

Supplemental material

Temporal trends in lifetime risks of atrial fibrillation and its complications between 2000-2022. A Danish nationwide study

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1. Additional Methods

Family income and educational attainment.

We obtained individual-level data on family income and educational attainment from Statistics Denmark. This repository includes two key registers: the population's education register and the income register. The education register provides detailed information on the highest level of education completed by every individual in the population. It is continually updated to reflect the ongoing educational achievements of all individuals enrolled in Danish educational institutions. The income register encompasses data on all individuals who have filed a tax return with the Tax Administration. The available data extends up to and including 2022 for educational attainment, while income data is available up to and including 2021.

Annual family income was calculated for the five years preceding the entry year, averaging the sum of various income sources—business income, public transfers, private pensions, interest income, other property income, and other non-classifiable income—before taxes for all family members. To adjust for inflation, a family income above the median value across all individuals in the entry year was classified as higher.

Regarding highest educational attainment, we categorized it as lower, medium, or higher, based on the level completed before the entry age but as close to it as possible. The lower category encompassed early childhood, primary education, and lower secondary education (ISCED levels 0-2). The medium category included general upper secondary and vocational upper secondary education (ISCED level 3). Finally, the higher category comprised short-cycle tertiary, medium-length tertiary, bachelor's level or equivalent, second-cycle, Masters-level or equivalent, and PhD level education (ISCED levels 5-8). Notably, ISCED level 4 does not exist in Denmark.

Subgroup analyses.

In evaluating the lifetime risk of AF by subgroup, we first stratified individuals by risk factor status at entry age. Individuals with history of a risk factor at entry age would be followed from entry age (first recorded visit free of AF between ages 45 and 95) up until the earliest of newly diagnosed AF, death, or end of follow-up. For individuals without history of a risk factor at entry age, we further accounted for the fact that this could change during follow-up; for example, a person initially free from hypertension and AF might develop hypertension before AF during the follow-up period. Therefore, individuals with no history of a risk factor at entry were followed from entry age up until the earliest of newly diagnosed AF, first occurrence of the risk factor, death, or end of follow-up. At the occurrence of the risk factor of interest before the onset of AF, participants would then enter the risk set for the other subgroup of individuals with the risk factor. When the risk factor and AF occurred simultaneously, the AF event was prioritized. Different methodologies were applied to identify new cases of hypertension and changes in income. Hypertension was assessed annually post-entry for those without a prior diagnosis, while family income changes were evaluated every five years. To adjust for inflation, income from post-entry years was recalibrated to their equivalent value in subsequent calendar years, using the median value among all individuals for each year. Educational attainment was treated as a constant, as no participant pursued education post-entry that would place them in a higher category than lower, medium, or higher.

In the analysis of lifetime risk of complications following AF, we employed a similar subgroup stratification but adopted a different analytical approach. To avoid conflating individuals with risk factors before and after AF, all risk factors were treated as time-invariant covariates.

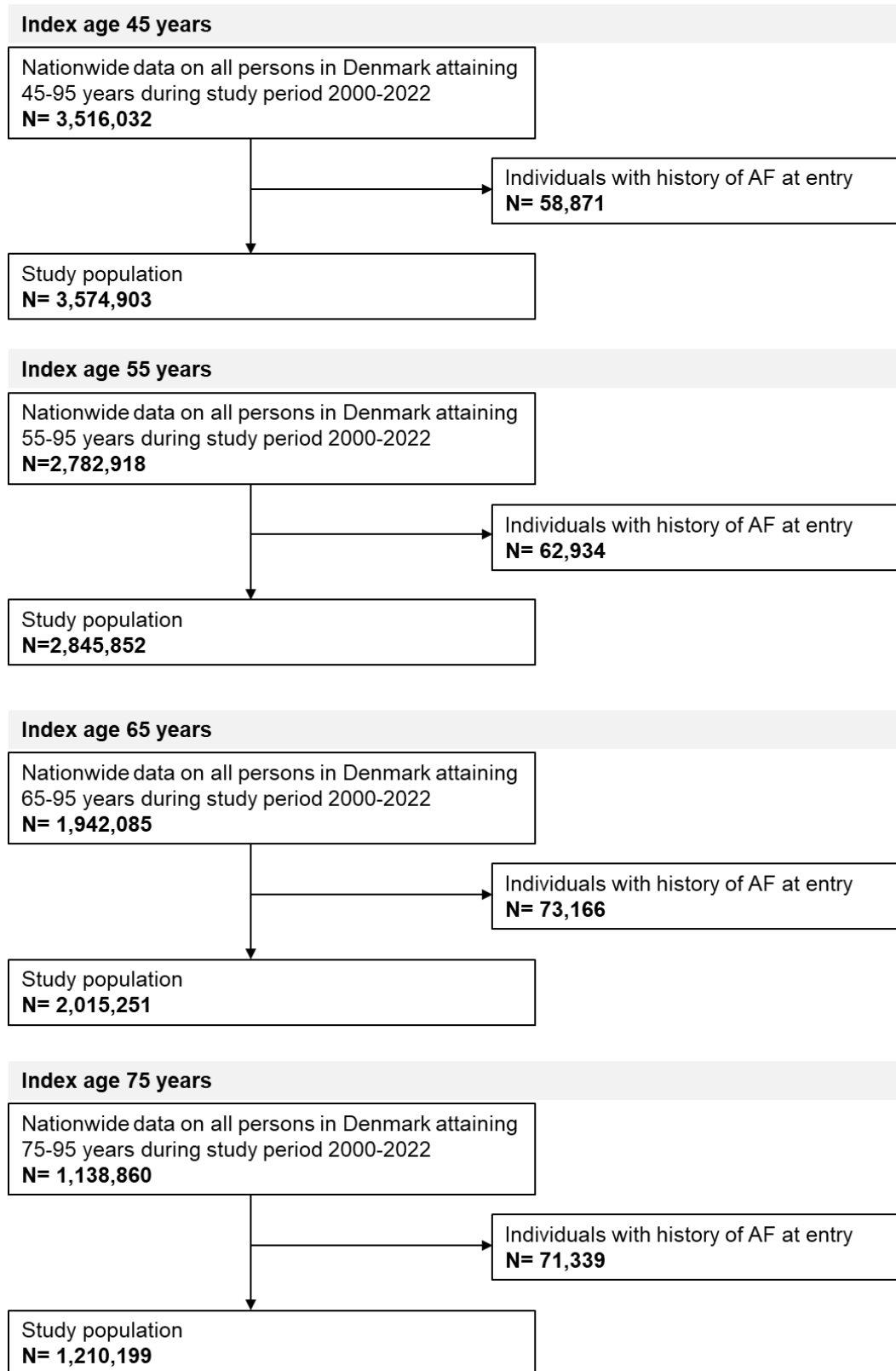
Supplemental Table 1. Definition of covariates.

	Time window	Definition	ICD-8	ICD-10	ATC
Atrial fibrillation	-	-	42793 42794	I48	-
Risk factors					
Hypertension	On or before entry date	At least one previous diagnosis or use of at least two types of antihypertensive medications up to 1 year before entry age.	400 401 402 403 404	I10 I11 I12 I13 I15	C09A C02DA C02L C03A C03B C03D C03EA C03X C07C C07D C08G C09BA C09DA C09XA52 C02DB C02DD C02DG C04 C05 C07 C07F C08 C09BB C09DB C09
Heart failure		At least one previous diagnosis	42709 42710 42711 42719 42899 78249	I110 I130 I132 I50	
Myocardial infarction		At least one previous diagnosis	410	I21 I22 I23	
Any stroke		At least one previous diagnosis	430 431 433 434 436	I160 I61 I62 I63 I64	
Diabetes		At least one previous diagnosis or use of medication up to 1 year before entry age.	249 250	E100 E101 E109 E110 E111 E119	A10
Cardiomyopathy		At least one previous diagnosis	746.40–746.49	I42 I43	
Valvular heart disease		At least one previous diagnosis or procedure	94.00-396.99	I05-I08, I34-I37 Or procedure KFJE, KFJF, KFG, KFK, KFM	
Dyslipidemia		At least one previous diagnosis or ATC code (within same time window used for antihypertensive medication)	279.00	E78.0–78.5	C10
Chronic obstructive pulmonary disease		At least one previous diagnosis	491.00-492.00	J44	
Chronic kidney disease		At least one previous diagnosis	24902 25002 582 583 584 59009 59320 75309 75310 75311 75319 792	E102 E112 E142 I120 I131 I132 I150 I151 N03 N05 N06 N07 N08 N110 N14 N15 N16 N18 N19 N26 N27 N280 N391 Q61	

All diagnoses included primary and secondary diagnoses. We excluded emergency room diagnoses until 2014 for stroke.

2. Flowchart

Supplemental Figure 1. Flowchart.



3. Characteristics of participants

Supplemental Table 2. History of comorbidities in the general atrial fibrillation-free population at entry, by sex.

	Men free of atrial fibrillation and 45 years or older at entry				Women free of atrial fibrillation and 45 years or older at entry				P value for overall difference between men and women
	Overall 2000-2022 N=1,727,703	Epoch 1 2000-2010 N=1,322,685	Epoch 2 2011-2022 N=1,409,879	P value	Overall 2000-2022 N=1,847,200	Epoch 1 2000-2010 N=1,453,425	Epoch 2 2011-2022 N=1,514,174	P value	
Age, median (Q1-Q3), years	47 (45-60)	53 (45-64)	54 (45-65)		50 (45-64)	55 (45-68)	56 (45-67)		<0.001
Cardiometabolic risk factors, N (%)									
Hypertension	152,213 (8.8)	129,498 (9.8)	283,550 (20.1)	<0.001	201,686 (10.9)	177,641 (12.2)	341,381 (22.5)	<0.001	<0.001
Diabetes	66,814 (3.9)	53,677 (4.1)	98,360 (7.0)	<0.001	58,538 (3.2)	47,276 (3.3)	82,405 (5.4)	<0.001	<0.001
Dyslipidemia	74,165 (4.3)	50,773 (3.8)	257,886 (18.3)	<0.001	50,658 (2.7)	36,782 (2.5)	252,959 (16.7)	<0.001	<0.001
Clinical comorbidities									
Heart failure	17,723 (1.0)	16,425 (1.2)	21,544 (1.5)	<0.001	17,009 (0.9)	16,250 (1.1)	16,796 (1.1)	0.470	<0.001
Myocardial infarction	52,301 (3.0)	49,417 (3.7)	53,125 (3.8)	0.17	24,774 (1.3)	23,697 (1.6)	24,810 (1.7)	0.58	<0.001
Any stroke	43,294 (2.4)	37,931 (2.9)	49,991 (3.5)	<0.001	41,443 (2.2)	37,349 (2.6)	46,613 (3.1)	<0.001	<0.001
Cardiomyopathy	3,060 (0.2)	2,104 (0.2)	5,244 (0.4)	<0.001	2,032 (0.1)	1,403 (0.1)	3,495 (0.2)	<0.001	<0.001
Valvular heart disease	8,726 (0.5)	7,433 (0.6)	15,265 (1.1)	<0.001	9,240 (0.5)	7,868 (0.5)	15,898 (1.0)	<0.001	0.52
Chronic obstructive pulmonary disease	26,104 (1.5)	23,966 (1.8)	33,028 (2.3)	<0.001	29,767 (1.6)	27,634 (1.9)	43,234 (2.8)	<0.001	<0.001
Chronic kidney disease	25,822 (1.5)	20,192 (1.5)	29,541 (2.1)	<0.001	21,237 (1.1)	16,431 (1.1)	23,265 (1.5)	<0.001	<0.001
Ischemic stroke	22,981 (1.3)	20,811 (1.6)	27,194 (1.9)	<0.001	21,062 (1.1)	19,029 (1.3)	24,199 (1.6)	<0.001	<0.001
Systemic embolism	3,411 (0.2)	3,113 (0.2)	3,021 (0.2)	<0.001	3,107 (0.2)	2,756 (0.2)	2,721 (0.2)	0.05	<0.001
Social factors									
Higher income*, N (%)	892,825 (52.8)	702,827 (54.1)	734,713 (53.2)	<0.001	860,171 (47.4)	663,879 (46.3)	701,899 (47.1)	<0.001	<0.001
Educational attainment†, N (%)									
Lower	475,901 (29.9)	399,147 (33.0)	362,124 (26.8)	<0.001	612,360 (37.0)	554,796 (43.4)	471,765 (32.5)	<0.001	<0.001
Medium	741,737 (46.5)	555,646 (45.9)	645,652 (47.8)		613,282 (37.0)	449,679 (35.1)	565,749 (39.0)		
Higher	375,955 (23.6)	254,763 (21.1)	342,842 (25.4)		430,834 (26.0)	275,254 (21.5)	414,310 (28.5)		

*5-year mean annual family income higher than calendar year-specific median value.

† Lower: early childhood, primary education, and lower secondary education (ISCED 0-2). Medium: general upper secondary education and vocational upper secondary education (ISCED 3). Higher: short-cycle tertiary, medium-length tertiary, bachelor's-level educations or equivalent, second-cycle, Masters-level or equivalent, and PhD level (ISCED 5-8). ISCED 4 does not exist in Denmark.

Missing atrial fibrillation-free participants: education: 324,834 (9.1%); income: 68,894 (1.9%).

Vinter et al. Lifetime risks of atrial fibrillation and complications
Supplemental Table 3. History of comorbidities at diagnosis of atrial fibrillation, by sex.

	Men at atrial fibrillation diagnosis and 45 years or older at entry				Women at atrial fibrillation diagnosis and 45 years or older at entry				P value for overall difference between men and women
	Overall 2000-2022 N=194,505	Epoch 1 2000-2010 N=78,722	Epoch 2 2011-2022 N=115,783	P value	Overall 2000-2022 N=168,216	Epoch 1 2000-2010 N=73,035	Epoch 2 2011-2022 N=95,181	P value	
Age, median (Q1-Q3), years	73 (65-80)	73 (64-80)	73 (66-80)	<0.001	78 (70-85)	79 (70-85)	78 (70-85)	<0.001	<0.001
Cardiometabolic risk factors, N (%)									
Hypertension	109,745 (56.4)	39,932 (50.7)	69,813 (60.3)	<0.001	103,688 (61.6)	41,149 (56.3)	62,539 (65.7)	<0.001	<0.001
Diabetes	31,244 (16.1)	10,433 (13.3)	20,811 (18.0)	<0.001	21,592 (12.8)	8,129 (11.1)	13,463 (14.1)	<0.001	<0.001
Dyslipidemia	72,790 (37.4)	20,127 (25.6)	52,663 (45.5)	<0.001	52,977 (31.5)	14,462 (19.8)	38,515 (40.5)	<0.001	<0.001
Clinical comorbidities									
Heart failure	35,707 (18.4)	16,678 (21.2)	19,029 (16.4)	<0.001	26,371 (15.7)	14,490 (19.8)	11,881 (12.5)	<0.001	<0.001
Myocardial infarction	29,767 (15.3)	13,409 (17.0)	16,358 (14.1)	<0.001	16,218 (9.6)	8,074 (11.1)	8,144 (8.6)	<0.001	<0.001
Any stroke	27,362 (14.1)	10,625 (13.5)	16,737 (14.5)	<0.001	24,290 (14.4)	10,680 (14.6)	13,610 (14.3)	0.061	0.001
Cardiomyopathy	5,032 (2.6)	1,996 (2.5)	3,036 (2.6)	0.24	2,462 (1.5)	858 (1.2)	1,604 (1.7)	<0.001	<0.001
Valvular heart disease	19,963 (10.3)	6,782 (8.6)	13,181 (11.4)	<0.001	17,004 (10.1)	6,608 (9.0)	10,396 (10.9)	<0.001	0.12
Chronic obstructive pulmonary disease	22,463 (11.5)	9,564 (12.1)	12,899 (11.1)	<0.001	21,623 (12.9)	8,818 (12.1)	12,805 (13.5)	<0.001	<0.001
Chronic kidney disease	13,748 (7.1)	4,899 (6.2)	8,849 (7.6)	<0.001	8,657 (5.1)	3,179 (4.4)	5,478 (5.8)	<0.001	<0.001
Ischemic stroke	13,864 (7.1)	6,361 (8.1)	7,503 (6.5)	<0.001	12,195 (7.2)	6,399 (8.8)	5,796 (6.1)	<0.001	0.16
Systemic embolism	1,664 (0.9)	383 (1.1)	826 (0.7)	<0.001	1,525 (0.9)	794 (1.1)	731 (0.8)	<0.001	0.10
Social factors									
Higher income*, N (%)	118,286 (60.8)	48,688 (61.9)	69,598 (60.1)	<0.001	63,012 (37.5)	27,180 (37.2)	35,832 (37.7)	<0.001	<0.001
Educational attainment†, N (%)									
Lower	65,754 (36.4)	28,107 (41.9)	37,647 (33.2)	<0.001	79,555 (54.7)	32,973 (62.1)	46,582 (50.4)	<0.001	<0.001
Medium	78,926 (43.7)	27,228 (40.6)	51,698 (45.6)		43,302 (29.8)	13,623 (25.6)	29,679 (32.1)		
Higher	35,826 (19.8)	11,756 (17.5)	24,070 (21.2)		22,633 (15.6)	6,518 (12.3)	16,115 (17.4)		

*5-year mean annual family income higher than calendar year-specific median value.

† Lower: early childhood, primary education, and lower secondary education (ISCED 0-2). Medium: general upper secondary education and vocational upper secondary education (ISCED 3). Higher: short-cycle tertiary, medium-length tertiary, bachelor's-level educations or equivalent, second-cycle, Masters-level or equivalent, and PhD level (ISCED 5-8). ISCED 4 does not exist in Denmark.

Missing atrial fibrillation-free participants: education: 36,725 (10.1%); income: 117 (0.03%).

4. Lifetime risk of atrial fibrillation from 2000-2022**Supplemental Table 4. Number of individuals at risk of incident atrial fibrillation and number of incident diagnosis of atrial fibrillation during follow-up.**

Index age	Number at risk at index age	Number of unique individuals contributing to the analysis	Number of incident diagnoses of atrial fibrillation
45	1,579,388	3,574,903	362,721
55	1,555,534	2,845,852	343,278
65	1,289,160	2,019,298	290,677
75	871,193	1,211,171	188,261

Number at risk at index age: Number of individuals who have entered the analysis at the age.

Supplemental Table 5. Lifetime risk of atrial fibrillation by subgroups at index age 45 years.

Risk factor	Lifetime risk	Difference	Test for difference
Men	29.9 (29.8;30.0)	4.3 (4.1;4.5)	<0.001
Women	25.6 (25.5;25.7)		
Hypertension	29.7 (29.6;29.8)	8.3 (8.1;8.5)	<0.001
No hypertension	21.5 (21.3;21.6)		
HF	35.2 (34.4;36.0)	8.0 (7.2;8.8)	<0.001
No HF	27.2 (27.1;27.3)		
MI	34.1 (33.7;34.5)	7.0 (6.6;7.4)	<0.001
No MI	27.2 (27.1;27.3)		
Stroke	22.7 (22.4;23.0)	-5.3 (-5.6;-5.0)	<0.001
No stroke	28.1 (28.0;28.2)		
Diabetes	26.6 (26.3;26.8)	-1.2 (-1.4;-1.0)	<0.001
No diabetes	27.8 (27.7;27.9)		
Cardiomyopathy	42.0 (40.8;43.1)	14.4 (13.3;15.5)	<0.001
No cardiomyopathy	27.6 (25.5;27.6)		
Dyslipidemia	32.8 (32.6;32.9)	7.4 (7.3;7.6)	<0.001
No dyslipidemia	25.3 (25.2;25.4)		
COPD	20.1 (19.8;20.4)	-8.1 (-8.5;-7.7)	<0.001
No COPD	28.2 (28.1;28.3)		
CKD	24.5 (24.2;23.9)	-3.3 (-3.7;-2.9)	<0.001
No CKD	27.8 (27.7;27.9)		
VHD	50.0 (49.2;50.7)	23.1 (22.4;23.9)	<0.001
No VHD	26.8 (26.8;26.9)		
Lower education	26.2 (26.0;26.3)	-	<0.001
Medium Education	29.3 (29.1;29.4)		
Higher education	31.2 (30.9;31.5)		
Higher income	32.1 (31.8;32.4)	7.2 (6.9;7.6)	<0.001
Lower income	24.9 (24.8;25.0)		

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

5. Number at risk for lifetime risk of atrial fibrillation by epoch

Supplemental Table 6. Number of individuals at risk for atrial fibrillation and number of incident diagnosis of atrial fibrillation by calendar period.

Epoch	Index age	Number at risk at index age	Number of unique individuals contributing to the analysis	Number of incident atrial fibrillation diagnoses
2000-2010	45	780,595	2,776,110	151,782
	55	746,259	2,365,577	143,107
	65	584,226	1,314,365	119,128
	75	356,398	696,376	79,582
2011-2022	45	798,793	2,924,053	210,939
	55	809,275	2,246,124	200,171
	65	704,934	1,510,433	171,549
	75	514,795	838,637	108,679

Number at risk at index age: Number of individuals who have entered the analysis at the age.

6. Adjusted analyses of lifetime risk of atrial fibrillation

Supplemental Table 7. Adjusted lifetime risks of atrial fibrillation.

	Model 1	Model 2
Epoch		
2000-2010	25.1 (24.9;25.2)	25.4 (25.2;25.5)
2011-2022	30.3 (30.2;30.4)	30.4 (30.3;30.5)
Absolute difference	5.2 (5.0;5.4)	5.0 (4.8;5.2)
P value	<0.001	<0.001
Sex		
Women	25.6 (25.5;25.7)	26.0 (25.9;26.1)
Men	29.8 (29.7;29.9)	30.2 (30.1;30.3)
Absolute difference	4.2 (4.0;4.4)	4.2 (4.0;4.3)
P value	<0.001	<0.001
Women		
2000-2010	23.6 (23.4;23.8)	23.9 (23.7;24.1)
2011-2022	27.6 (25.5;27.8)	27.7 (27.5;27.8)
Absolute difference	4.0 (3.8;4.3)	3.8 (3.5;4.0)
P value	<0.001	<0.001
Men		
2000-2010	26.5 (26.4;26.7)	26.8 (26.6;27.0)
2011-2022	33.0 (32.9;33.2)	33.2 (33.0;33.3)
Absolute difference	6.5 (6.3;6.7)	6.4 (6.1;6.6)
P value	<0.001	<0.001

Model 1: Adjusted for age (as time scale), sex, hypertension, diabetes, dyslipidemia, heart failure, myocardial infarction, any stroke, cardiomyopathy, valvular heart disease, chronic obstructive pulmonary disease, and chronic kidney disease.

Model 2: Adjusted for Model 1 and education and income. Includes individuals with complete information on education and income.

7. Temporal trends in lifetime risk of atrial fibrillation by subgroups

Supplemental Table 8. Temporal trends in lifetime risk (% , 95%CI) of atrial fibrillation by subgroups, at index age 45.

Risk factor	Lifetime risk in epoch 1, % (2000-2010)	Lifetime risk in epoch 2, % (2011-2022)	Difference between epochs, %	Test for interaction
Men	25.7 (25.5;25.8)	33.6 (33.4;33.7)	7.9 (7.7;8.1)	<0.001
Women	22.8 (22.6;22.9)	28.2 (28.1;28.4)	5.5 (5.3;5.7)	
Hypertension	26.5 (26.4;26.7)	32.0 (31.9;32.2)	5.5 (5.3;5.7)	0.34
No hypertension	19.7 (19.5;19.9)	25.0 (24.7;25.3)	5.3 (4.9;5.7)	
HF	30.9 (29.7;32.2)	39.5 (38.5;40.5)	8.6 (7.0;10.2)	0.01
No HF	23.7 (23.6;23.8)	30.3 (30.2;30.4)	6.6 (6.4;6.7)	
MI	30.5 (29.9;31.0)	38.2 (37.6;38.8)	7.8 (6.9;8.6)	0.004
No MI	23.7 (23.6;23.8)	30.3 (30.2;30.4)	6.6 (6.4;6.7)	
Stroke	18.0 (17.6;18.4)	27.2 (26.7;27.6)	9.1 (8.6;9.7)	<0.001
No stroke	24.8 (24.6;31.1)	31.1 (31.0;31.3)	6.4 (6.2;6.6)	
Diabetes	22.3 (21.9;22.6)	29.4 (29.2;29.7)	7.2 (6.8;7.6)	0.023
No diabetes	24.4 (24.3;24.5)	31.0 (30.9;31.2)	6.7 (6.5;6.8)	
Cardiomyopathy	36.9 (34.9;38.8)	45.6 (44.2;47.0)	8.8 (6.4;11.1)	0.008
No cardiomyopathy	24.1 (24.0;24.2)	30.7 (30.6;30.8)	6.6 (6.5;6.8)	
Dyslipidemia	30.9 (30.6;31.2)	33.4 (33.3;33.6)	2.5 (2.1;2.9)	<0.001
No dyslipidemia	22.8 (22.6;22.9)	28.9 (28.8;29.1)	6.2 (6.0;6.4)	
COPD	17.5 (17.0;18.0)	22.5 (22.0;22.9)	5.0 (4.3;5.7)	<0.001
No COPD	24.7 (24.5;24.8)	31.5 (31.4;31.6)	6.8 (6.7;7.0)	
CKD	20.3 (19.8;20.9)	28.0 (27.5;28.5)	7.7 (6.9;8.4)	0.008
No CKD	24.4 (24.3;24.5)	31.0 (30.9;31.1)	6.6 (6.5;6.8)	
VHD	46.8 (45.5;48.1)	52.1 (51.2;53.0)	5.3 (3.7;6.9)	0.22
No VHD	23.5 (23.4;23.7)	29.9 (29.8;30.0)	6.4 (6.2;6.5)	
Lower education	23.1 (22.8;23.5)	28.8 (28.6;29.0)	5.6 (5.3;6.0)	0.56
Medium education	25.4 (24.6;26.3)	31.5 (31.3;31.7)	6.1 (5.2;7.0)	
Higher education	27.6 (26.9;28.3)	33.0 (32.7;33.4)	5.5 (4.7;6.2)	
Higher income	28.0 (27.6;28.4)	35.3 (34.8;35.7)	7.3 (6.7;7.9)	0.002
Lower income	21.6 (21.5;21.8)	27.9 (27.8;28.0)	6.3 (6.1;6.4)	

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

8. Lifetime risk of atrial fibrillation by secondary index ages**Supplemental Table 9. Lifetime risks (%; 95%CI) of atrial fibrillation in secondary analyses, years 2000-2022, by sex.**

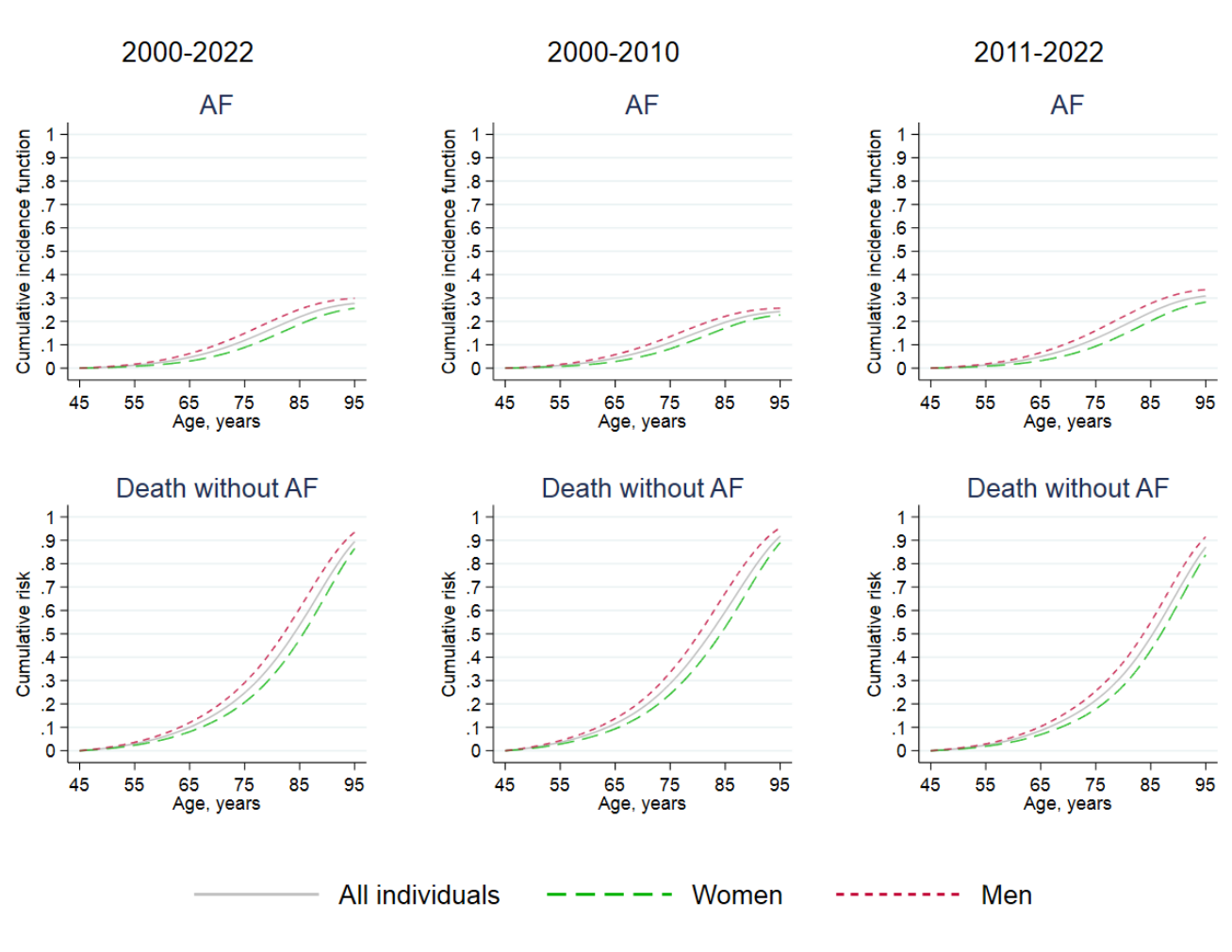
	Index age		
	55 years	65 years	75 years
Overall			
Lifetime risk, %	27.6 (27.5;27.7)	26.9 (26.9;27.0)	24.3 (24.2;24.4)
Men			
Lifetime risk, %	27.4 (27.3;27.6)	26.5 (26.4;26.7)	23.5 (23.3;23.7)
Women			
Lifetime risk, %	24.3 (24.1;24.4)	24.0 (23.9;24.2)	22.3 (22.2;22.5)
Absolute difference			
Lifetime risk, % (95%CI)	3.2 (3.0;3.4)	2.5 (2.3;2.7)	1.2 (1.0;1.5)

Supplemental Table 10. Temporal trends in lifetime risk (%) of atrial fibrillation by epoch.

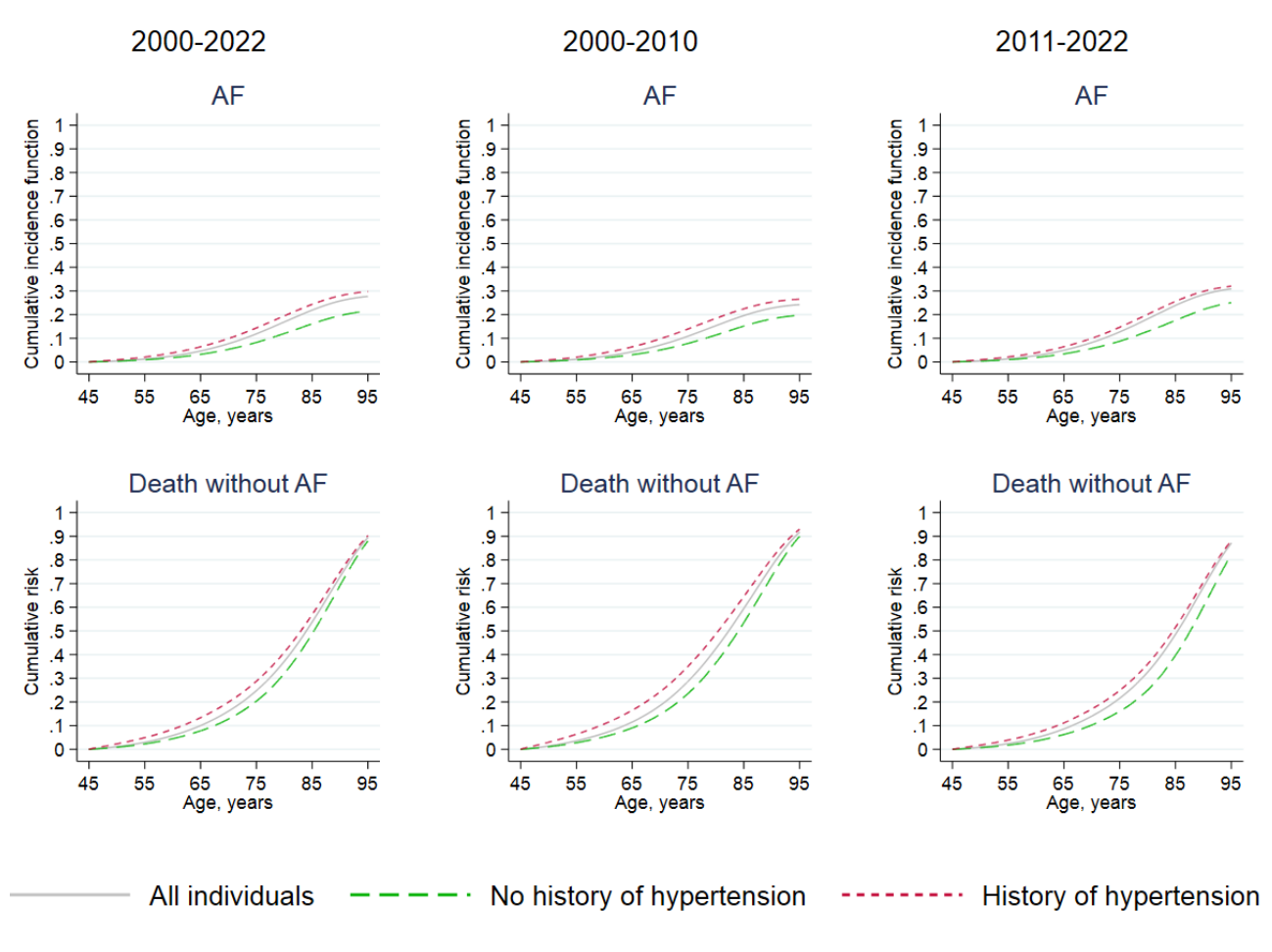
	Index age		
	55 years	65 years	75 years
Overall			
Lifetime risk			
2000-2010	24.2 (24.1;24.3)	23.6 (23.5;23.7)	21.4 (21.3;21.6)
2011-2022	30.7 (30.6;30.8)	29.9 (29.8;30.0)	27.0 (26.9;27.2)
Absolute difference	6.5 (6.3;6.7)	6.3 (6.2;6.5)	5.6 (5.4;5.8)
P value	<0.001	<0.001	<0.001
Men			
Lifetime risk			
2000-2010	24.6 (24.4;24.8)	23.6 (23.4;23.8)	21.0 (20.8;21.3)
2011-2022	29.9 (29.7;30.2)	29.0 (28.8;29.3)	25.8 (25.6;26.1)
Absolute difference	5.4 (5.1;5.6)	5.4 (5.1;5.7)	4.8 (4.4;5.2)
P value	<0.001	<0.001	<0.001
Women			
Lifetime risk			
2000-2010	21.9 (21.7;22.0)	21.7 (21.5;21.9)	20.3 (20.1;20.5)
2011-2022	26.5 (26.3;26.7)	26.2 (26.0;26.4)	24.2 (24.0;24.4)
Absolute difference	4.6 (4.3;4.9)	4.5 (4.2;4.7)	3.9 (3.6;4.2)
P value	<0.001	<0.001	<0.001

9. Figures showing the cumulative incidence function of atrial fibrillation

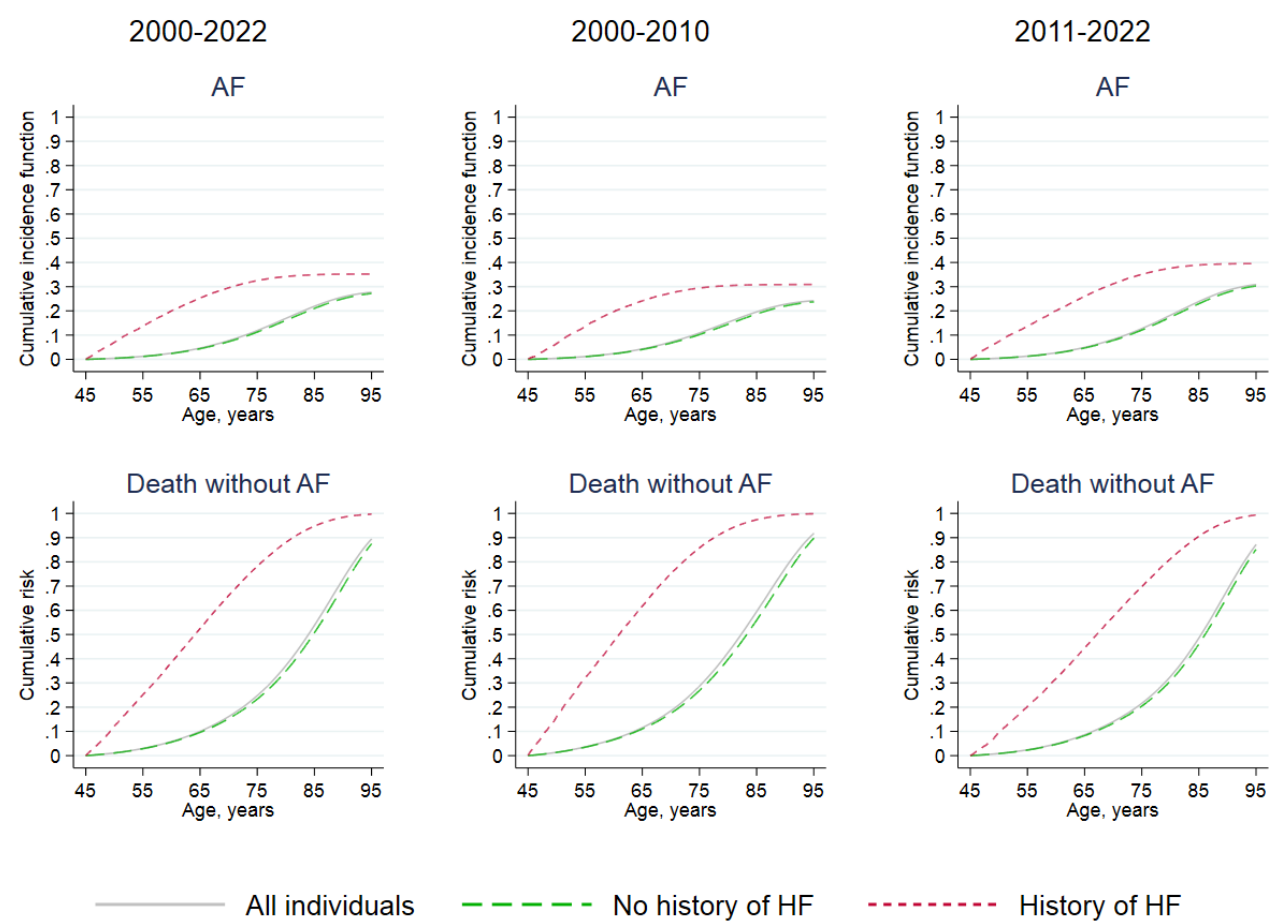
Supplemental Figure 2. Cumulative incidence at age 45 years by sex.



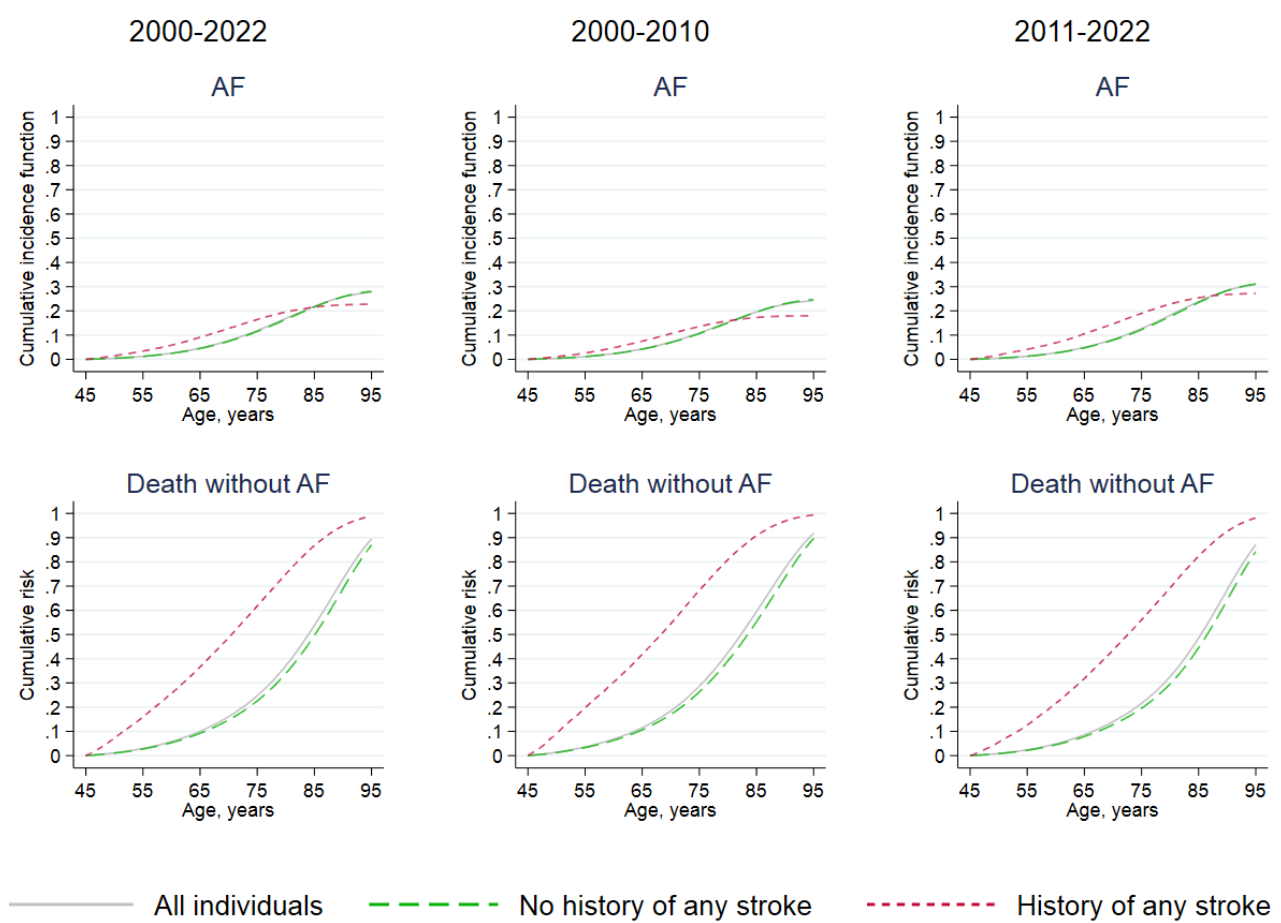
Supplemental Figure 3. Cumulative incidence at age 45 years by hypertension.



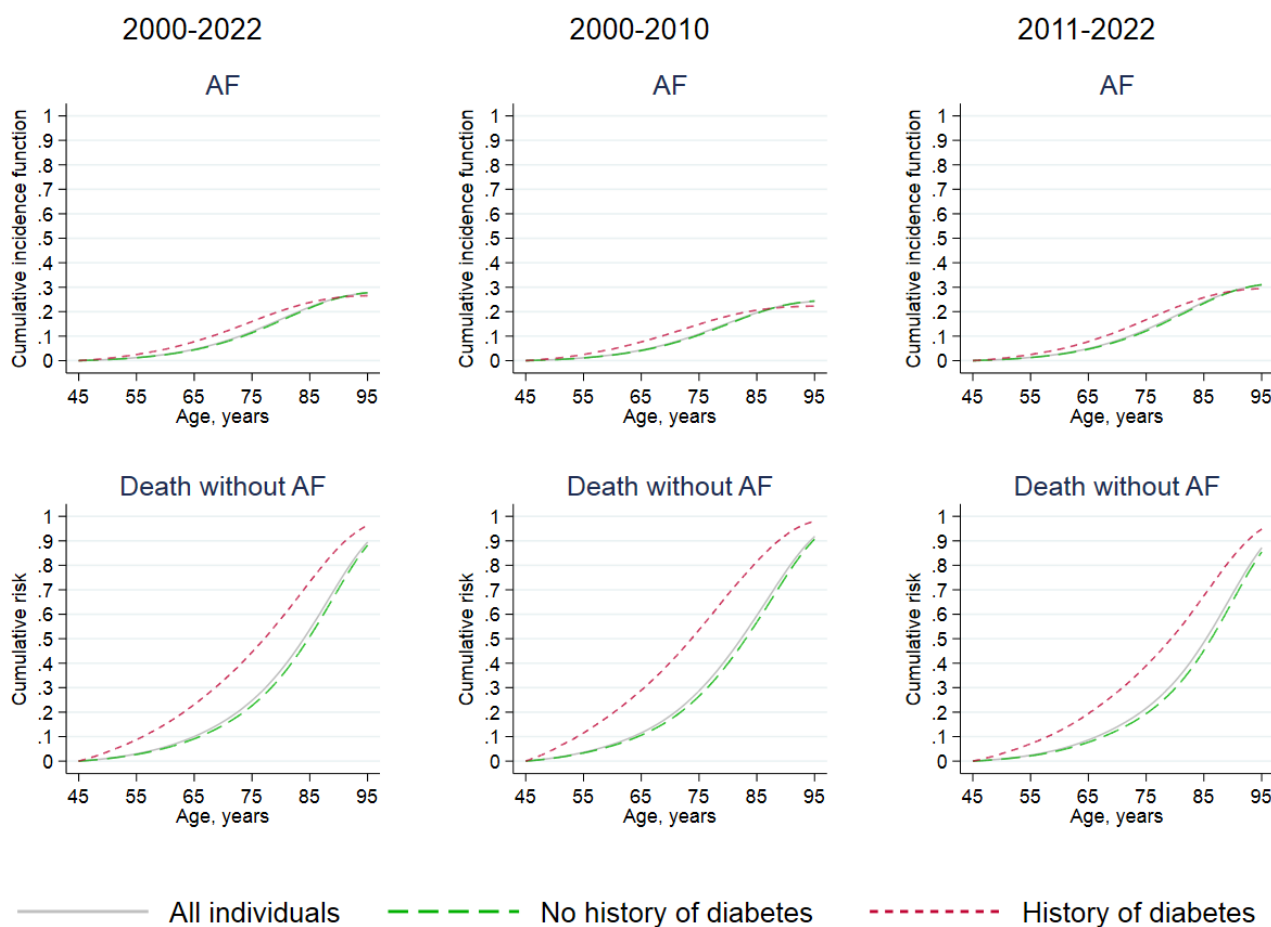
Supplemental Figure 4. Cumulative incidence at age 45 years by heart failure.



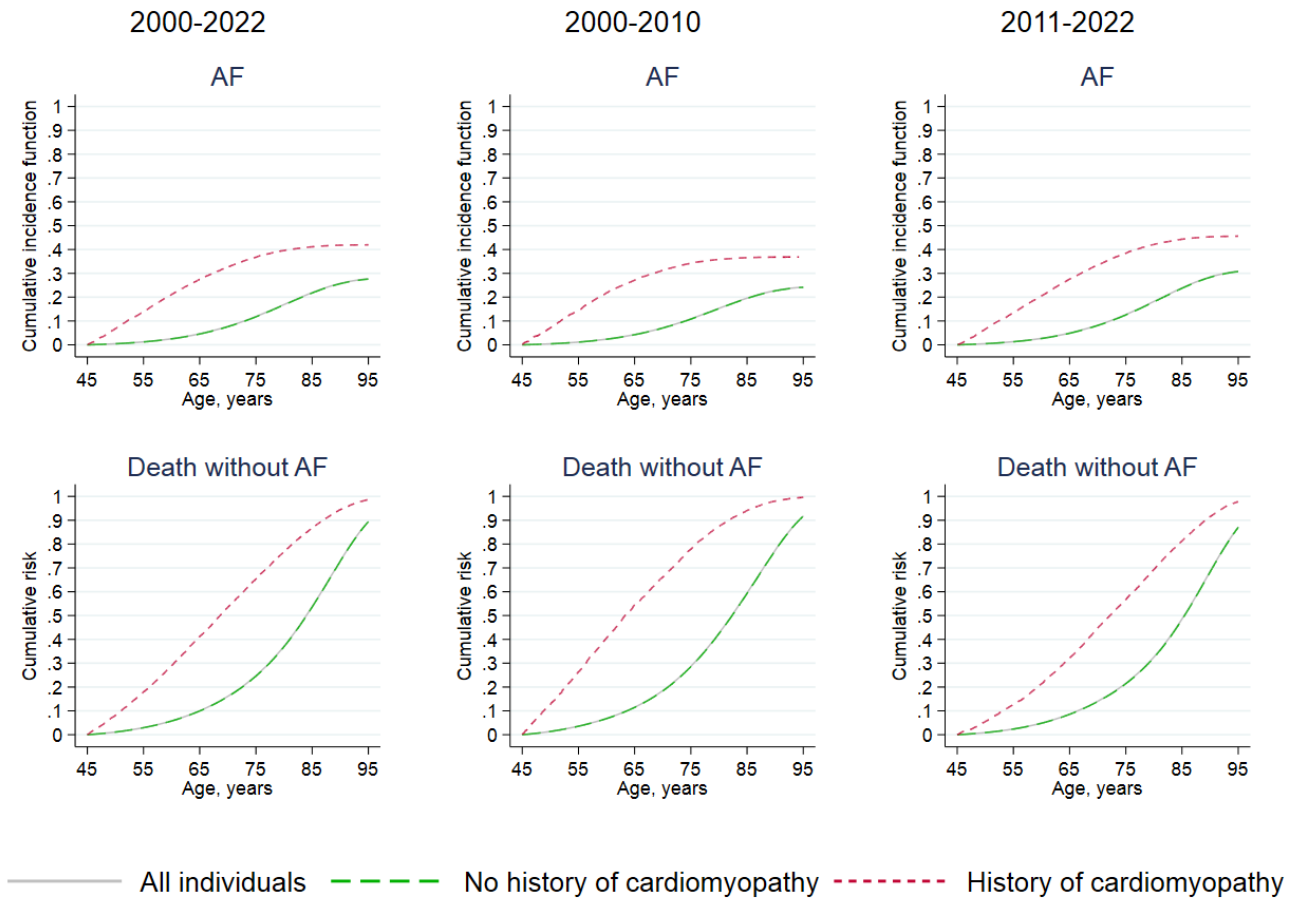
Supplemental Figure 5. Cumulative incidence at age 45 years by stroke.



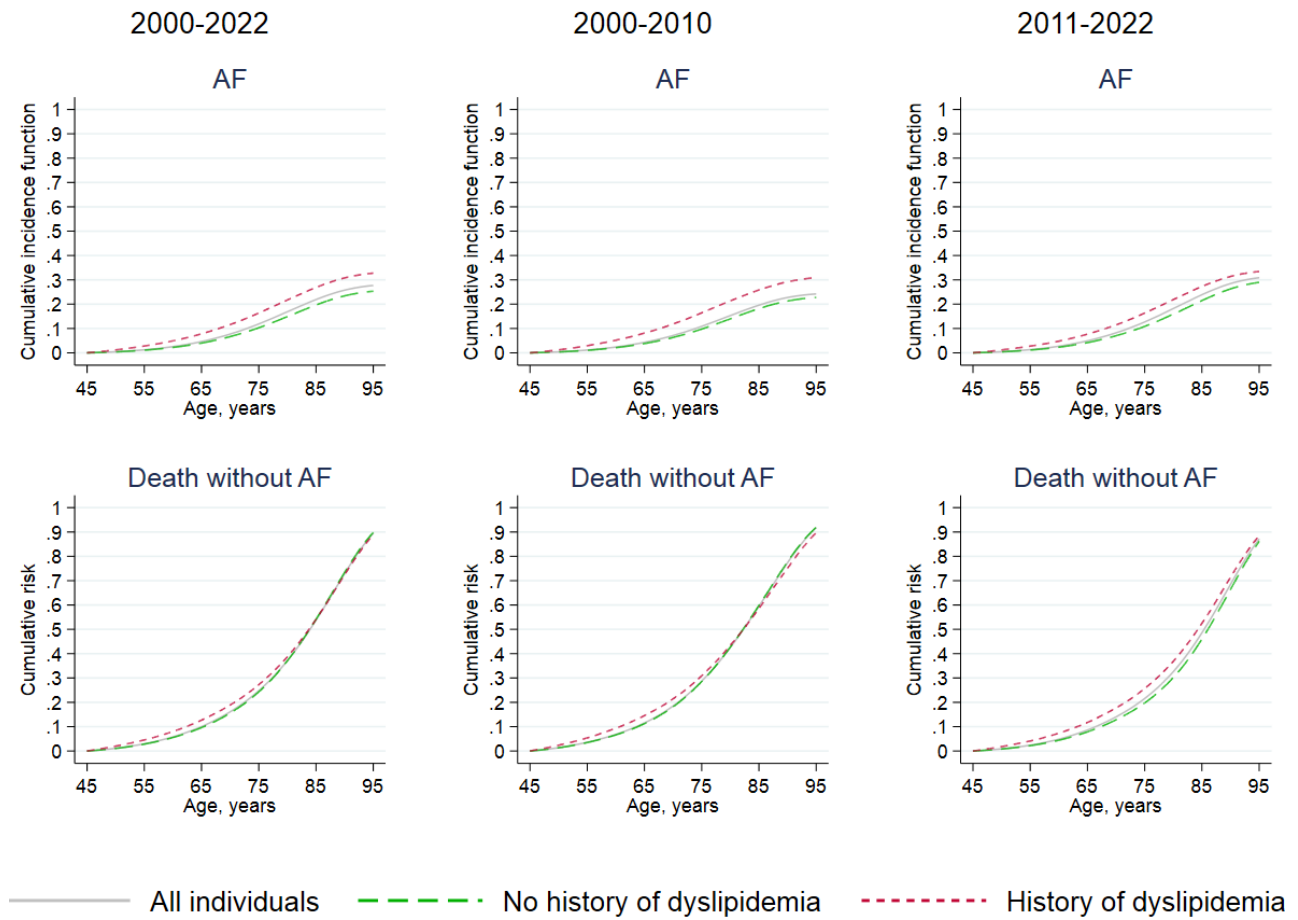
Supplemental Figure 6. Cumulative incidence at age 45 years by diabetes.



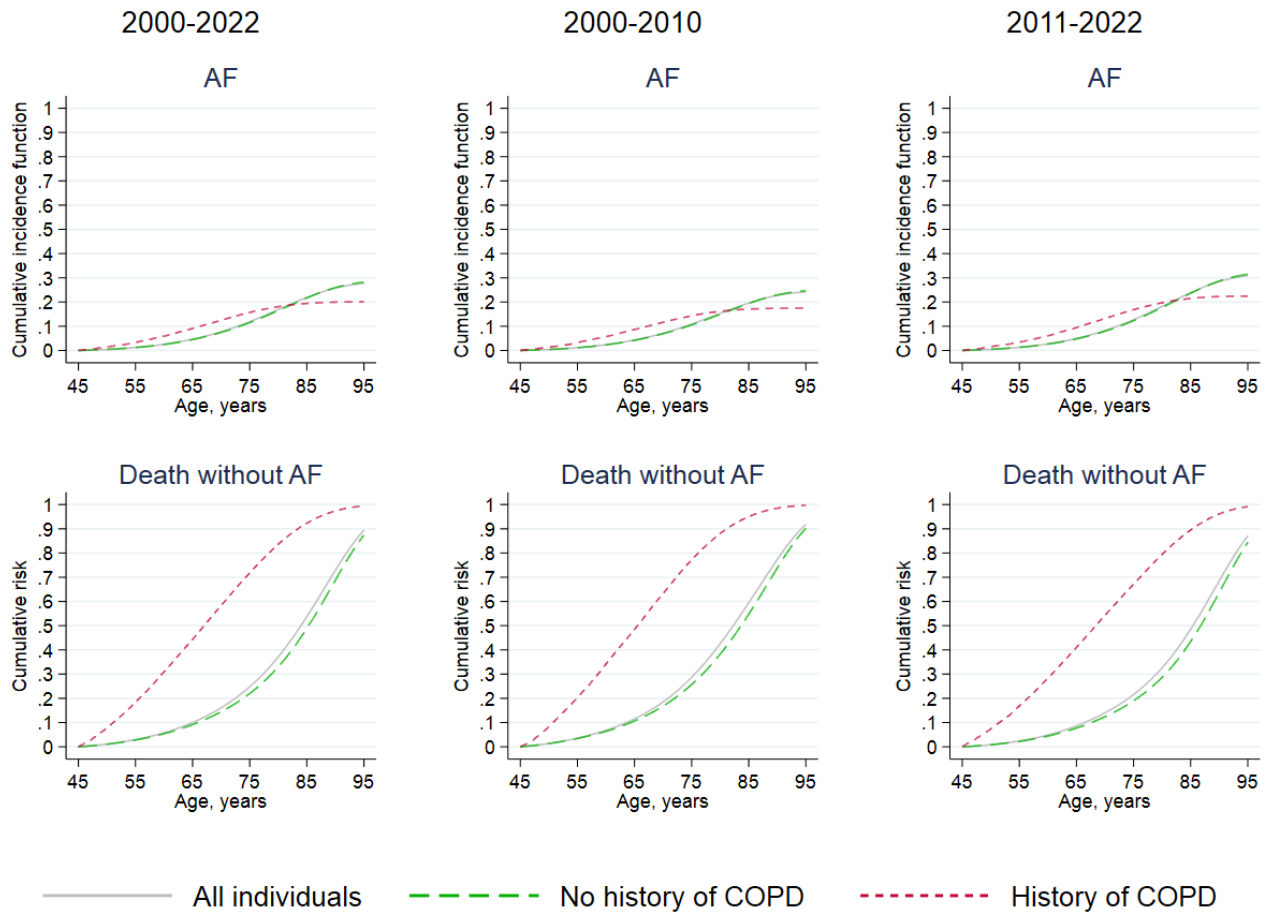
Supplemental Figure 7. Cumulative incidence at age 45 years by cardiomyopathy.



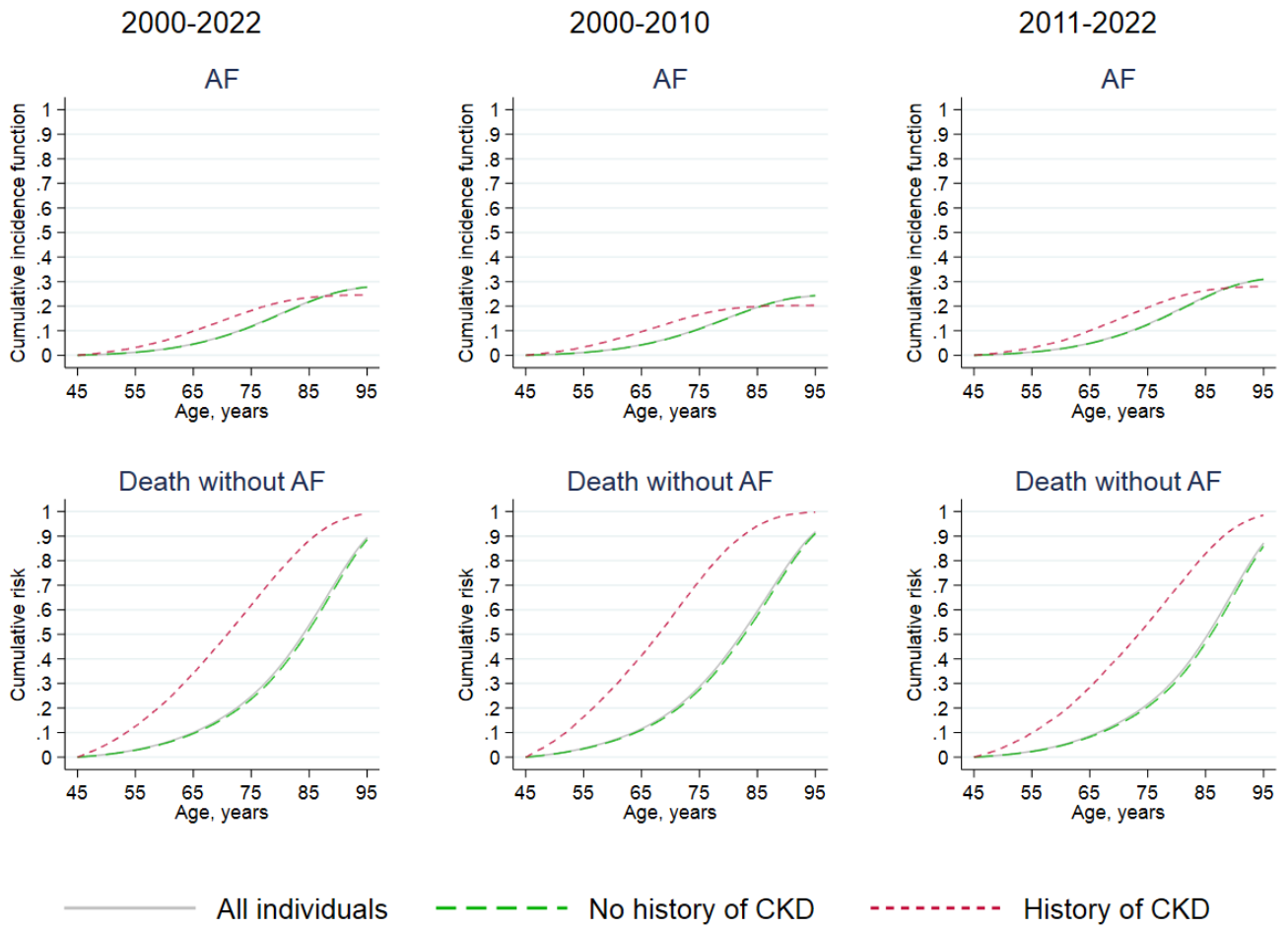
Supplemental Figure 8. Cumulative incidence at age 45 years by dyslipidemia.



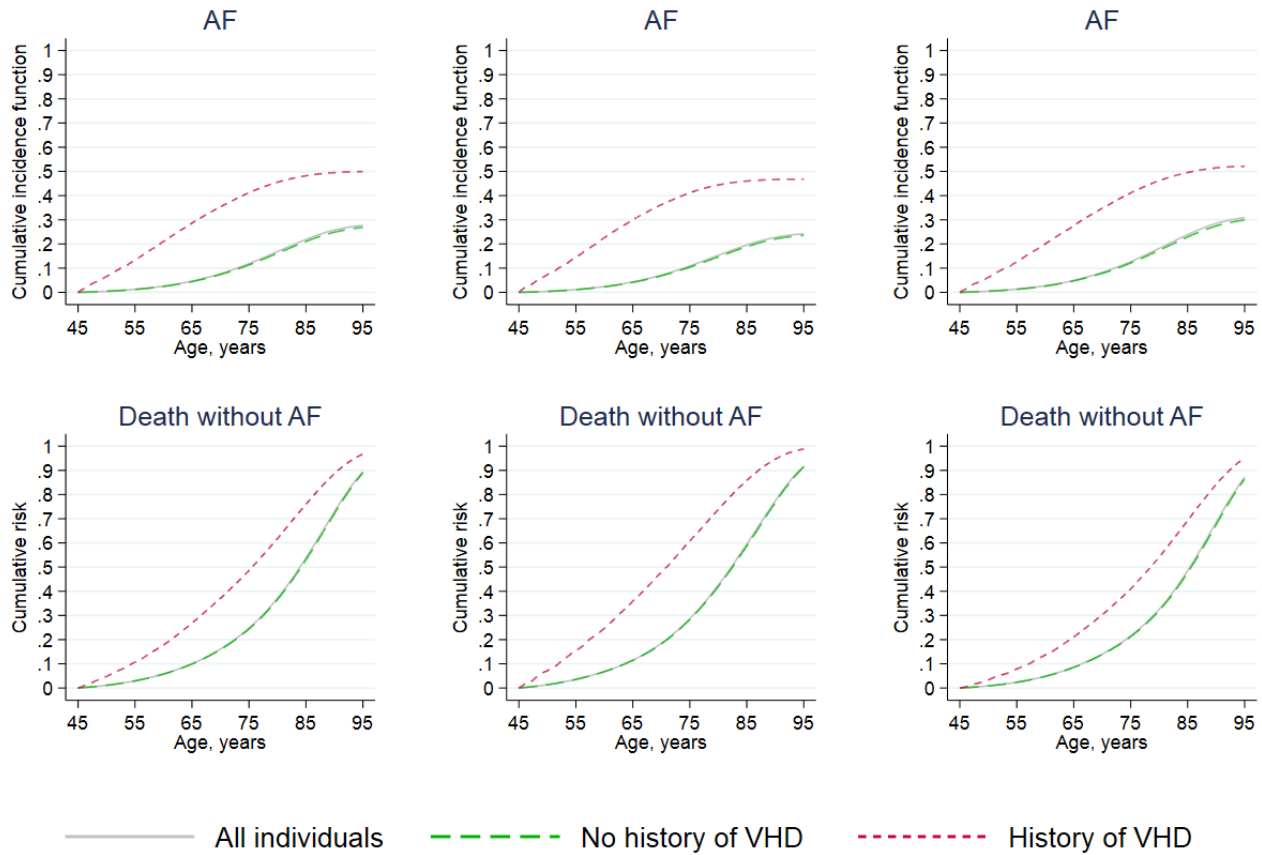
Supplemental Figure 9. Cumulative incidence at age 45 years by chronic obstructive pulmonary disease.



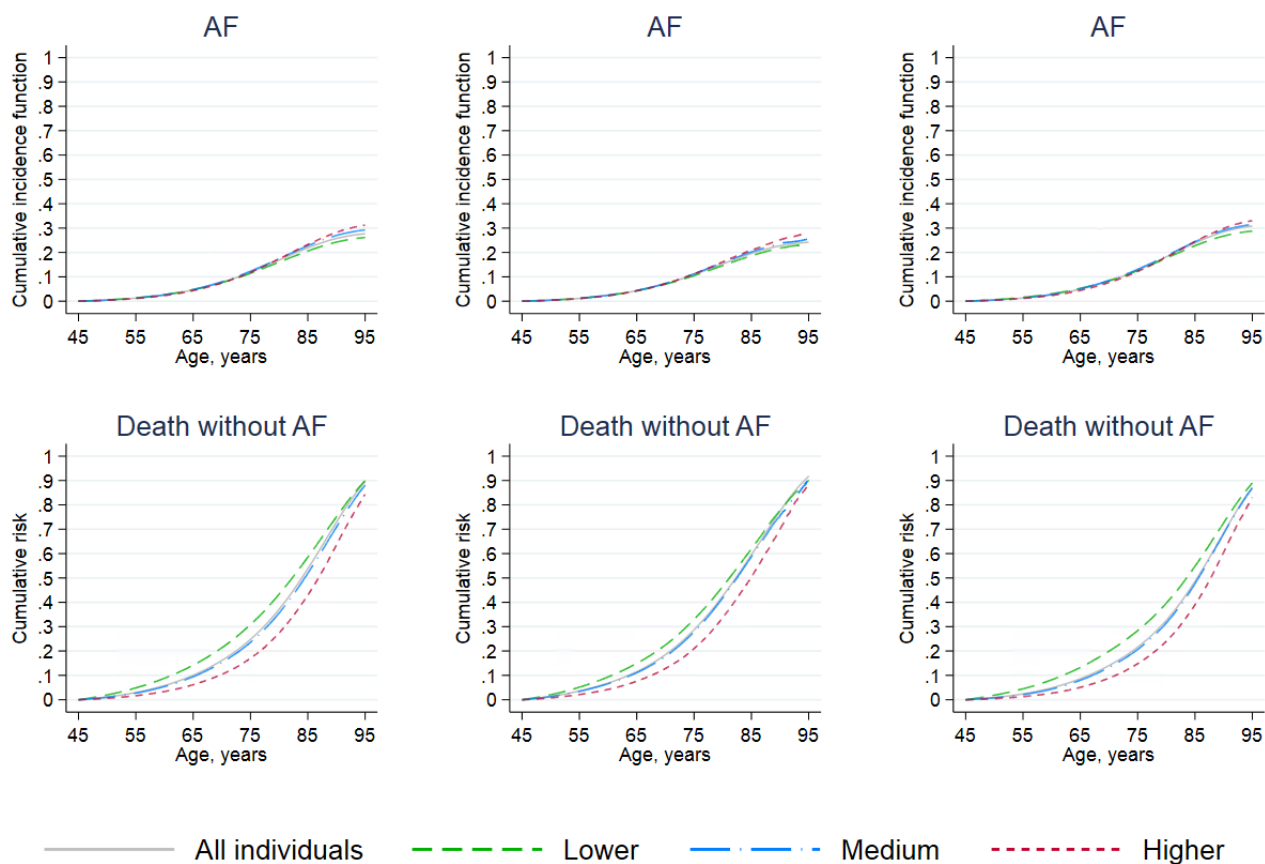
Supplemental Figure 10. Cumulative incidence at age 45 years by chronic kidney disease.



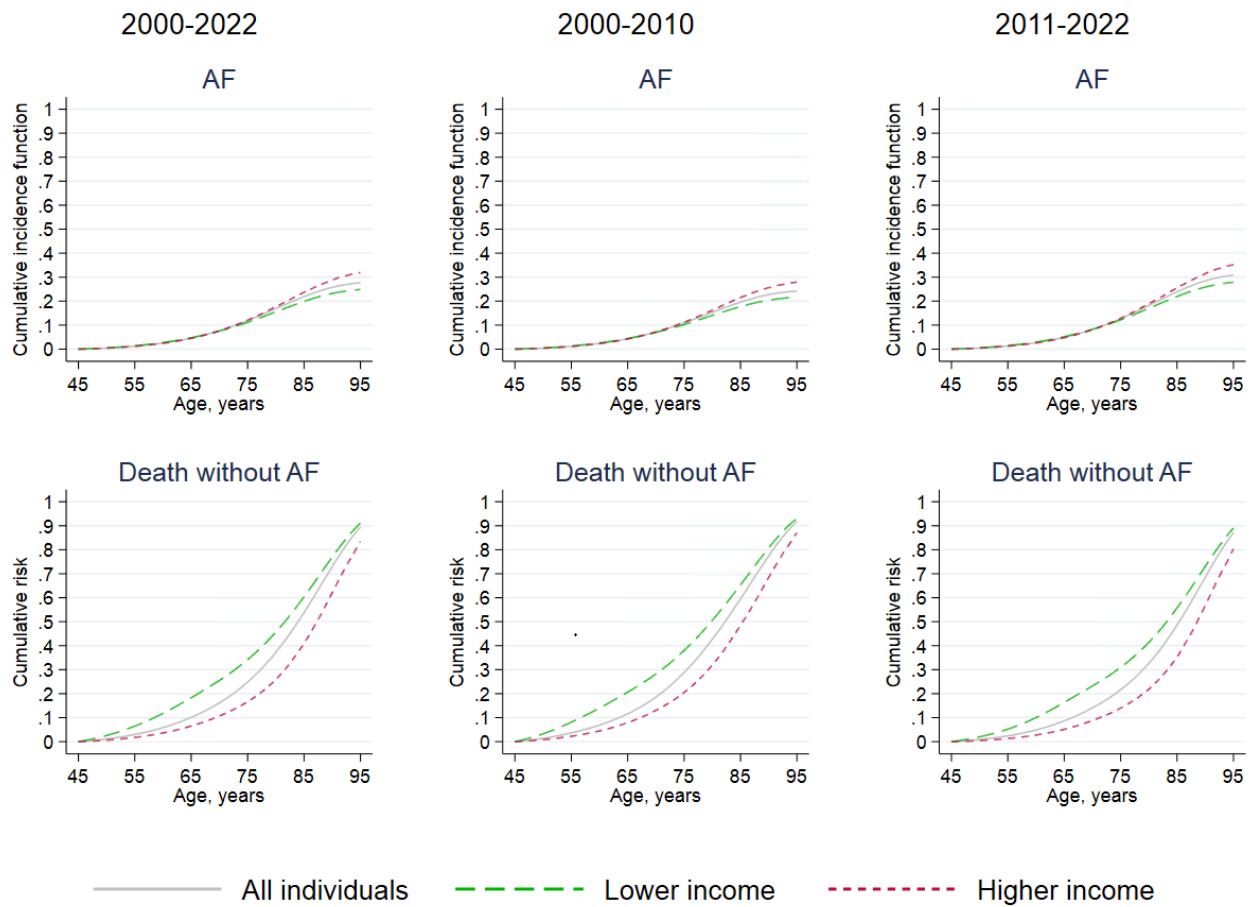
Supplemental Figure 11. Cumulative incidence at age 45 years by valvular heart disease.
2000-2022 2000-2010 2011-2022



Supplemental Figure 12. Cumulative incidence at age 45 years by educational attainment.
2000-2022 2000-2010 2011-2022



Supplemental Figure 13. Cumulative incidence at age 45 years by income.



10. Lifetime risks of complications after atrial fibrillation from 2000-2022**Supplemental Table 11. Number of individuals contributing with time at risk for complications.**

Index age	Follow-up age	Number of patients in analyses				
		Heart failure	Any stroke	Ischemic stroke	Myocardial infarction	Systemic embolism
45	55	12,786	13,820	14,359	13,779	14,814
	65	34,345	37,324	39,605	37,486	41,591
	75	57,116	61,508	66,817	62,667	72,012
	85	42,832	46,368	51,625	48,756	57,154
	Total number of unique individuals	297,558	309,999	335,891	315,779	359,266
55	65	30,071	32,626	34,631	32,757	36,391
	75	56,879	61,251	66,539	62,400	71,722
	85	42,832	46,368	51,625	48,756	57,154
	Total number of unique individuals	280,183	291,733	317,021	297,578	339,958
65	75	56,879	51,506	55,994	52,377	60,361
	85	42,832	36,166	51,398	48,563	56,916
	Total number of unique individuals	234,675	243,888	266,673	249,974	287,752
75	85	36,271	39,136	43,540	41,170	48,198
	Total number of unique individuals	148,199	154,587	170,740	160,458	186,237

Persons who encountered atrial fibrillation before the index age are excluded from the index age cohort. Accordingly, the number at risk is zero when the exact entry age equals the index age. Since an index age cohort consists of all persons at risk on or after index age, the index age cohort of higher index age is equal to that of a lower index age excluding those who encountered atrial fibrillation between the two index ages. The study period 2000-2022 is less than 20 years, so the number at risk by a given age only changes two index age cohorts back.

Supplemental Table 12. Number of incident complications after atrial fibrillation.

Complication	Index age	Number of diagnoses
Heart failure	45	47,373
	55	45,473
	65	38,878
	75	24,532
Any stroke	45	29,647
	55	28,439
	65	24,545
	75	15,905
Ischemic stroke	45	17,956
	55	17,399
	65	15,208
	75	10,013
Myocardial infarction	45	12,367
	55	11,741
	65	9,909
	75	6,233
Systemic embolism	45	2,314
	55	2,200
	65	1,868
	75	1,258

Supplemental Table 13. Lifetime risk of heart failure after atrial fibrillation by subgroups at index age 45 years.

Risk factor	Lifetime risk, %	Absolute difference, %	Test for difference
Men	44.2 (42.3;46.1)	9.5 (6.8;12.3)	<0.001
Women	34.6 (32.6;36.6)		
Hypertension	45.4 (41.2;49.7)	7.7 (3.2;12.2)	0.001
No hypertension	37.7 (36.3;39.2)		
HF	-	-	-
No HF	-		
MI	58.4 (51.6;65.2)	18.8 (11.9;25.8)	<0.001
No MI	39.6 (38.1;41.0)		
Stroke	37.5 (31.9;42.9)	-4.3 (-10.1;1.4)	0.14
No stroke	41.8 (40.3;43.2)		
Diabetes	43.1 (36.5;49.7)	2.3 (-4.4;9.1)	0.50
No diabetes	40.8 (9.3;42.2)		
Cardiomyopathy	84.5 (73.6;95.4)	44.6 (33.6;55.6)	<0.001
No cardiomyopathy	39.9 (38.6;41.3)		
Dyslipidemia	45.6 (42.4;48.9)	6.0 (2.4;9.6)	0.001
No dyslipidemia	39.6 (38.0;41.2)		
COPD	27.2 (14.9;39.5)	-14.8 (-27.1;-2.4)	0.019
No COPD	42.0 (40.5;43.4)		
CKD	24.8 (14.8;34.8)	-17.3 (-27.4;-7.2)	0.001
No CKD	42.1 (40.7;43.5)		
VHD	62.5 (56.0;68.9)	22.0 (16.3;29.4)	<0.001
No VHD	39.6 (38.1;41.0)		
Lower education	43.3 (38.7;47.9)	-	0.06
Medium Education	41.1 (39.3;42.9)		
Higher education	38.7 (37.0;40.4)		
Higher income	41.8 (40.6;43.0)	1.5 (-5.6;8.6)	0.69
Lower income	40.3 (33.3 (47.3)		

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

Supplemental Table 14. Lifetime risk of any stroke after atrial fibrillation by subgroups at index age 45 years.

Risk factor	Lifetime risk, %	Absolute difference, %	Test for difference
Men	20.6 (19.6;21.7)	-2.0 (-3.7;-0.2)	0.025
Women	22.6 (21.2;24.0)		
Hypertension	22.1 (20.0;24.3)	1.3 (-1.0;3.6)	0.27
No hypertension	20.8 (19.9;21.7)		
HF	16.2 (11.5;20.9)	-6.6 (-11.4;-1.8)	0.007
No HF	22.8 (21.9;23.6)		
MI	21.5 (18.3;24.6)	-0.1 (-3.4;3.2)	0.95
No MI	21.6 (20.7;22.4)		
Stroke	-	-	-
No stroke	-	-	-
Diabetes	18.8 (15.7;21.8)	-3.1 (-6.2;0.1)	0.06
No diabetes	21.8 (20.9;22.7)		
Cardiomyopathy	18.9 (10.1;27.7)	-2.6 (-11.4;6.2)	0.56
No cardiomyopathy	21.6 (20.7;22.4)		
Dyslipidemia	22.7 (20.6;24.8)	1.4 (-0.9;3.8)	0.23
No dyslipidemia	21.3 (20.3;22.2)		
COPD	8.4 (4.8;11.9)	-14.6 (-18.3;-11.0)	<0.001
No COPD	23.0 (22.1;23.9)		
CKD	11.1 (6.2;15.9)	-11.2 (-16.1;-6.3)	<0.001
No CKD	22.2 (21.4;23.0)		
VHD	25.5 (20.9;30.1)	4.4 (-0.4;9.1)	0.07
No VHD	21.1 (20.3;22.0)		
Lower education	20.4 (17.9;22.8)	-	<0.001
Medium Education	20.7 (19.6;21.7)		
Higher education	24.6 (23.3;25.9)		
Higher income	23.4 (22.5;24.2)	8.0 (5.3;10.8)	<0.001
Lower income	15.3 (12.7;17.9)		

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

Supplemental Table 15. Lifetime risk of ischemic stroke after atrial fibrillation by subgroups at index age 45 years.

Risk factor	Lifetime risk, %	Absolute difference, %	Test for difference
Men	12.6 (11.8;13.4)	-1.2 (-2.7;0.3)	0.11
Women	13.8 (12.6;15.0)		
Hypertension	14.7 (12.7;16.6)	2.5 (0.5;4.6)	0.014
No hypertension	12.1 (11.4;12.8)		
HF	9.2 (6.7;11.7)	-4.8 (-7.4;-2.2)	<0.001
No HF	13.9 (13.2;14.7)		
MI	16.2 (11.7;20.7)	3.2 (-1.4;7.7)	0.18
No MI	13.0 (12.3;13.7)		
Stroke	-	-	-
No stroke	-	-	-
Diabetes	14.2 (10.4;18.0)	1.1 (-2.8;4.9)	0.59
No diabetes	13.1 (12.4;13.8)		
Cardiomyopathy	13.1 (4.2;21.9)	-0.1 (-9.0;8.8)	0.99
No cardiomyopathy	13.1 (12.5;13.8)		
Dyslipidemia	15.3 (13.2;17.4)	2.6 (0.4;4.9)	0.021
No dyslipidemia	12.7 (11.9;13.4)		
COPD	5.7 (3.0;8.4)	-8.3 (-11.1;-5.5)	<0.001
No COPD	14.0 (13.3;14.7)		
CKD	9.7 (5.2;14.1)	-3.7 (-8.2;0.8)	0.105
No CKD	13.4 (12.7;14.1)		
VHD	16.8 (12.3;21.3)	3.9 (-0.6;8.4)	0.091
No VHD	12.9 (12.2;13.5)		
Lower education	13.4 (11.4;15.4)	-	0.052
Medium Education	12.1 (11.3;13.0)		
Higher education	13.7 (12.7;14.7)		
Higher income	13.7 (13.0;14.4)	2.6 (0.2;5.0)	0.035
Lower income	11.1 (8.8;13.4)		

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

Supplemental Table 16. Lifetime risk of myocardial infarction after atrial fibrillation by subgroups at index age 45 years.

Risk factor	Lifetime risk, %	Absolute difference, %	Test for difference
Men	12.2 (11.3;13.1)	1.9 (0.6;3.2)	0.003
Women	10.2 (9.3;11.2)		
Hypertension	13.0 (11.1;14.9)	2.7 (0.7;4.7)	0.009
No hypertension	10.3 (9.6;10.9)		
HF	10.1 (7.4;12.8)	-1.5 (-4.3;1.3)	0.29
No HF	11.6 (10.9;12.3)		
MI	-	-	-
No MI	-		
Stroke	11.7 (7.8;15.7)	0.2 (-3.9;4.2)	0.94
No stroke	11.5 (10.9;12.2)		
Diabetes	15.4 (10.5;20.3)	4.3 (-0.6;9.3)	0.088
No diabetes	11.1 (10.4;11.8)		
Cardiomyopathy	11.4 (6.8;15.9)	-0.2 (-4.8;4.4)	0.94
No cardiomyopathy	11.5 (10.9;12.2)		
Dyslipidemia	18.2 (15.5;21.0)	8.1 (5.3;11.0)	<0.001
No dyslipidemia	10.1 (9.4;10.7)		
COPD	4.8 (2.7;6.8)	-7.2 (-9.4;-5.0)	<0.001
No COPD	12 (11.3;12.7)		
CKD	8.6 (4.5;12.7)	-3.0 (-7.2;1.2)	0.16
No CKD	11.6 (10.9;12.3)		
VHD	13.4 (10.6;16.2)	2.0 (-0.9;4.9)	0.18
No VHD	11.4 (10.7;12.1)		
Lower education	11.4 (9.6;13.1)	-	0.39
Medium Education	11.5 (10.5;12.4)		
Higher education	10.5 (9.5;11.5)		
Higher income	12.3 (11.6;13.0)	4.6 (2.8;6.4)	<0.001
Lower income	7.7 (6.0;9.4)		

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

Supplemental Table 17. Lifetime risk of systemic embolism after atrial fibrillation by subgroups at index age 45 years.

Risk factor	Lifetime risk, %	Absolute difference, %	Test for difference
Men	1.7 (1.5;2.0)	-0.3 (-0.7;0.2)	0.24
Women	2.0 (1.6;2.3)		
Hypertension	2.1 (1.7;2.6)	0.5 (0.0;1.0)	0.031
No hypertension	1.6 (1.4;1.8)		
HF	1.7 (1.1;2.3)	-0.2 (-0.8;0.5)	0.60
No HF	1.8 (1.6;2.1)		
MI	3.1 (1.8;4.4)	1.4 (0.1;2.7)	0.036
No MI	1.7 (1.5;1.9)		
Stroke	3.6 (1.6;5.7)	1.9 (-0.2;4.0)	0.07
No stroke	1.7 (1.6;1.9)		
Diabetes	1.8 (1.3;2.4)	0.0 (-0.6;0.6)	0.98
No diabetes	1.8 (1.6;2.0)		
Cardiomyopathy	1.8 (0.1;3.4)	-0.1 (-1.7;1.6)	0.94
No cardiomyopathy	1.8 (1.7;2.0)		
Dyslipidemia	2.2 (1.7;2.7)	0.5 (0.0;1.1)	0.068
No dyslipidemia	1.7 (1.5;1.9)		
COPD	0.7 (0.2;1.3)	-1.2 (-1.7;-0.6)	<0.001
No COPD	1.9 (1.7;2.1)		
CKD	3.4 (1.2;5.5)	1.6 (-0.5;3.8)	0.14
No CKD	1.7 (1.6;1.9)		
VHD	1.5 (0.9;2.1)	-0.4 (-1.0;0.3)	0.14
No VHD	1.9 (1.7;2.1)		
Lower education	1.9 (1.4;2.3)	-	0.06
Medium Education	1.9 (1.6;2.2)		
Higher education	1.5 (1.2;1.7)		
Higher income	1.8 (1.6;2.0)	0.1 (-0.6;0.8)	0.78
Lower income	1.7 (1.1;2.4)		

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

11. Temporal trends in lifetime risk of complications after atrial fibrillation

Supplemental Table 18. Number of patients with atrial fibrillation at risk for complications by calendar period.

Epoch	Index age	Follow-up age	Number of patients in analysis				
			Heart failure	Any stroke	Ischemic stroke	Myocardial infarction	Systemic embolism
2000-2010	45	55	4,260	4,627	4,761	4,561	4,919
		65	9,829	10,737	11,278	10,558	11,962
		75	12,337	13,879	14,895	13,560	16,243
		85	10,808	12,286	13,424	12,825	15,202
		Total number of unique individuals	119,455	130,076	138,698	129,891	150,071
	55	65	9,803	10,703	11,241	10,555	11,927
		75	12,337	13,879	14,895	13,560	16,243
		85	10,808	12,286	13,424	12,825	15,202
		Total number of unique individuals	111,672	121,842	130,271	121,797	141,440
	65	75	12,290	13,824	14,838	13,507	16,182
		85	10,808	12,286	13,424	12,825	15,202
		Total number of unique individuals	91,078	99,869	107,425	100,369	117,653
	75	85	10,763	12,235	13,368	12,775	15,137
		Total number of unique individuals	58,954	65,416	70,886	66,810	78,539
2011-2022	45	55	5,943	6,389	6,707	6,460	6,920
		65	13,527	14,528	15,603	14,826	16,300
		75	26,692	27,802	30,497	28,822	32,571
		85	18,349	19,089	21,528	20,240	23,473
		Total number of unique individuals	178,103	179,923	197,193	185,888	209,195
	55	65	13,422	14,410	15,477	14,691	16,165
		75	26,713	27,823	30,523	28,844	32,597
		85	18,349	19,089	21,528	20,240	23,473
		Total number of unique individuals	168,511	169,891	186,750	175,781	198,518
	65	75	26,356	27,449	30,103	28,422	32,142
		85	18,352	19,089	21,530	20,248	23,477
		Total number of unique individuals	143,597	144,019	159,248	149,605	170,099
	75	85	18,100	18,824	21,219	19,964	23,146
		Total number of unique individuals	5,963	89,171	99,854	93,648	107,698

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Supplemental Table 19. Number of incident complications after atrial fibrillation by calendar period.

Epoch	Index age	Number of diagnoses				
		Heart failure	Any stroke	Ischemic stroke	Myocardial infarction	Systemic embolism
2000-2010	45	16,022	10,468	7,615	5,166	932
	55	15,463	10,205	7,448	4,986	907
	65	13,483	9,087	6,659	4,401	804
	75	9,196	6,551	4,818	3,059	610
2011-2022	45	20,316	10,749	5,832	4,109	728
	55	19,622	10,407	5,660	3,936	683
	65	17,368	9,322	5,148	3,426	589
	75	11,342	6,161	3,431	2,122	372

12. Adjusted analyses of lifetime risks of complications after atrial fibrillation

Supplemental Table 20. Adjusted lifetime risks of complications after atrial fibrillation.

	Heart failure		Any stroke		Ischemic stroke		Myocardial infarction		Systemic embolism	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Epoch										
2000-2010	44.5 (32.6;46.3)	43.7 (42.1;45.3)	23.0 (21.9;24.1)	22.8 (21.8;23.9)	16.9 (15.9;17.9)	16.6 (15.7;17.4)	15.1 (13.9;16.3)	14.3 (13.3;15.2)	2.1 (1.7;2.5)	2.0 (1.7;2.3)
2011-2022	41.5 (39.2;43.8)	41.7 (38.0;45.3)	19.5 (18.3;20.8)	19.3(17.3;21.3)	10.3 (9.3;11.3)	10.1 (8.5;11.7)	9.4 (8.3;10.4)	9.5 (7.7;11.2)	1.7 (1.4;2.0)	1.7 (1.3;2.1)
Absolute difference	-3.0 (-5.9;0.0)	-2.0 (-5.9;2.0)	-3.4 (-5.1;-1.7)	-3.5 (-5.7;-1.2)	-6.7 (-8.1;-5.3)	-6.4 (-8.2;-4.6)	-5.7 (-7.3;-4.2)	-4.8 (-6.8;-2.8)	-0.4 (-0.9;0.1)	-0.3 (-0.8;0.2)
P value	0.05	0.32	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.11	0.24
Sex										
Women	34.6 (30.2;39.0)	33.2 (30.0;36.4)	22.3 (19.3;25.4)	22.7 (20.0;25.3)	13.4 (10.7;16.1)	13.1 (10.9;15.4)	10.2 (8.2;12.2)	10.0 (8.1;11.8)	2.1 (1.3;2.9)	2.1 (1.3;2.9)
Men	44.4 (43.1;45.7)	44.2 (32.4;45.9)	20.7 (20.0;21.5)	20.5 (19.5;21.4)	12.7 (12.1-13.3)	12.4 (11.7;13.1)	12.2 (11.6;12.8)	11.9 (11.1;12.6)	1.7 (1.6;1.9)	1.7 (1.5;1.9)
Absolute difference	9.8 (5.2;14.4)	11.0 (7.3;14.6)	-1.6 (-4.7;1.5)	-2.2 (-5.0;0.6)	-0.7 (-3.5;2.1)	-0.7 (-3.0;1.6)	2.0 (-0.1;4.1)	1.9 (-0.1;3.9)	-0.3 (-1.2;0.4)	-0.4 (-1.2;0.5)
P value	<0.001	<0.001	0.32	0.13	0.62	0.55	0.06	0.06	0.37	0.38
Women										
2000-2010	46.9 (34.6;39.2)	35.7 (33.6;37.8)	23.6 (21.8;25.4)	23.4 (21.7;25.1)	16.6 (15.2;18.0)	16.4 (15.1;17.8)	14.1 (12.3;16.0)	12.9 (11.5;14.2)	2.3 (1.5;2.3)	2.2 (1.6;2.8)
2011-2022	34.6 (31.4;37.8)	35.4 (29.1;41.8)	21.5 (19.2;23.7)	21.9 (17.4;26.4)	11.4 (9.5;13.3)	11.8 (7.8;15.7)	8.0 (6.8;9.3)	8.2 (5.9;10.5)	1.8 (1.2;2.4)	1.7 (0.9;2.6)
Absolute difference	-2.3 (-6.2;1.6)	-0.2 (-6.9;6.4)	-2.2 (-5.0;0.7)	-1.5 (-6.2;3.3)	-5.2 (-7.6;-2.8)	-4.7 (-8.8;-0.5)	-6.1 (-8.3;-3.9)	-4.6(-7.3;-2.0)	-0.6 (-1.7;0.5)	-0.5 (-1.5;0.6)
P value	0.25	0.95	0.14	0.54	<0.001	0.03	<0.001	<0.001	0.26	0.40
Men										
2000-2010	47.5 (45.3;49.7)	47.0 (45.0;49.0)	22.4 (21.0;23.8)	22.3 (21.0;23.6)	16.9 (15.6;18.1)	16.4 (15.4;17.5)	15.4 (14.0;16.8)	14.8 (13.6;16.1)	1.9 (1.5;2.3)	1.9 (2.5;2.2)
2011-2022	44.5 (41.2;47.8)	44.4 (39.9;48.9)	18.5 (16.9;20.0)	18.3 (16.3;20.2)	9.6 (8.4;10.7)	9.4 (7.9;10.8)	10.1 (8.6;11.6)	10.2 (8.0;12.3)	1.6 (1.3;2.0)	1.7 (1.2;2.1)
Absolute difference	-3.0 (-7.0;-1.0)	-2.6 (-7.5;2.4)	-3.9 (-6.0;-1.9)	-4.0 (-6.4;-1.7)	-7.3 (-9.0;-5.6)	-7.0 (-8.8;-5.2)	-5.3 (-7.3;-3.3)	-4.7 (-7.1;-2.2)	-0.3 (-0.8;0.2)	-0.2 (-0.8;0.4)
P value	0.14	0.31	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.29	0.45

Model 1: Adjusted for age (as time scale), sex, hypertension, diabetes, dyslipidemia, heart failure, myocardial infarction, any stroke, cardiomyopathy, valvular heart disease, chronic obstructive pulmonary disease, and chronic kidney disease.

Model 2: Adjusted for Model 1 and education and income. Includes individuals with complete information on education and income.

13. Temporal trends in lifetime risks of complications after atrial fibrillation by subgroups

Supplemental Table 21. Temporal trends in lifetime risk (% , 95%CI) of heart failure by subgroups, at index age 45.

Risk factor	Lifetime risk in epoch 1, % (2000-2010)	Lifetime risk in epoch 2, % (2011-2022)	Difference between epochs, %	Test for interaction
Men	46.3 (43.5;49.1)	44.8 (42.0;47.6)	-1.5 (-5.5;2.4)	0.46
Women	35.0 (32.4;37.6)	35.7 (32.4;38.8)	0.6 (-3.5;4.7)	
Hypertension	52.6 (47.3;57.9)	41.8 (35.5;48.2)	-10.8 (-19.1;-2.5)	0.003
No hypertension	37.4 (35.2;39.5)	39.9 (37.7;42.0)	2.5 (-0.6;5.5)	
HF	-	-	-	-
No HF	-	-	-	
MI	60.2 (54;66.4)	57.8 (46.0;69.5)	-2.4 (-15.7;10.9)	0.76
No MI	40.9 (38.6;43.2)	40.7 (38.6;42.7)	-0.2 (-3.3;2.8)	
Stroke	35.0 (24.7;45.2)	40.3 (34.5;46.1)	5.3 (-6.5;17.1)	0.30
No stroke	43.7 (41.5;46.0)	42.5 (40.4;44.6)	-1.2 (-4.3;1.9)	
Diabetes	44.1 (34.7;53.6)	43.8 (33.8;53.8)	-0.3 (-14.1;13.4)	0.92
No diabetes	42.6 (40.3;44.9)	41.5 (39.5;43.6)	-1.1 (-4.1;2.0)	
Cardiomyopathy	85.8 (67.5;100.0)	82.3 (71.4;93.2)	-3.5 (-24.8;17.8)	0.76
No cardiomyopathy	41.2 (39.3;43.0)	41.0 (39.0;43.0)	-0.1 (-2.9;2.6)	
Dyslipidemia	52.1 (48.7;55.5)	44.5 (39.8;49.1)	-7.7 (-13.4;-1.9)	0.032
No dyslipidemia	40.9 (38.5;43.3)	40.5 (38.3;42.8)	-0.3 (-3.7;3.0)	
COPD	23.7 (9.7;37.8)	30.5 (8.8;52.2)	6.8 (-19.1;32.6)	0.57
No COPD	43.8 (41.7;46.0)	43.1 (41.0;45.1)	-0.8 (-3.8;2.2)	
CKD	22.9 (11.2;34.6)	29.3 (10.8;47.7)	6.4 (-15.5;28.2)	0.51
No CKD	43.9 (41.7;46.1)	42.8 (40.9;44.7)	-1.1 (-4.0;1.8)	
VHD	63.9 (56.6;71.2)	64.1 (52.7;75.5)	0.2 (-13.3;13.8)	0.85
No VHD	41.4 (39.1;43.7)	40.3 (38.3;42.3)	-1.1 (-4.2;1.9)	
Lower education	46.3 (39.9;52.7)	43.0 (35.6;50.3)	-3.3 (-13.1;6.4)	0.21
Medium Education	41.4 (38.5;44.2)	43.6 (41.1;46.2)	2.2 (-1.7;6.1)	
Higher education	41.8 (38.6;45.0)	39.4 (37.2;41.7)	-2.4 (-6.3;1.5)	
Higher income	44.0 (42.1;45.8)	42.8 (41.0;44.5)	-1.2 (-3.8;1.4)	0.45
Lower income	38.1 (27.3;38.9)	42.6 (32.6;52.7)	4.5 (-10.2;19.3)	

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

Supplemental Table 22. Temporal trends in lifetime risk (%; 95%CI) of any stroke by subgroups, at index age 45.

Risk factor	Lifetime risk in epoch 1, % (2000-2010)	Lifetime risk in epoch 2, % (2011-2022)	Difference between epochs, %	Test for interaction
Men	21.9 (20.3;23.6)	18.8 (17.4;20.1)	-3.1 (-5.3;-1.0)	0.19
Women	22.7 (20.8;24.6)	22.0 (19.7;24.0)	-0.8 (-3.7;2.1)	
Hypertension	24.8 (21.9;27.6)	19.7 (16.8;22.8)	-5.0 (-9.1;-0.9)	0.13
No hypertension	20.8 (19.4;22.3)	19.3 (18.0;20.5)	-1.6 (-3.4;0.3)	
HF	18.4 (7.8;29.0)	14.2 (10.7;17.7)	-4.2 (-15.3;7.0)	0.09
No HF	24.2 (23.0;25.3)	21.0 (19.8;22.3)	-3.1 (-4.8;-1.5)	
MI	24.7 (19.8;29.6)	19.3 (14.9;23.7)	-5.4 (-12.0;1.2)	0.43
No MI	22.5 (21.2;23.8)	19.9 (18.7;21.2)	-2.5 (-4.3;-0.7)	
Stroke	-	-	-	-
No stroke	-	-	-	
Diabetes	20.1 (14.4;25.7)	17.9 (14.1;21.6)	-2.2 (-9.0;4.6)	0.93
No diabetes	22.7 (21.4;24.0)	20.2 (19.0;21.4)	-2.6 (-4.4;-0.8)	
Cardiomyopathy	14.0 (6.6;21.4)	24.0 (6.2;41.8)	9.9 (-9.3;29.2)	0.19
No cardiomyopathy	22.7 (21.5;24.0)	19.8 (18.7;20.9)	-2.9 (-4.6;1.3)	
Dyslipidemia	24.9 (22.1;27.7)	21.2 (18.6;23.8)	-3.7 (-7.6;0.1)	0.63
No dyslipidemia	22.0 (20.6;23.4)	19.3 (18.0;20.6)	-2.7 (-4.6;-0.8)	
COPD	9.4 (2.2;16.7)	8.6 (3.9;13.4)	-0.8 (-9.5;7.9)	0.64
No COPD	24.3 (23.0;25.6)	21.4 (20.2;22.6)	-3.0 (-4.7;-1.2)	
CKD	9.3 (2.3;16.3)	12.9 (4.3;21.5)	3.6 (-7.5;14.7)	0.27
No CKD	23.3 (22.1;24.6)	20.5 (19.4;21.7)	-2.8 (-4.5;-1.1)	
VHD	27.3 (21.2;33.4)	24.5 (16.8;32.2)	-2.8 (-12.6;7.0)	0.96
No VHD	22.0 (20.7;23.3)	19.5 (18.3;20.6)	-2.6 (-4.3;-0.8)	
Lower education	21.9 (18.9 (24.9)	17.9 (14.4;21.4)	-4.0 (-8.5;0.6)	0.40
Medium Education	21.2 (19.4;23.0)	19.8(18.4;21.2)	-1.4 (-3.7;0.8)	
Higher education	26.8 (24.3;29.3)	23.2 (21.4;24.9)	-3.6 (-6.7;-0.6)	
Higher income	24.2 (22.9;25.5)	22.0 (20.9;23.2)	-2.2 (-4.0;-0.4)	0.86
Lower income	16.4 (12.2;20.6)	14.6 (11.1;18.0)	-1.8 (-7.3;3.6)	

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

Supplemental Table 23. Temporal trends in lifetime risk (%; 95%CI) of ischemic stroke by subgroups, at index age 45.

Risk factor	Lifetime risk in epoch 1, % (2000-2010)	Lifetime risk in epoch 2, % (2011-2022)	Difference between epochs, %	Test for interaction
Men	15.9 (14.6;17.2)	10.0 (9.0;11.0)	-5.9 (-7.6;-4.3)	0.12
Women	15.9 (14.4;17.5)	12.4 (10.4;14.5)	-3.5 (-6.0;-0.9)	
Hypertension	18.4 (15.8;21.0)	12.2 (9.6;14.8)	-6.2 (-9.9;-2.5)	0.55
No hypertension	14.5 (13.4;15.6)	9.5 (8.6;10.4)	-5.0 (-6.4;-3.6)	
HF	12.1 (6.1;18.2)	6.8 (4.9;8.7)	-5.3(-11.7;1.0)	0.85
No HF	17.5 (16.5;18.5)	11.6 (10.5;12.6)	-5.9 (-7.4;-4.5)	
MI	21.3 (14.7;28.0)	11.9 (5.8;18.0)	-9.5 (-18.5;-0.4)	0.35
No MI	15.9 (14.9;17.0)	10.9 (9.9;11.8)	-5.1 (-6.5;-3.7)	
Stroke	-	-	-	-
No stroke	-	-	-	
Diabetes	15.1 (9.3;20.9)	14.0 (8.9;19.2)	-1.1 (-8.9;6.7)	0.25
No diabetes	16.3 (15.2;17.3)	10.5 (9.6;11.5)	-5.7 (-7.1;-4.3)	
Cardiomyopathy	10.0 (3.5;16.4)	17.9 (1.1;36.8)	7.9 (-12.1;27.9)	0.18
No cardiomyopathy	16.4 (15.3;17.4)	10.6 (9.8;11.5)	-5.7 (-7.1;-4.4)	
Dyslipidemia	20.3 (17.1;23.6)	13.0 (10.7;15.3)	-7.3 (-11.3;-3.3)	0.41
No dyslipidemia	15.3 (14.2;16.4)	9.8 (8.7;10.9)	-5.5 (-7.0;-4.0)	
COPD	5.0 (0.9;9.0)	6.7 (2.3;11.1)	1.7 (-4.3;7.7)	0.013
No COPD	17.5 (16.5;18.6)	11.5 (10.5;12.5)	-6.1 (-7.5;4.6)	
CKD	9.6 (2.3;16.9)	10.2 (3.2;17.2)	0.6 (-9.5;10.7)	0.23
No CKD	16.6 (15.6;17.6)	10.9 (10.0;11.9)	-5.7 (-7.1;-4.3)	
VHD	20.7 (14.4;26.9)	15.0 (7.7;22.3)	-5.7 (-15.3;4.0)	0.93
No VHD	15.8 (14.7;16.8)	10.5 (9.6;11.4)	-5.2 (-6.6;-3.9)	
Lower education	15.4 (13.3;17.5)	11.0 (8.0;14.1)	-4.4 (-8.1;-0.6)	0.08
Medium Education	14.9 (13.5;16.3)	10.7 (9.5;11.9)	-4.2 (-6.0;-2.4)	
Higher education	18.9 (16.7;21.1)	11.3 (10.2;12.4)	-7.6 (-10.1;-5.1)	
Higher income	16.9 (15.8;17.9)	11.6 (10.6;12.6)	-5.3 (-6.7;-3.8)	0.85
Lower income	14.9 (10.7;19.1)	9.1 (6.2;12.0)	-5.8 (-11.9;-0.7)	

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

Supplemental Table 24. Temporal trends in lifetime risk (%; 95%CI) of myocardial infarction by subgroups, at index age 45.

Risk factor	Lifetime risk in epoch 1, % (2000-2010)	Lifetime risk in epoch 2, % (2011-2022)	Difference between epochs, %	Test for interaction
Men	14.2 (12.9;15.6)	10.6 (9.3;11.9)	-3.6 (-5.5;-1.7)	0.64
Women	12.6 (11.0;14.2)	8.3 (7.2;9.5)	-4.3 (-6.3;-2.3)	
Hypertension	14.8 (12.8;16.9)	11.8 (8.7;14.9)	-3.1 (-6.8;0.7)	0.57
No hypertension	12.4 (11.1;13.6)	8.2 (7.4;9.0)	-4.2 (-5.7;-2.7)	
HF	9.0 (5.2;12.7)	11.3 (7.1;15.4)	2.3 (-3.3;7.9)	0.022
No HF	14.1 (13.1;15.2)	9.7 (8.7;10.7)	-4.4 (-5.9;-3.0)	
MI	-	-	-	-
No MI	-	-	-	
Stroke	12.6 (3.9;21.3)	10.8 (6.6;14.9)	-1.9 (-11.5;7.8)	0.66
No stroke	13.9 (12.8;14.9)	9.8 (8.8;10.8)	-4.1 (5-5;2.6)	
Diabetes	20.1 (9.7;30.6)	11.6 (6.7;16.5)	-8.5 (-20.1;3.0)	0.41
No diabetes	13.1 (12.2;14.1)	9.5 (8.5;10.4)	-3.7 (-5.1;-2.3)	
Cardiomyopathy	10.1 (4.2;15.9)	14.7 (6.8;22.5)	4.6 (-5.2;14.4)	0.08
No cardiomyopathy	13.9 (12.8;14.9)	9.6 (8.7;10.6)	-4.2 (-5.7;-2.8)	
Dyslipidemia	26.1 (20.1;32.2)	15.0 (12.0;18.1)	-11.1 (-17.9;-4.3)	0.035
No dyslipidemia	11.9 (10.9;12.9)	8.2 (7.2;9.2)	-3.7 (-5.1;-2.3)	
COPD	5.9 (1.3;10.5)	3.2 (1.6;4.8)	-2.7 (-7.6;2.2)	0.60
No COPD	14.4 (13.3;15.4)	10.3 (9.3;11.3)	-4.1 (-5.5;-2.6)	
CKD	8.4 (2.2;14.6)	9.2 (1.4;17.0)	0.8 (-9.1;10.8)	0.33
No CKD	13.9 (12.8;14.9)	9.8 (8.8;10.7)	-4.1 (-5.5;-2.7)	
VHD	16.5 (11.5;21.5)	12.0 (8.2;15.9)	-4.5 (-10.8;1.8)	0.85
No VHD	13.5 (12.4;14.6)	9.6 (8.6;10.6)	-3.9 (-5.4;-2.4)	
Lower education	13.9 (12.2;15.7)	9.4 (6.1;12.7)	-4.5 (-8.3;-0.8)	0.041
Medium Education	12.5 (10.9;14.1)	10.8 (9.5;12.1)	-1.7 (-3.8;0.4)	
Higher education	13.5 (12.3;16.6)	8.8 (7.9;9.8)	-5.7 (-8.0;-3.3)	
Higher income	14.6 (13.5;15.7)	10.8 (9.7;11.8)	-3.8 (-5.4;-2.3)	0.72
Lower income	9.7 (6.7;12.7)	6.6 (4.4;8.8)	-3.1 (-6.8;0.6)	

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

Supplemental Table 25. Temporal trends in lifetime risk (%; 95%CI) of systemic embolism by subgroups, at index age 45.

Risk factor	Lifetime risk in epoch 1, % (2000-2010)	Lifetime risk in epoch 2, % (2011-2022)	Difference between epochs, %	Test for interaction
Men	1.8 (1.4;2.3)	1.7 (1.4;2.0)	-0.1(-0.7;0.4)	0.74
Women	2.1 (1.6;2.7)	1.8 (1.3;2.3)	-0.3 (-1.0;0.4)	
Hypertension	2.2 (1.6;2.9)	2.2 (1.5;2.8)	-0.1 (-1.0;0.9)	0.64
No hypertension	1.7 (1.3;2.1)	1.4 (1.1;1.6)	-0.3 (-0.8;0.2)	
HF	1.3 (0.6;1.9)	1.9 (1.0;2.8)	0.6 (-0.5;1.8)	0.12
No HF	2.0 (1.7;2.4)	1.7 (1.4;2.0)	-0.3 (-0.8;0.1)	
MI	3.4 (1.0;5.8)	2.4 (1.3;3.5)	-1.0 (-3.7;1.6)	0.54
No MI	1.9 (1.5;2.2)	1.7 (1.4;2.0)	-0.2 (-0.6;0.2)	
Stroke	4.4 (0.1;8.7)	3.8 (1.0;6.5)	-0.6 (-5.7;4.5)	0.89
No stroke	1.9 (1.5;2.2)	1.6 (1.4;1.9)	-0.2 (-0.6;0.2)	
Diabetes	1.3 (0.7;1.8)	2.3 (1.4;3.2)	1.0 (-0.1;2.0)	0.023
No diabetes	2.0 (1.7;2.4)	1.6 (1.4;1.9)	-0.4 (-0.8;0.1)	
Cardiomyopathy	2.9 (0.1;6.2)	0.9 (0.0;1.8)	-2.9 (-5.5;1.5)	0.30
No cardiomyopathy	1.9 (1.6;2.2)	1.8 (1.5;2.1)	-0.1 (-0.5;0.3)	
Dyslipidemia	2.9 (1.6;4.1)	2.0 (1.5;2.5)	-0.9 (-2.2;0.4)	0.35
No dyslipidemia	1.8 (1.5;2.1)	1.6 (1.3;1.9)	-0.2 (-0.7;0.2)	
COPD	0.6 (0.0;1.3)	0.9 (0.1;1.8)	0.3 (-0.8;1.4)	0.31
No COPD	2.1 (1.8;2.5)	1.8 (1.5;2.1)	-0.3 (-0.8;0.1)	
CKD	1.9 (0.6;4.4)	4.8 (0.5;9.0)	2.8 (-2.1;7.8)	0.19
No CKD	2.0 (1.6;2.3)	1.5 (1.3;1.8)	-0.4 (-0.8;0.0)	
VHD	1.8 (0.9;2.6)	1.3 (0.4;2.2)	-0.5 (-1.7;0.7)	0.65
No VHD	2.0 (1.6;2.3)	1.8 (1.5;2.1)	-0.2 (-0.6;0.3)	
Lower education	2.0 (1.4;2.7)	1.7 (1.0;2.4)	-0.3 (-1.3;0.6)	0.89
Medium Education	2.0 (1.4;1.5)	1.9 (1.5;2.3)	0.0 (-0.7;0.6)	
Higher education	1.5 (1.0;1.9)	1.4 (1.0;1.7)	-0.1 (-0.7;0.5)	
Higher income	2.0 (1.7;2.4)	1.7 (1.4;2.0)	-0.3 (-0.8;0.1)	0.53
Lower income	1.6 (0.6;2.6)	1.7 (0.8;2.6)	0.1 (-1.2;1.5)	

Abbreviations: HF=heart failure, MI=myocardial infarction, COPD=chronic obstructive pulmonary disease, CKD=chronic kidney disease, VHD=valvular heart disease.

14. Lifetime risk of complications after atrial fibrillation by secondary index ages**Supplemental Table 26. Lifetime risk of complications by secondary index ages.**

	Index age		
	55 years	65 years	75 years
Heart failure	40.7 (39.2;42.1)	34.3 (31.6;37.0)	30.8 (29.0;32.6)
Any stroke	20.0 (19.3;20.8)	17.7 (16.4;19.0)	15.6 (14.8;16.4)
Ischemic stroke	12.1 (11.6;12.7)	11.5 (10.5;12.5)	9.7 (9.1;10.3)
Myocardial infarction	10.5 (9.7;11.3)	8.3 (7.6;9.0)	6.9 (6.4;7.5)
Systemic embolism	1.7 (1.4;1.9)	1.2 (1.0;1.3)	1.0 (0.9;1.1)

Supplemental Table 27. Lifetime risk of complications by secondary index ages and sex.

	Index age		
	55 years	65 years	75 years
Men			
Heart failure	44.2 (32.4;46.0)	35.5 (31.5;39.5)	32.2 (29.2;35.2)
Any stroke	19.1 (18.3;20.0)	17.0 (15.2;18.7)	13.9 (12.9;14.9)
Ischemic stroke	11.5 (10.9;12.1)	10.8 (9.6;12.1)	8.4 (7.7;9.1)
Myocardial infarction	10.9 (9.8;12.0)	8.5 (7.4;9.6)	6.7 (6.0;7.4)
Systemic embolism	1.7 (1.4;2.1)	1.1 (0.9;1.2)	0.8 (0.7;1.0)
Women			
Heart failure	33.5 (31.6;35.4)	32.6 (30.5;34.7)	29.4 (27.8;31.0)
Any stroke	21.4 (20.1;22.1)	18.6 (17.5;19.6)	17.5 (16.4;18.5)
Ischemic stroke	13.1 (12.0;14.2)	12.5 (11.0;14.1)	11.1 (10.2;12.1)
Myocardial infarction	9.7 (8.6;10.8)	7.9 (7.3;8.5)	7.2 (6.3;8.1)
Systemic embolism	1.5 (1.3;1.7)	1.3 (1.1;1.5)	1.2 (1.0;1.4)
Absolute difference, % (95%CI)			
Heart failure	10.7 (8.1;13.4)	2.9 (-1.6;7.5)	2.8 (-0.6;6.1)
Heart failure P value	<0.001	0.203	0.110
Any stroke	-2.2 (-3.8;-0.7)	-1.6 (-3.7;0.4)	-3.6 (-5.0;-2.1)
Any stroke P value	0.005	0.123	<0.001
Ischemic stroke	-1.6 (-2.9;-0.4)	-1.7 (-3.7;0.3)	-2.7 (-3.9;-1.6)
Ischemic stroke P value	0.010	0.094	<0.001
Myocardial infarction	1.2 (-0.4;2.7)	0.5 (-0.7;1.8)	-0.5 (-1.7;0.7)
Myocardial infarction P value	0.132	0.385	0.403
Systemic embolism	0.2 (-0.2;0.6)	-0.3 (-0.6;0.0)	-0.4 (-0.6;-0.2)
Systemic embolism P value	0.298	0.044	0.001

Supplemental Table 28. Temporal trends in lifetime risk of complications after atrial fibrillation, by index ages 55, 65, and 75 years.

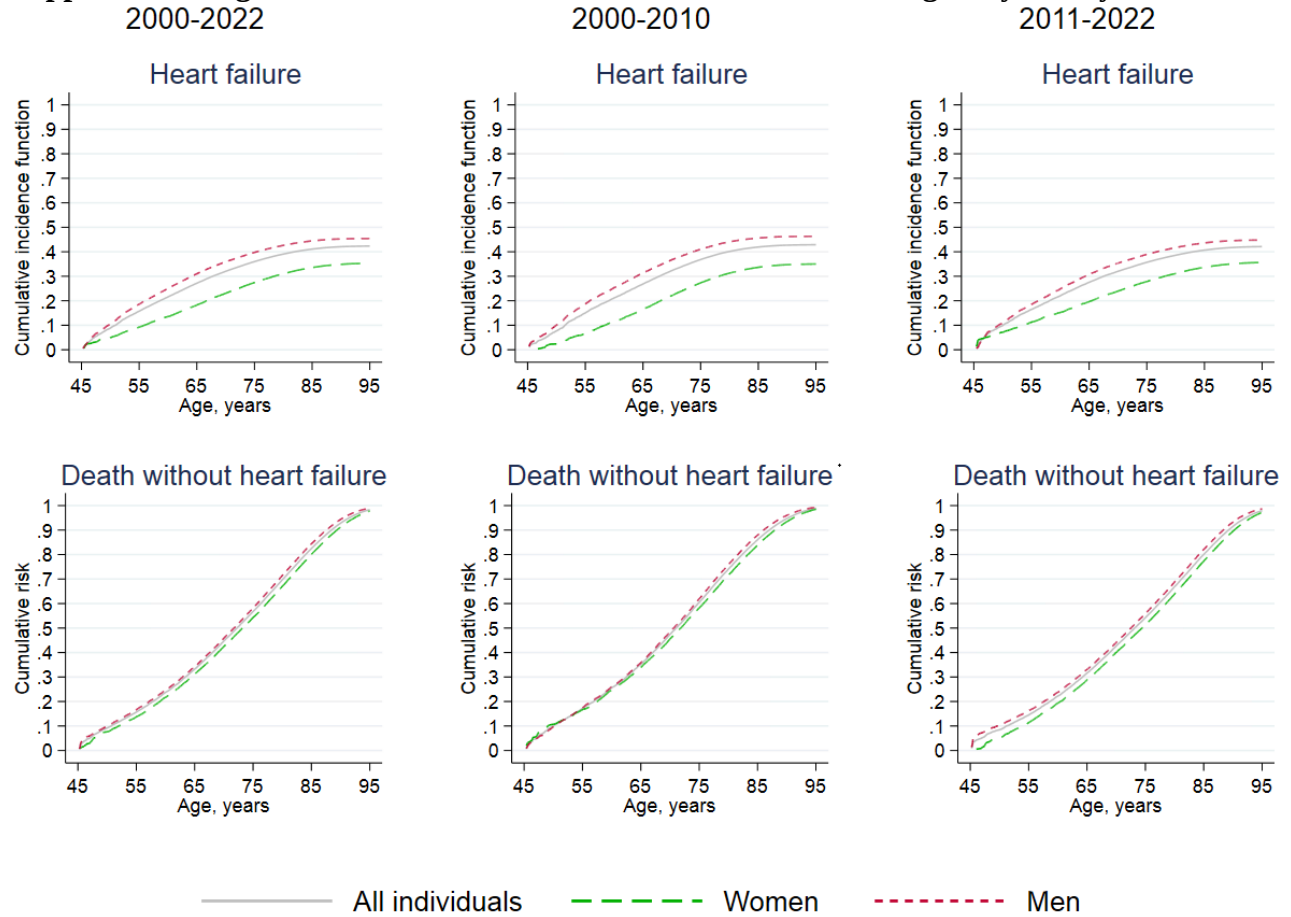
	Index age		
	55 years	65 years	75 years
Overall			
Heart failure			
2000-2010	43.9 (31.3;36.4)	34.1 (28.5;39.7)	35.9 (32.6;39.2)
2011-2022	39.4 (37.8;41.0)	35.4 (33.7;17.0)	27.9 (26.0;29.8)
Absolute difference, %	-4.5 (-7.5;-1.5)	1.3 (-4;5-7.1)	-8.0 (-11.8;-4.2)
Trend P value	0.003	0.66	<0.001
Any stroke			
2000-2010	21.9 (20.9;22.9)	19.1 (16.3;21.9)	17.9 (16.7;19.1)
2011-2022	18.0 (16.9;19.0)	16.1 (15.4;16.9)	13.6 (12.7;14.5)
Absolute difference, %	-4.0 (-5.4;-2.5)	-2.9 (-5.9;0.0)	-4.3 (-5.8;-2.8)
Trend P value	<0.001	0.048	<0.001
Ischemic stroke			
2000-2010	15.7 (14.9;16.6)	14.7 (12.3;17.2)	13.1 (12.2;14.1)
2011-2022	9.4 (8.7;10.1)	8.9 (8.4;9.5)	7.2 (6.5;7.8)
Absolute difference, %	-6.3 (-7.4;-5.2)	-5.8 (-8.3;-3.2)	-5.9 (-7.1;-4.8)
Trend P value	<0.001	<0.001	<0.001
Myocardial infarction			
2000-2010	13.4 (11.9;14.9)	10.5 (8.6;12.3)	9.2 (8.2;10.1)
2011-2022	8.4 (7.5;9.3)	6.8 (6.3;7.3)	5.3 (4.6;6.0)
Absolute difference, %	-5.0 (-6.8;-3.3)	-3.7 (-5.6;-1.7)	-3.9 (-5.0;-2.7)
Trend P value	<0.001	<0.001	<0.001
Systemic embolism			
2000-2010	2.0 (1.6;2.5)	1.3 (1.0;1.5)	1.4 (1.1;1.6)
2011-2022	1.3 (1.1-1.6)	1.1 (0.9;1.3)	0.7 (0.6;0.8)
Absolute difference, %	-0.7 (-1.2;-0.2)	-0.2 (-0.5;0.1)	-0.6 (-0.9;-0.4)
Trend P value	0.01	0.23	<0.001
Men			
Heart failure			
2000-2010	47.7 (44.3;51.0)	33.0 (24.1;38.1)	37.4 (31.7;43.2)
2011-2022	43.0 (41.0;45.9)	38.1 (36.2;41.0)	29.2 (26.1;32.4)
Absolute difference, %	-4.7 (-8.6;-0.8)	5.2 (5.2 (-3.9;14.3)	-8.2 (-14.8;-1.6)
Trend P value	0.019	0.262	0.015
Any stroke			
2000-2010	20.9 (19.8;21.9)	17.7 (13.7;21.6)	15.1 (13.6;16.6)
2011-2022	17.4 (16.2;18.7)	16.0 (15.1;16.9)	12.8 (11.5;14.1)
Absolute difference, %	-3.4 (-5.1;-1.8)	-1.7 (-5.7;2.3)	-2.4 (-4.4;-0.4)
Trend P value	<0.001	0.413	0.021
Ischemic stroke			
2000-2010	14.9 (14.0;15.8)	13.4 (10.2;16.6)	10.9 (9.8;12.0)
2011-2022	9.1 (8.3;9.9)	8.7 (8.0;9.5)	6.6 (5.8;7.4)
Absolute difference, %	-5.8 (-7.0;-4.6)	-4.7 (-7.9;-1.4)	-4.3 (-5.6;-2.9)
Trend P value	<0.001	0.005	<0.001
Myocardial infarction			
2000-2010	14.1 (12.0;16.1)	9.7 (6.6;12.9)	9.0 (7.6;10.5)

Vinter et al. Lifetime risks of atrial fibrillation and complications

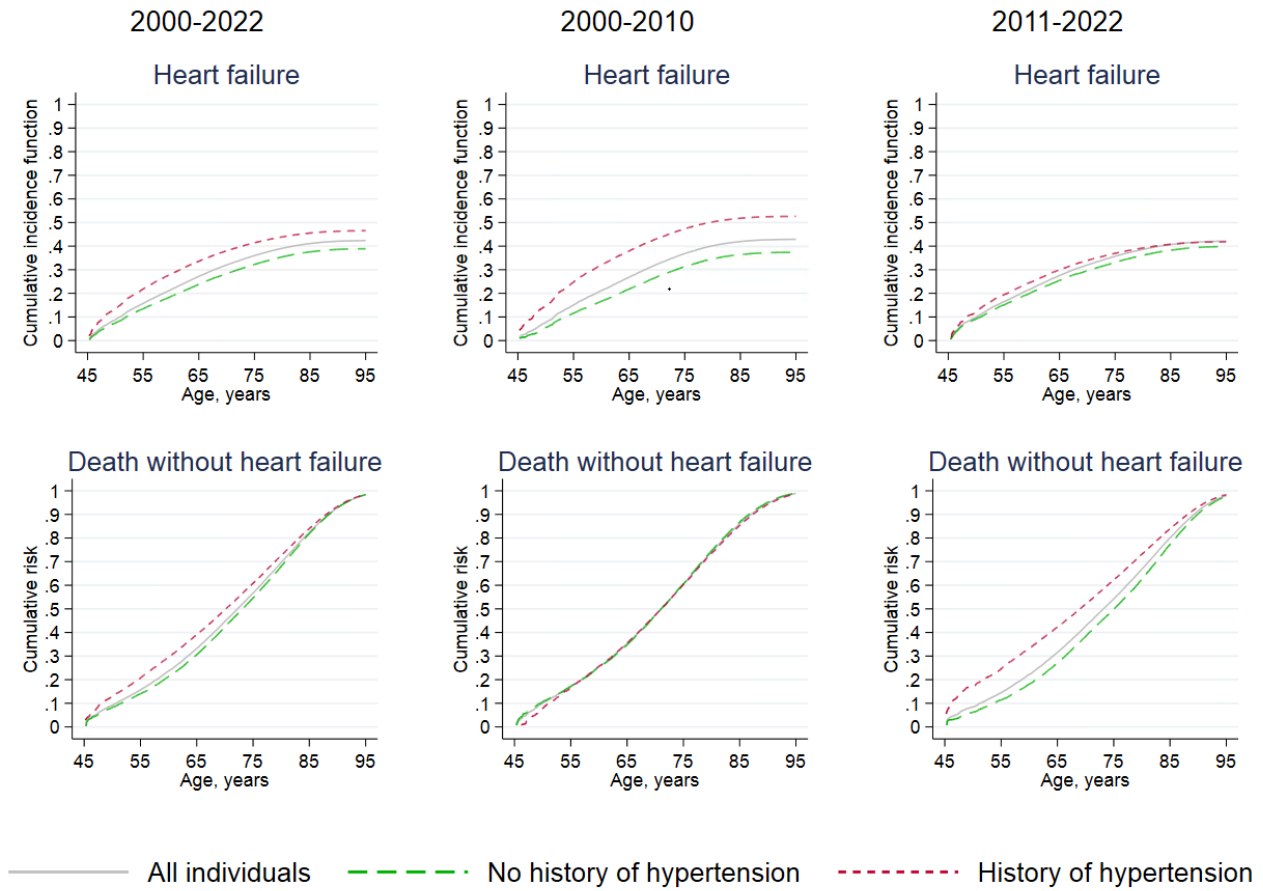
2011-2022	8.7 (7.7;9.7)	7.5 (6.8;8.2)	5.2 (4.5;5.9)
Absolute difference, %	-5.4 (-7.7;-3.1)	-2.2 (-5.4;1.0)	-3.9 (-5.5;-2.3)
Trend P value	<0.001	0.183	<0.001
Systemic embolism			
2000-2010	2.1 (1.4;2.8)	0.9 (0.7;1.2)	1.0 (0.7;1.3)
2011-2022	1.4 (1.1;1.7)	1.1 (0.9;1.4)	0.7 (0.5;0.9)
Absolute difference, %	-0.7 (-1.4;0.1)	0.2 (-0.2;0.6)	-0.3 (-0.7;0.0)
Trend P value	0.083	0.313	0.056
Women			
Heart failure			
2000-2010	36.0 (32.8;39.2)	36.2 (33.9;38.5)	34.1 (31.5;36.7)
2011-2022	32.3 (29.7;34.9)	30.8 (27.6;34.0)	26.4 (24.4;28.3)
Absolute difference, %	-3.7 (-7.9;0.4)	-5.4 (-9.3;-1.4)	-7.7 (-11.0;-4.5)
Trend P value	0.078	0.007	<0.001
Any stroke			
2000-2010	23.2 (20.9;25.5)	21.3 (19.7;22.9)	20.8 (19.0;22.7)
2011-2022	19.0 (17.3;20.6)	16.0 (14.6;17.3)	14.6 (13.3;15.8)
Absolute difference, %	-4.3 (-7.1;-1.4)	-5.3 (-7.4;-3.2)	-6.3 (-8.5;-4.0)
Trend P value	0.003	<0.001	<0.001
Ischemic stroke			
2000-2010	16.8 (14.9;18.8)	17.1 (13.9;20.3)	15.5 (13.9;17.7)
2011-2022	9.9 (8.6;11.3)	9.1 (8.1;10.1)	7.9 (-6.9;8.8)
Absolute difference, %	-6.9 (-9.3;-4.5)	-8.0 (-11.3;-4.7)	-7.6 (-9.5;-5.7)
Trend P value	<0.001	<0.001	<0.001
Myocardial infarction			
2000-2010	11.9 (10.7;13.1)	11.5 (10.4;12.6)	9.3 (8.2;10.3)
2011-2022	8.1 (6.3;9.9)	5.6 (5.0;6.2)	5.5 (4.2;6.9)
Absolute difference, %	-3.9 (-6.0;-1.7)	-5.9 (-7.2;-4.6)	-3.7 (-5.4;-2.0)
Trend P value	<0.001	<0.001	<0.001
Systemic embolism			
2000-2010	1.8 (1.5;2.1)	1.8 (1.4;2.2)	1.7 (1.4;2.1)
2011-2022	1.2 (0.9;1.4)	0.9 (0.7;1.2)	0.8 (0.6;0.9)
Absolute difference, %	-0.7 (-1.1;-0.3)	-0.9 (-1.3;-0.4)	-1.0 (-1.4;-0.6)
Trend P value	0.001	<0.001	<0.001

15. Figures showing cumulative incidence function of complications after atrial fibrillation

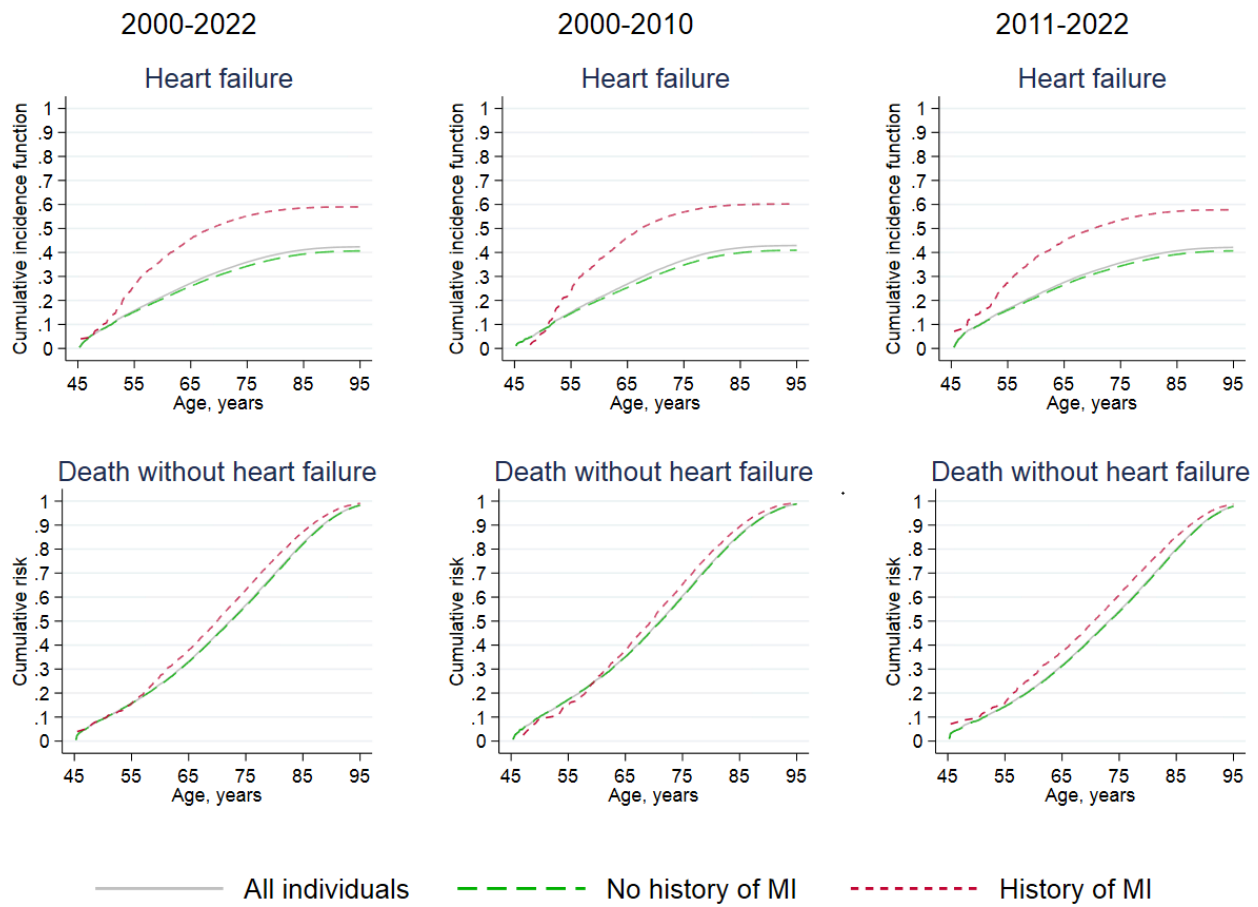
Supplemental Figure 14. Cumulative incidence of heart failure at age 45 years by sex.



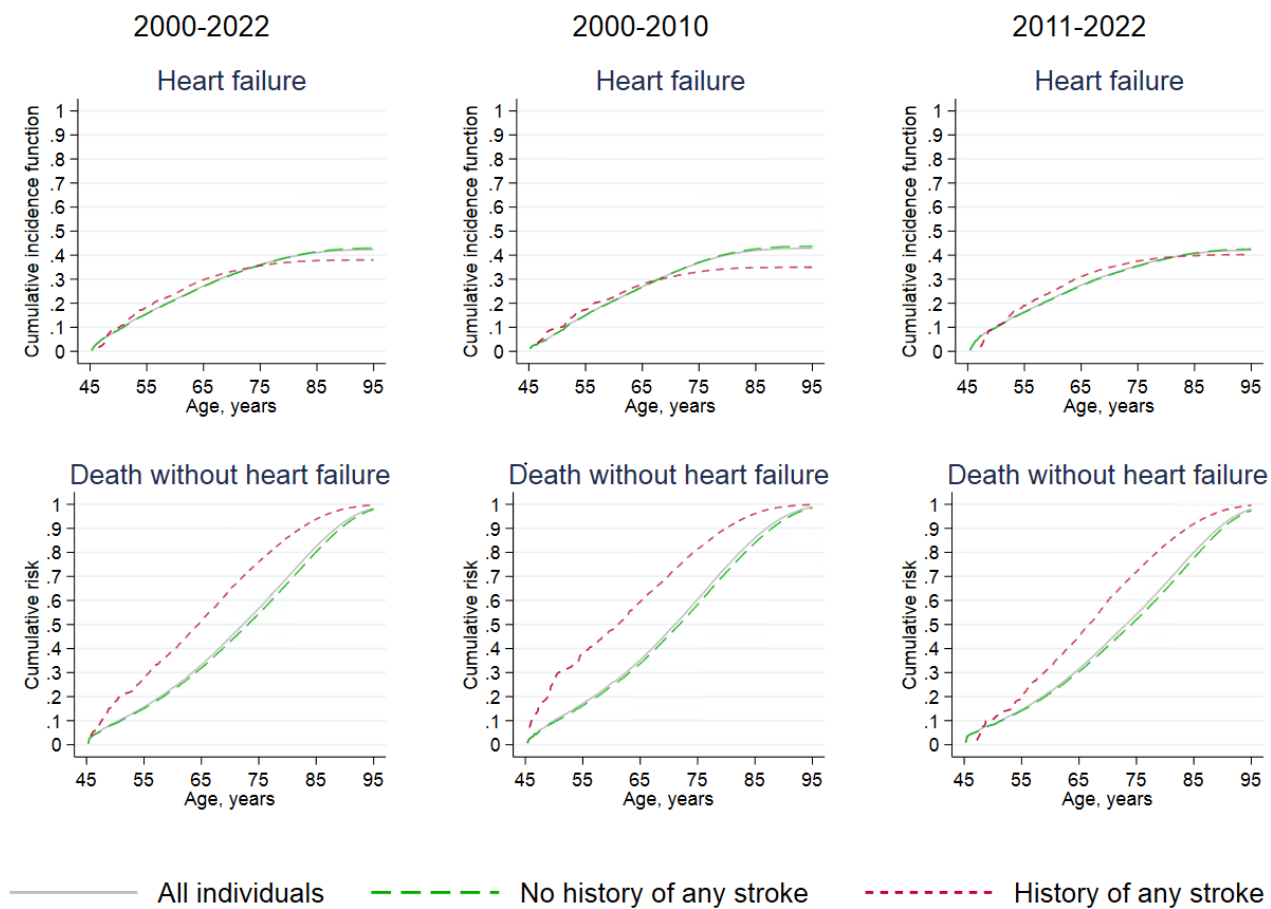
Supplemental Figure 15. Cumulative incidence of heart failure at age 45 years by hypertension.



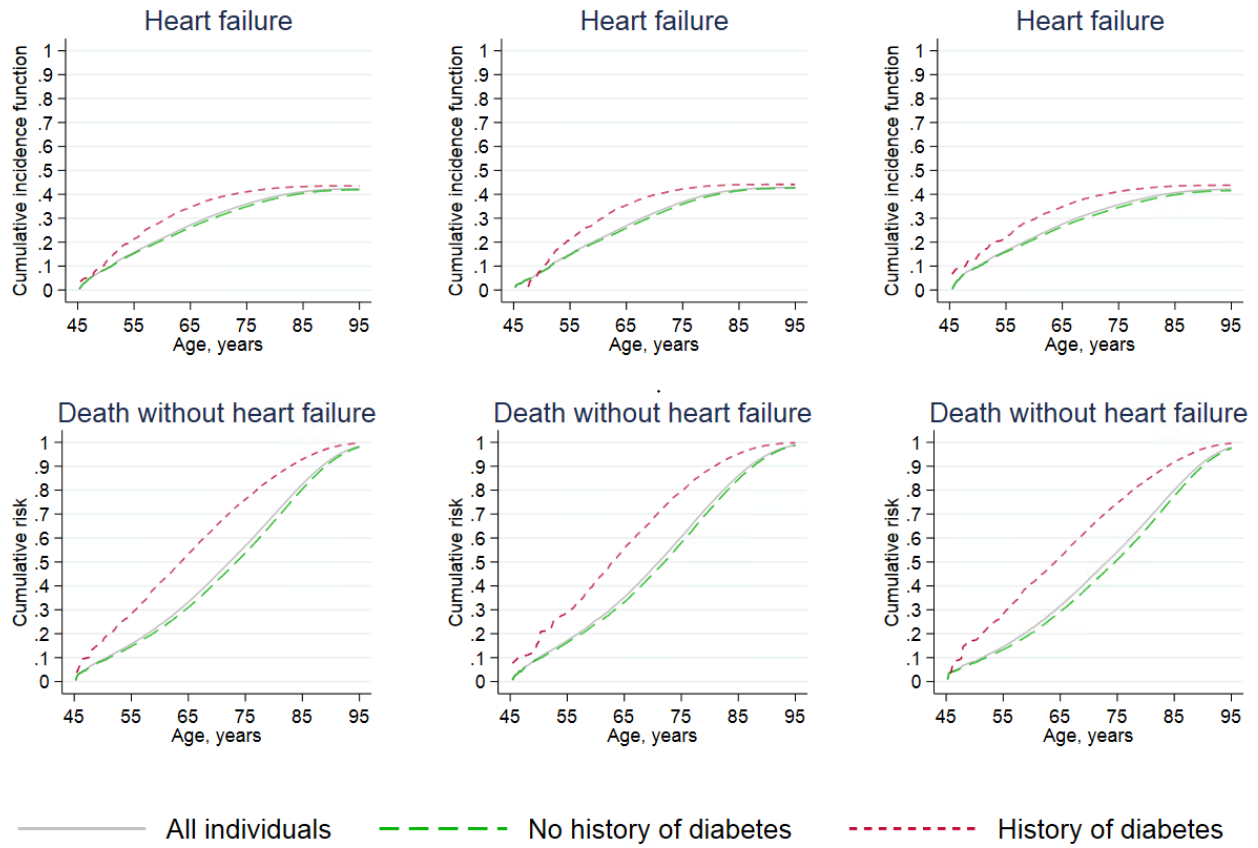
Supplemental Figure 16. Cumulative incidence of heart failure at age 45 years by myocardial infarction.



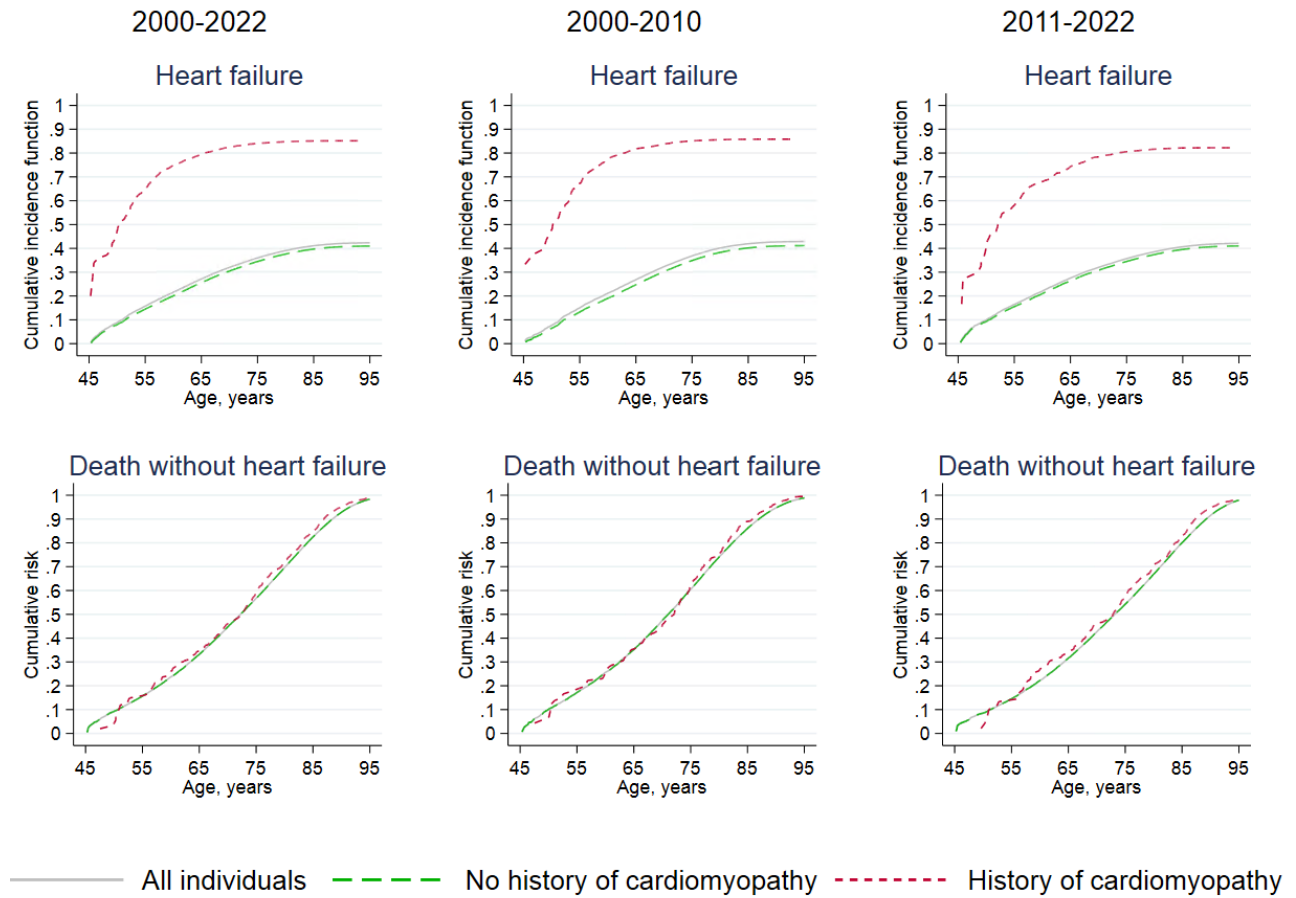
Supplemental Figure 17. Cumulative incidence of heart failure at age 45 years by stroke.



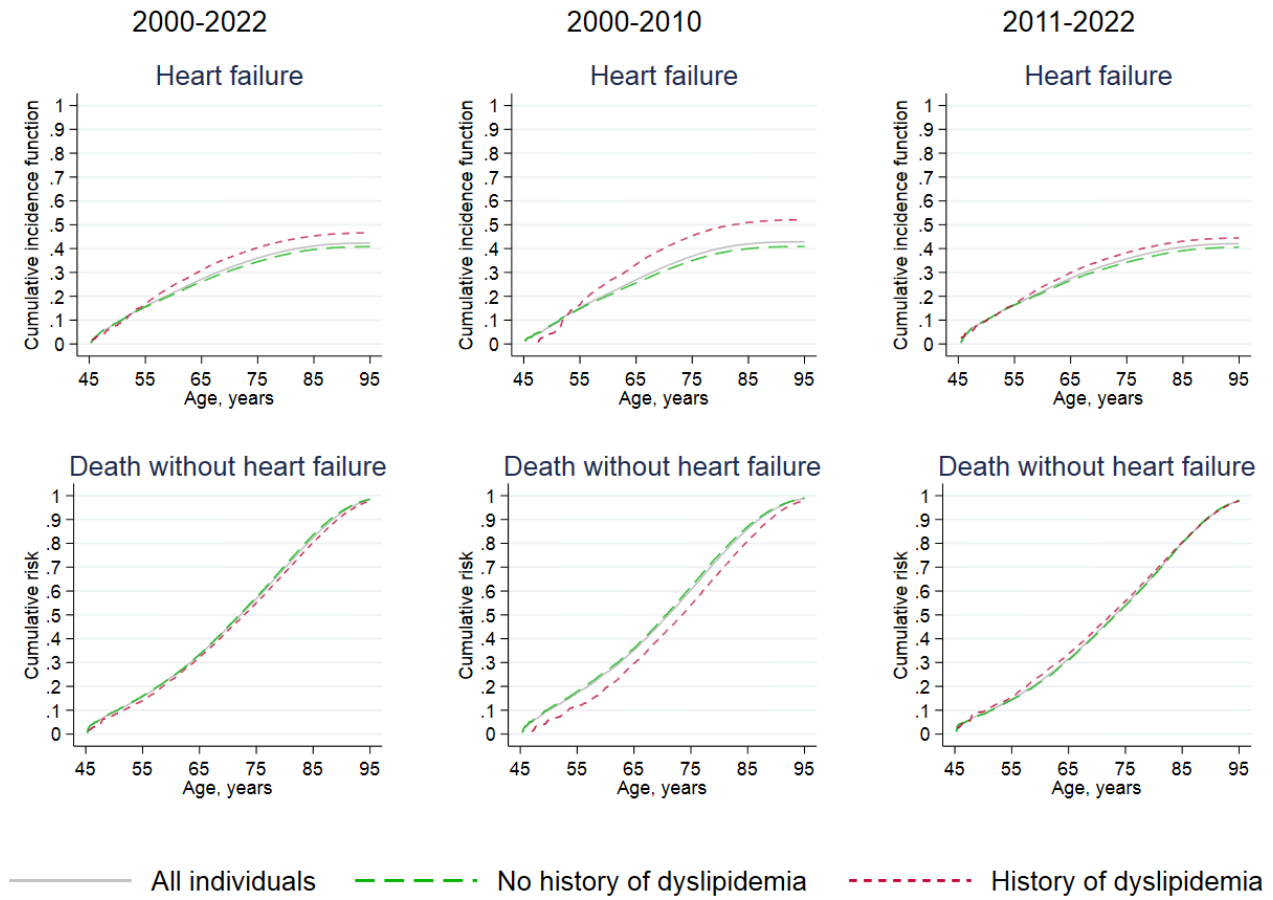
Supplemental Figure 18. Cumulative incidence of heart failure at age 45 years by diabetes.
2000-2022 2000-2010 2011-2022



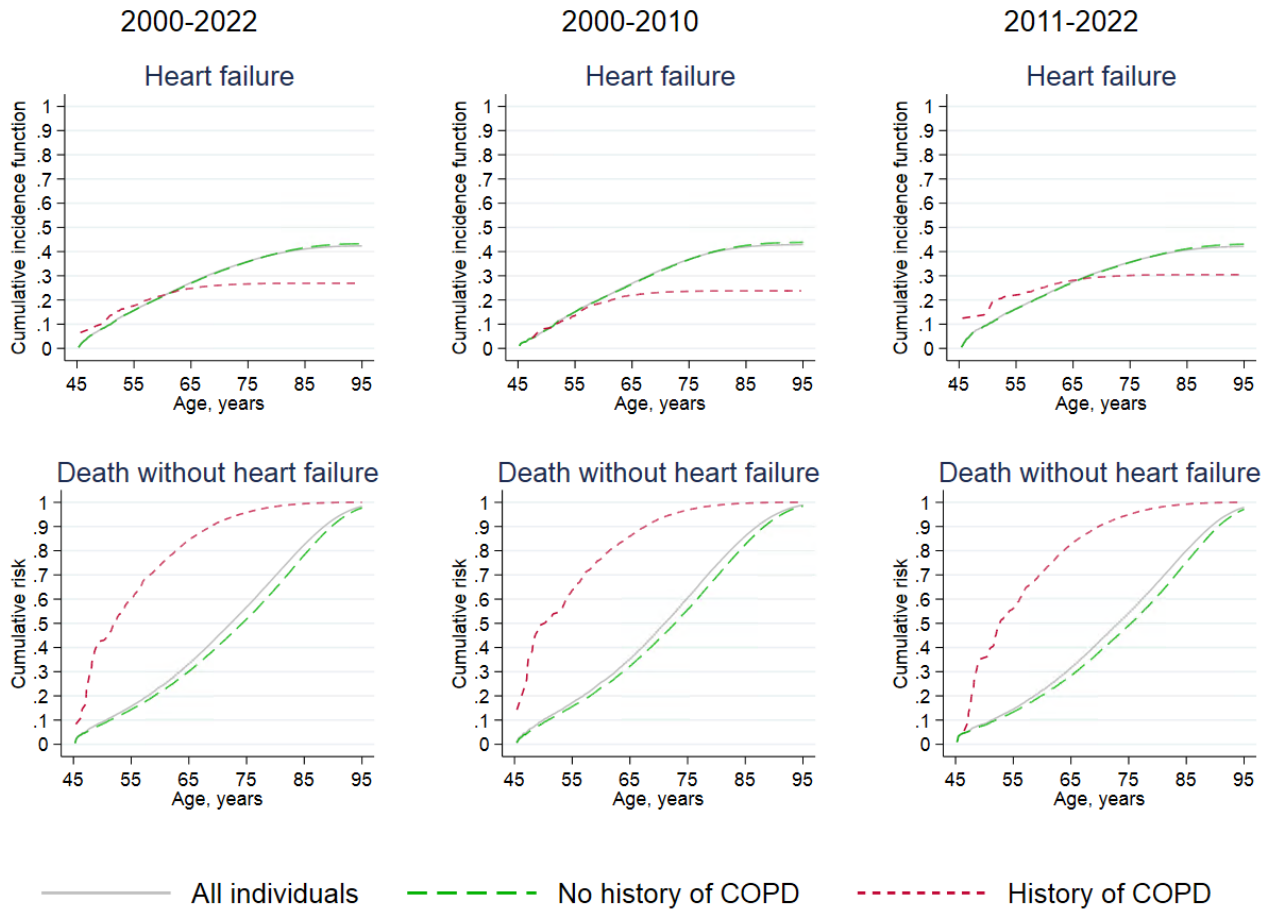
Supplemental Figure 19. Cumulative incidence of heart failure at age 45 years by cardiomyopathy.



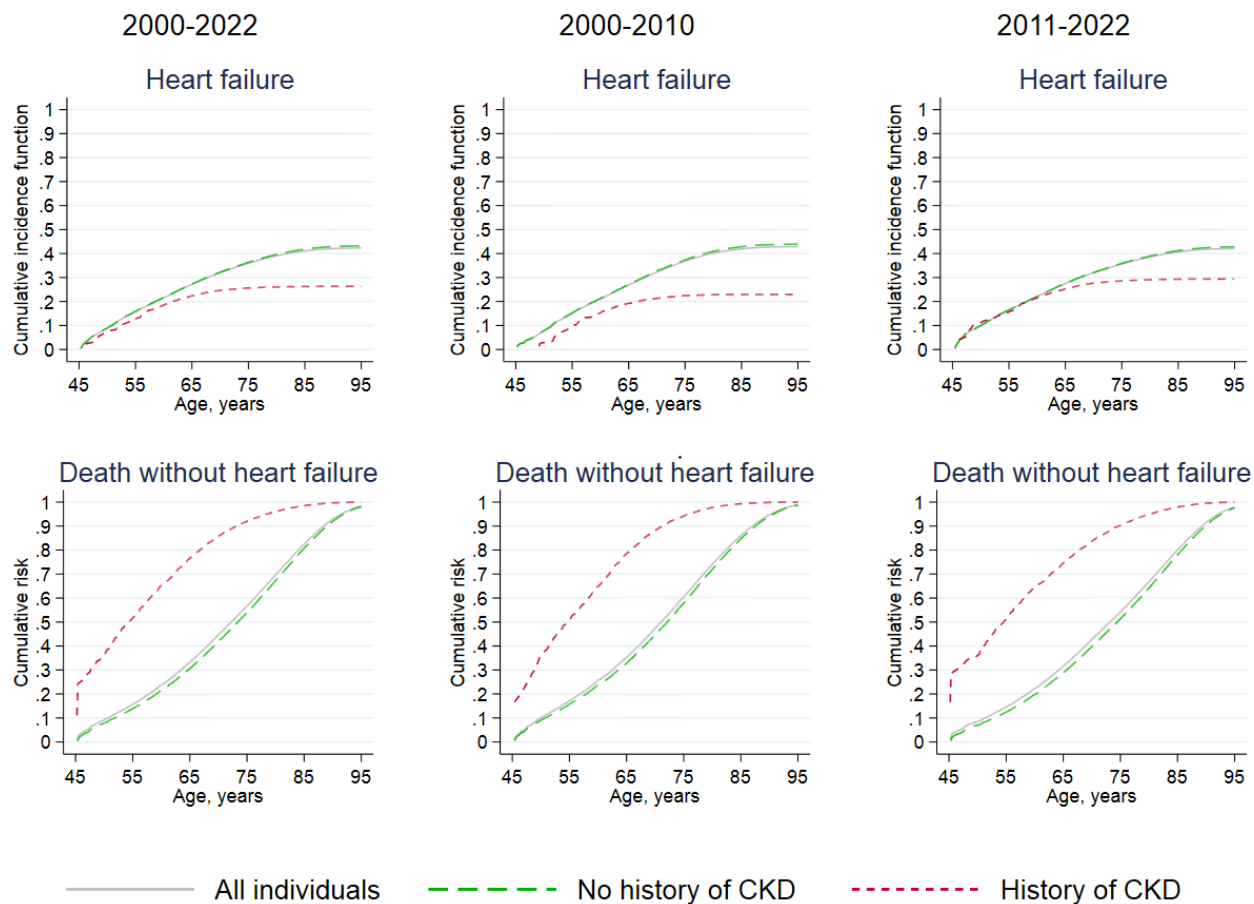
Supplemental Figure 20. Cumulative incidence of heart failure at age 45 years by dyslipidemia.



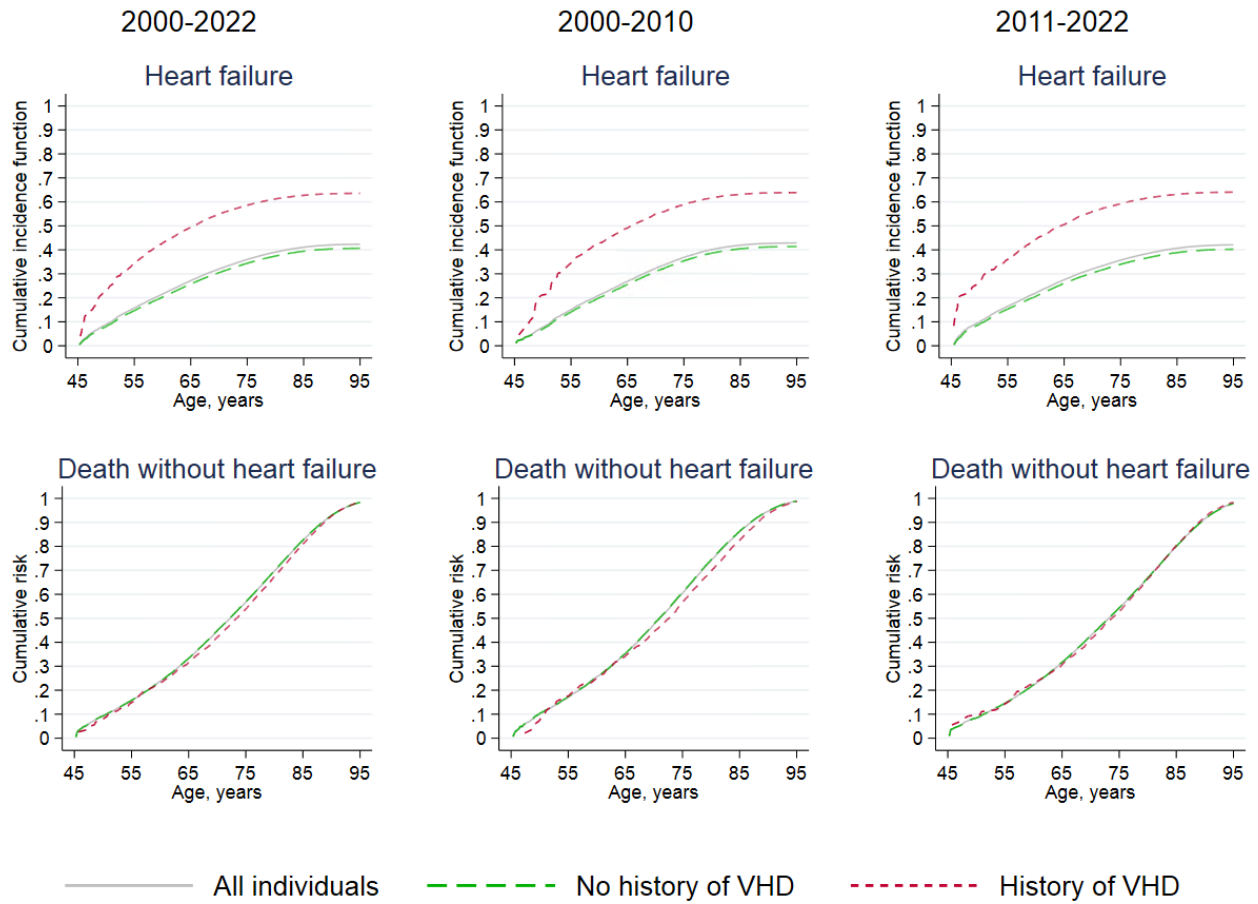
Supplemental Figure 21. Cumulative incidence of heart failure at age 45 years by chronic obstructive pulmonary disease.



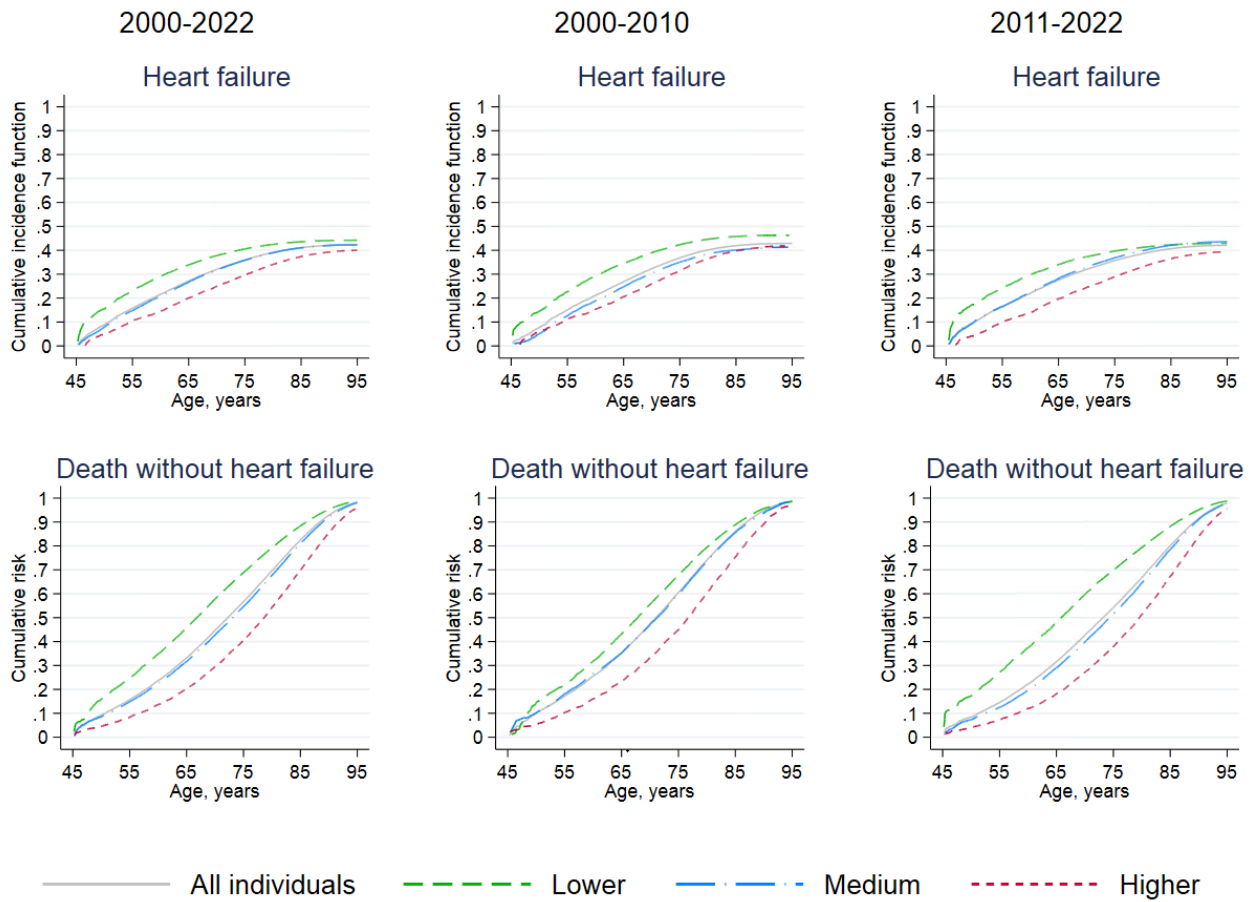
Supplemental Figure 22. Cumulative incidence of heart failure at age 45 years by chronic kidney disease.



Supplemental Figure 23. Cumulative incidence of heart failure at age 45 years by valvular heart disease.



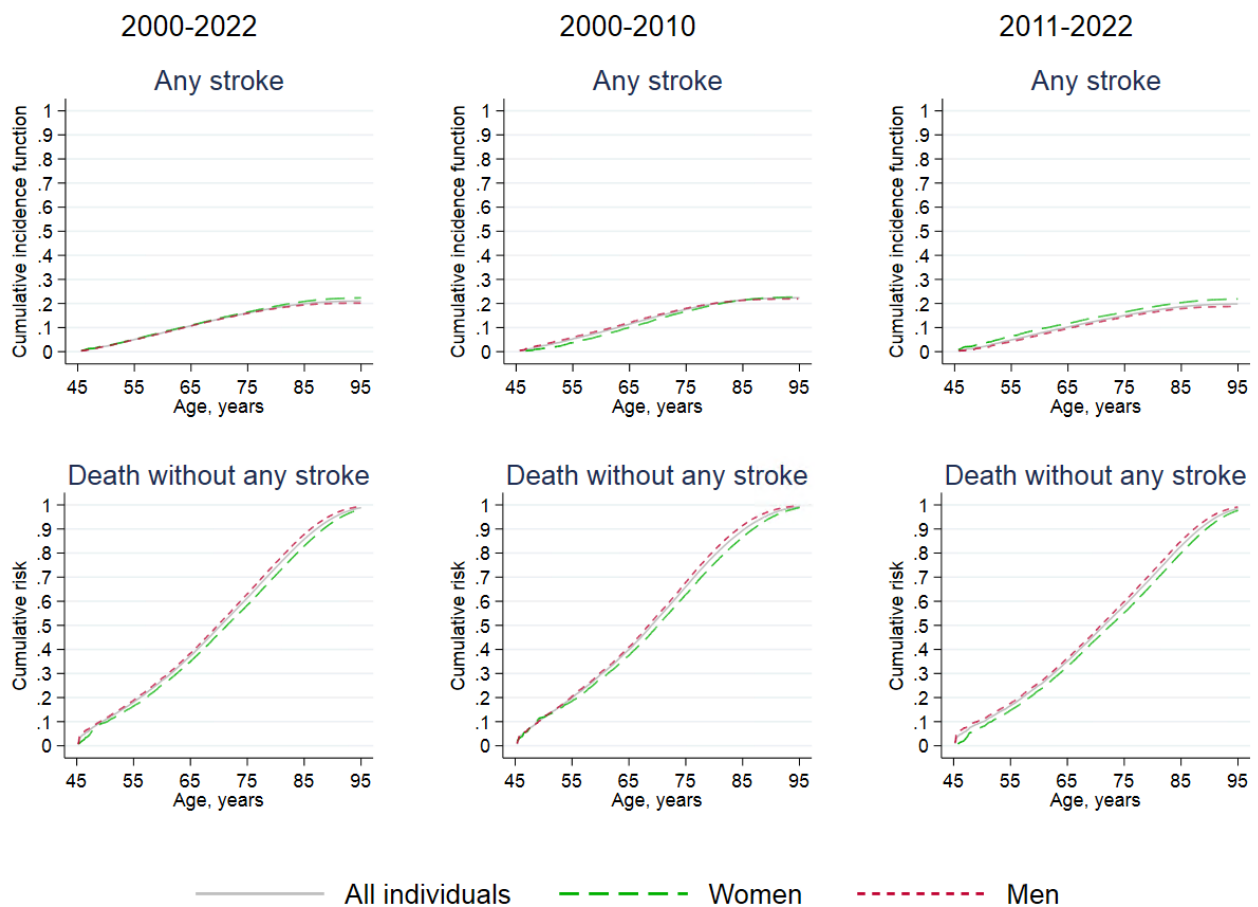
Supplemental Figure 24. Cumulative incidence of heart failure at age 45 years by educational attainment.



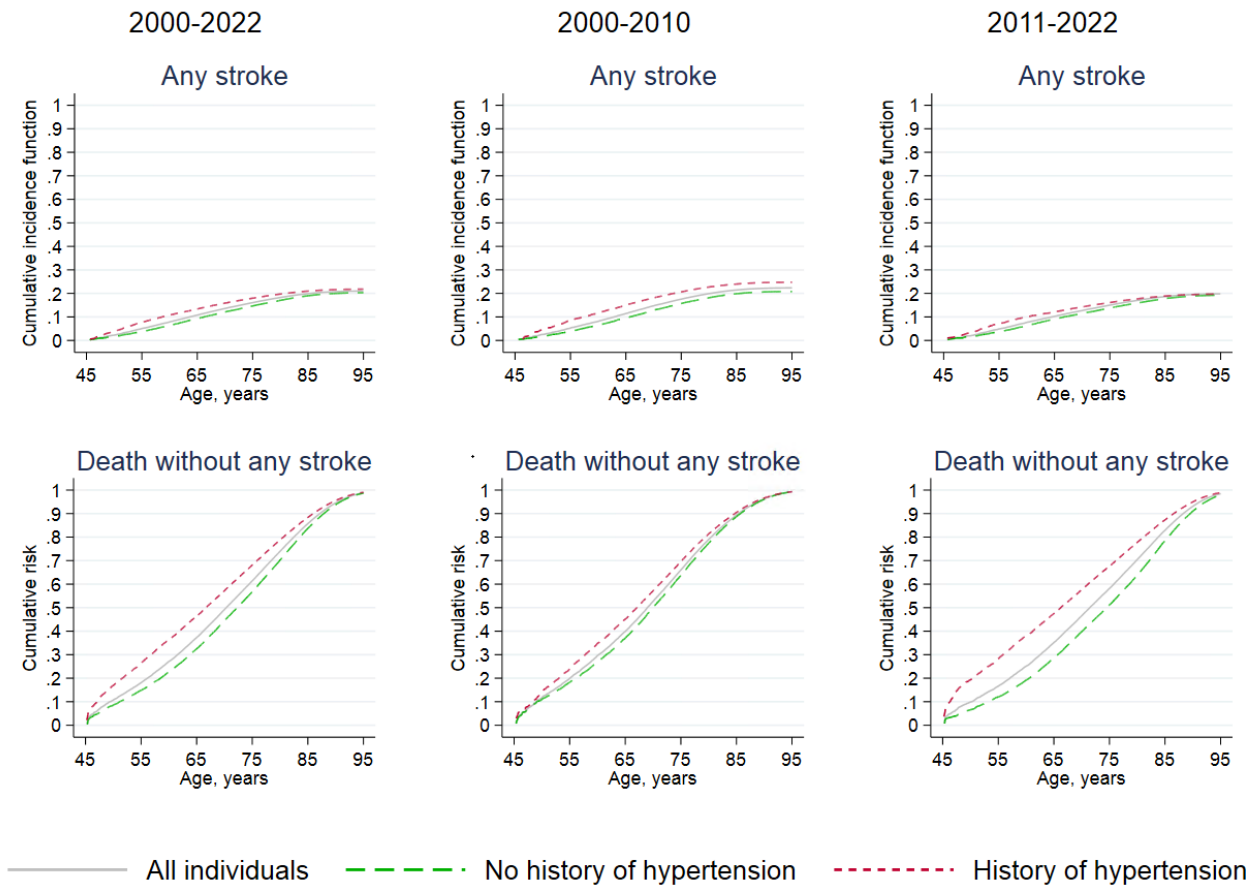
Supplemental Figure 25. Cumulative incidence of heart failure at age 45 years by income.



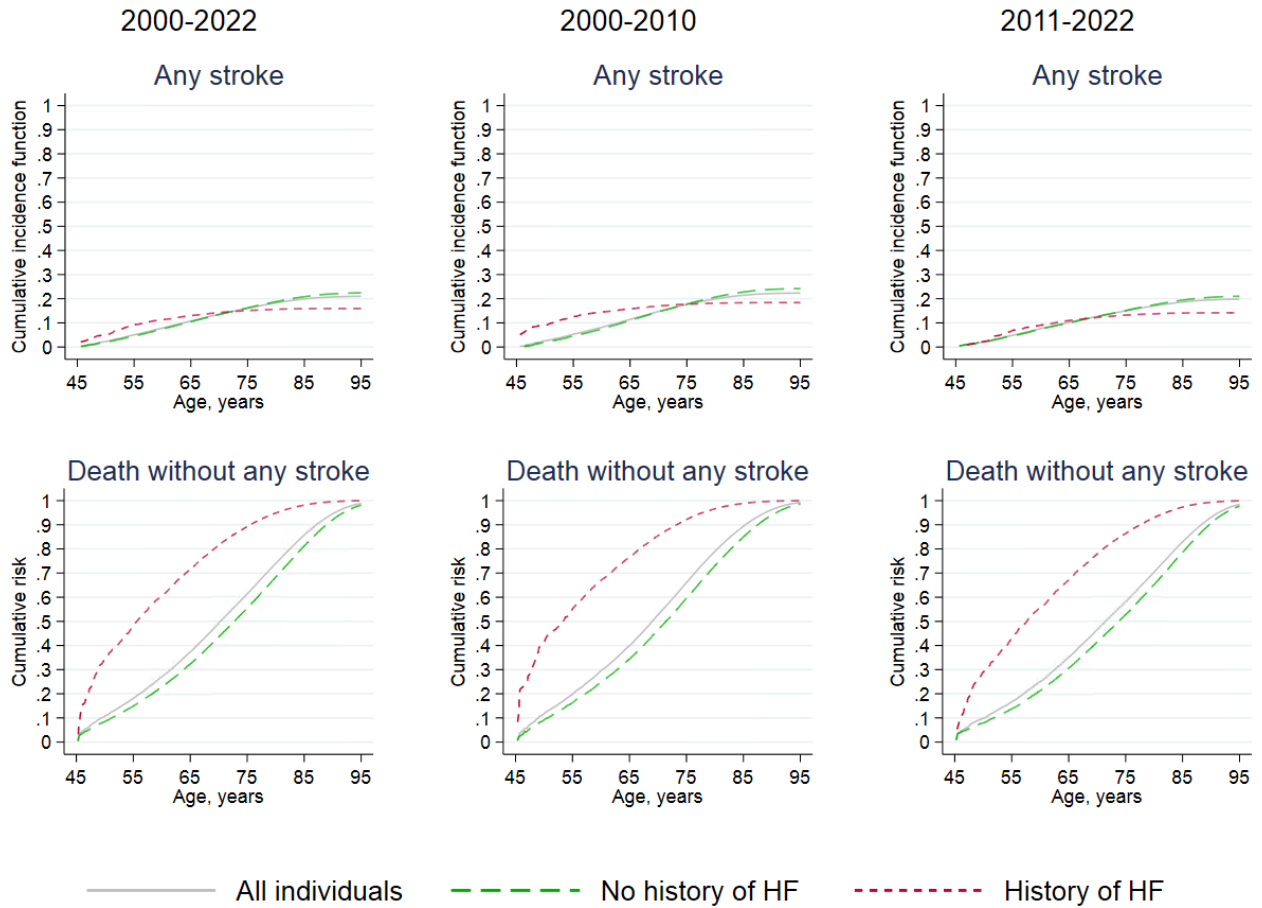
Supplemental Figure 26. Cumulative incidence of any stroke at age 45 years by sex.



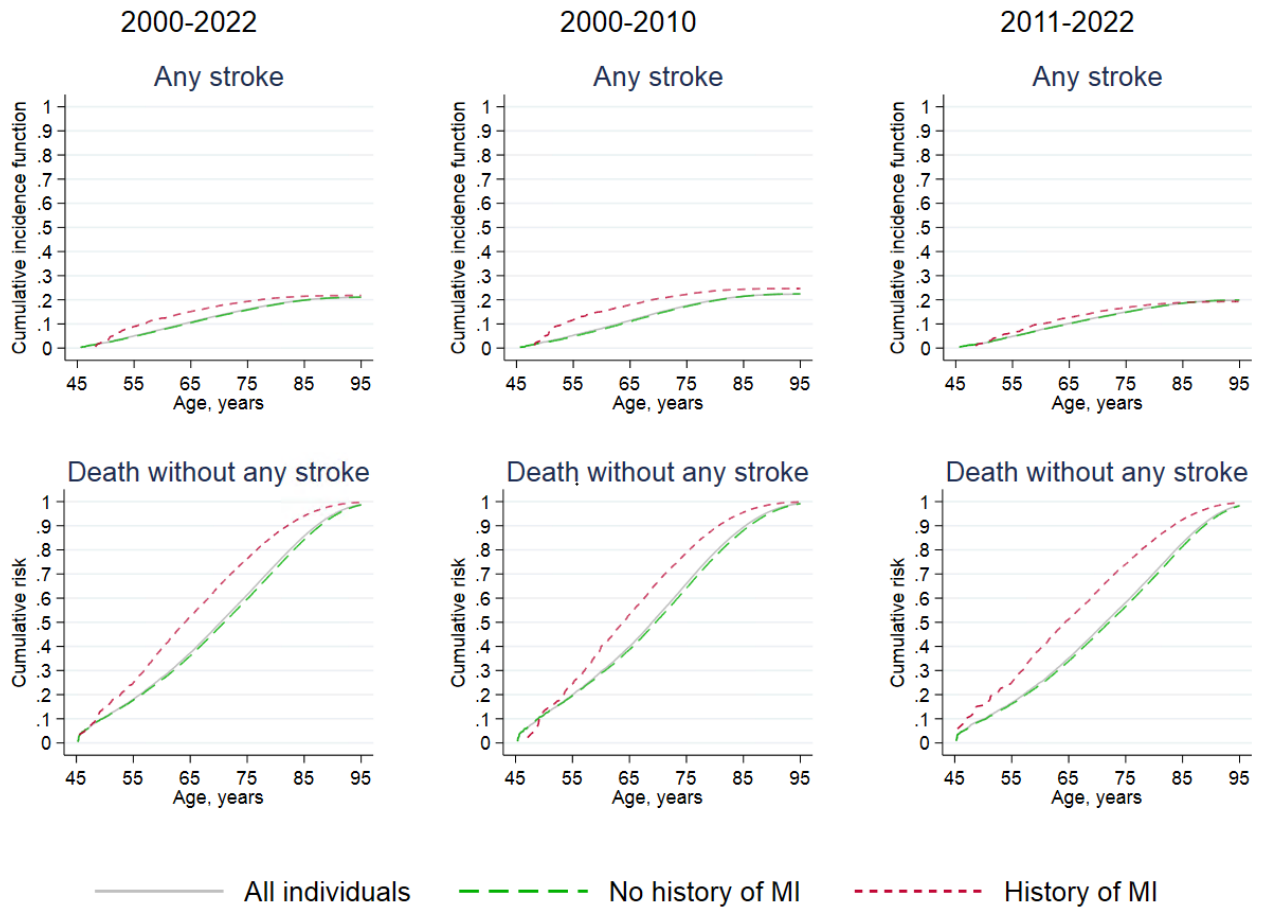
Supplemental Figure 27. Cumulative incidence of any stroke at age 45 years by hypertension.



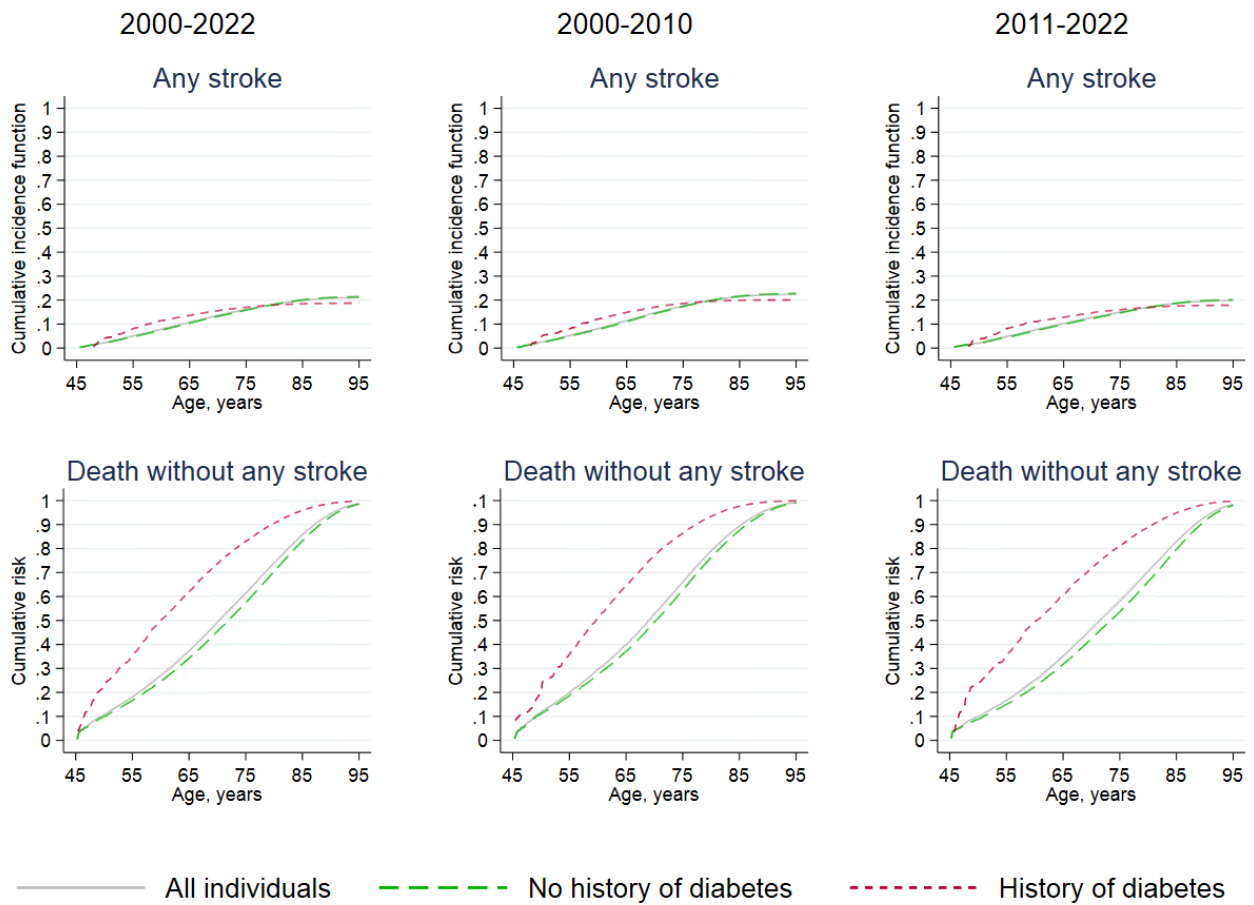
Supplemental Figure 28. Cumulative incidence of any stroke at age 45 years by heart failure.



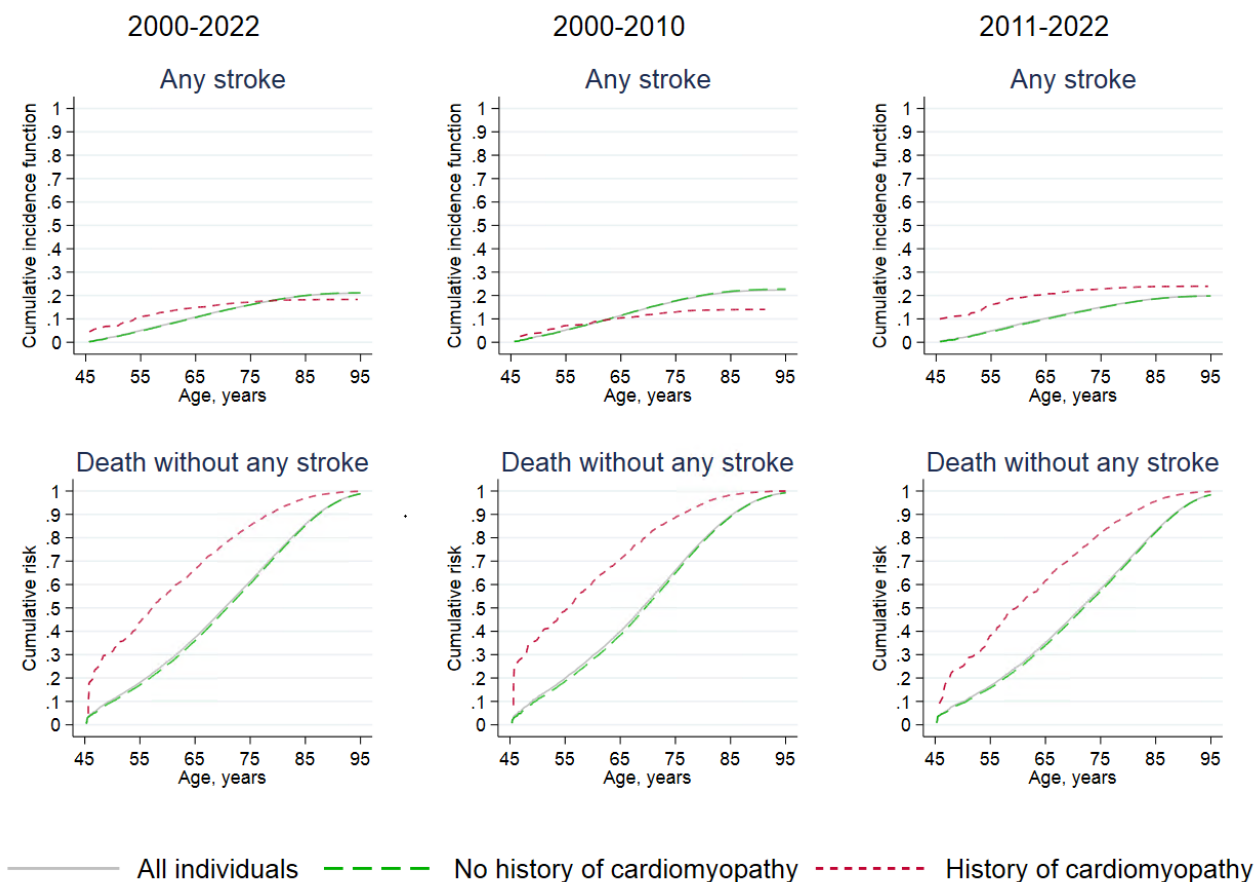
Supplemental Figure 29. Cumulative incidence of any stroke at age 45 years by myocardial infarction.



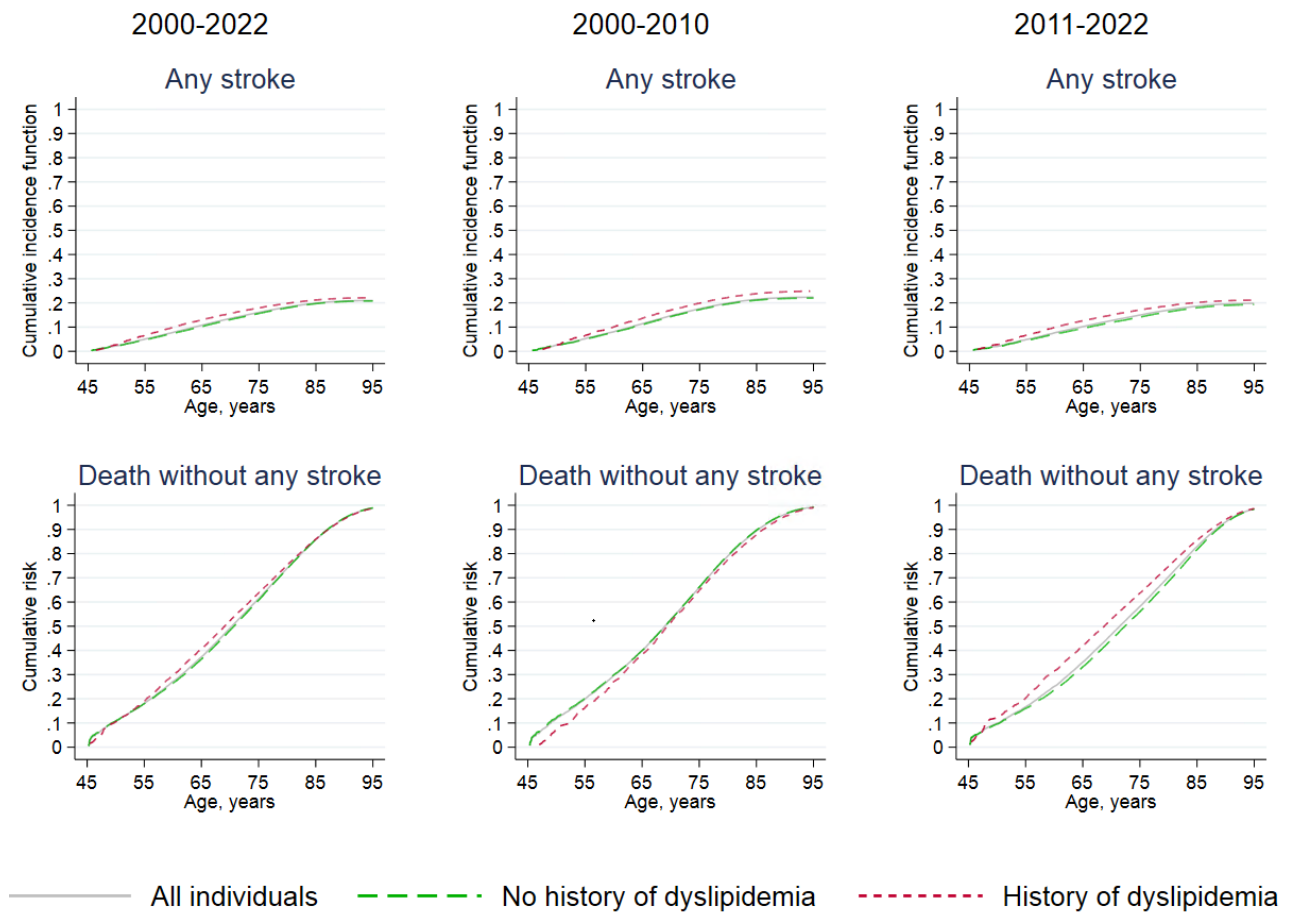
Supplemental Figure 30. Cumulative incidence of any stroke at age 45 years by diabetes.



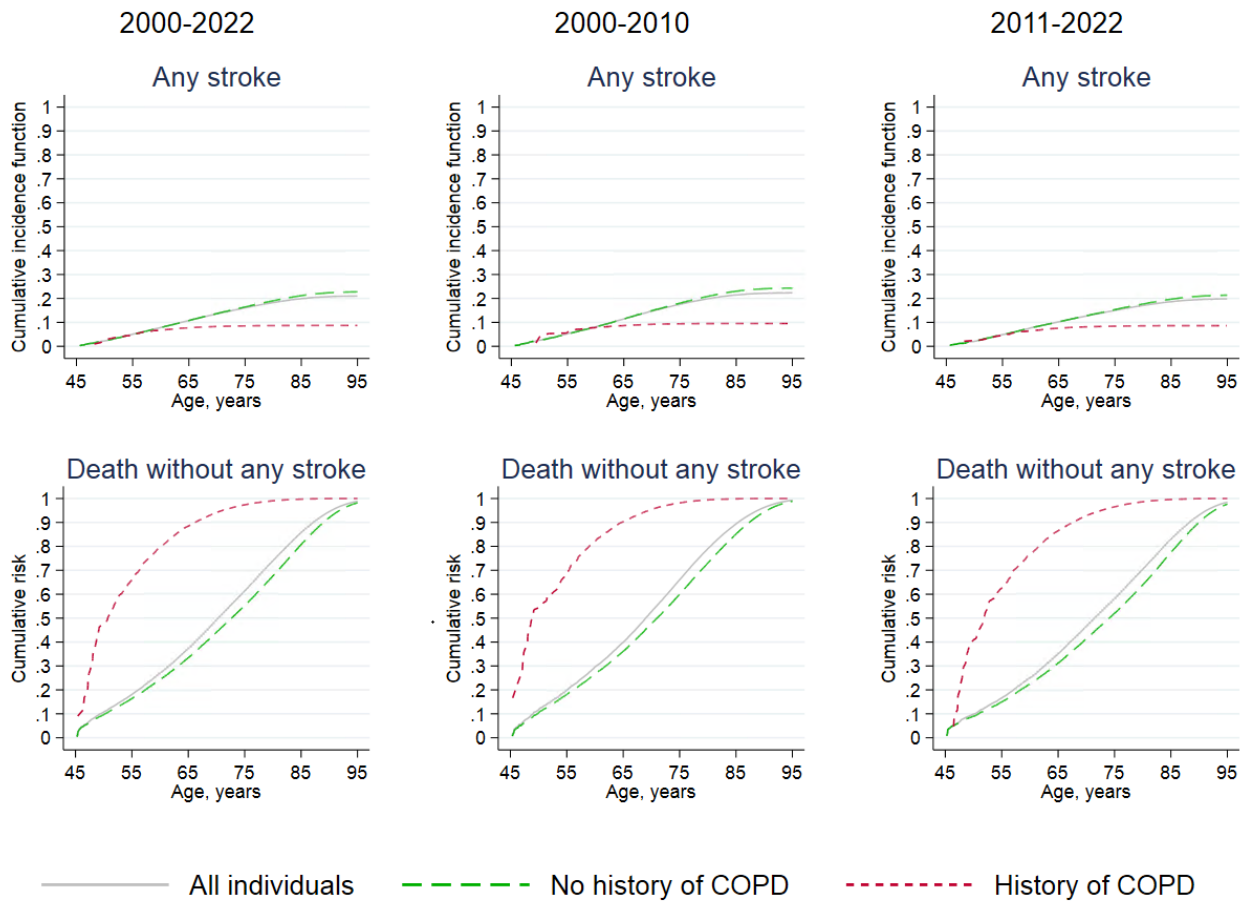
Supplemental Figure 31. Cumulative incidence of any stroke at age 45 years by cardiomyopathy.



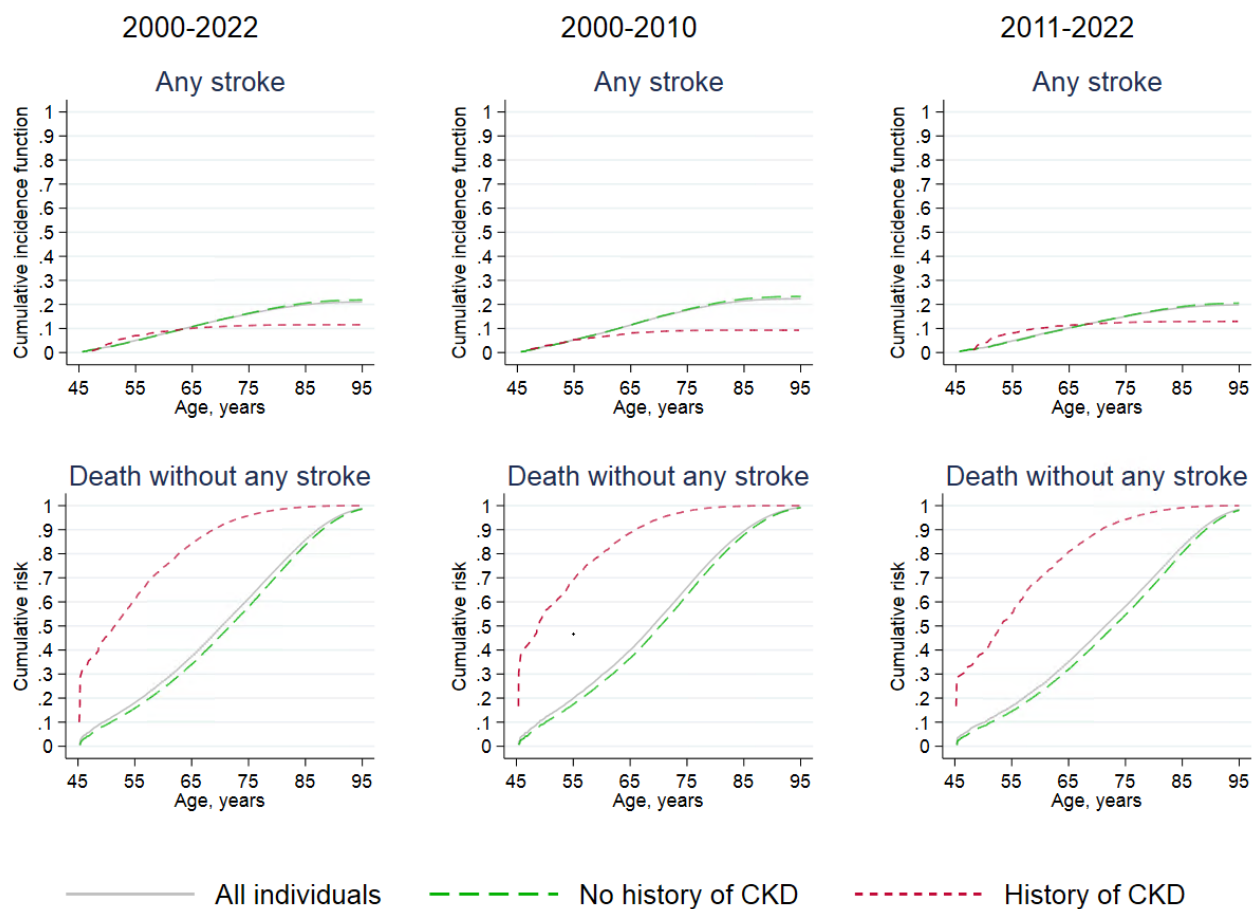
Supplemental Figure 32. Cumulative incidence of any stroke at age 45 years by dyslipidemia.



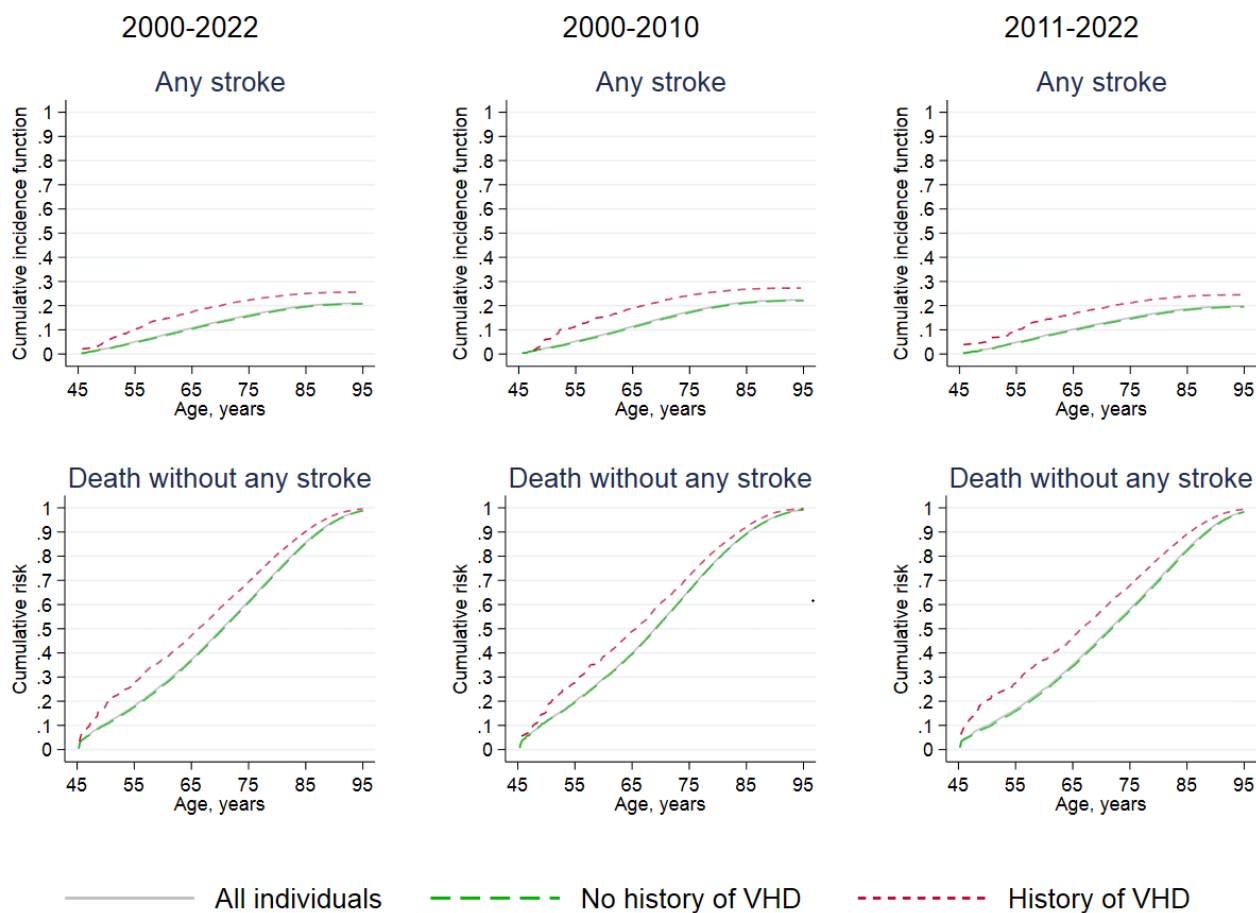
Supplemental Figure 33. Cumulative incidence of any stroke at age 45 years by chronic obstructive pulmonary disease.



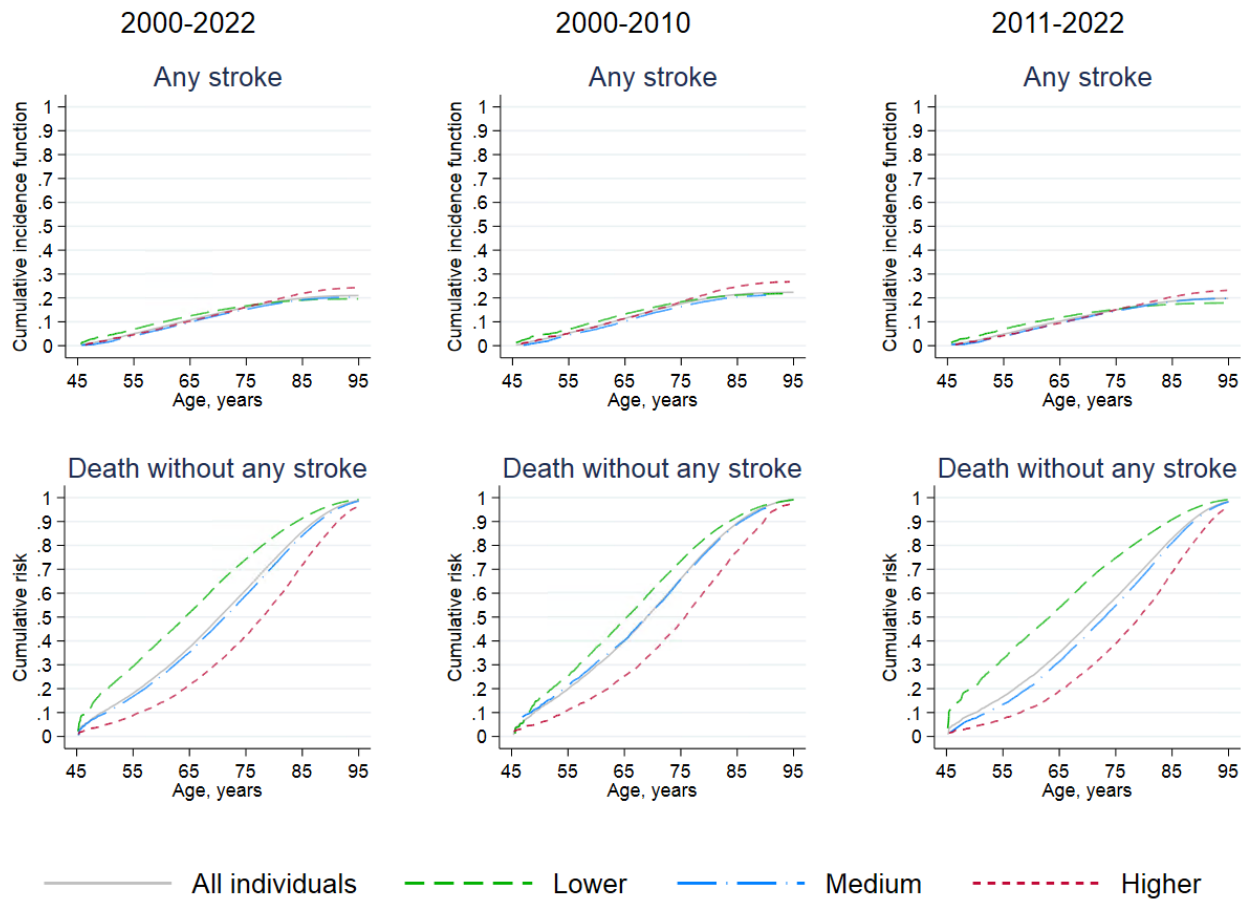
Supplemental Figure 34. Cumulative incidence of any stroke at age 45 years by chronic kidney disease.



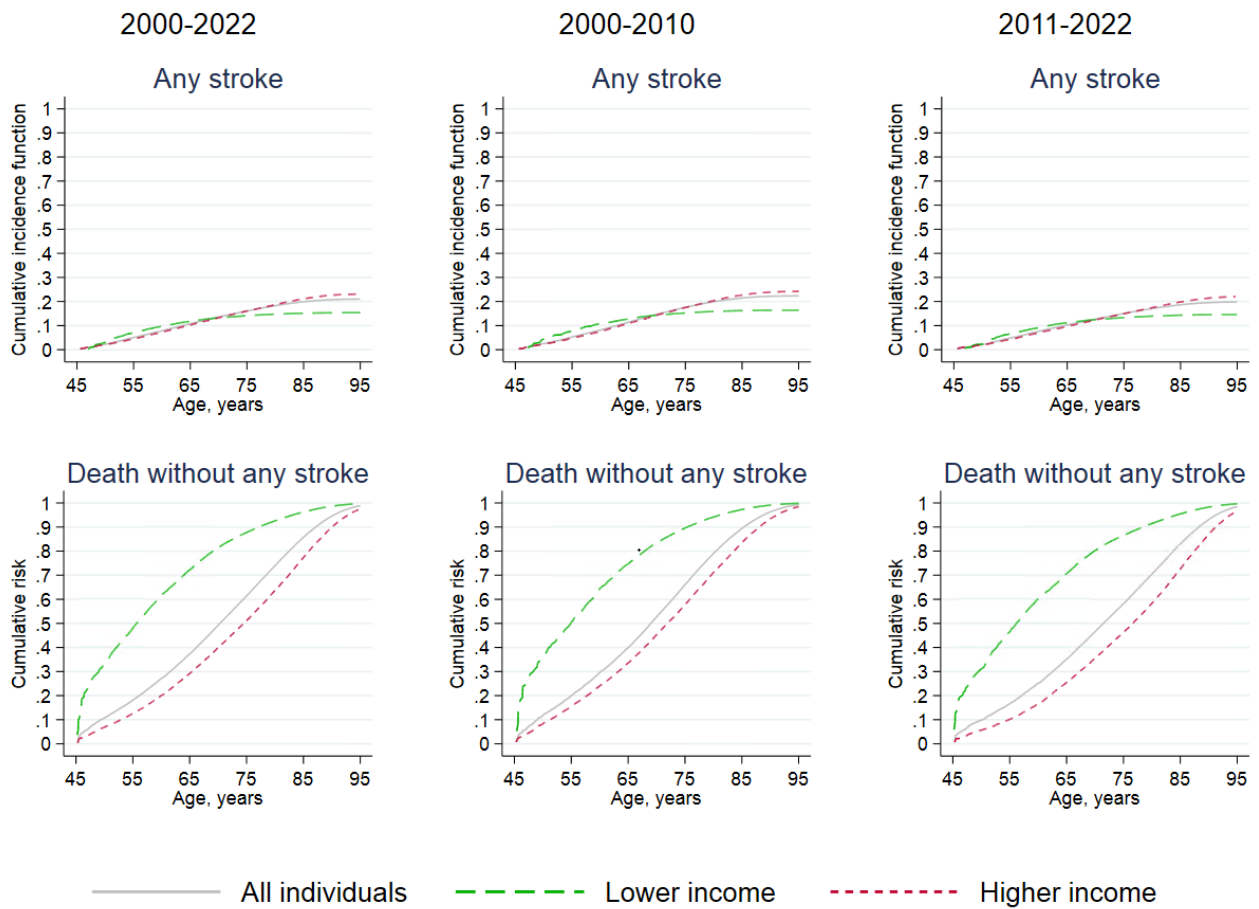
Supplemental Figure 35. Cumulative incidence of any stroke at age 45 years by valvular heart disease.



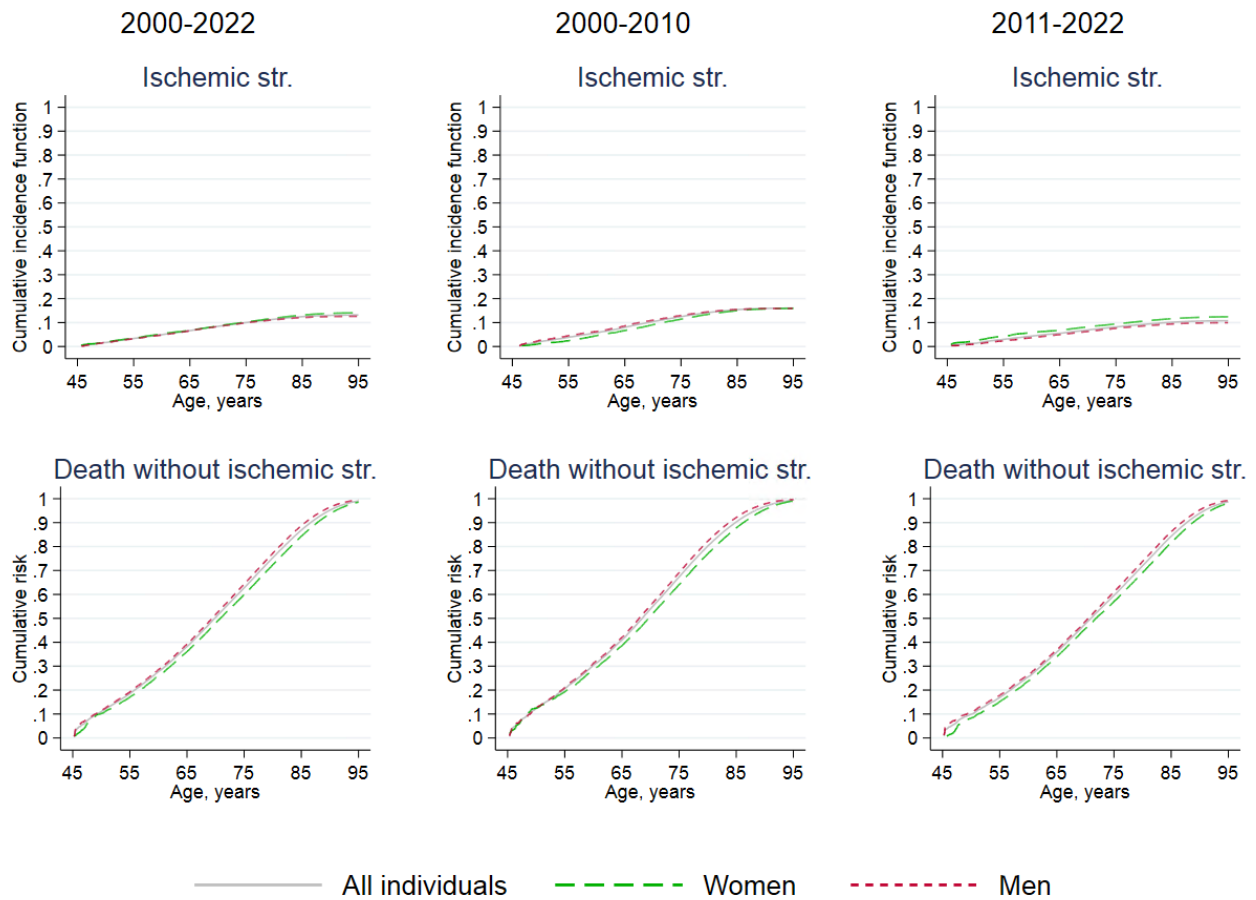
Supplemental Figure 36. Cumulative incidence of any stroke at age 45 years by educational attainment.



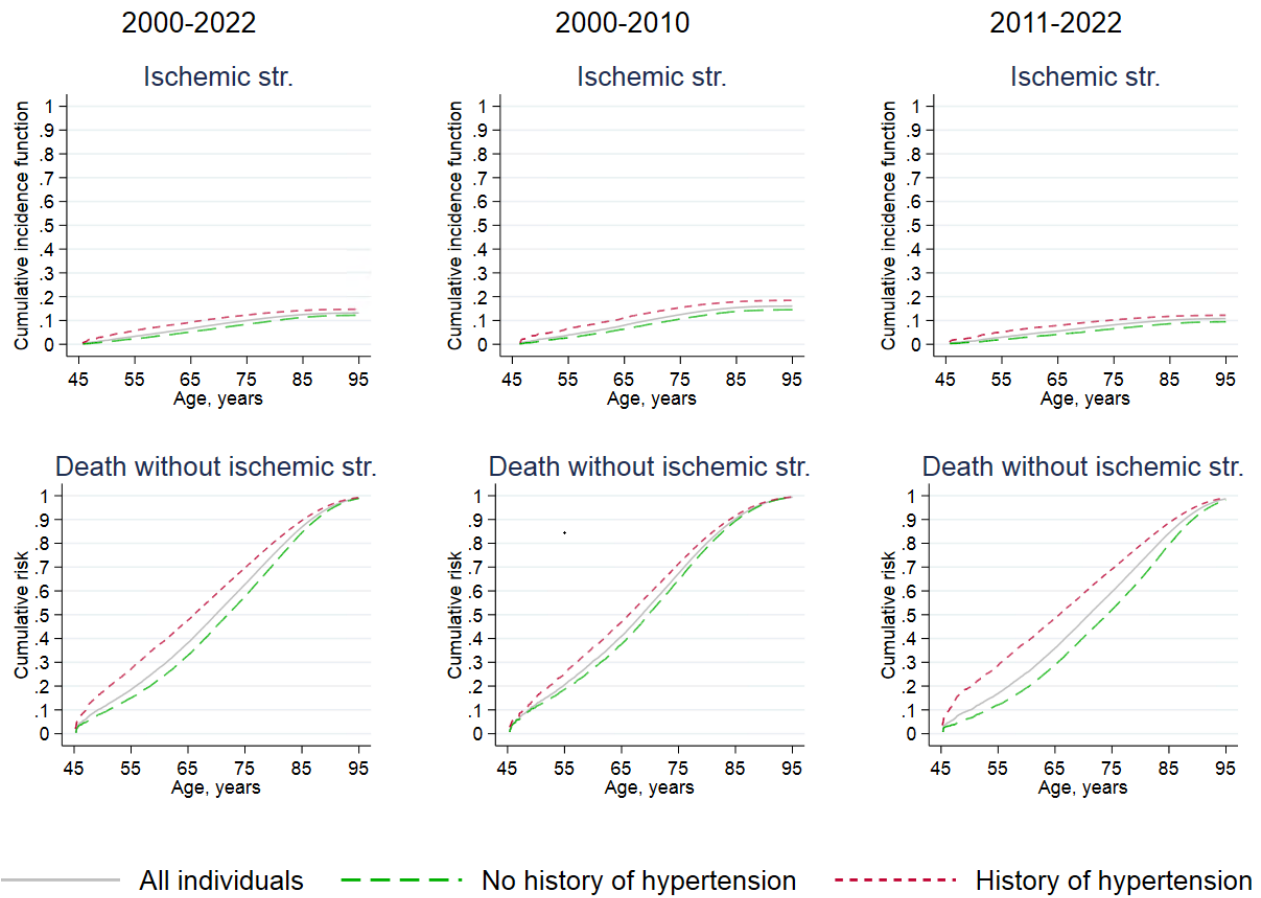
Supplemental Figure 37. Cumulative incidence of any stroke at age 45 years by income.



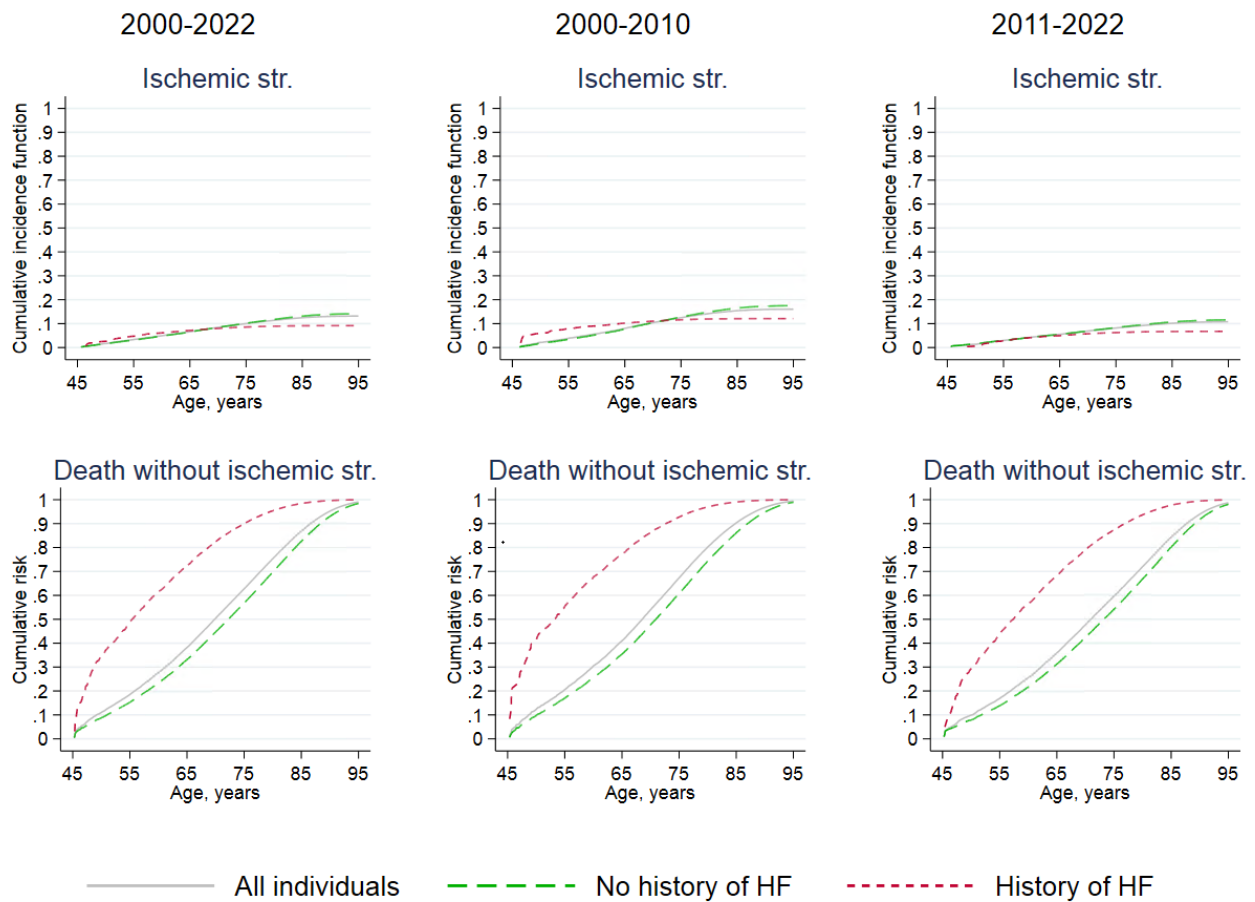
Supplemental Figure 38. Cumulative incidence of ischemic stroke at age 45 years by sex.



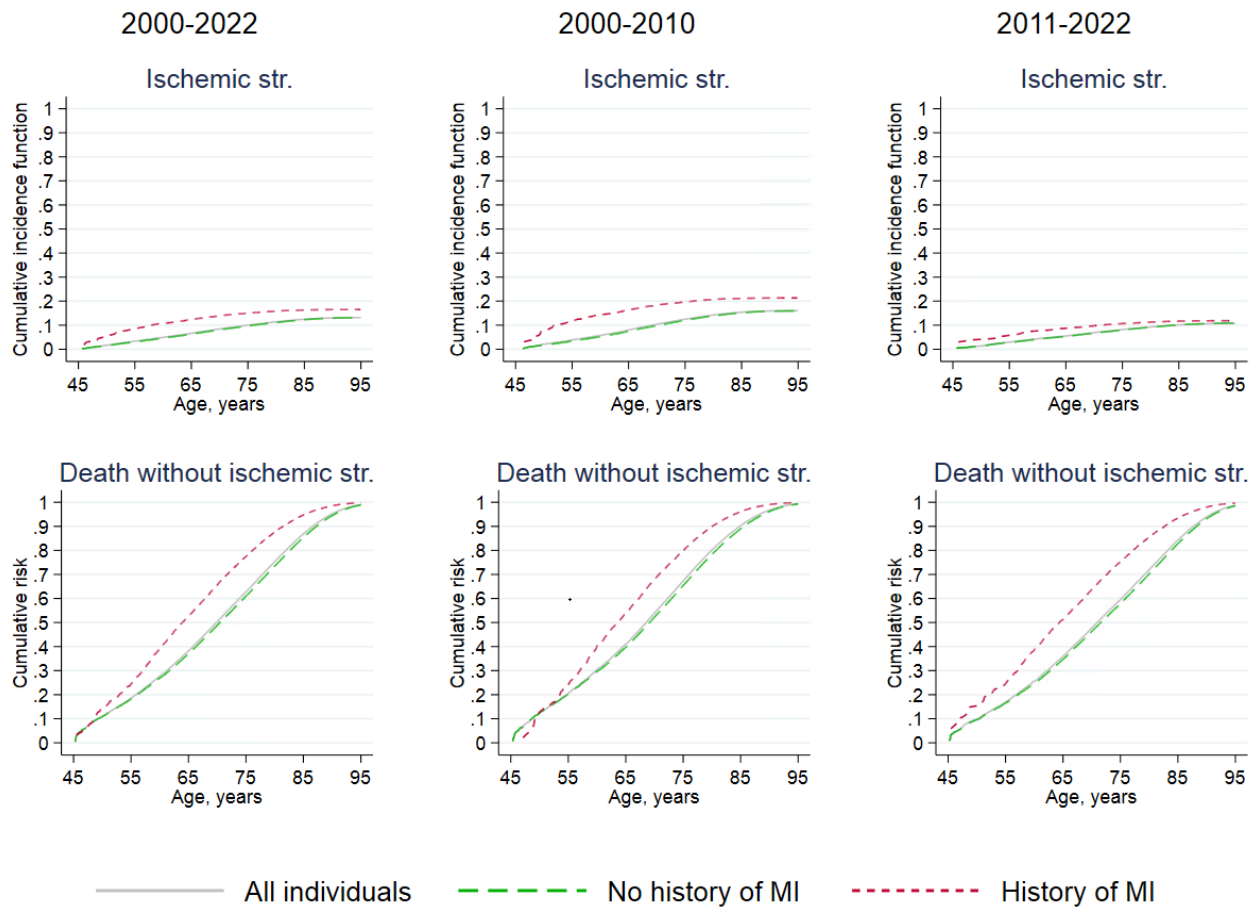
Supplemental Figure 39. Cumulative incidence of ischemic stroke at age 45 years by hypertension.



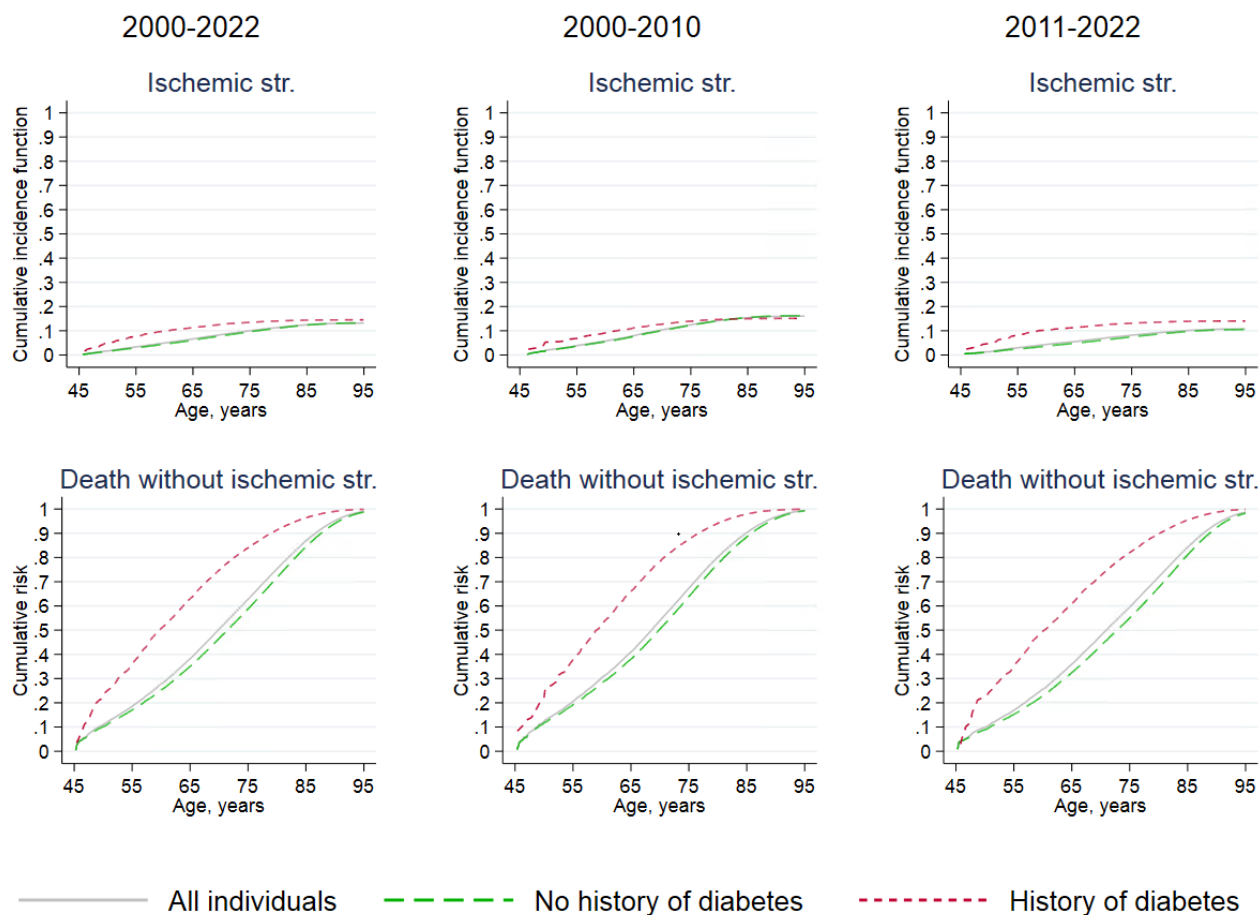
Supplemental Figure 40. Cumulative incidence of ischemic stroke at age 45 years by heart failure.



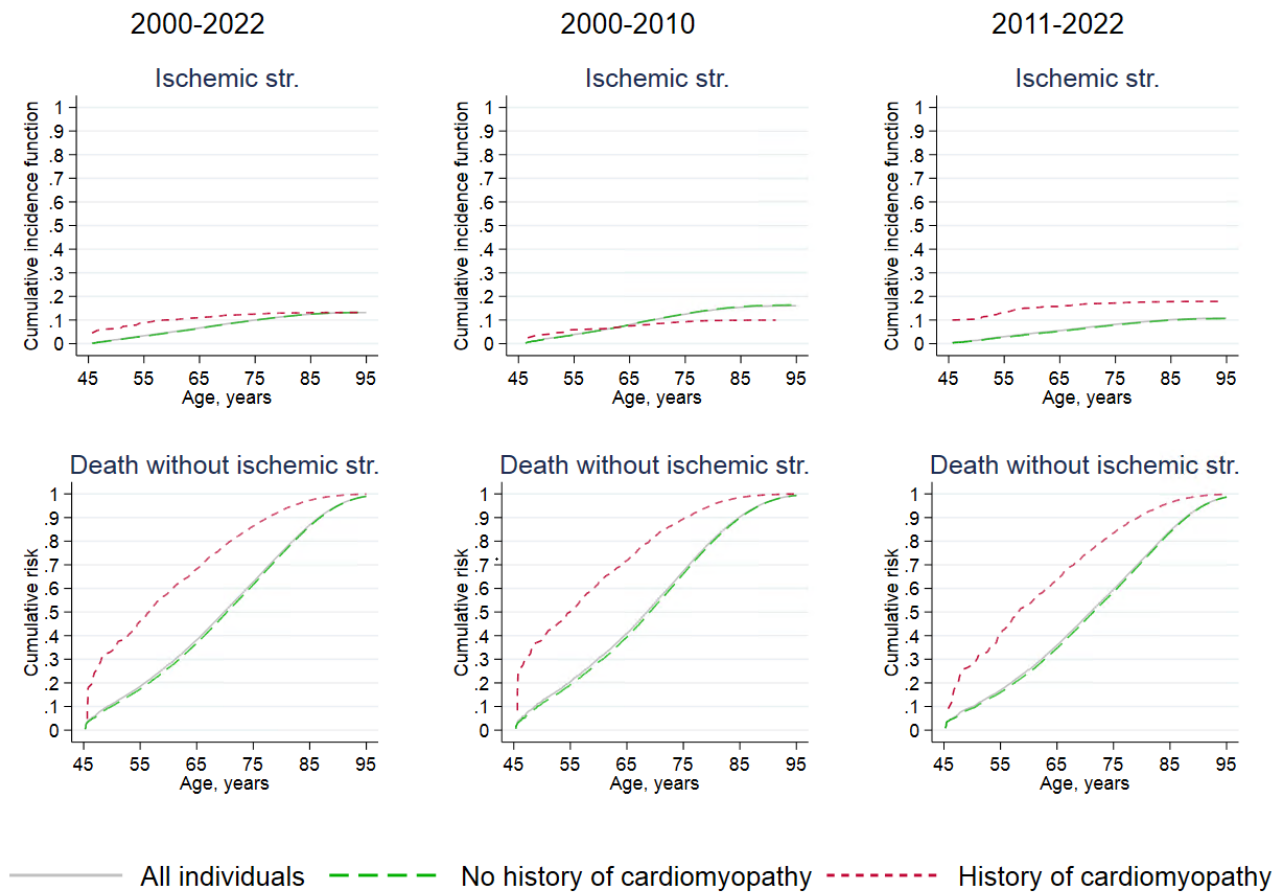
Supplemental Figure 41. Cumulative incidence of ischemic stroke at age 45 years by myocardial infarction.



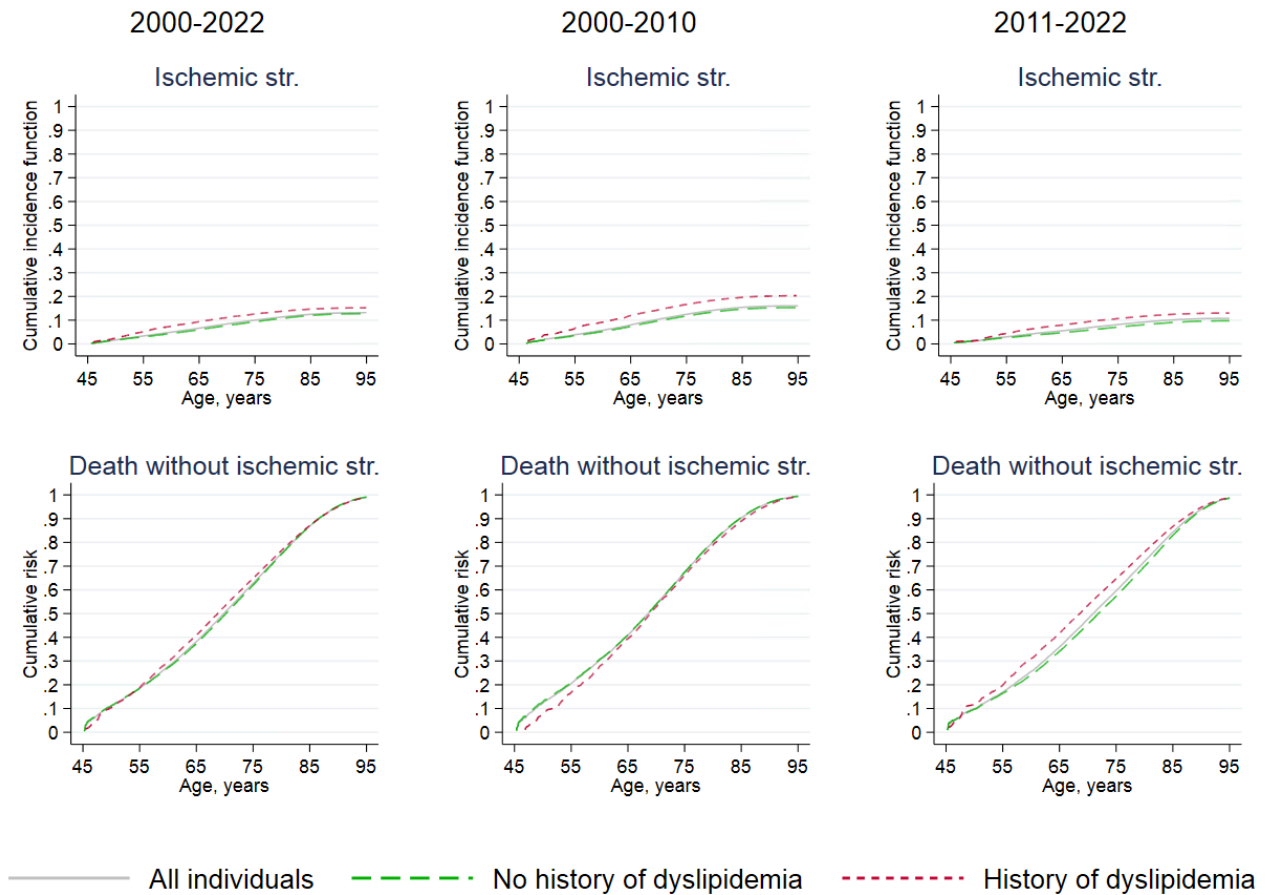
Supplemental Figure 42. Cumulative incidence of ischemic stroke at age 45 years by diabetes.



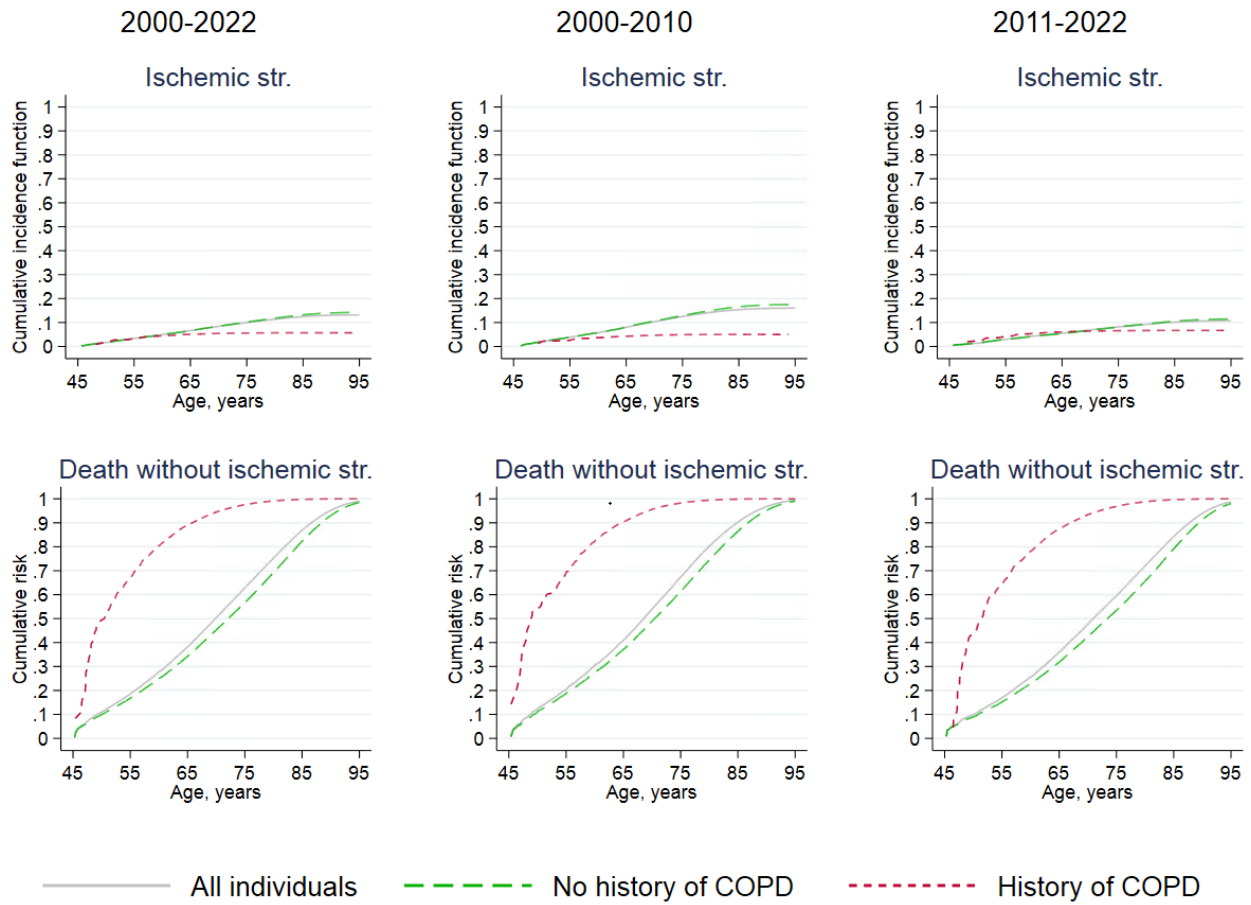
Supplemental Figure 43. Cumulative incidence of ischemic stroke at age 45 years by cardiomyopathy.



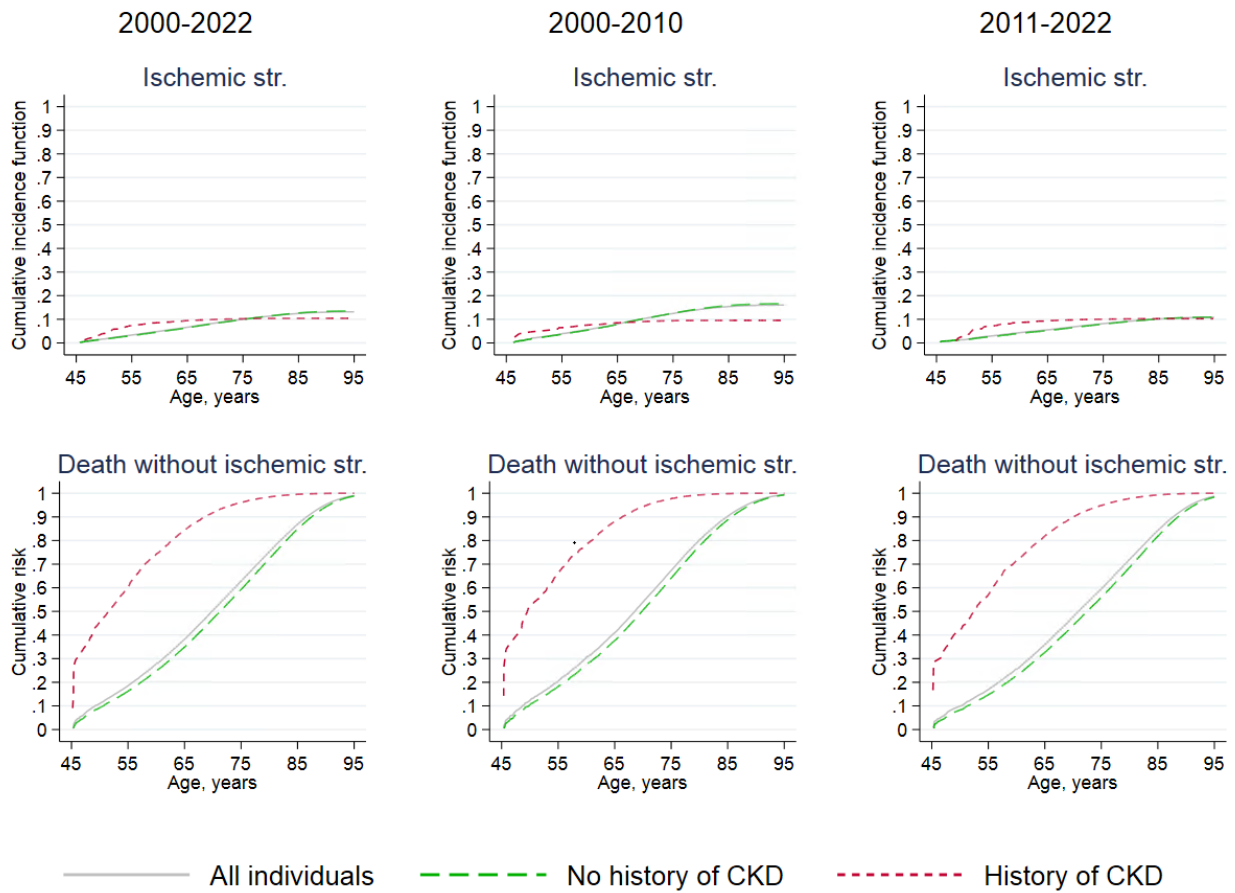
Supplemental Figure 44. Cumulative incidence of ischemic stroke at age 45 years by dyslipidemia.



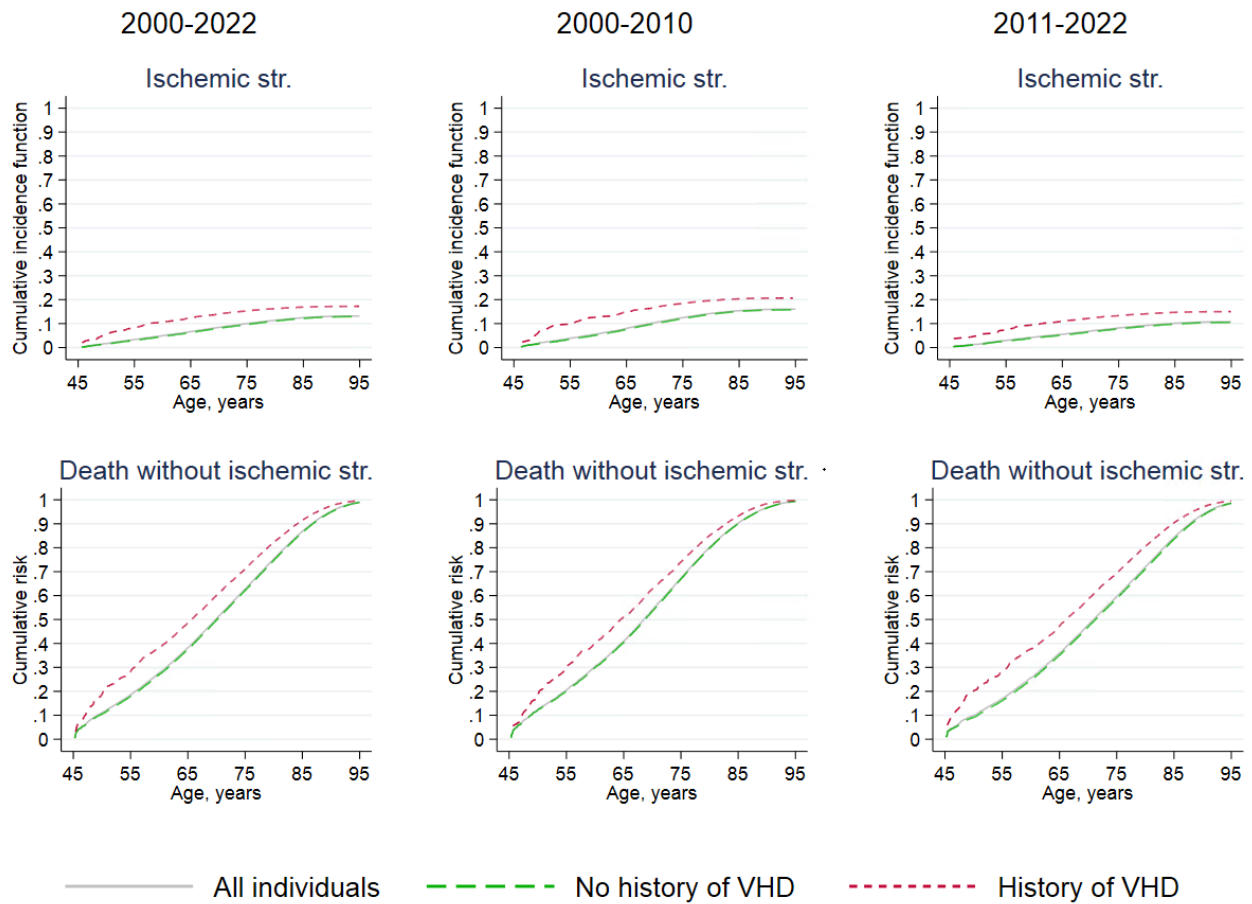
Supplemental Figure 45. Cumulative incidence of ischemic stroke at age 45 years by chronic obstructive pulmonary disease.



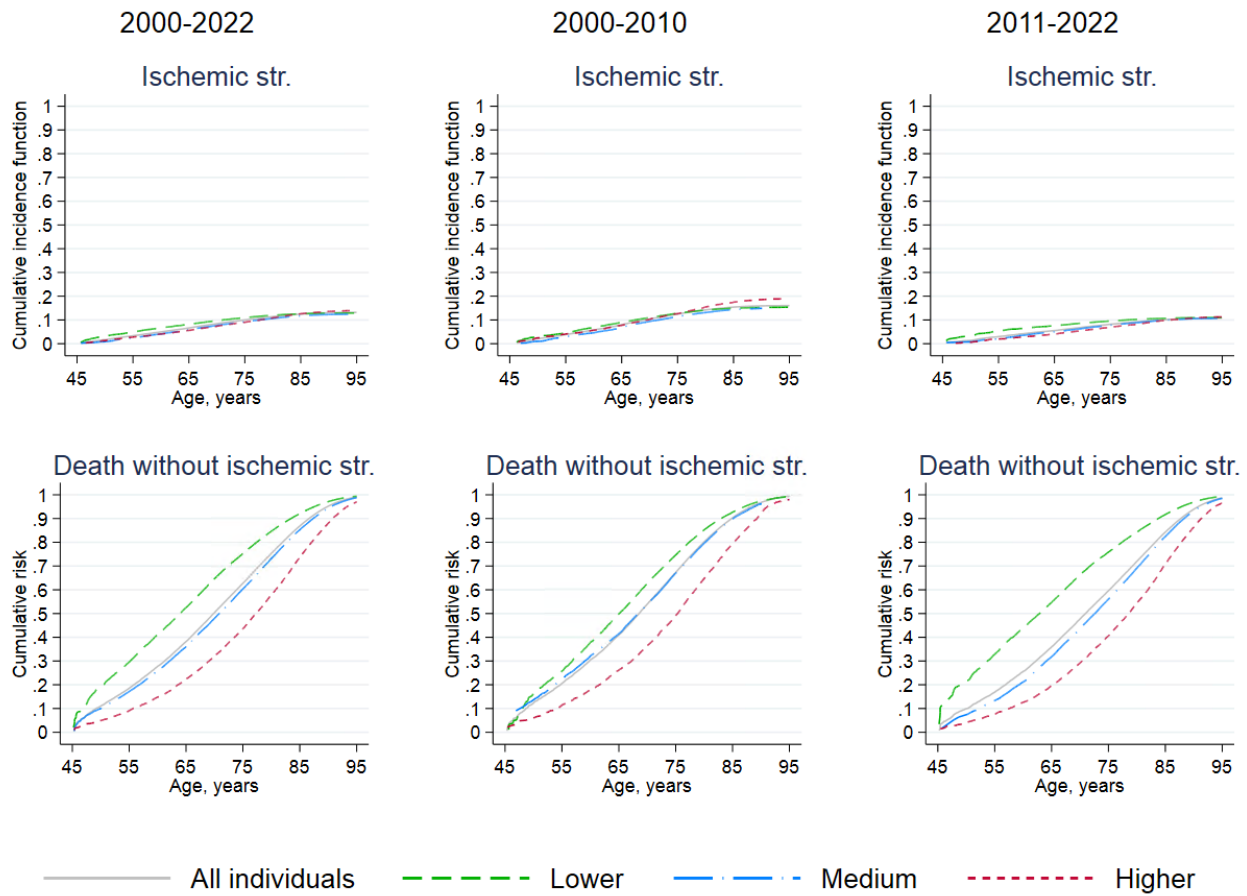
Supplemental Figure 46. Cumulative incidence of ischemic stroke at age 45 years by chronic kidney disease.



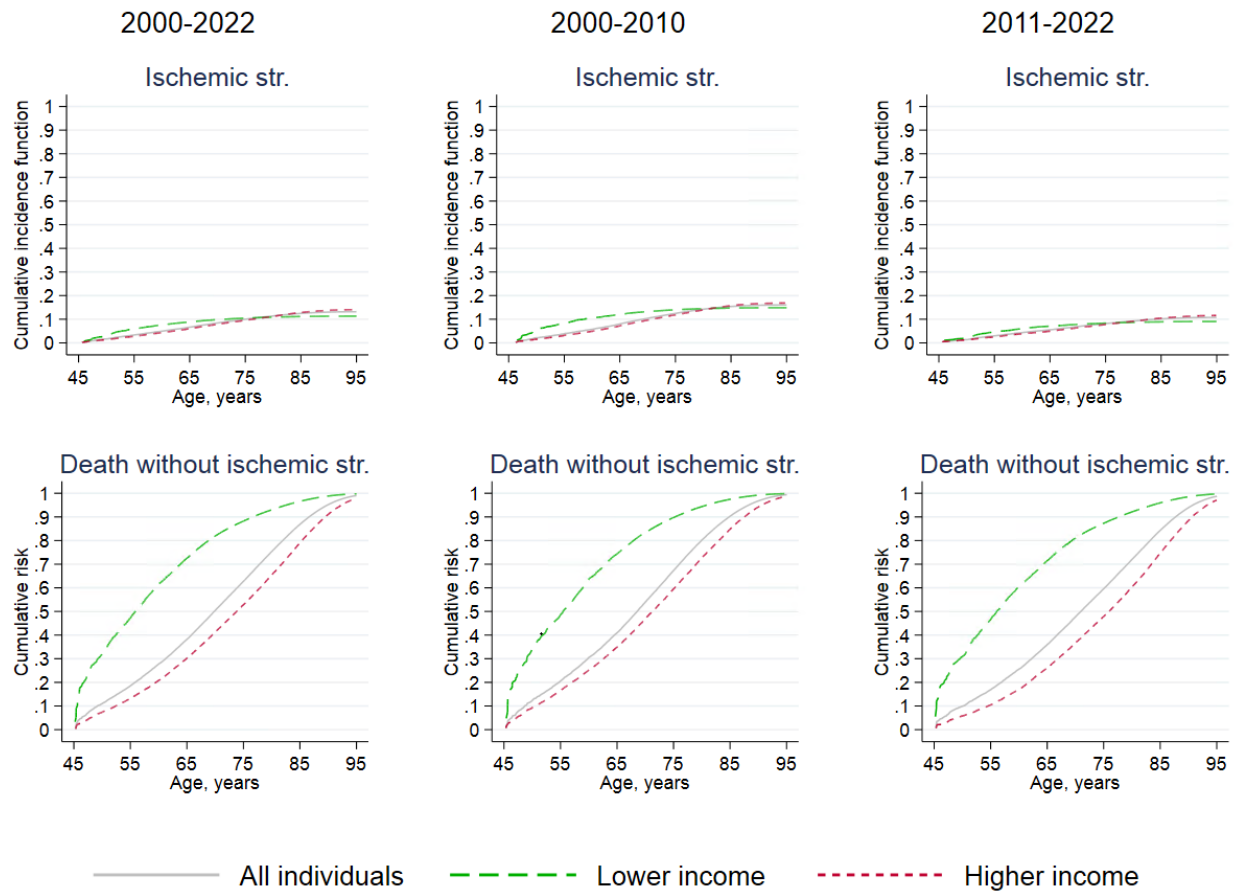
Supplemental Figure 47. Cumulative incidence of ischemic stroke at age 45 years by valvular heart disease.



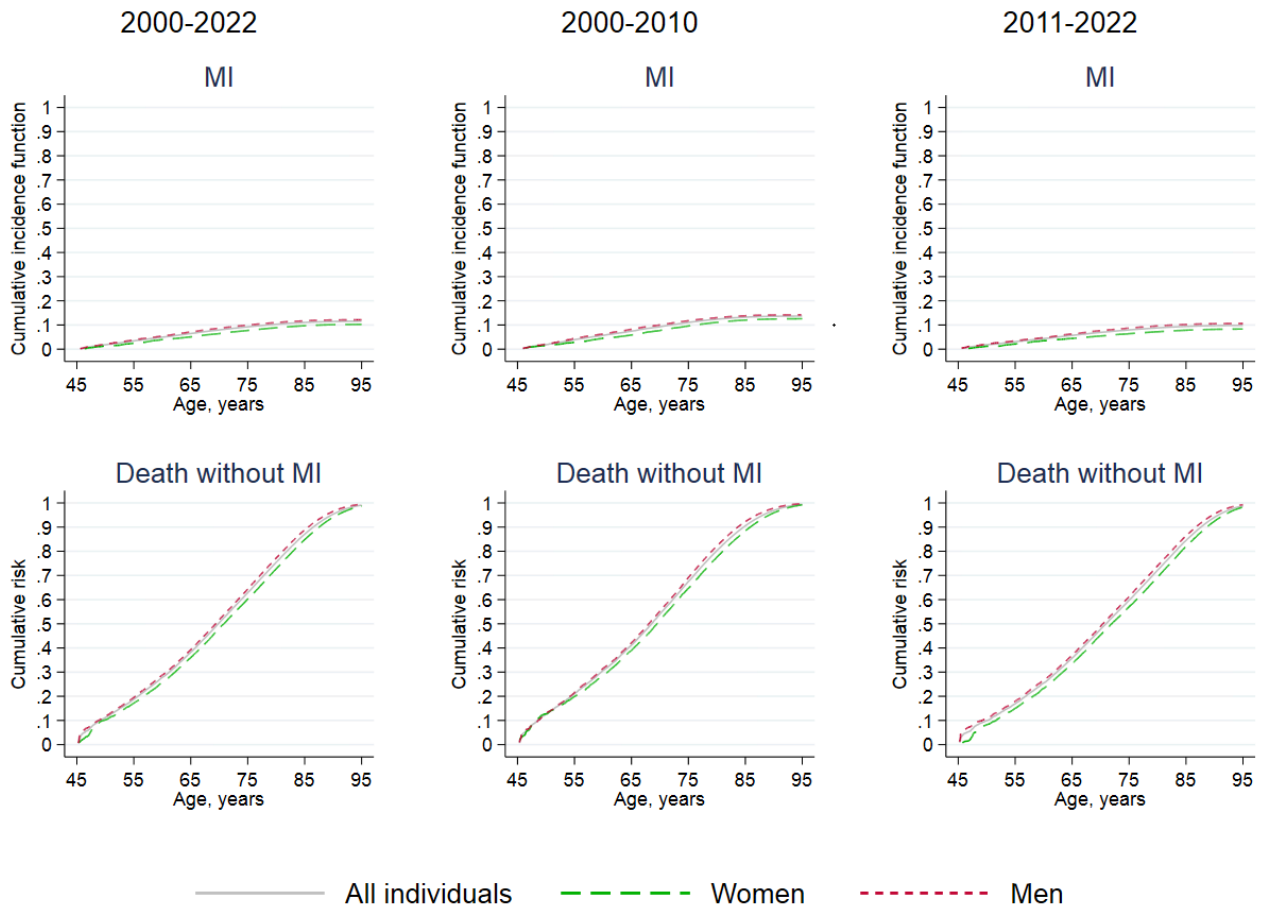
Supplemental Figure 48. Cumulative incidence of ischemic stroke at age 45 years by educational attainment.



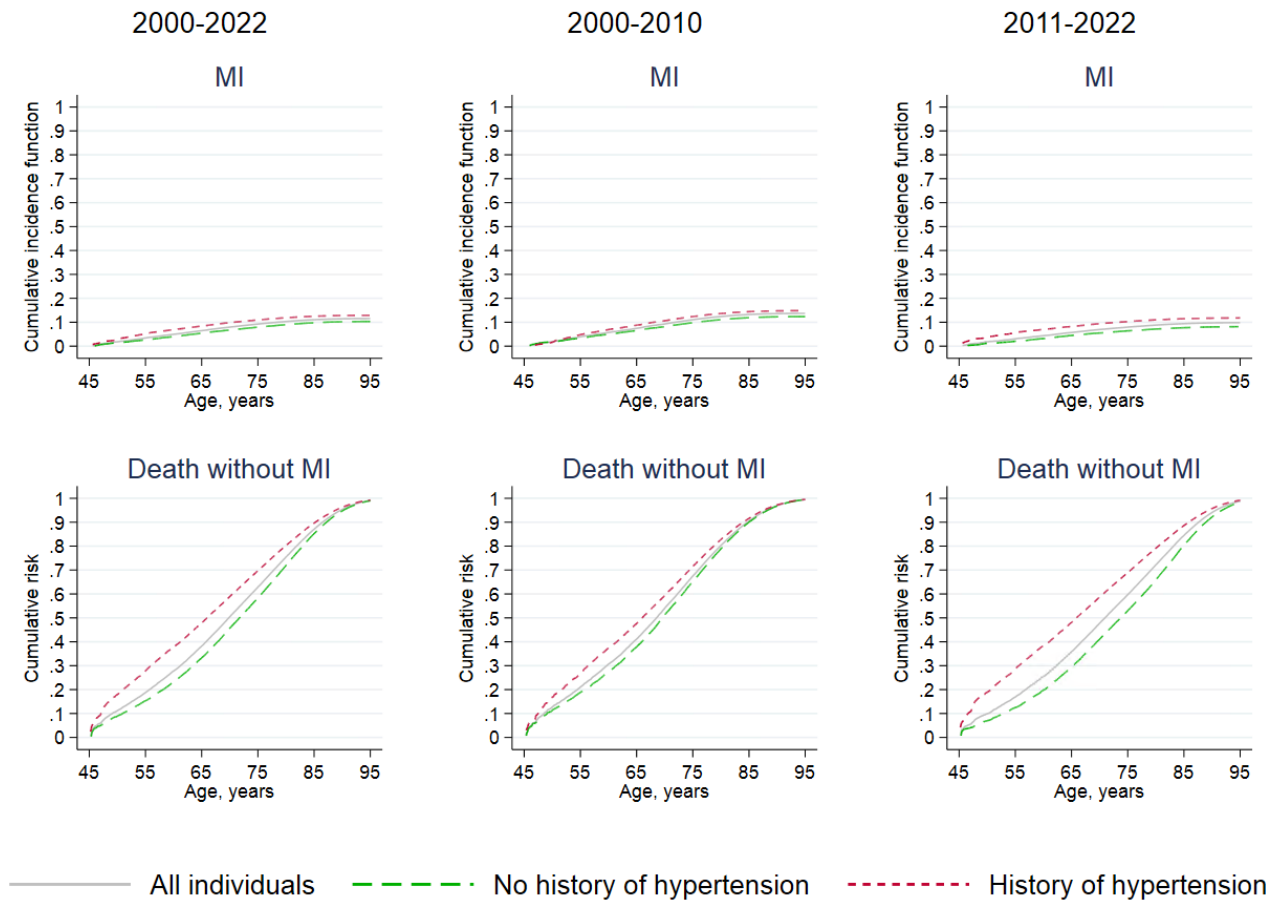
Supplemental Figure 49. Cumulative incidence of ischemic stroke at age 45 years by income.



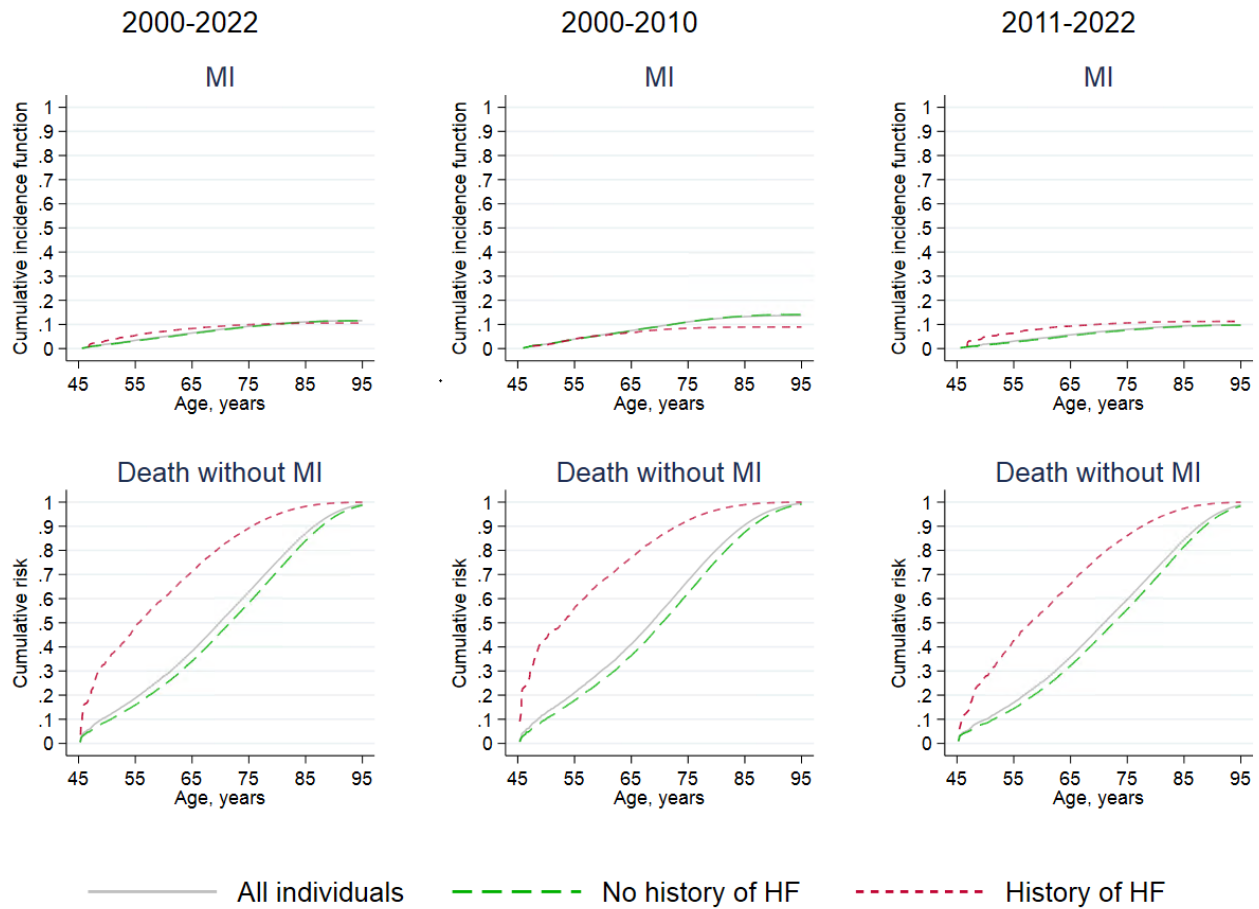
Supplemental Figure 50. Cumulative incidence of myocardial infarction at age 45 years by sex.



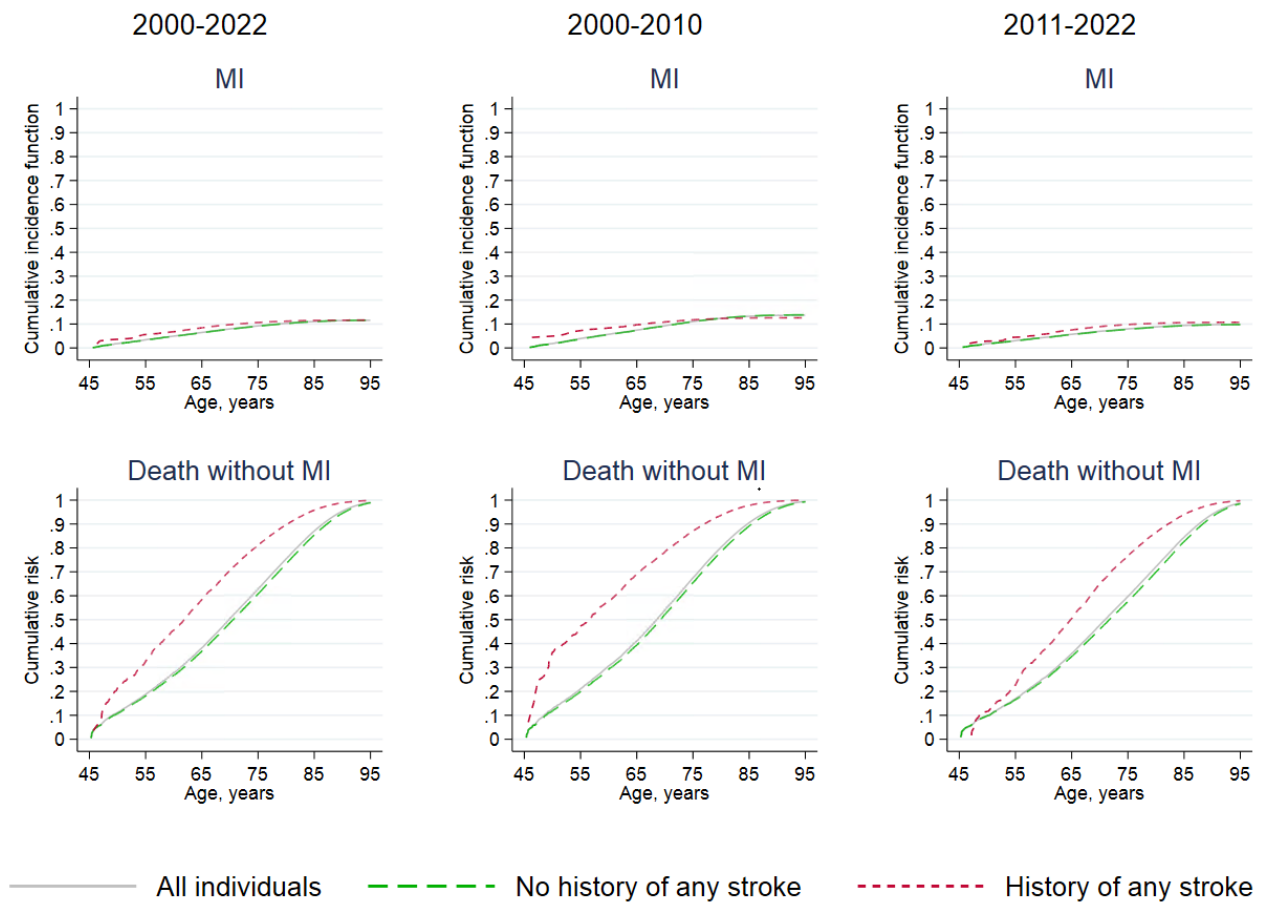
Supplemental Figure 51. Cumulative incidence of myocardial infarction at age 45 years by hypertension.



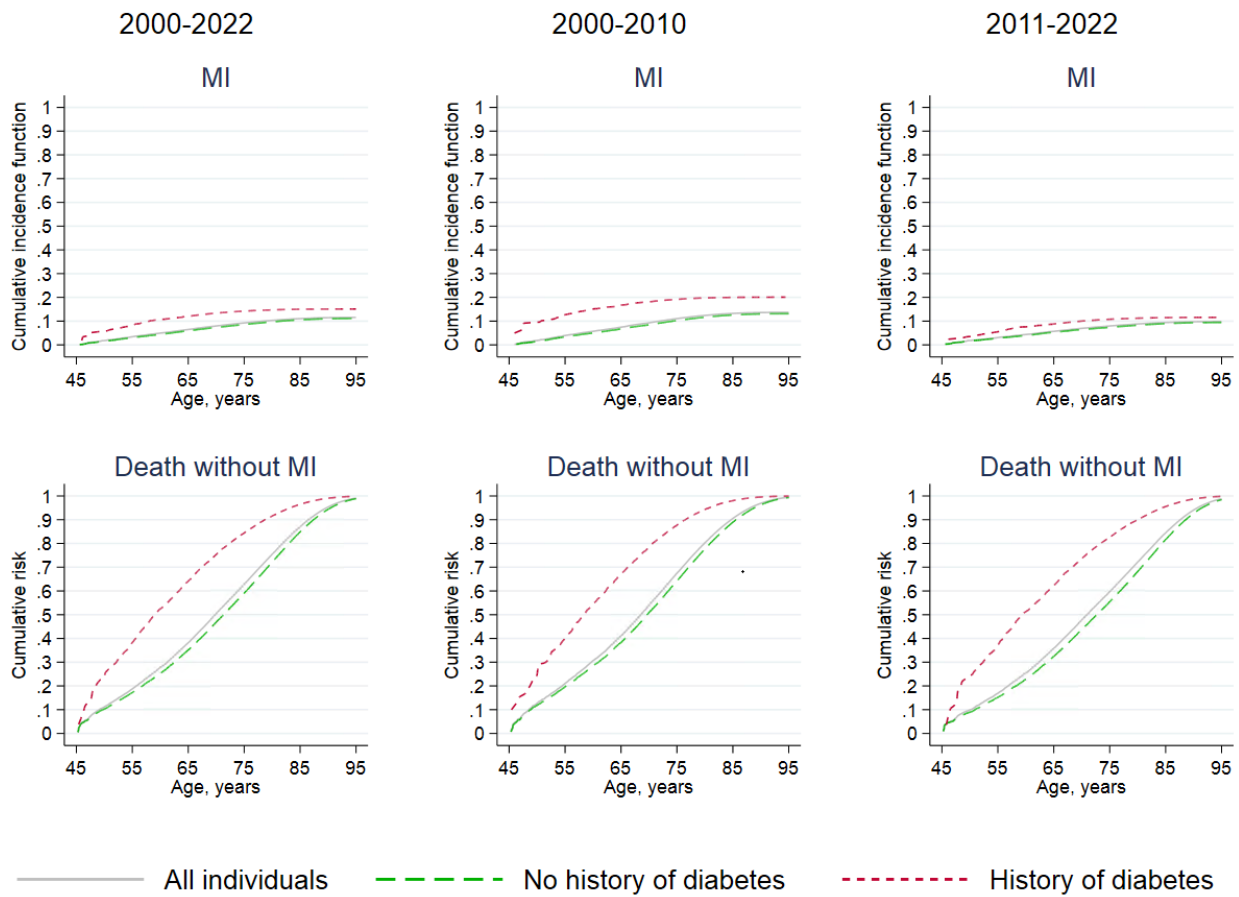
Supplemental Figure 52. Cumulative incidence of myocardial infarction at age 45 years by heart failure.



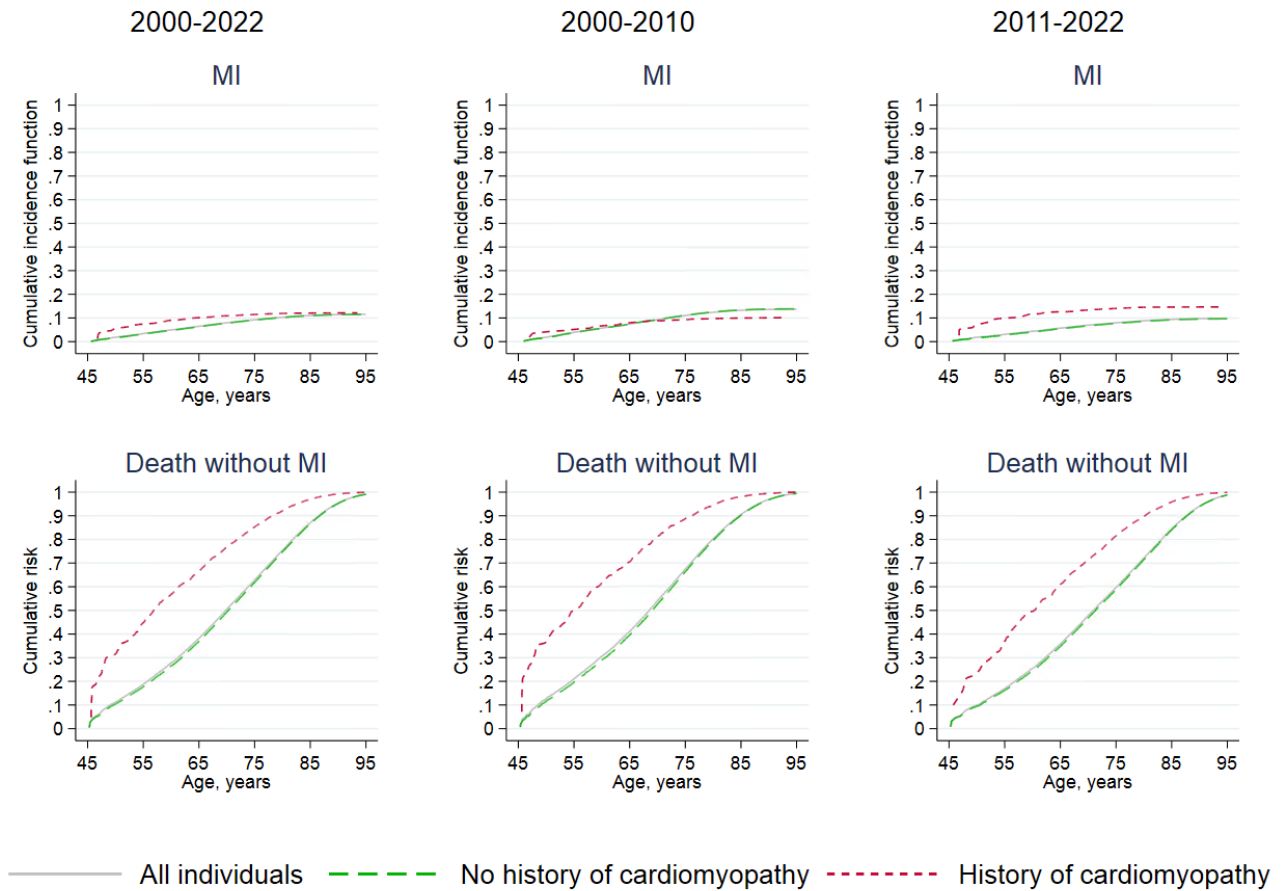
Supplemental Figure 53. Cumulative incidence of myocardial infarction at age 45 years by stroke.



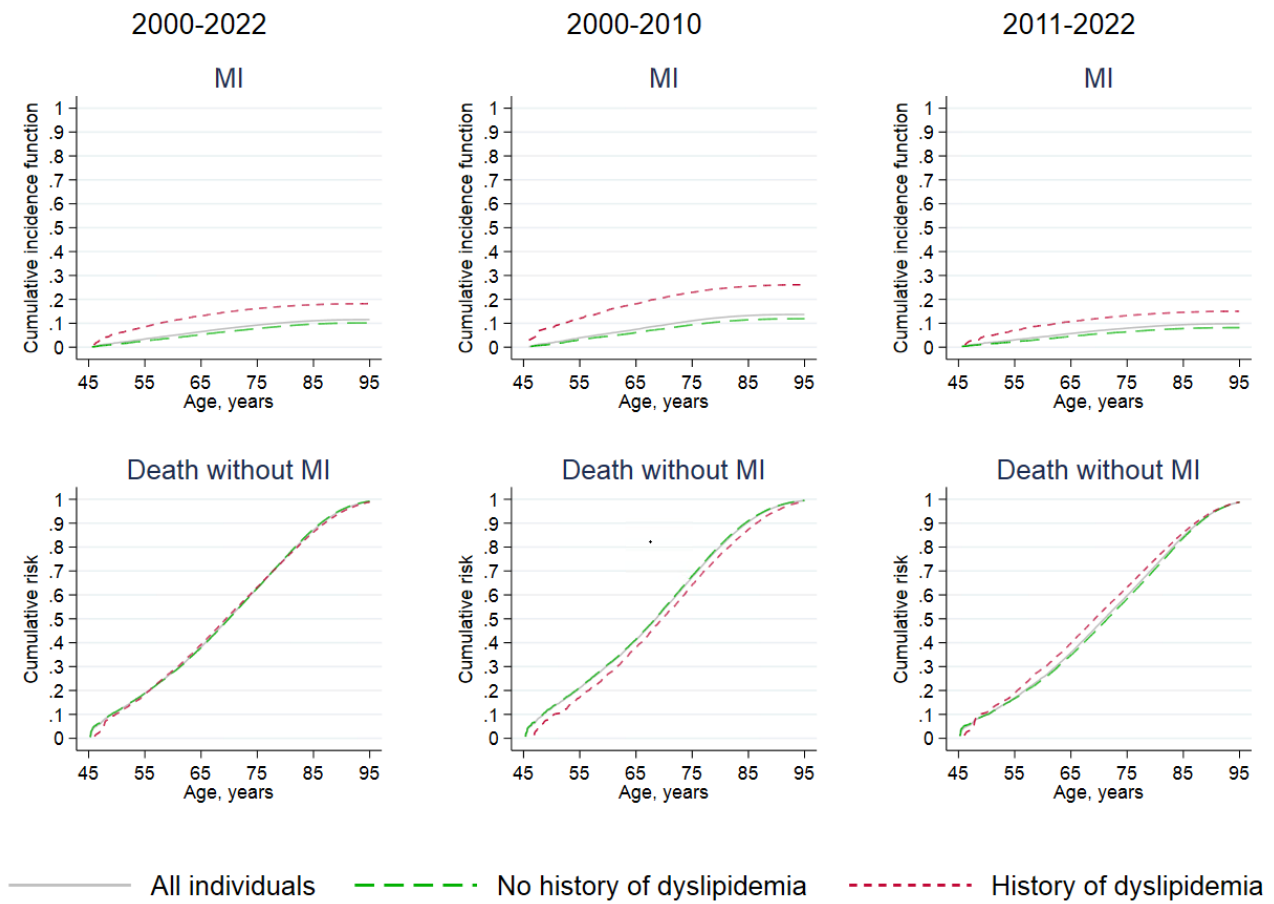
Supplemental Figure 54. Cumulative incidence of myocardial infarction at age 45 years by diabetes.



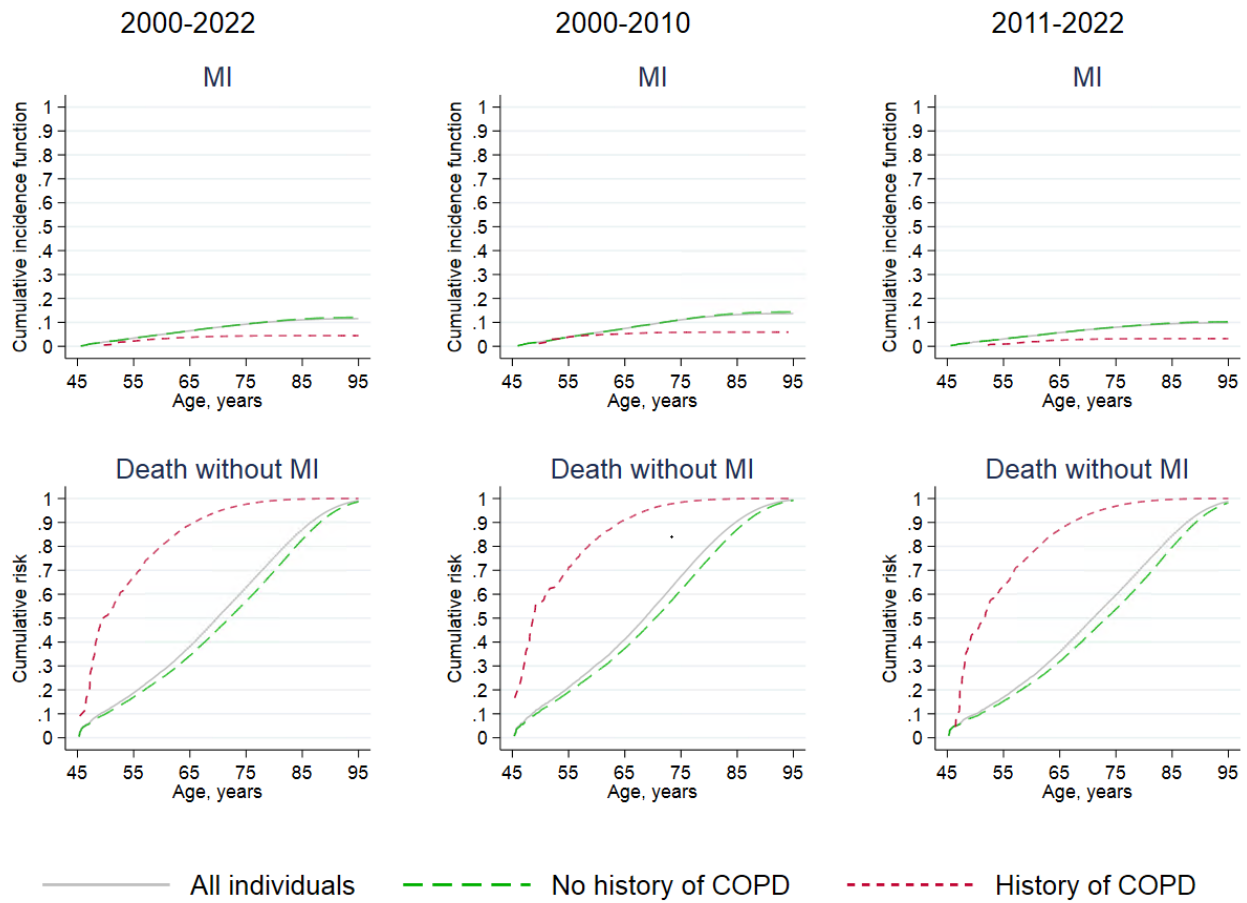
Supplemental Figure 55. Cumulative incidence of myocardial infarction at age 45 years by cardiomyopathy.



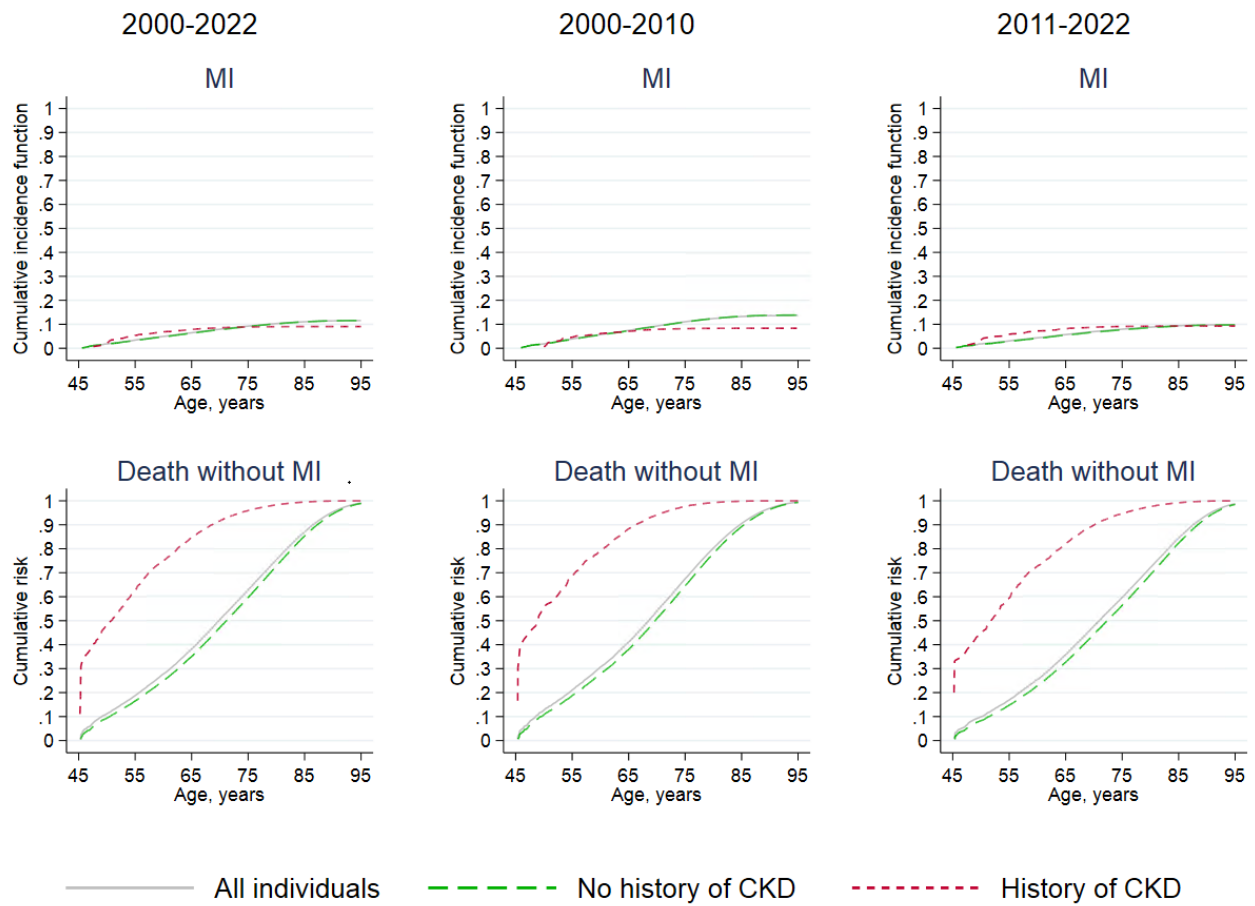
Supplemental Figure 56. Cumulative incidence of myocardial infarction at age 45 years by dyslipidemia.



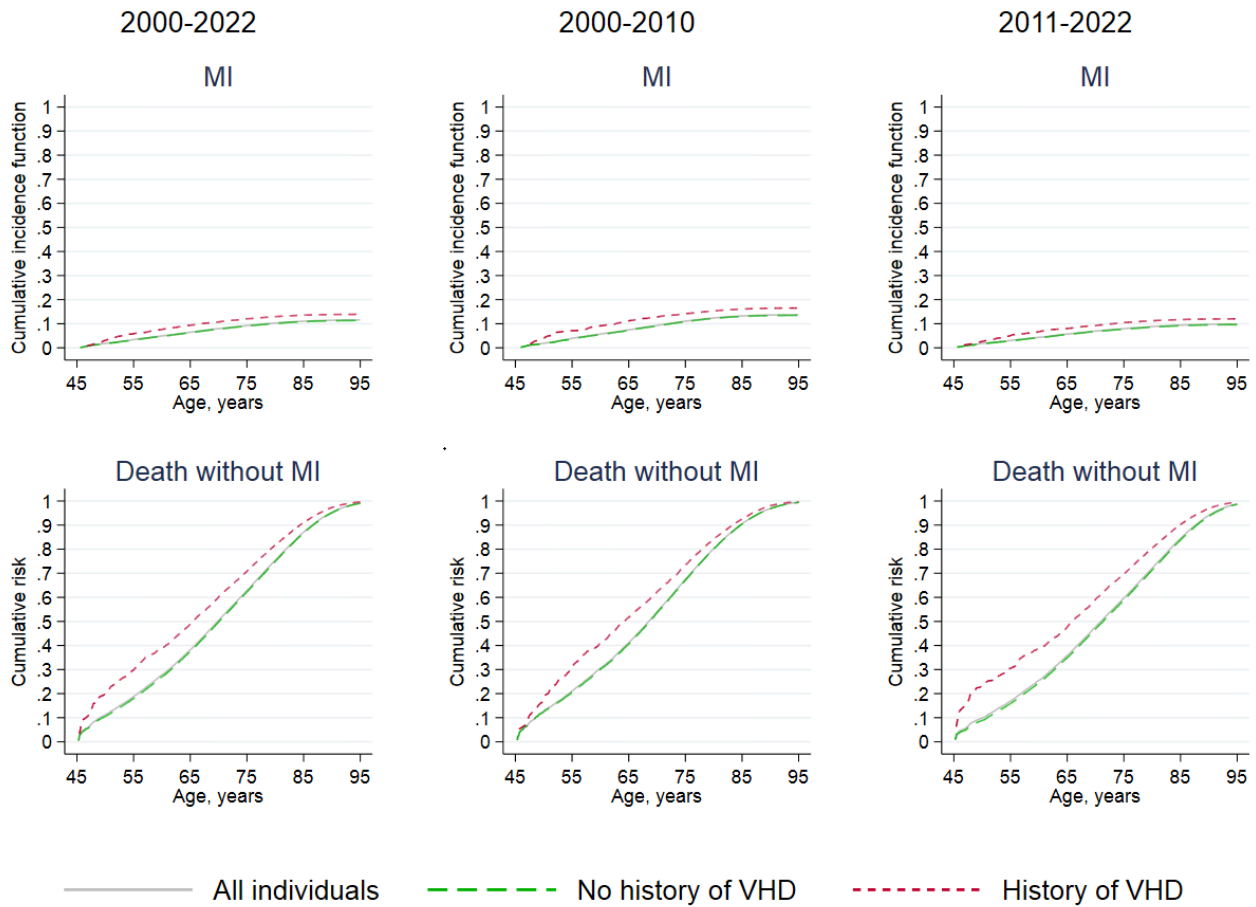
Supplemental Figure 57. Cumulative incidence of myocardial infarction at age 45 years by chronic obstructive pulmonary disease.



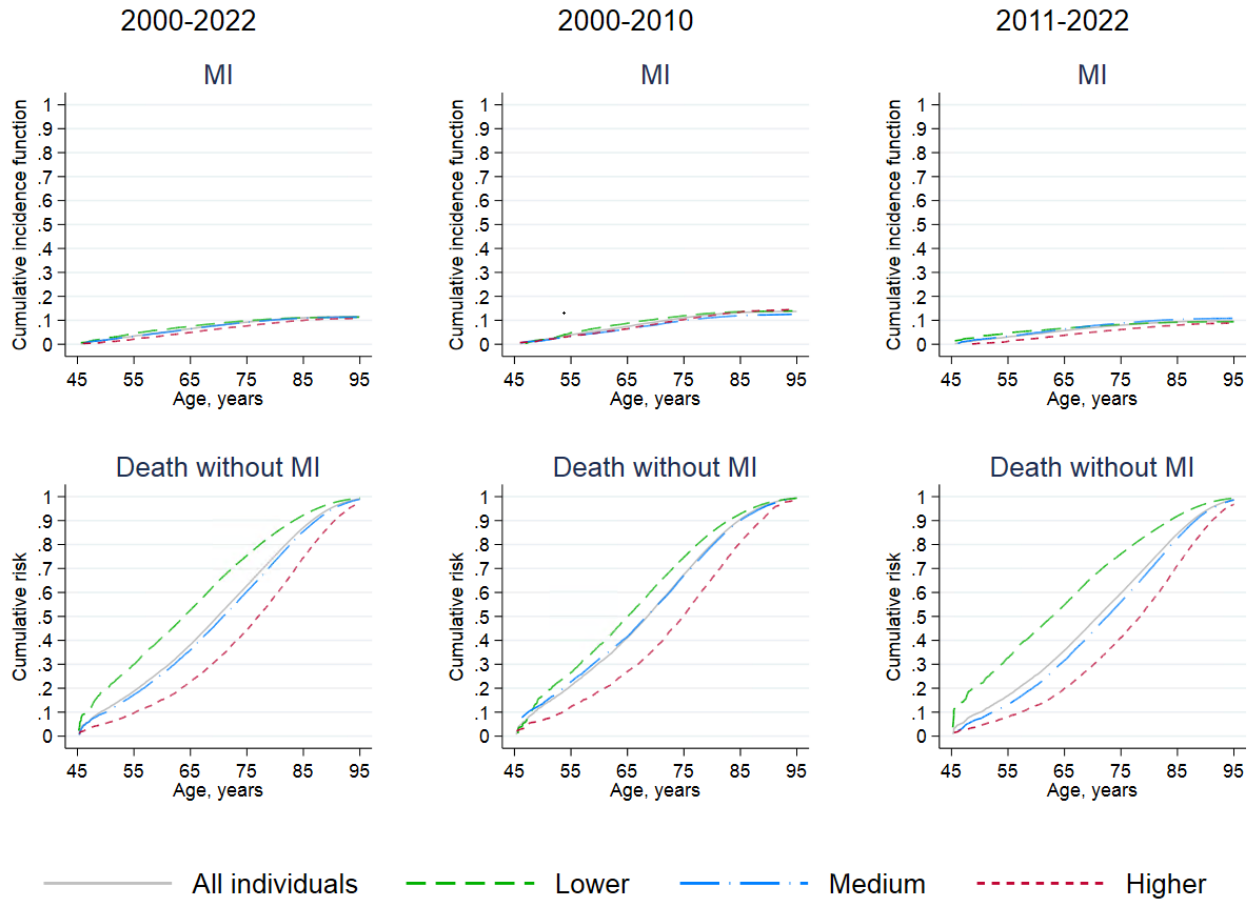
Supplemental Figure 58. Cumulative incidence of myocardial infarction at age 45 years by chronic kidney disease.



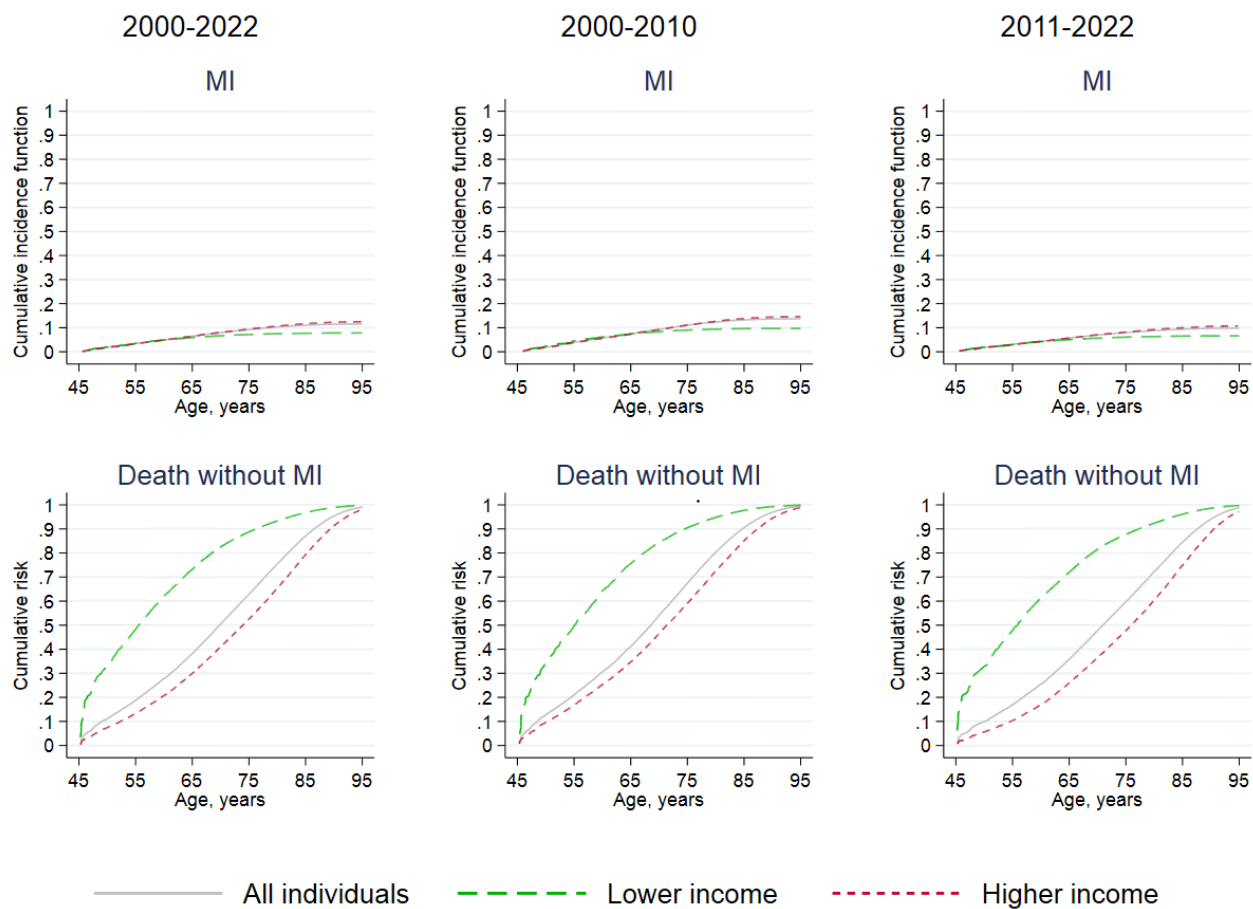
Supplemental Figure 59. Cumulative incidence of myocardial infarction at age 45 years by valvular heart disease.



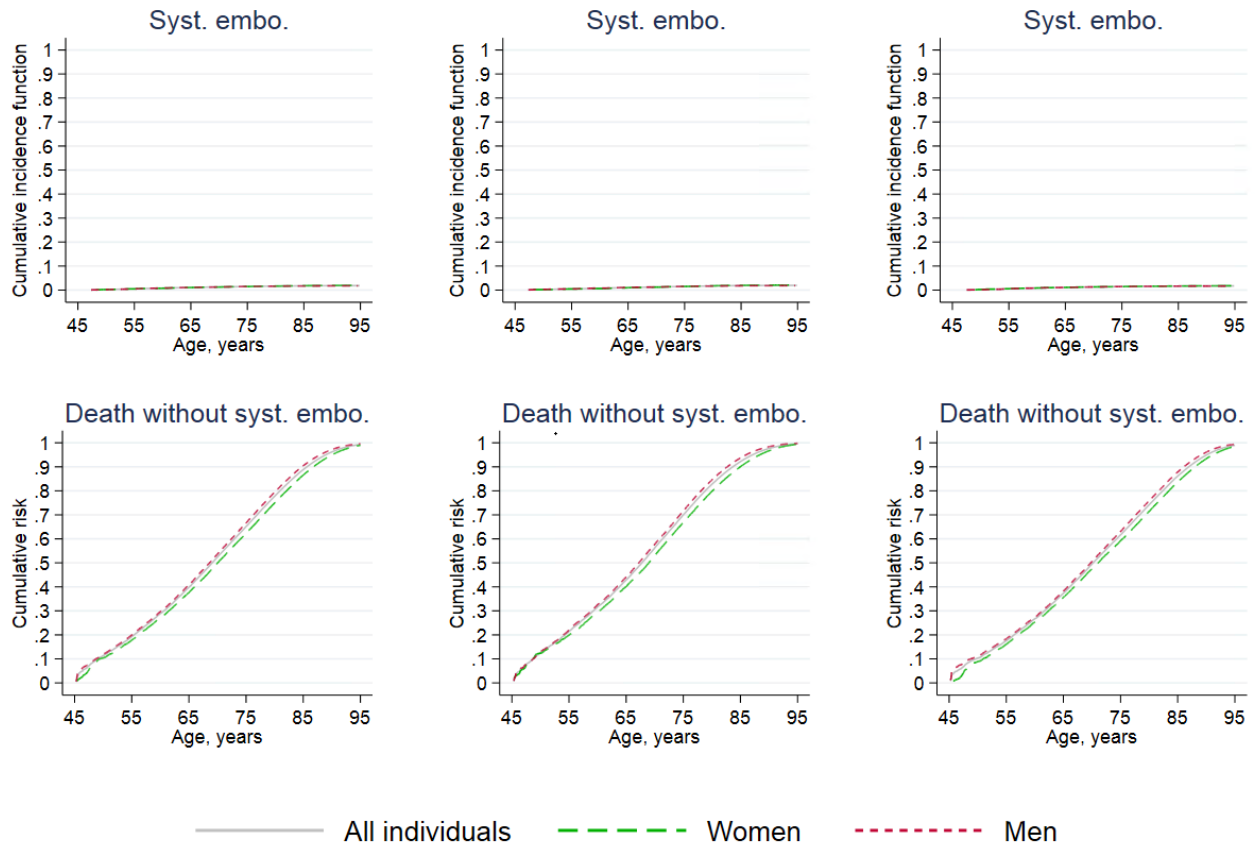
Supplemental Figure 60. Cumulative incidence of myocardial infarction at age 45 years by educational attainment.



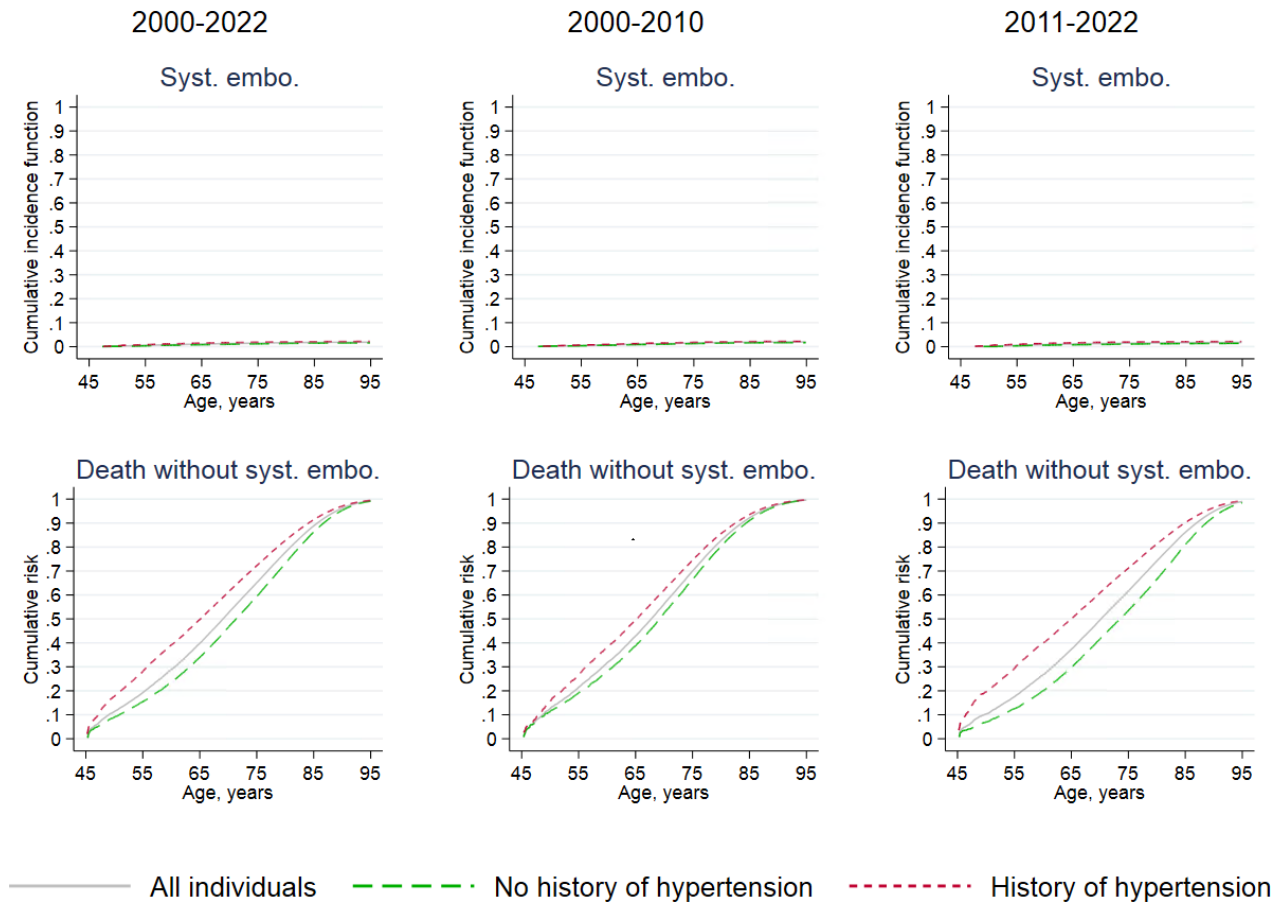
Supplemental Figure 61. Cumulative incidence of myocardial infarction at age 45 years by income.



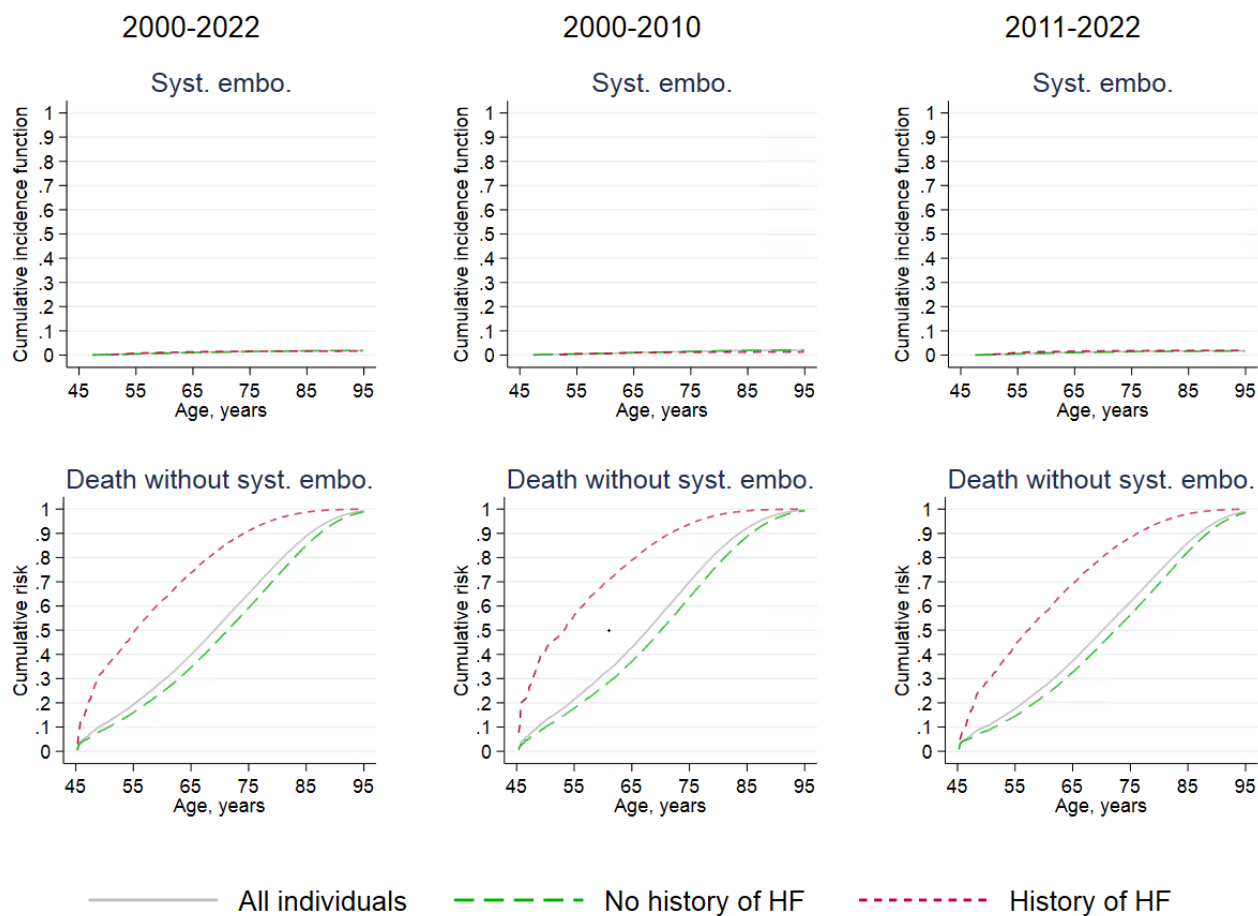
Supplemental Figure 62. Cumulative incidence of systemic embolism at age 45 years by sex.
2000-2022 2000-2010 2011-2022



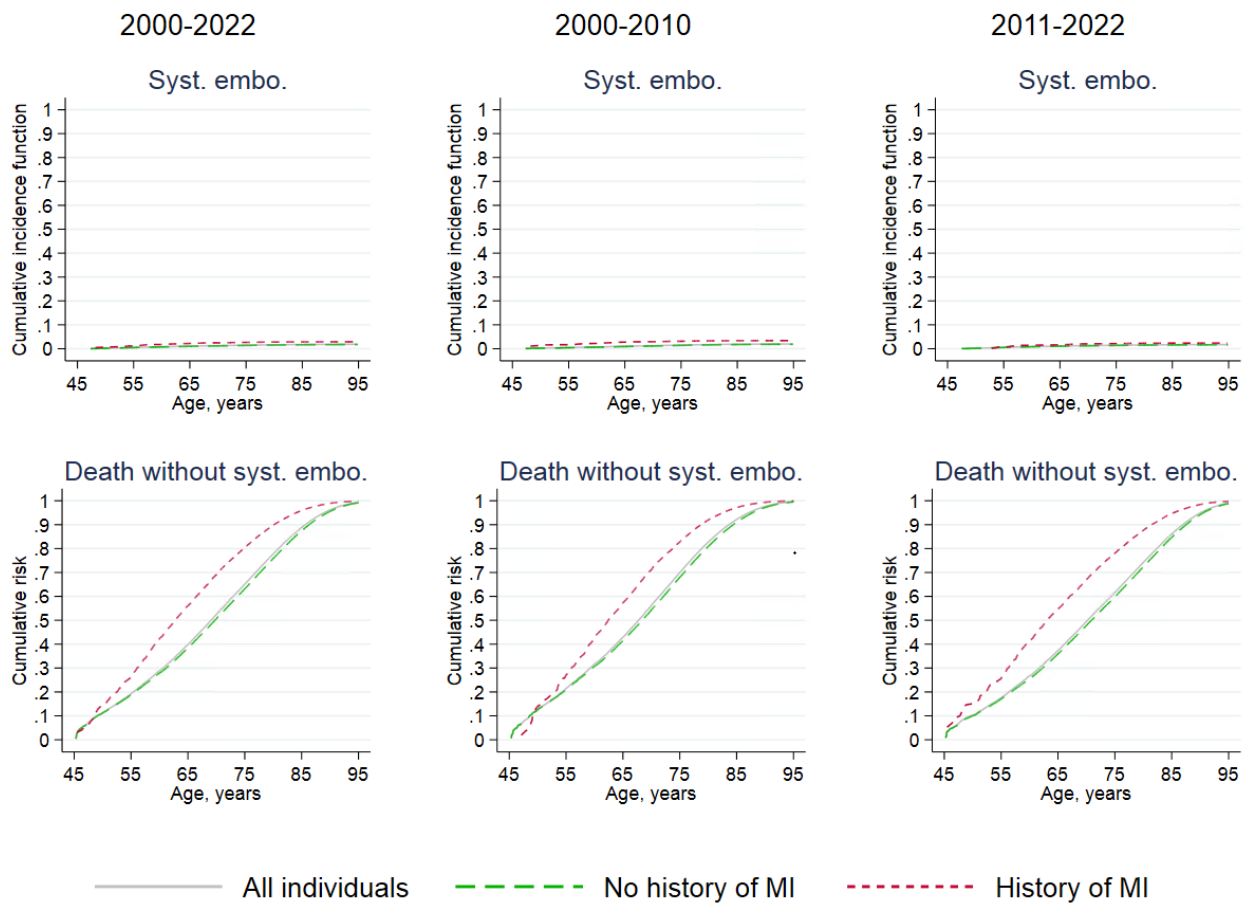
Supplemental Figure 63. Cumulative incidence of systemic embolism at age 45 years by hypertension.



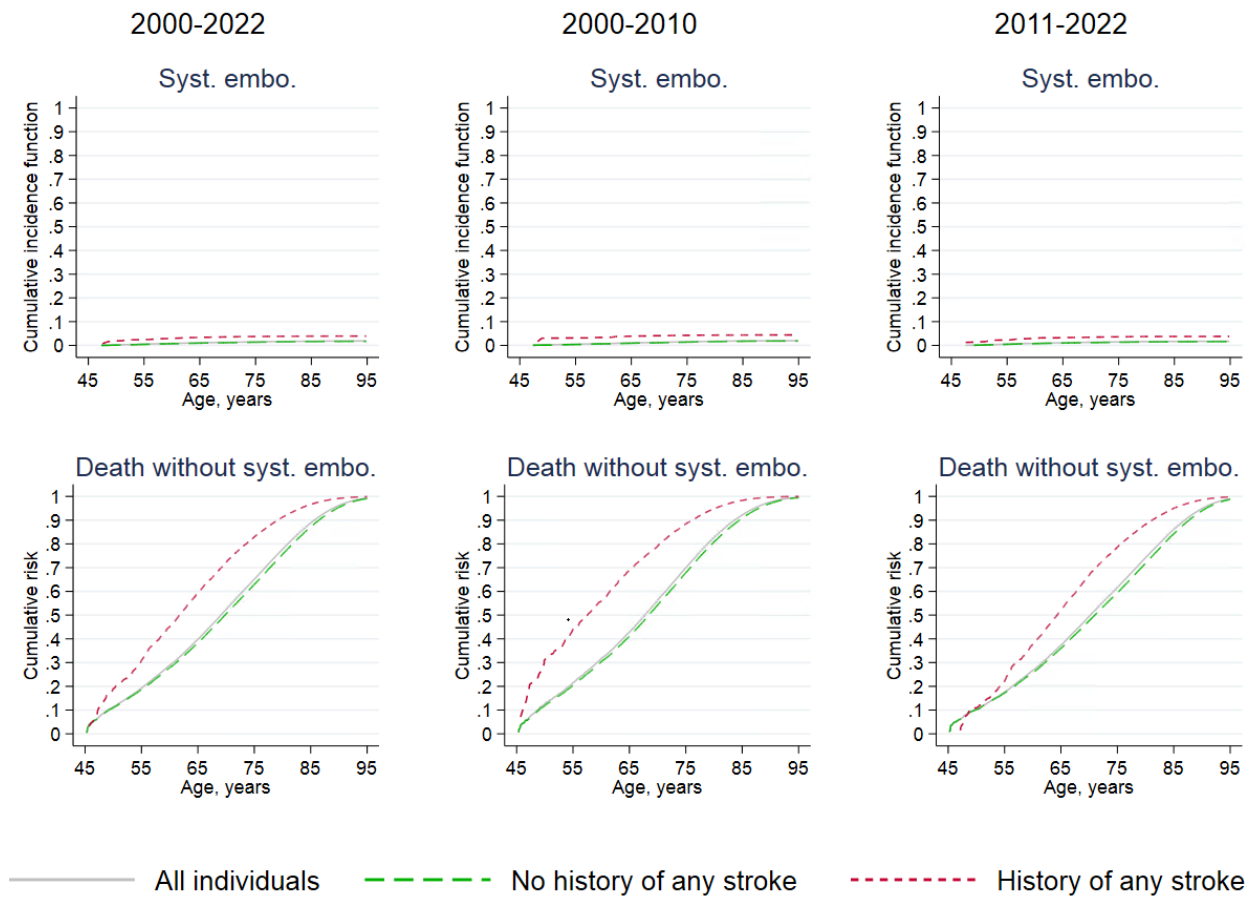
Supplemental Figure 64. Cumulative incidence of systemic embolism at age 45 years by heart failure.



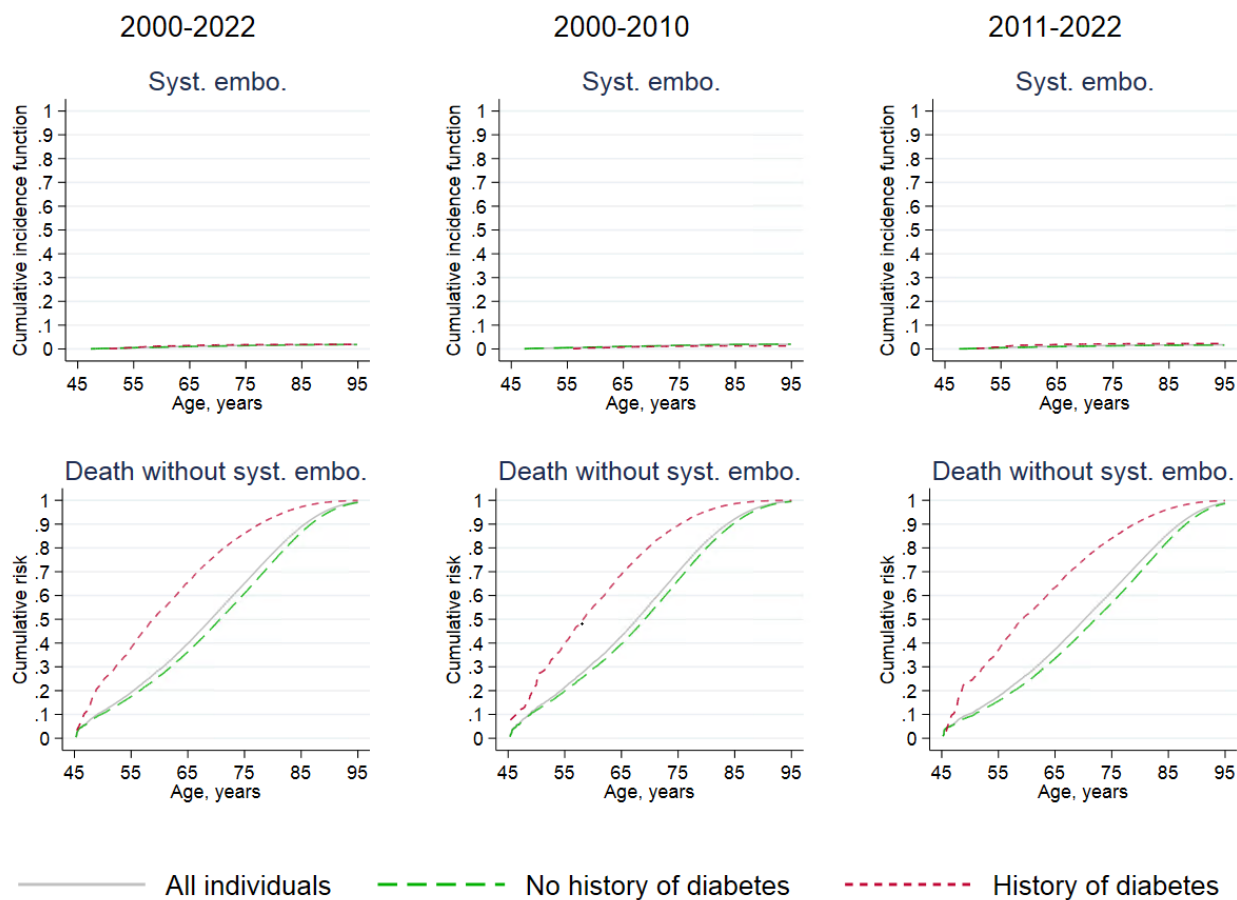
Supplemental Figure 65. Cumulative incidence of systemic embolism at age 45 years by myocardial infarction.



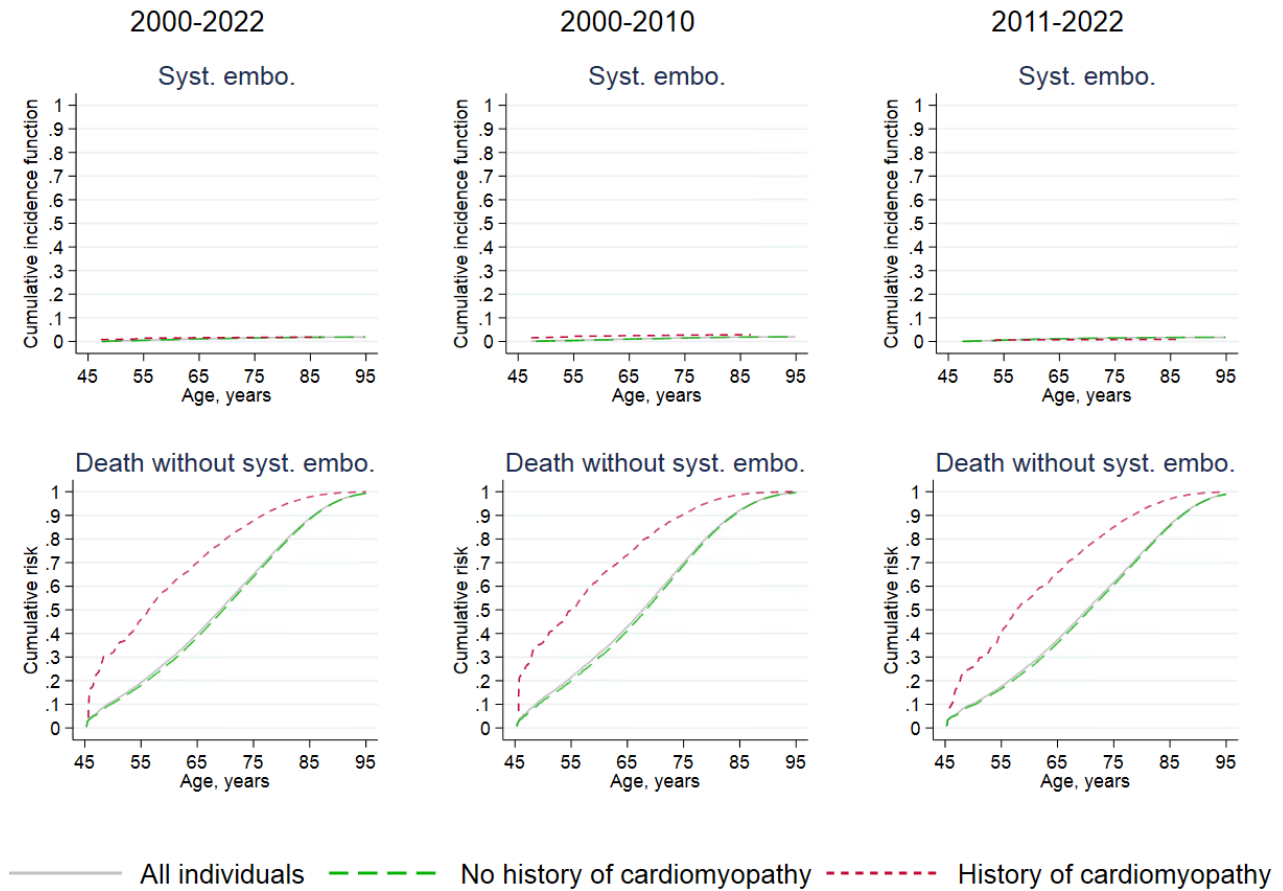
Supplemental Figure 66. Cumulative incidence of systemic embolism at age 45 years by stroke.



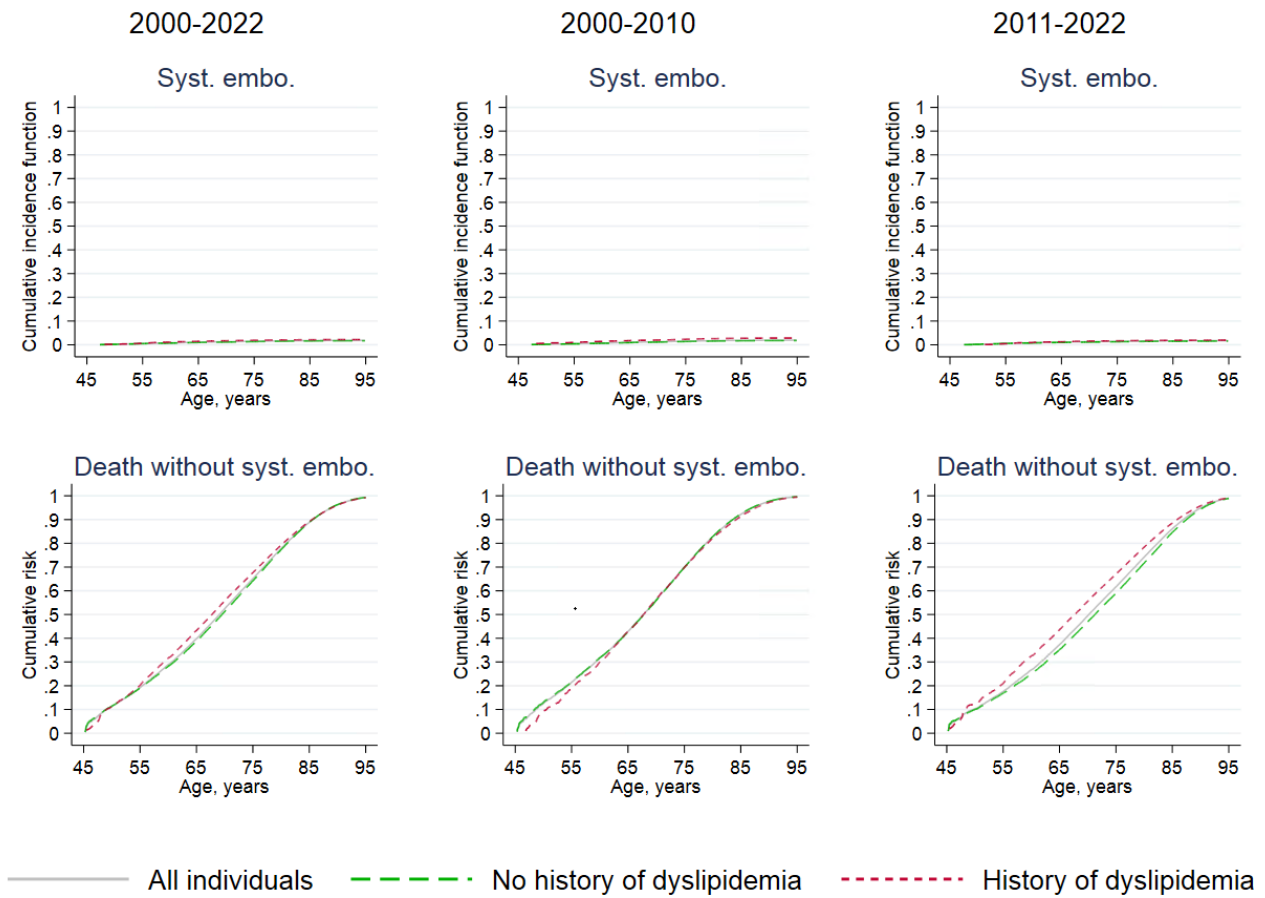
Supplemental Figure 67. Cumulative incidence of systemic embolism at age 45 years by diabetes.



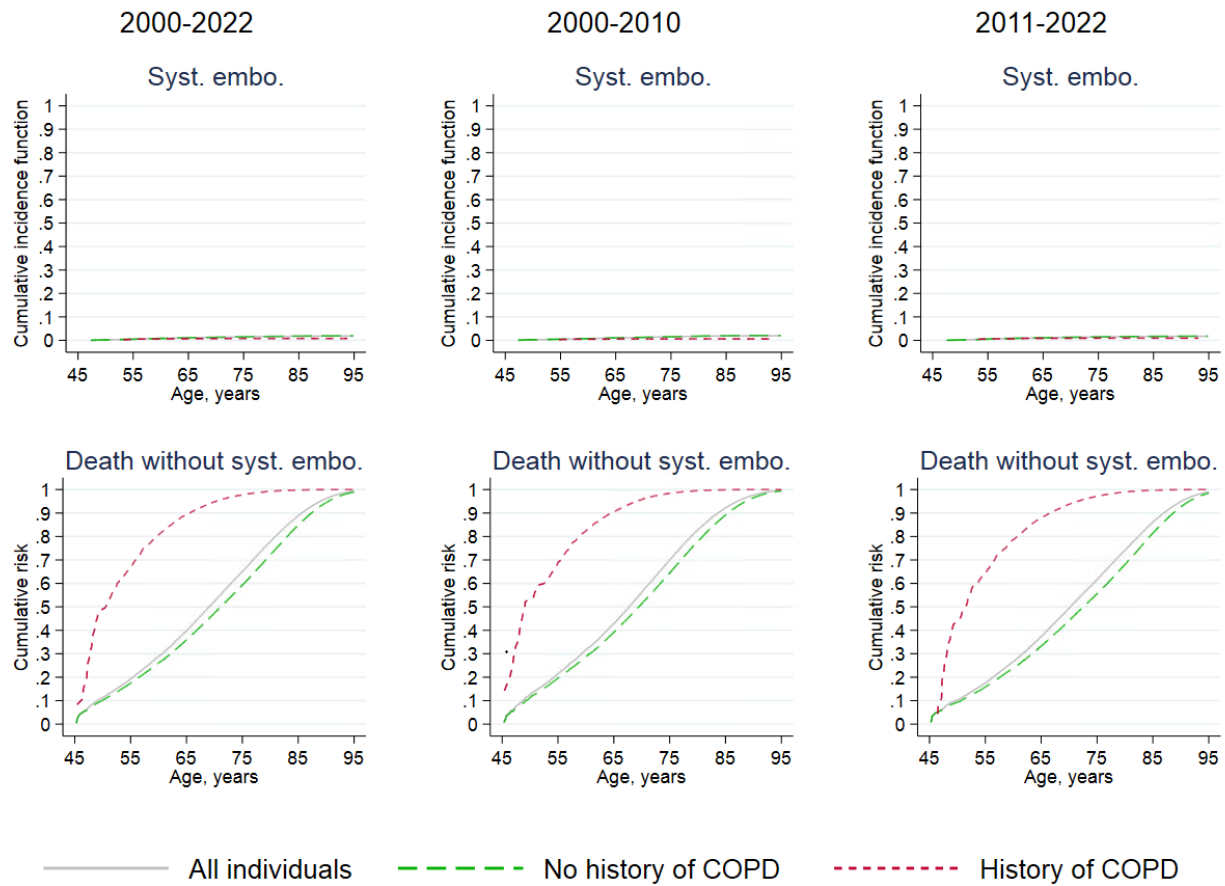
Supplemental Figure 68. Cumulative incidence of systemic embolism at age 45 years by cardiomyopathy.



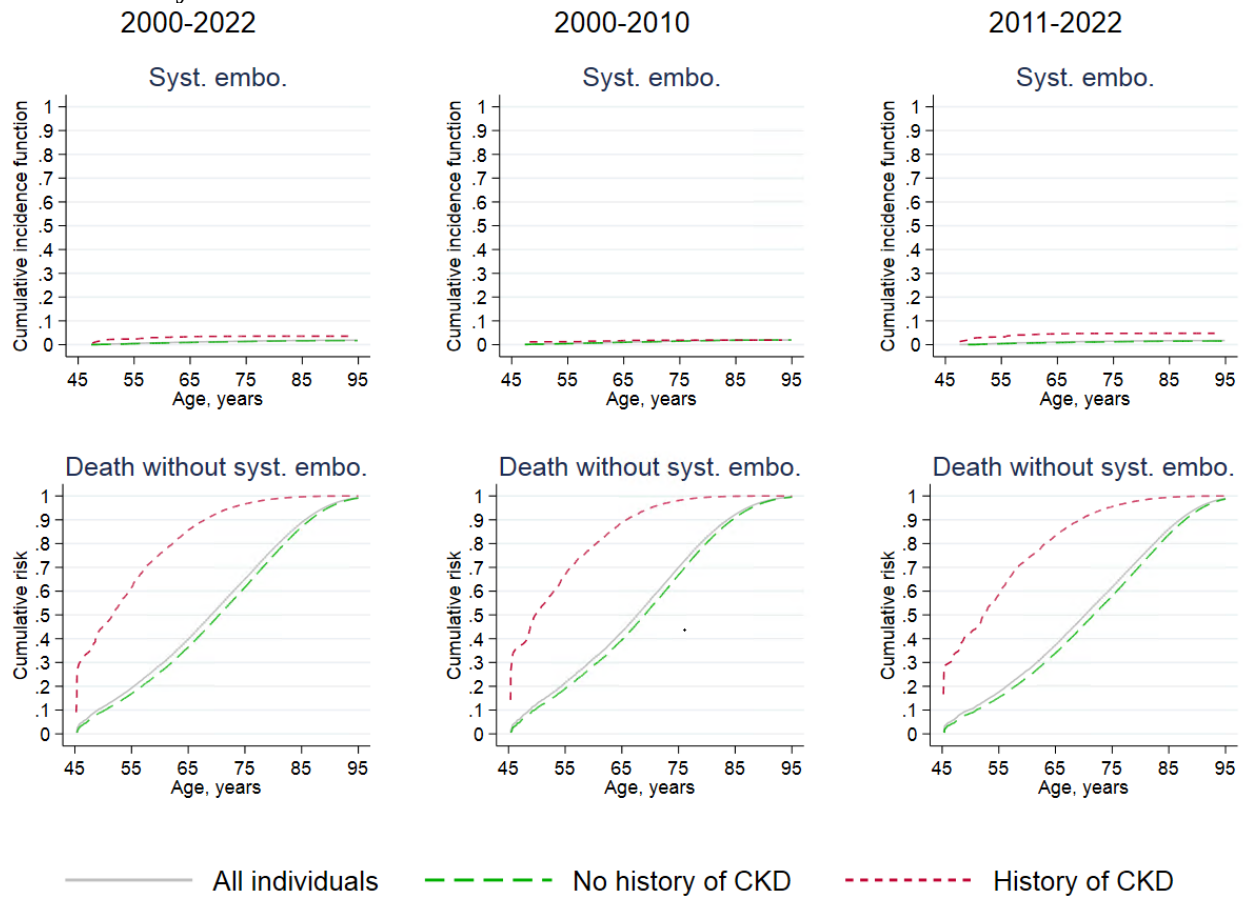
Supplemental Figure 69. Cumulative incidence of systemic embolism at age 45 years by dyslipidemia.



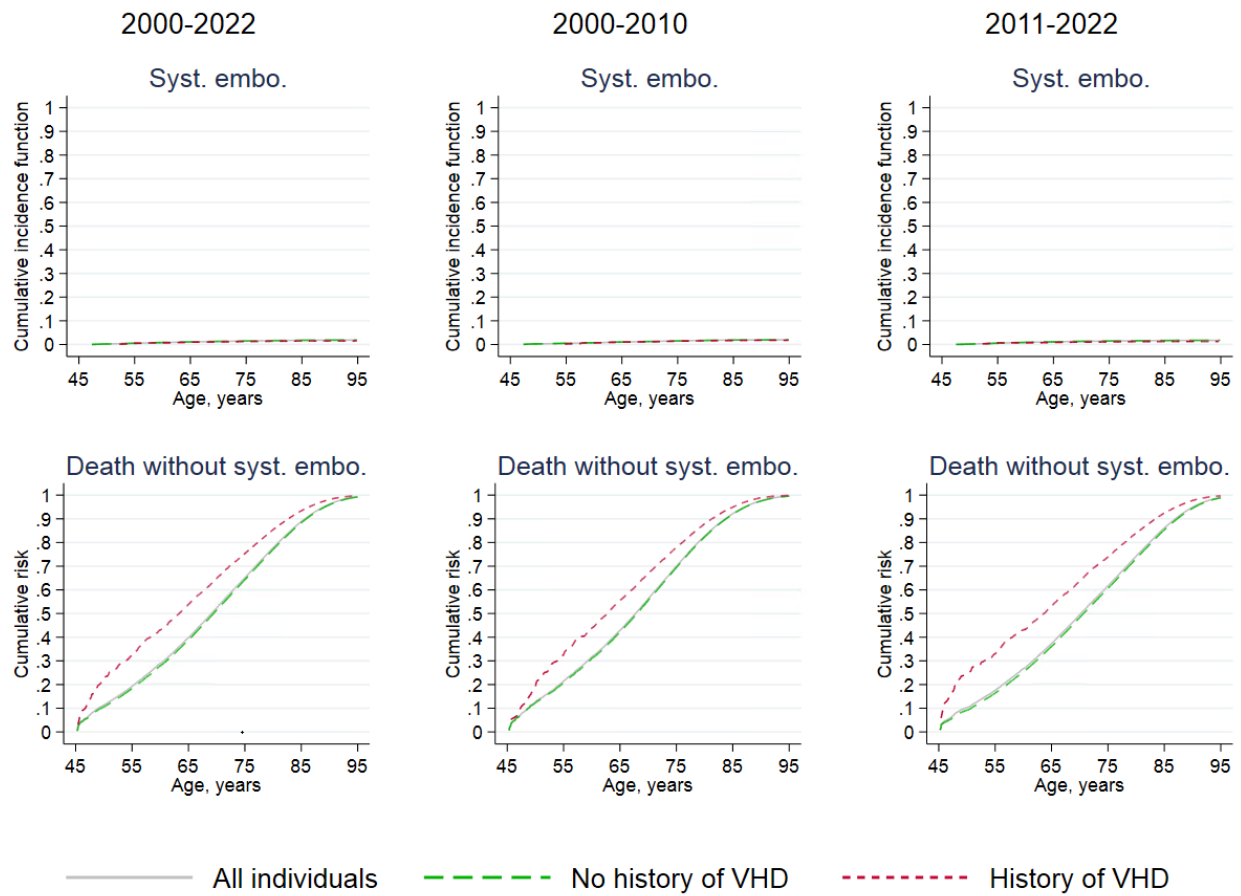
Supplemental Figure 70. Cumulative incidence of systemic embolism at age 45 years by chronic obstructive pulmonary disease.



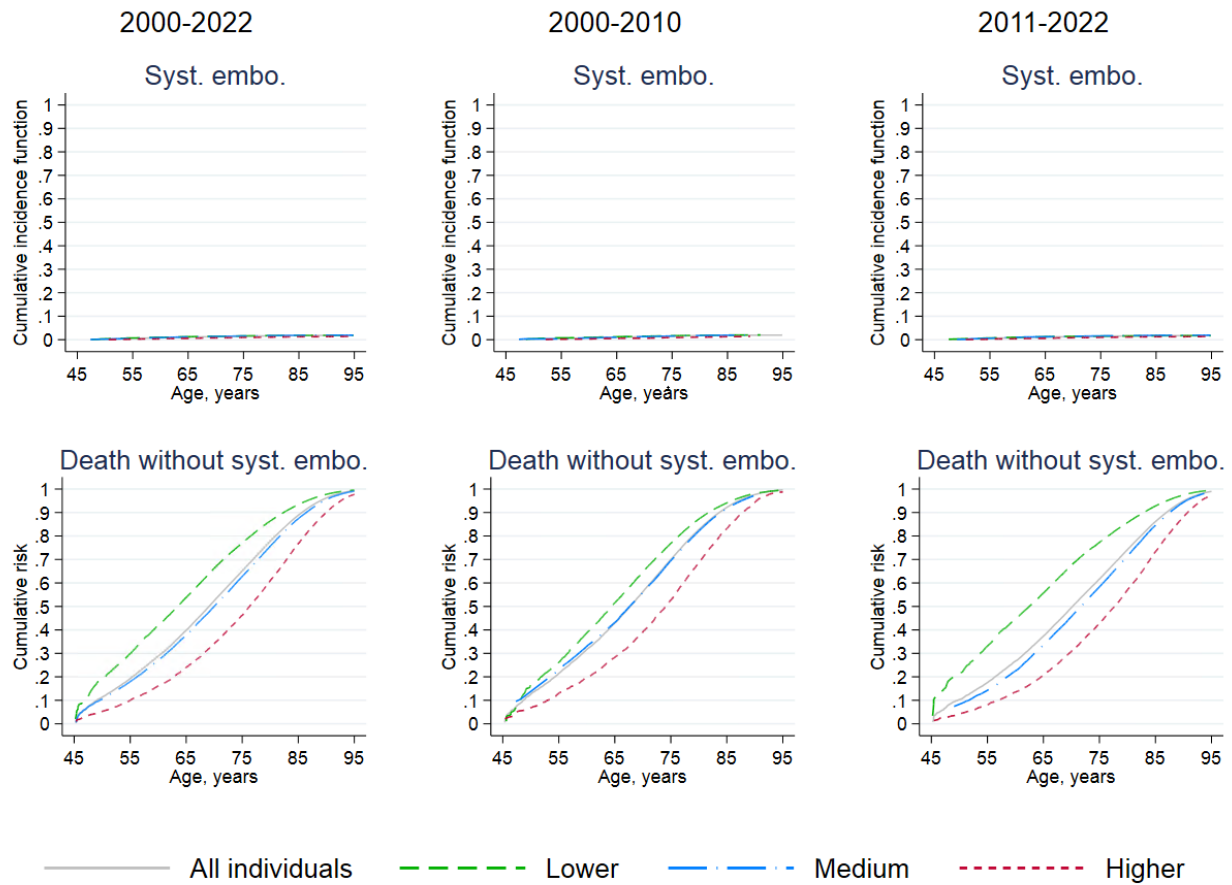
Supplemental Figure 71. Cumulative incidence of systemic embolism at age 45 years by chronic kidney disease.



Supplemental Figure 72. Cumulative incidence of systemic embolism at age 45 years by valvular heart disease.



Supplemental Figure 73. Cumulative incidence of systemic embolism at age 45 years by educational attainment.



Supplemental Figure 74. Cumulative incidence of systemic embolism at age 45 years by income.

