**Supplementary table 1: Receiver operating characteristics**

**Criterion Sensitivity Specificity NPV 95% CI**

≥-4 100.00 0.00

>4 100.00 37.85 100.0

>5 91.30 48.38 99.2 96.9 - 99.8

>6 86.96 56.07 98.9 97.0 - 99.6

>7 86.96 64.78 99.1 97.4 - 99.7

>8 78.26 72.67 98.6 97.1 - 99.4

>9 69.57 78.54 98.2 96.8 - 99.0

>10 69.57 81.98 98.3 96.9 - 99.1

>11 65.22 85.43 98.1 96.8 - 98.9

>12 60.87 88.06 98.0 96.7 - 98.8

>13 52.17 90.49 97.6 96.4 - 98.4

>14 43.48 92.31 97.2 96.1 - 98.0

>15 43.48 93.93 97.3 96.1 - 98.1

>16 34.78 95.55 96.9 95.9 - 97.7

>18 34.78 97.37 97.0 96.0 - 97.7

>19 26.09 98.18 96.6 95.7 - 97.3

>20 13.04 98.99 96.1 95.4 - 96.6

>21 8.70 99.39 95.9 95.4 - 96.4

>22 8.70 99.80 95.9 95.4 - 96.4

>23 4.35 99.80 95.7 95.4 - 96.1

>24 4.35 100.00 95.7 95.4 - 96.1

>29 0.00 100.00 95.6 95.6 - 95.6

**Supplementary Information on sample size calculation and cut-off definition**

**Sample size calculation**

The sample size calculations for proportions were performed using the formula n=((z\*z)\*prevalence\*(1-prevalence))/(error margin\*error margin). N is the minimal sample size, z is the z-statistic for the confidence level. We chose a 95% confidence level corresponding to a z-statistic of 1.96, used 0.5 (=50%) as the prevalence (this is the worst-case scenario yielding the largest sample size as prevalence was unknown), and used a margin of error of +/- 0.05 (=5%). This yields a minimum number of 385 admissions to be included in the study.

This is an extremely conservative procedure. Arya et al. (2012) would prefer using an expected prevalence of 0.05 of intensive care requirement (a figure much closer to the real-life situation), a margin of error of 0.025, and a margin of error of +/-0.025 (=2.5%) which corresponds to a sample size of 292.

In any case, our patient sample was much larger, so we can be confident of the results.

**Rationale for study protocol cut-off for the minimal negative predictive value**

The level of negative predictive values for important "rule out" applications that are accepted in clinical medicine range from 0.88-0.95 (ICU admission for pneumonia as measured by the CURB65), to 0.97 (D-dimer for exclusion of PE in low-risk patients) and 0.99 (rule out of myocardial infarction using two troponin determinations plus ECG; CHIIDA score for ICU requirement in pediatric head trauma). Therefore, we defined our minimal negative predictive value to be 0.9 to be clinically useful. In our study protocol, we defined clinically useful negative predictive value to be greater than 0.95 (with an interval breadth of +/-0.05 (this is the value from the sample size calculation)). If the measured value is 0.95 or greater, we can be sure (at the 95% level of certainty) that the true value is 0.9 or greater.

Our measured negative predictive value of 0.99 (95% confidence interval 0.97-1) clearly fulfills these requirements and is in the range of NPV values accepted for important "rule out" applications. For that reason, we conclude that the IRS is a useful test for ruling out the need for ICU care in acutely poisoned patients.