### Table A1. Characteristics of the sample by level of triage

| Outcome                  | Total† | Level 1 (n=217) | Level 2 (n=16003) | Level 3 (n=34623) | Level 4 (n=41335) | Level 5 (n=8076) |
|--------------------------|--------|-----------------|-------------------|-------------------|-------------------|------------------|
| Total†                   | 100,254| 0.2 (0.2-0.2)   | 16.0 (15.7-16.2)  | 34.5 (34.2-34.8)  | 41.2 (40.9-41.5)  | 8.1 (7.9-8.2)    |
| Sex†                     |        |                 |                   |                   |                   |                  |
| Male                     | 54,993 | 61.3 (54.5-67.8)| 58.7 (57.9-59.5)  | 55.7 (55.2-56.2)  | 52.9 (52.4-53.4)  | 53.5 (52.4-54.6) |
| Female                   | 45,249 | 38.7 (32.2-45.5)| 41.3 (40.5-42.1)  | 44.3 (43.8-44.8)  | 47.1 (46.6-47.6)  | 46.5 (45.4-47.6) |
| Age†                     |        |                 |                   |                   |                   |                  |
| [0-28d]                  | 1,264  | 3.2 (1.3-6.5)   | 7.4 (7.0-7.9)     | 0.0 (0.0-0.1)     | 0.1 (0.1-0.1)     | 0.1 (0.0-0.2)    |
| [28d-3m]                 | 2,630  | 6.0 (3.2-10.0)  | 10.3 (9.9-10.8)   | 1.4 (1.3-1.6)     | 0.9 (0.8-1.0)     | 1.1 (0.9-1.3)    |
| [3m-1y]                  | 9,800  | 14.7 (10.3-20.2)| 10.6 (10.1-11.1)  | 11.6 (11.3-12.0)  | 7.2 (6.9-7.4)     | 13.2 (12.5-14.0) |
| [1y-3y]                  | 22,319 | 20.7 (15.5-26.7)| 20.1 (19.4-20.7)  | 24.9 (24.4-25.3)  | 20.7 (20.3-21.1)  | 23.6 (22.6-24.5) |
| [3y-7y]                  | 26,159 | 24.0 (18.4-30.2)| 20.5 (19.9-21.1)  | 28.5 (28.0-28.9)  | 26.3 (25.9-26.7)  | 25.9 (25.0-26.9) |
| [7y-12y]                 | 21,392 | 11.1 (7.2-16.0) | 15.5 (15.0-16.1)  | 18.7 (18.3-19.2)  | 25.9 (25.5-26.3)  | 21.0 (20.1-21.9) |
| [12y-18y]                | 16,690 | 20.3 (15.1-26.2)| 15.5 (15.0-16.1)  | 14.8 (14.4-15.2)  | 18.9 (18.5-19.3)  | 15.1 (14.4-15.9) |
| Intensive care unit      | 121    | 7.8 (4.6-12.2)  | 0.5 (0.4-0.6)     | 0.0 (0.0-0.1)     | 0.0 (0.0-0.0)     | 0.0 (0.0-0.0)    |
| Hospitalization a        | 5,687  | 56.2 (49.3-62.9)| 19.9 (19.3-20.5)  | 5.4 (5.2-5.7)     | 1.1 (1.0-1.2)     | 0.5 (0.4-0.7)    |
| Transfer b               | 122    | 0.5 (0.0-2.5)   | 0.5 (0.4-0.6)     | 0.1 (0.1-0.1)     | 0.0 (0.0-0.1)     | 0.0 (0.0-0.1)    |
| Discharged               | 94,324 | 35.9 (29.1-42.2)| 79.1 (78.5-79.8)  | 94.5 (94.2-94.7)  | 98.8 (98.7-98.9)  | 99.4 (99.3-99.6) |
| Diagnosis                |        |                 |                   |                   |                   |                  |
| ENT infectious diseases   | 15,108 | 0.0 (0.0-1.7)   | 6.2 (5.8-6.6)     | 16.0 (15.6-16.4)  | 17.2 (16.8-17.6)  | 18.1 (17.3-19.0) |
| Acute gastroenteritis    | 8,502  | 1.8 (0.5-4.7)   | 10.3 (9.9-10.8)   | 13.9 (13.6-14.3)  | 4.6 (4.4-4.8)     | 1.5 (1.3-1.8)    |
| Asthma                   | 3,073  | 17.5 (12.7-23.2)| 10.5 (10.0-11.0)  | 3.6 (3.4-3.8)     | 0.2 (0.2-0.2)     | 0.3 (0.2-0.4)    |
| Bronchiolitis            | 1,682  | 9.2 (5.7-13.9)  | 6.3 (5.9-6.6)     | 1.7 (1.5-1.8)     | 0.2 (0.1-0.2)     | 0.2 (0.1-0.3)    |
| Flu                      | 1,080  | 0.0 (0.0-1.7)   | 1.0 (0.9-1.2)     | 1.4 (1.3-1.5)     | 0.9 (0.8-1.0)     | 0.8 (0.6-1.0)    |
| Fever                    | 5,044  | 2.8 (1.0-5.9)   | 4.5 (4.2-4.8)     | 6.5 (6.2-6.7)     | 4.3 (4.1-4.5)     | 3.7 (3.3-4.1)    |
| Mild trauma brain injury | 5,238  | 5.5 (2.9-9.5)   | 3.3 (3.0-3.6)     | 6.8 (6.5-7.1)     | 2.7 (2.6-2.9)     | 15.2 (14.4-16.0) |
| Upper limb trauma        | 9,702  | 2.3 (0.8-5.3)   | 4.3 (4.0-4.6)     | 6.7 (6.5-7.0)     | 14 (13.7-14.3)    | 11.1 (10.5-11.8) |
| Lower limb trauma        | 8,171  | 0.9 (0.1-3.3)   | 1.4 (1.3-1.6)     | 2.6 (2.4-2.8)     | 15.2 (14.8-15.5)  | 9.6 (9.0-10.3)   |
| Burn                     | 453    | 2.3 (0.8-5.3)   | 0.6 (0.5-0.7)     | 0.5 (0.4-0.6)     | 0.4 (0.3-0.4)     | 0.2 (0.1-0.3)    |
| Visceral pathologies     | 1,297  | 0.5 (0.0-2.5)   | 3.4 (3.1-3.7)     | 1.6 (1.5-1.8)     | 0.4 (0.4-0.5)     | 0.1 (0.1-0.2)    |

Length of stay (mn)†‡

| level of triage | Length of stay (mn)†‡ |
|-----------------|-----------------------|
| Level 1         | 205.2 ± 103.1         |
| Level 2         | 146.0 ± 96.1‡         |
| Level 3         | 134.6 ± 85.2‡         |
| Level 4         | 118.6 ± 74.8‡         |
| Level 5         | 107.2 ± 71.7‡         |

Values are presented as percentages with their 95% CI or means (Length of stay) with their standard deviation

†p<0.001 by level of triage; M: Top 6 of the medical diagnosis, S: Top 5 of the surgical diagnosis;
‡p<0.001 by periods: 2016-2017 versus 2018-2019

* Medical and surgical units

* 122 children were transferred to 2 pediatric units (hematology, neonatology) that are located at the Archet university hospital of Nice (2miles away from the Lenval Children’s hospital)

* Fever of unknown origin

* Appendicitis, occlusive pathologies, hernial pathologies, ovarian pathologies

* Length of stay defined as the duration between the time of the admission and the time of the exit of the PED (in minutes)
| Type of complaint†‡ | n   | Level 1 (n=217) | Level 2 (n=16003) | Level 3 (n=34623) | Level 4 (n=41335) | Level 5 (n=8076) |
|---------------------|-----|-----------------|-------------------|-------------------|-------------------|-----------------|
| **Medical complaint**|     |                 |                   |                   |                   |                 |
| ENT diseases†       | 9,904 | 4.6 (2.2-8.3)  | 3.8 (3.5-4.1)     | 4.3 (4.1-4.5)     | 15.8 (15.5-16.2) | 15.5 (14.7-16.3) |
| Pulmonary diseases† | 11,628 | 40.6 (34.0-47.4)| 31.8 (31.1-32.6) | 18.4 (18.1-18.9) | 0.1 (0.1-0.2)   | 0.1 (0.0-0.2)   |
| Cardiovascular diseases† | 1,813 | 4.6 (2.2-8.3)  | 2.9 (2.7-3.2)     | 1.1 (1.0-1.2)     | 2.0 (1.8-2.1)   | 1.8 (1.6-2.1)   |
| Neurology†         | 2,777  | 23.0 (17.6-29.2)| 5.4 (5.1-5.8)     | 3.4 (3.2-3.5)     | 1.7 (1.6-1.8)   | 0.0 (0.0-0.1)   |
| Digestive diseases† | 17,134 | 2.3 (0.8-5.3)  | 19.9 (19.3-20.5)  | 24.6 (24.2-25.1)  | 12.8 (12.5-13.1) | 1.6 (1.3-1.9)   |
| Urology-nephrology† | 2,982  | 0.5 (0.2-2.5)  | 4.5 (4.1-4.8)     | 3.1 (2.9-3.3)     | 2.9 (2.7-3.1)   | 0.1 (0.0-0.2)   |
| Gynecology†        | 271    | 0.0 (0.0-1.7)  | 0.2 (0.2-0.3)     | 0.4 (0.4-0.5)     | 0.2 (0.1-0.2)   | 0.1 (0.0-0.2)   |
| Dermatology†       | 7,835  | 2.3 (0.8-5.3)  | 2.4 (2.2-2.7)     | 2.8 (2.6-3.0)     | 11.7 (11.4-12.0)| 20.2 (19.3-21.1)|
| Endocrinology-metabolism disorders† | 267 | 0.9 (0.1-3.3) | 1.1 (0.9-1.3) | 0.2 (0.2-0.3) | 0.0 (0.0-0.0) | 0.0 (0.0-0.0) |
| Infectious diseases† | 11,962 | 5.5 (2.9-9.5)  | 7.2 (6.8-7.7)     | 13.0 (12.7-13.4)  | 12.2 (11.9-12.5)| 15.6 (14.8-16.4) |
| Rheumatology-pain† | 3,142  | 0.5 (0.0-2.5)  | 4.5 (4.2-4.8)     | 3.8 (3.6-4.0)     | 2.7 (2.6-2.9)   | 0.0 (0.0-0.0)   |
| Hematology†        | 161    | 0.0 (0.0-1.7)  | 0.9 (0.7-1.0)     | 0.1 (0.0-0.1)     | 0.0 (0.0-0.0)   | 0.0 (0.0-0.0)   |
| Poisoning†         | 174    | 0.0 (0.0-1.7)  | 0.4 (0.3-0.6)     | 0.2 (0.2-0.3)     | 0.0 (0.0-0.1)   | 0.0 (0.0-0.1)   |
| Others†            | 1,038  | 0.0 (0.0-1.7)  | 3.0 (2.8-3.3)     | 0.1 (0.0-0.1)     | 1.0 (0.9-1.1)   | 1.5 (1.2-1.8)   |
| **Surgical complaint** |     |                 |                   |                   |                   |                 |
| Head & neck trauma† | 9,132  | 2.3 (0.8-5.3)  | 4.6 (4.3-5.0)     | 13.5 (13.2-13.9)  | 5.1 (4.9-5.4)   | 19.5 (18.6-20.3)|
| Upper limb trauma† | 9,674  | 0.9 (0.1-3.3)  | 3.4 (3.1-3.7) †   | 6.3 (6.1-6.6)     | 14.4 (14.1-14.7)| 12.3 (11.6-13.0)|
| Lower limb trauma† | 8,290  | 0.0 (0.0-1.7)  | 1.0 (0.9-1.2)     | 2.1 (1.9-2.2)     | 15.7 (15.4-16.1)| 11.4 (10.7-12.1)|
| Trunk-pelvis-urogenital trauma† | 946 | 0.5 (0.0-2.5) | 0.5 (0.4-0.7) | 1.1 (1.0-1.2) | 1.1 (1.0-1.3) | 0.1 (0.1-0.2) |
| Burns†             | 408    | 2.3 (0.8-5.3)  | 0.5 (0.4-0.7)     | 0.5 (0.4-0.6)     | 0.3 (0.3-0.4)   | 0.1 (0.1-0.3)   |
| Others†            | 716    | 9.2 (5.7-13.9) | 1.7 (1.5-1.9)     | 1.0 (0.9-1.1)     | 0.2 (0.2-0.3)   | 0.0 (0.0-0.0)   |

Values are presented as percentages with their 95% CI
†p<0.001 by level of triage
‡p<0.001 by periods: 2016-2017 versus 2018-2019
Table A3. Agreement in triage between *pediaTRI* versus PEWS in screening “high-level emergency” and “low-level emergency”

| PEWS | Pediatric triage tool *pediaTRI* | |
|------|----------------------------------|-----|
|      | Stage 1^a| Stage 2^a| Stage 3^b| Stage 4^b| Stage 5^b| Total |
| ≥ 4/9 | 74^c  | 1,624^c  | 575^d  | 51^d  | 5^d  | 2,329 |
| ≤ 3/9 | 143^e  | 14,379^e  | 34,048^c  | 41,284^c  | 8,071^c  | 97,925 |
| Total  | 217  | 16,003  | 34,623  | 41,335  | 8,076  | 100,254 |

^a High-Level of emergency  
^b Low-level of emergency  
^c Agreement in triaging patients of *pediaTRI* versus PEWS according to high-level emergencies  
^d Under-triage of *pediaTRI* versus PEWS  
^e Over-triage of *pediaTRI* versus PEWS
Table A4. Sensitivity, specificity, predictive values and likelihood ratios of pediatri versus PEWS (Continued on next page)

| Type of complaint†‡ | Surgical | Medical |
|---------------------|----------|---------|
| ENT diseases†       | 9,904    | 63.8 (5.8-8.0) | 0.2 (0.1-0.3) | 43.5 (23.6-65.5) | 93.8 (93.3-94.3) | 1.6 (0.8-2.9) | 99.9 (98.9-99.9) | 7.0 (4.4-11.2) | 0.6 (0.4-0.9) |
| Pulmonary diseases† | 11,628   | 44.6 (43.4-45.5) | 17.2 (16.5-17.9) | 75.4 (73.4-77.3) | 61.8 (60.9-62.8) | 29.1 (27.9-30.4) | 92.4 (91.7-93.0) | 2.0 (1.9-2.0) | 0.4 (0.4-0.4) |
| Cardiovascular diseases | 1,813 | 26.5 (24.5-28.6) | 3.1 (2.4-4.1) | 38.6 (26.0-52.4) | 73.9 (71.8-76.0) | 4.6 (2.9-6.9) | 97.4 (96.4-98.2) | 1.5 (1.1-2.1) | 0.8 (0.7-1.0) |
| Neurology†          | 2,777    | 33.1 (31.4-34.9) | 2.3 (1.8-3.0) | 92.3 (80.9-95.7) | 68.3 (66.5-70.0) | 6.5 (5.0-8.3) | 99.7 (99.4-99.9) | 2.9 (2.7-3.2) | 0.1 (0.0-0.3) |
| Digestive diseases† | 17,134   | 18.6 (18.0-19.2) | 0.2 (0.1-0.2) | 60.7 (40.6-78.5) | 81.4 (80.9-82.0) | 0.5 (0.3-0.9) | 99.9 (99.9-100.0) | 3.3 (2.4-4.4) | 0.5 (0.3-0.8) |
| Urology-nephropathy | 2,982    | 24.0 (22.5-25.6) | 0.0 (0.0-0.1) | NA | 76.0 (74.4-77.5) | 0.0 (0.0-0.5) | 100.0 (98.8-100.0) | NA | NA |
| Gynecology          | 2,71     | 12.9 (9.2-17.5) | 0.4 (0.2-2.0) | 100.0 (2.5-100.0) | 87.4 (82.8-91.1) | 2.9 (0.1-14.9) | 100.0 (98.4-100.0) | 7.9 (5.8-10.9) | NA |
| Dermatology         | 7,835    | 5.0 (4.5-5.5) | 0.1 (0.1-0.3) | 36.4 (10.9-69.2) | 95.0 (94.5-95.5) | 1.0 (0.3-2.6) | 99.9 (98.8-100) | 7.3 (3.3-1.6) | 0.7 (0.4-1.0) |
| Endocrino-metabo. Dis. | 267 | 66.3 (60.3-71.9) | 3.0 (1.3-5.8) | 87.5 (47.3-99.7) | 34.4 (28.6-40.5) | 4.0 (1.6-8.0) | 98.9 (94.0-100.0) | 1.3 (1.0-1.8) | 0.4 (0.1-2.3) |
| Infectious diseases† | 11,962   | 9.8 (9.3-10.3) | 0.8 (0.7-1.0) | 50.0 (39.8-60.2) | 90.5 (90.0-91.1) | 4.3 (2.3-5.6) | 99.5 (99.4-99.7) | 5.3 (4.3-6.5) | 0.5 (0.5-0.7) |
| Rheumatology-pain    | 3,142    | 22.9 (21.5-24.4) | 0.2 (0.1-0.4) | 83.3 (35.9-99.6) | 77.2 (75.7-78.7) | 0.7 (0.2-1.6) | 100.0 (98.8-100.0) | 3.7 (2.5-5.3) | 0.3 (0.0-1.3) |
| Hematology           | 161      | 85.1 (78.6-90.2) | 0.6 (0.3-3.4) | 100.0 (2.5-100.0) | 15.0 (9.9-21.5) | 0.7 (0.4-0.7) | 100.0 (85.8-100.0) | 1.2 (1.1-1.3) | NA |
| Poisoning            | 174      | 40.8 (33.4-48.5) | 1.7 (0.4-5.0) | 66.7 (9.4-92.2) | 59.6 (51.9-67.1) | 2.8 (0.3-9.8) | 99.0 (94.7-100.0) | 1.7 (0.7-3.8) | 0.6 (0.1-2.8) |
| Others               | 1,038    | 46.5 (43.5-49.6) | 0.0 (0.0-0.4) | NA | 53.5 (50.4-56.5) | 0.0 (0.0-0.8) | 100.0 (99.3-100.0) | NA | NA |

*Surgical complaint*  
Head & neck trauma 9,132 8.2 (7.6-8.7) 0.1 (0.0-0.2) 42.9 (39.9-81.6) 91.9 (91.3-92.4) 0.4 (0.1-1.2) 100.0 (99.9-100.0) 5.3 (2.2-12.4) 0.6 (0.3-1.2)  
Upper limb trauma 9,674 5.7 (5.2-6.2) 0.1 (0.0-0.1) 40.0 (35.8-83.5) 94.3 (93.9-94.8) 0.4 (0.1-3.1) 100.0 (99.9-100.0) 7.1 (0.2-2.08) 0.6 (0.3-1.3)  
Lower limb trauma 8,290 2.0 (1.7-2.3) 0.0 (0.0-0.0) NA 98.0 (97.7-98.3) 0.0 (0.2-3.1) 100.0 (100.0-100.0) NA NA  
Trunk-pelv-urogen. trauma 946 9.3 (7.5-11.3) 0.0 (0.0-0.4) NA 90.7 (88.7-92.5) 0.0 (0.0-4.1) 100.0 (99.6-100.0) NA NA  
Burns 408 22.1 (18.1-26.4) 0.0 (0.0-0.9) NA 77.9 (73.6-81.9) 0.0 (0.0-4.0) 100.0 (98.8-100.0) NA NA  
Others 716 39.9 (36.3-43.6) 1.5 (0.8-2.7) 36.4 (10.9-69.2) 60.0 (56.3-63.6) 1.4 (0.4-3.5) 98.4 (96.7-99.3) 0.9 (0.4-2.0) 1.1 (0.7-1.7)

*Immediate and very urgent category; LR+=likelihood ratio for high-level emergency triage test result; LR-=likelihood ratio for low-level emergency triage test result. Sensitivity % (CI95)= high-level emergency; Specificity % (CI95)= low-level emergency  
†p<0.001 per type of level of emergency assigned by pediatri versus PEWS; †p<0.001 by periods: 2016-2017 versus 2018-2019; NA Not applicable
Table A4. Sensitivity, specificity, predictive values and likelihood ratios of *pediatri* versus PEWS (continued from previous page)

| Diagnosis                          | n       | *pediatri* | PEWS | Sensitivity | Specificity | PPV   | NPV   | LR+   | LR-   |
|------------------------------------|---------|------------|------|-------------|-------------|-------|-------|-------|-------|
| ENT infect. Dis.†                  | 15,108  | 6.6 (6.2-7.0) | 1.5 (1.4-1.8) | 27.5 (21.8-33.7) | 93.8 (93.4-94.2) | 6.5 (5.0-8.2) | 98.8 (98.6-99.0) | 4.4 (3.5-5.5) | 0.8 (0.7-0.8) |
| Acute gastroenteritis†             | 8,502   | 19.5 (18.6-20.3) | 0.4 (0.3-0.5) | 57.6 (39.2-74.5) | 80.7 (79.8-81.5) | 1.1 (0.7-1.8) | 99.8 (99.7-99.9) | 3.0 (2.2-4.0) | 0.5 (0.4-0.8) |
| Asthma†                            | 3,073   | 55.8 (54.0-57.5) | 37.1 (35.4-38.9) | 86.3 (84.2-88.3) | 62.3 (60.1-64.4) | 57.5 (55.1-59.8) | 88.5 (86.7-90.2) | 2.3 (2.2-2.4) | 0.2 (0.2-0.3) |
| Bronchiolitis†                     | 1,682   | 60.8 (58.4-63.1) | 10.1 (8.7-11.6) | 77.1 (70.0-83.1) | 41.1 (38.6-43.6) | 12.8 (10.8-15.0) | 94.1 (92.0-95.8) | 1.3 (1.2-1.4) | 0.6 (0.4-0.7) |
| Flu†                              | 1,080   | 15.5 (13.4-17.8) | 2.7 (1.8-3.8) | 48.3 (29.4-67.5) | 85.4 (83.2-87.5) | 8.4 (4.7-13.7) | 98.4 (97.3-99.1) | 3.3 (2.2-5.0) | 0.6 (0.4-0.9) |
| Fever†                            | 5,044   | 14.4 (13.5-15.4) | 2.0 (1.6-2.4) | 51.5 (41.3-61.6) | 86.3 (85.4-87.3) | 7.2 (5.4-9.3) | 98.9 (98.5-99.2) | 3.8 (3.1-4.6) | 0.6 (0.5-0.7) |
| Mild trauma brain injury           | 5,238   | 10.3 (9.4-11.1) | 0.1 (0.0-0.2) | 50.0 (6.8-93.2) | 89.8 (88.9-90.6) | 0.4 (0.0-1.3) | 100.0 (99.8-100.0) | 4.9 (1.8-13.1) | 0.6 (0.2-1.5) |
| Upper limb trauma                  | 9,702   | 7.1 (6.6-7.7) | 0.1 (0.0-0.1) | 50.0 (11.8-88.2) | 92.9 (92.4-93.4) | 0.4 (0.1-1.3) | 100.0 (99.9-100.0) | 7.0 (3.2-15.7) | 0.5 (0.2-1.2) |
| Lower limb trauma                  | 8,171   | 2.8 (2.5-3.2) | 0.0 (0.0-0.1) | 100.0 (2.5-100.0) | 97.2 (96.8-97.5) | 0.4 (0.0-2.4) | 100.0 (100.0-100.0) | 3.6 (3.1-4.0) | NA |
| Burn                               | 453     | 21.9 (18.1-25.9) | 0.0 (0.0-0.8) | NA | 78.1 (74.1-81.9) | 0.0 (0.0-3.7) | 100.0 (99.0-100.0) | NA | NA |
| Visceral pathologies               | 1,297   | 42.3 (39.5-45.0) | 0.2 (0.0-0.6) | 50.0 (1.3-98.7) | 57.8 (55.0-60.5) | 0.2 (0.0-1.0) | 99.9 (99.3-100.0) | 1.2 (0.3-4.7) | 0.9 (0.2-3.5) |

*Immediate and very urgent category; LR+=likelihood ratio for high-level emergency triage test result; LR−=likelihood ratio for low-level emergency triage test result.
Sensitivity % (CI95)= high-level emergency; Specificity % (CI95)= low-level emergency.
†p<0.001 per type of level of emergency assigned by *pediatri* versus PEWS; ‡p<0.001 by periods: 2016-2017 versus 2018-2019; NA Not applicable.