**S4 File. Diagnostic performance of the MTS for the most commonly used MTS flowchart, as determined by the 3-category reference standard**

*Table A. Flowchart Limb problems*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Erasmus MC | Maasstad  | Fernando Fonseca |
|  | All adultsn=4021 | Elderlyn=415 | All adultsn=6829 | Elderlyn=1431 | All adultsn=24,723 | Elderlyn=6504 |
| High urgent patients, n (%) | 80 (2.0) | 16 (3.9) | 144 (2.1) | 63 (4.4) | 528 (2.1) | 183 (2.8) |
| *Absolute classification (%)* |
| Correct triage | 2870 (71.4) | 253 (61.0) | 3705 (54.3) | 722 (50.5) | 14,871 (60.2) | 3551 (54.6) |
| Overtriage | 972 (24.2) | 116 (28.0) | 2782 (40.7) | 584 (40.8) | 3845 (15.6) | 1061 (16.3) |
| Undertriage | 179 (4.5) | 46 (11.1) | 342 (5.0) | 125 (8.7) | 6007 (24.3) | 1892 (29.1) |
|  |  |  |  |  |  |  |
| *Diagnostic accuracy (95% confidence interval)* |
| Sensitivity | 0.21 (0.12 to 0.34) | 0.16(0.06 to 0.38) | 0.22(0.15 to 0.32) | 0.13(0.07 to 0.25) | \* | \* |
| Specificity | 0.98 (0.98 to 0.99) | 0.97(0.94 to 0.98) | 0.98(0.98 to 0.98) | 0.96(0.95 to 0.97) |  |  |
| Positive LR | 11.82(6.50 to 21.51) | 4.81 (1.50 to 15.47) | 12.23(8.07 to 18.54) | 3.31(1.59 to 6.92) |  |  |
| Negative LR | 0.81 (0.70 to 0.93) | 0.87 (0.72 to 1.06) | 0.79(0.71 to 0.88) | 0.90(0.81 to 1.01) |  |  |
| DOR | 14.7(7.0 to 30.6) | 5.5(1.4 to 21.3) | 15.5(9.2 to 25.9) | 3.7(1.6 to 8.5) |  |  |

*\*≤10 high urgent patients available for analysis*

*Table B. Flowchart Unwell adult*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Erasmus MC | Maasstad | Fernando Fonseca |
|  | All adultsn=2429 | Elderlyn=672 | All adultsn=2541 | Elderlyn=1254 | All adultsn=13,272 | Elderlyn=6117 |
| High urgent patients, n (%) | 170 (7.0) | 70 (10.4) | 463 (18.2) | 263 (21.0) | 3507 (26.4) | 2199 (35.9) |
| *Absolute classification (%)* |
| Correct triage | 1467 (60.4) | 388 (57.7) | 1387 (54.6) | 742 (59.2) | 6101 (46.0) | 2451 (40.1) |
| Overtriage | 426(17.5) | 104 (15.5) | 887 (34.9) | 357 (28.5) | 5934 (44.7) | 3120 (51.0) |
| Undertriage | 536 (22.1) | 180 (26.8) | 267 (10.5) | 155 (12.4) | 1237 (9.3) | 546 (8.9) |
|  |  |  |  |  |  |  |
| *Diagnostic accuracy (95% confidence interval)* |
| Sensitivity | 0.33(0.28 to 0.39) | 0.36 (0.27 to 0.47) | 0.58(0.50 to 0.65) | 0.62(0.52 to 0.71) | 0.91 (0.86 to 0.94) | 0.92 (0.86 to 0.96) |
| Specificity | 0.96 (0.96 to 0.97) | 0.93 (0.91 to 0.95) | 0.85(0.83 to 0.86) | 0.82(0.80 to 0.85) | 0.74 (0.74 to 0.75) | 0.65 (0.64 to 0.66) |
| Positive LR | 9.42 (7.14 to 12.42) | 5.59(3.70 to 8.45) | 3.77(3.22 to 4.42) | 3.53(2.89 to 4.31) | 3.56 (3.37 to 3.76) | 2.65 (2.49 to 2.82) |
| Negative LR | 0.69 (0.64 to 0.75) | 0.68 (0.58 to 0.80) | 0.50(0.42 to 0.59) | 0.46(0.36 to 0.60) | 0.12 (0.08 to 0.20) | 0.12 (0.07 to 0.22) |
| DOR | 13.6(9.7 to 19.0) | 8.2(4.8 to 14.2) | 7.5(5.5 to 10.4) | 7.6(4.9 to 11.8) | 29.1 (17.4 to 48.8) | 21.6(11.3 to 41.2) |

*Table C. Flowchart Abdominal pain in adults*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Erasmus MC | Maasstad | Fernando Fonseca |
|  | All adultsn=2027 | Elderlyn=328 | All adultsn=3310 | Elderlyn=656 | All adultsn=13,872 | Elderlyn=3107 |
| High urgent patients, n (%) | 91 (4.5) | 21 (6.4%) | 327 (9.9) | 106 (16.2) | 2302 (16.6) | 507 (16.3) |
| *Absolute classification (%)* |
| Correct triage | 1248 (61.6) | 231 (70.4) | 1610 (48.6) | 387 (59.0) | 6622(47.7) | 1593 (51.3) |
| Overtriage | 564 (27.8) | 57 (17.4) | 1491 (45.0) | 207 (31.6) | 4938 (35.6) | 861 (27.7) |
| Undertriage | 215 (10.6) | 40 (12.2) | 209 (6.3) | 62 (9.5) | 2312 (16.7) | 653 (21.0) |
|  |  |  |  |  |  |  |
| *Diagnostic accuracy (95% confidence interval)* |
| Sensitivity | 0.26 (0.15 to 0.40) | \* | 0.59(0.47 to 0.70) | 0.63(0.48 to 0.76) | \* | \* |
| Specificity | 0.96 (0.95 to 0.97) |  | 0.91(0.90 to 0.92) | 0.87(0.84 to 0.90) |  |  |
| Positive LR | 6.34 (3.65 to 11.03) |  | 6.66(5.29 to 8.37) | 4.87(3.58 to 6.63) |  |  |
| Negative LR | 0.78 (0.65 to 0.92) |  | 0.45(0.34 to 0.60) | 0.43(0.29 to 0.63) |  |  |
| DOR | 8.2(4.0 to 16.8) |  | 14.8(8.9 to 24.6) | 11.4(5.9 to 22.1) |  |  |

*\*≤10 high urgent patients available for analysis*

*Table D. Flowchart Chest pain*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Erasmus MC | Maasstad | Fernando Fonseca |
|  | All adultsn=1349 | Elderlyn=373 | All adultsn=927 | Elderlyn=220 | All adultsn=12,403 | Elderlyn=3968 |
| High urgent patients, n (%) | 285 (21.1) | 95 (25.5) | 608 (65.6) | 175 (79.5) | 4781 (38.5) | 1982 (49.9) |
| *Absolute classification (%)* |
| Correct triage | 582 (43.1) | 159 (42.6) | 512 (55.2) | 129 (58.6) | 4182 (33.7) | 1122 (28.3) |
| Overtriage | 452 (33.5) | 89 (23.9) | 386 (41.6) | 86 (39.1) | 7343 (59.2) | 2631 (66.3) |
| Undertriage | 315 (23.4) | 125 (33.5) | 29 (3.1) | 5 (2.3) | 878 (7.1) | 215 (5.4) |
|  |  |  |  |  |  |  |
| *Diagnostic accuracy (95% confidence interval)* |
| Sensitivity | 0.39 (0.34 to 0.43) | 0.37(0.30 to 0.44) | 0.94(0.91 to 0.96) | 0.95(0.90 to 0.98) | 0.90 (0.85 to 0.93) | 0.91(0.82 to 0.95) |
| Specificity | 0.88 (0.86 to 0.90) | 0.85 (0.80 to 0.90) | 0.60(0.56 to 0.65) | 0.36(0.28 to 0.45) | 0.62 (0.61 to 0.63) | 0.51 (0.49 to 0.52) |
| Positive LR | 3.27 (2.64 to 4.05) | 2.48 (1.68 to 3.68) | 2.37(2.12 to 2.66) | 1.49(1.29 to 1.73) | 2.38 (2.26 to 2.51) | 1.85(1.71 to 2.00) |
| Negative LR | 0.69 (0.64 to 0.75) | 0.74 (0.66 to 0.84) | 0.10(0.07 to 0.15) | 0.13(0.05 to 0.31) | 0.17 (0.11 to 0.25) | 0.18(0.09 to 0.37) |
| DOR | 4.7(3.6 to 6.2) | 3.3(2.0 to 5.5) | 22.9(15.0 to 34.9) | 11.7(4.4 to 31.1) | 14.3(9.1 to 22.5) | 10.2(4.7 to 22.2) |

*Table E. Flowchart Shortness of breath in adults*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Erasmus MC | Maasstad  | Fernando Fonseca |
|  | All adultsn=1110 | Elderlyn=382 | All adultsn=2312 | Elderlyn=1166 | All adultsn=10,907 | Elderlyn=6408 |
| High urgent patients, n (%) | 237 (21.4) | 101 (26.4) | 955 (41.3) | 604 (51.8) | 4495 (41.2) | 3252 (50.7) |
| *Absolute classification (%)* |
| Correct triage | 608 (54.8) | 198 (51.8) | 919 (39.7) | 485 (41.6) | 4225 (38.7) | 2118 (33.1) |
| Overtriage | 273 (24.6) | 84 (22.0) | 1260 (54.5) | 605 (51.9) | 5706 (52.3) | 3796 (59.2) |
| Undertriage | 229 (20.6) | 100 (26.2) | 133 (5.8) | 76 (6.5) | 976 (8.9) | 494 (7.7) |
|  |  |  |  |  |  |  |
| *Diagnostic accuracy (95% confidence interval)* |
| Sensitivity | 0.53 (0.46 to 0.60) | 0.48(0.39 to 0.58) | 0.82(0.75 to 0.87) | 0.84(0.76 to 0.90) | 0.90(0.82 to 0.94) | 0.92(0.84 to 0.96) |
| Specificity | 0.86 (0.83 to 0.88) | 0.81 (0.76 to 0.86) | 0.62(0.60 to 0.64) | 0.52(0.49 to 0.55) | 0.59(0.58 to 0.60) | 0.50 (0.49 to 0.51) |
| Positive LR | 3.68(3.00 to 4.52) | 2.59(1.88 to 3.55) | 2.15(1.97 to 2.35) | 1.74(1.58 to 1.93) | 2.20 (2.05 to 2.36) | 1.83 (1.71 to 1.97) |
| Negative LR | 0.55 (0.47 to 0.64) | 0.64(0.53 to 0.78) | 0.29(0.21 to 0.40) | 0.31(0.20 to 0.47) | 0.18 (0.10 to 0.31) | 0.16(0.08 to 0.35) |
| DOR | 6.7(4.8 to 9.4) | 4.1(2.5 to 6.6) | 7.3(4.9 to 10.9) | 5.7(3.4 to 9.6) | 12.6(6.7 to 23.5) | 11.4(4.9 to 26.2) |

*Table F. Flowchart Headache*

|  |  |  |  |
| --- | --- | --- | --- |
| **Headache**  | Erasmus MC | Maasstad  | Fernando Fonseca |
|  | All adultsn=889 | Elderlyn=163 | All adultsn=730 | Elderlyn=273 | All adultsn=7970 | Elderlyn=1874 |
| High urgent patients, n (%) | 194 (21.8) | 62 (38.0) | 219 (30.0) | 117 (42.9) | 1228 (15.4) | 375 (20.0) |
| *Absolute classification (%)* |
| Correct triage | 468 (52.6) | 91 (55.8) | 268 (36.7) | 116 (42.5) | 4017 (50.4) | 859 (45.8) |
| Overtriage | 300 (33.7) | 39 (23.9) | 436 (59.7) | 145 (53.1) | 2856 (35.8) | 797 (42.5) |
| Undertriage | 121 (13.6) | 33 (20.2) | 26 (3.6) | 12 (4.4) | 1097 (13.8) | 218 (11.6) |
|  |  |  |  |  |  |  |
| *Diagnostic accuracy (95% confidence interval)* |
| Sensitivity | 0.56(0.49 to 0.63) | 0.62(0.50 to 0.72) | 0.76(0.55 to 0.89) | 0.81(0.57 to 0.93) | 0.78 (0.55 to 0.91) | \* |
| Specificity | 0.88(0.86 to 0.91) | 0.81(0.72 to 0.88) | 0.71(0.68 to 0.75) | 0.60(0.53 to 0.65) | 0.85(0.84 to 0.86) |  |
| Positive LR | 4.86 (3.82 to 6.18) | 3.26(2.05 to 5.19) | 2.66(2.04 to 3.47) | 2.01(1.52 to 2.65) | 5.09(3.96 to 6.56) |  |
| Negative LR | 0.50 (0.42 to 0.58) | 0.47(0.35 to 0.64) | 0.33(0.16 to 0.72) | 0.31(0.11 to 0.88) | 0.26(0.11 to 0.62) |  |
| DOR | 9.8(6.8 to 14.1) | 6.9(3.4 to 14.0) | 8.0(2.9 to 22.1) | 6.4(1.8 to 22.9) | 19.4(6.4 to 59.1) |  |

*\*≤10 high urgent patients available for analysis*