



Who's the bloke in the room?

Fathers during pregnancy and at the birth in the UK

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“After the birth I was treated as a nuisance and was in the way. I was told to leave immediately after my wife was brought to the ward with the baby. She was high on medication from a forceps delivery, exhausted and full of wires and a colostomy bag hanging out of her. She was starving because she hadn't eaten in more than a day. I felt like a spare part but I could have helped her and the baby while she was establishing breastfeeding after being in labour for 18 hours. The midwives told my wife I wasn't allowed to stay to respect the other women. I drove home after the birth and nearly crashed my car.”

(Open text comment from the How was it for you? survey of new fathers conducted to coincide with this report. For more details: p7.)

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FATHERHOOD INSTITUTE

About the Fatherhood Institute

The Fatherhood Institute (founded 1999, charity number 1075104) is a world leader in the fatherhood field, with a unique grasp of policy, practice and research. Our twin focus is child wellbeing and gender equality. Our research summaries, published free of charge on our much-visited website www.fatherhoodinstitute.org, are drawn on and cited all over the world; and our trainings in father-inclusive practice (online and face-to-face) are highly praised and evaluated by service providers. We work directly with fathers and couples in community, education and health settings, and train local facilitators to undertake this work. We also work with fathers and mothers in the workplace (seminars/ webinars/company intranet materials) and offer HR support to organisations aiming to develop competitive edge and reduce gender inequalities at work, through recognising and supporting male employees' caring responsibilities.



About the Nuffield Foundation

The Nuffield Foundation is an endowed charitable trust that aims to improve social wellbeing in the widest sense. It funds research and innovation in education and social policy and also works to build capacity in education, science and social science research. The Nuffield Foundation has funded this project, but the views expressed are those of the authors and not necessarily those of the Foundation. More information is available at www.nuffieldfoundation.org.

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Introduction to the Series

The Fatherhood Institute, supported by the Nuffield Foundation, has been compiling (and continues to compile) a Literature Library of mainly academic articles, book chapters and reports about fathers and fatherhood in the UK. Our study period is from 1998 to the present day; and, in order to be included, publications must draw on empirical research (UK samples) or describe/ reflect on relevant research methodologies, or on UK policy or practice. We have included within the scope of our Library and reviews all relevant studies found through systematic searches of bibliographic databases as well as web searches and extensive expert contacts. You can find out more about the Library and our Methodology for compiling it, on our website.

Complementing this work, we have investigated how quantitative research about British fathers ('raw data') is collected and researched. We undertook this work in two phases. In Phase One, we investigated sixteen large-scale repeated cross-sectional¹ and longitudinal² UK research datasets to discover how they collect information on fathers in Britain; and how they identify and differentiate different types of fathers and father-figures. In Phase Two, we selected three datasets from among the sixteen, and looked at which substantive data items had been collected on three specific topics.

Other reports in our CONTEMPORARY FATHERS IN THE UK series include:

- *Cash or carry? Fathers combining work and care in the UK* (published December 2017)
- *Where's the daddy? Fathers and father-figures in UK datasets* (published February 2018) - a Working Paper presenting the findings from Phase One of our datasets review.
- The current report, *Who's the bloke in the room? Fathers during pregnancy and at the birth in the UK*, contains findings from our Literature Library as well as from Phase Two of our review of the datasets.

¹ We looked at cross-sectional research datasets whose main purpose is not specific to parents or children. These were the 2011 UK Census, British Social Attitudes, Labour Force Survey, Family Resources Survey, Health Survey for England, ONS Opinions and Lifestyle Survey, and 2000 and 2014/15 UK Time Use Surveys. Identifying fathers/ mothers amongst respondents provides valuable nationally representative data about their health, wellbeing, time use, employment, social attitudes and finances. We classified the Labour Force Survey as a cross-sectional dataset for the purposes of our review, but looked at elements of its panel design that potentially enable the identification of non-resident fathers.

² We selected longitudinal studies that collect a variety of contextual data and 'outcomes data' about fathers, mothers and children that can be used in analyses of fathers and their impacts. These were the National Child Development Study, the 1970 British Cohort Study, the Millennium Cohort Study, Alspac, Growing Up in Scotland, the Longitudinal Study of Young People in England, and Understanding Society.

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Section A: Introduction to this Report

In the UK there have been more studies of fathers across the transition to parenthood than at any other life stage: as of June 2018, 603 records in our comprehensive library of UK research are key-worded ‘perinatal’, which we define as the period from conception to twelve months after the birth. By comparison, 408 records are key-worded ‘work’, and 282 ‘separation’ (which includes divorce).

Because the perinatal period is so crucial to maternal and child health and because almost all fathers are in contact with services during this time, we are devoting this whole Report to it. But even within this, due to limitations on word length, we must narrow our focus. We have therefore chosen the antenatal period for detailed investigation, although we include short sections on the birth and the neonatal period.

Integrated throughout this Report are findings from Phase 2 of our datasets review, during which we examined three ‘birth cohort studies’³ – the Avon Longitudinal Study of Children and Parents (Alspac), the Millennium Cohort Study (MCS), and Growing Up in Scotland (GUS) – to see what questions they asked about the fathers of cohort members in pregnancy and around the time of birth. Since these datasets contain most of the best antenatal/ birth-related data that exists on fathers in Britain⁴, together with extensive data on child outcomes, readers will not be surprised to find much of the research cited in this Report deriving from them. However, while some of the GUS births are relatively recent, the MCS births were 18 years ago and the Alspac births 28 – and limited to one geographical area. We have had to rely on these datasets because no more recent birth cohort study has been instituted⁵. Consequently, where we have identified more recent cross-sectional studies or surveys addressing relevant topics, we have included their findings⁶.

³ Having collected data on a child and their family at the time of the birth, these studies generally collect follow up data over many years.

⁴ The birth ‘sweeps’ of the older National Child Development Study (NCDS) and the 1970 Birth Cohort Study (BCS70) collected only minimal demographic data about fathers. Neither the adulthood sweeps of the NCDS nor the substantial United Kingdom Household Longitudinal Study, Understanding Society, asks male sample members any questions in relation to antenatal periods or births for children born between sweeps, with the exception of smoking during pregnancy in the NCDS.

⁵ The now discontinued Life Study <http://www.nature.com/news/massive-uk-baby-study-cancelled-1.18650>, had planned to collect extensive data directly from fathers and mothers’ partners during pregnancy and six and twelve months after birth. The most recent strategic review of UK longitudinal studies recommends the commissioning of a new UK population-representative birth cohort (Livingston et al., 2018).

⁶ Cross-sectional studies analyse data collected from a population, or a representative subset, at a specific point in time, but do not follow the same individuals over time so outcomes cannot be ascertained.

Because our research review revealed such paucity of data collected from new fathers about their experiences of maternity services in the UK, the Fatherhood Institute, together with Fathers Network Scotland, developed and distributed during May 2018 an online survey, *How was it for you?*, to men whose first child had been born in the NHS system in the previous five years; 1,873 recent fathers responded. Findings from this survey are included, where relevant, in this Report - and a separate summary of results is available on our website.

For researchers, we attach two Appendices⁷ as well as footnotes, in which some of the more technical detail is presented and some research gaps identified⁸.

And now, with our 'housekeeping' out of the way, let us turn to the substantive content of this Report...

⁷ Appendix A (below) tabulates the range of data collected in Alspac, the MCS and GUS in relation to the fathers of cohort members in the antenatal period and around the time of birth, which might inform new cohort studies and large-scale cross-sectional studies. Appendix B, based on our Literature Library, identifies apparent gaps in published analysis of the cohort studies relative to the questions asked, which can inform plans for future secondary analysis. Kneale et al, (2016) adopt a similar approach: commissioned by the Centre for Longitudinal Studies at University College London, the researchers created a systematic map of published studies analysing MCS data and then identified where MCS data are underutilized in ten priority question areas (Kneale et al., 2016).

⁸ Of course, any researcher wishing to undertake follow-up work would need to assess thoroughly whether a case could be developed for research funding, giving consideration to research questions of interest, the reliability and validity of data, and the suitability and added value of a particular dataset.

Section B. Expectant fathers' impact

Pre-conception

Fathers' impact on their children begins before conception. Analysis of the National Child Development Study (NCDS) found that while 15% of the variability in fetal growth could be explained by the mother's characteristics, around 7% was explained by the father's (Hennessy & Alberman, 1998). A number of UK studies have examined fathers' 'genetic bequests' in relation to inherited disease or conditions. While we have not included all of these here, an interesting analysis of the Isle of Wight cohort study (children born in the 1980s) found maternal allergy (asthma, eczema) increasing the risk in girls and paternal allergy increasing the risk in boys – with implications for childhood allergy prediction and prevention (Arshad et al., 2012).

A number of UK studies, contributing to a broader international literature, have looked at father-age in relation to offspring intelligence, autism and serious mental and physical illness (older fathers) and to child maltreatment, rates of complete immunizations, risk of hospital admission and father-absence (younger fathers)⁹.

The Avon Longitudinal Study of Parents and Children (Alspac) found fathers' as well as mothers' frequent binge drinking just before conception correlated with lower Key Stage 2 test scores in their children (Alati et al., 2013). Conception was delayed where Alspac fathers were heavy smokers (Hull et al., 2000); and when they had commenced smoking before age 11, their adolescent sons (but not daughters) were more likely to be obese (Northstone et al., 2014). A link was found between Alspac fathers' exposure to their own mother's smoking prenatally, and their children's birth head circumference (Pembrey et al., 2014).

Alspac analyses have found a relationship between fathers' pre-pregnancy body mass index (BMI) and sons' and daughters' bone mineral content and density (Macdonald-Wallis et al.,

⁹ Although we show in Appendix A that cohort studies (e.g. Alspac) may not collect data on the age of the fathers who are living apart from their baby's mother at the time of the birth (15-16% of the whole), among resident fathers, their age at the birth of a child is one of the most researched father variables in Alspac, the MCS and GUS. Published analyses relate age of resident fathers to a wide variety of outcomes including the relationship status of the birth parents at the time of the birth, and subsequently (MCS); later inter-parental collaboration as co-parents (GUS); later father involvement in childcare and housework (MCS and Alspac); later child outcomes such as health, school assessments, behavioural problems, language development and disability (MCS and Alspac); whether fathers attend the birth (MCS); mothers' employment at 9 months (MCS); whether fathers take paternity leave (MCS); and fathers' later health and health behaviours (MCS and Alspac). There are also MCS analyses of the age of fathers whose main household is separate from their child's, relative to contact and maintenance paid. Alspac has explored age in relation to male fecundity. Since this 'age' variable can reflect maturational, period and/or cohort effects for fathers, it would be interesting to review this literature systematically, and to compare effects across the three cohorts.

2010). Analyses of data from the Millennium Cohort Study (19,000 babies born in 2000/2001) has identified important paternal genetic and environmental effects on emergency C-section (Stulp et al., 2011), birth weight (Dearden et al., 2005) and excessive weight gain in young children (Griffiths et al., 2007)¹⁰.

During pregnancy

Alspac analyses have revealed an association between fathers' BMI during pregnancy and their children's 'fat mass' at age 7.5 (Davey Smith et al., 2007) and at age 10/11 (Lawlor et al., 2008)¹¹. Another Alspac analysis found a modest and more-or-less equal association between measures of both alcohol consumption and alcohol problems in fathers and mothers during pregnancy, and symptoms of early childhood hyperactivity (Kendler et al., 2013)¹².

The impact of fathers' smoking, before and during pregnancy, has been investigated in both Alspac and the MCS, although the Alspac data appears to have been more thoroughly

¹⁰ These findings were independent of maternal influences. A small caveat is that, in the MCS, the (resident) fathers' height and weight were not measured until nine months after their babies' births.

¹¹ The relationship between UK fathers' weight, height or BMI and later child biomedical outcomes, growth and weight is relatively well researched in Alspac (Blair et al., 2004; Brion, Ness, et al., 2010; Davey Smith et al., 2007; Fraser et al., 2013; Galobardes et al., 2012; Lawlor et al., 2008; Ong et al., 2000) although, as with smoking (see below), very often in an attempt to disentangle intrauterine mechanisms for the impact of maternal weight from other mechanisms or confounding factors.

¹² A 'no effect' finding can be as interesting as 'an effect' finding. A number of Alspac studies found no or little statistically significant relationship between, for example, father's alcohol use in pregnancy (as reported by mother) analysed in relation to child's later smoking and alcohol use (Macleod et al., 2008); father's report of alcohol use during pregnancy analysed as moderator in the relationship between postnatal paternal depression and child outcomes at ages 3.5 and 7 years (Gutierrez-Galve et al., 2015); and partner's alcohol use during pregnancy (18 weeks' gestation partner questionnaire) analysed in relation to child's later behavioural problems or IQ (Brion et al., 2008; Alati et al., 2008; 2010; O'Keeffe et al., 2015).

analysed¹³ than the MCS data¹⁴. While some Alspac studies found nil associations, in others a correlation was clear. Each parent's smoking during pregnancy was found to be associated with ADHD symptoms in their children (Langley et al., 2012); fathers' smoking during pregnancy predicted wheezing/ asthma in their ten-year-old children (Arshad et al., 2005); and Alspac mothers and fathers, whose own fathers had been smokers while they were in the womb, had poorer *locus of control*: that is, they were more likely to believe that outside forces, rather than their own actions, would influence outcomes (Golding et al., 2018; Golding et al., 2017)¹⁵. In Tyneside in 1998, a substantial cross-sectional survey found heavy smoking in either parent during the pregnancy associated with short stature in their children; and when both parents were heavy smokers, child overweight and obesity were both more likely (Koshy, 2011).

We found just one Alspac study relating fathers' drug use to child outcomes and that was only as a moderating variable (Gutierrez-Galve et al., 2015) so this appears to be an under-researched area for Alspac. Alspac analyses have explored the relationship between domestic violence in pregnancy (including emotional cruelty) on child behavioural outcomes (Flach et al., 2011), mothers' later interactions with their children (Thomson, 2014) and adolescents' chronic disabling fatigue (Crawley et al., 2012), finding harmful associations with all of these.

¹³ Often as a control variable, in an attempt to disentangle intrauterine mechanisms for the impact of maternal smoking from other mechanisms or confounding factors (Taylor et al., Capron et al., 2015; 2014). Other than the papers mentioned here, we also identified Alspac papers researching the relationship between father's smoking in pregnancy and school age children's IQ, where there was a tiny effect (Alati et al., 2008) and expectant fathers' smoking and older children's and adolescents' outcomes such as smoking, alcohol use, obesity and behavioural problems (Taylor et al., 2007; Brion, Victora, et al., 2010; Fraser et al., 2013; Galobardes et al., 2012; Leary et al., 2013; Leary et al., 2015; Macdonald-Wallis et al., 2011; Macleod et al., 2008; M. E. Pembrey et al., 2014; A. E. Taylor et al., 2014; Amy E. Taylor et al., 2014; Ware et al., 2014; Zammit et al., 2009).

¹⁴ Perhaps because fewer biomedical variables and fewer pregnancy variables were collected in the MCS, we found fewer MCS studies (Del Bono et al., 2008; Ward et al., 2007) researching the relationship between fathers' smoking in pregnancy and children's outcomes - specifically foetal growth and birth weight. One analysis examined the relationship of maternal smoking in pregnancy and children's obesity without incorporating data on fathers' smoking during pregnancy (Hawkins et al., 2009) So there is scope for further longitudinal analysis using this more recent MCS data, although multivariate analyses incorporating confounding and mediating variables is less possible, given the fewer biomedical and pregnancy variables collected relative to Alspac. Additionally, the data on smoking during pregnancy was collected retrospectively in the MCS (at the 9-month interviews) rather than during pregnancy as in Alspac.

¹⁵ More research on this topic using this dataset is in progress.

Expectant fathers' mental health

Expectant mothers' mental health is a topic of considerable interest to campaigners and policy makers¹⁶, partly because of identified risk to infants and children. Has expectant fathers' poor mental health also been found significant? There are a number of Alspac analyses available which link fathers' depression and/ or anxiety during the pregnancy to child outcomes, even though it is quite likely that the most severely affected fathers were not identified and included in this aspect of the study¹⁷; and it is therefore not surprising that some of the analyses found nil effects¹⁸. Others studies, however, despite the likely flawed methodology, did find fathers' depression during the pregnancy linked with more emotional, conduct, and total problems in their children (Hanington et al., 2012), attention difficulties (Van Batenburg-Eddes et al., 2013) and behavioural/ emotional/ psychiatric problems, especially in boys and through to age seven, controlling for their fathers' postnatal and concurrent depression (Ramchandani et al., 2008).

How can this be? After all, fathers do not interact directly with their babies before they are born. 'Genetic risks' (from father to child) cannot be ruled out¹⁹. In the Alspac sample these were not identified but are not likely to be significant: depressive disorders are less strongly 'heritable' than, for example, schizophrenia and bipolar disorder (Sullivan, 2012). This suggests that indirect effects are coming into play. For example, the research by Hanington and colleagues mentioned above found that when the expectant fathers were depressed the couples argued more, and their conflict was not only independently linked with their

¹⁶ <http://maternalmentalhealthalliance.org>.

¹⁷ The measure used to identify fathers' depression, or the cut-off point applied, may not have been sufficiently sensitive; the data was gathered relatively early in the pregnancy (at 18 weeks) and by postal survey, to which the most emotionally vulnerable may not have responded (Thorpe et al., 1992). Data was not gathered from the 15-16% of men who were not formally recognised as the mother's partner: these were likely to have had the highest rates of depression (Huang & Warner, 2005) and other mental health deficits.

¹⁸ No statistically significant association was found between expectant fathers' depression and adolescents' stress response (O'Donnell et al., 2013) or depression or anxiety (Capron et al., 2015; Pearson et al., 2013); nor was any link found with children's executive function at age 8 or school achievement at age 16 (Pearson et al., 2016), while mothers' poor antenatal mental health was connected with both of these, as it was in the development of Tourette Syndrome/ chronic tic disorders in their 13-year-olds (Ben-Shlomo et al., 2016).

¹⁹ Ramchandani and Psychogiou (2009) divide risk-transmission mechanisms into three categories: 'genetic, environmental and gene-environment interplay'. Genetic pathways are complex, and most often involve numerous genes, each contributing to the overall level of risk. 'Gene-environment interplay' refers to the fact that children's risk is rarely all genetic or all environmental. Parental genetic factors are associated with specific environmental factors, and many environmental risks only affect (or more seriously affect) children who have particular genetic propensities.

children's later difficulties but also moderated²⁰ the impact of the fathers' depression on them (Hanington et al., 2012). In addition it is possible that fathers' depression caused or exacerbated mothers' emotional difficulties (Ramchandani & Psychogiou, 2009), and there is good evidence that expectant mothers' stress, anxiety, and depression can have long-term effects on a variety of outcomes for the child (Glover et al., 2016), possibly through fetal programming. The expectant fathers' poor mental health may also have compromised their employment, and this might have caused financial or housing difficulties (Ramchandani & Psychogiou, 2009), distressing both parents and aggravating conflict.

And after the birth, the effects are felt too. Analyses of a smaller-scale Alspac pilot (Dragonas et al., 1992; Thorpe et al., 1992) found that fathers whose mental health had been poor during the pregnancy, were more likely to feel negatively about fatherhood afterwards. They were also less involved with their babies, experienced less enjoyment from taking care of them, and were less supportive towards their infant's mother. And when Alspac mothers had reported cruelty by their partner or no support or affection from him during pregnancy, their children were more likely to experience chronic and disabling fatigue thirteen years later (Crawley et al., 2012).

Dex & Joshi (2005) observe that 'father non-attendance at a child's birth . . . appears to be one indicator of social disadvantage . . . with potential implications for both family functioning and child development over the longer term.' However, even controlling for such 'contextual factors', nine-month-olds born to 'unaccompanied' MCS mothers were found more likely to have delayed gross motor development (Essex & Pickett, 2008). Other aspects of their development were not affected²¹.

²⁰ Made it worse or better – exacerbated or ameliorated it.

²¹ It is just possible that these babies were missing out on active play with their dads: an observational study (44 mothers, 40 fathers) found higher mother-infant relationship quality significantly associated with their seventeen-month-old-children's better language development, and higher father-infant relationship quality associated with the babies' more advanced motor development (Parfitt et al., 2013).

Section C: Background

The policy context

In light of a robust body of research internationally, demonstrating associations between expectant and new fathers' behaviour, experiences, attitudes and characteristics, and maternal and infant health and wellbeing, the World Health Organisation has set out, among ten recommendations on health promotion interventions for maternal and newborn health, a recommendation ('Recommendation Two') on engaging fathers:

Interventions to promote the involvement of men during pregnancy, childbirth and after birth are recommended to facilitate and support improved self-care of women, improved home care practices for women and newborns, improved use of skilled care during pregnancy, childbirth and the postnatal period for women and newborns, and to increase the timely use of facility care for obstetric and newborn complications. (World Health Organisation, 2015) (p.3)

In the UK professional bodies, including the Royal College of Obstetricians and Gynaecologists (RCOG, 2017), NHS England (National Maternity Review, 2016), Barnardo's (Cundy, 2012), the NSPCC (Hogg, 2014), the Royal College of Midwives, endorsed by the Department of Health (RCM, 2011) and the National Institute for Health and Clinical Excellence (NICE, 2010a) have also advised healthcare practitioners (HCPs) to engage fathers or 'mothers' partners' in maternity care and education.

The most recent administration to exhibit sustained interest in fathers in England was the last Labour Government (1997-2010). It focused on fathers in pregnancy and the early years (Olley & Potter, 2012)²². In Scotland, interest in fathers has been more recent (The Maternity Services Action Group, 2011) and is continuing (Scottish Government, 2017) (more on this later). Policy can be ignored or changed or archived by subsequent administrations, although we found one outstanding example of father-inclusive policy which seems to have survived three changes of government in England²³. Because there has been little or no monitoring of impact on practice, even in Scotland, such policy-making has been described as more 'rhetoric than reality' (Sherriff & Hall, 2014).

²² For example, in 2004 the National Service Framework for Children, Young People and Maternity Services declared that 'maternity care should be mother focused *and family centred*' (our italics); and 'The Healthy Child Programme' was explicit throughout about the importance of engaging fathers (Shribman & Billingham, 2009).

²³ Getting maternity services right for pregnant teenagers and young fathers' (DH/DCSF, 2009b) remedied the initial (2008) version which had contained few references to young fathers. The focus on both parents is retained in the 2015 revision (DH/DCSF, 2009a).

Painting by numbers

Despite lack of interest from policy makers, fatherhood looms large in the lives of almost all adult males in the UK. Analysis of the ‘Understanding Society’ longitudinal study (2009-11 sweeps) found that only 11% of men aged 70 years or more have never fathered a child or played a fathering role to a child (Poole et al., 2013).

In 2016, there were 696,271 live births in England and Wales (ONS, 2017b), 24,090 in Northern Ireland (NISRA, 2018) and 54,488 in Scotland (NRS, 2017).

Of births during 2016 in England and Wales, almost 3:4 were to British-born fathers²⁴. Social class distribution in 2011²⁵ was as follows: 36% of babies were born to men who were large employers or in higher professional/ managerial occupations; 26% to fathers in middle-ranking employment situations; and 26% to fathers in semi-routine occupations and below (ONS, 2013). Since there are fewer men in the higher employment classifications (Hall, 2006), this would suggest that fertility is higher among more advantaged men²⁶.

Men’s average age, at their children’s births, is – like women’s - increasing every year. Birth registration data reveals fathers’ mean age to be 33.2 in England and Wales (ONS, 2015b), 32.8 in Scotland (NRS, 2015) and 33 in Northern Ireland²⁷. But note: this is not men’s age when they first become fathers; it is their mean age across all births. The ages at which British men first become fathers are not known because at birth registration only the mother is asked about previous offspring. Mothers’ responses enable researchers to chart British women’s reproductive behaviour. Failure to ask fathers leaves substantial gaps in our knowledge about fathers^{28 29}.

²⁴ 27.8% were to fathers born outside the UK, of whom the largest population groups are currently from Pakistan, followed by Poland and then India (ONS, 2016b).

²⁵ Similar information will be less easily obtained in the future: 2011 is the last year for which the socio-economic status of fathers is routinely presented by ONS. Subsequently, socio-economic information from both parents, though collected individually, is combined to form a derived household socio-economic status variable.

²⁶ These figures do not include the 5% of infants whose birth certificates do not include information about their father. In this group, low income men may predominate.

²⁷ In May (2015) we identified this statistic at NISRA http://www.nisra.gov.uk/archive/demography/publications/annual_reports/2015/Births.pdf since when the webpage has been removed, with no substitution made.

²⁸ Whilst the MCS collected the fathers’ fertility histories, the definition of a ‘first’ birth in the published analyses to date, is that of the first (live) birth to the mother. Drawing on data from the MCS and other sources it would be possible to analyse the fertility histories collected from some of the men (those co-resident with their baby’s mother at the nine months sweep).

²⁹ As we shall see later, mothers ‘booking in’ their pregnancy are asked whether their child’s father has had any children previously, but no more detail is sought and this data is not generally available for analysis.

While there is evidence for declining fecundity in older men (Ford et al., 2000), and a qualitative study found some 29-year-old males already expressing concern about ‘getting too old’ (Shirani, 2013), no more than 20% of births in England and Wales are to men aged 45+³⁰. Only a tiny number of these (833) were aged 60+.

While around two thirds of British fathers are older than their baby’s mother at the time of the birth (ONS, 2016a), in 20% of families the mother is the older partner (ONS, 2015a). The older mother/ younger father partnership seems to be particularly common where the father is very young: when fathers are teenagers, 25% of their female partners are aged 20+ (Dex et al., 2005).

When the mother is a teenager, her partner is usually very young, too: 84% of fathers who register the birth jointly with a teenage mother are aged 24 or under, and 33.2% are teenagers themselves (ONS, 2017a). Teenage fathers are relatively rare across the whole population: analysis of the large Understanding Society dataset found that only 2% of males aged 16 to 19, and 4% of males aged 20-24, had become fathers (Poole et al., 2013). Nevertheless, the number of babies registered as being born to men aged 24 and under is, at 73,275, substantially higher than the number (31,643) born to older fathers (ONS, 2016a). In addition, 15,198 births were ‘sole registered’ by mothers aged 24 or under who gave no details of their baby’s father (ONS, 2016d). Since many of their sexual partners would have been young, too, it seems likely that, annually in Britain, at least 85,000 infants are born to young, and sometimes very young, fathers.

Family structure at the time of the birth

TIM: ... They ain't got no children, how can they be a family? (crossly)

JOHN: But they don't need children to be a family.

MARK: They do! ...

TIM: No, 'cos they're not married, are they?

JOHN: You don't have to be married.

TIM: You do!

JOHN: You don't!

(Morrow, 1998) (p.11)

³⁰ In England and Wales in 2011, there were 31,643 babies born to men aged 45+ and only 1,832 to women aged 45+ (ONS, 2013).

What is clear from the birth registration data and from substantial cohort studies such as the MCS and GUS³¹ is that at the time of the birth there really are hardly any ‘single mums’. Throughout Britain, almost all births (95%) are now registered by mother and father together³² with around 85% of parents living at the same address (married or cohabiting)³³. Among the 15% living separately, two-thirds are ‘romantically involved’ or ‘friends’; and among the 5% who say they are ‘not (or no longer) in a relationship’³⁴ (Kiernan & Smith, 2003)³⁵, one in ten of the fathers attends the birth; one in four enters his name on the birth certificate; and one in four is still in touch with infant and mother nine months later (Kiernan, 2006)³⁶.

³¹ But Appendix B shows that we found little published GUS analysis of ‘relationship at time of birth’, although the data was collected retrospectively at the 10 months interviews in their first birth cohort. It appears that the full set of relationships in this variable (i.e. beyond the married v. cohabiting codes) has been analysed only in relation to house moves (Chanfreau et al., 2011) c.f. the wide variety of MCS analyses. The GUS data is more recent than the MCS data for the UK, and so has the potential to update the MCS analysis, although specific to Scotland.

³² In England and Wales in 2015, 94.7% of the babies’ births were jointly registered (ONS, 2016a); and even among teenage mothers 75% of the births were registered by both parents together (DH/DCSF, 2009b).

³³ The distribution in the MCS (2000/2001) and GUS (2004/5) is almost exactly the same, although the GUS data was gathered retrospectively and only from mothers. There are currently few published analyses from that data.

³⁴ It is possible that a few of the mothers may have interpreted the question as asking whether the baby had been given the father’s surname, rather than whether the parents were still in a relationship (Kiernan, 2005).

³⁵ This data, collected retrospectively in the MCS on the relationship at birth between the parents is well researched as, to a lesser extent, has been the data on whether the father is on the birth certificate. It has been analysed in relation to a number of outcomes and parent characteristics. These include demographics, whether the pregnancy was planned (according to the mother), couple relationship quality at nine months, later father involvement, beliefs of mother about parenting, later home learning environment, maternal depression, maternal smoking during pregnancy, breastfeeding, maternal health + mental health, later residency of father with child, later parental separations, AND child outcomes including cognitive delay, school readiness and behaviour. Alspac data on whether the mother had a cohabiting or non-cohabiting partner in pregnancy has also been analysed in relation to later parental separation and to maternal and child outcomes.

³⁶ Collecting data about and directly from this group of alleged ‘not in a relationship’ new fathers (an annual cohort of around 38,000) may be particularly significant in terms of social policy. since these men are likely to be young/ and or disadvantaged (DH/DCSF, 2009a).

In maternity circles the term ‘woman’s or mother’s partner’ may be used instead of ‘father’³⁷. Obviously one needs to be inclusive but a father is much more than a mother’s partner; and defining him solely as a support-person fails to acknowledge his unique connections (both biological and social) to his infant. Furthermore, almost all the ‘partners’ at the time of the birth are the infant’s *biological* fathers. Even among teenage mothers only 2.2% have a new partner at the time of the birth (ONS, 2014). Among older mothers this is virtually unheard-of³⁸, and just one baby in every 1,000 is registered to two women (ONS, 2016c).

Nor can one assume, even if an infant is registered in the mother’s name alone, or the mother has a new partner or the birth is registered to two women, that the biological father is absent. A survey of over 5,000 mothers found that only 2% had not told their baby’s father of his impending parenthood (Redshaw & Heikkila, 2010). One small qualitative study of lesbian-identified mothers found that two-thirds had opted for a known male donor, with varying degrees of involvement in parenting by him (Touroni & Coyle, 2002)³⁹.

³⁷ e.g. <https://www.nice.org.uk/guidance/cg110/resources/pregnancy-and-complex-social-factors-a-model-for-service-provision-for-pregnant-women-with-complex-social-factors-35109382718149>.

³⁸ In just 0.7% of cases (7:1,000 births) where the mother is aged 20-29 is she in a relationship with a new male partner, that percentage dropping to 0.1% (1:1,000 births) where she is aged 30-39.

³⁹ Very little is known in the UK about the fathers of infants registered to two mothers.

Section D: About the fathers-to-be

Pregnancy planning

When she told me she was pregnant, I told her straight that I didn't want the kid and I wasn't happy about it . . . As it is now, I'm not having nothing to do with her so, I know that sounds bad but it's going to be easier to sort of let that go than if I've seen the kid and sort of been there and stuff. (Osborn, 2007) (p.172)

UK men's fertility intentions (how many children they intend to have, and when) are much the same as women's, with only 7% of young, childless males planning to remain childless. However, when *couples'* intentions are measured, slightly more men than women at all stages are reluctant to have a child or another child (Berrington, 2004)⁴⁰.

A pregnancy unwanted by either parent is associated with negative outcomes for parents and child. Alspac mothers' reports of partner-negativity towards a pregnancy was associated with his perpetrating domestic violence (Kothari et al., 2015) and being less likely to care for the child alone during the first three years (Washbrook, 2007). Scottish fathers who had reacted negatively were less likely to remain in contact with their child after separation (Marryat et al., 2009).

Also in Scotland, mothers' reports of their partner's negative response were found to be linked with health inequalities (Bromley & Cunningham-Burley, 2010) and (subsequent) parental separation (Chanfreau et al., 2011). However, because unplanned pregnancy is more common in disadvantaged families (Anderson et al., 2007) where parental separation and health inequalities are common, a father's negative response to a pregnancy may, in relation to such factors, be as much a marker of disadvantage as its cause⁴¹.

One way of ascertaining men's pregnancy intentions would be to explore their contraceptive use in specific relationships, but this has not been done in the UK⁴². Another would be to ask them whether they had intended the pregnancy. This is not done either – or, if done, is not reported on⁴³. The MCS, although interviewing fathers, only asked the mothers about

⁴⁰ Due to the research method, conflicting fertility intentions may have been under-reported in the couples.

⁴¹ All these analyses are of GUS data.

⁴² The Young Lives and Times survey in Northern Ireland examines contraception, but only among young people in one geographic area; and the National Sexual Attitudes and Lifestyle Survey asks questions around contraception but only in relation men's 'imagined futures', not their actual behaviour.

⁴³ Alspac fathers were asked about their attitude towards the pregnancy at two time points (pregnancy confirmation and at 18 weeks' gestation). However, this data appears to remain un-analysed, at least in the published literature.

their pregnancy planning; and defined the pregnancy as ‘planned’ when the mother had planned it (Kelly, 2004). GUS, while not interviewing the fathers, did ask the mothers if they had initiated the pregnancy without the father’s knowledge, and reported that this was ‘very rare’ (Anderson et al., 2007).

Across a number of datasets⁴⁴, mothers who are co-resident with their babies’ fathers report (with remarkable consistency) that only 3% of their partners reacted negatively to the pregnancy. Where ethnic differences were reported, none were found. Fathers under 25 were said to have expressed the least enthusiasm (Redshaw & Henderson, 2013). However, many more men than 3% are likely to have felt negatively: the most disadvantaged couples (the 15% who were not living together) were not included in the samples; the data was based solely on mothers’ reports; and the mothers were interviewed 9-10 months after their babies had been born. Research from outside the UK has shown that a pregnancy intention reported retrospectively accords more nearly with recent experiences, than with original pregnancy intendedness (Joyce et al., 2000).

For insights into UK fathers’ pregnancy intentions we must turn to qualitative research, with numbers so small we cannot generalise from them. Nine relatively advantaged fathers attending antenatal classes described the pregnancy as having been jointly planned (Chin et al., 2011). By contrast, few of 67 male young offenders in Scotland (Buston, 2010) and nine young, disadvantaged fathers in Norfolk (Osborn, 2007) reported contributing to pregnancy planning. A report based on interviews with ten young disadvantaged fathers who claimed the pregnancy had been planned, found that all had been strongly influenced by their partner’s wishes, and that, when it came down to it, many were not at all sure they had participated in the planning process (Cater, 2006).

To fill this data gap, the Fatherhood Institute/Fathers’ Network Scotland survey *How was it for you?* asked whether the pregnancy had been planned from ‘your’ (the father’s) point of view. The majority of the respondents were men unlikely to have experienced ‘accidental’ pregnancies: 61% were university educated, and only 3.1% were not co-resident with their baby’s mother, against a national figure of 15%. Nevertheless, 19.4% reported not planning the pregnancy. Most (with hindsight – their views were not canvassed at the time, but after the birth) claim to have been ‘pleased’. However, 22% had reacted with some negativity (Fatherhood Institute & Fathers Network Scotland, 2018).

Expectant fathers: mental health

... me and my gf (girlfriend) have been together for about 7 and a half months now, and three months ago we found out that she was pregnant. Everything was fine and dandy until about a month ago when i started having doubts about everything... i dont fell like im gonna be a good

⁴⁴ The Alspac pilot (Dragonas et al., 1996); GUS (Anderson et al., 2007); and National Perinatal Epidemiology Unit (NPEU) surveys (Redshaw & Heikkila, 2010; Redshaw & Henderson, 2014).

father, i dont feel like she wants me around to help raise the baby...I started cutting again a couple of days ago...i haven't done it in so long⁴⁵

How mentally and emotionally ‘well’ are our expectant fathers? In Alspac, 4% were found to be moderately (Hanington et al., 2012) and 2.3% severely (Ramchandani et al., 2008) depressed. As mentioned earlier, this is almost certainly an underestimate due to methodological issues⁴⁶. In addition, one in every 100 Alspac fathers was diagnosed with schizophrenia (Kukla et al., 1996)⁴⁷. Alspac researchers also noted that expectant fathers who were the partners of single mothers or who were living with children from a previous relationship (his or hers) were at particular risk of depression, especially if the mother’s mental health was also poor. Tougher economic and social factors relating to stepfamilies and lone parent families did not explain the men’s higher depression-risk in these families (Deater-Deckard et al., 1998).

Alspac pregnancies were 28 years ago. Since then we find both research and data collection gaps in expectant fathers’ mental health in subsequent birth cohort and other major studies⁴⁸. The only large-scale recent survey that delivers data on the mental health of fathers of babies and very young children relies on mother-reports from a self-selecting online survey of 2323 women who had given birth within the previous five years. These mothers report 12% of their partners (that is, one father in eight) *currently* experiencing mental health problems, often neglected by healthcare professionals and services (RCOG, 2017).

Expectant fathers: physical health

Nor could we find any published analyses relating to UK fathers’ *physical* health in the antenatal period or in fact at any time. This includes no published analyses of the physical

⁴⁵ <http://www.gaiaonline.com/forum/life-issues/my-girlfriend-s-pregnant-and-i-m-depressed/t.24605401/>

⁴⁶ The measure used to identify fathers’ depression, or the cut-off point applied, may not have been sufficiently sensitive; the data was gathered relatively early in the pregnancy (at 18 weeks) and by postal survey, to which the most emotionally vulnerable may not have responded (Thorpe et al., 1992); and men who were not formally recognised as the mother’s partner were not included. In other countries, high rates of depression are found among men in a tangential relationship with their baby’s mother (Huang & Warner, 2005) who are also likely to be disadvantaged in other ways (Philpott & Corcoran, 2018)

⁴⁷ This is slightly below the national average for men with schizophrenia and probably reflects the fact that men with a severe mental illness are less likely to become fathers, and that men with severe mental illness might have been less likely to be included in the Alspac postal survey (see Footnote 17, above).

⁴⁸ The more recent birth cohort studies (the MCS and GUS), did not interview mothers or fathers during pregnancy; and in their first post-birth sweeps (at 9 and 10 months respectively) did not ask either parent about fathers’ pre-natal mental health (and GUS fathers were not interviewed at that stage). Subject to adequate sample sizes, the Health Survey for England and Understanding Society may provide contemporary datasets for analysis. We did not find any published analyses based on such data.

health of Alspac fathers⁴⁹ from whom a considerable amount of biomedical data was gathered 27 years ago⁵⁰. Most recently, we discovered a small study underway at University College London, in which expectant fathers are being offered a ‘Well Man Check’, with the results from this (as well as maternal factors) to be examined in relation to a sample of their baby’s umbilical cord blood (Asenius, 2018).

Obesity is a significant health issue before and during pregnancy. What do we know about rates, or progress of obesity in expectant fathers in Britain? Very little. Parental status is not identified in published analyses of obesity statistics in the UK. However, these do reveal more overweight men than women between ages 25-34 (Baker, 2015) – a finding that could suggest more overweight/ obese expectant and new fathers than mothers. A commercial survey found problematic weight gain during pregnancy to be an issue for expectant fathers as well as mothers (Clift-Matthews, 2009) but as no information about methodology is available, one cannot rely on that as evidence⁵¹.

Alspac asked about fathers’ BMI, but most of the published analyses drawing on this data have included it as a moderating variable and/ or have explored correlations with child outcomes rather than to reveal the numbers of overweight fathers. None of the more recent cohort studies that we reviewed asked about fathers’ weight or diet or exercise. Nor is this information officially sought by the NHS during a pregnancy⁵².

UK obesity statistics reveal that couple over-weights are correlated, largely due to lifestyle factors (Brown et al., 2013); and Alspac found fathers’ physical activity and diet during pregnancy to be closely related to mothers’ (Northstone & Emmett, 2010). This suggests that to improve expectant mothers’ activity levels and dietary intake (key objectives in maternal health), engaging with both partners could prove fruitful. In 2009, the editor of the *British Journal of Midwifery* called for expectant and new fathers to be included in ‘any nutrition advice that a health professional gives’ (Clift-Matthews, 2009). We could not find any Department of Health or other guidelines suggesting this⁵³; nor any studies reviewing practice.

⁴⁹ It is possible that our social-science-oriented searches did not uncover biomedical papers applying to this or other bio-medically-orientated topics.

⁵⁰ Alspac asked about allergic and atopic disorders, STIs, measles, mumps, chicken pox, and more, collected hair and toenail samples and asked about their energy levels pre- and during pregnancy (Golding, 1996) but little of this data has been drawn on in analysis.

⁵¹ High quality quantitative research from outside the UK (Garfield et al., 2015) found weight gain in expectant fathers.

⁵² The Health Survey for England reports weight, physical activity etc. by sex, but not by parental status (although that information is collected and, subject to sample sizes, could provide data for analysis for the cohabiting partners of pregnant women in the sample).

⁵³ See for example the NICE guidance on Family Nutrition <https://www.nice.org.uk/guidance/PH111/chapter/4-Recommendations#family-nutrition>

Expectant fathers: substance use

It is really important to me he quit because 1. I don't want him to get cancer (my dad has cancer but not from smoking) and die and...2.I don't want our kid to grow up thinking it's okay to smoke because her Dad does it . . . I feel like he is choosing cigarettes over me and his soon-to-be daughter. What should I do?⁵⁴

The health risks of smoking, including to the partner and offspring of a smoker, are well known. Information about expectant fathers' smoking was collected in both Alspac - 35% of Alspac fathers reported being smokers at conception (Passaro et al., 1997) – and the MCS, where one fifth of pregnant couples admitted to both having been smokers (Prady et al., 2012). A cross-sectional survey in Tyneside (1998) found 40.7% of fathers (and 38% of mothers) smoking during pregnancy (Koshy, 2011). All these figures are likely to be under-estimates as they rely on self-report: when actual nicotine testing was used in a cross-sectional survey in the East Midlands at around the same time, the percentages of fathers, mothers and couples with infants found to be smokers were far higher: two fifths of households with babies contained two smoking parents, and more than two thirds a smoking father (Blackburn et al., 2005)⁵⁵.

Research finds a clear link between the mother's and the father's smoking: in Alspac, by far the biggest predictor of the pregnant woman's current smoking status was her partner's, with Alspac mothers four times more likely to smoke if their partner smoked (Penn & Owen, 2002). MCS mothers were less likely to quit if their partner continued smoking, and more likely to cut down if he did (Prady et al., 2012).

Does pregnancy impact on men's smoking behaviour? The MCS found 16% of expectant fathers quitting during the pregnancy, 25% cutting down, and 56% ('persistent smokers') smoking the same amount (Prady et al., 2012). After the birth, the smokers may again try to change their behaviour: the East Midlands survey found that, shortly after the birth, almost 20% of still-smoking fathers had tried to quit. While only 4% had succeeded, 78% had attempted, and 60% achieved, not smoking in their home (Blackburn et al., 2005).

What do we know about expectant fathers' alcohol and drug use? Alspac found them two-to-three times more likely than their partner to report drug or alcohol addictions, with 20% reporting heavy drinking (Kukla et al., 1996). A modest correlation was found between Alspac mothers' and fathers' alcohol consumption (AC) and alcohol problems (AP) (Kendler et al., 2013). And about 5% of both sexes reported regular cannabis use during pregnancy or afterwards (Macleod et al., 2008). The more recent cohort studies (the MCS and GUS) did not collect data on fathers' drug or alcohol use during pregnancy.

⁵⁴ <http://babyandbump.momtastic.com/pregnancy-second-trimester/953015-smoking-husband.html>

⁵⁵ As with fathers' mental health and weight/ physical activity, the Health Survey for England and Understanding Society may provide contemporary datasets for analyses.

Expectant fathers: use of violence

Men's use of intimate partner violence (IPV)⁵⁶ in pregnancy (or at any other time) constitutes a serious health risk for their partner (Walby & Allen, 2004) and for children both before and after they are born (Harne, 2010). Whenever it occurs, every act (or threat) of violence is one act (or threat) too many. But it is also important not to overstate risk: among other things, fear that their service may be overwhelmed may discourage practitioners from seeking to identify IPV or from engaging with fathers including with men who pose a risk.

What percentage of expectant fathers in Britain behave with active cruelty towards their pregnant partner? UK data on fathers' (rather than men's) use of IPV is scant (Harne, 2010); and, in relation to pregnancy, we found no analyses of data gathered in Scotland. In England, 28 years ago, Alspac found 1% of expectant mothers in the West of England reporting physical cruelty and 4.8% emotional cruelty in their current relationship (not necessarily during the pregnancy). However the women were asked only once and early in the pregnancy (Bowen et al., 2005); rates may have proved higher later in the pregnancy, particularly with repeated questioning by trained HCPs (Mezey et al., 2000).

But more than ten years after Alspac data-gathering, with HCPs trained to ask about IPV, a London hospital study found only 14 pregnant women of 771 (1.8%) reporting (via a paper survey administered early in their pregnancy) violence or threats of violence from their partner, or feeling unsafe or afraid of him (Bacchus et al., 2004)⁵⁷; and in the very disadvantaged district of Hull⁵⁸, an anonymous survey of 500 pregnant women which generated a remarkable 95% response rate, found 3.4% reporting victimisation (Johnson et al., 2003). Again, of course rates might be higher with repeated questioning. However, the UK figures accord with reports of IPV in pregnancy from other developed countries: 2.0% in Australia and Denmark (Devries et al., 2010) and 3.5% in a disadvantaged area (not unlike Hull, though with a high immigrant population) of Western Sydney (Dahlen et al., 2018).

In comparison with other stages in a couple's relationship, is pregnancy an especially high-risk, or intense, period for IPV in the UK – or across the world? Both 'trigger' and

⁵⁶ Previously more commonly referred to as 'Domestic Violence' (DV)

⁵⁷ Interviewed later in their pregnancy, 5.8% of a sample of 86 women (67 of whom were interviewed for a second time) reported violence or fear of violence. Ten days after the birth, the percentage was 5%: by then the sample size had shrunk to 40, of whom 19 had been questioned three times. The samples in the two later 'sweeps' are too small to provide basis for generalization. It is not clear whether the higher reported levels were related to repeat questioning; or whether some of the women reporting violence later had not been interviewed earlier; or whether some of the violence had begun in the later stages of pregnancy, or immediately after the birth.

⁵⁸ Hull is the 10th most deprived Local Authority in England (Morfitt, 2015) and there is a strong correlation between intimate partner violence and social deprivation (Walby & Allen, 2004).

'escalation' effects in pregnancy have been reported in some countries⁵⁹, the UK not among them (WHO, 2005). However, a recent large, quantitative cross-national study found a 'lower and narrower range of prevalence' for IPV during pregnancy compared to other phases of the couple relationship (Devries et al., 2010). The data we have for England also reveals higher rates both pre- and post- pregnancy⁶⁰.

Despite this, the Scottish Government makes the (unproven)⁶¹ claim that 'Evidence from Scotland and across the UK' indicates that 'abuse often starts in pregnancy and gets worse when the first child is new-born' (O'Hagan et al., 2013); and in England, Department of Health Guidance claims (without citing any evidence) that 'Domestic violence often starts or intensifies during . . . pregnancy'⁶². A number of trusted websites, including Boots Baby Centre, Best Beginnings and NHS London actually give a percentage⁶³, claiming (through virtually identical wording and without citing any evidence) that '30 per cent of domestic abuse starts in pregnancy' and that, where it already exists, it 'escalates'.

Where does the oft-quoted 30% figure come from? One of the websites that cites that figure - St Mary's Hospital (Manchester) - gives a reference⁶⁴. The study cited (McWilliams & McKiernan, 1993) turns out to be a 35-year-old study of 56 women in Northern Ireland. Its findings have been grossly misreported. McWilliams & McKiernan found between 1.79% and 3.57%⁶⁵ (not 30%) of the 56 study-participants reporting pregnancy or the immediate post-birth period as an IPV 'trigger'. 'Escalation' of violence during pregnancy was not reported at all, and for one simple reason: in this study, it was not investigated.

⁵⁹ 'The majority of those beaten during pregnancy had experienced physical violence before, with between 8% and 34% reporting that the violence got worse during the pregnancy'. And between 13% of pregnant women (Ethiopia province) to circa 50% (Brazil city and Serbia and Montenegro city) 'were beaten for the first time during pregnancy'.

⁶⁰ Alspac found the highest rates at 33 months postpartum: 2.9% physical, 10.8% emotional (Bowen et al., 2005). The London hospital study recorded higher levels in the year before the pregnancy than during it (Bacchus et al., 2004).

⁶¹ The footnote in this document that 'evidences' this research links to a Women's Aid document that can no longer be found <http://womensaid.scot/sites/default/files/EverydayTerrorismReport.pdf>

⁶² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/211018/9576-TSO-Health_Visiting_Domestic_Violence_A3_Posters_WEB.pdf

⁶³ <https://www.bestbeginnings.org.uk/domestic-abuse>; <https://www.babycentre.co.uk/a563127/domestic-violence>; <http://www.domesticviolencelondon.nhs.uk/1-what-is-domestic-violence-/23-domestic-abuse-during-pregnancy.html>.

⁶⁴ <http://www.endthefear.co.uk/wp-content/uploads/2010/10/PATHway-Project-Summary1.pdf?563068>

⁶⁵ Three women (of 56) reported that the violence 'began during their first pregnancy or *after the birth of their first child*' (our italics). This means that, at most, pregnancy itself was a trigger for two women, but possibly only for one. If 2:3 experienced IPV onset during pregnancy, the percentage would be 3.57%; if 1:3 had that experience, the percentage would be 1.79%.

Alspac identified a link between expectant mothers' experience of IPV and their own poor mental health and social adversity⁶⁶. This kind of research is vital, as it can inform interventions. However, no published Alspac analysis has looked at such factors in the perpetrators, although the necessary variables were collected and could inform analysis and intervention. A study of men (parenthood status not identified) attending GP surgeries in the West of England found that those who used physical violence or forms of negative behaviour associated with physical violence against their partner were three to five times more likely to report clinical levels of anxiety than non-perpetrators (Hester et al., 2015)⁶⁷. Alspac researchers have called for research drawing on other datasets, to establish the need for perinatal screening programmes for couple conflict and mental health/ social adversity in both parents (Hanington et al., 2012).

It seems likely (though only more research will confirm) that IPV in pregnancy, while exceedingly serious when it does occur, is not widespread in the UK. This news should encourage maternity services to double down on their efforts to seek to identify and address it, without fearing their service will be overwhelmed. It is also important that they recognise that de-escalation of IPV during pregnancy does not imply no risk going forward.

⁶⁶ For example, Alspac found depression and social adversity in expectant mothers (Flach et al., 2011) associated with increased DV risk (direction of effects not known).

⁶⁷ Men who perpetrated a negative behaviour in the past year were almost five times more likely than non-perpetrators to report symptoms of anxiety (OR 4.6; 95% CI 2.2 to 9.7). Perpetration of negative behaviours was also positively associated with symptoms of depression except for physically hurting a partner, where the evidence was marginal.

Section E: Maternity services and expectant fathers

NHS data collection

I haven't missed a trick. I've been to everything . . . I've got to be as supportive as I can be, you know, I want to be as prepared as I can be, understand it . . . (Miller, 2011) (p.61)

Around two-thirds of fathers-to-be are present with their partner when the pregnancy is confirmed (Alderdice et al., 2016; Redshaw & Henderson, 2015) and others are at the 'booking' appointment. However, even when the father is sitting beside his pregnant partner, the NHS 'Pregnancy Notes'⁶⁸ direct the HCP to ask *her* the questions relating to him: age, citizenship status, mental health⁶⁹; medical issues in his family⁷⁰; whether 'anyone at home' smokes or whether there are drug/ alcohol issues 'in the home'⁷¹. Questions not asked about the father/ her partner, which could reveal vulnerabilities significant to the whole family include his substance use, his housing circumstances, employment, benefits, education, disability, diet, exercise and physical health. Space on the form is only available to record the expectant mother's questions/ comments, and notes on her employment rights and benefits, healthy eating, home safety, parent education, and parent/ infant communication.

The NHS' confidence in the expectant mother's ability to provide accurate information about the father and his family may be misplaced⁷². Asking the expectant father directly is likely to result in more accurate information and would have the added benefit of acknowledging him and his role as a father (Seale et al., 2008).

⁶⁸ http://www.preg.info/PregnancyNotes/PDF/15_2_viewthepages.pdf NB. Local hospitals may develop their own, but based closely on this.

⁶⁹ Questions the mother is asked about her partner/ the father are: (i) his/ her employment status (partner) (ii) his/ her citizenship status/ year of entry to the UK (partner) (iii) his/ her address (not telephone number or email - no room on the form) (partner) (iii) whether s/he has any previous (poor) mental health history (partner) (iv) his age (father - not partner) (v) whether closely related (father - not partner) (vi) any previous children (and who looks after them).

⁷⁰ For example, disease that runs in the father's family; stillbirths/ multiple miscarriages; heart problems; abnormalities present since birth.

⁷¹ Given the paucity of data on some of these important issues, this (highly confidential) NHS data would clearly offer opportunities for analysis, although currently none of the data from the relevant questions seems to be reported (HES, 2015).

⁷² For example, while mother/ father reports of British fathers' drinking/ smoking behaviour correlate reasonably well (Passaro et al., 1997), mothers may misreport fathers' health (Burgess et al., 2004) and behaviour (Caspi et al., 2001). A review explores parental concordance on a number of topics in UK and other datasets (Kiernan & Prady, 2016).

Only two questions are officially directed at the father: whether he has been tested for genetic disorders and his understanding/ acceptance of this. His responses, as well as his test results (if any) are recorded on what is essentially the mother's form. By contrast, for tests and ultrasound scans relating to the *fetus*, only the mother's understanding/ acceptance is recorded, despite more than 90% of the fathers being present at anomaly scans (see below).

The Risk Assessment section of the form, which includes social and mental health factors, only takes account of these in relation to the mother. Nor is there a question on pregnancy intendedness (hers or his) or one that might indicate the quality of the couple relationship, despite the significance of both these factors to maternal and child health outcomes. Only the mother is asked to 'sign off' information-sharing of the data on the form. In fact, this may contravene data protection legislation, since she is also signing off on a father's genetic-test results, and his understanding/ acceptance of this.

Researchers have highlighted the importance of identifying expectant and new fathers who are smokers, referring them for treatment and measuring outcomes (Prady et al., 2012). While the relevant NICE Guidance advocates this (NICE, 2010b) (Recommendation 7), staff compliance with this Recommendation has not been measured although staff compliance with other NICE recommendations for maternity services has been (NICE, 2017). Pregnant women's partners are not mentioned in Public Health England's 'Models of delivery for stop smoking services' (Public Health England, 2017). Nor are maternity staff trained to deliver information to them: the staff training module on smoking (NCSCCT, UNDATED) trains HCPs to communicate such information only to expectant mothers.

In the US, when 11 psychosocial risk factors in expectant fathers whose partner was enrolled in a home visiting programme (an urban, low-income, highly disadvantaged population) were measured using the Brief Risk Overview (BRO) for men⁷³, moderate- or high-risk classifications were prevalent. These related to the men's basic needs, social support, mental health and substance use. Risk factors frequently co-occurred; and fathers' and mothers' total risk scores were significantly correlated (Carlson et al., 2018).

In the UK, the *How was it for you?* survey revealed that some midwives seem to be deviating from their official 'script' to ask some fathers direct questions. However, despite the risks of passive smoking to babies, and the impact of fathers' smoking behaviour on mothers', only 48% of the fathers-to-be had been asked about their own smoking. Despite known correlations between couples' health and health behaviours, only 18% had been asked about their own mental health and only 18% their diet and exercise patterns (Fatherhood Institute & Fathers Network Scotland, 2018).

⁷³ <https://www.brohealth.org/Login.aspx?ReturnUrl=%2fMain%2fClients.aspx>

Fathers and antenatal care

*I have my first midwife appointment tomorrow afternoon and my partner seems to want to come with me (if he can get the time off work!), is this normal or should I be seeing her by myself?*⁷⁴

Do fathers want to be involved in antenatal care? We have no contemporary data, but in the 1998 survey, only two fathers out of 435 wanted to be *less* involved (Newburn & Singh, 2000) and it seems unlikely that today's fathers would be any less willing or interested. Since expectant fathers are not invited to NHS antenatal care appointments with their partner, and since prior to April 2015 had no statutory right to time off work to do so⁷⁵, it is remarkable how many attend: a 2010 survey found first-time mothers reporting that 73.3% of their partners had attended at least one routine appointment (Redshaw & Heikkila, 2010)⁷⁶. In Northern Ireland a more recent survey (which included the most disadvantaged families) found 80% attending (Alderdice et al., 2016)⁷⁷. Other surveys have provided detail on numbers of appointments attended, leave utilized (sick leave, annual leave) and the men's education/ income levels⁷⁸. Among the fathers who responded to the 2018 *How was it for you?* survey (a similarly advantaged sample to the men who had responded to the 1998 postal survey), 93.7% had attended at least one appointment. Of the few who had not, the most common reason given was their employer's refusal to grant them time off (Fatherhood Institute & Fathers Network Scotland, 2018).

Fathers' participation in antenatal care is strongly associated with the number of antenatal checks/ appointments offered to their partner (Redshaw & Henderson, 2013). A clear invitation directly to the father would bring in many more: in 1998, 10% of men questioned said they didn't know whether they would be welcome, whether their attendance was necessary or whether they would make a useful contribution (Newburn & Singh, 2000). Others know nothing about the appointments at all (Osborn, 2007).

⁷⁴ http://community.babycentre.co.uk/post/a11415595/first_midwife_appointment_-_partner_present

⁷⁵ This recent policy change may result in higher attendance levels.

⁷⁶ 51.5% for second or later pregnancies.

⁷⁷ As long ago as 1998, three-quarters of expectant fathers reported attending at least one appointment (Singh & Newburn, 2003). We highlight this survey frequently because, prior to the *How was it for you?* survey (Fatherhood Institute/Fathers Network Scotland, 2018) it was the only substantial study (more than 400 fathers), which has gathered detailed information from men about their experiences of maternity services. However, there are weaknesses: the data is 20 years old; the questionnaire was distributed via the mothers (the fathers were not contacted directly); and the response rate was only 37%.

⁷⁸ The Fourth Work-Life Balance Employee survey (2011) found 65% of employed fathers who earned over £45,000 and 41% of those who earned under £25,000 taking formal time off for antenatal appointments, mainly through extra paid leave or annual leave or time-off-in-lieu. A few (9% of the whole) took unpaid leave, and 2% sick leave. This survey, unlike others, recorded the number of appointments attended: 29% of the expectant fathers attended two, 21% three and, among the others, 10% attended four appointments and 10% six (Tipping et al., 2012).

In addition to attending routine antenatal appointments, more than 90% of expectant fathers attend the scans⁷⁹. No substantial surveys have explored their experiences, or HCP's attitudes towards them. In a qualitative study, two women said their partner missed part or all of their 20-week scan because he was hunting for a hospital car parking space: the appointment was for the woman, not the couple, and so staff did not expect to wait until he arrived. Two other women reported that their partner had not been offered a chair and had to stand through the whole of what, in one case, turned out to be a traumatic procedure. Another reported that her hospital did not allow fathers in for the scans, except for the last five minutes, meaning that she had to cope alone during 'a worrying time' when she sensed (correctly) that the practitioner had identified something wrong with the baby (Locock & Alexander, 2006). Basildon Hospital was also found to be excluding expectant fathers from all but the last five minutes of the ultrasound scans, much to some mothers' distress (Williams, 2010). How many other hospitals engage in practices that limit fathers' attendance without expressly forbidding it, is not known. The *How was it for you?* survey found 6.7% of fathers excluded for at least part of the time (Fatherhood Institute/Fathers Network Scotland, 2018).

Fathers and antenatal screening

The ultrasound scan is primarily a fetal screening tool, although some fathers (possibly also mothers) may not fully understand this:

And it was only while I was there that I realised that it was to check the well-being of the baby . . . So it suddenly became a bit scary . . . I know it is a routine procedure but the implications of it could obviously be quite key. (Father) (Draper, 2002) (p.787)

Maternity services are becoming increasingly interested in men's involvement (or lack of involvement) in screening for fetal abnormality (Locock & Alexander, 2006; Reed, 2009b). This is partly because they are now so visible in maternity care and partly because their role in heritable conditions is better understood (Reed, 2009a). But it is also because they may fail to present for testing when invited to do so (Dormandy et al., 2010), resulting in preventable births of babies with severe abnormalities or life-limiting conditions.

When expectant fathers do not present - whose 'fault' is this? Where fetal diagnosis is concerned, the men's participation is highly contingent: inherent in the notion of fetal screening is the potential for pregnancy termination for which the decision, rightly, resides with the mother. When HCPs describe taking steps to enable mothers to make an informed

⁷⁹ Virtually all mothers in 2010 had the 18-20-week scan, and where this was their first pregnancy, 91.2% of their partners accompanied them (Redshaw & Henderson, 2013). In Northern Ireland the figure was virtually the same, even when non-cohabiting partners were included in the sample (Alderdice et al., 2016). Among the respondents to the *How was it for you?* survey, 98.8% had been there (Fatherhood Institute & Fathers Network Scotland, 2018).

choice about accepting, or rejecting, fetal screening tests, engaging with the woman's partner is not mentioned⁸⁰ (Ahmed et al., 2013). Nevertheless, and even though many women are expected to make 'on the spot' decisions when their partner is not present, 56% of mothers living with their baby's father in England said the decision on accepting/ rejecting fetal screening had been jointly made (Redshaw & Heikkila, 2010). In the Northern Ireland sample, which included non-cohabiting couples, 36% reported joint decision-making (Alderdice et al., 2016)⁸¹.

When the expectant fathers themselves need to be tested, for example to identify whether they are a 'carrier' of a heritable condition such as cystic fibrosis or sickle cell disease, blame for low attendance has usually been laid on them. Researchers have looked for, and found, ignorance, unwarranted optimism, skepticism about test results, fear of voicing opinions and being perceived as coercive, and fear of hypervisibility in a gendered space (Atkin, 2015; Dheensa et al., 2015; Dyson et al., 2015). There may be ethnic differences. Black and minority ethnic fathers may be more knowledgeable about screening and willing to be tested themselves, not least because they may have some experience of major conditions being tested for (Reed, 2011). A study involving 222 Pakistani mothers, fathers and wider family members of a child with a genetic condition (Ahmed et al., 2012) found fathers as willing to be tested as mothers.

Structural factors such as testing being offered too late in pregnancy for the father to be willing to contemplate termination (and therefore agree to testing) may be significant, although one study found not (Dormandy, 2010). In some hospitals, a very late offer of testing is common (Shakespeare, 2010). Staff attitudes may matter, too. Some community midwives were found to resist engaging with Pakistani men, assuming them to be 'controlling' (Reed, 2009a) or with Black Caribbean men, assuming them to be absent (Puthussery et al., 2008). However, HCPs who had met many black and minority ethnic fathers within

⁸⁰ HCPs say they believe the decision is personal to the women 'and her partner', but also that they believe the decision is the woman's to make (Ahmed et al., 2013).

⁸¹ In a smaller sample, 79.3% of respondents (90% of them pregnant women) said they had decided jointly; 14.4% said the mother had made the decision alone; and 6.3% reported the mother's partner as making the decision. In fact, one-third of those who reported they had made a joint decision also reported that they had not discussed it (Skirton & Barr, 2010), although this is not to say that their partner's views were entirely unknown to them.

antenatal screening could be very positive about their commitment and behaviour. These professionals reserved negativity for white fathers⁸² (Reed, 2011).

Fathers and antenatal education

I didn't find it very useful to be honest with you, because it was not ... it was more on S. [his partner] and her pain. I don't ... I wasn't ready and they didn't involve ... The only thing they said I could really do was just be there and that was it really (Deave et al., 2008).

Antenatal classes are mainly designed to prepare mothers, and to a lesser extent fathers, for the birth itself. Preparation can range from a quick hospital tour to in-depth sessions over many weeks. Classes may be provided by the NHS or by private providers (for a fee, or under contract to the NHS). While birth is usually the focus, child development, sensitive parenting, co-parenting ('team parenting') and the impact of caretaking on fathers are important issues that could be usefully addressed prenatally (Rilling & Mascaro, 2017).

Expectant fathers, like expectant mothers, are far more likely to attend antenatal classes for a first pregnancy (Alderdice et al., 2016; Bradshaw et al., 2013; Redshaw & Henderson, 2013; TNS System Three, 2005). Their attendance is contingent on a number of factors, the most important being whether affordable classes are offered to their partner. Other factors include the scheduling of classes (Newburn & Singh, 2000; Young, 2008), whether partners are *permitted* to attend (Redshaw & Heikkila, 2010) and whether the men know the classes are taking place (O'Kane, 2012). Despite these constraints, it seems that about two-thirds of first-time fathers whose partner attends classes, accompany her⁸³. Fathers from ethnic

⁸² The cohort studies have either not collected relevant data or, where some was collected, it has not been analysed. None of the three cohort studies examined in Phase 2 of our datasets review (GUS, the MCS and Alspac) included questions about fathers' participation in antenatal care, scans and other fetal screening activities. Nor were questions asked about whether the fathers had had their needs for information and advice met during pregnancy. This is a data collection gap, and thus a research gap which is likely to be of significance in policy and practice development. In Alspac, fathers reported, at 18 weeks into the pregnancy, whether they had thought that their partner might miscarry and whether she had had a test to see whether the baby was 'normal'. When a test had indicated a problem, the expectant father had been asked how much such a 'life event' had affected him. However, we could not find any published reports analysing this data.

⁸³ Ranging from 59.9% (Redshaw & Henderson, 2013) to 66% in Northern Ireland (Alderdice et al., 2016) and 68% in Scotland (Bradshaw et al., 2013). Both GUS and Alspac collected data on fathers' attendance, although GUS only asked mothers to report on this. It appears that this data has hardly been analysed for either study. The only relevant publication we identified for Alspac (Washbrook, 2007) found a positive statistical relationship between attendance (as reported by mothers) with later regular solo childcare by resident fathers during their child's first three years. And a PhD analysis of GUS child cohort data found a correlation between antenatal class attendance by fathers (as reported by mothers when their child was nearly 3 years old) and later collaborative co-parenting by the two parents (Hinchliffe, 2013). These statistical relationships might not indicate a causal effect of antenatal education, but might reflect fathers' orientation towards fatherhood or gender roles.

minority communities are less likely to attend, and this may partly be because classes are less likely to be offered to their partner (Redshaw & Henderson, 2015)⁸⁴. Cultural factors may contribute (Ali, 2004).

Low income and young father/ mother age may be confounding variables, contributing to the relatively low attendance by couples from Black and Ethnic Minority groups. A rare survey⁸⁵ that broke attendance down by social class (CSJ, 2016) found low-income men half as likely to attend as higher income men (71% v. 31%) and half as likely to use the internet to obtain information on parenting issues⁸⁶. Perhaps not surprisingly, therefore, the lower income fathers who did attend found classes more useful, while they also felt far less well prepared for fatherhood⁸⁷.

Almost all the fathers who responded to the 1998 survey and had attended classes, found some aspects of them useful (Newburn & Singh, 2000). One relatively small study found some fathers who had attended finding the birth less fulfilling than non-attenders. These were men assessed as being 'not open' to receiving 'threat' information during antenatal classes, i.e. as being emotionally 'avoidant' (Greenhalgh et al., 2000)⁸⁸. We could not find any studies describing what fathers had studied or learned; or that assessed their knowledge or understanding.

When men are offered male facilitators and/ or single sex breakout groups, reactions may be positive but such offers are rarely sustained (Symon, 2003): cost and staffing may be issues. A small survey of 69 expectant fathers from five different ethnic minority groups found the great majority favouring joint sessions with their partner over male-only forums, and no preference for a male facilitator (Shia & Alabi, 2013).

What do we know about expectant/ new fathers' experiences of support from their partner – and how well classes facilitate this? Alspac asked fathers about partner-support during pregnancy, but no published analyses have investigated their responses. When the National

⁸⁴ Asian women (56%) and Black women (47%) were less likely to be offered classes than White women (65%), as were the most disadvantaged mothers (Redshaw & Henderson, 2015).

⁸⁵ The sample was of 1071 fathers of children under eighteen, which may have meant a very small sample of fathers of infants born recently.

⁸⁶ A larger survey also found disadvantaged fathers less likely to attend classes – and classes less likely to be offered to their partner (Redshaw & Henderson, 2015).

⁸⁷ Another study which explored the behaviour of families using Children's Centres found 61% of expectant fathers attending classes with their partner, and 2% attending alone (Maisey et al., 2013). Children's Centres tend to cater for low income families and to be very substantially geared towards women (Lloyd et al., 2003), but this suggests that their relatively personal approach can reach out successfully to expectant fathers.

⁸⁸ The tendency to 'pathologise' expectant fathers has long been noted (Lewis, 1986). The so-called 'emotionally avoidant' men may have had negative reactions to the pregnancy or been concerned about other issues that were not being addressed, or been more prone to having their expectations of a trouble- or pain-free birth unrealistically raised.

Childbirth Trust asked the (generally relatively advantaged) mothers and fathers who had attended their classes whether these had equipped them to support their partner, 83% of the fathers – but not one of the mothers – said ‘yes’ (Newburn et al., 2011).

‘Unpacking’ satisfaction

How satisfied are expectant fathers with support offered to them during the perinatal period? Actual support is different from perceived support (Dragonas et al., 1992) and satisfaction is tricky to gauge, since it depends on expectation. If men don’t feel entitled to any support or attention, they may express high satisfaction with relatively little, as one HCP observed:

She went off to the toilet and he was following her out and I put my hand on his arm ... and said, ‘She’ll be fine’ ... ‘You’ll be able to be in there with her’. And that’s literally all I said to him. Afterwards when I saw her on the ward she said to me, ‘Thanks for being so nice to [partner]. He really appreciated it’. And I’d literally said a line to him. He obviously didn’t expect me to say anything to him ... They’re easily impressed aren’t they [laughs]. (Dolan & Coe, 2011) (p.1031)

Even within that context, while one recent survey found some fathers-to-be positive, it also found others⁸⁹ feeling excluded, a common grievance being that their role as a father was not recognised (National Maternity Review, 2016). Among the relatively advantaged 400+ fathers responding to the 1998 postal survey, two-thirds said HCPs had been encouraging, although almost half did not feel fully included in discussions, and a third reported that the HCP had talked only to his pregnant partner. Ethnic minority fathers had felt less encouraged, as had men who had previously had children: 72% of first time fathers v. 58% of later fathers (Newburn & Singh, 2000). These same researchers, who had also surveyed pregnant women about their experiences, recorded similar percentages feeling supported/ unsupported by midwives (Singh & Newburn, 2000), so perhaps sometimes the issue is poor practice generally rather than simple antagonism towards fathers.

When more specific questions were asked in 2018, in the *How was it for you?* survey, 29.4% of the fathers-to-be who had attended an antenatal appointment revealed that they had ‘rarely’ or ‘never’ been spoken to directly and 55.6% that they had rarely or never been addressed by name. Only 35% reported that the father’s role had ‘always’ or ‘often’ been discussed. Encouragement-to-ask-questions or raise concerns was more likely to be given during or after the birth than before it: 28.5% of expectant fathers attending routine antenatal appointments, 28.1% attending ultrasound scans, 41.7% attending the birth and 39.8% a post-birth home-visit had ‘often’ experienced such encouragement (Fatherhood Institute & Fathers Network Scotland, 2018). Though not directly comparable, in 1998, 45% of the postal-survey-fathers felt they had been ‘encouraged to ask all their questions’ (Newburn & Singh, 2000). This suggests either that HCPs were more encouraging in 1998 or (possibly more likely) that fathers in 2018 are more knowledgeable and have more potential questions to ask.

⁸⁹ Percentage not given.

Expectant mothers generally perceive HCP-father communication and support positively⁹⁰, although one survey that explored socio-economic differences found only 40% of the women overall feeling their partner had been encouraged, with the poorer, least well educated men the most likely to be overlooked or discouraged: 37%, compared with 24% in the 'skilled manual' and 21% in 'professional' families (TNS System Three, 2005)⁹¹.

Qualitative studies which can 'drill down' into experience reveal a mixed, though predominantly negative picture. Fifteen fathers interviewed in Oxfordshire (Machin, 2015) said they felt their unique relationship with their baby (as the father) was overlooked and eight (different UK locations) found midwives unwelcoming, felt they had been discouraged from asking questions, including at the scans, and any opinions they'd offered or questions they'd asked had been ignored. They also found the lack of opportunities to discuss issues, as a couple, with the HCPS frustrating and stressful (Williams et al., 2011).

Expectant fathers in Bradford (Darwin et al., 2017) and Birmingham (Ives, 2014b) did not feel entitled to attention or support from HCPs for themselves; and a study in Scotland found that when asked about satisfaction with support (for themselves), the men did not even recognise the question, describing instead ways they had supported their partner (Bradley et al., 2004). A very young father in London was unwilling to ask the midwife any questions in antenatal care as '*I didn't want to take the focus away from my girlfriend*' (O'Kane, 2012) and a middle-class father in Bristol who confessed to the researcher that '*I am feeling a little bit unsupported*' did not hope to find support for himself, instead declaring '*so I have got to find extra support for (my wife)*' (Miller, 2011). New fathers in Yorkshire felt excluded but questioned their entitlement to support, noting that pressured services 'should' be focused on mothers. Again, the men's response to their situation was to emphasise their need to support their partner; and one even felt he would not accept help if offered, as he identified with the cultural norm of men as self-reliant and stoical (Darwin et al., 2017). Since it seems likely that expectant and new fathers may fear that expressing or seeking help for their own support needs will detract from their partner's, it has been suggested that resources to encourage them to make their own needs visible should be framed around caring fatherhood, and should align men's self-care with their role as supporter and protector (Darwin et al., 2017).

One researcher noted that 'the sense of separation and detachment that many men already experience during pregnancy seems to be propagated by health services not making them feel valued and acknowledged' (Kowlessar, 2012). Ives (2014) argues that the men's expressions of deference and the desire to provide their partner with support may be a 'moral response' that exposes the 'dilemmatic nature' of their experience and explains their apparent acceptance of being actively or passively excluded. To cope with the resulting feelings of uncertainty and

⁹⁰ Four out of five mothers with cohabiting partners report good HCP/ father communication and support (Redshaw & Heikkila, 2010; Redshaw & Henderson, 2015). And in the Northern Ireland sample, which included non-cohabiting couples, 87% of the mothers said this was good (Alderdice et al., 2016).

⁹¹ The 100 fathers interviewed in this same survey (not a large sample, so it is hard to generalise) expressed greater satisfaction than the mothers: two-thirds felt they'd received a lot of encouragement and four-fifths were satisfied with the amount of encouragement received (TNS System Three, 2005).

frustration, the fathers may self-define as secondary, almost irrelevant, not only within maternity services but in their children's lives.

I think as soon as ... we had her basically, it was kind of, you know, at the hospital they said 'Oh, you have to leave at 8 o'clock', so it's kind of like you always seem to be sent away as the father anyway, so I don't know, maybe it's just a – I don't know, sort of getting into [my] head now, I'm going to have to leave her for periods. It's like, you know, it's I've got to start earning a living and stuff like that. (Ives, 2014a) (p.1010)

It is impossible to know, objectively, how the vast majority of HCPs are or are not engaging with expectant fathers since research evidence is minimal and none of it is based on observation. There is also a research gap (other than in antenatal screening – see below) relating to fathers' participation in discussion and decision-making in pregnancy: birth plan, neonatal vaccinations, Vitamin K. The one study we found that investigated fathers' contribution to birth 'place' choice, found lack of discussion with HCPs and with their partner, and a poor understanding of the risks and benefits (Bedwell et al., 2011).

In the absence of any policy directive to engage with the mother's partner and no audits of practice, inclusion depends on the motivation and skill of individuals (Sherriff & Hall, 2014); and the fact that the questions in the Pregnancy Notes are directed at mothers means that the HCP has to deviate from the 'script' to seek answers from the father. Thus the 'default' setting for fathers in antenatal care, is exclusion⁹².

⁹² Specific examples of exclusionary (but not inclusive) practice occasionally surface in the research literature. A small study in the West of England found that fathers had 'often' been excluded from antenatal care; and, when present, had not been given information that could have helped them. Nor were they supplied with contact numbers for midwives, health visitors or other HCPs (Deave et al., 2008). At the Royal Devon and Exeter Hospital, fathers' details were often found to be missing from the mother's Pregnancy Notes. Given, as previously reported, that almost all mothers are in a relationship with their baby's father at this time, this suggests that the HCPs were possibly only signing up fathers who were present at the first appointment. This was problematic, as the absence of fathers' details meant that midwives did not have all the information they needed to alert them to risk factors for impaired fetal growth (Knight, 2006).

Section F: The birth and the neonatal period

Fathers at the birth

When you go in [the labour room] there is a bed and a chair ... Your expectation is that's your chair ... It's all lined up like that ... There is a chair next to every bed at the head ... so like you know your place when you go in ... (Dolan & Coe, 2011).

At least 90% of fathers are present at their babies' births in Britain – and that is nothing new. That percentage was recorded in 1990⁹³ and has been found in every substantial survey since⁹⁴. Some studies have broken the figures down. In Scotland (births in 2010-11) 71% of the fathers attended when the mother was under age 20, and 83% when she was aged 20-25 (Bradshaw et al., 2014). The MCS found family structure to be important: among the 85% of couples living at the same address, 93% of fathers attended; but where parents were not co-resident, just under half of the fathers were at the birth (Kiernan & Smith, 2003). MCS researchers have also analysed birth attendance by geographic area, social class, and ethnicity. While 95% of men in professional socio-economic groups were present, the rate was 81% for men in semi-routine and routine occupations, and fell to 67% in areas of high minority ethnic population (Dex & Joshi, 2005). A more recent survey found partners of Black and Minority Ethnic women half as likely to be present as partners of White women (Redshaw & Henderson, 2013)⁹⁵.

⁹³ We could find no analyses from the main Alspac cohort data in the published research: this finding was from fathers who had taken part in the pre-study pilot (Dragonas et al., 1992).

⁹⁴ In the early 1990s, a small pilot study for Alspac (142 fathers) recorded 91% birth attendance (Dragonas et al., 1992). A decade later the MCS, with a more representative national sample, recorded 86% (Kiernan & Smith, 2003). In 2010, mothers reported 91% of fathers attending a first birth, and only very slightly fewer (88.3%) later births (Redshaw & Henderson, 2013). In Northern Ireland, the very recent figures, which include non-cohabiting fathers, are similar: around 92% for all births (Alderdice et al., 2016). Among the fathers responding to the 2018 survey, only 1.7% had not attended any part of the labour or birth (Fatherhood Institute & Fathers Network Scotland, 2018).

⁹⁵ Cultural factors may be significant, but BAME families are generally poorer and the mother younger – both factors strongly associated with fathers' non-attendance.

Do men *want* to be at the birth? Expectant Alspac fathers were asked this question at 18 weeks into the pregnancy⁹⁶ but we could not find any published analyses of their replies. Analysis has, however, revealed why those Alspac fathers who did not attend, stayed away: 30% blamed hospital policy⁹⁷. Times had obviously changed by 1998 when no father of the very few⁹⁸ who had failed to attend blamed hospital policy. Reasons given were being away, being unable to get away from work, feeling 'squeamish' or believing they would not be useful in the birthing room (Newburn & Singh, 2000). By 2018, only 8 men out of 1,324 responding to the *How was it for you?* survey chose to stay away; and among the 121 who missed the birth or were not present during the whole labour, the most common reason given was medical emergency, usually a C-section (Fatherhood Institute & Fathers Network Scotland, 2018).

Advice-givers are anxious that fathers not feel pressured to attend⁹⁹. So how many felt or feel under obligation? In the early 1990s, Alspac fathers were asked about this postnatally¹⁰⁰. However, there have been no published analyses of their responses, other than just one article based on data from the small Alspac pilot. Of those 142 men, 20% said they felt pressured to attend (Dragonas et al., 1992), although this did not necessarily mean they had been unwilling. Since then, no UK survey has asked the question. 'Feeling pressured' does not emerge as a concern in recent qualitative studies; and stress experienced by a father who had *missed* the birth was noted in a small qualitative study of young fathers (O'Kane, 2012).

I said I wanted to remain in there but I was told to go outside and wait . . . while my partner's friend and her mum got to stay inside with her and see my child being born. I was confused . . . I don't think that's right that I lost that experience. That was the moment my child was being born." (O'Kane, 2012)

⁹⁶ Alspac also asked mothers, shortly before the birth, whether they wanted the father to be present. Afterwards Alspac not only asked fathers about their birth attendance and experiences, but also asked mothers about their experiences of birth, later father involvement, and the later couple relationship. While all of these could be treated as 'outcomes' data in longitudinal analysis of impacts of fathers' participation in birth, we found only one study in the published Alspac literature that did so, using birth attendance as one measure of fathers' parenting orientation in relation to later solo father-care by resident fathers (Washbrook, 2007), finding no significant statistical effect. In the MCS, whether the mother was unaccompanied during labour has been studied in relation to a number of outcome variables and seems to be a marker of disadvantage (Essex & Pickett, 2008); similarly in relation to birthweight (Yan & Groothuis, 2015). We did not find studies using the most recent GUS data on fathers' birth attendance, although sample sizes of those not attending may be small.

⁹⁷ We could find no analyses from the main Alspac cohort data in the published research: this finding was from fathers who had taken part in the pre-study pilot (Dragonas et al., 1992).

⁹⁸ 25 out of 463

⁹⁹ <http://www.babycentre.co.uk/a564488/dads-do-you-have-to-be-at-your-babys-birth>

¹⁰⁰ Alspac fathers were also asked about the impact on them of the mother's pain, whether they'd felt actively involved and whether the birth had been a 'wonderful' experience. Again we could find no analyses of this data in Alspac-based publications. Despite its having been collected 25 years ago, a full analysis could serve as a baseline if equivalent data were to be collected from a future cohort.

How do HCPs engage with fathers during labour and delivery? A qualitative study (Machin, 2015) found men reporting far greater support and acknowledgement during the birth than before or afterwards. Perhaps midwives in under-staffed maternity units are grateful for the 'extra pair of hands'. Perhaps the fathers' presence is protective. In *How was it for you?*, 47.5% of the fathers thought the birth had been 'safer' because they were there; and another 27.6% thought this might have been the case (Fatherhood Institute & Fathers Network Scotland, 2018). Men are more critical than women of the birthing-environment ('dirty/ not homely') and the quality of care their partner received, while also noting lack of facilities for themselves (Symon et al., 2011).

Fathers and birth trauma?

Researchers have shown a lively interest in fathers' mental health post-birth and have been concerned about possible Post Traumatic Stress Disorder (PTSD). This does not seem to be common – and when identified may not be related to the birth itself. When 199 fathers were assessed within 72 hours of the birth and again six weeks later, not one was found to be suffering from PTSD. Clinical levels of anxiety were found in 8-9%, mainly associated with first-time birth attendance, feeling unprepared or because they were generally anxious individuals (Bradley et al., 2008). Another study (78 fathers) found depressive symptomology in five fathers six weeks after the birth. This was not correlated with the quality of the birth but with their mental health beforehand: the men depressed six weeks after the birth had been depressed beforehand (Greenhalgh et al., 2000)¹⁰¹. Two-to-four years after the birth fathers of severely pre-term infants were more likely to report higher levels of (retrospective) PTSD symptoms than fathers of full-term babies, but the extent to which this was associated with ongoing difficulties with the child was not explored (Alexander, 2016). After a stillbirth, mothers often experience high stress/ anxiety in a subsequent pregnancy until a live baby is safely delivered. The same pattern is found in fathers, although with lower levels of distress (Turton et al., 2006). And a study of fathers whose partner had almost died in childbirth found 'a few' (no number is given) experiencing continuing distress, including 'flashbacks' common in PTSD. However, far from this being linked to witnessing the birth, it could be linked with not witnessing it and to being 'left in the dark' while their partner was being treated (Hinton et al., 2014).

What understanding can we draw from this research? Most fathers seem to experience childbirth as both distressing and wonderful, a seemingly reasonable response to a potentially life-threatening situation. When expectation differs from reality, the reality tends to be less, not more, upsetting than anticipated (Newburn & Singh, 2000). Some feel unprepared but many do not. Almost all the one hundred (relatively advantaged) fathers interviewed in 2005 said they had felt at least fairly well equipped (TNS System Three, 2005). Expectant fathers now have a range of 'lay' options from the internet to TV shows to prepare for the birth

¹⁰¹ Studies which have identified apparently birth-related PTSD in fathers have been small (Parfitt, 2009), with self-selecting samples (Ayers et al., 2007; Etheridge & Slade, 2017) and, importantly, without pre-birth assessment of the men's mental health.

(Goulder, 2011) and seem to be making good use of them (Dolan & Coe, 2011; Harvey, 2010). In Northern Ireland one third of all expectant fathers (and many more first-time fathers) independently researched pregnancy and birth (Alderdice et al., 2016).

What is clear is that, firstly, the utility of applying a trauma perspective to fathers' experiences of the births of their children is not supported (Bradly et al., 2008); secondly, most fathers cope well, even when births are dangerous or disastrous; and finally resilience is likely to be enhanced through preparedness and good communication with HCPs. The research evidence points to the importance of identifying and appropriately supporting fathers with current or previous mental health vulnerabilities, or whose infants present ongoing challenges; and seeking to keep all fathers well informed during the labour and birth. The *How was it for you?* survey found only 61.3% of the largely well-educated men reporting that they had 'often' been kept informed about what was happening (Fatherhood Institute & Fathers Network Scotland, 2018).

Fathers in NICUs

A number of recent studies (21 in our Literature Library¹⁰²) have explored fathers' experiences in Neo-natal Intensive Care Units (NICUs), an important area of study as 1:10 births is affected (Hugill, 2012). Encouraging parents to spend time in the Units touching, holding and providing basic infant care, is believed to facilitate parental role development and babies' weight gain. So how often do fathers visit and engage with their premature infants, and to what extent is this encouraged in the UK?

A study of 82 mothers and 30 fathers in Scotland found mothers visiting more frequently and staying for longer periods, sometimes in a room specially provided for them. Fathers visited less frequently if their infant was over seven days old and more frequently if the mother visited more frequently, and stayed longer if she stayed longer. One third of the fathers did not visit on any of the days that data was being collected, and this did not vary by day-of-the-week. Fathers were less actively engaged during visits¹⁰³. However, night visits were not recorded which may be significant if more fathers do the 'night shift'.

No-one really knows why UK fathers are less engaged in NICUs. Researchers have hypothesised 'deficits' in the fathers: being too busy at work, being frightened to handle their

¹⁰² The 21 studies include five reviews and seven PhD theses, with many of the published articles deriving from these theses.

¹⁰³ While more than 75% of mothers engaged in infant cleaning and feeding activities, fewer than 20% of fathers did so. Mothers also engaged in more social interactions with other parents (Franck, 2003).

infants, and so on¹⁰⁴. Staff attitudes and behaviour may also play a part: a Scottish study that recorded ‘backstage’ staff-chat included covert revulsion and ridicule towards men who engaged in ‘Kangaroo care’ (skin-to-skin holding of their newborns) while this was praised in mothers. The researcher concluded that HCPs would do well to reflect critically on the dominant view of fatherhood in their Unit and whether the Unit culture is supportive of men’s efforts and fatherhood aspirations (Hugill, 2014)

Fathers immediately after the birth

When little un was born, we had this woman come into the delivery suite to show my wife how to latch on. She didn’t speak to me at all. (Sherriff et al., 2014) (p.20)

Although, after the birth, HCPs may communicate less well with fathers than during it¹⁰⁵ women whose partner is involved in their care are increasingly likely to say he is allowed to stay at the hospital with them (Care Quality Commission, 2017); and some maternity units have begun to make provision for fathers to stay overnight (Baldwyn, 2010). However, eight years after this was pledged by the then Prime Minister Gordon Brown¹⁰⁶, only 16.5% of fathers responding to the *How was it for you?* survey reported that their local hospital offered such a facility. This was regrettable, since 96% of the fathers felt staying after the birth could be helpful to mothers, and 80.7% that it could be helpful to staff (Fatherhood Institute & Fathers Network Scotland, 2018).

Almost half of the NHS negligence bill is accounted for by claims relating to poor maternity services and when two units piloted overnights for fathers, complaints plummeted and midwives were freed up to give direct care (Higgs, 2010).

Once mother and baby come home (which can be within 24 hours), many fathers meet HCPs. Even as long ago as 1998, 75% of fathers had seen a Health Visitor at least once (Newburn & Singh, 2000); and in 2005, after statutory Paternity Leave had been introduced, 88% were present for at least some post-birth home visits by HCPs with a quarter (24%) present at *all* such visits¹⁰⁷. Fifty-eight percent of the fathers in the small NHS survey of relatively advantaged couples had attended post-birth baby clinics (TNS System Three, 2005). It must be remembered that this sample included very few of the 15% of fathers who, at the time of

¹⁰⁴ The UK researchers cited here have hypothesised barriers including fathers’ work commitments and caring for other children at home, emphasis on the mother as the primary carer, fathers’ fears of harming tiny infants through clumsiness, the emotional roller-coaster of the environment, paradoxical emotions with no outlet for expression leading to emotional withdrawal, perceived devaluing of the fathering role in an NICU, and unit policies and staff practices. Much of this is untested and is a research gap.

¹⁰⁵ In Northern Ireland, mothers’ perceptions of support provided to their partner dropped from 91% during the birth to 82% afterwards (Alderdice et al., 2016); and in England from 81% to 75% (Redshaw & Henderson, 2015).

¹⁰⁶ <https://www.theguardian.com/society/2010/mar/15/fathers-can-stay-maternity-wards>

¹⁰⁷ Which may not be many.

the birth, are living in separate household from their infant's mother. Detailed exploration of fathers' engagement in post-birth services is outside of the scope of this Report, although a recent report/ review acknowledges that little known (Donetto et al., 2013). And it is worth noting that in 2018, only 6.3% of the *How was it for you?* fathers had not met at least one healthcare professional during a home visit after the birth (Fatherhood Institute & Fathers Network Scotland, 2018).

It is perhaps worth mentioning, however, as it provides a positive model of engagement with fathers before, as well as after, the birth, that a health visiting team in Lincolnshire undertook a small Randomised Control Trial to establish whether they could increase the number of fathers attending the Primary Birth Visit in the home. When they re-worded their usual approach to the family to address both parents ('Dear mum and dad') and to make clear that they would like to meet with both, the percentage of fathers attending increased from 20% to 70% (Fatherhood Institute et al., 2008).

Section G: Mothers

What women need – and want: ante- and postnatal

Do women want their partner beside them in antenatal care/ education? Two medium sized surveys (100 mothers in each) found expectant mothers keen for their partner to be included in discussions with the HCP about antenatal testing (Skirton & Barr, 2010) and in subsequent decision-making. Reasons given include that ‘the child belongs to both of us’; and that the father will have a role in the decision about continuing (or not) with the pregnancy (Ahmed et al., 2012)¹⁰⁸. Another very small group of 11 mothers was asked how the antenatal classes they’d attended could be improved. They wanted them scheduled so fathers could attend, and to include content on the father’s role, the couple relationship and the realities of life with a new baby (Young, 2008). When 1130 mothers of 0-2 year olds were asked how breastfeeding could be better supported, engaging the fathers in breastfeeding education and support came second out of 27 proposals for improvements (Brown, 2016)

From wider research, both quantitative and qualitative, the expectant mother’s partner emerges as her pre-eminent support person. Women without partners experience the perinatal period more negatively than women with partners and are less likely to access care and support (Raleigh et al., 2010); and where ‘connectedness’ between the partners is low¹⁰⁹, the mothers are at greater risk of adverse health and negative health behaviours¹¹⁰.

The Alspac pilot found one of the two most significant predictors of a pregnant woman’s emotional wellbeing to be her partner’s emotional wellbeing; and she was rendered emotionally vulnerable when he was away during the pregnancy (Thorpe et al., 1992)¹¹¹. In the wider Alspac population, prenatal support, mainly from her partner, predicted the quality of the mother’s parenting after the birth¹¹²; and high affection between the couple was positively correlated with her intention to breastfeed (Barnes et al., 1997). In a smaller study (112 mothers and their partners), emotional support provided prenatally by the father was

¹⁰⁸ This did not appear to compromise the women’s perceptions of autonomy even in more traditional communities, where the women believed that the ultimate decision would be theirs, even if this meant going against their partner’s wishes. The women were not interested in discussing the matter with wider family.

¹⁰⁹ ‘Connectedness’ was measured from ‘marriage’ through to ‘no relationship’.

¹¹⁰ Controlling for socio-economic factors, the MCS found low ‘connectedness’ linked to smoking in pregnancy, low levels of breastfeeding and greater maternal depression (Kiernan & Pickett, 2006).

¹¹¹ These questions were also asked in the full Alspac study but we have not found analysis in any of the published studies.

¹¹² This was more likely to be negative when she had felt unsupported; and positive when she had felt supported (Thomson, 2014). The main Alspac data on support given to mothers during pregnancy by their partners appears to be little analysed.

important to women's satisfaction with role division ('who does what' at home and work), both before and after the birth (Cappuccini, 2000)¹¹³.

Teenage mothers, interviewed in a small qualitative study, regarded their baby's father as a key supporter (Dykes, 2003). And a large scale survey found that expectant/ new mothers who were depressed had told their partner, before anyone else, that they were feeling unwell (Boots Family Trust Alliance, 2013). Giving birth unaccompanied by the baby's father was found to be a specific and independent risk factor for MCS mothers' low life-satisfaction (Essex & Pickett, 2008).

In a small study (48 fathers), infants whose fathers were positive about their relationship with their partner were more 'settled' (Davé et al., 2005); and in small samples of mothers 'partner support' was found to be a significant factor in breastfeeding maintenance (Ingram & Johnson, 2004; Ingram et al., 2002) and in mothers' recovery from depression (Di Mascio, 2008). Conversely, mothers who were critical of their partner, or felt criticised by him, expressed more negativity towards their baby (Barnes et al., 2007).

What women need – and want: the birth

Do women want their partner to be present at the birth? Alspac asked them, but we could not find the data reported in any published analyses. In the 1998 postal survey, only three mothers (according to the 400+ responding fathers) did not want him there (Newburn & Singh, 2000); and in the 2018 online survey, only 10 men out of 1,324 who responded to the question on birth attendance, reported that they had not attended because their partner did not want them there (Fatherhood Institute & Fathers Network Scotland, 2018). A small qualitative study of Muslim families found only one woman excluding her partner (he was in agreement with this) 'because it should be just for women' (Ali, 2004). The large contemporary surveys do not even ask the question; and a substantial Care Quality Commission report found mothers distressed when their partner could *not* be there (Care Quality Commission, 2013).

My whole labour was only 1 hr 50 min in the night – my partner wasn't allowed to stay with me. We live 40 mins away from hospital – so when I was allowed to call him, he missed most of my labour – which was distressing. (Care Quality Commission, 2013) (p.25)

A substantial study in a large West London hospital, found that women who had the support of their partner during labour felt more positive about the birth and required less pain relief.

¹¹³ Alspac asked mothers and partners about the couple relationship and partner-support at 12 weeks into the pregnancy; and, at 18 weeks, collected data from both parents on aggression and affection in their relationship. This Alspac data on couple relationships during pregnancy is under-researched, with only a few studies relating to future outcomes: parental separation (Culpin et al., 2013) (simple correlational analysis) and (O'Connor et al., 1999) (more robust multivariate analysis); and father's depression during pregnancy (Deater-Deckard et al., 1998; Hanington et al., 2012); and also child outcomes (Hanington et al., 2012).

They also rated his helpfulness highly - more highly than did the men themselves (Chan & Paterson-Brown, 2002). In a smaller study, women were more satisfied with their partner's support than with the midwives' (Spiby et al., 1999) – perhaps not surprisingly, given the paucity of continuity of carer in midwifery in the NHS (National Maternity Review, 2016a); and mothers of very pre-term babies reported that the extent to which staff involved their partner contributed to their positive, or negative, experience with care (Sawyer et al., 2013). In another (large) survey, too, women rated the care they themselves received more positively if they'd felt their partner had received encouragement (Redshaw & Henderson, 2013).

Repeated Care Quality Commission surveys (2013-2017) have found one woman in four left alone (probably mainly with their partner) by HCPs at a time that worried them (Care Quality Commission, 2017)¹¹⁴. Had they had been absolutely alone, their distress would undoubtedly have been much greater, as another survey discovered. Unaccompanied labouring women (many from minority ethnic groups) were more distressed when left alone by HCPs and more negative about other aspects of their care: adequacy of pain relief, having trust and confidence in staff, being treated with respect and dignity (Raleigh et al., 2010). It may be that a partner's presence is associated with more professional staff behaviour towards the mother, but that is not known.

More broadly, a large, recent consultation found that both fathers and mothers felt the father's role had not been recognised – and that because of this, opportunities had been missed to support the whole family. Mothers said they relied on their partner to support them and this needed to be recognised and supported by the NHS (National Maternity Review, 2016).

¹¹⁴ Given the importance of partner-support to mothers' wellbeing, it is worrying that in the 2015 Care Quality Commission survey, 46% of mothers said that, during their labour, their partner was not able to stay with them as much as they would have liked (Care Quality Commission, 2015). The percentage was even higher (precise figure not given) among first-time mothers, who are likely to be the most shocked and frightened.

Conclusion

This Report has explored UK data collection and research relating to fathers and fatherhood in the antenatal period. What is clear, is that the percentage of expectant and new fathers who are fully disconnected from their partner and infant at that time-point, is very small; that the great majority are keen to participate, and do participate, in important aspects of antenatal and neonatal care, as well as in labour and birth; and that this benefits their partner.

However, what is also clear is that along the ‘maternity pathway’, opportunities to support the whole family are missed; and that this may not only compromise maternal and infant health outcomes, but may also compound the many social and personal obstacles that can disconnect men from their role as fathers. Less confident and less well-resourced men are likely to be the most negatively affected.

Research and analysis gaps have been identified in this Report, largely in footnotes and Appendices. Research and/ or analysis gaps¹¹⁵ include couple relationships; fathers’ attitudes + beliefs + preferences towards infant feeding and caring for infants; mothers’ and fathers’ preferences in relation to fathers’ birth attendance; fathers’ reports of support to them in pregnancy from mother, family, friends and peers. In addition, in relation to all the topics covered here, there is a gap in robust large-scale data gathered directly from fathers; and where data was collected from Alspac fathers, much of it remains un-analysed (see Appendix B). Where topics/ variables have been relatively well researched¹¹⁶ there is potential for systematic syntheses of findings¹¹⁷. Data from and about fathers who are not cohabiting with their babies’ mothers during pregnancy and at the time of the birth (c.15%) is especially scarce¹¹⁸, as is information on the partners of women who sole-register their baby’s birth (c. 5%). Research on fathers’ attitudes and behaviours has problematized them while structural factors that might impede engagement have been less often explored. There has been no

¹¹⁵ See Appendix B at the end of this Report.

¹¹⁶ For example, in Alspac and the MCS these include associations of fathers’ smoking, weight/ BMI, antenatal mental health, attendance at birth and age at birth, with child and maternal outcomes and with fathers’ later involvement with their children.

¹¹⁷ Taking into account the statistical models used in each analysis, carrying out explicit quality appraisal and judging the balance of evidence. Examples of cohort-specific research reviews which include findings on fathers in the antenatal period are a systematic review of MCS studies (Twamley et al., 2013) and a summary of findings of Alspac studies (Niarchou et al., 2015)

¹¹⁸ Alspac collected data about and from non-cohabiting partners (see Appendix A) identifying 315 infants out of 13,975 whose mother was not currently cohabiting with a man she named as her partner. Descriptive, analysis of this group could be undertaken.

substantial recent investigation of expectant and new fathers' information needs¹¹⁹; and little is known from UK research about couple functioning during the perinatal period. Lack of a recent birth cohort study covering all four countries in the UK and beginning in the antenatal period is presenting particular challenges. An independent Longitudinal Studies Strategic Review has recommended to the Economic and Social Research Council that a new birth cohort study is commissioned and (p24) "could collect data on resident and non-resident fathers and mothers" (Davis-Kean et al., 2018). Recent discussions between statisticians suggest that samples in pregnancy should be representative but may not need to be selected randomly from a sampling frame for every analytic purpose¹²⁰. Our work (see Appendix A, below) identifies question gaps in past studies and proposes questions for interviews with fathers during these early cohort interviews.

International research has established substantial connections between fathers' care of infants and neurological and other physiological changes that support attachment and sensitive parenting – the 'neurobiology' of fatherhood (Rilling & Mascaro, 2017). The research findings have potential to challenge sex-and-gender stereotypes, as does recent international research on co-parenting and on father-infant attachment, none of which has been carried out in the UK. None of this seems to be readily available to expectant or new parents¹²¹. Thus 'essentialist' constructions of motherhood and fatherhood dominate¹²².

Finally, despite the guidelines and recommendations of professional bodies and voluntary sector organisations, we did not identify a single maternity service that routinely collects or analyses information on fathers' mental or physical health, substance use, smoking or other health behaviours, seeks to engage them in behaviour-change alongside their pregnant partner, or refers them to support services and monitors outcomes. Nor could we find any recent or current commissioning or inspection framework in England, Wales or Northern Ireland that requires engagement with anyone other than the pregnant woman. Scotland's 2011 Framework for Maternity Care required maternity services to recognize the father's role and include them, and also (most importantly) required NHS Boards to evidence that this is occurring (The Maternity Services Action Group, 2011). However, the requirement to evidence engagement does not seem to have been monitored, let alone enforced.

¹¹⁹ Alspac asked about partners' beliefs about looking after a baby and appropriate behaviours, so we have 1990s data on this (although the data quality/ response rates are unknown). This appears to be un-analysed. Questionnaires in pregnancy in the now-defunct Life Study included a substantial module on fathers/ partners' expectations/ aspirations/ beliefs about father involvement with the future baby, including his expectation to have sole care periods with the baby.

¹²⁰ <https://www.statslife.org.uk/features/3598-esrc-longitudinal-studies-review-an-update>

¹²¹ For example, the neurobiology of fatherhood is very inadequately addressed on NHS Choices <https://www.nhs.uk/news/mental-health/fathers-to-be-experience-hormone-changes/>

¹²² Wherein women are perceived as having 'natural' skills with infants and young children that men lack.

Thirteen years ago, in 2004, the idea of engaging with the woman's partner and the wider family was introduced in an important policy document (DfES & DH, 2004), which held that maternity care was to be 'woman-focused and family-centred'¹²³. This meant that while the obstetrics focus was to be on the woman, the wider family was to be informed and engaged with throughout. Although that approach was never enacted, this same formulation has recently been re-stated in policy in Scotland (Scottish Government, 2017)¹²⁴ and in a 'Manifesto to Strengthen Families' produced by an influential group of Conservative Parliamentarians (Bruce & Farmer, 2017). Will these recent calls to action, like so many before them, prove to be more rhetoric than reality (Sherriff & Hall, 2014)? Or will one of the UK jurisdictions – possibly Scotland – seriously address implementation of family-centred care by, for example, establishing working groups and identifying potential pilot sites? At national level, that would almost certainly be a 'first' (Steen et al., 2012).

¹²³ 'Family-centred care' is practised in many sites in the US <http://www.ipfcc.org>.

¹²⁴ Scotland's 2017 'forward plan' for maternity care commits to ensuring that 'Fathers, partners and other family members are actively encouraged and supported to become an integral part of all aspects of maternal and newborn care' (Scottish Government, 2017).

Our recommendations

Our recommendations are all about making fathers welcome throughout pregnancy, birth and early infancy, and valuing the role they play not just as supportive partners but also as independent parents with a unique connection to their baby.

RECOMMENDATION 1: Change NHS terminology to refer to fathers

At the time of the birth, 95% of parents are in a couple relationship, and 95% register the birth together. For a woman to have a new partner at this stage is almost unheard-of; and only one birth in a thousand is registered to two women. Yet despite the overwhelming presence of the biological father, the term ‘woman’s partner’ or ‘mother’s partner’ (rather than ‘father’) is commonly used in maternity services. This defines the baby’s father solely as a support-person and does not recognise his unique connections (both genetic and social) to his infant. The term ‘woman’s partner’ should be widely replaced by ‘father/ woman’s partner’.

In addition, the term ‘parent’ should not be used as a synonym for ‘mother’ but to describe mothers-and-fathers collectively: the use of the word ‘parent/ parents’ when only ‘mother/ mothers’ (or pregnant women) are meant, can cause confusion and mask the fact that fathers are not participating or being addressed.

RECOMMENDATION 2: Invite, enrol and engage with expectant dads

Employed fathers in Britain have a statutory right to time off to attend two antenatal appointments. Each father (or woman’s partner) should (with the pregnant woman’s consent) be formally enrolled in maternity services and an official invitation to meet the maternity team issued. This will acknowledge the father as a parent, and provide a pathway to welcoming, educating and informing him, identifying strengths and challenges associated with him, and referring him to relevant services (e.g. to smoking cessation). Working groups in each of the four countries in the UK should be established to consider mechanisms for enrolling the father/ woman’s partner; and to identify potential pilot sites.

RECOMMENDATION 3: Deliver woman-focused, family-centred services

Expectant fathers’ direct impact on the mother and indirect impact on the unborn child, are significant. Maternity services in the UK should be formulated as ‘woman-focused and family-centred’ meaning that, while the obstetrics focus remains on the pregnant woman, the father or woman’s partner and other key supporters are actively encouraged to become an integral part of all aspects of maternal and newborn care. This formulation first appeared in the National Service Framework for Children, Young People and Maternity Services (DfES & DH, 2004) and is re-stated in the Forward Plan for Maternity and Neonatal Care in Scotland (Scottish Government, 2017) and by the Conservative Parliamentarians Group (Bruce & Farmer, 2017). Hospitals should collect information about the experiences of mothers and fathers/ women’s partners of family-centred care, as part of the NHS Friends and Family Test; and working groups in each of the four countries in the UK should be established to define family-centred care during pregnancy, at the birth and in neonatal care; and to explore strategies, objectives and targets for implementation.

RECOMMENDATION 4: ‘Father-proof’ maternity staff training

The term ‘midwife’ means ‘with woman’ and most practitioners in maternity services are not trained to engage effectively with men or to work in a ‘partnership of care’ with families, including understanding and engaging with gender and other family dynamics. When guidelines for maternal and neonatal care are drawn up, these should include evidence on the impacts of fathers’ characteristics and behaviours on mother and infant; impacts of couple relationship functioning; and impacts of fatherhood on men.

Pre- and post- registration training curricula and CPD modules should be revised to cover the ‘whys’ and ‘hows’ of engaging with fathers and families. When core competencies are time-tabled for revision, relevant new competencies should be drafted and included. Existing training modules (such as the NCSCCT module on smoking in pregnancy) should, when revised, equip healthcare practitioners to engage with both parents, rather than only with the woman.

RECOMMENDATION 5: ‘Father-proof’ information for expectant and new parents

Pre-natal health education and information should be directed at men as well as women, and maternity service should be required to provide information directly to the father/ woman’s partner, rather than relying on the ‘woman as educator’. To counter unconscious bias against men/ fathers are caregivers, the content of antenatal information/ education should include the neurobiology of active caretaking (in relation to both fathers and mothers), co-operative caregiving (the ‘parenting team’) and the impacts of father involvement and couple functioning on the infant’s health and development. ‘Father-proofing’ guidelines to equip authors of new resources (and of resources that are being revised) to address both parents effectively should be developed and made available to commissioners, authors and editors, with the requirement that these be applied and utilized as part of the Gender Equality Impact Assessment.

RECOMMENDATION 6: Collect better data on expectant and new dads

On the basis of our research review, and a recent independent Longitudinal Studies Strategic review, we recommend that any future ‘birth’ cohort study (or a component thereof) should collect data in pregnancy from both partners (cohabiting or living separately), with a phase of testing for recruitment approaches. If data collection in pregnancy proves impossible, the ‘first sweep’ interview (in infancy) for fathers/ partners should be expanded to ask about pregnancy and the birth¹²⁵.

¹²⁵ Questions asked in Alspac (and that had been planned to be asked in Life Study) to fathers/ partners, and questions asked in MCS and GUS to mothers, may be a guide to questionnaire content for fathers/ partners in future studies.

Where we have identified gaps in primary research and/ or in secondary analyses of data already collected, consideration should be given to commissioning primary research or secondary analysis of existing cohort data with due regard paid to research and policy priorities and budgetary constraints.

At birth registration, the father should be asked whether the infant being registered is his first child. Analysis of the data collected will then be able to establish fathers' age at birth of first child and men's fertility rates in Britain.

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N.B. Where we have found full-text PDFs on the internet, we have inserted the link. Where not, we have included the doi.

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Appendix A

The questions asked in Alspac, the MCS & GUS relating to fathers/ the couple relationship during pregnancy and at the time of the birth

Introduction: In Phase 2 of our datasets review, we looked at the questions asked in Alspac, the MCS and the GUS about the fathers of cohort members and the parents' couple relationship during the antenatal period and around the time of birth. We also looked at the questions asked solely about mothers but which were relevant in relation to fathers. Our aim in this Appendix is, **firstly**, to show the potential for secondary analyses of these three birth cohort studies (see also the main part of this chapter, and the footnotes in it, for an account of published studies, and Appendix B for under-studied data); and **secondly**, to identify questions asked in these studies which might inform new cohort studies and large-scale cross-sectional surveys.

We consider whether these questions reflect the substantively important topics and UK research gaps identified in our reports (including the Report, *Who's the bloke in the room?*, to which this Appendix is attached). We hope that this makes a helpful contribution given that the ESRC's independent Longitudinal Studies Strategic review (Davis-Kean et al, 2018) has recommended that a new birth cohort study is commissioned and (p24) "could collect data on resident and non-resident fathers and mothers". The ESRC Review's report drew attention to prenatal factors and exposures.

We examine whether the data collected about fathers in the three cohort studies has been obtained directly from fathers and/or from mothers. Family research may collect data directly from all family members, including children, to represent their different perspectives. In our working paper *Where's the daddy?*, we discuss the potential inaccuracy and bias when mothers are asked to report on the characteristics, perceptions/ attitudes and behaviours of fathers. We acknowledge that 'symmetrical data collection' is expensive and increases respondent burden. For some measures and analytic purposes, concordance levels between mother and father may be assumed and may be sufficient (Kiernan, 2016).

Despite a wide variety of questions about fathers and the couple relationship during the antenatal period and around the time of birth being asked in at least one of these cohort studies (see Table 1 below), only four questions were asked (with different wording) in all three studies. All of these were based on mothers' reports:

- the relationship status of the birth parents during pregnancy or at the time of birth
- whether the father was present at birth

- whether the father was on the birth certificate (not directly asked in Alspac but information was added to the Alspac dataset from birth certificates)
- the age of the resident father or mother's partner.

Table 1 shows that Alspac collected a much broader range of information than did the other two cohort studies, in particular about fathers' characteristics and behaviours during the antenatal period, but also about the couple relationship at that time, and fathers' engagement in their partner's pregnancy and the birth. One key difference between the three studies is the time points at which they collected data *directly from mothers and fathers* in their first sweeps. Only Alspac collected data from mothers *and from mothers' partners*¹²⁶ (whether resident or not) during pregnancy,¹²⁷ and (for partners) eight weeks after birth, using self-completion questionnaires. Each partner questionnaire in pregnancy was similarly extensive to the equivalent questionnaire for mothers, although mothers received a greater number of questionnaires (at more time points) during pregnancy and early infancy than did partners. This enabled Alspac to collect data symmetrically from both fathers and from mothers for many variables.

The MCS interviewed mothers and their resident partner¹²⁸ at around nine months of their baby's age. Although mothers were asked about pregnancy and the birth at this interview, the partners at nine months who were birth fathers (the great majority) were not asked equivalent questions, with the exception of questions on smoking and employment during pregnancy. The 'main carer' interview (almost entirely mothers) was around 65 minutes long, whereas the 'partner' interview was around 30 minutes long and focused on other topics. In contrast, GUS did not interview¹²⁹ mothers' resident partners until the children were nearly two years old, even though mothers were interviewed for the first time when the children were around ten months old. In neither GUS nor the MCS¹³⁰ were 'live out' birth fathers interviewed (at any sweep), despite analysis of birth registration data and other sources suggesting that the 15% of all fathers who are not cohabiting with their baby's mother at the time of birth may be

¹²⁶ These three cohort studies use the term "partner questionnaires" and "partner interviews", referring to the mother's partner. Almost all these partners during pregnancy are biological fathers.

¹²⁷ Alspac data can identify mothers where the birth father is described as living outside the mother's household (non-resident) during pregnancy, differentiating whether this birth father is a partner of the mother or not. It collected data in pregnancy directly from those birth fathers that were non-cohabiting partners of the mother, and also from the small percentage of mothers' partners during pregnancy who were not the birth father. Given the large sample size of Alspac, it is possible that there are sufficient sample numbers for analysis of "non-cohabiting birth father partners", although the achieved sample of partner questionnaires (response rates 40% to 50% across childhood sweeps) is unlikely to be representative of all such fathers in the Alspac families. Among the 14,701 one-year-old Alspac children, 315 have mothers who have live-out partners (Opondo et al., 2016).

¹²⁸ Achieving an 88% response rate for interviews with eligible partners.

¹²⁹ With the exception of a small minority of the sample, where the mother could not be interviewed.

¹³⁰ In Alspac, those live-out birth fathers who were a partner of the mother during pregnancy were eligible to complete partner questionnaires.

the most disadvantaged fathers (see *Who's the bloke in the room?*). This means that nearly all the data in the MCS and GUS about fathers in the antenatal period, or at the time of birth, is reported retrospectively and by mothers.

As we make clear elsewhere in this Report, our critique is not a criticism of the past decisions made by research funders and directors in a specific historical context, and according to resources and priorities. Alspac has a biomedical emphasis, and this may help explain its use of multiple sweeps during pregnancy. Pearson (2016) discusses the rushed start for the MCS which precluded collection of data during pregnancy. There are historical accounts (Overy et al., 2012; Pearson, 2016) of the emphasis in Alspac on being wide-ranging in the data collected – and see Golding, (2014) for an innovative hypothesis-free exploratory approach to analysis using numerous variables (Golding et al., 2014). These accounts describe how such an approach can be a strength in terms of not being able to anticipate future research questions over the long timescale of the study. Of course there are also risks in this approach that data collected will not be used (see Appendix B); and there may be impacts on response rates, attrition and data quality. We suggest that researchers and funders initiating new cohort studies and cross-sectional surveys consider whether they might collect the data in Table 1 below. We have put in **bold** the questions, many unique to Alspac¹³¹, which reflect topics of scholarly or policy/ practice relevance in our Reports. These topics, which we consider to remain substantively important (more than 25 years after the Alspac pregnancies) and merit a longitudinal approach to analysis, include couple relationships in pregnancy; domestic violence; support given by fathers/partners to mothers during pregnancy; fathers' mental health; fathers' health behaviours (e.g. drug use) in pregnancy; fathers' feelings about the pregnancy; fathers beliefs in pregnancy about looking after a baby; and fathers' experiences during birth.

As shown in this Report, secondary analyses of Alspac data form a substantial part¹³² of the published UK literature which derives from large-scale longitudinal studies. Additionally, Alspac has been a source of cross-sectional estimates where equivalent data from large-scale nationally representative cross-sectional surveys has not been published, for example on fathers' antenatal mental health and alcohol use. However, Alspac is the oldest of the three cohort studies with births in 1991, and so does not reflect the contemporary context of pregnancy and birth. *Who's the bloke in the room?* notes gaps in knowledge where we found no more recent large-scale data than collected in Alspac, for example on fathers' antenatal mental health and alcohol use, and on couple relationships and domestic violence. Additionally, Alspac is geographically restricted to the area in SW England formerly called Avon.

¹³¹ Alspac data items which are not in bold in the table, such as fathers'/ partners' use of chemicals during pregnancy, consumption of caffeinated drinks, and long-standing medical conditions, may nevertheless be of importance in biomedical research, which was not a focus in our social science-oriented bibliographic searches and scoping review.

¹³² In counting the numbers of published antenatal papers from different large-scale datasets in our extensive library, Alspac has the greatest number of papers on antenatal smoking, substance use, couple relationships, partner support, domestic violence, obesity and mental health.

Alspac gained data through postal questionnaires that mothers passed to their partners, and therefore non-response amongst partners is more of an issue (40% to 50% response across childhood sweeps) than with the partner interviews in the MCS and GUS. In contrast to Alspac, and in line with the discontinued Life Study¹³³, future data collection could use interviews with expectant fathers in pregnancy, be nationally representative, and where appropriate incorporate innovations since the 1990s in recruitment, questionnaire scales and data collection methods (e.g. diaries).

Despite the dominance of Alspac data in the published literature on some topics, in particular the health and health behaviours of fathers during the antenatal period, we have also (see Appendix B) identified data collected in Alspac which has been little analysed. Consideration would need to be given to the reasons for this lack of analysis¹³⁴, and whether this has implications for future data collection.

Table 1

Questions asked in at least one of the MCS and GUS (i.e. the more recent cohort studies), but not in all three cohort studies	Questions about couple relationship or fathers' involvement asked only in Alspac (P) = data gained from mother's partner (usually the biological father) (M) = data gained from mother	Questions about fathers' characteristics, perceptions or behaviours asked only in Alspac (P) = data gained from mother's partner (usually the biological father) (M) = data gained from mother
Age of live-out ('non-resident') fathers (MCS) (mother's report)	Whether mother has non-cohabiting male partner in pregnancy (M) (P) Family structure of mother in pregnancy including mother's and partner's resident and non-resident children (including her step-children) (M) (P)	Whether partner took exams during pregnancy + impact on mother/ partner (P) (M) Partner's use of chemicals, toiletries + radiation at home or work just before partner became pregnant and during pregnancy (P)

¹³³ Life Study had planned first sweeps in pregnancy and early infancy, and data collection directly from fathers. See <http://www.lifestudy.ac.uk/about/faqs>

¹³⁴ For example, whether the lack of analysis derives from the value of the analytical constructs, the way they were operationalized as questions or scales, or the quality and representativeness of the data collected.

<p>Questions asked in at least one of the MCS and GUS (i.e. the more recent cohort studies), but not in all three cohort studies</p>	<p>Questions about couple relationship or fathers' involvement asked only in Alspac</p> <p>(P) = data gained from mother's partner (usually the biological father)</p> <p>(M) = data gained from mother</p>	<p>Questions about fathers' characteristics, perceptions or behaviours asked only in Alspac</p> <p>(P) = data gained from mother's partner (usually the biological father)</p> <p>(M) = data gained from mother</p>
<p>Whether father planned pregnancy (GUS) (mother's report)</p>	<p>Couple relationship including:</p> <ul style="list-style-type: none"> • aggression and affection (M) (P) • father's perception of how physically attractive he finds pregnant woman + whether changed (P) • support from father to mother during pregnancy (M) • support from mother to father during pregnancy (P) 	<p>Partner's use of illegal drugs (P) and drinking alcohol (P) (M) - also partner drinking coffee, tea, cola, milk, other drinks (P)</p>
<p>Smoking during pregnancy (MCS/ Alspac) (mother's and father's/partner's reports)</p>	<p>Domestic violence in pregnancy (M) (P) including pregnant mother's report of abuse by partner to her and to children in household (M)</p>	<p>Partner's physical health (M) (P) + details of medical problems (P) + whether he was admitted to hospital and/or 'very ill' and/or had accident during pregnancy + impact on him (P). + impact of partner's illness on pregnant mother (M) + resident partner's long-standing disorder, illness or disabling conditions + consequences for household(M)</p>
<p>Attitudes + feelings of father towards pregnancy +/-or the birth (GUS + Alspac) (mother's report in GUS)</p>	<p>Partner's report of pregnancy related 'life events' and worries, and impacts on him, including might miscarry, foetal screening tests, worries about health of baby, impacts of pregnancy on pregnant partner, + found out that mother did not want child, (P)</p>	<p>Partner's assessment of pregnant woman's physical health and emotional feelings/ somatic stress symptoms (P) and any changes since pregnant; Pregnant mother was ill since got pregnant, + impact on partner (P)</p>

<p>Questions asked in at least one of the MCS and GUS (i.e. the more recent cohort studies), but not in all three cohort studies</p>	<p>Questions about couple relationship or fathers' involvement asked only in Alspac</p> <p>(P) = data gained from mother's partner (usually the biological father)</p> <p>(M) = data gained from mother</p>	<p>Questions about fathers' characteristics, perceptions or behaviours asked only in Alspac</p> <p>(P) = data gained from mother's partner (usually the biological father)</p> <p>(M) = data gained from mother</p>
<p>Father attends antenatal classes (GUS + Alspac) (mother's report in GUS)</p> <p>Whether father had paid job in pregnancy*(MCS + Alspac)</p> <p><i>* Fathers' employment does not feature in this Report on the antenatal period, but is of substantive importance and is covered in another Report in this Series, on fathers, work and care (Cash or Carry?). No published analyses have explored correlations between fathers' pre-birth employment status and factors such as their own mental health or acceptance of the pregnancy, their partners' wellbeing, the couple relationship, or other factors</i></p>	<p>Partner's beliefs in pregnancy about looking after a baby + appropriate behaviours (P)</p> <p>Partner's attitudes + beliefs+ preference towards infant feeding + Mother's belief that 'Bottle-feeding allows the father to share the child more' (P) (M)</p> <p>Mother planning in pregnancy to use father for childcare (M)</p> <p>Preferences + attitudes + decision making around father's attendance at birth (P) (M)</p> <p>Experiences of father during birth (P)</p>	<p>Partner's physical activity + diet (P)</p> <p>Partner's emotional feelings/ stress symptoms/ energy levels and any changes noticed since start of pregnancy (M) (P) + social anxiety (P) + attempted suicide during pregnancy (P) + any psychiatric/ substance / alcohol misuse problems (P)</p> <p>Partner's assessment of neighbourhood, worries about crime, and contact with neighbours (P)</p> <p>Social support to partner - seeing family members, friends, confidantes, social network, help + support (P)</p> <p>Partner's 'outlook on life' including locus of control (P)</p> <p>Belief in divinity and religion, and religious behaviours (P)</p> <p>Impact on him of mother's job loss/ problems at work + other life events which happened to mother (since got pregnant) (P)</p>

<p>Questions asked in at least one of the MCS and GUS (i.e. the more recent cohort studies), but not in all three cohort studies</p>	<p>Questions about couple relationship or fathers' involvement asked only in Alspac</p> <p>(P) = data gained from mother's partner (usually the biological father)</p> <p>(M) = data gained from mother</p>	<p>Questions about fathers' characteristics, perceptions or behaviours asked only in Alspac</p> <p>(P) = data gained from mother's partner (usually the biological father)</p> <p>(M) = data gained from mother</p>
		<p>Life events happened to partner/ his children/ friends + relatives during pregnancy (M) (P) and impact on him (P) and impact on her (M) – including bereavement, illness of children/friends/ relatives, domestic violence, divorce, homelessness, trouble with law, moved house, financial problems, victim of crime</p>

We can also look at the questions asked in Alspac, the MCS and/or the GUS about mothers (of cohort members) in pregnancy or around the time of birth which, although also relevant to fathers, are not asked about fathers of cohort members in any of these three studies:

- When first became aware that pregnant
- Timing of first antenatal medical appointment
- How much wants to know about pregnancy/ birth; reading about pregnancy prior to becoming pregnant/ becoming a parent; and self assessed level of knowledge about pregnancy
- How useful found antenatal classes, how often attended, and reasons for not attending antenatal classes
- Sources of information during pregnancy, and most useful source (only asked of fathers if were main carer for interview, a tiny minority of respondents); usefulness of information received from health professionals, and whether received help or advice regarding breastfeeding;
- Awareness of current guidelines concerning drinking alcohol in pregnancy [could also be applied to smoking]
- Whether received any help or advice because using drugs during pregnancy [could also be applied to mental health problems, smoking and drinking alcohol]

- Importance that birth should be positive experience; experience of birth relative to expectations
- Feelings when first went into labour; whether felt in control of what doctors + midwives doing during labour, + whether felt able to ask when needed help during labour; who thinks should make decisions during labour; assessment of how many staff involved/ available during delivery, and feelings about this
- Feelings about closeness to baby as soon as born, and how long took to love baby.

There is a focus in these questions on engagement with maternity services; support and information during pregnancy; and experiences during and just after the birth. These topics feature in our scoping review of the broader UK literature (see the main part of this report) and are of substantive importance in relation to fathers. As noted at the start of this chapter, policy and good practice narratives include a focus on the participation of fathers in maternity services and providing fathers with information and support. Our scoping review notes research linking fathers' and mothers' health behaviours and mental health during pregnancy.

It therefore appears, subject to further assessment and a detailed case being made, that if future cohort studies and large-scale cross-sectional surveys were to ask these questions about fathers as well as about mothers, the subsequent analyses might make a valuable contribution to filling research gaps and be relevant to current policy and practice issues. Cohort studies would offer the potential to analyse these variables longitudinally in relation to the father's later experiences of birth and/or involvement with the baby, as well as in relation to outcomes for the infant, mother and the father such as emotional wellbeing¹³⁵. The data might be analysed according to father and mother characteristics such as age, ethnicity, socio-economic status and type of relationship with the mother to inform the development and evaluation of interventions to target help and support to fathers during pregnancy and around the time of birth.

So, in conclusion to this Appendix, we have identified potential questions for future cohort studies and cross-sectional studies which reflect the substantive topics and broader UK research gaps identified through our scoping review (see the main part of this report). The Life Study had planned to collect some of this data from mothers and fathers, although not about mothers' or fathers' engagement with maternity services/ antenatal classes¹³⁶; or about mothers' or fathers' birth experiences. At the time of writing, a cross-sectional national *You*

¹³⁵ For example, Twamley et al (2013) in the introduction to their systematic review of MCS studies note the complexity around positive and negative outcomes for mothers and fathers reported in the international research literature according to fathers' expectations, pressure to attend and experiences at the time of birth (Twamley et al., 2013).

¹³⁶ Attachment of NHS maternity health records to cohort data might give some of this information in relation to mothers, but perhaps not any reliable content about fathers' engagement with services.

and Your Baby Survey 2018 (a NPEU National Maternity Survey of mothers) is in the data collection phase¹³⁷.

Our purpose in presenting this information is not to be prescriptive. Our aim is to open up discussion about the value of these questions in future studies. We appreciate that resources for cohort studies are tight, and that response/ attrition and data quality can be affected by questionnaires and interviews which are overly long for research respondents¹³⁸. To develop proposals to inform a study's decisions on questionnaire content, scoping work would need to consider issues such as the suitability of, and added value to, that study for collecting that data; the research questions to which the new data could contribute (with a focus in cohort studies on the potential for longitudinal analysis); question/ data design issues; and the costs of collecting and processing the additional data. Where there have been analyses of previous questions on that topic (for example, of Alspac data), the published papers may raise methodological issues to take into account. This is beyond the remit of our exploratory Phase 2 work.

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¹³⁷ See <https://www.npeu.ox.ac.uk/maternity-surveys> for information about the 2016 NPEU survey in progress.

¹³⁸ The impact of additional questions on respondent burden may interact with how interesting and relevant these questions are for research respondents, and whether the respondents consider the questions to be 'sensitive' or intrusive. Kiernan notes in her report on development work for Life Study that questions were added in the Millennium Cohort Study after early piloting so that the interview was more interesting for fathers/ mothers' partners (Kiernan & Prady, 2016).

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Appendix B

Gaps in published analyses of cohort studies relative to questions asked in Alspac, the MCS and GUS

In Phase 2 of our datasets review, we compared analyses in our extensive library of UK research against the questions asked¹³⁹ in these three cohort studies (see Appendix A), to identify gaps in published¹⁴⁰ secondary analysis i.e. understudied areas. These are set out in Table 2 below. All of these understudied topics feature in our Report *Who's the bloke in the room?*, to which this Appendix is attached as of substantive importance (scholarly and/or policy/ practice relevance) in relation to fathers in the antenatal period and around the time of birth. Furthermore, that Report notes that there are gaps in the UK literature relating to couple relationships in pregnancy; fathers' reports¹⁴¹ of their feelings towards the pregnancy; and fathers' knowledge and understanding of child development and sensitive parenting.

These under-studied areas are in contrast to other topics where data items collected about fathers in these cohort studies have been used in secondary analysis in multiple research papers, for example fathers' mental health, smoking behavior, weight/ BMI and attendance at birth. There is the potential for systematic syntheses of these findings, particularly where

¹³⁹ See a similar approach in Kneale et al, 2016. Commissioned by the Centre for Longitudinal Studies at University College London, the researchers created a systematic map of published studies analysing MCS data and then identified where MCS data are underutilized in ten priority question areas (Kneale et al., 2016).

¹⁴⁰ There may have been unpublished analyses using these variables.

We carried out systematic searches of bibliographic databases (prioritising social science databases, UK databases and those covering UK research journals). We supplemented these with searches of publication lists on cohort study websites so that we could include the most recently published literature (up to October 2016), working papers and conference papers, and (for Alspac) literature published before 1998. We may have for example missed published analyses which (i) did not have fathers or couple relationships as a sufficient focus to appear in the abstract, or used gender-neutral language such as 'parents'; (ii) had a biomedical rather than social science focus.

¹⁴¹ In contrast to the GUS (which collected only retrospective mothers' reports), both fathers' and mothers' reports were collected during pregnancy in Alspac for fathers' feelings about and attitudes towards pregnancy and fatherhood, and fathers' reports of attendance at antenatal classes and at birth. However, we found analyses of only the mothers' reports of fathers' feelings and attitudes to pregnancy in published Alspac literature. A comparison of mothers' reports and fathers' reports in the Alspac data could be interesting, and any differing relationships to later outcomes, especially for the attitudinal variables.

there are conflicting findings and different statistical models in relation to the same research questions.

Table 2

Published analyses not found for all questions asked on this topic	No longitudinal analyses found linking questions to future outcomes, or only for a limited range of outcomes
Fathers' reports of their feelings about pregnancy and what becoming a father involves for him (Alspac)	Mothers' reports of fathers' feelings about pregnancy (GUS and Alspac)
Mothers' reports of support given to her by father during pregnancy (Alspac)	Aggression and affection in the couple relationship during pregnancy (Alspac)
Fathers' reports of pregnancy-related 'life events' and impact on him, including antenatal screening, worries about baby and mother, and finding out that mother did not want child (Alspac)	Mothers' reports of father's attendance at antenatal classes (GUS and Alspac)
Fathers' beliefs in pregnancy about looking after a baby + appropriate behaviours (Alspac)	Mothers' reports of whether father present at birth (GUS and Alspac) BUT the MCS data is well researched, including in longitudinal analyses
Fathers' attitudes + beliefs+ preferences towards infant feeding; + mothers' beliefs that "Bottle-feeding allows the father to share the child more" (Alspac)	Whether father on birth certificate (GUS second birth cohort) BUT the MCS data is well researched, including in longitudinal analyses
Fathers' reports of support to him in pregnancy from mother, family, friends and peers (Alspac)	
Fathers' and mothers' preferences in pregnancy for father to attend birth (Alspac)	
Fathers' reports of their attendance at antenatal classes (Alspac)	
Fathers' experiences during birth (Alspac)	
Relationship between birth parents (GUS)	

As shown in Appendix A, Alspac also collected a wealth of data on fathers' characteristics and behaviours during pregnancy. We found few papers reporting this data¹⁴², some of which is reported descriptively but not used in multivariate analysis linking it to future outcomes.

Examples of data that appears to have been rarely analysed are:

- o Fathers' physical activity and diet during pregnancy
- o Fathers' social anxiety and somatic stress symptoms
- o Fathers' outlook on life and 'locus of control'¹⁴³
- o Fathers' beliefs in divinity and religion, and their religious behaviours
- o Whether fathers had job during pregnancy (also in the MCS), job details, and job loss / unemployment/ problems at work
- o Fathers' and mothers' reports of life events happening to fathers during pregnancy that are not related directly to the pregnancy, and their impact on him and on the mother. These include illness, bereavement, illness of friends and family, homelessness, and financial problems.
- o Fathers' reports of life events happening to mothers during pregnancy - and their impact on him.

So, in conclusion, it appears that data collected in the cohort studies, especially in Alspac and the more recent GUS, is under-studied in terms of published analyses of fathers and parental relationships in pregnancy and at birth. These large-scale longitudinal datasets offer potential for future secondary analysis in substantively important areas. They provide contextual data on mothers during pregnancy; and outcomes data into adolescence and beyond for the cohort members. There is also data on mothers and fathers (including their involvement and relationship with the cohort member) post-birth and in future years of the study, which could be treated as 'outcomes' data in longitudinal analyses.

To develop proposals for secondary analysis for the identified topics, researchers and research funders would take into account that the Alspac data relates to births in the early 1990s and to one area of England. The GUS data is more recent but is restricted to Scotland. It may be asked whether the Alspac data collected at that time and the statistical relationships between variables remain relevant nearly 30 years later in a different historical context, but researchers

¹⁴² A recent analysis used many Alspac variables on the characteristics of fathers during the antenatal period in relation to ball skills at age 8 in an exploratory statistical approach to identify "previously unsuspected associations". Five of these antenatal paternal variables remained in the statistical regression model (Golding et al., 2014).

¹⁴³ In addition to the one published study investigating locus of control in Alspac (Lekfuangfu et al., 2014) a new Alspac project funded by the John Templeton Foundation will analyse fathers' and mothers' locus of control in pregnancy and afterwards in relation to child outcomes.

continue to analyse it¹⁴⁴, especially if more recent nationally representative birth cohort studies have not collected equivalent data.

Further work would need to establish specific research questions; the validity, reliability and statistical properties of the data collected (for example, whether scales and measures are standardized); and also the sample sizes and item non-response/ subsequent bias¹⁴⁵ for individual questions and derived composite measures. As we noted in Appendix A, the properties of the questions asked and the quality of the data collected may contribute to explaining why researchers have not used it in analysis, even where data is highly relevant to policy and practice interests (see Kneale et al., 2016). Nevertheless, these researchers suggest that dataset organisations might publish the case made during questionnaire consultation for particular data items, nominate ‘variable champions’, and develop an online community of dataset users, which might encourage secondary analyses of the data.

References for Appendix B

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¹⁴⁴ For example, in recently published works Alspac data collected during the antenatal period or in infancy is used to look at outcomes in middle childhood and the pre-teen years (Golding et al., 2014; Opondo et al., 2016).

¹⁴⁵ Despite the relatively high response rates achieved for the first sweeps of these cohort studies, attrition means that the samples at later sweeps for longitudinal analysis are smaller and less representative. For example, the MCS sample declined from 28,927 families in sweep 1 to 13,857 families at sweep 4. Data comparing respondents and non-respondents shows that families who participate in earlier sweeps but not later ones, as well as eligible families who do not participate in the first sweep, are more likely to be disadvantaged and less likely to be BAME families. This response and attrition bias may affect certain variables more than others, although can be taken into account to some extent by weighting in analysis.

