Table 1. Actual costs

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Mean** | **Median** | **IQR** | **Max** | **Min** | **Total** | **Obs.** |
| **All Patients** | 31.63 (2696) | 37.73 (3217) | 29.36 (2512) | 66.89 (5687) | 0.38 (33) | 68739 (5859287) | 2173 |
| **No** | 30.53 (2608) | 37.43 (3201) | 32.73 (2790) | 66.06 (5622) | 0.82 (70) | 13161 (1124203) | 431 |
| **Some** | 31.83 (2713) | 37.73 (3217) | 28.77 (5008) | 66.89 (5687) | 0.86 (74) | 45746 (3898177) | 1437 |
| **Severe** | 33.45 (2847) | 39.14 (3331) | 26.49 (2249) | 64.90 (5528) | 5.46 (457) | 9298 (791346) | 278 |
| **ORS only** | 23.89 (2049) | 14.40 (1236) | 30.16 (2587) | 49.56 (4251) | 1.11 (96) | 2628 (225434) | 110 |
| **IVF only** | 16.98 (1445) | 11.58 (979) | 9.39 (790) | 53.91 (4613) | 1.53 (129) | 1053 (89617) | 62 |
| **ORS + IVF only** | 32.72 (2788) | 38.71 (3304) | 28.59 (2450) | 66.89 (5687) | 2.97 (247) | 64813 (5523139) | 1981 |
| **No Fluid** | 12.30 (1055) | 2.05 (176) | 2.50 (214) | 58.30 (5000) | 0.38 (32.59) | 246 (21097) | 20 |

All values include hospital costs and fixed costs of equipment (if applicable), e.g. IVF needles and tubing.

Table 2. NIRUDAK model cost estimation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Mean** | **Median** | **IQR** | **Max** | **Min** | **Total** | **Obs.** |
| **All Patients** | 13.58 (1156) | 3.83 (316) | 23.53 (2008) | 63.67 (5443) | 0 (0) | 29043 (2473248) | 2139 |
| **No** | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 607 |
| **Some** | 3.32 (274) | 3.34 (276) | 1.01 (83) | 5.76 (475) | 0.43 (35) | 2072 (171002) | 624 |
| **Severe** | 29.70 (2535) | 36.09 (3080) | 28.51 (2450) | 63.67 (5443) | 1.57 (131) | 26971 (2302246) | 908 |

These values were calculated by adding the cost of fluid (and IV materials, if applicable) predicted by the NIRUDAK model to the actual cost of hospital stay from the data, if the NIRUDAK model classified these patients as having severe dehydration. For patients classified as having some or no dehydration, the cost of hospital stay was set at zero, as the NIRUDAK model would recommend that these patients be managed on an outpatient basis. The intent of this analysis is to approximate expenses under the NIRDUAK model with variable clinical decisions about discharge time.

Table 3. Actual six-hour costs (after one or two follow ups)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Mean** | **Median** | **IQR** | **Max** | **Min** | **Total** | **Obs.** |
| **All Patients** | 10.14 (986) | 10.18 (989) | 3.08 (255) | 19.12 (1727) | 6.38 (675) | 22032 (2143363) | 2173 |
| **No** | 8.78 (874) | 8.29 (834) | 3.56 (293) | 17.76 (1616) | 6.38 (676) | 3784 (376805) | 431 |
| **Some** | 10.42 (1010) | 10.21 (992) | 2.59 (214) | 18.35 (1664) | 6.38 (676) | 14981 (1451364) | 1437 |
| **Severe** | 10.93 (1051) | 11.42 (1092) | 3.80 (314) | 19.12 (1727) | 6.48 (685) | 3037 (292254) | 278 |
| **ORS only** | 6.45 (682) | 6.43 (680) | 0.07 (6.48) | 6.62 (697) | 6.38 (676) | 709 (75001) | 110 |
| **IVF only** | 9.29 (916) | 8.90 (884) | 2.52 (208) | 13.94 (1300) | 7.01 (728) | 576 (56812) | 62 |
| **ORS + IVF only** | 10.41 (1009) | 10.20 (991) | 2.59 (214) | 19.12 (1727) | 6.38 (676) | 20618 (1998032) | 1981 |
| **No Fluid** | 6.38 (676) | 6.38 (676) | 0 (0) | 6.38 (676) | 6.38 (676) | 128 (13517) | 20 |

Table 4. Fluid only cost comparison

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Actual Median** | **WHO Median** | **NIRUDAK Median** | **Actual IQR** | **WHO IQR** | **NIRUDAK IQR** | **Actual Total** | **WHO Total** | **NIRUDAK Total** | **Actual Obs.** | **WHO Obs.** | **NIRUDAK Obs.** |
| **All Patients** | 5.53 (458) | 4.55 (375) | 3.27 (3217) | 2.69 (324) | 3.83 (316) | 4.27 (354) | 12835 (1064432) | 8574 (708647) | 5850 (483949) | 2173 | 2172 | 2139 |
| **No** | 3.31 (277) | 0 (0) | 0 (0) | 3.92 (324) | 0 (0) | 0 (0) | 1719 (142815) | 0 (0) | 0 (0) | 431 | 491 | 607 |
| **Some** | 5.58 (463) | 4.45 (367) | 3.34 (276) | 2.63 (218) | 1.32 (108) | 1.01 (83) | 8923 (739797) | 4125 (340489) | 2072 (171002) | 1437 | 937 | 624 |
| **Severe** | 6.81 (564) | 6.04 (500) | 4.30 (356) | 3.79 (313) | 1.65 (136) | 1.38 (114) | 2126 (17630) | 4449 (368158) | 3778 (312946) | 278 | 744 | 908 |

Under the NIRUDAK and WHO models, patients hypothetically classified as “Severe” would only receive IVF, patients hypothetically classified as “Some” would only receive ORS, and patients hypothetically classified as “No” received no fluid. In the actual study, patients across diagnosis categories received both fluids, e.g. 1382 patients were classified as having “Some” dehydration in the actual study and received both ORS and IVF. These values include do not hospital costs or fixed costs of equipment. Observations missing diagnostic labels for a particular model were omitted in estimating costs for that model.

Table 5. Comparison of actual costs with estimations of NIRUDAK & WHO costs

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Actual Median** | **WHO Median** | **NIRUDAK Median** | **Actual IQR** | **WHO IQR** | **NIRUDAK IQR** | **Actual Total** | **WHO Total** | **NIRUDAK Total** | **Actual Obs.** | **WHO Obs.** | **NIRUDAK Obs.** |
| **All Patients** | 37.73 (3217) | 4.75 (392) | 3.83 (316) | 29.36 (2512) | 14.73 (1253) | 23.53 (2008) | 68739 (5859287) | 27462 (2328614) | 29043 (2473248) | 2173 | 2172 | 2139 |
| **No** | 37.43 (3201) | 0 (0) | 0 (0) | 32.73 (2790) | 0 (0) | 0 (0) | 13161 (1124203) | 0 (0) | 0 (0) | 431 | 491 | 607 |
| **Some** | 37.73 (3217) | 4.45 (367) | 3.34 (276) | 28.77 (5008) | 1.31 (108) | 1.01 (83) | 45746 (3898177) | 4125 (340489) | 2072 (171002) | 1437 | 937 | 624 |
| **Severe** | 39.14 (3331) | 31.37 (2672) | 36.09 (3080) | 26.49 (2249) | 28.33 (2429) | 28.51 (2450) | 9298 (791346) | 23337 (1988125) | 26971 (2302246) | 278 | 744 | 908 |

Values were calculated using the same methods and for the same purposes as values in Table 2. Values for the NIRUDAK and WHO models were calculated by adding the cost of fluid (and IV materials, if applicable) predicted by the models to the actual cost of hospital stay from the data, if the models classified these patients as having severe dehydration. For patients classified as having some or no dehydration, the cost of hospital stay was set at zero, as both models would recommend that these patients be managed expectantly. This level of analysis estimates and compare total expenses under both models with variable clinical decisions about discharge time. Observations missing diagnostic labels for a particular model were omitted in estimating costs for that model.

Table 6. Comparison of initial recommended resuscitation estimates

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Actual Median** | **WHO Median** | **NIRUDAK Median** | **Actual IQR** | **WHO IQR** | **NIRUDAK IQR** | **Actual Total** | **WHO Total** | **NIRUDAK Total** | **Actual Obs.** | **WHO Obs.** | **NIRUDAK Obs.** |
| **All Patients** | 15.52 (1315) | 14.76 (1250) | 13.84 (1174) | 5.10 (421) | 23.32 (1990) | 34.10 (2913) | 35477 (3006578) | 40264 (3426698) | 39330 (3355529) | 2146 | 2172 | 2139 |
| **No** | 3.31 (277) | 0 (0) | 0 (0) | 3.92 (324) | 0 (0) | 0 (0) | 1719 (142815) | 0 (0) | 0 (0) | 431 | 491 | 607 |
| **Some** | 15.58 (1320) | 14.45 (1225) | 13.34 (1133) | 2.63 (218) | 1.31 (108) | 1.01 (83) | 23293 (1972312) | 13495 (1144154) | 8312 (706207) | 1437 | 937 | 624 |
| **Severe** | 38.81 (3138) | 36.04 (3073) | 34.30 (2929) | 3.79 (313) | 1.65 (136) | 1.38 (114) | 10466 (891451) | 26769 (2282545) | 31018 (2649321) | 278 | 744 | 908 |

Values were calculated by adding fluid costs to the cost of one day of hospital stay for patients classified as having severe dehydration or to the cost of eight hours of hospital stay for those classified as having some dehydration. Hospital costs for patients classified as having no dehydration were set at zero. Fluid costs and diagnostic categories were based on either the actual data or model outputs. Observations missing diagnostic labels were omitted in estimating costs for that category.