Appendix 2 (as supplied by the authors): Selection of Candidate Predictors for Multivariable Logistic Regression

Initial List of 43 Candidate Predictors

24 Categorical Candidate Predictors

- Sex
- 6 Syncope characteristics: Witnessed, Palpitations prior to the syncope, syncope while sitting or lying or exertion, predisposition to vasovagal symptoms (warm-crowded place, prolonged standing, fear, emotion or pain),presence of prodrome (dizziness, light-headedness, vision changes, nausea or vomiting), or presence of orthostatic symptoms prior or after the syncope
- 2 Medical history predictors: heart disease (history of any one of the following: coronary or valvular heart disease, cardiomyopathy, congestive heart failure or non-sinus rhythm – ECG evidence during the index visit or documented history of ventricular or atrial arrhythmias, or device implantation); or vascular disease (history of transient ischemic attack, cerebrovascular accident or peripheral vascular disease)
- 2 Family history predictors: congenital heart disease or sudden death
- 2 Final ED diagnosis predictors at disposition: vasovagal or cardiac with other diagnosis as the reference variable and includes cause unknown
- Troponin >99th percentile of the normal population
- 10 ECG predictors: 5 blocks (right bundle branch block, left bundle branch block, left anterior fascicular block, left posterior fascicular block, bifascicular block [right bundle branch block + left fascicular block either anterior or posterior, or bundle branch block + first degree atrioventricular block); axis deviations – left or right; ventricular hypertrophy – right or left; or presence of old ischemia

19 Continuous Candidate Predictors

- Age
- 11 ED vitals: Triage, highest and lowest systolic and diastolic blood pressures; triage, highest and lowest pulse rates, triage respiratory rate and oxygen saturation
- 4 laboratory values: hemoglobin, hematocrit, urea and creatinine levels
- 3 ECG predictors: QRS axis, QRS duration, and corrected QT interval

20 Candidate Predictors that were Excluded prior to Multivariable Logistic Regression and Reason for Exclusion

Sparse distribution of SAE – Fewer than 5 SAE (10 predictors):

- Family history: congenital heart disease and sudden death
- 8 ECG predictors: 5 blocks [right bundle branch block, left anterior fascicular block, left posterior fascicular block, right bundle branch block + left fascicular block (anterior or posterior), bundle branch block + first degree atrioventricular block]; axis deviations – left and right; right ventricular hypertrophy

Not significant (p>0.05) on bivariable screening (8 predictors):

- 4 Syncope characteristics: Witnessed, Palpitations prior to the syncope, syncope while sitting or lying or exertion, and presence of orthostatic symptoms prior or after the syncope
- Old ischemic changes on ECG
- 3 ED vitals: Triage diastolic blood pressure, triage and lowest heart rate

Low prevalence at abnormal values (2 predictors):*

- Triage oxygen saturation
- Hemoglobin

ED = Emergency Department; ECG = Electrocardiogram

*Though mean values for the two candidate predictors, triage oxygen saturation and hemoglobin were significantly different between the two groups (with and without SAE), the values were within normal range. When abnormal value cut-points were explored, there was sparse distribution of SAE. They were excluded from multivariable logistic regression as no clinically meaningful cut-points could be identified

No candidate predictors were excluded because of low kappa (<0.4) value or high proportion of missing values (>25% of patients with missing values)

Appendix to: Thiruganasambandamoorthy V, Kwong K, Wells GA, et al. Development of the Canadian Syncope Risk Score to predict serious adverse events after emergency department assessment of syncope. *CMAJ* 2016. DOI:10.1503/cmaj.151469.