

## Appendix 1 (as supplied by the authors): Weighting of Risk Factors in The Framingham Global Risk Score and Pooled Cohort Equation Models

### Framingham Global Risk Score Coefficients

Wilson PWF, D'Agostino RB, Levy D, Belanger AM, Silbershatz H, Kannel WB. Prediction of Coronary Heart Disease Using Risk Factor Categories. *Circulation*. 1998;97:1837-47

#### For Women

Variable	Coefficient
Ln Age (y)	2.32888
Ln Total Cholesterol (mg/dL)	1.20904
Ln HDL-C (mg/dL)	-0.70833
Ln Untreated Systolic BP (mm Hg)	2.76157
Ln Treated Systolic BP (mm Hg)	2.82263
Smoking	0.52873
Diabetes	0.69154

#### For Men

Variable	Coefficient
Ln Age (y)	3.06117
Ln Total Cholesterol (mg/dL)	1.1237
Ln HDL-C (mg/dL)	-0.93263
Ln Untreated Systolic BP (mm Hg)	1.93303
Ln Treated Systolic BP (mm Hg)	1.99881
Smoking	0.65451
Diabetes	0.57367

## Pooled Cohort Equation Coefficients

Goff DC, Jr., Lloyd-Jones DM, Bennett G, et al. 2013 ACC/AHA guideline on the assessment of cardiovascular risk: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2014;129:S49-73

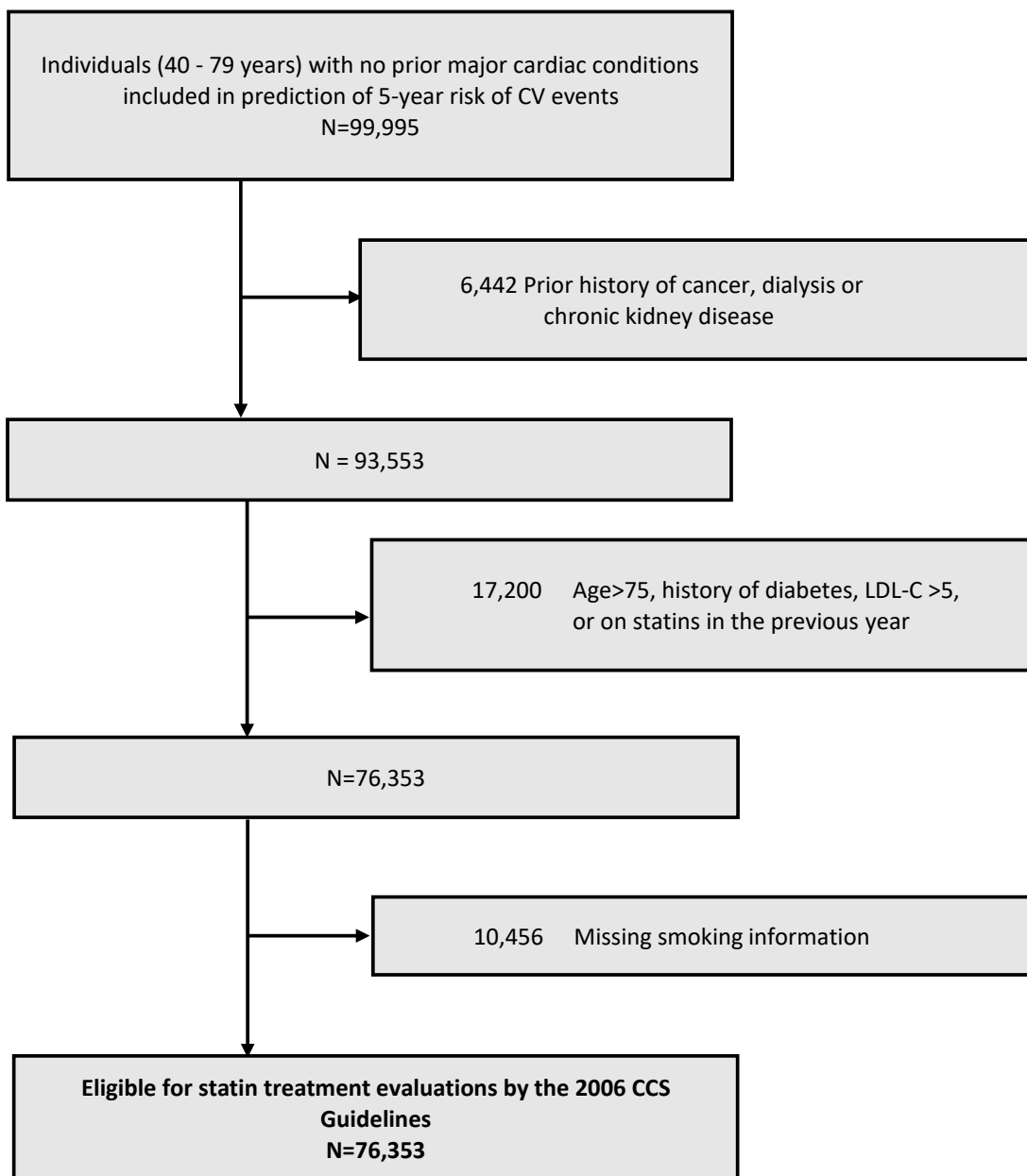
### For Women

Variable	Coefficient	
	White	African American
Ln Age (y)	-29.799	17.114
Ln Age Squared	4.884	N/A
Ln Total Cholesterol (mg/dL)	13.54	0.94
Ln Age x Ln Total Cholesterol	-3.114	N/A
Ln HDL-C (mg/dL)	-13.578	-18.920
Ln Age x Ln HDL-C	3.149	4.475
Ln Treated Systolic BP (mm Hg)	2.019	29.291
Ln Age x Ln Treated Systolic BP	N/A	-6.432
Ln Untreated Systolic BP (mm Hg)	1.957	27.82
Ln Age x Ln Untreated Systolic BP	N/A	-6.087
Current Smoker	7.574	0.691
Ln Age x Current Smoker	-1.665	N/A
Diabetes	0.661	0.874

### For Men

Variable	Coefficient	
	White	African American
Ln Age (y)	12.344	2.469
Ln Total Cholesterol (mg/dL)	11.853	0.302
Ln Age x Ln Total Cholesterol	-2.664	N/A
Ln HDL-C (mg/dL)	-7.990	-0.307
Ln Age x Ln HDL-C	1.769	N/A
Ln Treated Systolic BP (mm Hg)	1.797	1.916
Ln Untreated Systolic BP (mm Hg)	1.764	1.809
Current Smoker	7.837	0.549
Ln Age x Current Smoker	-1.795	N/A
Diabetes	0.658	0.645

Supplemental Figure 1. Cohort flowchart for individuals eligible for statins by CCS Guidelines



Abbreviations: CCS, Canadian Cardiovascular Society.

<b>Supplemental Table 1:</b> International classification disease and classification of health Interventions codes use to defined outcomes*(1,2)			
Outcomes	Framingham Risk Score	Pooled Cohort Equations	International classification disease, 10th (unless specified)
Acute myocardial infarction	X	X	I21, I22
Unstable angina	X		I20
Stroke	X	X	I60, I61, I630, I631, I632, I633, I634, I635, I637, I638, I639, I64, H341
Trans ischemic attack	X		G450, G451, G452, G453, G458, G459, H340
Heart failure	X		I50
Peripheral arterial disease	X		I702, I739, I743, I744, E1150, E1151
Abdominal aortic aneurysm	X		I713, I714
Carotid endarterectomy or stent	X		Classification of Health Interventions codes: 1JE57, 1JE50, 1JE87
Circulatory death	X		I00 to I99
Cerebrovascular death		X	I60, I61, I62, I63, I64, I65, I66, I67, I68, I69
Ischemic heart disease death		X	I20, I21, I22, I23, I24, I25
*Circulatory death captures causes of death relating to disease of the circulatory system as defined by the International Classification of Disease, 10 <sup>th</sup> version, using data from Registrar General of Ontario Database			

<b>Supplemental Table 2:</b> Baseline table for individuals eligible for statins by CCS Guidelines(3)			
	Overall	Men	Women
	N=59,126	N=24,298	N=34,828
Mean age — years ± SD	53.80 ± 8.95	53.55 ± 8.85	53.97 ± 9.01
Income quintile — no. (%)			
1	8,306 (14.0)	3,550 (14.6)	4,756 (13.7)
2	10,209 (17.3)	4,195 (17.3)	6,014 (17.3)
3	11,336 (19.2)	4,687 (19.3)	6,649 (19.1)
4	13,020 (22.0)	5,395 (22.2)	7,625 (21.9)
5	16,006 (27.1)	6,353 (26.1)	9,653 (27.7)
Rural residency — no. (%)	11,965 (20.2)	5,145 (21.2)	6,820 (19.6)
Ethnicity — no. (%)			
Chinese	1,480 (2.5)	564 (2.3)	916 (2.6)
South Asian	866 (1.5)	384 (1.6)	482 (1.4)
Black	683 (1.2)	292 (1.2)	391 (1.1)
Mean lipid measurements — mmol/L ± SD			
Total cholesterol	5.26 ± 0.93	5.18 ± 0.94	5.31 ± 0.92
HDL cholesterol	1.48 ± 0.44	1.28 ± 0.35	1.62 ± 0.43
LDL cholesterol	3.16 ± 0.78	3.20 ± 0.78	3.13 ± 0.79
Mean body mass index — kg/m <sup>2</sup> ± SD	28.31 ± 6.37	28.83 ± 5.56	27.98 ± 6.81
Mean systolic blood pressure — mm Hg ± SD	126.11 ± 17.26	128.84 ± 16.62	124.19 ± 17.44
Smoking — no. (%)			
Non-smoker	33,295 (56.3)	12,122 (49.9)	21,173 (60.8)
Smoker	10,073 (17.0)	4,960 (20.4)	5,113 (14.7)
Ex-smoker	15,758 (26.7)	7,216 (29.7)	8,542 (24.5)
Medications — no. (%)			
Antihypertensive	8,843 (15.0)	3,727 (15.3)	5,116 (14.7)

Abbreviations: HDL, high density lipoprotein; LDL, low density lipoprotein; SD indicates standard deviation.

<b>Supplemental Table 3:</b> Predicted and observed events for Framingham global and the pooled risk score for individuals eligible for statins by CCS Guidelines (3)					
	Predicted (95% CI)	Observed (95% CI)	Absolute Difference, %	Discordance, %*	C- Statistic
Overall					
Framingham Risk Score	4.32 (4.29, 4.36)	1.89 (1.77, 2.01)	2.43	129	0.75
Pooled Cohort Equations	2.2 (2.18, 2.23)	1.20 (1.10, 1.29)	1	83	0.74
Men					
Framingham Risk Score	6.57 (6.51, 6.63)	2.93 (2.69, 3.16)	3.64	124	0.70
Pooled Cohort Equations	3.61 (3.57, 3.65)	1.94 (1.75, 2.13)	1.67	86	0.69
Women					
Framingham Risk Score	2.76 (2.73, 2.78)	1.18 (1.06, 1.30)	1.58	134	0.74
Pooled Cohort Equations	1.23 (1.21, 1.24)	0.68 (0.59, 0.78)	0.55	81	0.71
* Discordance (%) is calculated as (predicted event rate – observed event rate)/observed event rate × 100					

<b>Supplemental Table 4:</b> Predicted and observed events for Framingham global and the pooled risk score with smoking imputation					
	Predicted (95% CI)	Observed (95% CI)	Absolute Difference, %	Discordance, %*	C-Statistic
Overall					
Framingham Risk Score	5.81 (5.78, 5.85)	2.85 (2.74, 2.97)	2.96	104	0.75
Pooled Cohort Equations	3.55 (3.52, 3.57)	1.62 (1.54, 1.71)	1.92	118	0.74
Men					
Framingham Risk Score	8.56 (8.50, 8.63)	3.96 (3.76, 4.16)	4.61	116	0.72
Pooled Cohort Equations	5.34 (5.28, 5.39)	2.38 (2.23, 2.54)	2.96	124	0.70
Women					
Framingham Risk Score	3.72 (3.69, 3.75)	2.02 (1.90, 2.15)	1.70	84	0.76
Pooled Cohort Equations	2.18 (2.15, 2.21)	1.05 (0.97, 1.15)	1.13	107	0.74
* Discordance (%) is calculated as (predicted event rate – observed event rate)/observed event rate × 100					

## References

1. The International Classification of Disease, 10th version.
2. Canadian Institute for Health Information. Canadian Coding Standards for Version 2018 ICD-10-CA and CCI. Ottawa: CIHI; 2018
3. Anderson TJ, Gregoire J, Pearson GJ, et al. 2016 Canadian Cardiovascular Society Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult. Can. J. Cardiol. 2016;32:1263-82.