

Supplementary file 6: Characteristics of included sources

| Author and year | Aim and objectives | Design | Context | Population | Stillbirth definition | Stillbirth classification (antepartum, intrapartum) | Type of inequality | Precision of inequality |
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| Baird 1945 [26] | To examine the influence of social and economic factors on stillbirths and neonatal deaths | Descriptive | Scotland, compared with England and Wales | All maternities 1938-1944 | Undefined | Both | Socio-economic (individual) | Registrar Generals Scale of occupational class |
| Morris 1955 [27] | To describe the background and design of inquiry into stillbirths and infant deaths in England and Wales in 1949 and 1950 | Review | England and Wales | Stillbirths and Infant deaths | Undefined | Both | Socio-economic (individual) | Registrar Generals Scale of occupational class |
| Heady 1955 [28] | To describe the main features of variation of the stillbirth rate, and the neonatal and post-neonatal mortality rates, with two biological factors (age of mother and parity) | Descriptive | England and Wales | Births in 1949 | Single, legitimate, stillbirth after the 28th week of pregnancy | Both | Socio-economic (individual) | Registrar Generals Scale of occupational class |
| Daly 1955 [29] | To consider the extent of such "biological" differences between the social classes, and the effect of these differences on the stillbirth and infant mortality rates of the social classes | Descriptive | England and Wales | Legitimate, livebirths and stillbirths born in 1949 | Single, legitimate, stillbirth after the 28th week of pregnancy | Both | Socio-economic (individual and place of residence) | Registrar Generals Scale of occupational class |
| Heady 1955 [30] | To investigate the "independence" of mother's age and her parity in relation to social class and region | Descriptive | England and Wales | Single, legitimate livebirths and stillbirths born in 1949 | Single, legitimate, stillbirth after the 28th week of pregnancy | Both | Socio-economic (individual) | Registrar Generals Scale of occupational class |
| Illesley 1955 [31] | To examine the processes of movement between social classes and the effects on stillbirths and infant death statistics | Descriptive | Aberdeen, Scotland | Married primiparae resident and delivered in Aberdeen between July, 1950, and December, 1954 | Undefined | Both | Socio-economic (individual) | Registrar Generals Scale of occupational class |
| Kincaid 1965 [32] | To explore changes in UK perinatal mortality rates over the period 1951-1961 | Descriptive | Scotland, England & Wales | Birth records from national databases over periods ranging from 1948-1964 | Undefined | Both | Socio-economic (individual) | Registrar Generals Scale of occupational class |
| Clarke 1983 [33] | (a) to measure the extent to which established risk factors, such as high parity and low social class, were risk factors in our locality; (b) to measure the extent to which other factors, such as the provision of medical services and demographic changes, might contribute to the risk of perinatal mortality; (c) to estimate the extent to which avoidable factors might be detected in the case histories of the perinatal deaths; and (d) to contribute our findings to the educational and planning processes of the local health authorities | Case-control | Leicestershire | All perinatal deaths in Leicestershire 1976-1985 | Undefined | Both | Ethnicity | Broad categories (Asian or European) |
| Guldea 2001 [34] | To investigate the relation between social deprivation and causes of stillbirth and infant mortality | Retrospective cohort | Wales | All births to women resident in Wales 1993-98 | Late fetal deaths after 24 weeks gestation [stillbirth and neonatal death combined] | Both | Socio-economic (area) | Townsend social and material deprivation score (unemployment, car ownership, owner occupation and |

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| | | | | | | | | overcrowding 1991 census) |
| Flenady 2011 [35] | To clearly identify important risk factors for stillbirth in high income countries | Systematic review and meta-analysis | High-income countries (including UK) | Studies from HICs | Death of a baby 20 weeks' gestation or more, or birthweight of at least 400 g | Both | ethnic origin, socioeconomic status, education level, young maternal age | Different in different studies |
| Seaton 2012 [36] | To assess time trends in socioeconomic inequalities in overall and cause-specific stillbirths in England over an 8-year period to aid understanding of each cause's impact on the deprivation gap and the overall stillbirth rate | Population-based retrospective study | England | All singleton stillbirths born to mothers resident in England between 01/01/2000 and 31/12/ 2007 | Losses from the 24th weeks of gestation occurring in singleton infants | Both | Socio-economic (area) | Indices of Multiple Deprivation (IMD) 2004 score (income; employment; health and disability; education, skills and training; barriers to housing; living environment and crime) |
| Zeitlin 2016 [37] | What is the magnitude of social inequalities in stillbirth rates in European countries? | Retrospective review of data from countries participating in the Euro-Peristat project | Europe (includes UK data) | Stillbirths and live births for the year 2010 from 29 countries | Intrauterine death after 22 weeks gestation or birthweight of 500 grams or more | Both | Socio-economic (individual) | Country level available data on educational level, and occupational group |
| Penn 2014 [38] | What is the association between clinical and socio-demographic factors and stillbirth, with a particular focus on ethnicity and obesity? | Cross-sectional | London | London population - (multi-ethnic) | 24 completed weeks of pregnancy (with 28 wks (WHO definition) data in a supplementary table | Both | Ethnicity and socio-economic (area) | Ethnicity general categories (i.e. Black, Asian), Area deprivation IMD score |
| Chitty 1989 [39] | To assess the contribution of lethal congenital malformations to perinatal mortality in different ethnic groups, to investigate the incidence of definite and probable autosomal recessive syndromes, and to estimate the possible effect of consanguinity. | Descriptive | North West Thames Region | All babies born between 1980-1985 | Undefined | Both | Ethnicity | Ethnicity - broad categories (European, Pakistani and Indian) |
| Gray 2009 [40] | To study the effect of area deprivation on rates of stillbirth and infant mortality in Scotland for the 10 year period 1994-2003 and to establish whether smoking during pregnancy contributed to these gradients and, if so, to what extent. | Population based retrospective cohort study | Scotland | Live births and stillbirths 1994 - 2003. | 24-44 weeks of pregnancy | Both | Socio-economic (area) | Deprivation according to Carstairs-Morris Index |
| Rush 1983 [41] | To re-explore the interrelation of smoking, social class, birth weight, and perinatal mortality in the total population of births in Britain born 5-11 April 1970. | Prospective cohort study | Britain | All livebirths and stillbirths 5th - 11th April, 1970 | Undefined | Both | Socio-economic (individual) | Registrar Generals Scale of occupational class |
| Weightman 2012 [42] | To assess the current evidence for the effects of social disadvantage on birth and infant outcomes for children born in the UK | Systematic review and meta-analysis | UK | UK studies | A baby born after the 24th week of pregnancy who does not show any signs of life | Unclear | Socio-economic (individual and area) | Different measures in different studies |

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| Wood 2012 [43] | To compare changes in inequalities in sudden infant death syndrome with other causes of infant mortality and stillbirth in Scotland, 1985-2008. | Retrospective cohort study | Scotland | Singleton births of infants with birth weight >500 g born at 28-43 weeks' gestation | An infant born showing no signs of life after 28 weeks gestation | Both | Socio-economic (area) | Deprivation according to Carstairs Index (car ownership, unemployment, overcrowding, and social class) |
| Bambang 2000 [44] | To study the relationship between cause-specific perinatal deathrates, material deprivation and birthweight among births in 3 consecutive years in the West Midlands Health Region | Retrospective cohort study. | West Midlands Health Region | All live and stillbirths to mothers with addresses in the WMHR in 1991, 1992 and 1993. | Not given | Both | Socio-economic (area) | Townsend Deprivation Index |
| Khalil 2013 [45] | To examine the association between maternal-racial origin and a wide range of adverse pregnancy outcomes after adjustment for confounding factors in obstetric history and maternal characteristics | Retrospective cohort study. | London | Singleton pregnancies with a live fetus at 11 + 0 to 13+6 weeks | Fetal deaths at or after 24 weeks | Both | Ethnicity | Ethnicity - broad categories (Caucasian, Afro-Caribbean, East Asian, South Asian, Mixed) |
| Sutan 2010 [46] | To determine the risk factors of unexplained antepartum stillbirth in Scotland from 1994 to 2003 and assess their value as a screening tool | Retrospective cohort study. | Scotland | All stillborn and live births in Scotland from 1994 to 2003 | Not given | Antepartum only | Socio-economic (area) and place (urban/rural) | Urban/Rural classified according to settlement size and remoteness; Deprivation according to Carstairs Morris Index |
| Murrells 1985 [47] | To examine changes in the data for stillbirth rates between 1949/50 and 1975 | Retrospective cohort study | UK | Comparisons between data from 1949/50 and 1975 | Not given | Both | Socio-economic (individual) | Registrar Generals Scale of occupational class |
| Neasham 2001 [48] | To investigate the variation of stillbirth and neonatal mortality due to congenital anomalies in relation to small-area measures of deprivation in a population-based study in England and Wales, 1986-96 | Retrospective population based study | England and Wales | All births in England and Wales from 1986-1996 | On or after 24 weeks gestation | Both | Socio-economic (area) | Carstairs Index |
| Antonovsky 1977 [49] | To examine the relationship between the components of infant mortality and social class by analysing the data available from infant mortality studies. | Review and commentary using secondary data | Western Europe and the United States | Uses data from infant mortality studies undertaken in Western Europe and the United States | Component of infant mortality - European nations require registration of stillbirths from 28 weeks gestation; most of United States from the 20th week of gestation. | Unclear | Social class (individual) | Inconsistencies in reporting of class across countries discussed and complexity of occupation, and education as measures. |
| Macintyre 1986 [50] | To place debates (by social epidemiologists and medical sociologists among others attending to inequalities and health) in a broader and perhaps more traditional context: that of interest in observed social regularities in health, illness and death. | Review and commentary using secondary data | Britain | No specific population - those where social patterning of health has been observed across the life-course | Unclear | Unclear | Social class (occupational), gender, marital status, age, ethnicity, and area of residence | These six variables are conceptualized as positions on dimensions of social differentiation which may be associated with particular patterns of life chances. |

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| Bloor 1987 [51] | To examine more thoroughly than was possible for Black and his colleagues, the possible role of an artefactual element in mortality data for explanations concerning health inequalities. | Review and commentary using secondary data | UK | No specific population draws on historical, theoretical and routinely collected statistical data reporting inequalities across the life-course | Unclear | Unclear | Socio-economic | Examines social processes whereby statistics are produced. |
| Andrews 1993 [52] | First objective, to draw attention to remarkable patterns of diversity and change revealed by recent official statistics for ethnic minority' infant deaths in England & Wales. Secondly, to suggest that these patterns represent a challenge to many orthodox explanations for inequalities in infant health offered by social scientists, not least materialist explanations. Thirdly, to propose that further development and evaluation of explanations is impeded by flaws in some of the indices and categories employed in the construction of data. | Review and commentary using secondary data | England and Wales | Uses OPCS data on ethnic inequalities in infant deaths | Unclear | Unclear | Ethnicity | Argues ethnicity is as much a matter of the way in which boundaries are created and reproduced between groups as the internal contents of ethnic cultures. |
| Kingdon 2016 [53] | To review the concept of society and discusses stillbirth as a social issue | Stillbirth used as a case study | Includes data from the UK | No specific population (stillbirth used as a case study) | A baby which has issued forth from its mother after the 24th week of pregnancy and which did not breathe or show any other signs of life' [UK definition....others given] | Both | Socio-economic, ethnic and gender | Multi-dimensional across place, time and culture |
| Black 1980 [54] | The first Government authorised attempt to explain trends in inequalities in health and to relate these to the policies intended to promote, as well as restore health. | Government Enquiry utilising official statistics | UK | Studies reporting inequalities based on occupational social class across the life-course | Not defined | Unclear | Socio-economic (individual) | Registrar Generals Scale of occupational class |
| Whitehead 1988 [55] | To update evidence following on from the Black Report (see above). The original aim of the Health Divide was to draw together, to summarise the wide-ranging new evidence, and to describe what had happened and could happen, in policy development. | Government Enquiry utilising official statistics | UK | Studies reporting inequalities based on occupational social class, and unemployment, income, housing, material and social deprivation in small areas, gender and ethnicity. | Undefined | Unclear | Socio-economic | Registrar Generals Scale of occupational class |
| Garcia 2015 [56] | 'What specific BAME maternity interventions exist for UK-based BAME women?' | Review and commentary | HICs including UK | Studies from HICs | Authors use an infant born with no life signs after 24 weeks gestation - however included studies in the review may have used different definitions | Unclear | Ethnicity (BAME - Black, Asian and Minority Ethnic) | "BAME groups" - Asian, Indian, Pakistani, Bangladeshi, Kashmiri, Black African, Black Caribbean, Arabian, Traveller [defined as a gypsy or Irish traveller], |

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| | | | | | | | | Chinese, Mediterranean. |
| Flenady 2011 [57] | To present priority areas for stillbirth prevention, and interventions and research to address these priorities in high-income countries. | Review and commentary | HICs including UK | Studies from HICs | Death of a baby 500 g or more, or 22 weeks' gestation or more | Both | Socio-economic disadvantage | "Socioeconomic disadvantage" includes maternal education, ethnicity |
| Flenady 2016 [58] | To summarise the status of stillbirths in HICs and suggest strategies to accelerate momentum in the reduction of stillbirths and to meet parents' needs when their baby is stillborn. | Review and commentary | HICs including UK | Studies from HICs | Late gestation stillbirth" as >28 weeks and "early gestation stillbirth" as occurring prior to 28 weeks gestation | Both | Socio-economic disadvantage | As above |
| Pickton 1987 [59] | To analyse, describe and explain the distribution of perinatal mortality within an urban area | Case-control with geographical component (statistical and cartographical) | Greater Leicester | All births in Greater Leicester in the study periods | Stillbirth (late fetal death) = death after 28 weeks gestation | Both | Socio-economic (area and individual), ethnicity | Registrar Generals Scale of occupational class, employment housing, education level. Measures of ethnicity very broad (Asian, New Commonwealth). |
| Slogget 1998 [60] | To determine whether inequality in stillbirth risk between social strata has changed over time | Retrospective cohort study. | England and Wales | A random sample of more than 300 000 people enumerated at the 1981 census | Not defined | Unclear | Socio-economic (area and individual) | Deprivation was assessed by a "Townsend/Carstairs-like" index of four components – unemployment, car ownership, home ownership, lower employment status according to Registrar General. |
| Joyce 1999 [61] | To determine whether social class (individual level) or a census-based deprivation score (based on area of residence) is a better predictor of stillbirth rates | Unclear | South Thames (West) | All births 1993-95 | Not defined | Unclear | Socio-economic (individual and area) | Social class using the Registrar General categories; area deprivation by Townsend score |
| Dummer 2000 [62] | To determine whether inequality in stillbirth risk between social strata has changed over time | Population based retrospective study | Cumbria compared with England & Wales data | For Cumbria all birth occurring between 1950-93: For E & W all births occurring between 1981-92 | Two definitions given reflecting the change from 28 wks to 24wks that occurred in 1992 | Both | | |
| Dickinson 2002 [63] | To investigate whether stillbirth risk was higher, and the effect of deprivation on inequality in stillbirth risk more marked, in rural than in urban areas | Retrospective cohort study | Cumbria | Singleton births between 01/01/1950 – 30/09/1992 to mothers in the area now designated as Cumbria | A baby born dead after at least 28 weeks' gestation | Unclear | Socio-economic (individual, area and place) | Social Class - based on fathers occupation Deprivation based on several scores including IMD |

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| Pattenden 2011 [64] | To analyse adverse pregnancy outcomes, concentrating on estimating the extent of geographical variation from large areas (approximately 400 000 persons population) to small areas (wards, approximately 100 times smaller) | Population based retrospective cohort study | Northern Ireland | Birth records from Northern Ireland over the years 1992-2002 | 24 weeks and over | Both | Socio-economic (area) and place | Deprivation according to The Noble Index (households receiving means-tested benefits). Settlement size (rural areas, village, small town, medium town, large town, or city). |
| Rutter 1990 [65] | To review the literature on psychosocial factors in pregnancy outcome and to present a model which attempts to integrate the findings theoretically. | Theoretical | UK | UK | Not defined | Unclear | Socio-economic (individual) | Registrar Generals Scale of occupational class |
| CEMCH 2006 [66] | To report on perinatal mortality statistics | Confidential Enquiry | England, Wales & Northern Ireland | England, Wales and NI Perinatal deaths during 2004 | 24th week of pregnancy | Both | Socio-economic (area), ethnicity | Ethnicity approximated, Indices of Multiple Deprivation (IMD) scores |
| CMACE 2011 [67] | To report on perinatal mortality statistics | Confidential Enquiry | UK | UK Perinatal deaths in 2009 | A baby delivered without signs of life after 23+6 weeks of pregnancy | Both | Socio-economic (area), ethnicity, and place (inferred regional and NHS Trust differences) | Ethnicity - broad categories; IMD data based on quintiles of deprivation; Employment status - simple yes/no |
| Draper 2015 [68] | Perinatal confidential enquiry carried out as part of the MBRRACE-UK programme of work, aim to focus on term, singleton, normally formed, antepartum stillbirths. | Confidential Enquiry | UK | Representative sample of stillbirths from those identified as eligible for review by MBRRACE-UK in April 2014 | Term singleton, normally formed antepartum stillbirth (no precise definition given) | Antepartum | Socio-economic (area and individual), ethnicity | Ethnicity - broad categories; IMD data based on quintiles of deprivation; Employment status - broad categories (employed/unemployed; student; looking after home/family; permanently sick/disabled) |
| Manktelow 2015 [69] | To collect, analyse and report national surveillance data to stimulate and evaluate improvements in health care for mothers and babies. | Confidential Enquiry | UK | All births in the UK in 2013 | Stillbirth: a baby delivered at or after 24+0 weeks gestational age showing no signs of life, irrespective of when the death occurred | Both | Socio-economic (area), ethnicity, and place (inferred regional and NHS Trust differences) | Deprivation -Based on mothers' postcodes at time of delivery, using the Children in Low-Income Families Local Measure; Ethnicity - Broad categories [white, mixed, Asian or British Asian, Black or Black British, other] |
| Manktelow 2016 [70] | To collect, analyse and report national surveillance data to stimulate and evaluate improvements in health care for mothers and babies. | Confidential Enquiry | UK | All births in the UK in 2014 | A baby delivered at or after 24+0 weeks gestational age showing no signs of life, irrespective of when the death occurred [including | Both | Socio-economic (area), ethnicity, and place (inferred regional and NHS Trust differences) | Deprivation -Based on mothers' postcodes at time of delivery, using the Children in Low-Income Families Local Measure; Ethnicity - Broad categories |

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| | | | | | separate definitions for ante & intrapartum stillbirths] | | | [white, mixed, Asian or British Asian, Black or Black British, other] |
| Gardosi 2005 [71] | 1. summarise a recently completed analysis of stillbirth and infant mortality trends from 1998-2003 in the West Midlands; 2. assess the main categories contributing to these deaths; 3. analyse the trends of mortality associated with inequalities and the association with deprivation within different mortality subgroups. | Retrospective case-note audit | West Midlands | Perinatal mortality and infant mortality from the West Midlands over a 5 year period (1998 -2003) | > 24 weeks | Both | Socio-economic (area) | Indices of Multiple Deprivation (IMD) |
| Gardosi 2007 [72] | To explore trends in perinatal mortality rates (including stillbirths) in the West Midlands over the period 1997-2005 | Retrospective case-note audit | West Midlands | All births in the West Midlands Health Region over the period 1997-2005 | 24.0 weeks of pregnancy | Both | Socio-economic (area), ethnicity | IMD (as above), ethnicity as recorded in notes |
| Gardosi 2009 [73] | To explore trends in stillbirths and infant deaths in the West Midlands over the period 1997-2007/8 | Retrospective case-note audit | West Midlands | All births in the West Midlands Health Region over the period 1997-2007/8 | 24.0 weeks of pregnancy | Both | Socio-economic (area) | IMD (as above) |
| Gardosi 2011 [74] | To understand the causes underlying perinatal mortality and develop strategies for prevention | Retrospective case-note audit and survey of community midwives | West Midlands | Perinatal deaths | Perinatal mortality – defined as a stillbirth or a death of a live born baby in its first week of life. | Antepartum | Socio-economic (area), ethnicity | IMD (as above) Ethnicity - More subtle (Africa, African - Caribbean, Indian, Pakistani, Bangladeshi, Eastern European, Middle Eastern). |
| Tang 2008 [75] | To identify appropriate health targets by investigating associations between social deprivation and causes of stillbirth in Liverpool | Retrospective case-note audit | Liverpool | All stillbirths at local NHS Trust | Stillbirths from 24 weeks gestation. | Both | Socio-economic (area) | Indices of Multiple Deprivation (IMD) |
| Man 2016a [76] | What is the role of placental histological examination in determining the cause of intrauterine death? | Descriptive | London | Intrauterine deaths | Stillbirths (≥ 24 weeks) | Both | Ethnicity | Ethnicity – general categories |
| Man 2016b [77] | To present contemporary demographic findings from a large series of > 1000 intrauterine deaths in London which underwent autopsy investigation, and to examine these features in relation to the gestational age at which fetal death occurred, including deaths across both second and third trimesters, which are not captured by traditional registry-based approaches | Descriptive | London | Intrauterine deaths | Stillbirths (≥ 24 weeks) | Both | Ethnicity | Ethnicity – general categories |
| Man 2016c [78] | To examine factors relating to determination of cause of death using a large dataset extracted from an autopsy research database including cases from two specialist centers, in which observer bias was reduced as far as possible by recording objectively findings at autopsy and assigning causes and classifications of death based on predetermined criteria. | Descriptive | London | Intrauterine deaths | Stillbirths (≥ 24 weeks) | Both | Ethnicity | Ethnicity – general categories |
| Garcia 2017 [Unpublished PhD Thesis] | How do health beliefs influence health behaviour and contribute to perinatal mortality in babies born to Pakistani, Bangladeshi and WB women living in Luton? | Mixed Methods | Luton, UK | White, Pakistani and Bangladeshi women in Luton | Delivery of an infant with 'no signs of life' between 24 and 42 weeks of gestation | Both | Intersectional – socioeconomic (individual and area), ethnicity and immigration status | Education level, ethnicity by country of heritage. Immigration status by years in UK. |