

# Association of Household Income and Adverse Outcomes in Patients with Atrial Fibrillation

## SUPPLEMENTARY MATERIAL

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Dr. Lindsay Bengtson is an employee of Optum©. There are no other author disclosures.

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**Supplementary Table 1.** ICD-9-CM Codes used for comorbidity and outcome ascertainment.

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<b>Condition</b>	<b>ICD-9-CM codes</b>
Heart failure	398.91, 402.01 <sup>†</sup> , 402.11 <sup>†</sup> , 402.91 <sup>†</sup> , 404.01 <sup>†</sup> , 404.03 <sup>†</sup> , 404.11 <sup>†</sup> , 404.13 <sup>†</sup> , 404.91 <sup>†</sup> , 404.93 <sup>†</sup> , 425.4, 425.9, 428 <sup>†</sup>
Ischemic stroke	433, 434 <sup>†</sup> , 435, 436 <sup>†</sup> , 437, 438
Coronary Heart Disease	410, 411, 412, 413, 414
Hypertension	401, 402, 403, 404, 405
Diabetes	250
Chronic Obstructive Pulmonary Disease	490-505, 416.8, 416.9, 506.4, 508.1, 508.8
Chronic Kidney Disease	403.01, 403.11, 403.91, 404.02, 404.03, 404.12, 404.13, 404.92, 404.93, 582, 583.0, 583.1, 583.2, 583.3, 583.4, 583.5, 583.6, 583.7, 585, 586, 588.0, V42.0, V45.1, V56

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ICD-9-CM indicates International Classification of Diseases, Ninth Revision, Clinical Modification. <sup>†</sup>Codes used to define main outcome variables

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**Supplementary Table 2A.** Summary of events, person-time (years), and hazard ratios with 95% confidence intervals for cardiovascular events, by income category for study patients identified as white race.

	<b>Income</b>				
	<b>&lt;\$40K</b>	<b>\$40-59K</b>	<b>\$60-74K</b>	<b>\$75-99K</b>	<b>≥\$100K</b>
<b>Ischemic stroke</b>					
Number of events	1259	500	259	296	427
Person-time, years	142292.93	76591.78	44749.84	54799.23	99686.45
Model 3	0.94 (0.82, 1.07)	0.88 (0.77, 1.01)	0.89 (0.76, 1.05)	0.95 (0.82, 1.1)	1 (ref)
<b>Heart failure</b>					
Number of events	1773	788	393	420	526
Person-time, years	129965.92	71840.46	41952.47	52046.71	95637.03
Model 3	1.16 (1.04, 1.3)	1.14 (1.01, 1.28)	1.11 (0.97, 1.28)	1.09 (0.95, 1.24)	1 (ref)
<b>Coronary Heart Disease</b>					
Number of events	534	233	112	127	187
Person-time, years	107509.59	56487.2	33121.23	41377.98	79008.85
Model 3	1.19 (0.97, 1.46)	1.15 (0.93, 1.42)	1.05 (0.82, 1.34)	1.05 (0.83, 1.32)	1 (ref)

Model 1 adjusted for age, sex, and race. Model 2 adjusted for baseline age, sex, education, hypertension, diabetes, and prevalent coronary heart disease, and heart failure. Model 3 adjusted for Model 2 covariates and chronic obstructive pulmonary disease and chronic kidney disease.

**Supplementary Table 2B.** Summary of events, person-time (years), and hazard ratios with 95% confidence intervals for cardiovascular events, by income category for study patients identified as black race.

	<b>Income</b>				
	<b>&lt;\$40K</b>	<b>\$40-59K</b>	<b>\$60-74K</b>	<b>\$75-99K</b>	<b>≥\$100K</b>
<b>Ischemic stroke</b>					
Number of events	194	60	26	18	16
Person-time, years	18236.15	7274.82	3721.5	3625.37	3936.07
Model 3	1.35 (0.77, 2.34)	1.32 (0.74, 2.34)	1.24 (0.66, 2.34)	0.97 (0.49, 1.91)	1 (ref)
<b>Heart failure</b>					
Number of events	255	65	40	30	17
Person-time, years	15033.21	6225.96	3206.78	3183.89	3417.46
Model 3	1.7 (1, 2.9)	1.36 (0.78, 2.37)	1.82 (1.02, 3.26)	1.53 (0.84, 2.8)	1 (ref)
<b>Coronary Heart Disease</b>					
Number of events	71	28	14	12	10
Person-time, years	13716.85	5305.19	2657.36	2706.67	3037.36
Model 3	0.98 (0.47, 2.05)	1.25 (0.58, 2.66)	1.33 (0.58, 3.05)	1.19 (0.51, 2.8)	1 (ref)

Model 1 adjusted for age, sex, and race. Model 2 adjusted for baseline age, sex, education, hypertension, diabetes, and prevalent coronary heart disease, and heart failure. Model 3 adjusted for Model 2 covariates and chronic obstructive pulmonary disease and chronic kidney disease.

**Supplementary Table 2C.** Summary of events, person-time (years), and hazard ratios with 95% confidence intervals for cardiovascular events, by income category for patients identified as Asian race.

	<b>Income</b>				
	<b>&lt;\$40K</b>	<b>\$40-59K</b>	<b>\$60-74K</b>	<b>\$75-99K</b>	<b>≥\$100K</b>
<b>Ischemic stroke</b>					
Number of events	22	11	12	9	18
Person-time, years	2877.19	1696.39	1201.19	1471.29	3215.52
Model 3	0.92 (0.44, 1.93)	0.95 (0.42, 2.13)	1.51 (0.7, 3.26)	0.95 (0.42, 2.16)	1 (ref)
<b>Heart failure</b>					
Number of events	34	16	8	14	13
Person-time, years	2737.88	1620.85	1091.99	1398.16	3119.06
Model 3	1.57 (0.76, 3.23)	1.53 (0.71, 3.3)	1.13 (0.46, 2.78)	1.67 (0.77, 3.62)	1 (ref)
<b>Coronary Heart Disease</b>					
Number of events	14	2	3	2	6
Person-time, years	2208.15	1360.82	850.5927447	1125.22	2577.98
Model 3	2.89 (0.88, 9.49)	0.61 (0.11, 3.28)	1.54 (0.37, 6.49)	0.8 (0.16, 4.11)	1 (ref)

Model 1 adjusted for age, sex, and race. Model 2 adjusted for baseline age, sex, education, hypertension, diabetes, and prevalent coronary heart disease, and heart failure. Model 3 adjusted for Model 2 covariates and chronic obstructive pulmonary disease and chronic kidney disease.

**Supplementary Table 2D.** Summary of events, person-time (years), and hazard ratios with 95% confidence intervals for cardiovascular events, by income category for patients identified as Hispanic ethnicity.

	<b>Income</b>				
	<b>&lt;\$40K</b>	<b>\$40-59K</b>	<b>\$60-74K</b>	<b>\$75-99K</b>	<b>≥\$100K</b>
<b>Ischemic stroke</b>					
Number of events	173	56	28	29	22
Person-time, years	15301.07	7306.52	3594.9	3969.79	4995.24
Model 3	1.36 (0.84, 2.22)	1.14 (0.68, 1.91)	1.26 (0.71, 2.25)	1.33 (0.76, 2.33)	1 (ref)
<b>Heart failure</b>					
Number of events	177	70	22	32	43
Person-time, years	13298.54	6333.16	3336.58	3724.45	4632.15
Model 3	0.83 (0.57, 1.23)	0.81 (0.54, 1.22)	0.52 (0.31, 0.89)	0.75 (0.47, 1.19)	1 (ref)
<b>Coronary Heart Disease</b>					
Number of events	41	20	10	8	10
Person-time, years	11171.29	5337.82	2717.74	3065.16	3826.35
Model 3	0.85 (0.39, 1.86)	0.96 (0.43, 2.17)	1.05 (0.42, 2.59)	0.79 (0.31, 2.03)	1 (ref)

Model 1 adjusted for age, sex, and race. Model 2 adjusted for baseline age, sex, education, hypertension, diabetes, and prevalent coronary heart disease, and heart failure. Model 3 adjusted for Model 2 covariates and chronic obstructive pulmonary disease and chronic kidney disease.

