

THE LANCET

Diabetes & Endocrinology

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Holman N, Knighton P, Kar P, et al. Risk factors for COVID-19-related mortality in people with type 1 and type 2 diabetes in England: a population-based cohort study. *Lancet Diabetes Endocrinol* 2020; published online August 13. [https://doi.org/10.1016/S2213-8587\(20\)30271-0](https://doi.org/10.1016/S2213-8587(20)30271-0).

Supplementary information

National Diabetes Audit

The National Diabetes Audit (NDA) collates data on nearly all people with diagnosed diabetes registered with a healthcare provider in England. Individuals are included if they have a valid code for diabetes mellitus (excluding gestational diabetes) in their electronic health record. Diagnosis of diabetes is based on usual clinical practice in England which follows guidance from the National Institute for Health and Clinical Excellence who recommend that diagnosis is based on a HbA1c persistently above 48mmol/mol, a random glucose of 11.1mmol/L or more, a 2-hour post 75gram glucose load of 11.1mmol/l or more, or a fasting glucose of 7.0mmol/l or more. Demographic and clinical data are extracted from general practice electronic clinical systems using the General Practice Extraction Service (a national centralised data collection service). This is supplemented by data submitted by specialist diabetes services. Each person with diabetes is identified by a unique NHS number. Data from general practices in England is available from 1st April 2003 to 31st December 2019. For the period 1st January 2018 to 31st March 2019 data was collected from 98% of general practices in England. Data was submitted by 113 specialist diabetes services.

Data on demographic characteristics and clinical markers of cardiovascular risk and co-morbidity is extracted from clinical systems. This clinical record data is linked to Hospital Episode Statistics (HES) for data on hospital admissions and discharge diagnoses and to Office of National Statistics data for dates and causes of death. Type of diabetes was based on the coded diagnostic information recorded in clinical records. Where there were inconsistencies in the type of diabetes recorded over time or in different settings the code most recently assigned by a specialist service was used if available or the most recently recorded code noted in primary care if not.

Table S1: Age-sex and multiply adjusted hazard ratios for COVID-19 related mortality by risk factors in people with Type 1 and Type 2 diabetes

	Type 1		Type 2	
	Adjusted for age and sex HR (95% CI)	Adjusted for all variables HR (95% CI)	Adjusted for age and sex HR (95% CI)	Adjusted for all variables HR (95% CI)
Deprivation				
Most deprived	2.93 (2.11 - 4.07)	1.93 (1.36 - 2.72)	1.75 (1.64 - 1.86)	1.46 (1.37 - 1.56)
2nd most deprived	2.30 (1.64 - 3.23)	1.59 (1.13 - 2.25)	1.54 (1.45 - 1.65)	1.28 (1.20 - 1.37)
3rd most deprived	2.20 (1.57 - 3.09)	1.82 (1.30 - 2.56)	1.18 (1.11 - 1.27)	1.08 (1.01 - 1.16)
2nd Least deprived	1.33 (0.92 - 1.93)	1.22 (0.84 - 1.76)	1.05 (0.98 - 1.13)	1.01 (0.94 - 1.08)
Least deprived	1.00	1.00	1.00	1.00
Ethnic group				
Asian	2.29 (1.74 - 3.02)	1.08 (1.16 - 2.12)	1.45 (1.36 - 1.53)	1.08 (1.01 - 1.15)
Black	2.90 (2.13 - 3.95)	1.77 (1.25 - 2.49)	2.38 (2.21 - 2.55)	1.63 (1.51 - 1.77)
Mixed	1.36 (0.51 - 3.64)	0.86 (0.32 - 2.33)	1.78 (1.5 - 2.11)	1.30 (1.10 - 1.55)
Other	2.29 (1.25 - 4.17)	1.89 (1.03 - 3.47)	1.23 (1.05 - 1.43)	1.01 (0.86 - 1.18)
White	1.00	1.00	1.00	1.00
Missing	0.91 (0.62 - 1.35)	1.13 (0.76 - 1.67)	0.70 (0.65 - 0.75)	0.80 (0.75 - 0.86)
HbA1c				
<48 mmol/mol	1.55 (1.02 - 2.37)	1.37 (0.89 - 2.09)	1.19 (1.12 - 1.26)	1.11 (1.05 - 1.18)
48-53 mmol/mol	1.00	1.00	1.00	1.00
54-58 mmol/mol	0.74 (0.46 - 1.19)	0.78 (0.48 - 1.25)	1.09 (1.02 - 1.18)	1.05 (0.97 - 1.13)
59-74 mmol/mol	1.12 (0.78 - 1.60)	1.16 (0.81 - 1.67)	1.38 (1.29 - 1.47)	1.22 (1.15 - 1.30)
75-85 mmol/mol	1.39 (0.92 - 2.10)	1.37 (0.90 - 2.07)	1.69 (1.54 - 1.85)	1.36 (1.24 - 1.50)
≥86 mmol/mol	2.57 (1.74 - 3.80)	2.23 (1.50 - 3.3)	2.12 (1.94 - 2.31)	1.61 (1.47 - 1.77)
Missing	2.11 (1.43 - 3.11)	1.48 (0.94 - 2.32)	1.96 (1.83 - 2.10)	1.20 (1.1 - 1.31)
Duration of diagnosis				
<1 year	5.80 (0.65 - 51.92)	5.81 (0.65 - 52.08)	0.99 (0.75 - 1.30)	1.01 (0.77 - 1.34)
1-2 years	1.66 (0.47 - 5.90)	1.63 (0.46 - 5.76)	0.89 (0.80 - 0.98)	0.89 (0.81 - 0.98)
3-4 years	1.00	1.00	1.00	1.00
5-9 years	1.69 (0.57 - 4.99)	1.60 (0.54 - 4.73)	1.02 (0.94 - 1.11)	1.00 (0.92 - 1.08)
10-14 years	2.65 (0.95 - 7.36)	2.17 (0.78 - 6.06)	1.15 (1.06 - 1.24)	1.04 (0.97 - 1.13)
15-19 years	3.79 (1.39 - 10.29)	2.79 (1.02 - 7.61)	1.47 (1.36 - 1.59)	1.19 (1.10 - 1.29)
≥20 years	2.53 (0.94 - 6.80)	2.08 (0.77 - 5.63)	1.84 (1.70 - 1.99)	1.26 (1.16 - 1.37)
eGFR				
≥90 ml/min/1.73m ^{2.2}	1.00	1.00	1.00	1.00
60-89 ml/min/1.73m ²	1.15 (0.86 - 1.55)	1.17 (0.87 - 1.57)	0.98 (0.92 - 1.03)	1.02 (0.96 - 1.08)
45-59 ml/min/1.73m ²	2.40 (1.73 - 3.34)	2.07 (1.48 - 2.89)	1.45 (1.36 - 1.55)	1.39 (1.3 - 1.49)
30-44 ml/min/1.73m ²	3.18 (2.25 - 4.5)	2.46 (1.72 - 3.52)	2.08 (1.94 - 2.23)	1.76 (1.63 - 1.89)
15-29 ml/min/1.73m ²	5.30 (3.57 - 7.85)	3.71 (2.47 - 5.58)	3.19 (2.91 - 3.50)	2.31 (2.1 - 2.54)
<15 ml/min/1.73m ²	14.09 (9.49 - 20.91)	8.35 (5.50 - 12.70)	8.55 (7.59 - 9.65)	4.91 (4.34 - 5.56)
Missing	2.55 (1.54 - 4.22)	1.75 (1.01 - 3.02)	1.54 (1.34 - 1.78)	0.82 (0.71 - 0.96)
Body mass index				
<20 kg/m ²	2.43 (1.6 - 3.71)	2.45 (1.60 - 3.75)	2.52 (2.29 - 2.78)	2.33 (2.11 - 2.56)
20-24.9 kg/m ²	1.48 (1.13 - 1.93)	1.51 (1.15 - 1.98)	1.37 (1.29 - 1.44)	1.34 (1.27 - 1.42)
25-29.9 kg/m ²	1.00	1.00	1.00	1.00
30-34.9 kg/m ²	1.67 (1.27 - 2.20)	1.47 (1.12 - 1.94)	1.07 (1.01 - 1.13)	1.04 (0.98 - 1.10)
35-39.9 kg/m ²	2.14 (1.50 - 3.04)	1.72 (1.21 - 2.46)	1.26 (1.18 - 1.36)	1.17 (1.08 - 1.26)
≥40 kg/m ²	3.13 (2.07 - 4.74)	2.33 (1.53 - 3.56)	1.82 (1.67 - 1.99)	1.6 (1.47 - 1.75)
Missing	2.51 (1.79 - 3.52)	2 (1.40 - 2.86)	2.22 (2.08 - 2.38)	1.89 (1.76 - 2.03)
Systolic blood pressure				
≤140 mmHg	1.00	1.00	1.00	1.00
>140 mmHg	0.94 (0.76 - 1.16)	1.1 (0.83 - 1.46)	0.89 (0.85 - 0.93)	1.03 (0.97 - 1.09)
Missing	1.00 (0.72 - 1.40)	1.35 (1.01 - 1.79)	1.03 (0.96 - 1.11)	1.67 (1.57 - 1.78)
On anti-hypertensive drugs				
Yes	1.60 (1.21 - 2.13)	1.10 (0.81 - 1.49)	1.27 (1.19 - 1.35)	1.09 (1.02 - 1.16)
No	1.00	1.00	1.00	1.00
Missing	2.82 (1.22 - 6.52)	-	1.38 (1.1 - 1.72)	-
Total cholesterol				
<5 mmol/l	1.00	1.00	1.00	1.00
≥5 mmol/l	1.12 (0.85 - 1.47)	0.85 (0.69 - 1.05)	1.07 (1.01 - 1.13)	0.86 (0.82 - 0.9)
Missing	1.68 (1.35 - 2.09)	0.71 (0.48 - 1.06)	1.83 (1.75 - 1.92)	0.72 (0.66 - 0.79)
On statins				
Yes	0.91 (0.73 - 1.13)	0.82 (0.65 - 1.03)	0.74 (0.71 - 0.77)	0.72 (0.69 - 0.75)
No	1.00	1.00	1.00	1.00
Missing	1.8 (0.79 - 4.08)	1.34 (0.54 - 3.31)	0.90 (0.72 - 1.11)	0.67 (0.53 - 0.85)

Smoking				
Current smoker	0.98 (0.7 - 1.37)	0.88 (0.62 - 1.25)	0.66 (0.61 - 0.72)	0.67 (0.62 - 0.74)
Ex-smoker	1.07 (0.88 - 1.31)	1.09 (0.89 - 1.35)	1.04 (1.00 - 1.08)	1.13 (1.08 - 1.18)
Non-smoker*	1.12 (0.63 - 2.00)	1.03 (0.58 - 1.85)	1.46 (1.29 - 1.64)	1.28 (1.14 - 1.45)
Never smoked	1.00	1.00	1.00	1.00
Missing	-	0 (0 - 2.63E+191)	2.91 (1.83 - 4.63)	2.11 (1.33 - 3.36)
Co-morbidities				
Previous MI	2.42 (1.68 - 3.49)	1.25 (0.85 - 1.84)	1.91 (1.73 - 2.1)	1.11 (1.00 - 1.23)
Previous stroke	3.42 (2.55 - 4.6)	2.33 (1.72 - 3.15)	2.59 (2.41 - 2.78)	2.02 (1.88 - 2.17)
Previous heart failure	3.51 (2.81 - 4.39)	1.80 (1.41 - 2.29)	2.99 (2.84 - 3.13)	2.09 (1.99 - 2.21)

* This category is used where an individual is not currently a smoker but their history is unknown therefore interpretation of the results is complex.

- indicates that small number of cases in this category meant that it was not possible to calculate a HR with appropriate CI

Table S2: Adjusted hazard ratios for COVID-19 related and not COVID-19 related deaths in people with Type 1 (n=264,390) and Type 2 diabetes (n=2,874,020) in England, 16th February 2020 to 11th May 2020

	COVID-19 related deaths		Not COVID-19 related deaths	
	Type 1 HR (95% CI)	Type 2 HR (95% CI)	Type 1 HR (95% CI)	Type 2 HR (95% CI)
Number of deaths	464	10,525	1142	25,787
Sex				
Male	1.61 (1.32 - 1.96)	1.61 (1.54 - 1.67)	1.24 (1.09 - 1.40)	1.18 (1.15 - 1.22)
Female	1.00	1.00	1.00	1.00
Age				
<40	0.03 (0.01 - 0.07)	0.18 (0.12 - 0.27)	0.08 (0.06 - 0.12)	0.12 (0.09 - 0.17)
40-49	0.19 (0.11 - 0.32)	0.25 (0.20 - 0.31)	0.28 (0.21 - 0.39)	0.21 (0.18 - 0.25)
50-59	0.52 (0.37 - 0.73)	0.52 (0.47 - 0.58)	0.51 (0.40 - 0.65)	0.49 (0.45 - 0.53)
60-69	1.00	1.00	1.00	1.00
70-79	1.89 (1.42 - 2.52)	1.94 (1.81 - 2.08)	2.48 (2.04 - 3.00)	2.03 (1.93 - 2.13)
80+	4.79 (3.62 - 6.32)	4.52 (4.23 - 4.84)	5.99 (4.95 - 7.24)	4.95 (4.72 - 5.19)
Deprivation				
Most deprived	1.93 (1.36 - 2.72)	1.46 (1.37 - 1.56)	1.35 (1.12 - 1.64)	1.26 (1.21 - 1.32)
2nd most deprived	1.59 (1.13 - 2.25)	1.28 (1.20 - 1.37)	1.05 (0.86 - 1.28)	1.14 (1.09 - 1.19)
3rd most deprived	1.82 (1.30 - 2.56)	1.08 (1.01 - 1.16)	1.04 (0.86 - 1.27)	1.08 (1.04 - 1.13)
2nd Least deprived	1.22 (0.84 - 1.76)	1.01 (0.94 - 1.08)	0.98 (0.81 - 1.20)	1.02 (0.97 - 1.06)
Least deprived	1.00	1.00	1.00	1.00
Region				
London	2.30 (1.57 - 3.35)	1.69 (1.57 - 1.81)	1.17 (0.92 - 1.49)	0.92 (1.49 - 1.01)
South West	0.90 (0.56 - 1.45)	0.61 (0.55 - 0.67)	1.03 (0.81 - 1.32)	1.04 (0.99 - 1.10)
South East	1.00	1.00	1.00	1.00
Midlands	1.46 (1.01 - 2.09)	1.03 (0.96 - 1.11)	1.11 (0.91 - 1.36)	1.09 (1.05 - 1.14)
East of England	1.90 (1.28 - 2.82)	0.96 (0.89 - 1.05)	1.15 (0.92 - 1.46)	1.05 (1.00 - 1.11)
North West	1.64 (1.09 - 2.49)	1.17 (1.08 - 1.26)	1.04 (0.82 - 1.32)	1.09 (1.04 - 1.15)
North East	1.15 (0.77 - 1.74)	0.96 (0.89 - 1.03)	1.11 (0.89 - 1.38)	1.13 (1.08 - 1.19)
Ethnic group				
Asian	1.57 (1.16 - 2.12)	1.08 (1.01 - 1.15)	0.71 (0.54 - 0.92)	0.56 (0.53 - 0.59)
Black	1.77 (1.25 - 2.49)	1.63 (1.51 - 1.77)	0.94 (0.70 - 1.27)	0.75 (0.69 - 0.81)
Mixed	0.86 (0.32 - 2.33)	1.30 (1.10 - 1.55)	0.91 (0.48 - 1.70)	0.65 (0.55 - 0.76)
Other	1.89 (1.03 - 3.47)	1.01 (0.86 - 1.18)	0.55 (0.28 - 1.11)	0.72 (0.64 - 0.81)
White	1.00	1.00	1.00	1.00
Missing	1.13 (0.76 - 1.67)	0.80 (0.75 - 0.86)	0.88 (0.69 - 1.12)	0.85 (0.82 - 0.88)
HbA1c				
<48 mmol/mol	1.37 (0.89 - 2.09)	1.11 (1.05 - 1.18)	1.23 (0.94 - 1.61)	1.27 (1.22 - 1.32)
48-53 mmol/mol	1.00	1.00	1.00	1.00
54-58 mmol/mol	0.78 (0.48 - 1.25)	1.05 (0.97 - 1.13)	0.87 (0.65 - 1.15)	0.97 (0.92 - 1.02)
59-74 mmol/mol	1.16 (0.81 - 1.67)	1.22 (1.15 - 1.30)	0.98 (0.78 - 1.23)	1.09 (1.04 - 1.14)
75-85 mmol/mol	1.37 (0.90 - 2.07)	1.36 (1.24 - 1.50)	1.18 (0.91 - 1.53)	1.25 (1.17 - 1.33)
≥86 mmol/mol	2.23 (1.50 - 3.30)	1.61 (1.47 - 1.77)	1.90 (1.48 - 2.44)	1.42 (1.33 - 1.51)
Missing	1.48 (0.94 - 2.32)	1.20 (1.10 - 1.31)	1.28 (0.97 - 1.69)	1.30 (1.24 - 1.37)
Duration of diagnosis				
<1 year	5.81 (0.65 - 52.08)	1.01 (0.77 - 1.34)	0.92 (0.12 - 6.82)	0.92 (0.76 - 1.12)
1-2 years	1.63 (0.46 - 5.76)	0.89 (0.81 - 0.98)	1.00 (0.56 - 1.79)	1.02 (0.96 - 1.09)
3-4 years	1.00	1.00	1.00	1.00
5-9 years	1.60 (0.54 - 4.73)	1.00 (0.92 - 1.08)	1.19 (0.75 - 1.89)	1.09 (1.04 - 1.15)
10-14 years	2.17 (0.78 - 6.06)	1.04 (0.97 - 1.13)	0.91 (0.58 - 1.43)	1.19 (1.13 - 1.26)
15-19 years	2.79 (1.02 - 7.61)	1.19 (1.10 - 1.29)	0.89 (0.57 - 1.37)	1.33 (1.27 - 1.40)
≥20 years	2.08 (0.77 - 5.63)	1.26 (1.16 - 1.37)	1.06 (0.70 - 1.60)	1.51 (1.43 - 1.60)
eGFR				
≥90 ml/min/1.73m ²²	1.00	1.00	1.00	1.00
60-89 ml/min/1.73m ²	1.17 (0.87 - 1.57)	1.02 (0.96 - 1.08)	0.99 (0.83 - 1.18)	0.81 (0.78 - 0.84)
45-59 ml/min/1.73m ²	2.07 (1.48 - 2.89)	1.39 (1.30 - 1.49)	1.23 (0.99 - 1.53)	1.08 (1.04 - 1.13)
30-44 ml/min/1.73m ²	2.46 (1.72 - 3.52)	1.76 (1.63 - 1.89)	1.73 (1.39 - 2.16)	1.38 (1.32 - 1.45)
15-29 ml/min/1.73m ²	3.71 (2.47 - 5.58)	2.31 (2.10 - 2.54)	3.11 (2.43 - 3.97)	2.07 (1.96 - 2.19)
<15 ml/min/1.73m ²	8.35 (5.50 - 12.7)	4.91 (4.34 - 5.56)	5.93 (4.52 - 7.79)	3.37 (3.09 - 3.69)
Missing	1.75 (1.01 - 3.02)	0.82 (0.71 - 0.96)	0.86 (0.59 - 1.25)	0.91 (0.83 - 1.00)
Body mass index				
<20 kg/m ²	2.45 (1.60 - 3.75)	2.33 (2.11 - 2.56)	2.95 (2.36 - 3.68)	3.38 (3.22 - 3.56)
20-24.9 kg/m ²	1.51 (1.15 - 1.98)	1.34 (1.27 - 1.42)	1.42 (1.21 - 1.67)	1.61 (1.56 - 1.67)
25-29.9 kg/m ²	1.00	1.00	1.00	1.00
30-34.9 kg/m ²	1.47 (1.12 - 1.94)	1.04 (0.98 - 1.10)	0.85 (0.70 - 1.03)	0.83 (0.80 - 0.86)

35-39.9 kg/m ²	1.72 (1.21 - 2.46)	1.17 (1.08 - 1.26)	1.21 (0.95 - 1.54)	0.83 (0.79 - 0.88)
≥40 kg/m ²	2.33 (1.53 - 3.56)	1.60 (1.47 - 1.75)	1.45 (1.08 - 1.94)	1.14 (1.07 - 1.21)
Missing	2.00 (1.40 - 2.86)	1.89 (1.76 - 2.03)	1.71 (1.37 - 2.14)	1.70 (1.62 - 1.78)
Systolic blood pressure				
≤140	1.00	1.00	1.00	1.00
>140	0.85 (0.69 - 1.05)	0.86 (0.82 - 0.90)	0.85 (0.74 - 0.98)	0.83 (0.8 - 0.85)
Missing	0.71 (0.48 - 1.06)	0.72 (0.66 - 0.79)	0.91 (0.72 - 1.15)	0.74 (0.7 - 0.78)
On anti-hypertensive drugs				
Yes	1.10 (0.81 - 1.49)	1.09 (1.02 - 1.16)	1.72 (1.40 - 2.10)	1.20 (1.15 - 1.25)
No	1.00	1.00	1.00	1.00
Missing	-	-	-	-
Total cholesterol				
≤5mmol/l	1.00	1.00	1.00	1.00
>5mmol/l	1.10 (0.83 - 1.46)	1.03 (0.97 - 1.09)	0.91 (0.76 - 1.1)	0.95 (0.91 - 0.99)
Missing	1.35 (1.01 - 1.79)	1.67 (1.57 - 1.78)	1.48 (1.25 - 1.75)	1.64 (1.58 - 1.71)
On statins				
Yes	0.82 (0.65 - 1.03)	0.72 (0.69 - 0.75)	0.67 (0.59 - 0.77)	0.64 (0.62 - 0.66)
No	1.00	1.00	1.00	1.00
Missing	1.34 (0.54 - 3.31)	0.67 (0.53 - 0.85)	1.51 (0.86 - 2.63)	0.83 (0.73 - 0.95)
Smoking				
Current smoker	0.88 (0.62 - 1.25)	0.67 (0.62 - 0.74)	1.53 (1.26 - 1.85)	1.40 (1.34 - 1.47)
Ex-smoker	1.09 (0.89 - 1.35)	1.13 (1.08 - 1.18)	1.24 (1.09 - 1.42)	1.16 (1.13 - 1.19)
*Non-smoker	1.03 (0.58 - 1.85)	1.28 (1.14 - 1.45)	1.40 (1.00 - 1.96)	1.33 (1.23 - 1.43)
Never smoked	1.00	1.00	1.00	1.00
Missing	-	2.11 (1.33 - 3.36)	0.26 (0.06 - 1.11)	1.49 (1.03 - 2.16)
Co-morbidities				
Previous MI	1.25 (0.85 - 1.84)	1.11 (1.00 - 1.23)	1.43 (1.14 - 1.79)	1.26 (1.18 - 1.33)
Previous stroke	2.33 (1.72 - 3.15)	2.02 (1.88 - 2.17)	1.68 (1.36 - 2.07)	1.83 (1.75 - 1.92)
Previous heart failure	1.80 (1.41 - 2.29)	2.09 (1.99 - 2.21)	2.43 (2.09 - 2.84)	2.60 (2.52 - 2.69)

*Please note also that whilst we included the category 'non-smokers', Table 1 shows that this group is <3% of all categories. We suspect this group is mostly ex-smokers but because the data comes from routinely recorded clinical records, we do not have definitive information (some could be never smokers). For avoidance of confusion, we have left their data out of the figures.

Table S3: Sensitivity analysis examining adjusted hazard ratios for COVID-19 related death in people with Type 1 and Type 2 diabetes stratified by type of classification of cause of death

	Type 1			Type 2		
	Base analysis HR (95% CI)	Primary cause only HR (95% CI)	U07.1 only HR (95% CI)	Base analysis HR (95% CI)	Primary cause only HR (95% CI)	U07.1 only HR (95% CI)
Number of deaths	464	432	437	10525	9991	9783
Sex						
Male	1.61 (1.32 - 1.96)	1.62 (1.32 - 1.99)	1.67 (1.37 - 2.05)	1.61 (1.54 - 1.67)	1.61 (1.54 - 1.68)	1.64 (1.57 - 1.71)
Female	1.00	1.00	1.00	1.00	1.00	1.00
Age						
<40	0.03 (0.01 - 0.07)	0.03 (0.01 - 0.08)	0.03 (0.01 - 0.08)	0.18 (0.12 - 0.27)	0.18 (0.12 - 0.27)	0.19 (0.12 - 0.28)
40-49	0.19 (0.11 - 0.32)	0.19 (0.11 - 0.34)	0.19 (0.11 - 0.33)	0.25 (0.2 - 0.31)	0.25 (0.20 - 0.30)	0.26 (0.21 - 0.32)
50-59	0.52 (0.37 - 0.73)	0.47 (0.33 - 0.69)	0.53 (0.38 - 0.76)	0.52 (0.47 - 0.58)	0.53 (0.47 - 0.59)	0.53 (0.48 - 0.59)
60-69	1.00	1.00	1.00	1.00	1.00	1.00
70-79	1.89 (1.42 - 2.52)	1.96 (1.45 - 2.64)	1.88 (1.40 - 2.52)	1.94 (1.81 - 2.08)	1.95 (1.82 - 2.09)	1.92 (1.79 - 2.06)
≥80	4.79 (3.62 - 6.32)	5.13 (3.84 - 6.85)	4.55 (3.42 - 6.06)	4.52 (4.23 - 4.84)	4.59 (4.29 - 4.92)	4.35 (4.06 - 4.66)
Deprivation						
Most deprived	1.93 (1.36 - 2.72)	1.91 (1.34 - 2.73)	1.81 (1.28 - 2.58)	1.46 (1.37 - 1.56)	1.46 (1.36 - 1.56)	1.47 (1.37 - 1.58)
2nd most deprived	1.59 (1.13 - 2.25)	1.55 (1.08 - 2.22)	1.52 (1.07 - 2.16)	1.28 (1.2 - 1.37)	1.27 (1.19 - 1.36)	1.29 (1.20 - 1.38)
3rd most deprived	1.82 (1.3 - 2.56)	1.81 (1.28 - 2.58)	1.72 (1.21 - 2.43)	1.08 (1.01 - 1.16)	1.08 (1.00 - 1.15)	1.08 (1.01 - 1.16)
2nd Least deprived	1.22 (0.84 - 1.76)	1.22 (0.83 - 1.79)	1.19 (0.81 - 1.72)	1.01 (0.94 - 1.08)	1.00 (0.93 - 1.07)	1 (0.93 - 1.08)
Least deprived	1.00	1.00	1.00	1.00	1.00	1.00
Missing	-	-	-	1.7 (0.81 - 3.59)	1.56 (0.7 - 3.48)	1.67 (0.75 - 3.73)
Region						
London	2.30 (1.57 - 3.35)	2.31 (1.56 - 3.42)	2.41 (1.62 - 3.57)	1.69 (1.57 - 1.81)	1.71 (1.59 - 1.85)	1.8 (1.67 - 1.94)
South West	0.90 (0.56 - 1.45)	0.87 (0.52 - 1.44)	0.93 (0.56 - 1.54)	0.61 (0.55 - 0.67)	0.62 (0.56 - 0.69)	0.62 (0.56 - 0.68)
South East	1.00	1.00	1.00	1.00	1.00	1.00
Midlands	1.46 (1.01 - 2.09)	1.42 (0.97 - 2.07)	1.54 (1.05 - 2.25)	1.03 (0.96 - 1.11)	1.05 (0.97 - 1.12)	1.11 (1.03 - 1.19)
East of England	1.90 (1.28 - 2.82)	2.00 (1.33 - 3.01)	2.04 (1.35 - 3.08)	0.96 (0.89 - 1.05)	0.97 (0.89 - 1.06)	1.05 (0.96 - 1.15)
North West	1.64 (1.09 - 2.49)	1.68 (1.09 - 2.58)	1.75 (1.14 - 2.69)	1.17 (1.08 - 1.26)	1.19 (1.1 - 1.28)	1.24 (1.15 - 1.35)
North East	1.15 (0.77 - 1.74)	1.13 (0.74 - 1.74)	1.14 (0.74 - 1.76)	0.96 (0.89 - 1.03)	0.98 (0.9 - 1.06)	1.00 (0.92 - 1.08)
Missing	-	-	-	-	-	-
Ethnic group						
Asian	1.57 (1.16 - 2.12)	1.68 (1.24 - 2.28)	1.59 (1.17 - 2.17)	1.08 (1.01 - 1.15)	1.11 (1.04 - 1.18)	1.11 (1.04 - 1.19)
Black	1.77 (1.25 - 2.49)	1.79 (1.25 - 2.55)	1.81 (1.27 - 2.58)	1.63 (1.51 - 1.77)	1.66 (1.53 - 1.80)	1.69 (1.56 - 1.83)
Mixed	0.86 (0.32 - 2.33)	0.93 (0.34 - 2.51)	0.92 (0.34 - 2.48)	1.30 (1.10 - 1.55)	1.31 (1.09 - 1.56)	1.33 (1.11 - 1.59)
Other	1.89 (1.03 - 3.47)	1.86 (0.98 - 3.51)	2.02 (1.10 - 3.71)	1.01 (0.86 - 1.18)	1.00 (0.85 - 1.18)	1.03 (0.88 - 1.21)
White	1.00	1.00	1.00	1.00	1.00	1.00
Missing	1.13 (0.76 - 1.67)	1.14 (0.76 - 1.71)	1.11 (0.74 - 1.67)	0.8 (0.75 - 0.86)	0.8 (0.74 - 0.86)	0.81 (0.75 - 0.87)
HbA1c						
<48 mmol/mol	1.37 (0.89 - 2.09)	1.43 (0.93 - 2.21)	1.37 (0.88 - 2.12)	1.11 (1.05 - 1.18)	1.11 (1.04 - 1.18)	1.09 (1.03 - 1.16)

48-53 mmol/mol	1.00	1.00	1.00	1.00	1.00	1.00
54-58 mmol/mol	0.78 (0.48 - 1.25)	0.72 (0.43 - 1.18)	0.82 (0.51 - 1.33)	1.05 (0.97 - 1.13)	1.05 (0.97 - 1.13)	1.04 (0.97 - 1.13)
59-74 mmol/mol	1.16 (0.81 - 1.67)	1.14 (0.78 - 1.65)	1.18 (0.81 - 1.71)	1.22 (1.15 - 1.3)	1.23 (1.15 - 1.31)	1.22 (1.14 - 1.3)
75-85 mmol/mol	1.37 (0.90 - 2.07)	1.33 (0.86 - 2.05)	1.31 (0.85 - 2.02)	1.36 (1.24 - 1.5)	1.38 (1.25 - 1.52)	1.37 (1.24 - 1.51)
≥86 mmol/mol	2.23 (1.5 - 3.3)	2.32 (1.54 - 3.47)	2.23 (1.49 - 3.35)	1.61 (1.47 - 1.77)	1.60 (1.46 - 1.76)	1.61 (1.47 - 1.77)
Missing	1.48 (0.94 - 2.32)	1.44 (0.9 - 2.29)	1.37 (0.86 - 2.19)	1.2 (1.10 - 1.31)	1.21 (1.11 - 1.32)	1.18 (1.08 - 1.29)
Duration of diagnosis						
<1 year	5.81 (0.65 - 52.08)	7.69 (0.8 - 74.16)	7.6 (0.79 - 73.31)	1.01 (0.77 - 1.34)	1.03 (0.78 - 1.37)	1.01 (0.76 - 1.35)
1-2 years	1.63 (0.46 - 5.76)	2.15 (0.54 - 8.62)	2.17 (0.54 - 8.68)	0.89 (0.81 - 0.98)	0.88 (0.79 - 0.97)	0.88 (0.80 - 0.98)
3-4 years	1.00	1.00	1.00	1.00	1.00	1.00
5-9 years	1.60 (0.54 - 4.73)	2.13 (0.63 - 7.24)	1.76 (0.51 - 6.10)	1.00 (0.92 - 1.08)	1.00 (0.92 - 1.09)	1.01 (0.93 - 1.09)
10-14 years	2.17 (0.78 - 6.06)	2.5 (0.77 - 8.10)	2.89 (0.90 - 9.32)	1.04 (0.97 - 1.13)	1.04 (0.96 - 1.12)	1.05 (0.97 - 1.14)
15-19 years	2.79 (1.02 - 7.61)	3.52 (1.11 - 11.15)	3.52 (1.11 - 11.14)	1.19 (1.10 - 1.29)	1.19 (1.09 - 1.29)	1.19 (1.09 - 1.29)
≥20 years	2.08 (0.77 - 5.63)	2.57 (0.82 - 8.09)	2.62 (0.83 - 8.24)	1.26 (1.16 - 1.37)	1.25 (1.15 - 1.36)	1.25 (1.15 - 1.37)
eGFR						
≥90 ml/min/1.73m ²²	1.00	1.00	1.00	1.00	1.00	1.00
60-89 ml/min/1.73m ²	1.17 (0.87 - 1.57)	1.18 (0.87 - 1.61)	1.17 (0.87 - 1.58)	1.02 (0.96 - 1.08)	1.02 (0.97 - 1.08)	1.04 (0.98 - 1.10)
45-59 ml/min/1.73m ²	2.07 (1.48 - 2.89)	2.04 (1.44 - 2.89)	2.07 (1.47 - 2.91)	1.39 (1.30 - 1.49)	1.40 (1.31 - 1.50)	1.42 (1.32 - 1.52)
30-44 ml/min/1.73m ²	2.46 (1.72 - 3.52)	2.48 (1.72 - 3.59)	2.35 (1.62 - 3.41)	1.76 (1.63 - 1.89)	1.77 (1.65 - 1.91)	1.80 (1.67 - 1.94)
15-29 ml/min/1.73m ²	3.71 (2.47 - 5.58)	3.49 (2.27 - 5.37)	3.55 (2.32 - 5.42)	2.31 (2.10 - 2.54)	2.28 (2.07 - 2.51)	2.43 (2.21 - 2.68)
<15 ml/min/1.73m ²	8.35 (5.50 - 12.7)	8.59 (5.58 - 13.25)	8.50 (5.55 - 13.01)	4.91 (4.34 - 5.56)	4.84 (4.26 - 5.51)	5.21 (4.6 - 5.91)
Missing	1.75 (1.01 - 3.02)	1.53 (0.85 - 2.74)	1.78 (1.01 - 3.12)	0.82 (0.71 - 0.96)	0.8 (0.68 - 0.94)	0.81 (0.69 - 0.96)
Body mass index						
<20 kg/m ²	2.45 (1.6 - 3.75)	1.92 (1.19 - 3.10)	2.27 (1.44 - 3.59)	2.33 (2.11 - 2.56)	2.3 (2.08 - 2.54)	2.19 (1.98 - 2.43)
20-24.9 kg/m ²	1.51 (1.15 - 1.98)	1.46 (1.10 - 1.93)	1.47 (1.12 - 1.95)	1.34 (1.27 - 1.42)	1.34 (1.27 - 1.42)	1.31 (1.23 - 1.39)
25-29.9 kg/m ²	1.00	1.00	1.00	1.00	1.00	1.00
30-34.9 kg/m ²	1.47 (1.12 - 1.94)	1.50 (1.13 - 1.99)	1.49 (1.12 - 1.97)	1.04 (0.98 - 1.10)	1.03 (0.97 - 1.09)	1.05 (0.99 - 1.11)
35-39.9 kg/m ²	1.72 (1.21 - 2.46)	1.73 (1.20 - 2.50)	1.75 (1.22 - 2.52)	1.17 (1.08 - 1.26)	1.19 (1.1 - 1.28)	1.19 (1.11 - 1.29)
≥40 kg/m ²	2.33 (1.53 - 3.56)	2.47 (1.61 - 3.80)	2.41 (1.57 - 3.70)	1.6 (1.47 - 1.75)	1.59 (1.46 - 1.74)	1.61 (1.47 - 1.76)
Missing	2.00 (1.4 - 2.86)	2.11 (1.47 - 3.03)	2.18 (1.52 - 3.12)	1.89 (1.76 - 2.03)	1.88 (1.75 - 2.03)	1.85 (1.72 - 1.99)
Systolic blood pressure						
≤140 mmHg	1.00	1.00	1.00	1.00	1.00	1.00
>140 mmHg	1.10 (0.83 - 1.46)	0.83 (0.66 - 1.03)	0.86 (0.69 - 1.07)	1.03 (0.97 - 1.09)	0.86 (0.82 - 0.90)	0.87 (0.83 - 0.91)
Missing	1.35 (1.01 - 1.79)	0.73 (0.48 - 1.10)	0.69 (0.46 - 1.05)	1.67 (1.57 - 1.78)	0.73 (0.67 - 0.80)	0.71 (0.65 - 0.78)
On anti-hypertensive drugs						
Yes	1.10 (0.81 - 1.49)	0.83 (0.66 - 1.03)	0.86 (0.69 - 1.07)	1.09 (1.02 - 1.16)	0.86 (0.82 - 0.90)	0.87 (0.83 - 0.91)
No	1.00	1.00	1.00	1.00	1.00	1.00
Missing	-	-	-	-	-	-
Total cholesterol						
<5 mmol/l	1.00	1.00	1.00	1.00	1.00	1.00
≥5 mmol/l	0.85 (0.69 - 1.05)	1.09 (0.81 - 1.46)	1.12 (0.84 - 1.50)	0.86 (0.82 - 0.90)	1.03 (0.97 - 1.09)	1.02 (0.96 - 1.09)
Missing	0.71 (0.48 - 1.06)	1.36 (1.01 - 1.82)	1.36 (1.01 - 1.82)	0.72 (0.66 - 0.79)	1.66 (1.56 - 1.76)	1.63 (1.53 - 1.74)
On statins						
Yes	0.82 (0.65 - 1.03)	0.85 (0.67 - 1.08)	0.84 (0.66 - 1.07)	0.72 (0.69 - 0.75)	0.72 (0.69 - 0.75)	0.74 (0.70 - 0.77)

No	1.00	1.00	1.00	1.00	1.00	1.00
Missing	1.34 (0.54 - 3.31)	1.37 (0.55 - 3.42)	1.53 (0.61 - 3.83)	0.67 (0.53 - 0.85)	0.66 (0.52 - 0.84)	0.67 (0.52 - 0.86)
Smoking						
Current smoker	0.88 (0.62 - 1.25)	0.87 (0.6 - 1.26)	0.86 (0.6 - 1.24)	0.67 (0.62 - 0.74)	0.65 (0.59 - 0.71)	0.67 (0.61 - 0.73)
Ex-smoker	1.09 (0.89 - 1.35)	1.09 (0.88 - 1.35)	1.08 (0.88 - 1.34)	1.13 (1.08 - 1.18)	1.13 (1.08 - 1.18)	1.13 (1.09 - 1.19)
Non-smoker*	1.03 (0.58 - 1.85)	1.11 (0.62 - 1.99)	1.1 (0.61 - 1.97)	1.28 (1.14 - 1.45)	1.28 (1.13 - 1.45)	1.24 (1.09 - 1.41)
Never smoked	1.00	1.00	1.00	1.00	1.00	1.00
Missing	0 (0 - 2.63E+191)	0 (0 - 3.2E+199)	0 (0 - 2.51E+195)	2.11 (1.33 - 3.36)	1.98 (1.21 - 3.24-)	2.2 (1.37 - 3.55)
Co-morbidities						
Previous MI	1.25 (0.85 - 1.84)	1.27 (0.86 - 1.89)	1.25 (0.84 - 1.86)	1.11 (1.00 - 1.23)	1.11 (1.00 - 1.23)	1.14 (1.03 - 1.26)
Previous stroke	2.33 (1.72 - 3.15)	2.38 (1.75 - 3.25)	2.36 (1.73 - 3.22)	2.02 (1.88 - 2.17)	2.06 (1.91 - 2.22)	2.00 (1.85 - 2.16)
Previous heart failure	1.8 (1.41 - 2.29)	1.72 (1.34 - 2.22)	1.81 (1.41 - 2.33)	2.09 (1.99 - 2.21)	2.07 (1.96 - 2.19)	2.12 (2.01 - 2.24)

* This category is used where an individual is not currently a smoker but their history is unknown therefore interpretation of the results is complex.

- indicates that small number of cases in this category meant that it was not possible to calculate a HR with appropriate CI

Table S4: Adjusted hazard ratios for COVID-19 related death in people with Type 1 and Type 2 diabetes stratified by sex

	Type 1		Type 2	
	Male HR (95% CI)	Female HR (95% CI)	Male HR (95% CI)	Female HR (95% CI)
Deaths	284	180	6456	4069
Age				
<40	0.03 (0.01 - 0.09)	0.03 (0.01 - 0.12)	0.16 (0.09 - 0.28)	0.21 (0.12 - 0.37)
40-49	0.21 (0.11 - 0.38)	0.15 (0.05 - 0.45)	0.27 (0.21 - 0.35)	0.21 (0.14 - 0.31)
50-59	0.42 (0.28 - 0.65)	0.78 (0.43 - 1.4)	0.50 (0.44 - 0.57)	0.57 (0.48 - 0.69)
60-69	1.00	1.00	1.00	1.00
70-79	1.93 (1.37 - 2.72)	1.93 (1.14 - 3.28)	1.95 (1.79 - 2.12)	1.94 (1.72 - 2.19)
≥80	4.00 (2.82 - 5.69)	6.56 (4.04 - 10.66)	4.63 (4.27 - 5.03)	4.36 (3.88 - 4.90)
Deprivation				
Most deprived	2.03 (1.29 - 3.19)	1.83 (1.07 - 3.13)	1.54 (1.41 - 1.68)	1.34 (1.20 - 1.49)
2nd most deprived	1.77 (1.13 - 2.78)	1.34 (0.77 - 2.32)	1.36 (1.25 - 1.48)	1.16 (1.04 - 1.29)
3rd most deprived	2.03 (1.30 - 3.15)	1.57 (0.92 - 2.68)	1.12 (1.03 - 1.22)	1.01 (0.91 - 1.13)
2nd Least deprived	1.21 (0.74 - 1.97)	1.21 (0.69 - 2.14)	1.03 (0.94 - 1.12)	0.98 (0.88 - 1.1)
Least deprived	1.00	1.00	1.00	1.00
Region				
London	2.66 (1.62 - 4.38)	1.95 (1.08 - 3.51)	1.64 (1.5 - 1.80)	1.5 (1.8 - 1.77)
South West	0.90 (0.47 - 1.74)	0.91 (0.45 - 1.85)	0.62 (0.55 - 0.70)	0.6 (0.51 - 0.70)
South East	1.00	1.00	1.00	1.00
Midlands	1.74 (1.07 - 2.80)	1.16 (0.66 - 2.03)	0.99 (0.9 - 1.08)	1.12 (0.99 - 1.25)
East of England	2.23 (1.32 - 3.76)	1.56 (0.84 - 2.87)	0.93 (0.84 - 1.04)	1.02 (0.89 - 1.16)
North West	1.82 (1.05 - 3.16)	1.47 (0.78 - 2.77)	1.12 (1.01 - 1.23)	1.25 (1.10 - 1.41)
North East	1.22 (0.70 - 2.11)	1.09 (0.59 - 2.02)	0.88 (0.8 - 0.97)	1.09 (0.96 - 1.23)
Ethnic group				
Asian	1.80 (1.24 - 2.6)	1.34 (0.79 - 2.28)	1.12 (1.03 - 1.22)	1.04 (0.93 - 1.15)
Black	2.10 (1.37 - 3.23)	1.39 (0.78 - 2.50)	1.88 (1.71 - 2.08)	1.32 (1.16 - 1.51)
Mixed	0.78 (0.19 - 3.16)	1.01 (0.25 - 4.14)	1.47 (1.19 - 1.83)	1.09 (0.81 - 1.46)
Other	2.66 (1.35 - 5.24)	0.89 (0.22 - 3.62)	1.13 (0.94 - 1.37)	0.81 (0.62 - 1.08)
White	1.00	1.00	1.00	1.00
Missing	1.32 (0.82 - 2.14)	0.9 (0.45 - 1.78)	0.85 (0.78 - 0.93)	0.73 (0.65 - 0.82)
HbA1c				
<48 mmol/mol	1.26 (0.73 - 2.15)	1.5 (0.75 - 3.02)	1.08 (1.00 - 1.17)	1.16 (1.06 - 1.28)
48-53 mmol/mol	1.00	1.00	1.00	1.00
54-58 mmol/mol	0.71 (0.39 - 1.29)	0.91 (0.42 - 2.01)	1.08 (0.98 - 1.18)	0.98 (0.87 - 1.12)
59-74 mmol/mol	1.17 (0.75 - 1.84)	1.12 (0.6 - 2.07)	1.16 (1.06 - 1.25)	1.34 (1.20 - 1.49)
75-85 mmol/mol	1.28 (0.75 - 2.16)	1.49 (0.75 - 2.96)	1.27 (1.12 - 1.43)	1.52 (1.31 - 1.77)
≥86 mmol/mol	1.99 (1.20 - 3.29)	2.50 (1.31 - 4.78)	1.49 (1.32 - 1.67)	1.81 (1.57 - 2.09)
Missing	1.64 (0.94 - 2.88)	1.24 (0.58 - 2.67)	1.23 (1.10 - 1.38)	1.16 (1.01 - 1.33)
Duration of diagnosis				
<1 year	10.26 (0.92 - 114.08)	-	1.02 (0.72 - 1.46)	0.99 (0.63 - 1.55)
1-2 years	1.02 (0.14 - 7.27)	2.26 (0.41 - 12.37)	0.92 (0.81 - 1.04)	0.83 (0.71 - 0.98)
3-4 years	1.00	1.00	1.00	1.00
5-9 years	1.64 (0.36 - 7.47)	1.65 (0.35 - 7.78)	0.96 (0.87 - 1.06)	1.06 (0.93 - 1.20)
10-14 years	2.56 (0.61 - 10.78)	1.82 (0.42 - 7.95)	1.06 (0.96 - 1.18)	1.01 (0.89 - 1.15)
15-19 years	3.46 (0.84 - 14.23)	2.17 (0.52 - 9.08)	1.20 (1.08 - 1.33)	1.19 (1.05 - 1.35)
≥20 years	2.52 (0.62 - 10.25)	1.68 (0.41 - 6.88)	1.28 (1.15 - 1.42)	1.25 (1.09 - 1.43)
eGFR				
≥90 ml/min/1.73m ^{2.2}	1.00	1.00	1.00	1.00
60-89 ml/min/1.73m ²	1.24 (0.86 - 1.77)	1.06 (0.63 - 1.78)	1.02 (0.96 - 1.10)	1.01 (0.92 - 1.12)
45-59 ml/min/1.73m ²	2.22 (1.46 - 3.38)	1.85 (1.05 - 3.24)	1.34 (1.23 - 1.45)	1.48 (1.32 - 1.65)
30-44 ml/min/1.73m ²	2.44 (1.54 - 3.87)	2.36 (1.32 - 4.22)	1.73 (1.58 - 1.90)	1.80 (1.6 - 2.03)
15-29 ml/min/1.73m ²	3.93 (2.35 - 6.59)	3.55 (1.81 - 6.98)	2.12 (1.87 - 2.40)	2.57 (2.22 - 2.99)
<15 ml/min/1.73m ²	8.07 (4.79 - 13.58)	8.73 (4.29 - 17.77)	4.49 (3.84 - 5.25)	5.67 (4.63 - 6.95)
Missing	1.38 (0.67 - 2.83)	2.44 (1.04 - 5.75)	0.78 (0.63 - 0.95)	0.92 (0.73 - 1.16)
Body mass index				
<20 kg/m ²	2.15 (1.15 - 4.01)	2.6 (1.41 - 4.81)	2.08 (1.8 - 2.41)	2.59 (2.26 - 2.97)
20-24.9 kg/m ²	1.35 (0.96 - 1.89)	1.74 (1.1 - 2.76)	1.28 (1.2 - 1.38)	1.45 (1.31 - 1.59)
25-29.9 kg/m ²	1.00	1.00	1.00	1.00
30-34.9 kg/m ²	1.37 (0.97 - 1.92)	1.68 (1.05 - 2.71)	1.03 (0.96 - 1.11)	1.06 (0.97 - 1.17)
35-39.9 kg/m ²	2.46 (1.64 - 3.70)	0.82 (0.39 - 1.74)	1.18 (1.07 - 1.29)	1.19 (1.06 - 1.34)
≥40 kg/m ²	2.15 (1.15 - 4.00)	2.55 (1.40 - 4.67)	1.63 (1.45 - 1.84)	1.61 (1.42 - 1.83)
Missing	1.91 (1.21 - 3.04)	2.15 (1.21 - 3.81)	1.77 (1.61 - 1.94)	2.09 (1.87 - 2.33)

Systolic blood pressure				
≤140 mmHg	1.00	1.00	1.00	1.00
>140 mmHg	0.98 (0.75 - 1.28)	0.67 (0.47 - 0.95)	0.86 (0.81 - 0.91)	0.87 (0.81 - 0.94)
Missing	0.62 (0.37 - 1.05)	0.85 (0.46 - 1.57)	0.68 (0.60 - 0.76)	0.79 (0.69 - 0.90)
On anti-hypertensive drugs				
Yes	0.87 (0.59 - 1.29)	1.46 (0.88 - 2.41)	1.13 (1.04 - 1.23)	1.02 (0.92 - 1.13)
No	1.00	1.00	1.00	1.00
Missing	-	-	-	-
Total cholesterol				
<5 mmol/l	1.00	1.00	1.00	1.00
≥5 mmol/l	1.08 (0.72 - 1.62)	1.06 (0.71 - 1.59)	1.11 (1.02 - 1.2)	0.95 (0.87 - 1.04)
Missing	1.45 (1.01 - 2.08)	1.18 (0.74 - 1.87)	1.64 (1.51 - 1.78)	1.70 (1.54 - 1.87)
On statins				
Yes	0.96 (0.7 - 1.31)	0.66 (0.46 - 0.92)	0.73 (0.69 - 0.78)	0.70 (0.65 - 0.75)
No	1.00	1.00	1.00	1.00
Missing	1.05 (0.3 - 3.72)	1.90 (0.51 - 7.18)	0.67 (0.49 - 0.91)	0.67 (0.48 - 0.96)
Smoking				
Current smoker	0.87 (0.57 - 1.33)	0.91 (0.5 - 1.67)	0.62 (0.56 - 0.7)	0.76 (0.65 - 0.88)
Ex-smoker	1.02 (0.79 - 1.32)	1.18 (0.84 - 1.68)	1.09 (1.03 - 1.15)	1.19 (1.11 - 1.28)
Non-smoker*	0.74 (0.30 - 1.8)	1.3 (0.60 - 2.81)	1.24 (1.05 - 1.46)	1.33 (1.11 - 1.59)
Never smoked	1.00	1.00	1.00	1.00
Missing	-	-	2.02 (1.12 - 3.66)	2.24 (1.06 - 4.71)
Co-morbidities				
Previous MI	0.99 (0.59 - 1.68)	1.74 (0.98 - 3.07)	1.10 (0.97 - 1.24)	1.15 (0.97 - 1.36)
Previous stroke	2.29 (1.55 - 3.39)	2.36 (1.47 - 3.8)	2.16 (1.97 - 2.37)	1.82 (1.61 - 2.05)
Previous heart failure	1.97 (1.45 - 2.68)	1.53 (1.03 - 2.27)	1.98 (1.85 - 2.12)	2.27 (2.09 - 2.47)

* This category is used where an individual is not currently a smoker but their history is unknown therefore interpretation of the results is complex.

- indicates that small number of cases in this category meant that it was not possible to calculate a HR with appropriate CI

Table S5: Adjusted hazard ratios for COVID-19 related death in people with Type 1 and Type 2 diabetes stratified by age

	Type 1		Type 2	
	< 70 years HR (95% CI)	70+ years HR (95% CI)	< 70 years HR (95% CI)	70+ years HR (95% CI)
Deaths	163	301	1881	8644
Sex				
Male	1.85 (1.32 - 2.61)	1.49 (1.17 - 1.91)	1.72 (1.56 - 1.9)	1.59 (1.52 - 1.66)
Female	1.00	1.00	1.00	1.00
Age				
<40	0.24 (0.14 - 0.42)	N/A	0.32 (0.26 - 0.4)	N/A
40-49	0.59 (0.42 - 0.84)	N/A	0.59 (0.53 - 0.66)	N/A
50-59	1.21 (0.68 - 2.17)	N/A	1.54 (1.28 - 1.85)	N/A
60-69	1.00	N/A	1.00	N/A
70-79	N/A	1.00	N/A	1.00
≥80	N/A	2.57 (2.01 - 3.29)	N/A	2.36 (2.25 - 2.48)
Deprivation				
Most deprived	1.21 (0.68 - 2.17)	2.42 (1.58 - 3.72)	1.54 (1.28 - 1.85)	1.46 (1.36 - 1.57)
2nd most deprived	1.26 (0.71 - 2.24)	1.75 (1.13 - 2.7)	1.42 (1.19 - 1.71)	1.26 (1.17 - 1.35)
3rd most deprived	1.25 (0.7 - 2.24)	2.13 (1.4 - 3.25)	1.25 (1.03 - 1.51)	1.06 (0.98 - 1.14)
2nd Least deprived	1.28 (0.71 - 2.33)	1.12 (0.7 - 1.8)	1.02 (0.83 - 1.25)	1.01 (0.94 - 1.09)
Least deprived	1.00	1.00	1.00	1.00
Missing	-	-	0 (0 - 9.324E+78)	2.08 (0.99 - 4.38)
Region				
London	1.93 (1.09 - 3.43)	2.77 (1.66 - 4.61)	1.79 (1.51 - 2.13)	1.51 (2.13 - 1.65)
South West	0.47 (0.19 - 1.17)	1.26 (0.70 - 2.29)	0.63 (0.48 - 0.82)	0.61 (0.55 - 0.68)
South East	1.00	1.00	1.00	1.00
Midlands	1.07 (0.61 - 1.88)	1.83 (1.13 - 2.97)	1.07 (0.89 - 1.28)	1.03 (0.95 - 1.11)
East of England	1.64 (0.90 - 2.99)	2.13 (1.25 - 3.63)	1.08 (0.88 - 1.34)	0.94 (0.86 - 1.03)
North West	1.02 (0.52 - 2.01)	2.30 (1.34 - 3.95)	0.96 (0.79 - 1.18)	1.21 (1.11 - 1.31)
North East	0.84 (0.44 - 1.6)	1.43 (0.83 - 2.46)	0.76 (0.62 - 0.93)	1.00 (0.92 - 1.08)
Missing	-	-	-	-
Ethnic group				
Asian	3.05 (1.92 - 4.85)	1.45 (0.64 - 3.31)	1.48 (1.3 - 1.69)	0.94 (0.78 - 1.13)
Black	2.53 (1.44 - 4.44)	1.1 (0.67 - 1.79)	2.25 (1.93 - 2.64)	0.79 (0.73 - 0.85)
Mixed	1.1 (0.27 - 4.53)	1.39 (0.90 - 2.15)	1.63 (1.18 - 2.26)	1.49 (1.36 - 1.63)
Other	2.66 (1.08 - 6.57)	1.67 (1.02 - 2.74)	1.36 (1.01 - 1.84)	1.10 (1.03 - 1.17)
White	1.00	1.00	1.00	1.00
Missing	1.29 (0.67 - 2.49)	0.61 (0.33 - 1.14)	0.91 (0.76 - 1.09)	1.01 (0.93 - 1.10)
HbA1c				
<48 mmol/mol	0.66 (0.27 - 1.61)	1.67 (1.02 - 2.74)	1.14 (0.97 - 1.34)	1.1 (1.03 - 1.17)
48-53 mmol/mol	1.00	1.00	1.00	1.00
54-58 mmol/mol	1.05 (0.49 - 2.26)	0.61 (0.33 - 1.14)	1.26 (1.06 - 1.51)	1.01 (0.93 - 1.10)
59-74 mmol/mol	0.8 (0.41 - 1.55)	1.33 (0.86 - 2.06)	1.31 (1.12 - 1.53)	1.21 (1.13 - 1.3)
75-85 mmol/mol	1.34 (0.67 - 2.7)	1.3 (0.77 - 2.19)	1.52 (1.25 - 1.86)	1.33 (1.19 - 1.48)
≥86 mmol/mol	1.80 (0.91 - 3.54)	2.39 (1.46 - 3.91)	1.98 (1.65 - 2.37)	1.48 (1.32 - 1.65)
Missing	1.60 (0.75 - 3.41)	1.33 (0.75 - 2.37)	1.18 (0.94 - 1.49)	1.2 (1.09 - 1.32)
Duration of diagnosis				
<1 year	-	-	1.18 (0.72 - 1.94)	0.97 (0.69 - 1.36)
1-2 years	1.84 (0.31 - 11.05)	1.45 (0.24 - 8.68)	0.92 (0.75 - 1.11)	0.89 (0.79 - 1.00)
3-4 years	1.00	1.00	1.00	1.00
5-9 years	1.19 (0.25 - 5.75)	2.05 (0.45 - 9.28)	1.06 (0.90 - 1.25)	0.97 (0.88 - 1.06)
10-14 years	1.60 (0.37 - 7.02)	2.63 (0.63 - 11.07)	1.14 (0.97 - 1.35)	1.00 (0.92 - 1.09)
15-19 years	2.25 (0.53 - 9.47)	3.14 (0.77 - 12.87)	1.21 (1.01 - 1.45)	1.16 (1.06 - 1.27)
≥20 years	2.12 (0.51 - 8.76)	2.14 (0.53 - 8.68)	1.37 (1.12 - 1.68)	1.24 (1.13 - 1.36)
eGFR				
≥90 ml/min/1.73m ²	1.00	1.00	1.00	1.00
60-89 ml/min/1.73m ²	1.25 (0.79 - 1.96)	0.94 (0.64 - 1.38)	1.26 (1.13 - 1.41)	0.90 (0.85 - 0.96)
45-59 ml/min/1.73m ²	2.68 (1.47 - 4.89)	1.52 (1.01 - 2.3)	2.16 (1.82 - 2.57)	1.22 (1.13 - 1.31)
30-44 ml/min/1.73m ²	5.22 (2.92 - 9.35)	1.57 (1.01 - 2.45)	3.61 (2.94 - 4.43)	1.53 (1.41 - 1.65)
15-29 ml/min/1.73m ²	7.01 (3.66 - 13.39)	2.36 (1.40 - 3.96)	4.99 (3.87 - 6.44)	1.97 (1.78 - 2.19)
<15 ml/min/1.73m ²	11.46 (6.31 - 20.81)	4.94 (2.65 - 9.2)	8.44 (6.64 - 10.73)	3.88 (3.36 - 4.49)
Missing	1.91 (0.87 - 4.19)	1.65 (0.76 - 3.58)	0.94 (0.67 - 1.33)	0.78 (0.65 - 0.92)
Body mass index				
<20 kg/m ²	2.12 (0.91 - 4.95)	2.3 (1.4 - 3.78)	1.72 (1.1 - 2.7)	2.26 (2.04 - 2.5)
20-24.9 kg/m ²	1.47 (0.87 - 2.46)	1.48 (1.08 - 2.03)	1.22 (1.03 - 1.45)	1.33 (1.25 - 1.41)

25-29.9 kg/m ²	-	-	-	-
30-34.9 kg/m ²	1.96 (1.2 - 3.21)	1.31 (0.94 - 1.83)	1.21 (1.06 - 1.39)	1.02 (0.95 - 1.08)
35-39.9 kg/m ²	3.36 (1.94 - 5.84)	1.10 (0.67 - 1.80)	1.66 (1.43 - 1.93)	1.05 (0.97 - 1.15)
≥40 kg/m ²	4.44 (2.44 - 8.1)	1.24 (0.63 - 2.41)	2.30 (1.97 - 2.68)	1.35 (1.21 - 1.51)
Missing	2.42 (1.30 - 4.50)	1.74 (1.12 - 2.71)	1.98 (1.63 - 2.4)	1.86 (1.73 - 2.01)
Systolic blood pressure				
≤140 mmHg	1.00	1.00	1.00	1.00
>140 mmHg	0.88 (0.61 - 1.26)	0.82 (0.63 - 1.07)	0.87 (0.78 - 0.97)	0.86 (0.82 - 0.9)
Missing	0.64 (0.34 - 1.18)	0.78 (0.46 - 1.32)	0.64 (0.52 - 0.79)	0.77 (0.7 - 0.85)
On anti-hypertensive drugs				
Yes	1.25 (0.78 - 1.99)	0.79 (0.53 - 1.16)	0.84 (0.75 - 0.95)	0.92 (0.86 - 0.99)
No	1.00	1.00	1.00	1.00
Missing	-	-	-	-
Total cholesterol				
<5 mmol/l	1.00	1.00	1.00	1.00
≥5 mmol/l	1.30 (0.85 - 1.98)	0.96 (0.66 - 1.41)	1.08 (0.95 - 1.22)	1.00 (0.94 - 1.08)
Missing	1.09 (0.65 - 1.81)	1.47 (1.04 - 2.08)	1.47 (1.25 - 1.73)	1.7 (1.59 - 1.82)
On statins				
Yes	0.89 (0.6 - 1.33)	0.76 (0.58 - 1.01)	0.84 (0.75 - 0.95)	0.69 (0.66 - 0.73)
No	1.00	1.00	1.00	1.00
Missing	-	1.50 (0.56 - 4.03)	-	0.54 (0.42 - 0.70)
Smoking				
Current smoker	1.34 (0.86 - 2.09)	0.53 (0.28 - 1.02)	0.48 (0.40 - 0.58)	0.80 (0.72 - 0.88)
Ex-smoker	1.07 (0.74 - 1.56)	1.09 (0.85 - 1.40)	1.17 (1.05 - 1.29)	1.13 (1.07 - 1.18)
Non-smoker*	1.93 (0.89 - 4.21)	0.60 (0.25 - 1.46)	1.07 (0.78 - 1.47)	1.32 (1.16 - 1.51)
Never smoked	1.00	1.00	1.00	1.00
Missing	-	-	1.98 (0.74 - 5.31)	2.17 (1.28 - 3.68)
Co-morbidities				
Previous MI	0.68 (0.29 - 1.60)	1.60 (1.04 - 2.47)	1.23 (0.97 - 1.56)	1.07 (0.96 - 1.20)
Previous stroke	2.53 (1.47 - 4.38)	2.21 (1.54 - 3.17)	2.17 (1.74 - 2.7)	1.98 (1.83 - 2.14)
Previous heart failure	2.29 (1.45 - 3.61)	1.7 (1.27 - 2.26)	2.44 (2.08 - 2.85)	2.08 (1.97 - 2.20)

* This category is used where an individual is not currently a smoker but their history is unknown therefore interpretation of the results is complex.

- indicates that small number of cases in this category meant that it was not possible to calculate a HR with appropriate CI

Table S6: Adjusted hazard ratios for COVID-19 related death in people with Type 2 diabetes stratified by ethnicity

	White HR (95% CI)	Mixed HR (95% CI)	Asian HR (95% CI)	Black HR (95% CI)	Other HR (95% CI)	Missing HR (95% CI)
Number of deaths	7105	133	1313	884	164	926
Sex						
Male	1.50 (1.42 - 1.57)	2.15 (1.45 - 3.16)	1.78 (1.58 - 2.01)	2.41 (2.08 - 2.81)	2.26 (1.58 - 3.22)	1.89 (1.63 - 2.18)
Female	1.00	1.00	1.00	1.00	1.00	1.00
Age						
<40	0.07 (0.03 - 0.19)	-	0.32 (0.19 - 0.56)	0.13 (0.03 - 0.52)	-	0.27 (0.08 - 0.85)
40-49	0.30 (0.22 - 0.40)	0.19 (0.04 - 0.83)	0.18 (0.12 - 0.27)	0.26 (0.15 - 0.45)	0.22 (0.05 - 0.94)	0.29 (0.14 - 0.59)
50-59	0.47 (0.40 - 0.55)	0.67 (0.34 - 1.30)	0.53 (0.42 - 0.65)	0.62 (0.48 - 0.8)	0.62 (0.32 - 1.18)	0.46 (0.31 - 0.69)
60-69	1.00	1.00	1.00	1.00	1.00	1.00
70-79	2.08 (1.90 - 2.28)	2.46 (1.44 - 4.20)	1.84 (1.57 - 2.15)	1.70 (1.36 - 2.11)	1.77 (1.12 - 2.82)	2.24 (1.76 - 2.87)
≥80	5.06 (4.63 - 5.53)	3.51 (2.03 - 6.08)	3.36 (2.87 - 3.94)	3.39 (2.77 - 4.14)	3.43 (2.12 - 5.55)	6.10 (4.8 - 7.75)
Deprivation						
Most deprived	1.40 (1.30 - 1.52)	1.49 (0.71 - 3.13)	2.17 (1.68 - 2.81)	1.33 (0.9 - 1.96)	1.96 (1.05 - 3.68)	1.6 (1.29 - 1.98)
2nd most deprived	1.22 (1.13 - 1.32)	1.15 (0.54 - 2.45)	1.92 (1.49 - 2.47)	1.23 (0.83 - 1.81)	1.59 (0.84 - 2.98)	1.25 (1.01 - 1.54)
3rd most deprived	1.03 (0.95 - 1.11)	1.47 (0.69 - 3.15)	1.48 (1.13 - 1.92)	1.08 (0.72 - 1.62)	1.27 (0.65 - 2.50)	1.21 (0.99 - 1.47)
2nd Least deprived	1.00 (0.92 - 1.08)	1.36 (0.60 - 3.08)	1.10 (0.82 - 1.47)	0.93 (0.59 - 1.47)	1.65 (0.85 - 3.22)	1.05 (0.86 - 1.29)
Least deprived	1.00	1.00	1.00	1.00	1.00	1.00
Missing	1.50 (0.62 - 3.63)	44.66 (5.14 - 388.01)	0 (0 - 1.36E+86)	0 (0 - 2.48E+105)	23.63 (2.88 - 193.69)	0 (0 - 1.1E+126)
Region						
London	1.74 (1.59 - 1.91)	1.73 (0.88 - 3.42)	1.39 (1.11 - 1.73)	1.48 (1.03 - 2.14)	1.55 (0.91 - 2.63)	1.81 (1.39 - 2.36)
South West	0.62 (0.55 - 0.69)	1.02 (0.32 - 3.28)	0.5 (0.26 - 0.97)	0.79 (0.43 - 1.45)	0.29 (0.07 - 1.26)	0.66 (0.53 - 0.82)
South East	1.00	1.00	1.00	1.00	1.00	1.00
Midlands	1.02 (0.94 - 1.11)	2.35 (1.13 - 4.91)	0.82 (0.64 - 1.06)	1.10 (0.74 - 1.64)	0.94 (0.46 - 1.94)	1.16 (0.96 - 1.41)
East of England	0.96 (0.87 - 1.05)	1.08 (0.43 - 2.76)	1.12 (0.82 - 1.53)	1.05 (0.65 - 1.67)	1.15 (0.63 - 2.1)	0.86 (0.66 - 1.10)
North West	1.20 (1.10 - 1.31)	0.91 (0.32 - 2.56)	0.72 (0.53 - 0.96)	1.25 (0.78 - 2.01)	0.64 (0.26 - 1.55)	1.29 (1.03 - 1.61)
North East	1.03 (0.95 - 1.12)	0.90 (0.32 - 2.53)	0.51 (0.37 - 0.69)	0.56 (0.32 - 1.00)	0.63 (0.32 - 1.24)	0.92 (0.72 - 1.17)
Missing	-	-	-	-	-	-
HbA1c						
<48 mmol/mol	1.15 (1.07 - 1.23)	1.29 (0.71 - 2.35)	1.08 (0.91 - 1.28)	0.91 (0.73 - 1.12)	1.12 (0.68 - 1.85)	1.03 (0.84 - 1.26)
48-53 mmol/mol	1.00	1.00	1.00	1.00	1.00	1.00
54-58 mmol/mol	1.01 (0.92 - 1.11)	2.46 (1.32 - 4.59)	1.13 (0.93 - 1.37)	0.98 (0.76 - 1.27)	1.14 (0.63 - 2.05)	1.07 (0.84 - 1.38)
59-74 mmol/mol	1.20 (1.11 - 1.30)	1.72 (0.92 - 3.21)	1.18 (0.99 - 1.41)	1.25 (1.01 - 1.56)	1.34 (0.80 - 2.25)	1.38 (1.11 - 1.71)
75-85 mmol/mol	1.31 (1.16 - 1.47)	2.33 (1.05 - 5.17)	1.26 (0.98 - 1.62)	1.41 (1.04 - 1.90)	1.41 (0.67 - 2.95)	1.80 (1.32 - 2.47)
≥86 mmol/mol	1.55 (1.38 - 1.74)	2.63 (1.21 - 5.73)	1.52 (1.19 - 1.93)	1.57 (1.2 - 2.05)	2.12 (1.09 - 4.13)	2.04 (1.50 - 2.78)
Missing	1.25 (1.13 - 1.38)	1.62 (0.65 - 4.01)	1.00 (0.76 - 1.32)	0.95 (0.68 - 1.32)	2.31 (1.15 - 4.66)	1.2 (0.91 - 1.58)
Duration of diagnosis						
<1 year	1.03 (0.73 - 1.45)	-	1.28 (0.59 - 2.77)	0.52 (0.13 - 2.12)	-	1.16 (0.58 - 2.28)
1-2 years	0.86 (0.76 - 0.98)	0.57 (0.23 - 1.43)	0.96 (0.71 - 1.3)	0.82 (0.57 - 1.18)	0.58 (0.27 - 1.25)	1.08 (0.83 - 1.41)
3-4 years	1.00	1.00	1.00	1.00	1.00	1.00

5-9 years	1.01 (0.92 - 1.12)	1.00 (0.53 - 1.87)	1.15 (0.91 - 1.46)	0.88 (0.66 - 1.18)	0.39 (0.22 - 0.71)	0.94 (0.74 - 1.19)
10-14 years	1.06 (0.97 - 1.17)	0.68 (0.34 - 1.34)	1.06 (0.83 - 1.36)	1.13 (0.85 - 1.5)	0.54 (0.31 - 0.94)	0.98 (0.77 - 1.24)
15-19 years	1.24 (1.13 - 1.37)	0.83 (0.42 - 1.64)	1.23 (0.97 - 1.57)	1.17 (0.88 - 1.56)	0.53 (0.29 - 0.96)	1.07 (0.84 - 1.37)
≥20 years	1.34 (1.21 - 1.49)	0.96 (0.49 - 1.90)	1.30 (1.02 - 1.67)	1.24 (0.93 - 1.66)	0.47 (0.25 - 0.88)	1.06 (0.81 - 1.39)
eGFR						
≥90 ml/min/1.73m ²²	1.00	1.00	1.00	1.00	1.00	1.00
60-89 ml/min/1.73m ²	0.94 (0.88 - 1.01)	1.3 (0.75 - 2.26)	1.16 (0.99 - 1.35)	1.22 (1.02 - 1.45)	1.98 (1.25 - 3.12)	0.99 (0.81 - 1.19)
45-59 ml/min/1.73m ²	1.25 (1.16 - 1.36)	2.52 (1.35 - 4.72)	1.51 (1.23 - 1.84)	1.93 (1.54 - 2.42)	2.39 (1.35 - 4.24)	1.41 (1.13 - 1.77)
30-44 ml/min/1.73m ²	1.55 (1.42 - 1.69)	3.81 (1.91 - 7.58)	2.47 (2.00 - 3.06)	2.13 (1.63 - 2.79)	4.37 (2.41 - 7.92)	1.58 (1.23 - 2.04)
15-29 ml/min/1.73m ²	2.05 (1.83 - 2.3)	5.38 (2.33 - 12.43)	2.97 (2.27 - 3.89)	3.13 (2.24 - 4.37)	3.2 (1.27 - 8.1)	2.08 (1.47 - 2.93)
<15 ml/min/1.73m ²	3.72 (3.10 - 4.47)	8.92 (3.36 - 23.69)	8.97 (6.99 - 11.5)	5.87 (4.27 - 8.07)	6.37 (2.13 - 19.07)	4.54 (2.64 - 7.81)
Missing	0.91 (0.75 - 1.09)	3.12 (0.97 - 10.01)	0.89 (0.55 - 1.45)	0.65 (0.38 - 1.11)	0.34 (0.04 - 2.67)	0.87 (0.55 - 1.37)
Body mass index						
<20 kg/m ²	2.58 (2.3 - 2.89)	2.26 (0.79 - 6.47)	1.54 (1.17 - 2.02)	1.69 (1.1 - 2.61)	1.31 (0.4 - 4.29)	2.28 (1.56 - 3.35)
20-24.9 kg/m ²	1.46 (1.36 - 1.56)	1.40 (0.82 - 2.37)	0.94 (0.81 - 1.08)	1.21 (0.99 - 1.48)	1.27 (0.79 - 2.07)	1.41 (1.15 - 1.74)
25-29.9 kg/m ²	1.00	1.00	1.00	1.00	1.00	1.00
30-34.9 kg/m ²	0.99 (0.93 - 1.06)	1.54 (0.94 - 2.52)	1.07 (0.91 - 1.26)	1.28 (1.06 - 1.54)	1.48 (0.97 - 2.25)	1.24 (1.01 - 1.51)
35-39.9 kg/m ²	1.09 (1 - 1.19)	2.26 (1.25 - 4.09)	1.69 (1.36 - 2.1)	1.41 (1.10 - 1.80)	1.00 (0.52 - 1.90)	1.66 (1.29 - 2.12)
≥40 kg/m ²	1.49 (1.34 - 1.65)	2.91 (1.43 - 5.93)	2.46 (1.86 - 3.25)	2.27 (1.71 - 3.02)	3.27 (1.85 - 5.77)	2.17 (1.6 - 2.94)
Missing	1.92 (1.76 - 2.09)	1.52 (0.73 - 3.16)	1.14 (0.9 - 1.44)	2.06 (1.61 - 2.62)	1.63 (0.89 - 2.97)	2.86 (2.33 - 3.50)
Systolic blood pressure						
≤140 mmHg	1.00	1.00	1.00	1.00	1.00	1.00
>140 mmHg	0.85 (0.81 - 0.90)	1.02 (0.70 - 1.50)	0.88 (0.78 - 1.01)	1.03 (0.89 - 1.19)	0.75 (0.51 - 1.10)	0.76 (0.65 - 0.88)
Missing	0.76 (0.68 - 0.84)	0.7 (0.29 - 1.68)	0.68 (0.52 - 0.88)	0.88 (0.65 - 1.20)	0.54 (0.26 - 1.14)	0.62 (0.46 - 0.82)
On anti-hypertensive drugs						
Yes	1.04 (0.96 - 1.12)	1.77 (0.95 - 3.29)	1.29 (1.07 - 1.56)	1.11 (0.88 - 1.41)	1.02 (0.61 - 1.69)	1.01 (0.83 - 1.23)
No	1.00	1.00	1.00	1.00	1.00	1.00
Missing	-	-	-	-	-	-
Total cholesterol						
<5 mmol/l	1.00	1.00	1.00	1.00	1.00	1.00
≥5 mmol/l	0.98 (0.91 - 1.06)	0.77 (0.47 - 1.27)	1.21 (1.02 - 1.43)	1.12 (0.92 - 1.35)	1.10 (0.68 - 1.79)	1.08 (0.89 - 1.31)
Missing	1.74 (1.62 - 1.87)	0.73 (0.36 - 1.47)	1.55 (1.27 - 1.89)	1.39 (1.09 - 1.77)	1.06 (0.59 - 1.88)	1.6 (1.31 - 1.96)
On statins						
Yes	0.70 (0.67 - 0.74)	0.49 (0.33 - 0.71)	0.71 (0.61 - 0.82)	0.89 (0.76 - 1.04)	1.41 (0.89 - 2.24)	0.71 (0.61 - 0.82)
No	1.00	1.00	1.00	1.00	1.00	1.00
Missing	0.72 (0.55 - 0.96)	0.94 (0.11 - 7.89)	0.40 (0.16 - 1.01)	0.50 (0.21 - 1.18)	1.56 (0.31 - 7.90)	0.81 (0.40 - 1.65)
Smoking						
Current smoker	0.71 (0.64 - 0.79)	0.77 (0.36 - 1.62)	0.48 (0.35 - 0.65)	0.55 (0.39 - 0.78)	0.05 (0.01 - 0.33)	0.92 (0.7 - 1.21)
Ex-smoker	1.15 (1.09 - 1.21)	1.37 (0.93 - 2.02)	1.14 (0.99 - 1.32)	1.08 (0.92 - 1.27)	0.94 (0.68 - 1.32)	1.09 (0.94 - 1.25)
Non-smoker*	1.34 (1.16 - 1.54)	0.42 (0.06 - 3.02)	0.93 (0.61 - 1.42)	1.30 (0.88 - 1.91)	1.13 (0.41 - 3.08)	1.45 (0.97 - 2.16)
Never smoked	1.00	1.00	1.00	1.00	1.00	1.00
Missing	2.11 (1.13 - 3.93)	-	1.38 (0.19 - 9.81)	1.61 (0.4 - 6.46)	-	3.23 (1.31 - 7.97)
Co-morbidities						
Previous MI	1.15 (1.02 - 1.29)	0.37 (0.05 - 2.7)	1.32 (1.04 - 1.68)	0.88 (0.55 - 1.42)	1.26 (0.57 - 2.8)	0.75 (0.49 - 1.15)

Previous stroke	1.95 (1.79 - 2.13)	0.92 (0.33 - 2.54)	2.4 (1.94 - 2.97)	1.92 (1.47 - 2.5)	2.65 (1.44 - 4.86)	2.12 (1.65 - 2.71)
Previous heart failure	2.22 (2.09 - 2.36)	0.83 (0.43 - 1.6)	1.54 (1.3 - 1.81)	1.85 (1.51 - 2.26)	1.36 (0.84 - 2.2)	2.22 (1.85 - 2.67)

* This category is used where an individual is not currently a smoker but their history is unknown therefore interpretation of the results is complex.

- indicates that small number of cases in this category meant that it was not possible to calculate a HR with appropriate CI

Table S7: Adjusted hazard ratios for COVID-19 related death in people with Type 2 diabetes stratified by quintile of social deprivation

	Most deprived HR (95% CI)	2nd most deprived HR (95% CI)	3rd most deprived HR (95% CI)	2nd least deprived HR (95% CI)	Least deprived HR (95% CI)
Number of deaths	2817	2558	1983	1692	1468
Sex					
Male	1.64 (1.52 - 1.78)	1.7 (1.56 - 1.85)	1.61 (1.46 - 1.77)	1.54 (1.39 - 1.71)	1.48 (1.32 - 1.66)
Female	1.00	1.00	1.00	1.00	1.00
Age					
<40	0.24 (0.13 - 0.42)	0.18 (0.08 - 0.38)	0.08 (0.02 - 0.34)	0.1 (0.01 - 0.68)	0.30 (0.07 - 1.20)
40-49	0.26 (0.19 - 0.37)	0.23 (0.16 - 0.34)	0.25 (0.16 - 0.41)	0.32 (0.18 - 0.6)	0.16 (0.06 - 0.44)
50-59	0.54 (0.45 - 0.65)	0.51 (0.42 - 0.62)	0.48 (0.37 - 0.62)	0.54 (0.40 - 0.75)	0.56 (0.39 - 0.81)
60-69	1.00	1.00	1.00	1.00	1.00
70-79	2.07 (1.83 - 2.34)	1.76 (1.54 - 2)	1.81 (1.55 - 2.12)	2.18 (1.80 - 2.63)	2.19 (1.76 - 2.72)
≥80	4.37 (3.86 - 4.94)	4.11 (3.62 - 4.67)	4.08 (3.5 - 4.76)	5.46 (4.52 - 6.58)	5.83 (4.71 - 7.20)
Region					
London	1.87 (1.53 - 2.28)	1.96 (1.67 - 2.30)	2.15 (1.83 - 2.52)	1.47 (1.24 - 1.73)	1.33 (1.11 - 1.60)
South West	0.60 (0.45 - 0.81)	0.65 (0.53 - 0.82)	0.59 (0.47 - 0.73)	0.58 (0.47 - 0.71)	0.72 (0.59 - 0.88)
South East	1.00	1.00	1.00	1.00	1.00
Midlands	1.32 (1.10 - 1.60)	1.18 (1.00 - 1.39)	1.14 (0.97 - 1.34)	0.86 (0.73 - 1.00)	0.83 (0.7 - 0.97)
East of England	0.96 (0.75 - 1.23)	1.16 (0.96 - 1.41)	0.96 (0.80 - 1.15)	0.83 (0.69 - 0.99)	1.05 (0.89 - 1.24)
North West	1.37 (1.13 - 1.66)	1.50 (1.26 - 1.78)	1.25 (1.03 - 1.52)	0.96 (0.80 - 1.14)	0.96 (0.79 - 1.15)
North East	1.17 (0.96 - 1.41)	1.08 (0.9 - 1.29)	1.24 (1.04 - 1.48)	0.81 (0.68 - 0.96)	0.64 (0.52 - 0.78)
Missing					
Ethnic group					
Asian	1.04 (0.93 - 1.17)	1.24 (1.09 - 1.40)	1.04 (0.89 - 1.22)	0.84 (0.69 - 1.03)	0.84 (0.65 - 1.08)
Black	1.62 (1.42 - 1.84)	1.69 (1.47 - 1.95)	1.56 (1.28 - 1.89)	1.59 (1.20 - 2.12)	1.74 (1.20 - 2.53)
Mixed	1.33 (0.98 - 1.80)	1.07 (0.76 - 1.51)	1.51 (1.04 - 2.20)	1.50 (0.92 - 2.43)	1.24 (0.64 - 2.4)
Other	1.03 (0.78 - 1.36)	1.03 (0.77 - 1.39)	0.89 (0.6 - 1.32)	1.22 (0.83 - 1.79)	0.8 (0.46 - 1.38)
White	1.00	1.00	1.00	1.00	1.00
Missing	0.88 (0.75 - 1.03)	0.8 (0.68 - 0.93)	0.91 (0.78 - 1.05)	0.76 (0.65 - 0.89)	0.71 (0.61 - 0.83)
HbA1c					
<48 mmol/mol	1.05 (0.93 - 1.18)	1.12 (0.99 - 1.27)	1.16 (1.01 - 1.33)	1.07 (0.93 - 1.24)	1.19 (1.02 - 1.39)
48-53 mmol/mol	1.00	1.00	1.00	1.00	1.00
54-58 mmol/mol	1.09 (0.94 - 1.25)	1.05 (0.9 - 1.22)	1.11 (0.94 - 1.31)	0.98 (0.81 - 1.18)	0.97 (0.80 - 1.19)
59-74 mmol/mol	1.17 (1.03 - 1.33)	1.30 (1.14 - 1.48)	1.23 (1.06 - 1.43)	1.19 (1.02 - 1.40)	1.20 (1.01 - 1.43)
75-85 mmol/mol	1.34 (1.13 - 1.60)	1.51 (1.25 - 1.82)	1.24 (0.99 - 1.56)	1.42 (1.12 - 1.80)	1.20 (0.91 - 1.59)
≥86 mmol/mol	1.47 (1.24 - 1.74)	1.60 (1.33 - 1.92)	1.71 (1.39 - 2.10)	1.67 (1.32 - 2.10)	1.81 (1.39 - 2.35)
Missing	1.20 (1.01 - 1.42)	1.30 (1.09 - 1.55)	1.12 (0.92 - 1.37)	1.14 (0.93 - 1.40)	1.28 (1.02 - 1.61)
Duration of diagnosis					
<1 year	0.91 (0.76 - 1.10)	0.75 (0.61 - 0.92)	0.99 (0.79 - 1.25)	0.96 (0.75 - 1.23)	0.89 (0.69 - 1.16)
1-2 years	0.91 (0.78 - 1.05)	0.95 (0.82 - 1.11)	1.17 (0.97 - 1.41)	1.02 (0.83 - 1.25)	1.02 (0.83 - 1.27)
3-4 years	1.00	1.00	1.00	1.00	1.00

5-9 years	0.91 (0.78 - 1.06)	0.98 (0.84 - 1.14)	1.15 (0.95 - 1.38)	1.20 (0.98 - 1.46)	1.14 (0.92 - 1.40)
10-14 years	1.22 (1.05 - 1.41)	1.03 (0.88 - 1.20)	1.36 (1.12 - 1.64)	1.26 (1.03 - 1.55)	1.18 (0.95 - 1.47)
15-19 years	1.15 (0.98 - 1.35)	1.15 (0.97 - 1.35)	1.46 (1.20 - 1.78)	1.33 (1.07 - 1.64)	1.42 (1.13 - 1.77)
≥20 years	1.13 (1.02 - 1.26)	1.04 (0.93 - 1.17)	0.96 (0.84 - 1.09)	0.94 (0.82 - 1.09)	0.95 (0.81 - 1.10)
eGFR					
≥90 ml/min/1.73m ²²	1.00	1.00	1.00	1.00	1.00
60-89 ml/min/1.73m ²	1.13 (1.02 - 1.26)	1.04 (0.93 - 1.17)	0.96 (0.84 - 1.09)	0.94 (0.82 - 1.09)	0.95 (0.81 - 1.10)
45-59 ml/min/1.73m ²	1.51 (1.32 - 1.71)	1.45 (1.27 - 1.66)	1.36 (1.17 - 1.59)	1.37 (1.16 - 1.62)	1.14 (0.95 - 1.36)
30-44 ml/min/1.73m ²	1.82 (1.58 - 2.10)	1.86 (1.60 - 2.15)	1.70 (1.44 - 2.01)	1.65 (1.38 - 1.98)	1.65 (1.37 - 2.00)
15-29 ml/min/1.73m ²	2.43 (2.02 - 2.92)	2.18 (1.79 - 2.66)	2.57 (2.08 - 3.18)	2.23 (1.77 - 2.83)	2.02 (1.56 - 2.61)
<15 ml/min/1.73m ²	5.27 (4.22 - 6.57)	5.07 (3.98 - 6.46)	4.71 (3.5 - 6.35)	5.67 (4.12 - 7.8)	3.58 (2.40 - 5.34)
Missing	0.87 (0.65 - 1.16)	0.78 (0.57 - 1.07)	0.70 (0.48 - 1.02)	0.92 (0.64 - 1.33)	0.94 (0.63 - 1.40)
Body mass index					
<20 kg/m ²	1.30 (1.16 - 1.45)	1.35 (1.20 - 1.51)	1.27 (1.12 - 1.45)	1.27 (1.12 - 1.45)	1.38 (1.2 - 1.60)
20-24.9 kg/m ²	0.91 (0.82 - 1.02)	1.08 (0.96 - 1.21)	1.04 (0.91 - 1.18)	1.04 (0.91 - 1.18)	1.14 (0.98 - 1.33)
25-29.9 kg/m ²	1.00	1.00	1.00	1.00	1.00
30-34.9 kg/m ²	1.03 (0.9 - 1.18)	1.26 (1.09 - 1.45)	1.20 (1.01 - 1.42)	1.15 (0.95 - 1.40)	1.26 (1.02 - 1.55)
35-39.9 kg/m ²	1.34 (1.14 - 1.56)	1.53 (1.29 - 1.83)	1.62 (1.32 - 1.98)	2.09 (1.68 - 2.60)	1.98 (1.54 - 2.55)
≥40 kg/m ²	1.76 (1.53 - 2.03)	1.86 (1.61 - 2.15)	2.03 (1.74 - 2.38)	2.29 (1.94 - 2.70)	1.61 (1.33 - 1.96)
Missing	0.89 (0.81 - 0.97)	0.89 (0.81 - 0.97)	0.86 (0.77 - 0.95)	0.87 (0.78 - 0.98)	0.78 (0.69 - 0.89)
Systolic blood pressure					
≤140 mmHg	1.00	1.00	1.00	1.00	1.00
>140 mmHg	0.77 (0.65 - 0.90)	0.63 (0.53 - 0.76)	0.68 (0.55 - 0.84)	0.75 (0.61 - 0.93)	0.82 (0.66 - 1.03)
Missing	1.05 (0.94 - 1.18)	1.05 (0.93 - 1.18)	0.99 (0.86 - 1.13)	1.04 (0.89 - 1.22)	0.98 (0.83 - 1.15)
On anti-hypertensive drugs					
Yes	1.11 (0.97 - 1.26)	1.14 (0.99 - 1.30)	1 (0.86 - 1.15)	1.01 (0.86 - 1.19)	1.15 (0.97 - 1.37)
No	1.00	1.00	1.00	1.00	1.00
Missing	-	-	-	-	-
Total cholesterol					
<5 mmol/l	1.00	1.00	1.00	1.00	1.00
≥5 mmol/l	1.57 (1.39 - 1.77)	1.61 (1.42 - 1.83)	1.61 (1.40 - 1.85)	1.90 (1.64 - 2.19)	1.77 (1.51 - 2.07)
Missing	0.55 (0.47 - 0.64)	0.69 (0.58 - 0.82)	0.79 (0.64 - 0.97)	0.74 (0.58 - 0.95)	0.81 (0.61 - 1.08)
On statins					
Yes	0.75 (0.69 - 0.82)	0.74 (0.67 - 0.81)	0.63 (0.57 - 0.7)	0.81 (0.73 - 0.91)	0.65 (0.57 - 0.73)
No	1.00	1.00	1.00	1.00	1.00
Missing	0.52 (0.31 - 0.86)	0.45 (0.25 - 0.82)	0.7 (0.41 - 1.2)	0.65 (0.37 - 1.14)	1.23 (0.77 - 1.97)
Smoking					
Current smoker	0.55 (0.47 - 0.64)	0.69 (0.58 - 0.82)	0.79 (0.64 - 0.97)	0.74 (0.58 - 0.95)	0.81 (0.61 - 1.08)
Ex-smoker	1.07 (0.98 - 1.16)	1.18 (1.08 - 1.29)	1.16 (1.05 - 1.27)	1.11 (1.00 - 1.23)	1.16 (1.03 - 1.29)
Non-smoker*	1.09 (0.85 - 1.39)	1.48 (1.18 - 1.87)	1.37 (1.04 - 1.81)	1.29 (0.95 - 1.74)	1.29 (0.93 - 1.81)
Never smoked	1.00	1.00	1.00	1.00	1.00
Missing	1.32 (0.49 - 3.53)	1.82 (0.68 - 4.86)	4.33 (1.79 - 10.46)	2.58 (0.83 - 8.08)	1.89 (0.47 - 7.62)
Co-morbidities					
Previous MI	1.13 (0.94 - 1.36)	1.17 (0.96 - 1.43)	1.15 (0.91 - 1.46)	1.05 (0.81 - 1.36)	0.98 (0.73 - 1.31)

Previous stroke	1.75 (1.51 - 2.02)	2.03 (1.75 - 2.35)	2.26 (1.92 - 2.67)	2.30 (1.94 - 2.74)	1.92 (1.57 - 2.35)
Previous heart failure	2.10 (1.9 - 2.32)	1.99 (1.79 - 2.22)	1.99 (1.76 - 2.25)	2.13 (1.87 - 2.42)	2.36 (2.05 - 2.71)

* This category is used where an individual is not currently a smoker but their history is unknown therefore interpretation of the results is complex.

- indicates that small number of cases in this category meant that it was not possible to calculate a HR with appropriate CI

Table S8: Adjusted hazard ratios for COVID-19 related death in people with Type 2 diabetes stratified by category of body mass index

	<20 kg/m ² HR (95% CI)	20-24.9 kg/m ² HR (95% CI)	25-29.9 kg/m ² HR (95% CI)	30-34.9 kg/m ² HR (95% CI)	35-39.9 kg/m ² HR (95% CI)	40+ kg/m ² HR (95% CI)	Missing HR (95% CI)
Number of deaths	488	2143	2962	2097	975	676	1184
Sex							
Male	1.62 (1.33 - 1.96)	1.61 (1.46 - 1.76)	1.75 (1.61 - 1.9)	1.65 (1.5 - 1.81)	1.64 (1.43 - 1.88)	1.56 (1.33 - 1.82)	1.44 (1.28 - 1.63)
Female	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Age							
<40	0 (0 - 3.32E+137)	0.29 (0.11 - 0.78)	0 (0 - 6.787E+56)	0.25 (0.11 - 0.56)	0.2 (0.07 - 0.55)	0.31 (0.15 - 0.65)	0.16 (0.04 - 0.65)
40-49	0.23 (0.03 - 1.74)	0.16 (0.08 - 0.35)	0.18 (0.11 - 0.29)	0.21 (0.13 - 0.35)	0.22 (0.12 - 0.39)	0.51 (0.34 - 0.75)	0.27 (0.13 - 0.53)
50-59	0.44 (0.15 - 1.33)	0.51 (0.37 - 0.71)	0.38 (0.3 - 0.48)	0.53 (0.43 - 0.66)	0.61 (0.47 - 0.78)	0.64 (0.5 - 0.83)	0.56 (0.39 - 0.8)
60-69	1.00	1.00	1.00	1.00	1.00	1.00	1.00
70-79	3.01 (1.72 - 5.26)	2.39 (1.97 - 2.9)	1.99 (1.74 - 2.28)	1.93 (1.68 - 2.22)	1.46 (1.22 - 1.75)	1.46 (1.18 - 1.79)	2.68 (2.12 - 3.38)
≥80	5.86 (3.43 - 10.03)	5.1 (4.24 - 6.14)	5.07 (4.45 - 5.78)	4.34 (3.77 - 4.99)	3.19 (2.64 - 3.85)	2.91 (2.29 - 3.69)	5.64 (4.51 - 7.06)
Deprivation							
Most deprived	0.9 (0.69 - 1.16)	0.88 (0.78 - 0.99)	0.81 (0.73 - 0.9)	0.94 (0.83 - 1.06)	0.97 (0.81 - 1.15)	0.91 (0.74 - 1.13)	0.82 (0.69 - 0.97)
2nd most deprived	0.77 (0.58 - 1.02)	0.69 (0.6 - 0.79)	0.69 (0.61 - 0.77)	0.78 (0.69 - 0.89)	0.81 (0.67 - 0.98)	0.87 (0.69 - 1.1)	0.76 (0.64 - 0.91)
3rd most deprived	0.66 (0.49 - 0.88)	0.66 (0.57 - 0.76)	0.6 (0.53 - 0.67)	0.75 (0.65 - 0.87)	0.7 (0.57 - 0.87)	1.01 (0.8 - 1.29)	0.77 (0.64 - 0.92)
2nd Least deprived	0.67 (0.5 - 0.91)	0.66 (0.57 - 0.76)	0.62 (0.55 - 0.7)	0.8 (0.69 - 0.92)	0.79 (0.63 - 0.99)	1.02 (0.78 - 1.34)	0.56 (0.46 - 0.69)
Least deprived	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Missing	-	0.95 (0.13 - 6.78)	0.94 (0.23 - 3.78)	1.12 (0.16 - 8.03)	2.39 (0.33 - 17.22)	0 (0 - 1.29E+115)	1.95 (0.48 - 7.88)
Region							
London	1.84 (1.31 - 2.61)	1.62 (1.37 - 1.91)	1.68 (1.46 - 1.93)	1.98 (1.68 - 2.34)	1.93 (1.5 - 2.5)	1.83 (1.35 - 2.47)	1.39 (1.17 - 1.67)
South West	0.67 (0.43 - 1.06)	0.65 (0.52 - 0.81)	0.64 (0.53 - 0.76)	0.54 (0.43 - 0.68)	0.67 (0.48 - 0.93)	0.71 (0.48 - 1.04)	0.61 (0.47 - 0.81)
South East	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Midlands	0.95 (0.68 - 1.35)	1.12 (0.96 - 1.32)	1.01 (0.88 - 1.15)	1.12 (0.95 - 1.31)	1.16 (0.91 - 1.49)	1.24 (0.94 - 1.65)	0.78 (0.64 - 0.94)
East of England	1.13 (0.78 - 1.65)	1.01 (0.84 - 1.22)	0.9 (0.77 - 1.06)	1.09 (0.9 - 1.31)	1.2 (0.91 - 1.58)	1.11 (0.8 - 1.54)	0.62 (0.47 - 0.81)
North West	1.42 (1 - 2.02)	1.27 (1.07 - 1.5)	1.18 (1.02 - 1.36)	1.13 (0.95 - 1.35)	1.33 (1.02 - 1.73)	1.25 (0.92 - 1.71)	0.92 (0.76 - 1.13)
North East	1.02 (0.71 - 1.47)	1.03 (0.87 - 1.22)	0.93 (0.8 - 1.07)	1.06 (0.89 - 1.26)	1.01 (0.78 - 1.31)	0.93 (0.69 - 1.27)	0.9 (0.72 - 1.14)
Missing	-	-	-	-	-	-	-
Ethnic group							
Asian	0.64 (0.47 - 0.87)	0.82 (0.71 - 0.94)	1.35 (1.2 - 1.52)	1.41 (1.21 - 1.65)	1.91 (1.52 - 2.4)	1.9 (1.42 - 2.54)	0.6 (0.48 - 0.76)
Black	0.84 (0.53 - 1.32)	1.26 (1.04 - 1.51)	1.64 (1.42 - 1.91)	2.12 (1.79 - 2.5)	2.05 (1.59 - 2.64)	2.44 (1.82 - 3.28)	1.38 (1.09 - 1.74)
Mixed	0.7 (0.26 - 1.9)	1.03 (0.69 - 1.54)	1.18 (0.83 - 1.68)	1.83 (1.28 - 2.61)	2.28 (1.41 - 3.67)	2.21 (1.2 - 4.06)	0.76 (0.42 - 1.39)
Other	0.37 (0.12 - 1.16)	0.75 (0.51 - 1.1)	1.01 (0.74 - 1.36)	1.48 (1.09 - 1.99)	0.89 (0.5 - 1.58)	2.02 (1.25 - 3.25)	0.68 (0.41 - 1.13)
White	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Missing	0.57 (0.39 - 0.83)	0.67 (0.57 - 0.79)	0.7 (0.61 - 0.81)	0.87 (0.75 - 1.02)	1.03 (0.83 - 1.29)	0.95 (0.72 - 1.26)	0.93 (0.79 - 1.09)
HbA1c							
<48 mmol/mol	1.27 (0.96 - 1.67)	1.2 (1.05 - 1.36)	1.11 (1 - 1.24)	1.11 (1 - 1.24)	1.09 (0.89 - 1.34)	0.91 (0.7 - 1.19)	0.99 (0.82 - 1.19)
48-53 mmol/mol	1.00	1.00	1.00	1.00	1.00	1.00	1.00
54-58 mmol/mol	0.87 (0.57 - 1.32)	0.96 (0.81 - 1.14)	1.05 (0.92 - 1.21)	1.05 (0.92 - 1.21)	1.13 (0.9 - 1.43)	1.32 (1 - 1.74)	1.02 (0.8 - 1.31)
59-74 mmol/mol	1.44 (1.02 - 2.02)	1.25 (1.08 - 1.46)	1.22 (1.09 - 1.38)	1.22 (1.09 - 1.38)	1.12 (0.91 - 1.38)	1.17 (0.91 - 1.5)	1.24 (1 - 1.53)

75-85 mmol/mol	0.96 (0.52 - 1.78)	1.32 (1.04 - 1.66)	1.24 (1.03 - 1.5)	1.24 (1.03 - 1.5)	1.42 (1.07 - 1.87)	1.72 (1.26 - 2.35)	1.14 (0.82 - 1.57)
≥86 mmol/mol	0.95 (0.53 - 1.71)	1.62 (1.3 - 2.01)	1.7 (1.43 - 2.01)	1.7 (1.43 - 2.01)	1.72 (1.32 - 2.24)	1.81 (1.34 - 2.45)	1.46 (1.09 - 1.95)
Missing	1.11 (0.77 - 1.6)	1.34 (1.12 - 1.61)	1.23 (1.04 - 1.46)	1.23 (1.04 - 1.46)	1.22 (0.9 - 1.65)	1.32 (0.92 - 1.89)	0.93 (0.74 - 1.18)
Duration of diagnosis							
<1 year	0.76 (0.18 - 3.13)	0.75 (0.33 - 1.69)	1.19 (0.7 - 2)	1.19 (0.7 - 2)	0.66 (0.24 - 1.79)	1.07 (0.39 - 2.95)	1.13 (0.59 - 2.17)
1-2 years	0.56 (0.34 - 0.92)	0.88 (0.69 - 1.11)	0.91 (0.75 - 1.1)	0.91 (0.75 - 1.1)	0.82 (0.62 - 1.09)	1.14 (0.81 - 1.61)	1.18 (0.89 - 1.58)
3-4 years	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5-9 years	0.69 (0.48 - 1)	1 (0.83 - 1.21)	1.03 (0.88 - 1.19)	1.03 (0.88 - 1.19)	0.88 (0.7 - 1.11)	1.14 (0.85 - 1.54)	1.01 (0.79 - 1.29)
10-14 years	0.8 (0.57 - 1.14)	1.24 (1.03 - 1.49)	1 (0.86 - 1.16)	1 (0.86 - 1.16)	0.8 (0.63 - 1.02)	1.24 (0.91 - 1.68)	1.16 (0.91 - 1.48)
15-19 years	0.87 (0.61 - 1.23)	1.32 (1.09 - 1.59)	1.24 (1.06 - 1.44)	1.24 (1.06 - 1.44)	0.92 (0.72 - 1.17)	1.25 (0.91 - 1.71)	1.25 (0.97 - 1.6)
≥20 years	1.04 (0.73 - 1.48)	1.43 (1.18 - 1.74)	1.32 (1.13 - 1.55)	1.32 (1.13 - 1.55)	0.92 (0.71 - 1.2)	1.59 (1.15 - 2.22)	1.46 (1.13 - 1.89)
eGFR							
≥90	1.00	1.00	1.00	1.00	1.00	1.00	1.00
60-89	1.11 (0.86 - 1.43)	0.93 (0.82 - 1.05)	0.96 (0.86 - 1.07)	1.11 (0.98 - 1.26)	1.32 (1.09 - 1.59)	0.97 (0.79 - 1.2)	0.98 (0.82 - 1.16)
45-59	1.52 (1.13 - 2.03)	1.24 (1.08 - 1.43)	1.36 (1.2 - 1.55)	1.62 (1.39 - 1.89)	1.66 (1.32 - 2.1)	1.4 (1.07 - 1.81)	1.16 (0.95 - 1.42)
30-44	1.91 (1.39 - 2.62)	1.44 (1.22 - 1.69)	1.77 (1.54 - 2.03)	2.11 (1.79 - 2.49)	2.52 (1.97 - 3.23)	1.58 (1.17 - 2.12)	1.46 (1.18 - 1.81)
15-29	2.21 (1.41 - 3.47)	2.19 (1.78 - 2.7)	2.35 (1.96 - 2.81)	2.23 (1.78 - 2.8)	3.58 (2.64 - 4.84)	2.35 (1.64 - 3.35)	1.87 (1.41 - 2.46)
<15	3.08 (1.41 - 6.72)	4.47 (3.39 - 5.9)	4.19 (3.27 - 5.37)	5.24 (3.93 - 6.98)	9.39 (6.6 - 13.36)	5.47 (3.53 - 8.46)	4.34 (3.05 - 6.18)
Missing	1.42 (0.84 - 2.4)	1.37 (1 - 1.88)	1.59 (1.16 - 2.18)	1.04 (0.65 - 1.66)	0.9 (0.41 - 1.96)	0.24 (0.06 - 0.96)	0.52 (0.38 - 0.69)
Systolic blood pressure							
≤140 mmHg	1.00	1.00	1.00	1.00	1.00	1.00	1.00
>140 mmHg	0.79 (0.63 - 1)	0.84 (0.76 - 0.93)	0.85 (0.78 - 0.92)	0.94 (0.85 - 1.04)	0.86 (0.74 - 0.99)	1 (0.85 - 1.18)	0.74 (0.64 - 0.86)
Missing	0.86 (0.61 - 1.22)	0.71 (0.59 - 0.87)	0.75 (0.63 - 0.9)	0.72 (0.58 - 0.89)	0.72 (0.53 - 0.99)	0.72 (0.5 - 1.04)	0.76 (0.63 - 0.91)
On anti-hypertensive drugs							
Yes	0.85 (0.68 - 1.08)	1.05 (0.92 - 1.19)	1.1 (0.97 - 1.24)	1.09 (0.93 - 1.29)	1.31 (1.01 - 1.71)	1.36 (0.98 - 1.87)	0.97 (0.81 - 1.16)
No	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Missing	-	-	-	-	-	-	-
Total cholesterol							
<5 mmol/l	1.00	1.00	1.00	1.00	1.00	1.00	1.00
≥5 mmol/l	1.11 (0.84 - 1.46)	1.09 (0.95 - 1.24)	1.04 (0.93 - 1.17)	0.97 (0.85 - 1.12)	1.15 (0.95 - 1.38)	0.83 (0.66 - 1.06)	0.96 (0.79 - 1.16)
Missing	2.09 (1.63 - 2.67)	1.91 (1.68 - 2.18)	1.62 (1.44 - 1.83)	1.64 (1.42 - 1.89)	1.54 (1.25 - 1.91)	1.4 (1.09 - 1.8)	1.39 (1.18 - 1.65)
On statins							
Yes	0.68 (0.56 - 0.83)	0.64 (0.58 - 0.71)	0.67 (0.62 - 0.73)	0.75 (0.67 - 0.83)	0.87 (0.74 - 1.03)	0.9 (0.74 - 1.1)	0.79 (0.69 - 0.9)
No	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Missing	0.1 (0.01 - 0.76)	0.91 (0.59 - 1.41)	0.5 (0.3 - 0.85)	0.51 (0.26 - 1.03)	0.56 (0.17 - 1.86)	0.78 (0.23 - 2.64)	0.82 (0.53 - 1.26)
Smoking							
Current smoker	0.68 (0.49 - 0.95)	0.67 (0.56 - 0.81)	0.71 (0.6 - 0.84)	0.68 (0.55 - 0.85)	0.49 (0.35 - 0.69)	0.67 (0.47 - 0.94)	0.72 (0.56 - 0.92)
Ex-smoker	0.92 (0.74 - 1.13)	1.12 (1.02 - 1.23)	1.21 (1.11 - 1.31)	1.2 (1.09 - 1.32)	1.18 (1.03 - 1.36)	1.09 (0.92 - 1.28)	0.96 (0.85 - 1.1)
Non-smoker*	1.39 (0.89 - 2.18)	1.54 (1.2 - 1.97)	1.41 (1.11 - 1.77)	1.33 (1 - 1.76)	0.75 (0.45 - 1.25)	1.4 (0.9 - 2.18)	0.88 (0.61 - 1.27)
Never smoked	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Missing	-	2.18 (0.7 - 6.77)	2.99 (1.12 - 7.99)	1.78 (0.44 - 7.12)	0 (0 - 1.44E+123)	3.31 (0.46 - 23.66)	2.37 (1.17 - 4.77)
Co-morbidities							
Previous MI	1.07 (0.67 - 1.72)	1.17 (0.95 - 1.45)	0.92 (0.76 - 1.12)	1.14 (0.91 - 1.43)	1.66 (1.24 - 2.24)	1.24 (0.82 - 1.86)	1.06 (0.76 - 1.48)
Previous stroke	1.6 (1.18 - 2.18)	2.12 (1.83 - 2.46)	2.09 (1.82 - 2.39)	2.15 (1.81 - 2.55)	1.91 (1.45 - 2.52)	1.98 (1.39 - 2.83)	1.66 (1.34 - 2.07)

Previous heart failure	1.7 (1.33 - 2.18)	1.92 (1.7 - 2.17)	2.16 (1.95 - 2.39)	2.11 (1.88 - 2.38)	2.02 (1.7 - 2.4)	2.77 (2.29 - 3.35)	2.08 (1.79 - 2.42)
------------------------	-------------------	-------------------	--------------------	--------------------	------------------	--------------------	--------------------

* This category is used where an individual is not currently a smoker but their history is unknown therefore interpretation of the results is complex.

- indicates that small number of cases in this category meant that it was not possible to calculate a HR with appropriate CI