**Appendix A: Sensitivity analysis**

As reported in this study the ICC for the overall HEART Score was 0.91 (95%CI: 0.87, 0.93) and for the subjective elements of the score: for ‘history’ 0.41 (95%CI: 0.30, 0.52), for ‘ECG’ 0.64 (95%CI: 0.54, 0.73), and for risk factors 0.84 (95%CI: 0.79, 0.89). The conclusion was that there was very strong overall inter-operator reliability. It is acknowledged however that the subjective elements of the score and in particular the history component demonstrated poorer reliability than the overall HEART score.

It was decided to perform a post hoc sensitivity analysis to gain further insight into the reliability between each of the individual categories of rater and ensure that the level of reliability observed was not overly contributed to by outlying strong or weak agreement between two of the individual categories of raters. ICC comparisons were made between all of the individual categories of rater, for the overall ICC, the subjective elements combined and for each of the individual, subjective elements.

The net reclassification index (NRI) was calculated to quantify degree of reclassification if scores for any of the four categories of rater were removed. For this analysis average scores were categorised as high if ≥7, intermediate if ≥ 4 and < 7, low if <4. Of the 88 patients included in the analysis 9 patients had a diagnosis of acute myocardial infarction as defined by the 3rd universal definition of myocardial infarction.

**Table1: ICC between grades**

|  |  |  |  |
| --- | --- | --- | --- |
|  | JUNIOR NURSE | SENIOR NURSE | JUNIOR DOCTOR |
| JUNIOR NURSE |  |  |  |
| SENIOR NURSE | 0.90 (0.85, 0.93) |  |  |
| JUNIOR DOCTOR | 0.92 (0.88, 0.95) | 0.92 (0.89, 0.95) |  |
| SENIOR DOCTOR | 0.90 (0.86, 0.94) | 0.89 (0.84, 0.93) | 0.89 (0.83, 0.92) |

**Table 2: Subjective elements of ICC between grades**

|  |  |  |  |
| --- | --- | --- | --- |
|  | JUNIOR NURSE | SENIOR NURSE | JUNIOR DOCTOR |
| JUNIOR NURSE |  |  |  |
| SENIOR NURSE | 0.74 (0.63, 0.82) |  |  |
| JUNIOR DOCTOR | 0.80 (0.70, 0.86) | 0.82 (0.73, 0.88) |  |
| SENIOR DOCTOR | 0.79 (0.70, 0.86) | 0.78 (0.68, 0.85) | 0.76 (0.66, 0.84) |

**Table 3: History ICC between grades**

|  |  |  |  |
| --- | --- | --- | --- |
|  | JUNIOR NURSE | SENIOR NURSE | JUNIOR DOCTOR |
| JUNIOR NURSE |  |  |  |
| SENIOR NURSE | 0.36 (0.16, 0.53) |  |  |
| JUNIOR DOCTOR | 0.39 (0.19, 0.55) | 0.55 (0.39, 0.68) |  |
| SENIOR DOCTOR | 0.31 (0.11, 0.48) | 0.44 (0.26, 0.60) | 0.43 (0.24, 0.59) |

**Table 4: ECG ICC between grades**

|  |  |  |  |
| --- | --- | --- | --- |
|  | JUNIOR NURSE | SENIOR NURSE | JUNIOR DOCTOR |
| JUNIOR NURSE |  |  |  |
| SENIOR NURSE | 0.59 (0.44, 0.71) |  |  |
| JUNIOR DOCTOR | 0.66 (0.53, 0.76) | 0.60 (0.45, 0.72) |  |
| SENIOR DOCTOR | 0.80 (0.71, 0.87) | 0.57 (0.40, 0.69) | 0.63 (0.49, 0.74) |

**Table 5: Risk factor ICC between grades**

|  |  |  |  |
| --- | --- | --- | --- |
|  | JUNIOR NURSE | SENIOR NURSE | JUNIOR DOCTOR |
| JUNIOR NURSE |  |  |  |
| SENIOR NURSE | 0.81 (0.72, 0.87) |  |  |
| JUNIOR DOCTOR | 0.86 (0.79, 0.90) | 0.88 (0.82, 0.92) |  |
| SENIOR DOCTOR | 0.85 (0.78, 0.90) | 0.88 (0.82, 0.92) | 0.90 (0.85, 0.93) |

In general it was observed that there were no individual comparisons that differed widely from the overall ICCs calculated in the study. Although specific tests of significance between each ICC have not been calculated it can be appreciated that the overlapping confidence intervals for each analysis suggests there is unlikely to be a significant difference between the calculated ICCs.

**Table 6: Net reclassification index**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category of rater removed | JUNIOR NURSE | SENIOR NURSE | JUNIOR DOCTOR | SENIOR DOCTOR |
| Event reclassified up | 0 | 0 | 0 | 0 |
| Event reclassified down | 0 | 0 | 0 | 0 |
| Non-event reclassified up | 2 | 2 | 1 | 1 |
| Non-event reclassified down | 1 | 1 | 0 | 1 |
| NRI | -0.01 | -0.01 | -0.01 | 0 |

The table above illustrates the net reclassification of events when one of the categories of rater was removed. It can be seen that there was minimal reclassification between risk categories on removing one of each of the four categories of rater.