emergence of NIPT testing underlines the need for us to continue to monitor birth ratios and abortion data by ethnicity to monitor whether the availability of new tests may be having an impact, particularly if they become more widely available. Use of ultrasound for identifying fetal sex is also becoming increasingly reliable from 12 weeks gestation, and could also be potentially accessed through private clinics. A summary report is at **Annex C**.

Abortions by Gestation and Ethnicity

Taking into account the findings from the review of technologies, DH analysts have examined abortions data for 2014 in England and Wales by gestation and ethnicity. The key findings are:

- For women having an abortion in 2014, the distribution of ethnic groups differed when compared with the distribution of ethnic groups in the general population.
- For abortions carried out before 17 weeks gestation there is evidence that the gestation at which an abortion occurs varies depending on the ethnic group of the woman.
- There is evidence that the likelihood of having had a previous abortion varies depending on the ethnic group of the woman.
- Where gestation is 17 weeks or later, there is no evidence of gestation being dependent on the ethnic group of the woman.

A copy of the full analysis is at **Annex D**.

Stakeholder Engagement

We wrote to a number of stakeholder organisations (a copy of the letter and the organisations contacted is at **Annex E**) asking them to submit any relevant information they had that gender abortions are taking place in England, Wales or Scotland. Five responses were received, one of which, from Jeena International, included some outline information about 7 women. From this information it

appears that some of these women sought a gender related abortion. The information about the other women shows other pressures and serious impacts on their lives following them giving birth to or being pregnant with girls (the anonymised case studies are at **Annex F**). The details provided are very limited and we plan to do to some further work with Jeena International to explore whether any further information is available.

In relation to the other organisations, two stated that they had no evidence of gender related abortions occurring and that the two other responses related to the first proposed amendment to the Serious Crime Bill and did not contain any evidence in relation to abortions occurring.

Officials met with professional bodies including the Royal College of Obstetricians and Gynaecologists, the British Medical Association and the Society of Radiographers to seek their views as part of the assessment. No evidence of gender abortions was submitted by professional bodies. The Society of Radiographers highlighted concerns raised by their members about the pressure parents are subjecting them to during scans if the fetal sex cannot be immediately identified. They have undertaken a more general survey which included questions on this issue the results of which are to be published shortly. However, results from this survey indicate this issue seems to be more generally about parent's desire to know whether the baby is a boy or a girl rather than specific evidence of gender abortions.

Map of Research Literature

DH commissioned the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre), which is part of the Social Science Research Unit at the UCL Institute of Education, to produce a report containing a systematic map examining the volume and nature of research concerning sex-selective abortion. A systematic review of the literature takes longer than the six months available and therefore a systematic map was agreed as feasible. The full report is attached separately but, key points include:

- The systematic map produced by EPPI-Centre can only be used to describe the volume and nature of research in relation to sex-selective abortion.

- The literature from OECD countries comprised of 23 studies, 20 of which were relevant to the research question.

- Six unique studies focussed upon populations within the UK, five the US, four Canada, two Greece, two Norway and one Italy. Those focussed upon UK populations were: Adamou et al. 2013, Anagnostopoulos 2014, Department of Health 2013, Department of Health 2014, Dubuc and

Coleman 2007, Smith and Fogarty 2014, see Annex G. One linked report was identified from the UK but reported analysis of the same dataset over the same period so was excluded, (Drakos 2011).

- In order to establish the extent to which sex-selective abortion is taking place in UK-relevant contexts, the studies outlined above would have to be subjected to critical appraisal to assess the reliability of their findings. Where results are robust but inconsistent, examination of the scope of the studies and the specification of their analytical models would be required in order to explain mixed and conflicting findings.

The EPPI-Centre have recommended that, to the extent that it is possible, future research should give further consideration to important confounders such as socio-economic status, marital status, birth order, parity and parental age.

A copy of the full report, Sex-Selective Abortion: A Systematic Map of the Volume and Nature of Research, has been published separately on Gov.uk.

Statement and explanation of why a plan is not required

We have carefully considered all the evidence arising from this assessment. There are limitations in what it has been possible to do within the six month period specified in the Serious Crime Act 2015. For example, it was not possible to complete a systematic review of the literature within this timescale. However we have found no substantiated concerns of gender abortions occurring in England, Wales and Scotland. As highlighted, we have carefully considered the finding relating to Nepalese born women and have concluded that this could be the result of a random variation and was the only significant result from over 500 statistical tests. A further statistical test assessing homogeneity between the birth ratios for 3rd born or more across all countries, including Nepal, did not achieve a significant result. Furthermore analyses of two sets of previous data presented no evidence that gender specific abortions are occurring. However, we will keep this population/group under review going forward.

Although some evidence was submitted in relation to the experience of individual women which identify a high level of prejudice towards girl children, we do not have enough information to properly assess those concerns. Our letter to stakeholders made clear that “any information that is submitted needs to be corroborated by qualitative data, quantitative analysis or other clearly documented evidence”. It is therefore not possible to draw definitive conclusions from the case-studies but we will work with relevant stakeholder organisations to further explore the information that has been submitted.

The case studies do serve to highlight what anecdotal and media reports as well as experience in other countries has found, that discrimination in favour of sons and against daughters remains deep-seated in some cultures and promoting gender equality and education is likely to be the most effective long-term solution. The Government is also rightly committed to tackling issues around coercion and abuse of women in some communities as part of the wider violence against women and girls (VAWG) agenda.

We will continue to take the issue of gender selective abortions very seriously and actions we are committed to undertaking include:

- Repeating the birth ratio analysis on an annual basis.
- Continuing to review abortions by gender and ethnicity.

- We are supporting applications made by Dr Sylvie Dubec, a respected researcher, for further research in this area.
- Exploring how issues around coercion and pressure on women around boy preference can be linked to the violence against women and girls (VAWG) agenda.
- Considering commissioning a full systematic review of the studies identified in the Eppi-Centre's systematic map.
- Continuing to remain vigilant to reports of gender abortions. We would again urge anyone with evidence of individual cases to report this to the police to investigate.

Annex A: Section 84 of the Serious Crime Act: "termination of pregnancy on grounds of sex of foetus"

(1) The Secretary of State shall arrange for an assessment to be made of the evidence of termination of pregnancy on the grounds of the sex of the foetus in England, Wales and Scotland.

(2) The arrangements made under sub-section (1) shall be such as to enable publication of the assessment by the Secretary of State within 6 months of the date of Royal Assent to this Act.

(3) The Secretary of State shall consider the assessment made under sub-section (1) and—

> (a) determine and publish a strategic plan to tackle substantiated concerns identified in the assessment made under sub-section (1), or
>
> (b) a statement and explanation in relation to why a plan under sub-section (3)(a) is not required.

(4) Any strategic plan under sub-section (3)(a) must include, but not be limited to, steps –

> (a) to promote change in the social and cultural patterns of behaviour with a view to eradicating prejudices, customs, traditions and all other practices which are based on the idea of the inferiority of women and which may amount to pressure to seek a termination on the grounds of the sex of the foetus,
>
> (b) to ensure best practise exists in identifying women being coerced or pressured into seeking a termination on the grounds of the sex of the foetus, or at risk of being so, and in the provision of protection and support to potential victims, and
>
> (c) to promote guidance to service providers, health professionals and other stakeholders.

(5) The Secretary of State must lay a copy of the plan, determined under sub-section 3(a), before each House of Parliament within 6 months of the publication date of the assessment under sub-section (2).

Annex B: Birth Ratios in Great Britain

1. In May 2013, the Department of Health published the results of an analysis of male to female birth ratios in the UK. This covered overall birth ratios alongside breakdowns by the mother's country of birth. In that analysis, no group was found to have a ratio that was statistically significantly different from the range that might be expected to occur naturally, leading to the conclusion that analysis of birth ratios did not offer evidence of sex selection occurring in the UK3.

2. The Department made the commitment to publish further analysis annually, in line with the recommendation of the Council of Europe Parliamentary Assembly that member states should 'collect the ratio at birth, monitor its development and take prompt action to tackle possible imbalances' and 'encourage research on sex ratios at birth among specific communities'4

3. This original analysis used the most up to date information that was available at the time, covering births in the five-year period from 2007 to 2011, broken down by the mother's country of birth. Since that analysis was carried out, birth data then became available for 2012 and so the second report published in May 2014 used birth data covering the five-year period from 2008 to 2012.

4. The report published in May 2014 provided an update of the overall gender ratio analysis carried out in the previous report, plus two further pieces of analysis. Firstly, birth ratios by birth order, broken down by the mother's country of birth, for the period 2008 to 2012. Secondly, overall birth ratios and birth ratios by birth order, broken down by the child's ethnicity as stated by the mother, for the period 2007-11.

5. In this report birth ratios are examined for:

- all mothers (2009 to 2013) for Great Britain
- mother's country of birth (2009 to 2013) for Great Britain
- ethnicity of child (2008 to 2012) for England and Wales

6. In each case, the analysis looks at (a) overall birth ratios and (b) birth-ratios by birth order (that is, for first born children, second born children, etc.)

[3] Birth ratios in the UK- A report on gender ratios at birth in the UK (2013)

[4] http://assembly.coe.int/Main.asp?link=/Documents/AdoptedText/ta11/ERES1829.htm

7. In the period 2009 to 2013 there were 3.9 million births registered in Great Britain and a ratio of boys to girls of 105.2. This is not statistically significantly higher than the expected upper limit of 107.

8. The latest analyses by country of birth of mother for overall birth ratios and by birth order shows no ratio was found to be statistically significantly higher than a boy to girl birth ratio of 107, except for Nepalese-born mothers giving birth to their third or more child in Great Britain. The chances of getting a false positive result in at least one of a large number of tests is quite high, and although the application of the Benjamini-Hochberg procedure reduces the chance of this happening randomly, it does not completely eliminate it[5].

9. The analysis of birth ratios by the child's ethnicity for both overall birth ratio and birth ratios by birth order showed no ratio to be significantly higher than 107.

10. It should be noted that the numbers of births within many groups in the analysis are such that large differences in birth ratios would need to be observed for the ratio to be identified as higher than the expected upper limit. That is, evidence would only be identified through this means if sex selection were taking place on a significant scale.

Method

11. This analysis has followed the same procedure as last year's analysis and has been quality assured by the Methodology Advisory Service at the Office for National Statistics.

12. The gender ratio at birth is the subject of numerous academic articles, with general consensus that a birth ratio of around 105 male births for every 100 female births is normal[6]. There is evidence that a number of factors can influence the sex of a child, including paternal and maternal age, coital rates and the number and sex of previous children[7].

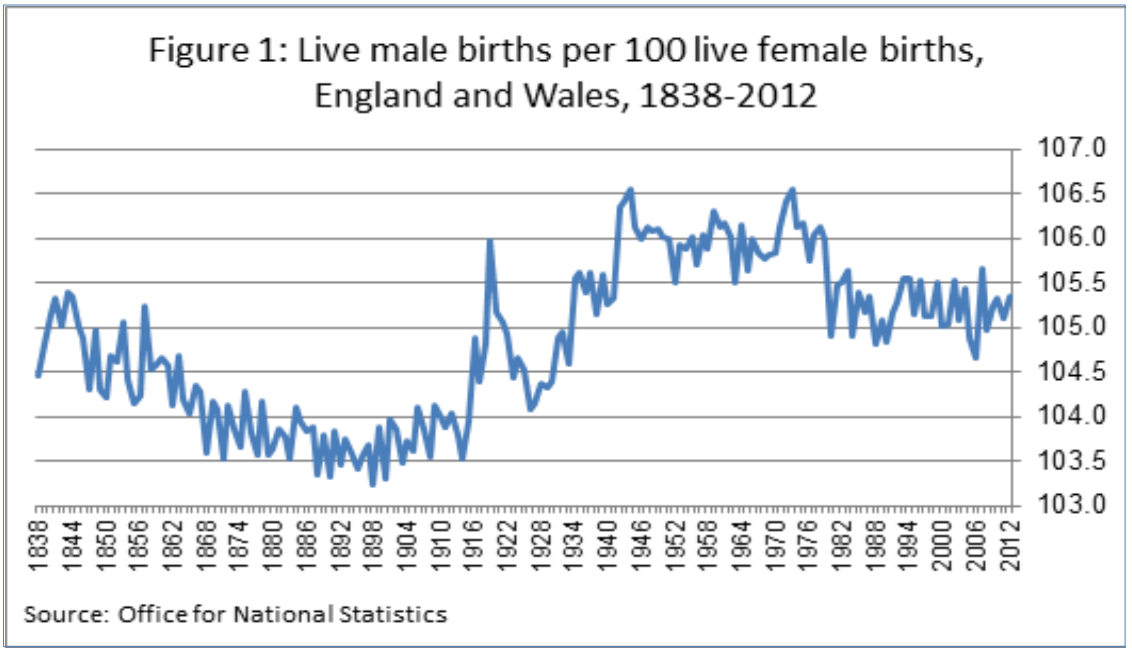
13. Even within large populations, observed birth ratios vary considerably over time. For example, Figure 1 shows that the birth ratio in England and Wales has varied considerably, ranging from 106.5 in 1944 and 1973 to 103.2 in 1898.

[5] We further explored this with a chi square test and did not find a significant result.

[6] Eberstadt, N. (2011) The Global War Against Baby Girls. The New Atlantis.

[7] Jacobosen, R et al (1999). Natural variation in the human sex ratio. Human Reproduction vol 14 no.12

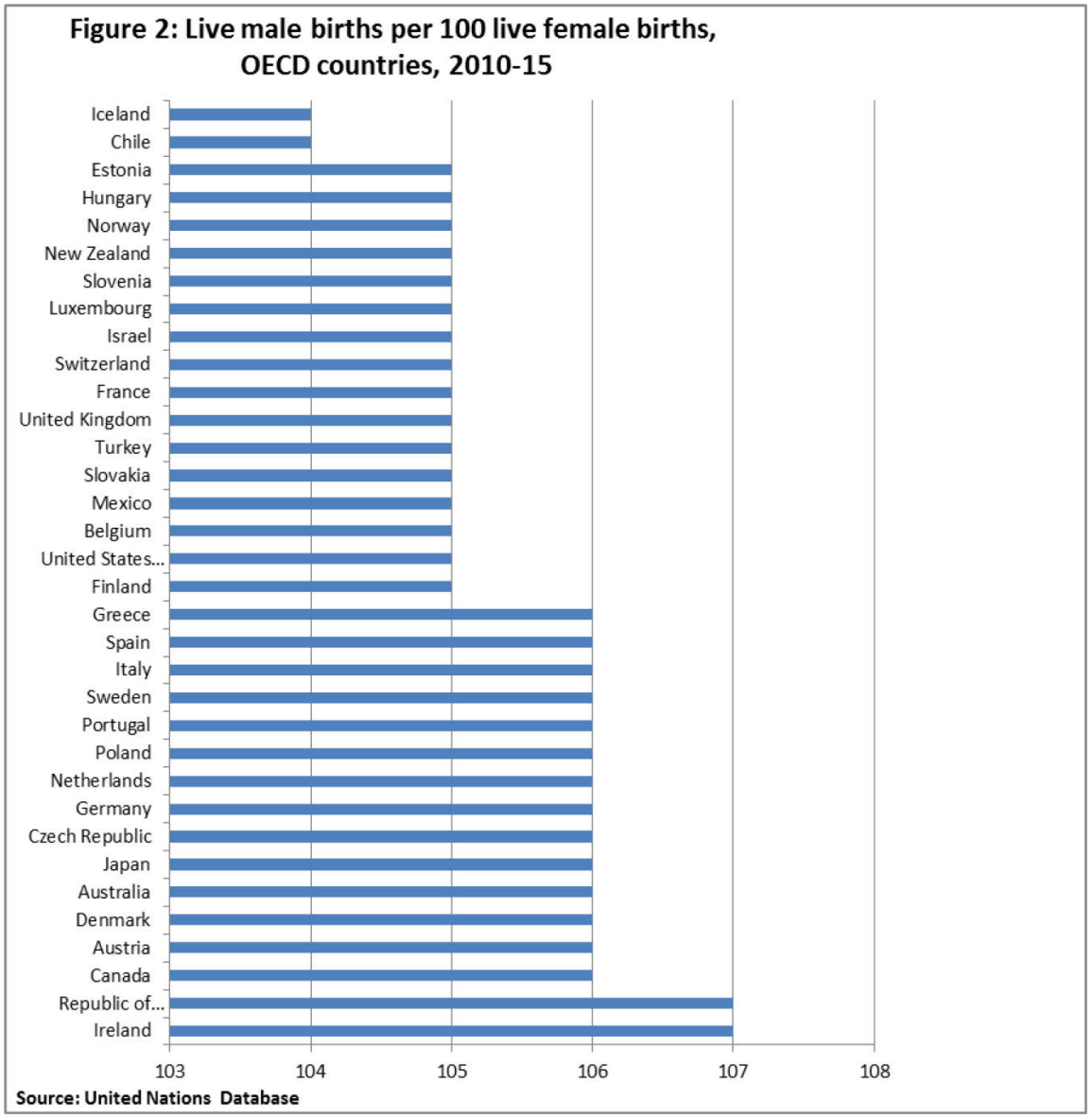
14. This analysis uses a birth ratio of 107 and is based on a review of available literature[8],[9] advice from academic experts and on examination of data on birth ratios in more developed countries.



[8] Hesketh, T. and Xing, ZW. (2006)Abnormal sex ratios in human populations: Causes and consequences. Proceedings of the National Academy of Sciences

[9] Chahnazarian, A. (1988). "Determinants of the sex ratio at birth: review of recent literature". Bioemography and Social Biology 35 (3-4): 214-235

15. The data in Figure 2 from the UN database[10] show that birth ratios in the 34 OECD countries in the period 20010-15 ranged from 104 in Iceland and Chile to 107 in Ireland and the Republic of Korea.



16. In this latest analysis, birth ratios are examined (i) for all mothers, (ii) by the mother's country of birth and (iii) by the child's ethnicity. In each case, the analysis looks at (a) overall birth ratios and (b) births ratios by birth order (that is, for firstborn children, second born children, etc).

17. For many countries of birth and for some ethnic groups, the number of births occurring each year is too small to draw meaningful conclusions and/or to have a reasonable chance of spotting anomalies in the male to female birth ratios. We therefore aggregate data across a number of years to ensure we have

[10] See http://esa.un.org/unpd/wpp/Excel-Data/fertility.htm.

reasonably large sample sizes. By including data from earlier years, however, the analysis is less likely to reflect current circumstances. To strike a balance between these two competing demands, this analysis covers the most recent five-year period for which data are available. Calculations suggest that moving from five to six years would add little to the power of these tests (see Appendix B). The information by country of birth is derived from birth registrations, for which the latest five-year period runs from 2009 to 2013. The information by ethnicity is derived from birth notifications[11], for which the latest five-year period runs from 2008 to 2012.

18. Even though five years' data have been used, the numbers for some countries and ethnic groups are still very small. We excluded those countries with fewer than 100 births in the period and merged some ethnic categories. This gives us datasets comprising over 3.8 million live births and figures for 171 countries and 13 ethnic groups. The majority of births were to mothers born in England, Wales and Scotland (75%) and were of children in the 'White British' ethnic group (64%).

19. Information on the child's ethnicity is routinely collected from mothers as a part of the birth notification data from the NHS Number for Babies (NN4B) system. The Office for National Statistics carried out an assessment of the quality of these ethnicity data for 2005 to 2008. The data at that time were assessed as being of sufficient quality at national level, but not consistently robust sub-nationally. The proportion of 'not stateds' was higher than country of birth, although that is not expected to affect male and female births differently. The ethnic categories used are groupings of the NHS categories collected at birth notification and are broadly in line with the GSS harmonised standard on ethnic group.

20. The information on previous children used for the analysis by birth order is only available from May 2012 in England and Wales and from January 2013 in Scotland. Prior to these time periods, data on birth order was only available for births within marriage. There is no evidence that natural sex ratios are affected by marital status.

21. In testing whether a result is statistically significant, it is common practice to determine whether the likelihood of an extreme observation occurring by

[11] The Office for National Statistics (ONS) routinely produces statistics on births and infant deaths in England and Wales using information collected when the birth or death is registered. But some important information – including on ethnicity - is not collected at birth registration. This information is however available to the NHS. ONS has been provided with access to full year's information since 2006 and is derived from the birth notification record (known as the NN4B linked dataset). Over 99% of birth registration records are successfully linked to their corresponding birth notification record each year. These figures will not, therefore, match figures based solely on birth registrations.

chance is less than 5% (that is, the odds are less than 1 in 20). However, as there are nearly 171 countries and 13 ethnic groups being tested in this analysis, we would expect a birth ratio with that level of deviance to occur for several countries and some ethnic groups through random variation (around 8 to 9 countries). We could then be in the position of mistakenly stating that some groups have birth ratios which are so low/high that they are unlikely to happen naturally. To deal with this problem, known as the 'multiple testing' problem, we used a technique called the Benjamini– Hochberg procedure (as for the previous analyses). Details of the procedure are given in Appendix A.

22. It should be noted that a consequence and a limitation of using the techniques for multiple testing are that the groups being analysed will generally need to be large (that is, have a high number of births) for relatively small differences in birth rates to be found to lie outside the expected range. Many of the groups in this analysis are small and so would require large differences in birth rates to be identified as different from the expected range.

23. In the period 2009 to 2013 there were 3.9 million births registered in Great Britain and a ratio of boys to girls of 105.2. This is not statistically significantly higher than the expected upper limit of 107.

24. The ratio did not vary significantly by birth order (see Table 1 below). The ratio among the 950 thousand second born children was 105.4 and among the 610 thousand children born third or more in line was 105.0. Again, these are within the expected range of 104 to 107 and not statistically significantly higher than 107.

Table 1: Birth ratios by birth order, Great Britain, 2009-2013

Birth order	Number of births	Birth ratio
All births	3,862,844	105.2
First born	1,056,092	105.4
Second born	946,099	105.4
Third born or more	612,536	105.0

25. An analysis was conducted of birth ratios by the mother's country of birth, both for the overall ratio and by birth order. As stated above, tests were carried out to examine whether any ratios were statistically significantly higher than 107. In doing so, account was taken of the issue of multiple testing. Table 2 shows the births ratios for the countries analysed.

26. In the case of the overall birth ratio and birth ratios by birth order, no ratio was found to be significantly higher than 107, except for Nepalese-born mothers giving birth in Great Britain to their third or more child. It should be noted the chances of getting a statistically significant result in at least one of a large number of tests is quite high, even when no sex selection is present, and although the application of the Benjamini-Hochberg procedure reduces the chance of this happening randomly, it does not completely eliminate it[12]

27. An analysis was also conducted of birth ratios by the child's ethnicity, again both for the overall birth ratio and by birth order. Table 3 reports the results.

28. For both the overall birth ratio and birth ratios by birth order, no ratio was found to be significantly higher than 107.

Summary

29. Analyses by country of birth in GB and ethnicity in England and Wales by both the overall birth ratio and birth order in each case , showed no group to be found significantly higher than a boy to girl ratio of 107, except for Nepalese-born mothers giving birth to their third or more child in GB. It should be noted that, the chances of getting a statistically significant result in at least one of a large number of tests is quite high, even when no sex selection is present, and although the application of the Benjamini-Hochberg procedure reduces the chance of this happening randomly, it does not completely eliminate it.

[12] We further explored this with a chi square test and did not find a significant result.

30. There is evidence that a number of factors can influence the sex of a child, including paternal and maternal age, coital rates and the number and sex of previous children[13]. Even within large populations, observed birth ratios vary considerably over time.

31. It should be noted that the numbers of births within many groups in the analysis are such that large differences in birth ratios would need to be observed for the ratio to be identified as higher than the expected upper limit. That is, evidence would only be identified through this means if sex selection is taking place on a significant scale.

32. DH will repeat this analysis on an annual basis following publication of birth data by ONS and in the light of any other analyses that are conducted.

[13] Eberstadt, N. (2011) The Global War Against Baby Girls. The New Atlantis.

Table 2: Birth ratios (number of boys per 100 girls) by mothers' country of birth, births registered in Great Britain, 2009-2013*

It is important to bear in mind that this analysis covers nearly 171 countries and 13 ethnic groups. So we can expect to see some apparently very high birth ratios for some groups simply as a result of random variation. Statistical techniques have been used to reduce the risk of this leading to "false positive" results, however these risks cannot be entirely eliminated.

Country of birth	All live births	First born children	Second born children	Third born or more	Second born or more
Total for all countries	105.2	105.4	105.4	105.0	105.3
Afghanistan	104.2	98.0	105.3	107.9	106.9
Africa (NOS)	109.7	137.8	87.8	111.8	100.0
Albania	110.4	107.7	110.7	126.2	114.7
Algeria	105.5	108.3	97.6	110.3	103.9
Angola	103.9	98.0	108.0	95.6	100.2
Argentina	114.8	124.3	112.6	101.2	108.8
Armenia	89.5	84.9	88.6	121.4	96.6
Asia (Except Middle East) (NOS)	105.7	93.2	103.8	147.1	120.9
Australia	106.7	105.5	108.7	117.9	111.2
Austria	96.9	111.9	87.0	95.7	90.2
Azerbaijan	112.1	118.1	118.2	89.7	109.5
Bahrain	103.8	102.1	124.2	87.1	111.8
Bangladesh	103.4	103.8	101.1	104.6	103.3
Barbados	94.7	76.0	105.4	103.7	104.7
Belarus	114.4	117.9	119.2	110.3	117.1
Belgium	110.8	98.3	131.0	103.1	117.4
Benin	149.0	233.3	145.5	141.7	143.5
Bermuda	123.7	98.0	133.3	216.7	159.0
Bolivia	95.9	76.4	98.7	129.4	108.3
Bosnia and Herzegovina	100.4	96.3	105.0	107.0	105.6
Botswana	101.0	93.1	87.9	116.2	98.9
Brazil	107.3	109.7	103.1	97.3	101.7
Brunei	99.3	76.4	121.6	100.0	112.5
Bulgaria	108.1	109.4	106.0	114.8	107.5
Burma	127.6	105.1	170.6	120.4	149.6
Burundi	97.8	131.1	105.3	90.2	97.1
Cambodia	114.5	118.5	131.8	78.6	111.1
Cameroon	104.8	97.2	95.8	108.1	101.7

Country of birth	All live births	First born children	Second born children	Third born or more	Second born or more
Canada	105.7	105.8	100.9	116.8	105.1
Canary Islands	132.6	156.3	136.4	80.0	118.8
Cape Verde	89.1	57.1	118.2	133.3	126.9
Channel Islands	111.6	136.4	162.5	160.0	161.5
Chile	103.2	101.4	95.0	141.9	106.1
China	107.3	108.8	102.0	111.3	104.4
Colombia	107.5	107.3	107.8	110.2	108.4
Congo	104.9	119.8	136.6	94.7	106.9
Congo (Democratic Republic)	104.9	112.0	93.2	103.3	100.2
Croatia	115.0	110.1	129.7	121.1	127.3
Cuba	129.9	162.9	97.4	113.3	101.9
Cyprus	112.3	112.0	114.2	86.5	104.7
Czech Republic	106.6	103.2	106.7	105.5	106.2
Denmark	109.5	110.2	113.1	105.3	110.2
Djibouti	74.7	93.3	68.4	66.7	67.3
Dominica	116.5	120.0	135.3	65.0	97.3
Dominican Republic	114.6	144.4	113.3	135.3	121.3
East Timor	90.1	104.3	75.0	65.4	70.7
Ecuador	100.2	100.0	98.2	100.0	98.9
Egypt	106.5	104.6	109.6	104.3	107.2
England	105.3	105.2	105.7	105.2	105.5
Eritrea	102.2	104.6	116.4	103.4	109.2
Estonia	102.3	110.5	101.3	86.5	97.6
Ethiopia	100.4	102.8	96.5	104.2	100.0
Fiji	97.1	102.7	99.4	90.5	94.9
Finland	100.3	108.8	93.1	76.5	88.3
France	105.9	107.0	102.3	108.4	104.4
Georgia	101.1	99.1	115.5	103.0	111.5
Germany	105.3	104.4	107.9	102.5	106.0
Ghana	102.5	104.2	100.8	102.0	101.4
Gibraltar	101.0	101.9	96.2	98.2	96.9
Greece	107.8	107.8	110.9	106.4	109.9
Grenada	97.8	114.3	75.0	84.6	79.6
Guadeloupe	126.1	283.3	85.7	200.0	120.0
Guatemala	94.2	87.5	125.0	70.0	100.0
Guinea	105.6	100.0	122.0	94.0	105.3
Guinea-Bissau	88.9	100.0	88.9	76.0	81.1

Country of birth	All live births	First born children	Second born children	Third born or more	Second born or more
Guyana	102.5	89.7	113.4	89.6	100.6
Hong Kong (Special admin. Region of China)	103.8	105.0	103.2	103.7	103.3
Hungary	104.2	102.9	103.4	112.0	105.7
Iceland	95.2	69.0	93.3	105.0	98.0
India	106.3	105.1	106.1	111.3	107.4
Indonesia	101.9	100.0	105.3	106.9	105.8
Iran	105.8	104.5	106.3	106.8	106.4
Iraq	106.4	109.9	104.6	102.9	103.8
Ireland	105.1	103.4	108.6	102.7	106.3
Isle of Man	98.6	98.2	107.7	79.1	98.5
Israel	109.2	102.4	98.6	118.9	110.6
Italy	107.6	105.1	110.8	115.5	112.0
Ivory Coast	111.5	132.4	114.0	98.2	105.2
Jamaica	102.8	104.7	105.1	104.6	104.8
Japan	105.6	108.3	107.3	94.0	104.3
Jordan	103.7	107.4	119.8	88.9	102.3
Kazakhstan	110.7	107.1	121.6	140.7	125.6
Kenya	107.5	103.5	107.6	107.4	107.5
Korea (South)	117.1	125.1	109.8	105.1	108.6
Kosova	114.6	111.6	126.8	111.4	118.5
Kuwait	104.2	118.8	104.3	98.7	101.2
Kyrgyzstan	120.5	116.7	134.2	138.5	135.3
Latvia	105.9	107.2	98.5	109.9	101.6
Lebanon	105.0	99.4	94.2	125.5	109.5
Liberia	109.9	112.5	93.5	104.6	100.0
Libya	105.1	104.8	108.3	103.9	105.6
Lithuania	106.1	102.1	107.4	111.3	108.3
Luxembourg	110.5	100.0	126.7	150.0	131.6
Macedonia	98.6	112.8	104.0	78.4	97.1
Madagascar	122.9	120.0	133.3	100.0	117.2
Malawi	102.2	83.3	115.0	116.4	115.7
Malaysia	105.1	100.3	110.0	105.6	108.5
Malta	102.2	99.1	106.0	98.4	103.0
Mauritius	108.1	99.7	110.6	122.5	114.3
Mexico	110.1	117.9	102.4	127.8	107.6
Moldova	115.3	96.7	115.5	143.9	121.4

Country of birth	All live births	First born children	Second born children	Third born or more	Second born or more
Mongolia	114.2	120.3	120.6	121.9	121.1
Montserrat	123.0	138.7	103.2	119.0	112.3
Morocco	99.6	102.0	104.4	93.7	99.0
Mozambique	102.3	105.6	87.9	114.3	98.3
Namibia	103.8	78.2	101.4	116.0	105.3
Nepal	109.6	104.0	110.5	153.2	117.5
Netherlands	96.8	98.9	109.3	95.5	104.2
New Zealand	106.0	105.7	111.2	106.4	109.9
Nigeria	102.7	100.9	102.0	103.5	102.7
Northern Ireland	104.9	107.9	104.4	102.0	103.6
Norway	102.8	107.3	100.0	102.6	100.8
Oman	129.2	140.0	142.9	108.1	123.1
Pakistan	103.1	105.0	103.2	102.1	102.6
Palestine	121.6	125.8	116.2	125.0	121.6
Papua New Guinea	94.3	70.0	113.6	94.1	105.1
Peru	113.5	127.3	102.1	89.1	98.5
Philippines	110.1	116.3	103.1	114.2	106.9
Poland	104.6	106.3	103.6	99.7	102.7
Portugal	103.3	98.9	110.7	111.3	110.9
Qatar	102.5	142.5	71.8	90.9	80.6
Romania	104.0	104.6	103.4	99.8	102.1
Russia	108.0	113.3	103.3	109.5	104.9
Rwanda	106.6	130.5	110.8	100.0	104.8
Sao Tome and Principe	108.9	96.7	136.8	122.2	129.7
Saudi Arabia	107.2	110.9	103.8	107.7	105.7
Scotland	105.0	105.9	104.2	105.9	104.8
Senegal	104.6	79.3	111.5	108.7	109.9
Serbia	110.9	118.5	111.0	68.8	94.5
Seychelles	109.8	104.8	113.5	137.5	120.8
Sierra Leone	101.5	106.8	106.0	101.1	103.5
Singapore	109.4	100.3	125.8	100.0	117.8
Slovakia	108.5	110.7	108.3	108.2	108.3
Slovenia	106.9	84.4	90.0	116.7	97.6
Somalia	102.6	104.5	104.0	102.0	102.5
South Africa	106.7	104.0	108.4	112.7	109.5
Spain	106.2	100.0	118.0	105.3	113.3
Sri Lanka	101.3	98.2	101.7	103.5	102.3
St Helena and Dependencies	122.7	107.1	126.7	68.8	96.8

Country of birth	All live births	First born children	Second born children	Third born or more	Second born or more
St Lucia	108.4	110.5	81.0	123.5	96.7
St Vincent	114.3	104.3	105.6	135.0	116.1
Sudan	106.5	112.4	100.6	103.2	102.1
Swaziland	142.7	168.2	78.3	125.0	94.3
Sweden	108.8	109.3	107.3	108.8	107.7
Switzerland	98.4	101.6	96.7	88.9	92.9
Syria	113.9	110.7	119.9	113.2	116.7
Taiwan (province of China)	101.3	95.3	113.6	110.3	112.9
Tanzania	108.5	109.1	112.3	106.1	109.6
Thailand	106.3	101.9	108.6	116.1	110.7
The Bahamas	123.7	80.0	130.8	257.1	157.6
The Gambia	103.7	108.0	93.7	108.8	101.4
Togo	93.1	92.9	84.4	104.3	96.2
Trinidad and Tobago	108.1	116.9	101.9	113.2	105.9
Tunisia	111.8	110.0	103.7	110.8	106.4
Turkey	107.6	108.0	108.4	108.0	108.3
Turkmenistan	110.0	178.8	48.6	150.0	67.4
Uganda	102.1	106.0	103.2	99.6	101.5
Ukraine	103.2	101.8	100.5	103.6	101.2
Union of Soviet Socialist States	112.0	121.6	91.4	120.0	97.8
United Arab Emirates	103.3	93.7	110.2	107.1	108.9
United States	104.1	103.1	105.3	104.4	105.0
Uruguay	122.4	100.0	128.6	145.5	134.4
Uzbekistan	115.2	102.7	124.2	105.4	118.9
Venezuela	99.8	90.7	112.0	100.0	109.5
Vietnam	111.0	117.1	103.8	114.9	107.5
Wales	105.4	108.1	106.3	103.2	105.1
Yemen	112.4	106.3	116.0	115.9	115.9
Yugoslavia	106.2	122.9	104.8	104.8	104.8
Zambia	112.6	120.9	109.7	114.7	111.7
Zimbabwe	101.2	104.9	101.2	102.5	101.8
Not stated	88.3	140.0	44.4	56.3	52.0

* The information on previous children used for the analysis by birth order was only available for all births in England and Wales from May 2012 onwards and for Scotland from January 2013 onwards. Prior to these dates, information on previous children was only available for births within marriage.

Table 3: Birth ratios and test results by child's ethnicity, births notifications in England and Wales, 2008-12*

Ethnicity	All live births	First born children	Second born children	Third born or more	Second born or more
Total	105.2	105.4	105.4	105.0	105.3
White British	105.3	105.3	105.6	105.6	105.6
Other White	106.0	105.9	106.0	106.1	106.0
Mixed	105.9	106.1	107.1	105.6	106.6
Black Carribean	103.0	97.2	105.1	107.0	105.9
Black African	102.0	103.9	101.6	100.8	101.2
Other Black	101.8	102.6	99.2	103.4	101.4
Indian	105.0	103.8	105.0	110.2	106.5
Pakistani	103.7	105.2	102.9	103.7	103.3
Bangladeshi	102.6	104.1	101.4	101.7	101.6
Chinese	107.1	105.2	104.9	112.2	106.6
Other Asian	105.5	103.6	105.9	106.1	106.0
Other ethnic group	106.6	105.5	107.1	109.9	108.3
Not stated	105.6	105.7	106.1	102.8	104.9

*The information on previous children used for the analysis by birth order was only available for all births in England and Wales from May 2012 onwards and for Scotland from January 2013 onwards. Prior to these dates, information on previous children was only available for births within marriage.

Appendix A

The multiple testing problem and the Benjamini–Hochberg procedure

The 'multiple testing problem' arises because the significance level for a single test, α, (which measures the probability that we detect a difference under the assumption that there isn't one) is not maintained if we do lots of tests. The chances of getting a significant result in at least one of a large number of tests is actually quite high. To assist in the detection of results which are still unusual when we are doing lots of tests, we need to make a correction to α. Many approaches have been developed and one of them, the Benjamini-Hochberg procedure, is used in the analyses presented here.

The Benjamini–Hochberg procedure (BH step-up procedure) controls the false discovery rate (at level α). This means that the proportion of tests in the set which falsely find a significant effect is no more than α. The B-H procedure works as follows:

1. Find the significance level (p-value) for each individual test.
2. Rank the tests in descending order of p-values, and call the rank of a test in the ordered list *k*.
3. For a given overall *α*, find the smallest *k* such that $p_k < \frac{(m-k+1)\alpha}{m}$
4. Then say that for all tests $i = k,\ldots,m$ that there is a significant effect.

We will review this methodology in the context of multiple testing by birth order before the next publication. We welcome any comments on methodology from interested users.

Appendix B

Power calculations

In testing whether a result is statistically significant, it is common practice to determine whether the likelihood of an extreme observation occurring by chance is less than 5% (that is, the odds are less than 1 in 20). This is known as the alpha (α) value.

A consequence and a limitation of using this technique for multiple testing is that the groups being analysed will generally need to be large (that is, have a high number of births) for relatively small differences in birth rates to be found to lie outside the expected range. Many of the groups in this analysis are small and so would require large differences in birth rates to be identified as different from the expected range.

Calculations were conducted to determine the birth ratio that would need to be observed for a particular country of birth or ethnic group in order to have a good chance (i.e. 80%) of correctly concluding that the true value lies above the expected upper limit of 107 boys for every 100 girls. The required ratio depends on the number of births registered for that country or ethnic group. The fewer the number of births, the greater the observed ratio needs to be to ensure this chance is maintained. The levels of power and significance were set to 5% and the calculation carried out for a one-tailed test, i.e. results greater than 107:100.

Use of the Benjamini-Hochberg (B-H) procedure cannot easily be factored into a power calculation. A minimum level of power was deduced by using the critical value of (i/N) * α that is associated with the 171st country and 13th ethnic group, rather than the α that is used when calculating the effect size for a single hypothesis test. In the case of the 171st country, i=1,
N=171 and α=0.05, giving a critical value of 0.000292. In the case of the 13th country, i=1,
N=13 and α=0.05, giving a critical value of 0.00384.

Annex C: Review of Technologies

This paper reviews what technologies are available to identify the pre-natal gender of a foetus and their associated effectiveness.

Current Practice in the NHS

Antenatal sexing of the foetus is not a routine part of antenatal care. Scans are undertaken to support the clinical care of the mother and unborn baby such as:

- the number of foetuses;
- the age of the foetus;
- screening for fetal anomaly's.

It is usually only possible to identify the sex of a baby at the second ultrasound scan, which takes place at around 18-21 weeks gestation. Disclosing the sex of a foetus is a local decision, adhering to local policies, and should be based on clinical judgment about the certainty of the assessment and the individual circumstances of each case. There are some guidelines for professionals undertaking scans from the Society of Radiographers. See link below:

http://www.sor.org/learning/document-library/sale-images-determination-fetal-sex-and-commercial-aspects-related-nhs-obstetric-ultrasound-0

Ultrasound: from 12 weeks gestation

Ultrasound Imaging can be used (Lubusky et al, 2012; Esfrat et al, 1999) to accurately determine the gender of a foetus where gestational age was over 12 weeks and certain other factors are present. However, where these factors are not present, and gestation is less than 11 weeks and 4 days, it was not possible to accurately identify the gender of a foetus using ultrasound imaging.

Non-invasive pre-natal testing (NIPT): from 7 weeks gestation

Non-invasive prenatal testing (NIPT) can detect DNA fragments from an unborn baby in a sample of blood taken from the mother and can be used to assess the risk of certain genetic and chromosomal conditions and determine the sex of a foetus during pregnancy.

Following a trial in NHS labs, the NIPT method was found to be highly accurate when performed after 7 weeks gestation and using stringent reporting criteria (Hill et al). In the UK and other European countries, fetal sexing using NIPT is currently available at a number of laboratories at a cost comparable to invasive chorionic villus sampling (CVS) testing (Osipenko et al) which carry a small risk of miscarriage. There are a number of private clinics registered with the Care Quality Commission (CQC) which offer this service with costs starting from around £320 (Source: Care Quality Commission website).

NIPT is now also being marketed online with the use of finger prick tests. The dried blood is typically analysed in laboratories outside of the UK. This can therefore lead to a delay in getting results to clients, increasing the gestation of the foetus as the client waits for a result. There have been no published large-scale technical trials reporting test performance using finger prick samples (Osipenko et al). These finger prick tests cost around £150 to £200. Online forums suggest they are being undertaken at 8 weeks gestation. They are marketed as offering a 95% accuracy rate (Osipenko et al).

Clinical use of NIPT for identification of gender

There can be a clinical benefit for having early indication of the gender of a foetus. Sex-linked disorders occur with a frequency of about 5 per 10,000 live births (RAPID commissioning guide). Gender related fetal abnormality conditions have previously been identified only through Invasive methods such as amniocentesis and chorionic villous sampling, methods that can only be undertaken from 11 weeks gestation and carry an approximately 1% risk of miscarriage associated with the procedure..

Conclusion

NIPT is the main technological development enabling women to learn the gender of their foetus. The emergence of NIPT tests underlines the need for us to continue to monitor birth ratios and abortions by ethnicity to assess the impact of these tests, particularly if they become more widely available in the coming years.

The required effect size for groups of varying size is shown in the table below. For example, an ethnic group with 10,000 registered births would need a birth ratio of 114 or more; and a country associated with 10,000 registered births would need a birth ratio of 116 or more.

	Ratio of Boys: 100 girls		
Sample size:	13th Single test	171st ethnic group	country group
500	133	146	157
1,000	125	133	140
5,000	114	118	120
10,000	112	114	116
50,000	109	110	111
100,000	108	109	109

Annex D: Abortions by Gestation and Ethnicity

This section presents statistics on abortions carried out for residents of England and Wales in 2014 split by gestation and ethnic group of the woman.

Key Points

- For women having an abortion in 2014, the distribution of ethnic groups differed when compared with the distribution of ethnic groups in the general population.
- There is evidence that the gestation at which an abortion occurs varies depending on the ethnic group of the woman.
- There is evidence that the likelihood of having had a previous abortion varies depending on the ethnic group of the woman.
- Where gestation is 17 weeks or later, there is no evidence of gestation being dependent on ethnic group of the woman.

All Abortions, by gestation

The total number of abortions for residents of England and Wales in 2014 was 184,571. This was 0.4% less than in 2013 (185,311) and 0.6% less than in 2004 (185,713). The majority of abortions took place in the early stages of pregnancy:

- 97% of all abortions were before 17 weeks gestation
- 89% of all abortions were before 12 weeks gestation (within first trimester)
- 37% of all abortions were before 7 weeks gestation (within first trimester)

All Abortions, by ethnic group

Of women whose ethnicity was recorded[14] in 2014, 77% were reported as White, 9% as Asian or Asian British and 8% as Black or Black British. This differs from the ethnicity population estimates based on the 2011 census where 86% are reported as White, 7.5% as Asian or Asian British and 3.3% as Black or Black British.

[14] The revised HSA4 forms introduced in 2002 allowed for the recording of ethnicity, as self-reported by the women involved. This information was not previously recorded. Ethnicity was recorded on 97% of the forms received for 2014 compared with 80% in 2004, the second full year of collection.

All Abortions, by gestation and ethnic group

The distribution of abortions by gestation is statistically significantly different across ethnic groups, indicating that gestation time for an abortion is dependent on the ethnicity of the woman.

- The proportion of abortions before 17 weeks range from 95% to 98% depending on the ethnic group of the woman
- The proportion of abortions before 12 weeks range from 87% to 92% depending on the ethnic group of the woman
- The proportion of abortions before 7 weeks range from 35% to 46% depending on the ethnic group of the woman

Up until 12 weeks, there was more variability in the gestation between different ethnic groups. After 12 weeks, the variability in gestation across different ethnic groups decreases.

All Abortions, by gestation and ethnic group: under 7 week's gestation

The three ethnic groups most likely to have an abortion under 7 weeks gestation were: 'Asian or Asian British – Pakistani' (46%); 'Asian - Any other Asian background' (45%) and 'Asian or Asian British – Indian' (44%).

The three ethnic groups least likely to have an abortion under 7 weeks gestation were: 'Asian or Asian British – Bangladeshi' (35%); 'Mixed - White and Black Caribbean' (35%); and 'White British' (36%).

All Abortions, by gestation and ethnic group: under 12 week's gestation

The three ethnic groups most likely to have an abortion under 12 weeks gestation were: 'Chinese' (92%), 'Asian or Asian British – Bangladeshi' (91%) and 'Asian or Asian British – Indian' (91%).

The three ethnic groups least likely to have an abortion under 12 weeks were: 'White Irish' (87%), 'White - Any other White background' (88%) and 'Black or Black British – Caribbean' (88%).

All Abortions, by gestation and ethnic group: under 17 week's gestation

The three ethnic groups most likely to have an abortion under 17 weeks gestation were: 'Chinese' (98%), 'Asian or Asian British – Bangladeshi' (98%), and 'Any other ethnic group' (97%).

The three ethnic groups least likely to have an abortion under 17 weeks gestation were: 'White – Irish' (95%), 'Mixed - White and Asian' (96%) and 'Black or Black British - Any other' (96%).

All Abortions, by gestation and ethnic group

Table 1. Abortions by gestation and ethnic group, residents of England and Wales, 2014

		Gestation (weeks)									
		Number					*Percentage*				
Ethnic Group of Woman	**Total**	**<7**	**7-11**	**12-16**	**17-21**	**22+**	**<7**	**7-11**	**12-16**	**17-21**	**22+**
Total	**184,571**	**68,862**	**95,795**	**14,371**	**4,350**	**1,193**	***37***	***52***	***8***	***2***	***1***
White - British	**121,153**	43,614	64,113	9,736	2,890	800	*36*	*53*	*8*	*2*	*1*
White - Irish	**820**	303	408	68	35	6	*37*	*50*	*8*	*4*	*1*
White - Any other White background	**15,787**	6,039	7,931	1,337	361	119	*38*	*50*	*8*	*2*	*1*
Mixed - White and Black Caribbean	**2,720**	960	1,450	233	64	13	*35*	*53*	*9*	*2*	*0*
Mixed - White and Black African	**792**	292	409	66	20	5	*37*	*52*	*8*	*3*	*1*
Mixed - White and Asian	**792**	330	389	43	24	6	*42*	*49*	*5*	*3*	*1*
Mixed - Any Other	**1,751**	647	904	143	45	12	*37*	*52*	*8*	*3*	*1*
Asian or Asian British - Indian	**6,376**	2,780	3,023	352	172	49	*44*	*47*	*6*	*3*	*1*
Asian or Asian British - Pakistani	**3,827**	1,755	1,719	247	89	17	*46*	*45*	*6*	*2*	*0*
Asian or Asian British - Bangladeshi	**1,686**	582	959	103	35	7	*35*	*57*	*6*	*2*	*0*
Asian - Any other Asian background	**4,349**	1,944	1,994	283	96	32	*45*	*46*	*7*	*2*	*1*
Black or Black British - Caribbean	**4,538**	1,745	2,263	382	114	34	*38*	*50*	*8*	*3*	*1*
Black or Black British - African	**9,294**	3,914	4,468	638	217	57	*42*	*48*	*7*	*2*	*1*
Black or Black British - Any other	**773**	307	379	59	22	6	*40*	*49*	*8*	*3*	*1*
Chinese	**1,685**	644	910	102	22	7	*38*	*54*	*6*	*1*	*0*
Any other ethnic group	**2,401**	1,042	1,140	154	54	11	*43*	*47*	*6*	*2*	*0*
Not known/not stated	**5,827**	1,964	3,336	425	90	12	*34*	*57*	*7*	*2*	*0*

2% of abortions happened between 17 and 21 weeks, with a further 1% occurring at 22 weeks or more.

For abortions with a gestation of 17 weeks or more, there is no statically significant variation is gestation across ethnic groups, indicating that gestation time for an abortion is not dependent on the ethnicity of the woman

Repeat abortions and ethnic group

In 2014, amongst women who have had a previous abortion, there was significant variation in the number of previous abortions across ethnic groups.

37% of abortions in 2014 were to women who had already had one or more abortions. 29% of Chinese women having abortions in 2014 had previously had an abortion, compared with 48% of Black women and 46% of women of mixed ethnic groups.

Table 2. Percentage of women who had one, two and three or more previous abortions, by ethnic group, England and Wales, 2014

Ethnic group of woman	No. of previous abortions		
	1	2	3 or more
White	*27%*	*7%*	*2%*
Mixed	*31%*	*11%*	*4%*
Asian or Asian British	*26%*	*6%*	*2%*
Black or Black British	*32%*	*11%*	*5%*
Chinese	*22%*	*5%*	*2%*
Any other ethnic group	*25%*	*8%*	*3%*
Not known/not stated	*23%*	*6%*	*2%*
All women	***27%***	***8%***	***3%***

Annex E: Letter to Stakeholder Organisations and List of Organisations Contacted

Richmond House
79 Whitehall
London SW1A 2NS

ASSESSMENT OF TERMINATION OF PREGNANCY ON THE GROUNDS OF SEX

As you may be aware, following an amendment to the Serious Crime Act 2015, the Secretary of State for Health is committed to undertaking an assessment "of termination of pregnancy on the grounds of the sex of the foetus in England, Scotland and Wales".

To help inform the assessment, we would like to invite your organisation to submit any relevant information you may have that sex selective abortions have taken place or been solicited in England, Scotland or Wales. Any information that is submitted needs to be corroborated by qualitative data, quantitative analysis or other clearly documented evidence. All relevant information submitted will support the Department of Health in undertaking the assessment. Examples of the kind of information that we are seeking include:

Any unpublished (peer reviewed) information from research, observational studies or other studies
Systematic reviews
Qualitative research
Quantitative research which may establish a cause and effect relationship

If anecdotal information is submitted it will not be possible to draw definitive conclusions based on this alone.

Please note this is not a request for information or views about any other aspect of abortion legislation or treatment.

We manage the information you provide in response to this information gathering exercise in accordance with the Department of Health's Information Charter. Information we receive, including personal information, may be published or disclosed in accordance with the access to information regimes (primarily the

Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).
If you want the information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence. In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

An anonymised summary of the information received will be published as part of the assessment. Any evidence of criminal activity or potential criminal activity will be reported to the police.

Please can you submit your information by Friday 31st July 2015 to The Sexual Health Team, Room 111, Richmond House, 79, Whitehall, London SWA1 2NS or alternatively email to: HSBD@dh.gsi.gov.uk so it can be considered for inclusion in the assessment which will be published in early September. If you wish to discuss this request in more detail, do not hesitate to contact in the first instance.

Yours sincerely

Screening and Sexual Health Division

Sent to:

All Party Pro Life Group
Antenatal Results and Choices
BPAS
Care
Christian Medical Fellowship
FPA
Brook
LIFE
Marie Stopes International
SPUC
Jeena International
Karma Nirvana
Sharan Project
NAZ Project London
Southall Black Sisters
Voice for Choice
End Violence Against Women Coalition
Safe Lives
Refuge
Women's AID

Annex F: Case-Studies Submitted By Jeena International

A

British born A a 25 years old is third generation Indian, undertook the decision to have an abortion based on gender, not because of domestic violence or duress by any of her in laws or husband, but for various complex cultural reasons both self imposed and community imposed, she thought by giving birth to a boy she would be accepted into the family, she would therefore have a status, her father in law was the only son and her husband too was an only son, this compounded her belief that it was expected for her to have a son to carry on the family name too -lineage. A registered at an ante-natal clinic and attended all appointments, when she was 18/19 weeks and went for a private scan at Harley St, as a result of the scan that she was expecting a girl. The next day A booked an appointment to have an abortion, she told a doctor it was because she could not afford to have a baby. Ante-natal clinic called to chase her missed appointment, A informed them that she had miscarried when she was on holiday. A at the age of 29 was again expecting however this time twins she then repeated the cycle of aborting on the basis of gender.

B

Bangledeshi born B came to the UK on a spousal visa at the age of 19, soon afterwards she became pregnant her pregnancy was very traumatic as she became a victim of domestic violence as her husband wanted to know if she was carrying a son, she gave birth to a healthy girl, however the domestic violence increased until eventually she left him and was at an women's refuge.

C

C was born in Pakistan and was her in the UK as a dependent EU spouse, she fell pregnant soon after the birth of her first child that was a girl, during a routine ultra scan her husband asked what the sex of the baby was and was told a girl. During the drive home there was pin drop silence in the car, when they arrived home C starting to prepare the evening meal in the kitchen, trying to silence her daughter at the same time as she was crying, as she knew her husband was not happy and was angry as she was expecting another girl. She remembers him repeatedly punching and kicking her in the stomach and passing out, when she regained consciousness her husband had walked out and sent her divorce papers a couple of months later.

D

After D's third girl was born he had repeated pressure to divorce his wife as she had given birth to another girl. He was told that he would be disinherited and would be ostracised from the family, coupled with the fact he was the only son he felt he had no other choice but to divorce his wife. He then travelled to India and remarried. He is consumed with guilt over his first wife and children, angry with his parents and hates his new wife.

E

E was born in Kenya and was of Indian heritage, she had an arranged marriage and moved to the UK. During the her pregnancy she had complications whereby she was rushed to hospital and had an emergency caesarean, she gave birth to a girl that was almost 3 months early and weighed 1 ½ lbs she was in a special care unit. When her father in law came to see them in hospital he remarked as to how disappointed he was in her as she had given birth to a girl.

F

F decided to abort her third child as she was expecting a girl, even though her she had two boys as she thought giving birth to a girl would be too traumatic. F was the eldest of six girls and she recalls each time that her mother went to the hospital of how disappointed everyone was when each time it was a girl. This experience traumatised and consumed her so much that the thought of giving birth to a girl meant disappointment, betrayal and lowered status with in the family and the community. She remembers vividly when her marriage was being arranged of how reluctant the community was to look for a perspective partner as she was the eldest of six girls, she was met were either sympathy or caution as she may not be able to bear a son herself. F made a painful decision to abort which she now regrets as she felt that she had no other choice as her childhood was full of disappointment directed at her mother producing daughters and she herself was a disappointment as she was a girl too.

G

G visited India to find out what the sex of her baby was when finding out it was a girl she had an abortion. G's second pregnancy she visited private clinic to determine the sex of the baby she was carrying, on discovering that it was a girl, she informed her GP that she wanted an abortion, as she could not afford to have a baby, an abortion was offered and carried out. On finding out for the third time G ordered a blood test to determine the sex of the baby again it was a girl and she again visited her GP and an abortion was offered and carried out.