Supplementary Material:

Additional Statistical Measures

Contents

Table S1: Chi square analysis for chart review population

Table S2: Chart reviewer agreement by suicidality subtype

Table S3: ICD-10 evaluation compared to reviewer 1 (RX)  
Table S4: ICD-10 evaluation compared to reviewer 2 (AM)

### **CHI SQUARE ANALYSIS OF STUDY POPULATION**

|  | **A) Cases (N=103)** | | **B) Non-cases (N=102)** | |
| --- | --- | --- | --- | --- |
| **Demographic** | ***X*2** | **P-value** | ***X*2** | **P-value** |
| Age group 6-11 vs. 12-18 yrs | 2.13 | 0.14 | 0.37 | 0.55 |
| Male vs. Female | 1.99 | 0.16 | 2.54 | 0.11 |

**Table S1: Chi square analysis for study population demographics**. Age and gender proportions did not differ significantly for A) chart-reviewed cases or B) chart-reviewed non-cases as compared to all ED encounters with ICD-10 code for suicidality. P<0.05 was considered significant.

### **CHART REVIEWER AGREEMENT**

| Sensitivity | Specificity | PPV | NPV | Label |
| --- | --- | --- | --- | --- |
| 0.957 | 0.915 | 0.909 | 0.96 | \* |
| 0.895 | 0.935 | 0.895 | 0.935 | action-past |
| 0.917 | 0.895 | 0.733 | 0.971 | action-present |
| 1 | 0.812 | 0.919 | 1 | ideation-past |
| 0.966 | 1 | 1 | 0.955 | ideation-present |

**Table S2: Chart reviewer agreement by suicidality subtype.** F1 is a measure of agreement between chart reviewers. PPV and NPV are positive and negative predictive values, respectively. Labels evaluated include suicidality action-past, action-present, ideation-present, and ideation-past. No comparison can be made to ICD-10 for ideation-past, because there is no corresponding ICD-10 code.

### **ICD-10 VALIDATION**

| Sensitivity | Specificity | PPV | NPV | Label |
| --- | --- | --- | --- | --- |
| 0.494 | 0.944 | 0.89 | 0.669 | \* |
| 0.14 | 0.953 | 0.7 | 0.587 | action-past |
| 0.316 | 0.987 | 0.923 | 0.743 | action-present |
| 0.816 | 0.842 | 0.912 | 0.696 | ideation-present |

**Table S3: ICD-10 evaluation compared to reviewer 1 (RX).** ICD-10 agreement with reviewer 1 was highest for ideation-present (F1=86.1%) and lowest for action-past (F1=23.3%). ICD-10 codes were not present for more than half of all true positive suicidality actions in the evaluation. In the case of action-past, ICD-10 codes were missing for more than three quarters (sensitivity=14.0%) of true positive cases.

| Sensitivity | Specificity | PPV | NPV | Label |
| --- | --- | --- | --- | --- |
| 0.573 | 0.961 | 0.848 | 0.855 | \* |
| 0.267 | 0.955 | 0.615 | 0.828 | action-past |
| 0.357 | 0.982 | 0.833 | 0.86 | action-present |
| 0.831 | 0.939 | 0.907 | 0.885 | ideation-present |

**Table S4: ICD-10 evaluation compared to reviewer 2 (AM).** ICD-10 agreement with reviewer 2 was highest for ideation-present (F1=86.7%) and lowest for action-past (F1=37.2%). ICD-10 codes were not present for more than half of all true positive suicidality actions in the evaluation. In the case of action-past, ICD-10 codes were missing for nearly three quarters (sensitivity=26.7%) of true positive cases.