**Supplemental Digital Content**

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| Supplemental Digital Content, table 1. Aetiologies of AMS in the ED stratified against age (*n* = 554) |
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| Etiologic factors | No. of patients (%) | Patients <60 years (n=189) | Patients $\geq $60 years (n=365) | *P value* |
| **Neurological causes**  |  |
|  |  |  |  |  |
| **Cerebrovascular disease**  | 24 (4.33) | 7 (3.70) | 17 (4.66) | 0.601 |
| **Seizures/epilepsy**  | 19 (3.43) | 6 (3.17) | 13 (3.56) | 0.812 |
| **Traumatic brain injury**  | 16 (2.89) | 6 (3.17) | 10 (2.74) | 0.772 |
| **Dementia or delirium**  | 14 (2.53) | 2 (1.09) | 12 (3.29) | 0.155 |
| **Other diseases of CNS**  | 13 (2.35) | 3 (1.53) | 10 (2.74) | 0.558 |
| **Non-neurological causes1** |  |
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| **Infections** | 105 (18.95) | 7 (3.70) | 98 (26.85) | $\leq $0.001\*\*\* |
|  *Pneumonia*  | *45 (8.12)* | *3 (1.59)* | *42 (11.51)* | $\leq $*0.001\*\*\** |
| *Urinary tract* | *33 (5.96)* | *1 (0.53)* | *32 (8.77)* | $\leq $*0.001\*\*\** |
|  *Sepsis*  | *8 (1.44)* | *1 (0.53)* | *7 (1.92)* | *0.194* |
|  *Other*  | *19 (3.43)* | *2 (1.06)* | *17 (4.66)* | *<0.05\** |
| **Intoxication** | 74 (13.36) | 56 (29.63) | 18 (4.93) | $\leq $0.001\*\*\* |
|  *Acute alcohol intoxication* | *48 (8.66)* | *40 (21.16)* | *8 (2.19)* | $\leq $*0.001\*\*\** |
|  *Intoxication, non-alcoholic*  | *26 (4.69)* | *16 (8.47)* | *10 (2.74)* | $\leq $*0.01\*\** |
| **System/organ dysfunction** | 47 (8.48) | 10 (5.29) | 37 (10.14) | 0.052 |
| **Metabolic, nutritional, or endocrinal**  | 30 (5.42) | 6 (3.17) | 24 (3.56) | 0.094 |
| **Trauma**  | 26 (4.69) | 12 (6.35) | 14 (3.83)  | 0.185 |
| **Miscellaneous2** | 23 (4.15) | 6 (3.17) | 17 (4.66) | 0.407 |
| **R-diagnoses3** | 123 (22.20) | 53 (28.04) | 70 (19.18) | $\leq $0.05\* |
|  *Fainting/syncope* | *39 (7.04)* | *16 (8.47)* | *23 (6.30)* | *0.345* |
|  *Convulsions/cramps* | *16 (2.89)* | *8 (4.23)* | *8 (2.19)* | *0.174* |
|  *Malaise* | *15 (2.71)* | *9 (4.76)* | *6 (1.64)* | $\leq $*0.05\** |
|  *Other R-diagnoses* | *53 (9.57)* | *20 (10.58)* | *33 (9.04)* | *0.559* |
| **Z-diagnoses4** | 40 (7.22) | 15 (7.94) | 25 (6.85) | 0.639 |
| **Note**: 1Oncologic and infectious diseases involving CNS were included in ‘other diseases of CNS’ (n = 4). 2 Miscellaneous diagnosis includes different extra-cranial diagnoses within ICD10 chapters 1-14, e.g., oncologic diseases (n = 7) and psychiatric diseases (n = 4). Grey lettering indicates subdivision of the aetiological factor. \**p < 0.05, \*\*p ≤ 0.01, \*\*\*p ≤ 0.001.* |

# Supplemental Digital Content, fig. 1.

# *Age* *distribution****.*** Frequency of specific age occurrence in the study population.



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| Supplemental Digital Content, fig. 2. *Kaplan-Meier Curve.* Cumulative incidence proportions for the five aetiologies with the most observed deaths. |
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|  | Day one indicates the day of admission to the ED. Log-rank test *p* < 0.001\*\*\*. |  |