

**Appendix 1: Likert Scales used in outcome (adverse event) determination and for preventability of adverse events**

For determining occurrence of adverse event:

Rate your level of confidence that this flagged outcome is related to health care received:

- 1. No evidence for causation
- 2. Slight evidence for causation
- 3. Management causation <50-50 but close call
- 4. Management causation >50-50 but close call
- 5. Strong evidence for management causation
- 6. Certain evidence for management causation

For determining preventability of adverse event:

Was the adverse event preventable?

- 1. Definitely not preventable
- 2. Probably not preventable
- 3. Probably preventable

**Appendix 2A: Patient characteristics to be examined for association with the occurrence of adverse events**

<b>Patient Characteristics</b>	<b>Further Description/Categories</b>
Age	Age, in years
Sex	male/female
Language	One parent fluent in English (all sites) or French (Montreal and Ottawa sites)
Immigration	One parent immigrated to Canada in last five years
Pediatric Canadian Triage Acuity Scale (PedsCTAS)	Five categories: 1=resuscitation; 2=emergent; 3=urgent; 4 semi-urgent; 5=nonurgent Variable be grouped into 3 categories for analysis: (1) resuscitation and emergent; (2) urgent; and (3) semi-urgent and nonurgent
Time of day of patient presentation to the ED	‘regular hours’ (8 am to 5 pm) / ‘after hours’ (5 pm to 8 am)
Weekday/weekend presentation of patient to the ED	‘weekday’ (Monday to Friday) / ‘weekend’ (Saturday and Sunday)
Discharge disposition	Admitted / discharged / left without being seen / died
Complex illness*	Medical condition involving several different organ systems, or a single organ system and requiring a high level of specialty care, such as cystic fibrosis

\*As defined by Matlow 2012. [7]

**Appendix 2B: System factors to be examined for association with the occurrence of adverse events**

<b>System factors</b>	<b>Further Description/Categories</b>
Length of time to see physician	Time between triage and first physician assessment
Number of ED physicians involved in that patient’s care	Number of ED staff physicians that assume responsibility for care (reflects number of end-of-physician-shift hand overs for each patient)
Location within the ED	Participating EDs are divided into two areas: 'ambulatory' and 'acute' zones
Need for a consultation	Consultation by ED staff of another sub-speciality (e.g.; general surgery, orthopedics, cardiology, etc.)
Level of physician initially managing patient (ED staff versus medical trainee)	All centres are teaching centres and patients may be seen first by ED staff or by medical trainees (i.e.; medical students, residents, fellows)
Overall ED census (i.e. the overall number of patients present in the ED)*	This reflects all the patients currently present in the ED - those in the waiting room, those in ED examination rooms, and those in ED examination rooms awaiting inpatient beds
The number of patients waiting to be seen*	The number of patients in the ED who have not yet been seen by a physician.
Number of patients awaiting in-patient beds*	The number of patients for whom inpatient beds have been requested (for admission) but who remain in the ED
Average time between patient triage and registration*	The time between children being triaged (where patient acuity is assessed) and registered (registration: process where patient’s chart is created and data such as health insurance coverage and identification of family data is collected).
Number of beds in the ED	Overall number of beds/stretchers where patients may be placed; does not include waiting room space

\*These are system variables that reflect volume and operational processes. Given the volume of patients that can present over a short period to the triage desk it is not feasible to collect these variables at the exact moment each patient is triaged. We will operationalize the data collection of these variables by capturing these variables at the midpoint of each hour during each shift. We will then use this data for patients who arrived within 30 minutes before or after this time point. For example, if a patient presents to the ED at 13:00, we will use for this patient the data collected at 13:30 for these specific variables.