

## Supplementary materials

1) Calculation of the number of patients by color code for the daytime shift considering the daily average of visits:

*Number of patients with acuity 5 per day shift = 111 patients per day : 100% = x patients per day : 9.3%*

$$x = \frac{111 \cdot 9.3}{100} = 10.3 \approx 10 \text{ patients with acuity 5 per day shift}$$

\* Where 111 indicates the average number of patients seen per daytime shift; while 9.3% is the average percentage of patients with code 5 who arrive in the ED during daytime shifts (the data used in the formula were extracted from Table 1).

2) Calculation of the average cumulative time spent performing triage based on the color code and for the daytime shift:

*Mean time spent per day shift for acuity 5 patients = (10 patients \* 4.6 minutes) = 46 minutes per day shift*

*Mean time spent per day shift for acuity 4 patients = (76 patients \* 5.2 minutes) = 395.2 minutes per day shift*

*Mean time spent per day shift for acuity 3 patients = (19 patients \* 6.3 minutes) = 119.7 minutes per day shift*

*Mean time spent per day shift for acuity 2 patients = (5 patients \* 6.4 minutes) = 32 minutes per day shift*

*Mean time spent per day shift for acuity 1 patients = (1 patients \* 3.5 minutes) = 3.5 minutes per day shift*

\* The minutes per triage code were extracted and incorporated into the formula from Table 1.

3) Calculation of the number of nurses needed in triage considering the daytime shift:

$$\text{Number of nurses needed in triage during day shift} = \frac{\text{Minutes required for patient in triage}}{\text{Minutes of work per triage nurse}}$$

$$\text{Number of nurses needed in triage during day shift} = \frac{46 + 395.2 + 119.7 + 32 + 3.5}{720} = 0.82$$

\* The 720 minutes represent the 12-hour work shifts of the triage nurses.