## Online supplement DS1

Risk scales tested in the predicting risk of repeat self-harm cohort study

<table>
<thead>
<tr>
<th>Scales</th>
<th>Scale details</th>
<th>Assessment method</th>
<th>Items and cut-off points</th>
</tr>
</thead>
</table>
| Manchester Self-Harm Rule\textsuperscript{17} | 4 items  
- History of self-harm  
- Prior psychiatric treatment  
- Benzodiazepines  
- Current psychiatric treatment | Taken from clinical interview and notes post assessment         | Score of any one indicates moderate/high risk                |
| The ReACT Self-Harm Rule\textsuperscript{19} | 4 items  
- Recent self-harm (last year)  
- Cutting as method  
- Lives alone or homeless  
- Current psychiatric treatment | Taken from clinical interview and notes post assessment         | Score of any one indicates moderate/high risk                |
| The SAD PERSONS scale\textsuperscript{15,42} | 10 items  
- Male gender  
- Older age  
- Depression  
- Previous suicide attempt  
- Excess alcohol or substance use  
- Rational thinking loss  
- Social supports lacking  
- Organised plan  
- No spouse  
- Sickness | Taken from clinical interview and assessment notes               | 3 categories of risk: 0–4, 5–6, 7–10 for low, moderate, and high respectively |
| The Modified SAD PERSONS scale\textsuperscript{15,22} | 10 items  
- Male gender  
- >19<45  
- Depression or hopelessness  
- Previous suicidal attempts or psychiatric care  
- Rational thinking loss  
- Single, widowed or divorced  
- Organised or serious attempt  
- No social support | Taken from clinical interview and assessment notes               | 3 categories of risk: 0–5, 6–8, 9–14, for low, moderate, and high respectively |
- Excessive ethanol or drug use
- Stated future intent

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Description</th>
<th>Administration</th>
<th>Scoring Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Barratt Impulsiveness Scale</td>
<td>30-items based on personality. Responses scored on 4-point likert scale.</td>
<td>Patient completed</td>
<td>30 item self-report. Higher scores indicate greater impulsivity. A cut-off of 97 was used to denote high risk based on Randall et al (2012).</td>
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<tr>
<td>Patient global estimation of risk</td>
<td>1–10 likert scale evaluating likelihood of risk of repeat self-harm in the next six months</td>
<td>Patient completed</td>
<td>1–10 scale, mid-point (0–5, 6+) used as the cut-off</td>
</tr>
<tr>
<td>Clinician global estimation of risk</td>
<td>1–10 likert scale evaluating likelihood of risk of repeat self-harm in the next six months</td>
<td>Clinicians completed as part of the clinical assessment</td>
<td>1–10 scale, mid-point (0–5, 6+) used as the cut-off</td>
</tr>
</tbody>
</table>
Definitions\textsuperscript{13,27,63}

**Sensitivity (Sens)** – the proportion of people who repeat self-harm and are correctly identified by the scale as high risk

**Specificity (Spec)** – the proportion of people who do not repeat self-harm and are correctly identified by the scale as low risk

**Positive predictive value (PPV)** – The probability that the person identified as high risk by the scale actually went on to repeat self-harm

**Negative predictive value (NPV)** – The probability that the person identified as low risk by the scale actually did not repeat self-harm

**Positive Likelihood ratio (LR+)** – The increased likelihood of a high-risk scale result in a patient who repeats self-harm versus one who does not

**Negative likelihood ratio (LR-)** – The decreased likelihood of a low-risk scale result in a patient who repeats self-harm versus one who does not

**Diagnostic odds ratio (DOR)** – The odds of a high-risk result in a patient who repeats self-harm versus one who does not (interpreted the same as an odds ratio).

**Receiver operating characteristic curve (ROC):** Graphically shows the overall discrimination ability of a scale to identify patients who repeat self-harm compared with those who do not at various cut-off points (plotted as sensitivity versus 1-specificity). The performance of the scale is indicated by the calculation of the area under the curve (AUC). Higher AUC indicate greater discriminatory power.

**Youden’s J index (J):** The difference between true positive rate and false positive rate. It provides the maximum point on the curve for both sensitivity and specificity

Additional reference