SUPPLEMENTARY MATERIAL

Preeclampsia and premature cardiovascular disease in a large UK pregnancy cohort of linked electronic health records: a CALIBER study

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SUPPLEMENTARY METHODS

CPRD and HES

The CPRD is taken from a representative sample of 701 UK National Health Service (NHS) primary care practices. Data are available on British National Formulary (BNF) prescription codes, and records of laboratory tests, diagnoses, anthropometric measurements, demographic characteristics, and medical procedures using the Read coding system.[1] Diagnoses relating to episodes of admitted patient care are recorded in HES using the ninth and tenth iterations of the International Classification of Diseases and Health-Related Problems (ICD9 and ICD10).[2] Elective and emergency procedures are recorded in HES using the Office of Population Censuses and Surveys Classification of Interventions and Procedures (OPCS) Version 4.[3]

The CPRD pregnancy register and HES maternity file

The CPRD pregnancy register was developed from the larger CPRD dataset to capture pregnancy episodes recorded within primary care and relevant data on the timing, duration, and outcome (livebirth, stillbirth, pregnancy loss) of each. The compilation of the register is based on an algorithm that uses a list of more than 4000 pregnancy-related Read codes and entity types, extracted from Clinical, Referral and Test files of all female patients between the ages of 11 and 49 years within CPRD. For cases in which pregnancies ended in a live birth, additional data from the linked baby record are available, such as gestational age at birth.

Using the Pregnancy Register, a complete pregnancy was flagged if the estimated duration of a pregnancy episode in the CPRD pregnancy register was at least 140 days (20 weeks), and the outcome category code was one of: 1=Livebirth; 2=Stillbirth; 3=1&2; 11=Delivery based on a third trimester pregnancy record; or 12=Delivery based on a late pregnancy (e.g. “Baby overdue”) record. Details on the compilation of the Pregnancy Register, including code lists, and algorithms for timing estimations are available from CPRD on request.

Inferred gestational ages were only calculated for a subset of HES records in which the maternity file did not contain delivery information for the pregnancy. In these participants gestational age data were derived from gestation at first antenatal appointment, date at first antenatal appointment, and end of pregnancy estimates, where available. If no gestational age was available or derivable, records were excluded.

Duplicated pregnancy records

There were 30 instances in which two separate CPRD entries matched the same HES pregnancy window. For these records, the combination of time windows across the overlapping records was calculated and the two with the longest overlap were counted as one pregnancy and those with the shortest overlap as separate pregnancies. See figure S1 for clarification of additional handling of manually identified duplicate records.

Baseline variables

Maternal age at delivery was the estimated age at end of pregnancy or delivery for each pregnancy record. Firstly, maternal age was extracted from both HES and CPRD variables. Where maternal age data were available in both datasets for the same pregnancy, the mean of the two records were retained. Maternal age was complete in the CPRD Pregnancy Register. By contrast, HES maternity files only record maternal age when a related delivery record exists, resulting in substantial missingness. Therefore, for missing records, maternal age was calculated using the estimated date at pregnancy end and date of birth from CPRD.

Maternal ethnicity was taken from the HES patient file. Missing records were recoded as a separate 'unknown' category. The original 12 categories recorded in HES were merged into four larger groups of: Asian (Bangladeshi, Indian, Pakistani, Other Asian), Black (Black Caribbean, Black African, Black Other), Other (Chinese, Mixed, Other), Unknown, and White.

2015 practice level Index of Multiple Deprivation (IMD) scores refer to measures of relative social deprivation mapped to postcodes within England, with a participant's General

Practitioner surgery as the reference address[4]. The score is recorded in deciles and combines a number of domains of deprivation such as employment, income, health, and crime. Higher scores indicate a higher level of deprivation.

Pre-pregnancy diabetes was defined by the presence of any diagnostic record of type one or two Diabetes Mellitus within CPRD or HES data (Table S1). Pre-pregnancy hypertension was either an inferred or diagnosed record of hypertension taken from the composite validated CALIBER phenotype[5], that uses a combination of diagnostic codes, continuous blood pressure readings, and prescriptions for blood pressure lowering medications. Systemic lupus erythematous (SLE) was defined by the presence of an ICD10 diagnosis code below the M32 branch prior to first pregnancy. Chronic kidney disease (CKD) was defined according to the presence of a relevant diagnostic code recorded in primary care, prior to the first index pregnancy (Table S1).

Estimates of parity were only available for women who had a pregnancy record in the HES maternity file, where the number of previous live births is recorded. A dichotomous variable for parity (nulliparity/multiparity) was constructed where data were available. BMI data were available from CPRD in continuous form and from HES in categorical groupings. The two were combined into a single categorical variable (Underweight (<18.5); Healthy (18.5-24.9); Overweight (25-29.9); Obese (30-39); Severely obese (>40)). These data were only available for 378,002 (29%) women. 725,959 (55.70%) women had available data on their parity status. Due to these significant proportions of missingness in these two variables, imputation of the remaining variables was deemed unsuitable and it was decided to leave them out of the final models and conduct sensitivity analyses to examine their effects instead in the sub-set with available data. For replication of Bartsch et al. summary data, available continuous BMI data in our study were re-categorised into BMI>25 and BMI>30 groupings.

Maternal smoking status was combined from the CALIBER variables for primary and secondary care smoking status. The smoking record closest to the start of the first pregnancy was used to identify either ‘ever-smoker’ or ‘never smoker’ categories.

Data on multi-fetal pregnancies were taken from HES delivery records with anything over 2 infants coded as 'multi-fetal'. Gestational diabetes (GDM) was defined according to the presence of one of a number of code-lists in either HES or CPRD (Table S1) within 20 weeks either side of the end of a pregnancy, no record was assumed to indicate no GDM.

Infant birthweight information was only available for HES recorded pregnancies. Any recorded birthweights under 100 grams (g) and over 6500 g were considered to be administrative errors and were recoded as NA. Preterm birth was defined as any end of pregnancy record prior to 37 weeks gestation.

SUPPPLEMENTARY TABLES

Table S1 Overview of codes used to define exposure, covariate, and outcome variables and data sources for phenotypes that are not listed as starred phenotypes on the CALIBER data portal. *Details of the codes and algorithms used to create the CALIBER 'starred' phenotypes used in the study (hypertension, ischaemic stroke, intracerebral haemorrhage, subarachnoid haemorrhage, stroke not otherwise specified (NOS), myocardial infarction, atrial fibrillation, heart failure, stable angina, coronary heart disease NOS, peripheral arterial disease) are available in the CALIBER data portal (https://www.caliberresearch.org/portal)*

Variable	CPRD – Read code diagnoses	HES – ICD10 Hospital diagnoses
Preeclampsia	L124.00: Mild or unspecified pre-eclampsia L124.11; Mild pre-eclampsia L124.12: Toxaemia NOS L124000: Mild or unspecified pre-eclampsia unspecified L124100: Mild or unspecified pre-eclampsia - delivered L124200: Mild or unspecified pre-eclampsia - delivered with p/n comp L124300: Mild or unspecified pre-eclampsia - not delivered L124400: Mild or unspecified pre-eclampsia with p/n complication L124500: Mild pre-eclampsia	O14: Pre-eclampsia O14.0: Mild to moderate pre-eclampsia O14.1: Severe pre-eclampsia O14.2: HELLP syndrome O14.9: Pre-eclampsia, unspecified O15: Eclampsia O15.0: Eclampsia in pregnancy O15.1: Eclampsia in labour O15.2: Eclampsia in the puerperium O15.9: Eclampsia, unspecified as to time period

	L124600: Pre-eclampsia, unspecified L124z00: Mild or unspecified pre-eclampsia NOS L125.00: Severe pre-eclampsia L125000: Severe pre-eclampsia unspecified L125100: Severe pre-eclampsia - delivered L125200: Severe pre-eclampsia - delivered with postnatal complication L125300: Severe pre-eclampsia - not delivered L125400: Severe pre-eclampsia with postnatal complication L125z00: Severe pre-eclampsia NOS L126.00: Eclampsia L126000: Eclampsia unspecified L126100: Eclampsia - delivered L126200: Eclampsia - delivered with postnatal complication L126300: Eclampsia - not delivered L126400: Eclampsia with postnatal complication L126500: Eclampsia in pregnancy L126600: Eclampsia in labour L126z00: Eclampsia NOS	

	L127.00: Pre-eclampsia or eclampsia with pre-existing hypertension L127000: Pre-eclampsia or eclampsia with hypertension unspecified L127100: Pre-eclampsia or eclampsia with hypertension - delivered L127200: Pre-eclampsia or eclampsia with hypertension - del+p/n comp L127300: Pre-eclampsia or eclampsia with hypertension - not delivered L127400: Pre-eclampsia or eclampsia with hypertension + p/n comp L127z00: Pre-eclampsia or eclampsia + pre-existing hypertension NOS L129.00: Moderate pre-eclampsia L12A.00: HELLP - Syndrome haemolysis, elev liver enzyme low platelets L12B.00: Proteinuric hypertension of pregnancy Lyu1.00: [X]Oedema,proteinuria+hypertens in pregnancy,childbrth,puerp Q000.11 Fetus affected by maternal toxaemia	

HDP	*All codes listed above AND:* L123.00: Transient hypertension of pregnancy L123000: Transient hypertension of pregnancy unspecified L123100: Transient hypertension of pregnancy - delivered L123200: Transient hypertension of pregnancy - deliv with p/n comp L123300: Transient hypertension of pregnancy - not delivered L123400: Transient hypertension of pregnancy + postnatal complication L123500: Gestational hypertension L123600: Transient hypertension of pregnancy L123z00: Transient hypertension of pregnancy NOS L120.00: Benign essential hypertension in pregnancy/childbirth/puerp L120000: Benign essential hypertension in preg/childb/puerp unspec L120100: Benign essential hypertension in preg/childb/puerp - deliv	*All codes listed above AND:* O13; Gestational (pregnancy induced) hypertension O10: Pre-existing hypertension complicating pregnancy, childbirth and the puerperium O10.0: Pre-existing essential hypertension complicating pregnancy, childbirth and the puerperium O10.9: Unspecified pre-existing hypertension complicating pregnancy, childbirth and the puerperium O11: Pre-eclampsia superimposed on chronic hypertension O16: Unspecified maternal hypertension O10.1: Pre-existing hypertensive heart disease complicating pregnancy, childbirth and the puerperium O10.2: Pre-existing hypertensive renal disease complicating pregnancy, childbirth and the puerperium O10.3: Pre-existing hypertensive heart and renal disease complicating pregnancy, childbirth and the puerperium O10.4: Pre-existing secondary hypertension complicating pregnancy, childbirth and the puerperium

	L120200: Benign ess hypert in preg/childb/puerp - deliv with p/n comp L120300: Benign essential hypertension in preg/childb/puerp-not deliv L120400: Benign essential hypertension in preg/childb/puerp +p/n comp L120z00: Benign essential hypertension in preg/childb/puerp NOS L122.00: Other pre-existing hypertension in preg/childbirth/puerp L122000: Other pre-existing hypertension in preg/childb/puerp unspec L122100: Other pre-existing hypertension in preg/childb/puerp - deliv L122300: Other pre-exist hypertension in preg/childb/puerp-not deliv L122z00: Other pre-existing hypertension in preg/childb/puerp NOS L128.00: Pre-exist hypertension compl preg childbirth and puerperium L128000 Pre-exist hyperten heart dis compl preg childbth+puerperium	

	L128200 Pre-exist 2ndry hypertens comp preg childbth and puerperium L121.00 Renal hypertension in pregnancy/childbirth/puerperium L121000 Renal hypertension in pregnancy/childbirth/puerp unspecified L121100 Renal hypertension in pregnancy/childbirth/puerp - delivered L121200 Renal hypertension in preg/childb/puerp -deliv with p/n comp L121300 Renal hypertension in preg/childbirth/puerp - not delivered L121z00 Renal hypertension in pregnancy/childbirth/puerperium NOS L12..00 Hypertension complicating pregnancy/childbirth/puerperium L12z.00 Unspecified hypertension in pregnancy/childbirth/puerperium L12z000 Unspecified hypertension in preg/childb/puerp unspecified	

	L12z100 Unspecified hypertension in preg/childb/puerp - delivered L12z200 Unspecified hypertension in preg/childb/puerp -del +p/n comp L12z300 Unspecified hypertension in preg/childb/puerp - not deliv L12z400 Unspecified hypertension in preg/childb/puerp with p/n comp L12zz00 Unspecified hypertension in preg/childb/puerp NOS Q000.00 Fetus or neonate affected by maternal hypertensive disease	
Diabetes	6761: Diabetic pre-pregnancy counselling 7276: Pan retinal photocoagulation for diabetes 9360: Patient held diabetic record issued 13AB.00: Diabetic lipid lowering diet 13AC.00: Diabetic weight reducing diet 13B1.00: Diabetic diet 2BBF.00: Retinal abnormality - diabetes related 2BBk.00: O/E - right eye stable treated prolif diabetic retinopathy	E10 Insulin-dependent diabetes mellitus E11 Non-insulin-dependent diabetes mellitus E13 Other specified diabetes mellitus E14 Unspecified diabetes mellitus G590 Diabetic mononeuropathy G632 Diabetic polyneuropathy H280 Diabetic cataract H360 Diabetic retinopathy

	2BBL.00: O/E - diabetic maculopathy present both eyes 2BBl.00: O/E - left eye stable treated prolif diabetic retinopathy 2BBM.00: O/E - diabetic maculopathy absent both eyes 2BBo.00: O/E - sight threatening diabetic retinopathy 2BBP.00: O/E - right eye background diabetic retinopathy 2BBQ.00: O/E - left eye background diabetic retinopathy 2BBR.00: O/E - right eye preproliferative diabetic retinopathy 2BBS.00: O/E - left eye preproliferative diabetic retinopathy 2BBT.00: O/E - right eye proliferative diabetic retinopathy 2BBV.00: O/E - left eye proliferative diabetic retinopathy 2BBW.00: O/E - right eye diabetic maculopathy 2BBX.00: O/E - left eye diabetic maculopathy 2G51000: Foot abnormality - diabetes related 2G5A.00: O/E - Right diabetic foot at risk 2G5B.00: O/E - Left diabetic foot at risk 2G5C.00: Foot abnormality - diabetes related 2G5E.00: O/E - Right diabetic foot at low risk 2G5F.00: O/E - Right diabetic foot at moderate risk 2G5G.00: O/E - Right diabetic foot at high risk 2G5H.00: O/E - Right diabetic foot - ulcerated	M142 Diabetic arthropathy N083 Glomerular disorders in diabetes mellitus O240 Diabetes mellitus in pregnancy: Pre-existing diabetes mellitus, insulin-dependent O241 Diabetes mellitus in pregnancy: Pre-existing diabetes mellitus, non-insulin-dependent O243 Diabetes mellitus in pregnancy: Pre-existing diabetes mellitus, unspecified

	2G5I.00: O/E - Left diabetic foot at low risk 2G5J.00: O/E - Left diabetic foot at moderate risk 2G5K.00: O/E - Left diabetic foot at high risk 2G5L.00: O/E - Left diabetic foot - ulcerated 2G5V.00: O/E - right chronic diabetic foot ulcer 2G5W.00: O/E - left chronic diabetic foot ulcer 66A3.00: Diabetic on diet only 66A4.00: Diabetic on oral treatment 66A5.00: Diabetic on insulin 66A8.00: Has seen dietician - diabetes 66A9.00: Understands diet - diabetes 66Aa.00: Diabetic diet - poor compliance 66AA.11: Injection sites - diabetic 66Ab.00: Diabetic foot examination 66Ac.00: Diabetic peripheral neuropathy screening 66AD.00: Fundoscopy - diabetic check 66AG.00: Diabetic drug side effects 66Ag.00: Insulin needles changed daily 66AH.00: Diabetic treatment changed 66Ah.00: Insulin needles changed for each injection	

	66AI.00: Diabetic - good control 66Ai.00: Diabetic 6 month review 66AJ.00: Diabetic - poor control 66Aj.00: Insulin needles changed less than once a day 66AJ.11: Unstable diabetes 66AJ100: Brittle diabetes 66AJz00: Diabetic - poor control NOS 66AK.00: Diabetic - cooperative patient 66AL.00: Diabetic-uncooperative patient 66Am.00: Insulin dose changed 66An.00: Diabetes type 1 review 66AN.00: Date diabetic treatment start 66Ao.00: Diabetes type 2 review 66AO.00: Date diabetic treatment stopp. 66AP.00: Diabetes: practice programme 66Ap.00: Insulin treatment initiated 66AQ.00: Diabetes: shared care programme 66Aq.00: Diabetic foot screen 66AR.00: Diabetes management plan given 66AS.00: Diabetic annual review	

	66AT.00: Annual diabetic blood test 66AU.00: Diabetes care by hospital only 66AV.00: Diabetic on insulin and oral treatment 66AW.00: Diabetic foot risk assessment 66AX.00: Diabetes: shared care in pregnancy - diabetol and obstet 66AY.00: Diabetic diet - good compliance 68A7.00: Diabetic retinopathy screening 68A9.00: Diabetic retinopathy screening offered 68AB.00: Diabetic digital retinopathy screening offered 7L10000: Continuous subcutaneous infusion of insulin 7L19800: Subcutaneous injection of insulin 889A.00: Diab mellit insulin-glucose infus acute myocardial infarct 8A13.00: Diabetic stabilisation 8B3l.00: Diabetes medication review 8BL2.00: Patient on maximal tolerated therapy for diabetes 8CA4100: Pt advised re diabetic diet 8CAQ.00: Advice about blood glucose control 8CP2.00: Transition of diabetes care options discussed 8H2J.00: Admit diabetic emergency 8H3O.00: Non-urgent diabetic admission	

	8H7r.00: Refer to diabetic foot screener 8HBG.00: Diabetic retinopathy 12 month review 8HBH.00: Diabetic retinopathy 6 month review 8Hl1.00: Referral for diabetic retinopathy screening 8HLE.00: Diabetology D.V. done 8I3k.00: Insulin therapy declined 8I3W.00: Diabetic foot examination declined 8I3X.00: Diabetic retinopathy screening refused 8I57.00: Patient held diabetic record declined 9OLD.00: Diabetic patient unsuitable for digital retinal photography C10..00: Diabetes mellitus C100.00: Diabetes mellitus with no mention of complication C100000: Diabetes mellitus, juvenile type, no mention of complication C100011: Insulin dependent diabetes mellitus C100100: Diabetes mellitus, adult onset, no mention of complication C100111: Maturity onset diabetes C100112: Non-insulin dependent diabetes mellitus	

	C100z00: Diabetes mellitus NOS with no mention of complication C101.00: Diabetes mellitus with ketoacidosis C101000: Diabetes mellitus, juvenile type, with ketoacidosis C101100: Diabetes mellitus, adult onset, with ketoacidosis C101y00: Other specified diabetes mellitus with ketoacidosis C101z00: Diabetes mellitus NOS with ketoacidosis C102.00: Diabetes mellitus with hyperosmolar coma C102000: Diabetes mellitus, juvenile type, with hyperosmolar coma C102100: Diabetes mellitus, adult onset, with hyperosmolar coma C102z00: Diabetes mellitus NOS with hyperosmolar coma C103.00: Diabetes mellitus with ketoacidotic coma C103000: Diabetes mellitus, juvenile type, with ketoacidotic coma C103100: Diabetes mellitus, adult onset, with ketoacidotic coma C103y00: Other specified diabetes mellitus with coma C103z00: Diabetes mellitus NOS with ketoacidotic coma C104.00: Diabetes mellitus with renal manifestation C104.11: Diabetic nephropathy C104000: Diabetes mellitus, juvenile type, with renal manifestation C104100: Diabetes mellitus, adult onset, with renal manifestation	

	C104y00: Other specified diabetes mellitus with renal complications C104z00: Diabetes mellitis with nephropathy NOS C105.00: Diabetes mellitus with ophthalmic manifestation C105000: Diabetes mellitus, juvenile type, + ophthalmic manifestation C105100: Diabetes mellitus, adult onset, + ophthalmic manifestation C105y00: Other specified diabetes mellitus with ophthalmic complicatn C105z00: Diabetes mellitus NOS with ophthalmic manifestation C106.00: Diabetes mellitus with neurological manifestation C106.11: Diabetic amyotrophy C106.12: Diabetes mellitus with neuropathy C106.13: Diabetes mellitus with polyneuropathy C106000: Diabetes mellitus, juvenile, + neurological manifestation C106100: Diabetes mellitus, adult onset, + neurological manifestation C106y00: Other specified diabetes mellitus with neurological comps	

	C106z00: Diabetes mellitus NOS with neurological manifestation C107.00: Diabetes mellitus with peripheral circulatory disorder C107.11: Diabetes mellitus with gangrene C107.12: Diabetes with gangrene C107000: Diabetes mellitus, juvenile +peripheral circulatory disorder C107100: Diabetes mellitus, adult, + peripheral circulatory disorder C107200: Diabetes mellitus, adult with gangrene C107300: IDDM with peripheral circulatory disorder C107400: NIDDM with peripheral circulatory disorder C107z00: Diabetes mellitus NOS with peripheral circulatory disorder C108.00: Insulin dependent diabetes mellitus C108.11: IDDM-Insulin dependent diabetes mellitus C108.12: Type 1 diabetes mellitus C108.13: Type I diabetes mellitus C108000: Insulin-dependent diabetes mellitus with renal complications C108011: Type I diabetes mellitus with renal complications C108012: Type 1 diabetes mellitus with renal complications	

	C108100: Insulin-dependent diabetes mellitus with ophthalmic comps C108200: Insulin-dependent diabetes mellitus with neurological comps C108211: Type I diabetes mellitus with neurological complications C108212: Type 1 diabetes mellitus with neurological complications C108300: Insulin dependent diabetes mellitus with multiple complicatn C108400: Unstable insulin dependant diabetes mellitus C108411: Unstable type I diabetes mellitus C108412: Unstable type 1 diabetes mellitus C108500: Insulin dependent diabetes mellitus with ulcer C108511: Type I diabetes mellitus with ulcer C108512: Type 1 diabetes mellitus with ulcer C108600: Insulin dependent diabetes mellitus with gangrene C108700: Insulin dependent diabetes mellitus with retinopathy C108711: Type I diabetes mellitus with retinopathy C108712: Type 1 diabetes mellitus with retinopathy C108800: Insulin dependant diabetes mellitus - poor control C108811: Type I diabetes mellitus - poor control	

	C108812: Type 1 diabetes mellitus - poor control C108900: Insulin dependant diabetes maturity onset C108911: Type I diabetes mellitus maturity onset C108912: Type 1 diabetes mellitus maturity onset C108A00: Insulin-dependent diabetes without complication C108A11: Type I diabetes mellitus without complication C108B00: Insulin dependent diabetes mellitus with mononeuropathy C108C00: Insulin dependent diabetes mellitus with polyneuropathy C108D00: Insulin dependent diabetes mellitus with nephropathy C108D11: Type I diabetes mellitus with nephropathy C108E00: Insulin dependent diabetes mellitus with hypoglycaemic coma C108E11: Type I diabetes mellitus with hypoglycaemic coma C108E12: Type 1 diabetes mellitus with hypoglycaemic coma C108F00: Insulin dependent diabetes mellitus with diabetic cataract C108F11: Type I diabetes mellitus with diabetic cataract C108G00: Insulin dependent diab mell with peripheral angiopathy C108H00: Insulin dependent diabetes mellitus with arthropathy	

	C108H11: Type I diabetes mellitus with arthropathy C108J00: Insulin dependent diab mell with neuropathic arthropathy C108J11: Type I diabetes mellitus with neuropathic arthropathy C108J12: Type 1 diabetes mellitus with neuropathic arthropathy C108y00: Other specified diabetes mellitus with multiple comps C108z00: Unspecified diabetes mellitus with multiple complications C109.00: Non-insulin dependent diabetes mellitus C109.11: NIDDM - Non-insulin dependent diabetes mellitus C109.12: Type 2 diabetes mellitus C109.13: Type II diabetes mellitus C109000: Non-insulin-dependent diabetes mellitus with renal comps C109011: Type II diabetes mellitus with renal complications C109012: Type 2 diabetes mellitus with renal complications C109100: Non-insulin-dependent diabetes mellitus with ophthalm comps C109111: Type II diabetes mellitus with ophthalmic complications C109112: Type 2 diabetes mellitus with ophthalmic complications	

	C109200: Non-insulin-dependent diabetes mellitus with neuro comps C109211: Type II diabetes mellitus with neurological complications C109212: Type 2 diabetes mellitus with neurological complications C109300: Non-insulin-dependent diabetes mellitus with multiple comps C109400: Non-insulin dependent diabetes mellitus with ulcer C109411: Type II diabetes mellitus with ulcer C109412: Type 2 diabetes mellitus with ulcer C109500: Non-insulin dependent diabetes mellitus with gangrene C109511: Type II diabetes mellitus with gangrene C109512: Type 2 diabetes mellitus with gangrene C109600: Non-insulin-dependent diabetes mellitus with retinopathy C109611: Type II diabetes mellitus with retinopathy C109612: Type 2 diabetes mellitus with retinopathy C109700: Non-insulin dependant diabetes mellitus - poor control C109711: Type II diabetes mellitus - poor control C109712: Type 2 diabetes mellitus - poor control	

	C109900: Non-insulin-dependent diabetes mellitus without complication C109A00: Non-insulin dependent diabetes mellitus with mononeuropathy C109A11: Type II diabetes mellitus with mononeuropathy C109B00: Non-insulin dependent diabetes mellitus with polyneuropathy C109B11: Type II diabetes mellitus with polyneuropathy C109C00: Non-insulin dependent diabetes mellitus with nephropathy C109C11: Type II diabetes mellitus with nephropathy C109C12: Type 2 diabetes mellitus with nephropathy C109D00: Non-insulin dependent diabetes mellitus with hypoglyca coma C109D11: Type II diabetes mellitus with hypoglycaemic coma C109D12: Type 2 diabetes mellitus with hypoglycaemic coma C109E00: Non-insulin depend diabetes mellitus with diabetic cataract C109E11: Type II diabetes mellitus with diabetic cataract C109E12: Type 2 diabetes mellitus with diabetic cataract	

	C109F00: Non-insulin-dependent d m with peripheral angiopath C109F11: Type II diabetes mellitus with peripheral angiopathy C109F12: Type 2 diabetes mellitus with peripheral angiopathy C109G00: Non-insulin dependent diabetes mellitus with arthropathy C109G11: Type II diabetes mellitus with arthropathy C109G12: Type 2 diabetes mellitus with arthropathy C109H00: Non-insulin dependent d m with neuropathic arthropathy C109H11: Type II diabetes mellitus with neuropathic arthropathy C109H12: Type 2 diabetes mellitus with neuropathic arthropathy C109J00: Insulin treated Type 2 diabetes mellitus C109J11: Insulin treated non-insulin dependent diabetes mellitus C109J12: Insulin treated Type II diabetes mellitus C109K00: Hyperosmolar non-ketotic state in type 2 diabetes mellitus C10A.00: Malnutrition-related diabetes mellitus C10A000: Malnutrition-related diabetes mellitus with coma C10A100: Malnutrition-related diabetes mellitus with ketoacidosis C10B.00: Diabetes mellitus induced by steroids	

	C10B000: Steroid induced diabetes mellitus without complication C10C.00: Diabetes mellitus autosomal dominant C10C.11: Maturity onset diabetes in youth C10C.12: Maturity onset diabetes in youth type 1 C10D.00: Diabetes mellitus autosomal dominant type 2 C10D.11: Maturity onset diabetes in youth type 2 C10E.00: Type 1 diabetes mellitus C10E.11: Type I diabetes mellitus C10E.12: Insulin dependent diabetes mellitus C10E000: Type 1 diabetes mellitus with renal complications C10E100: Type 1 diabetes mellitus with ophthalmic complications C10E112: Insulin-dependent diabetes mellitus with ophthalmic comps C10E200: Type 1 diabetes mellitus with neurological complications C10E300: Type 1 diabetes mellitus with multiple complications C10E311: Type I diabetes mellitus with multiple complications C10E312: Insulin dependent diabetes mellitus with multiple complicat C10E400: Unstable type 1 diabetes mellitus C10E411: Unstable type I diabetes mellitus	

	C10E412: Unstable insulin dependent diabetes mellitus C10E500: Type 1 diabetes mellitus with ulcer C10E511: Type I diabetes mellitus with ulcer C10E512: Insulin dependent diabetes mellitus with ulcer C10E600: Type 1 diabetes mellitus with gangrene C10E700: Type 1 diabetes mellitus with retinopathy C10E711: Type I diabetes mellitus with retinopathy C10E712: Insulin dependent diabetes mellitus with retinopathy C10E800: Type 1 diabetes mellitus - poor control C10E812: Insulin dependent diabetes mellitus - poor control C10E900: Type 1 diabetes mellitus maturity onset C10E911: Type I diabetes mellitus maturity onset C10E912: Insulin dependent diabetes maturity onset C10EA00: Type 1 diabetes mellitus without complication C10EA11: Type I diabetes mellitus without complication C10EB00: Type 1 diabetes mellitus with mononeuropathy C10EC00: Type 1 diabetes mellitus with polyneuropathy C10EC11: Type I diabetes mellitus with polyneuropathy C10ED00: Type 1 diabetes mellitus with nephropathy C10EE00: Type 1 diabetes mellitus with hypoglycaemic coma	

	C10EF00: Type 1 diabetes mellitus with diabetic cataract C10EG00: Type 1 diabetes mellitus with peripheral angiopathy C10EH00: Type 1 diabetes mellitus with arthropathy C10EJ00: Type 1 diabetes mellitus with neuropathic arthropathy C10EK00: Type 1 diabetes mellitus with persistent proteinuria C10EL00: Type 1 diabetes mellitus with persistent microalbuminuria C10EM00: Type 1 diabetes mellitus with ketoacidosis C10EM11: Type I diabetes mellitus with ketoacidosis C10EN00: Type 1 diabetes mellitus with ketoacidotic coma C10EN11: Type I diabetes mellitus with ketoacidotic coma C10EP00: Type 1 diabetes mellitus with exudative maculopathy C10EP11: Type I diabetes mellitus with exudative maculopathy C10EQ00: Type 1 diabetes mellitus with gastroparesis C10ER00: Latent autoimmune diabetes mellitus in adult C10F.00: Type 2 diabetes mellitus C10F.11: Type II diabetes mellitus C10F000: Type 2 diabetes mellitus with renal complications C10F011: Type II diabetes mellitus with renal complications C10F100: Type 2 diabetes mellitus with ophthalmic complications	

	C10F200: Type 2 diabetes mellitus with neurological complications C10F211: Type II diabetes mellitus with neurological complications C10F300: Type 2 diabetes mellitus with multiple complications C10F311: Type II diabetes mellitus with multiple complications C10F400: Type 2 diabetes mellitus with ulcer C10F411: Type II diabetes mellitus with ulcer C10F500: Type 2 diabetes mellitus with gangrene C10F600: Type 2 diabetes mellitus with retinopathy C10F611: Type II diabetes mellitus with retinopathy C10F700: Type 2 diabetes mellitus - poor control C10F711: Type II diabetes mellitus - poor control C10F900: Type 2 diabetes mellitus without complication C10F911: Type II diabetes mellitus without complication C10FA00: Type 2 diabetes mellitus with mononeuropathy C10FA11: Type II diabetes mellitus with mononeuropathy C10FB00: Type 2 diabetes mellitus with polyneuropathy C10FB11: Type II diabetes mellitus with polyneuropathy C10FC00: Type 2 diabetes mellitus with nephropathy C10FD00: Type 2 diabetes mellitus with hypoglycaemic coma C10FD11: Type II diabetes mellitus with hypoglycaemic coma	

	C10FE00: Type 2 diabetes mellitus with diabetic cataract C10FE11: Type II diabetes mellitus with diabetic cataract C10FF00: Type 2 diabetes mellitus with peripheral angiopathy C10FG00: Type 2 diabetes mellitus with arthropathy C10FH00: Type 2 diabetes mellitus with neuropathic arthropathy C10FJ00: Insulin treated Type 2 diabetes mellitus C10FJ11: Insulin treated Type II diabetes mellitus C10FK00: Hyperosmolar non-ketotic state in type 2 diabetes mellitus C10FL00: Type 2 diabetes mellitus with persistent proteinuria C10FL11: Type II diabetes mellitus with persistent proteinuria C10FM00: Type 2 diabetes mellitus with persistent microalbuminuria C10FM11: Type II diabetes mellitus with persistent microalbuminuria C10FN00: Type 2 diabetes mellitus with ketoacidosis C10FP00: Type 2 diabetes mellitus with ketoacidotic coma C10FQ00: Type 2 diabetes mellitus with exudative maculopathy C10FR00: Type 2 diabetes mellitus with gastroparesis C10M.00: Lipoatrophic diabetes mellitus	

	C10y.00: Diabetes mellitus with other specified manifestation C10y100: Diabetes mellitus, adult, + other specified manifestation C10yy00: Other specified diabetes mellitus with other spec comps C10yz00: Diabetes mellitus NOS with other specified manifestation C10z.00: Diabetes mellitus with unspecified complication C10z000: Diabetes mellitus, juvenile type, + unspecified complication C10z100: Diabetes mellitus, adult onset, + unspecified complication C10zy00: Other specified diabetes mellitus with unspecified comps C10zz00: Diabetes mellitus NOS with unspecified complication C314.11: Renal diabetes C350011: Bronzed diabetes Cyu2.00: [X]Diabetes mellitus Cyu2000: [X]Other specified diabetes mellitus F171100: Autonomic neuropathy due to diabetes F345000: Diabetic mononeuritis multiplex F35z000: Diabetic mononeuritis NOS F372.00: Polyneuropathy in diabetes F372.11: Diabetic polyneuropathy	

	F372.12: Diabetic neuropathy F372000: Acute painful diabetic neuropathy F372100: Chronic painful diabetic neuropathy F372200: Asymptomatic diabetic neuropathy F381300: Myasthenic syndrome due to diabetic amyotrophy F381311: Diabetic amyotrophy F3y0.00: Diabetic mononeuropathy F420.00: Diabetic retinopathy F420000: Background diabetic retinopathy F420100: Proliferative diabetic retinopathy F420200: Preproliferative diabetic retinopathy F420300: Advanced diabetic maculopathy F420400: Diabetic maculopathy F420500: Advanced diabetic retinal disease F420600: Non proliferative diabetic retinopathy F420700: High risk proliferative diabetic retinopathy F420800: High risk non proliferative diabetic retinopathy F420z00: Diabetic retinopathy NOS F440700: Diabetic iritis F464000: Diabetic cataract	

	G73y000: Diabetic peripheral angiopathy K01x100: Nephrotic syndrome in diabetes mellitus K01x111: Kimmelstiel - Wilson disease L180500: Pre-existing diabetes mellitus, insulin-dependent L180600: Pre-existing diabetes mellitus, non-insulin-dependent L180X00: Pre-existing diabetes mellitus, unspecified M037200: Cellulitis in diabetic foot M21yC00: Insulin lipohypertrophy M21yC11: Insulin site lipohypertrophy M271000: Ischaemic ulcer diabetic foot M271100: Neuropathic diabetic ulcer - foot M271200: Mixed diabetic ulcer - foot N030000: Diabetic cheiroarthropathy N030011: Diabetic cheiropathy N030100: Diabetic Charcot arthropathy Q441.00: Neonatal diabetes mellitus R054200: [D]Gangrene of toe in diabetic R054300: [D]Widespread diabetic foot gangrene TJ23.00: Adverse reaction to insulins and antidiabetic agents TJ23z00: Adverse reaction to insulins and antidiabetic agents NOS	

	U602311: [X] Adverse reaction to insulins and antidiabetic agents ZC2C800: Dietary advice for diabetes mellitus ZC2C900: Dietary advice for type I diabetes ZC2CA00: Dietary advice for type II diabetes ZRbH.00: Perceived control of insulin-dependent diabetes ZV65312: [V]Dietary counselling in diabetes mellitus	
Gestational diabetes	O244 Diabetes mellitus arising in pregnancy O249 Diabetes mellitus in pregnancy, unspecified	Pre-existing type 1 diabetes mellitus O24.0 Pre-existing type 2 diabetes mellitus O24.1 Pre-existing diabetes mellitus, unspecified O24.3 Pre-existing malnutrition-related diabetes mellitus O24.2 Diabetes mellitus in pregnancy O24 Diabetes mellitus arising in pregnancy O24.4 Diabetes mellitus in pregnancy, unspecified O24.9
Chronic kidney disease	1Z10.00: Chronic kidney disease stage 1 1Z17.00: Chronic kidney disease stage 1 with proteinuria 1Z17.11: CKD stage 1 with proteinuria 1Z18.00: Chronic kidney disease stage 1 without proteinuria 1Z11.00: Chronic kidney disease stage 2 1Z19.00: Chronic kidney disease stage 2 with proteinuria	

	1Z19.11: CKD stage 2 with proteinuria 1Z1A.00: Chronic kidney disease stage 2 without proteinuria 1Z1A.11: CKD stage 2 without proteinuria 1Z12.00: Chronic kidney disease stage 3 1Z15.00: Chronic kidney disease stage 3A 1Z16.00: Chronic kidney disease stage 3B 1Z1B.00: Chronic kidney disease stage 3 with proteinuria 1Z1B.11: CKD stage 3 with proteinuria 1Z1C.00: Chronic kidney disease stage 3 without proteinuria 1Z1C.11: CKD stage 3 without proteinuria 1Z1D.00: Chronic kidney disease stage 3A with proteinuria 1Z1D.11: CKD stage 3A with proteinuria 1Z1E.00: Chronic kidney disease stage 3A without proteinuria 1Z1E.11: CKD stage 3A without proteinuria 1Z1F.00: Chronic kidney disease stage 3B with proteinuria 1Z1F.11: CKD stage 3B with proteinuria 1Z1G.00: Chronic kidney disease stage 3B without proteinuria 1Z13.00: Chronic kidney disease stage 4 1Z1H.00: Chronic kidney disease stage 4 with proteinuria 1Z1J.00: Chronic kidney disease stage 4 without proteinuria	

	1Z1J.11: CKD stage 4 without proteinuria 1Z14.00: Chronic kidney disease stage 5 1Z1K.00: Chronic kidney disease stage 5 with proteinuria 1Z1L.00: Chronic kidney disease stage 5 without proteinuria 1Z1L.11: CKD stage 5 without proteinuria	

Table S2: Comparison between study attributes of Bartsch et al[6] and current study

	Bartsch et al	Current study
Study inclusion	-Study period: 2000 to 2015 -Cohort study design with minimum samples size of 1000 pregnancies -Numbers of patients with/without the risk factor and with /without preeclampsia were provided to enable pooled effect size calculation -Evaluated each risk factor up to 16 weeks gestation or earlier -Studies investigating association between preeclampsia and at least one risk factor in a previous pregnancy (history of preeclampsia, placental abruption, intrauterine growth restriction, stillbirth) or in the current pregnancy (nulliparity, advanced maternal age, high body mass index, chronic	-Study period: 1996-2016 -Electronic health records study with all women in CPRD eligible for linkage with HES and with record of 'completed' pregnancy either in primary or secondary care within cohort inclusion dates and between ages of 11-49 at pregnancy. -Evaluated each risk factor from five years prior to pregnancy and up to 16 weeks gestation

	hypertension, prepregnancy diabetes, CKD, SLE, ALS, ART, multi-fetal pregnancy) -92 studies included in the meta-analysis	
Exposure (definition, comparison)	[(MeSH terms “pre-eclampsia, eclampsia, HELLP syndrome, toxemia”) OR (keywords “preeclampsia, pre-eclampsia, eclampsia, HELLP syndrome, toxemia”)	PE as defined by code list (see methods) and presence of a record within 20 weeks either side of estimate of pregnancy end.
Confounding	No adjustment	No adjustment
Model	Unadjusted relative risk for each risk factor from the raw numbers and then a pooled relative risk and 95% CI for each risk factor and I^2 heterogeneity calculated	Unadjusted relative risk for each risk factor from the raw numbers with 95% CI

Table S3 – with adjustment for potential mediating effects of post-pregnancy hypertension with robust standard errors

Composite outcome	Preeclampsia HR (95% CI)	P	% difference with model 1	HDP HR (95% CI)	P	% difference with model 1	Preterm preeclampsia HR (95% CI)	P	% difference with model 1
All stroke	1.68 (1.30-2.18)	9.55e-5	24.44	1.65 (1.40-1.94)	1.26e-9	21.69	2.79 (1.48-5.25)	0.0015	15.96
Cardiac atherosclerotic	1.45 (1.32-1.59)	1.17e-14	32.84	1.53 (1.45-1.62)	<2e-16	25.35	1.78 (1.34-2.36)	6.24e-05	17.89
All peripheral disease	1.60 (1.12-2.29)	0.0097	26.83	1.35 (1.07-1.72)	0.012	36.36	1.44 (0.46-4.48)	0.53	64.8
Other cardiovascular	1.43 (1.15-1.76)	0.00098	48.81	1.22 (1.06-1.40)	0.0047	58.49	1.60 (0.88-2.92)	0.12	52.38
All CVD	1.45 (1.34-1.57)	<2e-16	34.78	1.49 (1.41-1.56)	<2e-16	27.94	1.87 (1.47-2.37)	2.51e-07	22.32

Table S4 – Sensitivity analysis of BMI 5 years with preeclampsia exposure with robust standard errors

Composite outcome	HR (95% CI)	P	% difference with model 1	N events	N events full cohort
All stroke	1.58 (1.11-2.25)	0.01	15.94	553	1698
Cardiac atherosclerotic	1.23 (1.10-1.39)	0.00056	66.67	5832	14309
All peripheral disease	1.66 (1.04-2.63)	0.033	20.73	288	852
Other cardiovascular	1.41 (1.06-1.87)	0.018	51.19	877	2620
All CVD	1.24 (1.11-1.38)	9.67e-05	66.67	7217	18624

Table S5: Forest plot of adjusted hazard ratios (HRs) with 95% confidence intervals (CIs) for 12 cardiovascular outcomes and relevant composites, given exposure to Preeclampsia with preterm birth. All HRs were computed using a cox proportional hazards model with time-dependent exposure and adjusted for effects of maternal ethnicity, maternal age, pre-pregnancy diabetes, pre-pregnancy hypertension and index of multiple deprivation with robust SE using clustering for patient ID.

Outcome	Unadjusted		Adjusted	
	Preeclampsia HR (95% CI)	Preeclampsia P	Preeclampsia HR (95% CI)	Preeclampsia P
Ischaemic stroke	**2.71 (2.03-3.62)**	**1.38E-11**	**2 (1.48-2.7)**	**6.13E-06**
Intracerebral haemorrhage	1.7 (0.975-2.96)	0.0615	1.52 (0.861-2.68)	0.148
Subarachnoid haemorrhage	**2.21 (1.52-3.21)**	**3.22E-05**	**1.85 (1.26-2.72)**	**0.00175**
Stroke NOS	**3.83 (2.58-5.68)**	**2.42E-11**	**2.89 (1.92-4.34)**	**3.24E-07**
All stroke	**2.4 (1.94-2.95)**	**2.22E-16**	**1.9 (1.53-2.35)**	**5.32E-09**
Myocardial infarction	**3.71 (2.85-4.82)**	**<2.2E-16**	**2.53 (1.91-3.36)**	**9.35E-11**
Stable angina	**2.04 (1.88-2.22)**	**<2.2E-16**	**1.64 (1.51-1.78)**	**<2.2E-16**
Unstable angina	**2.99 (2.13-4.2)**	**2.18E-10**	**2.14 (1.49-3.08)**	**3.49E-05**
Coronary heart disease NOS	**3.04 (2.52-3.66)**	**<2.2E-16**	**2.29 (1.89-2.79)**	**1.11E-16**

Cardiac atherosclerotic	**2.08 (1.92-2.25)**	**<2.2E-16**	**1.67 (1.54-1.81)**	**<2.2E-16**
Peripheral arterial disease	**2.44 (1.8-3.31)**	**8.79E-09**	**1.88 (1.37-2.56)**	**7.63E-05**
Abdominal aortic aneurysm	1.7 (0.537-5.41)	0.365	0.628 (0.179-2.21)	0.468
All peripheral disease	**2.37 (1.76-3.18)**	**1.36E-08**	**1.82 (1.34-2.46)**	**0.000119**
Heart failure	**2.87 (2.24-3.67)**	**1.11E-16**	**2.13 (1.64-2.76)**	**1.35E-08**
Atrial fibrillation	**2.19 (1.76-2.72)**	**1.36E-12**	**1.73 (1.38-2.16)**	**1.81E-06**
Other cardiovascular	**2.31 (1.95-2.75)**	**<2.2E-16**	**1.84 (1.54-2.19)**	**2.11E-11**
CVD death	**2.7 (1.93-3.76)**	**5.14E-09**	**2.12 (1.49-2.99)**	**2.36E-05**
All CVD	**2.07 (1.94-2.22)**	**<2.2E-16**	**1.69 (1.57-1.81)**	**<2.2E-16**
Hypertension	4.87 (4.72-5.03)	<2.2E-16	**4.47 (4.32-4.62)**	**<2.2E-16**

Bold = P<0.05

Table S6: Forest plot of adjusted hazard ratios (HRs) with 95% confidence intervals (CIs) for 12 cardiovascular outcomes and relevant composites, given exposure to Hypertensive disorders of pregnancy. All HRs were computed using a cox proportional hazards model with time-dependent exposure and adjusted for effects of maternal ethnicity, maternal age, pre-pregnancy diabetes, pre-pregnancy hypertension and index of multiple deprivation with robust SE using clustering for patient ID.

Outcome	Unadjusted		Adjusted	
	HDP HR (95% CI)	HDP P	HDP HR (95% CI)	HDP P
Ischaemic stroke	**2.25 (1.85-2.73)**	**1.11E-16**	**1.72 (1.39-2.12)**	**4.16E-07**
Intracerebral haemorrhage	**1.85 (1.34-2.55)**	**0.000162**	**1.71 (1.24-2.36)**	**0.00102**
Subarachnoid haemorrhage	**2.33 (1.86-2.92)**	**1.38E-13**	**1.99 (1.57-2.52)**	**1.39E-08**
Stroke NOS	**2.58 (1.93-3.45)**	**1.65E-10**	**1.99 (1.46-2.71)**	**1.36E-05**
All stroke	**2.25 (1.97-2.57)**	**<2.2E-16**	**1.83 (1.59-2.1)**	**<2.2E-16**
Myocardial infarction	**3.4 (2.85-4.06)**	**<2.2E-16**	**2.48 (2.04-3.01)**	**<2.2E-16**
Stable angina	**2.05 (1.95-2.16)**	**<2.2E-16**	**1.66 (1.58-1.75)**	**<2.2E-16**
Unstable angina	**2.85 (2.29-3.54)**	**<2.2E-16**	**2.14 (1.67-2.74)**	**1.47E-09**
Coronary heart disease NOS	**3 (2.66-3.38)**	**<2.2E-16**	**2.37 (2.08-2.69)**	**<2.2E-16**
Cardiac atherosclerotic	**2.1 (2-2.2)**	**<2.2E-16**	**1.71 (1.62-1.79)**	**<2.2E-16**
Peripheral arterial disease	**1.93 (1.58-2.37)**	**2.49E-10**	**1.56 (1.26-1.93)**	**4.12E-05**

Abdominal aortic aneurysm	1.88 (0.968-3.66)	0.0621	0.721 (0.312-1.67)	0.444
All peripheral disease	**1.93 (1.58-2.35)**	**6.19E-11**	**1.55 (1.26-1.9)**	**2.97E-05**
Heart failure	**2.01 (1.69-2.39)**	**6.88E-15**	**1.54 (1.28-1.86)**	**6.18E-06**
Atrial fibrillation	**1.9 (1.65-2.18)**	**<2.2E-16**	**1.5 (1.29-1.75)**	**1.37E-07**
Other cardiovascular	**1.9 (1.7-2.13)**	**<2.2E-16**	**1.53 (1.36-1.73)**	**5.40E-12**
CVD death	**2.58 (2.09-3.19)**	**<2.2E-16**	**2.15 (1.72-2.68)**	**2.11E-11**
All CVD	**2.04 (1.96-2.13)**	**<2.2E-16**	**1.68 (1.61-1.76)**	**<2.2E-16**
Hypertension	4.42 (4.33-4.52)	<2.2E-16	**4.15 (4.06-4.24)**	**<2.2E-16**

Bold P<0.05

Table S7: Forest plot of adjusted hazard ratios (HRs) with 95% confidence intervals (CIs) for 12 cardiovascular outcomes and relevant composites, given exposure to Preeclampsia with preterm birth. All HRs were computed using a cox proportional hazards model with time-dependent exposure and adjusted for effects of maternal ethnicity, maternal age, pre-pregnancy diabetes, pre-pregnancy hypertension and index of multiple deprivation with robust SE using clustering for patient ID.

Outcome	Unadjusted		Adjusted	
	Preterm preeclampsia HR (95% CI)	Preterm preeclampsia P	Preterm preeclampsia HR (95% CI)	Preterm preeclampsia P
Ischaemic stroke	**6.32 (3.28-12.2)**	**3.83E-08**	**3.42 (1.73-6.74)**	**0.000396**
Intracerebral haemorrhage	**4.69 (1.51-14.6)**	**0.0077**	3.11 (0.948-10.2)	0.0612
Subarachnoid haemorrhage	**3.89 (1.46-10.4)**	**0.00677**	2.59 (0.947-7.1)	0.0639
Stroke NOS	**8.58 (3.55-20.8)**	**1.88E-06**	**4.49 (1.84-11)**	**0.000983**
All stroke	**5.17 (3.16-8.46)**	**6.16E-11**	**3.13 (1.88-5.19)**	**1.07E-05**

Myocardial infarction	**5.93 (2.82-12.5)**	**2.80E-06**	**2.53 (1.15-5.57)**	**0.0206**
Stable angina	**2.28 (1.76-2.96)**	**4.85E-10**	**1.77 (1.36-2.31)**	**2.21E-05**
Unstable angina	**6.54 (2.92-14.6)**	**4.85E-06**	**2.69 (1.16-6.21)**	**0.0209**
Coronary heart disease NOS	**7.15 (4.6-11.1)**	**<2.2E-16**	**3.49 (2.2-5.54)**	**1.08E-07**
Cardiac atherosclerotic	**2.54 (2.01-3.23)**	**1.57E-14**	**1.95 (1.53-2.48)**	**6.41E-08**
Peripheral arterial disease	**3.45 (1.43-8.31)**	**0.00582**	2 (0.823-4.85)	0.126
Abdominal aortic aneurysm	6.8 (0.946-49)	0.0569	1.32 (0.159-11)	0.796
All peripheral disease	**3.83 (1.72-8.56)**	**0.00104**	**2.25 (1-5.08)**	**0.0496**
Heart failure	**4.11 (2.05-8.23)**	**6.96E-05**	2 (0.97-4.12)	0.0603
Atrial fibrillation	**3.14 (1.69-5.85)**	**0.00031**	**1.98 (1.06-3.72)**	**0.033**

Other cardiovascular	**3.7 (2.33-5.88)**	**3.25E-08**	**2.26 (1.41-3.63)**	**0.000719**
CVD death	**5.86 (2.62-13.1)**	**1.65E-05**	**3.19 (1.39-7.36)**	**0.00636**
All CVD	**2.79 (2.28-3.41)**	**<2.2E-16**	**2.12 (1.73-2.6)**	**3.31E-13**
Hypertension	6.14 (5.59-6.75	<2.2E-16	**5.65 (5.1-6.26)**	**<2.2E-16**

Bold P <0.05

Table S8; Comparison of HR with impact of non-CVD mortality as a competing risk on CVD events.

	Original HR (95% CI)	HR adjusted for competing risk of non-cvd mortality (95% CI)
Stroke all	1.9 (1.53-2.35)	1.89 (1.53-2.35)
Cardio atherosclerotic	1.67 (1.54-1.81)	1.67 (1.54-1.81)
Other cardio	1.84 (1.54-2.19)	1.83 (1.53-2.19)
Peripheral all	1.82 (1.34-2.46)	1.81 (1.34-2.45)
All CVD	1.69 (1.57-1.81)	1.89 (1.53-2.35)

SUPPLEMENTAL FIGURE LEGENDS

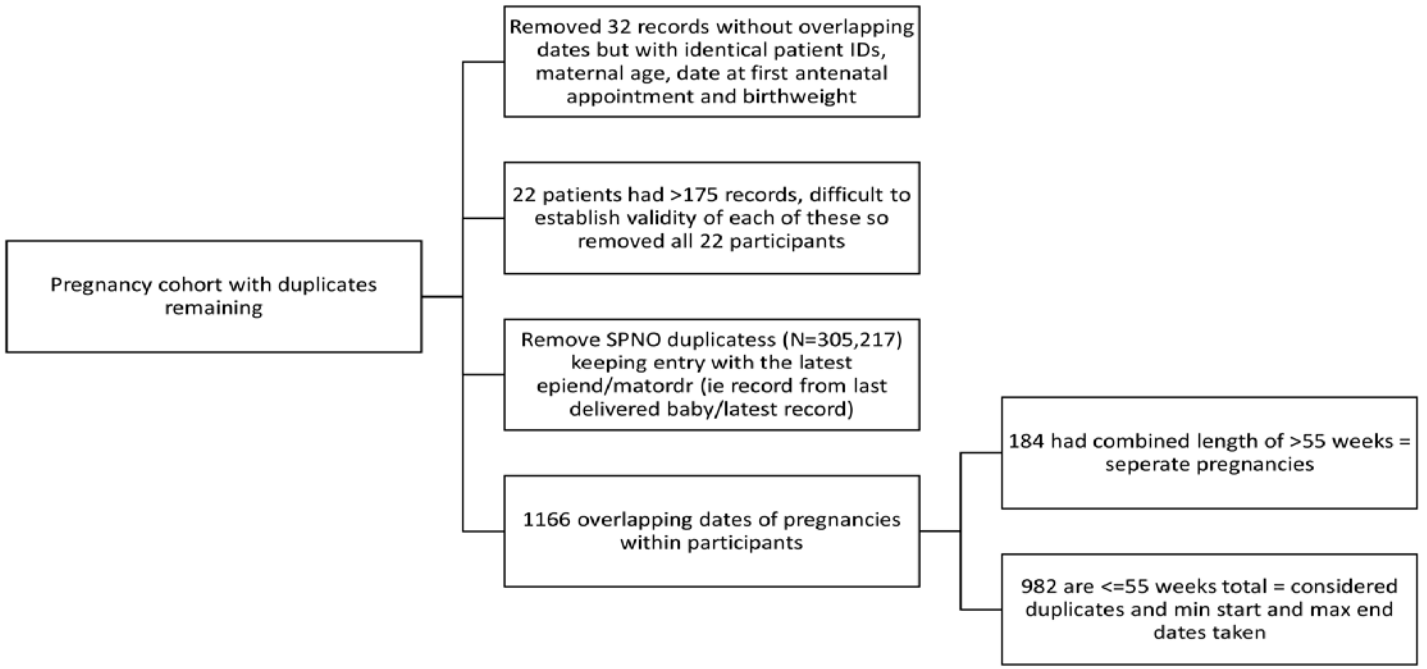

Figure S1: Dealing with duplicates and merging primary and secondary care pregnancy records

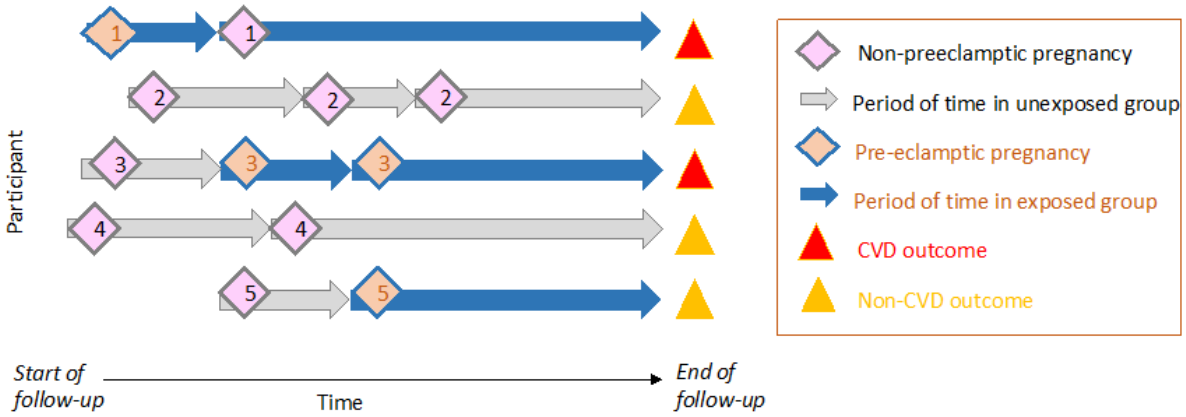

Figure S2: Schematic to explain time-varying exposure model used to investigate association between preeclampsia and cardiovascular outcomes, enabling inclusion of multiple pregnancies per woman in our cohort.

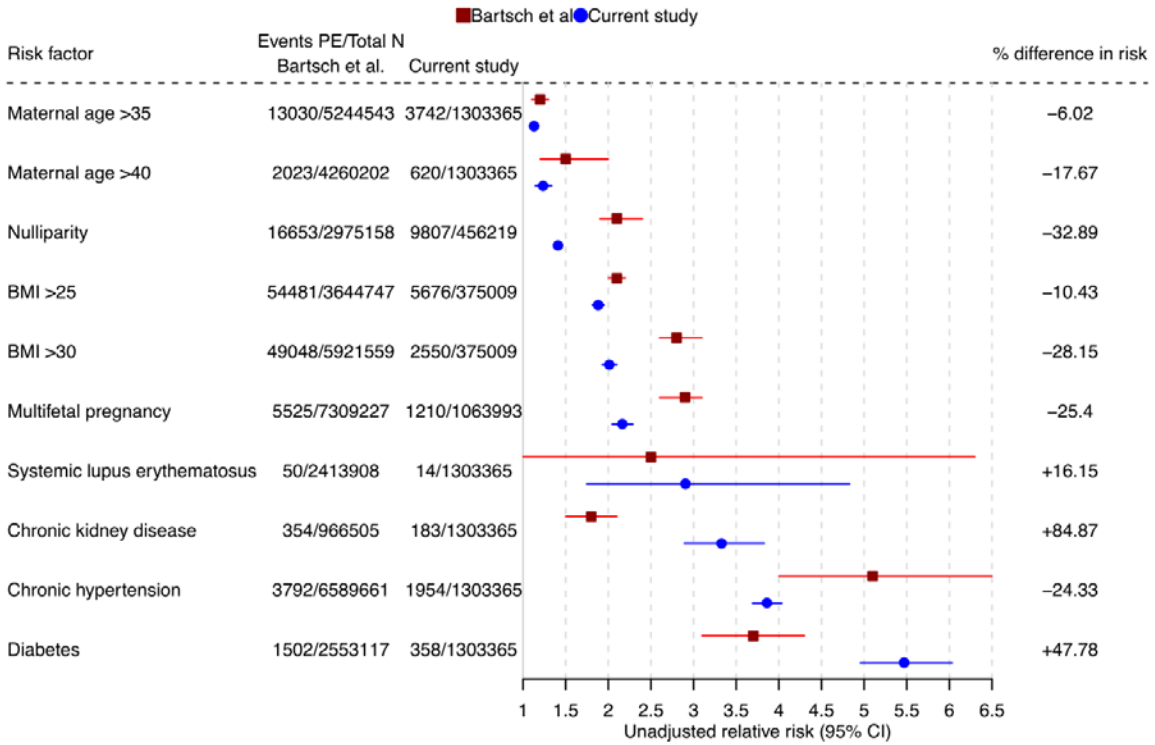

Figure S3: Comparison of relative risk of preeclampsia for a selection of pre-pregnancy risk factors, between Bartsch et al (2016) systematic review and current dataset. Risk factors and preeclampsia status relate to first recorded pregnancy in cohort. Percentage difference in risk was calculated as the point estimate for the relative risk for each risk factor in the current study minus the point estimate for the Bartsh et al study.

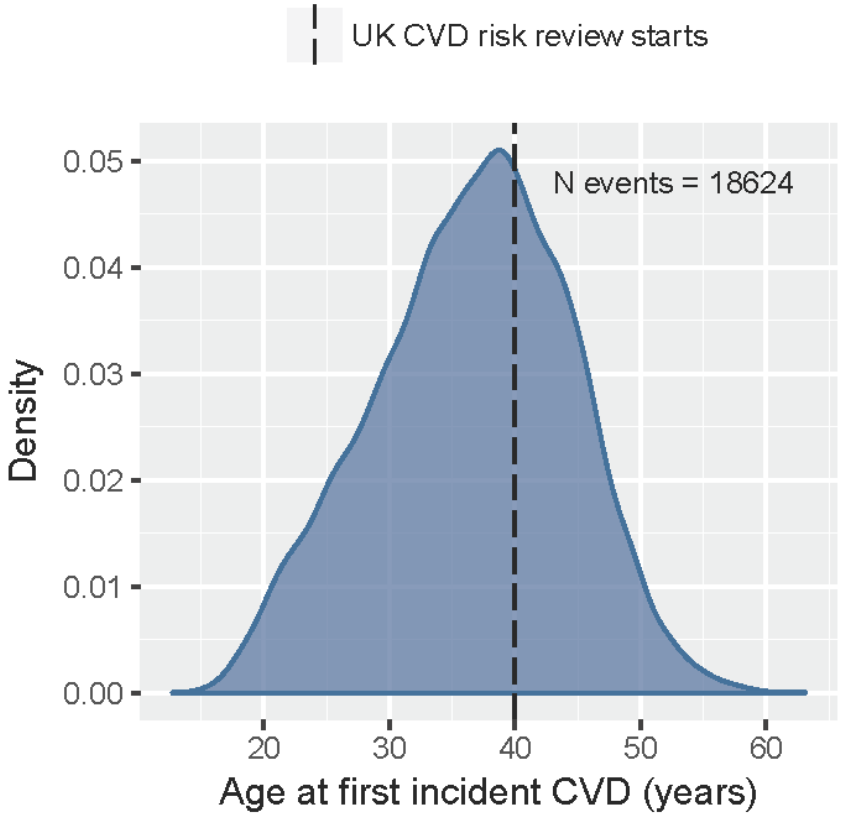

Figure S4: Age at event density distributions for first incident of any cardiovascular outcome for women in the present study. Dotted line is age at first cardiovascular risk screen in UK (40 years).

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