

Figure S1 Diagnosis rate of various diagnoses in the single shock (A) or mixed shock (B).

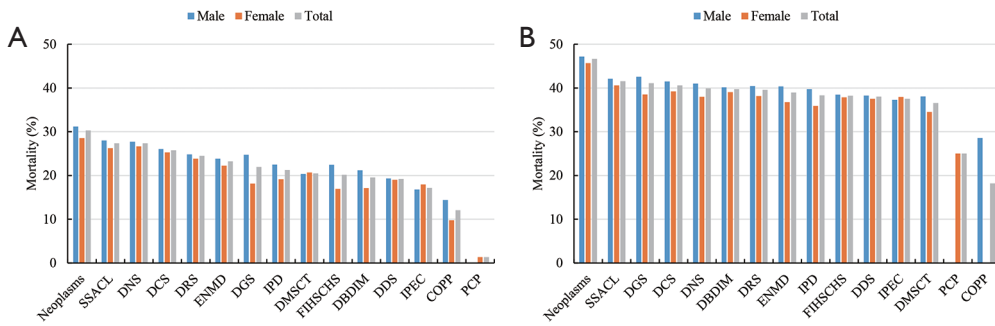


Figure S2 Diagnostic mortality in patients with single shock (A) or mixed shock (B).

Table S1 Fifteen categories and their abbreviation based in the ICD-10

| Abbreviation | Disease | ICD-10 code |
|--------------|---|-------------|
| IPD | Certain infectious and parasitic disease | A00-B99 |
| Neoplasms | Neoplasms | C00-D48 |
| DBDIM | Diseases of the Blood and Blood-Forming Organs and Certain Disorders Involving the Immune Mechanism | D50-D89 |
| ENMD | Endocrine, nutritional and metabolic diseases | E00-E90 |
| DNS | Diseases of the nervous system | G00-G99 |
| DCS | Diseases of the circulatory system | I00-I99 |
| DRS | Diseases of the respiratory system | J00-J99 |
| DDS | Diseases of the digestive system | K00-K99 |
| DMSCT | Diseases of the musculoskeletal system and connective tissue | M00-M99 |
| DGS | Diseases of the genitourinary system | N00-N99 |
| PCP | Pregnancy, childbirth and the puerperium | O00-O99 |
| COPP | Certain conditions originating in the perinatal period | P00-P96 |
| SSACL | Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified | R00-R99 |
| IPEC | Injury, poisoning and certain other consequences of external causes | S00-T98 |
| FIHSCHS | Factors influencing health status and contact with health services | Z00-Z99 |

Table S2 Characteristics of patients with single or mixed shock according to front page information

| | Single Shock | Mixed Shock |
|-----------------------------------|---------------|-------------|
| No. | 281281 | 8147 |
| Age, mean (SD), y | 59.3 (20.7) | 65.1 (18.8) |
| Age group, N (%) | | |
| 0–18 | 12531 (4.4) | 220 (2.7) |
| 19–65 | 143978 (51.2) | 3324 (40.8) |
| ≥66 | 124772 (44.4) | 4603 (56.5) |
| Gender, N (%) | | |
| Male | 173383 (61.6) | 5048 (62.0) |
| Female | 107898 (38.4) | 3099 (38.0) |
| Ward of hospital admission, N (%) | | |
| Male | 125591 (44.6) | 3621 (44.4) |
| Female | 78089 (27.8) | 1564 (19.2) |
| Male | 14064 (5.0) | 517 (6.3) |
| Female | 42934 (15.3) | 1913 (23.5) |
| Male | 9880 (3.5) | 265 (3.3) |
| Female | 10723 (3.8) | 267 (3.3) |
| Primary Diagnosis, N (%) | | |
| IPD | 7307 (2.6) | 274 (3.4) |
| Neoplasms | 15882 (5.7) | 513 (6.3) |
| DBDIM | 2784 (1.0) | 83 (1.0) |
| ENMD | 4699 (1.7) | 275 (3.4) |
| DNS | 2208 (0.8) | 71 (0.9) |
| DCS | 43000 (15.3) | 1380 (16.9) |
| DRS | 28187 (10.0) | 1294 (15.9) |
| DDS | 61847 (22.0) | 1208 (14.8) |
| DMSCT | 1936 (0.7) | 91 (1.1) |
| DGS | 10838 (3.9) | 328 (4.0) |
| PCP | 9504 (3.4) | 35 (0.4) |
| COPP | 1119 (0.4) | 8 (0.1) |
| SSACL | 50077 (17.8) | 1680 (20.6) |
| IPEC | 31772 (11.3) | 552 (6.8) |
| FIHSCHS | 3362 (1.2) | 90 (1.1) |
| Other | 2310 (0.8) | 80 (1.0) |
| Unknown | 4449 (1.6) | 185 (2.3) |
| Region, N (%) | | |
| Northeast | 20364 (7.2) | 526 (6.5) |
| North | 26077 (9.3) | 1161 (14.2) |
| East | 68507 (24.4) | 1719 (21.1) |
| South | 46491 (16.5) | 1469 (18) |
| Centre | 41309 (14.7) | 989 (12.1) |
| Northwest | 21112 (7.5) | 601 (7.4) |
| Southwest | 57421 (20.4) | 1682 (20.7) |

Table S2 (continued)

Table S2 (continued)

| | Single Shock | Mixed Shock |
|-----------------------------------|----------------------------|-----------------------------|
| GDP, N (%) | | |
| Tertile 1 | 110251 (39.2) | 3385 (41.6) |
| Tertile 2 | 94251 (33.5) | 2422 (29.7) |
| Tertile 3 | 76779 (27.3) | 2340 (28.7) |
| Hospital stay, median (IQR), days | 9 (3 to 18) | 9 (3 to 20) |
| Hospital cost, median (IQR), RMB | 26114 (11194.6 to 60602.0) | 45744 (17431.6 to 113108.9) |
| Mortality, N (%) | 55887 (19.9) | 3070 (37.7) |

Table S3 Types of mixed shock

| Mixed shock | Cases numbers | Proportion (%) | Number of deaths | Mortality (%) |
|--|---------------|----------------|------------------|---------------|
| Septic shock + hypovolemic shock | 4706 | 57.76 | 1546 | 32.85 |
| Septic shock + cardiogenic shock | 2388 | 29.31 | 1079 | 45.18 |
| Cardiogenic shock + hypovolemic shock | 605 | 7.43 | 260 | 42.98 |
| Septic shock + cardiogenic shock + hypovolemic shock | 142 | 1.74 | 68 | 47.89 |
| Hypovolemic shock + obstructive shock | 133 | 1.63 | 52 | 39.10 |
| Septic shock + obstructive shock | 78 | 0.96 | 28 | 35.90 |
| Cardiogenic shock + obstructive shock | 69 | 0.85 | 28 | 40.58 |
| Septic shock + cardiogenic shock + obstructive shock | 12 | 0.15 | 3 | 25.00 |
| Cardiogenic shock + hypovolemic shock + obstructive shock | 11 | 0.14 | 5 | 45.45 |
| Septic shock + hypovolemic shock + obstructive shock | 2 | 0.02 | 1 | 50.00 |
| Septic shock + cardiogenic shock + hypovolemic shock + obstructive shock | 1 | 0.01 | 0 | 0.00 |
| Total | 8187 | 100 | 3070 | 37.68 |

Table S4 Different shock types combined with other shock

| | Cases numbers | Proportion (%) |
|---------------------------------------|---------------|----------------|
| Septic shock combined (N=121543) | | |
| Hypovolemic shock | 4851 | 3.99 |
| Cardiogenic shock | 2543 | 2.09 |
| Obstructive shock | 93 | 0.08 |
| Cardiogenic shock combined (N=44597) | | |
| Septic shock | 2543 | 5.70 |
| Hypovolemic shock | 759 | 1.70 |
| Obstructive shock | 93 | 0.21 |
| Hypovolemic shock combined (N=128436) | | |
| Septic shock | 4851 | 3.78 |
| Cardiogenic shock | 759 | 0.59 |
| Obstructive shock | 147 | 0.11 |
| Obstructive shock combined (N=3168) | | |
| Hypovolemic shock | 147 | 4.64 |
| Septic shock | 93 | 2.94 |
| Cardiogenic shock | 93 | 2.94 |

Table S5 Diagnosis rate of various diagnoses in septic shock patients (in descending order of total diagnosis rate)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|-----------------|---------------|---------------|-----------------|---------------|---------------|-----------------|---------------|---------------|
| | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) |
| DRS | 54929 | 73862 | 74.37 | 31201 | 47681 | 65.44 | 86130 | 121543 | 70.86 |
| ENMD | 45635 | 73862 | 61.78 | 30648 | 47681 | 64.28 | 76283 | 121543 | 62.76 |
| DCS | 44069 | 73862 | 59.66 | 28117 | 47681 | 58.97 | 72186 | 121543 | 59.39 |
| DDS | 43342 | 73862 | 58.68 | 26950 | 47681 | 56.52 | 70292 | 121543 | 57.83 |
| SSACL | 30411 | 73862 | 41.17 | 18030 | 47681 | 37.81 | 48441 | 121543 | 39.86 |
| DGS | 27602 | 73862 | 37.37 | 19490 | 47681 | 40.88 | 47092 | 121543 | 38.75 |
| IPD | 26828 | 73862 | 36.32 | 17372 | 47681 | 36.43 | 44200 | 121543 | 36.37 |
| DBDIM | 23222 | 73862 | 31.44 | 15709 | 47681 | 32.95 | 38931 | 121543 | 32.03 |
| FIHSCHS | 12430 | 73862 | 16.83 | 7620 | 47681 | 15.98 | 20050 | 121543 | 16.5 |
| Neoplasms | 12548 | 73862 | 16.99 | 7130 | 47681 | 14.95 | 19678 | 121543 | 16.19 |
| DNS | 11746 | 73862 | 15.9 | 6190 | 47681 | 12.98 | 17936 | 121543 | 14.76 |
| IPEC | 8311 | 73862 | 11.25 | 4620 | 47681 | 9.69 | 12931 | 121543 | 10.64 |
| DMSCT | 5979 | 73862 | 8.09 | 4818 | 47681 | 10.1 | 10797 | 121543 | 8.88 |
| PCP | - | - | - | 613 | 47681 | 1.29 | 613 | 47681 | 1.29 |
| COPP | 725 | 73862 | 0.98 | 501 | 47681 | 1.05 | 1226 | 121543 | 1.01 |

Table S6 Diagnosis rate of various diagnoses in cardiogenic shock patients (in descending order of total diagnosis rate)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|-----------------|---------------|---------------|-----------------|---------------|---------------|-----------------|---------------|---------------|
| | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) |
| DCS | 26267 | 26772 | 98.11 | 17433 | 17825 | 97.8 | 43700 | 44597 | 97.99 |
| DRS | 15830 | 26772 | 59.13 | 10273 | 17825 | 57.63 | 26103 | 44597 | 58.53 |
| ENMD | 14508 | 26772 | 54.19 | 10599 | 17825 | 59.46 | 25107 | 44597 | 56.3 |
| DDS | 9055 | 26772 | 33.82 | 5951 | 17825 | 33.39 | 15006 | 44597 | 33.65 |
| SSACL | 7840 | 26772 | 29.28 | 5165 | 17825 | 28.98 | 13005 | 44597 | 29.16 |
| DGS | 7955 | 26772 | 29.71 | 4622 | 17825 | 25.93 | 12577 | 44597 | 28.2 |
| FIHSCHS | 4890 | 26772 | 18.27 | 2848 | 17825 | 15.98 | 7738 | 44597 | 17.35 |
| DBDIM | 4326 | 26772 | 16.16 | 3370 | 17825 | 18.91 | 7696 | 44597 | 17.26 |
| DNS | 2861 | 26772 | 10.69 | 1897 | 17825 | 10.64 | 4758 | 44597 | 10.67 |
| IPD | 2309 | 26772 | 8.62 | 1331 | 17825 | 7.47 | 3640 | 44597 | 8.16 |
| IPEC | 1473 | 26772 | 5.5 | 1194 | 17825 | 6.7 | 2667 | 44597 | 5.98 |
| DMSCT | 1415 | 26772 | 5.29 | 1128 | 17825 | 6.33 | 2543 | 44597 | 5.7 |
| Neoplasms | 1263 | 26772 | 4.72 | 773 | 17825 | 4.34 | 2036 | 44597 | 4.57 |
| PCP | - | - | - | 90 | 17825 | 0.5 | 90 | 17825 | 0.5 |
| COPP | 52 | 26772 | 0.19 | 53 | 17825 | 0.3 | 105 | 44597 | 0.24 |

Table S7 Diagnosis rate of various diagnoses in hypovolemic shock patients (in descending order of total diagnosis rate)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|-----------------|---------------|---------------|-----------------|---------------|---------------|-----------------|---------------|---------------|
| | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) |
| DDS | 52407 | 81088 | 64.63 | 21232 | 47348 | 44.84 | 73639 | 128436 | 57.34 |
| DBDIM | 35110 | 81088 | 43.3 | 22751 | 47348 | 48.05 | 57861 | 128436 | 45.05 |
| ENMD | 36221 | 81088 | 44.67 | 18755 | 47348 | 39.61 | 54976 | 128436 | 42.8 |
| DCS | 31778 | 81088 | 39.19 | 16216 | 47348 | 34.25 | 47994 | 128436 | 37.37 |
| DRS | 31878 | 81088 | 39.31 | 14509 | 47348 | 30.64 | 46387 | 128436 | 36.12 |
| IPEC | 28791 | 81088 | 35.51 | 11809 | 47348 | 24.94 | 40600 | 128436 | 31.61 |
| PCP | - | - | - | 12375 | 47348 | 26.14 | 12375 | 47348 | 26.14 |
| SSACL | 22233 | 81088 | 27.42 | 10973 | 47348 | 23.18 | 33206 | 128436 | 25.85 |
| DGS | 16119 | 81088 | 19.88 | 12359 | 47348 | 26.1 | 28478 | 128436 | 22.17 |
| Neoplasms | 13123 | 81088 | 16.18 | 6133 | 47348 | 12.95 | 19256 | 128436 | 14.99 |
| FIHSCHS | 9816 | 81088 | 12.11 | 8425 | 47348 | 17.79 | 18241 | 128436 | 14.2 |
| IPD | 11069 | 81088 | 13.65 | 4489 | 47348 | 9.48 | 15558 | 128436 | 12.11 |
| DNS | 6614 | 81088 | 8.16 | 3179 | 47348 | 6.71 | 9793 | 128436 | 7.62 |
| DMSCT | 5289 | 81088 | 6.52 | 2927 | 47348 | 6.18 | 8216 | 128436 | 6.4 |
| COPP | 131 | 81088 | 0.16 | 378 | 47348 | 0.8 | 509 | 128436 | 0.4 |

Table S8 Diagnosis rate of various diagnoses in obstructive shock patients (in descending order of total diagnosis rate)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|-----------------|---------------|---------------|-----------------|---------------|---------------|-----------------|---------------|---------------|
| | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) |
| DRS | 1313 | 1857 | 70.71 | 805 | 1311 | 61.4 | 2118 | 3168 | 66.86 |
| DCS | 1229 | 1857 | 66.18 | 886 | 1311 | 67.58 | 2115 | 3168 | 66.76 |
| ENMD | 1046 | 1857 | 56.33 | 802 | 1311 | 61.17 | 1848 | 3168 | 58.33 |
| DDS | 903 | 1857 | 48.63 | 652 | 1311 | 49.73 | 1555 | 3168 | 49.08 |
| DGS | 644 | 1857 | 34.68 | 496 | 1311 | 37.83 | 1140 | 3168 | 35.98 |
| SSACL | 589 | 1857 | 31.72 | 446 | 1311 | 34.02 | 1035 | 3168 | 32.67 |
| DBDIM | 419 | 1857 | 22.56 | 390 | 1311 | 29.75 | 809 | 3168 | 25.54 |
| IPD | 411 | 1857 | 22.13 | 277 | 1311 | 21.13 | 688 | 3168 | 21.72 |
| DNS | 288 | 1857 | 15.51 | 196 | 1311 | 14.95 | 484 | 3168 | 15.28 |
| IPEC | 269 | 1857 | 14.49 | 153 | 1311 | 11.67 | 422 | 3168 | 13.32 |
| Neoplasms | 236 | 1857 | 12.71 | 166 | 1311 | 12.66 | 402 | 3168 | 12.69 |
| FIHSCHS | 206 | 1857 | 11.09 | 156 | 1311 | 11.9 | 362 | 3168 | 11.43 |
| DMSCT | 92 | 1857 | 4.95 | 95 | 1311 | 7.25 | 187 | 3168 | 5.9 |
| PCP | - | - | - | 22 | 1311 | 1.68 | 22 | 1311 | 1.68 |
| COPP | 24 | 1857 | 1.29 | 16 | 1311 | 1.22 | 40 | 3168 | 1.26 |

Table S9 The concomitant disease in patients with septic shock

| Concomitant disease | Male | | Female | | Total | |
|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | Cases numbers | Diagnosed (%) | Cases numbers | Diagnosed (%) | Cases numbers | Diagnosed (%) |
| Pulmonary infection | 39877 | 57.54 | 22607 | 50.34 | 62484 | 54.71 |
| Respiratory failure | 25426 | 36.69 | 11983 | 26.68 | 37409 | 32.75 |
| Septicemia | 17366 | 25.06 | 12068 | 26.87 | 29434 | 25.77 |
| Hypertension | 17258 | 24.90 | 11858 | 26.41 | 29116 | 25.49 |
| Heart failure | 14480 | 20.89 | 9827 | 21.88 | 24307 | 21.28 |
| Kidney failure | 14694 | 21.20 | 8421 | 18.75 | 23115 | 20.24 |
| Chronic heart disease | 13568 | 19.58 | 8412 | 18.73 | 21980 | 19.24 |
| Peritonitis | 13092 | 18.89 | 8195 | 18.25 | 21287 | 18.64 |
| Cerebrovascular disease | 12803 | 18.47 | 6982 | 15.55 | 19785 | 17.32 |
| Gastrointestinal disease | 12053 | 17.39 | 7278 | 16.21 | 19331 | 16.93 |
| Diabetes | 10280 | 14.83 | 8191 | 18.24 | 18471 | 16.17 |
| Malignant tumors | 12038 | 17.37 | 6266 | 13.95 | 18304 | 16.03 |
| MODS | 10579 | 15.26 | 5915 | 13.17 | 16494 | 14.44 |
| Arrhythmia | 8644 | 12.47 | 5405 | 12.04 | 14049 | 12.30 |
| Liver failure | 8571 | 12.37 | 4390 | 9.78 | 12961 | 11.35 |
| Organ hemorrhage | 7781 | 11.23 | 2344 | 5.22 | 10125 | 8.86 |
| Coagulopathy | 6177 | 8.91 | 3896 | 8.68 | 10073 | 8.82 |
| COPD | 975 | 1.41 | 716 | 1.59 | 1691 | 1.48 |
| Valvular heart disease | 260 | 0.38 | 130 | 0.29 | 390 | 0.34 |
| Burn | 39877 | 57.54 | 22607 | 50.34 | 62484 | 54.71 |

Table S10 The concomitant disease in patients with cardiogenic shock

| Concomitant disease | Male | | Female | | Total | |
|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | Cases numbers | Diagnosed (%) | Cases numbers | Diagnosed (%) | Cases numbers | Diagnosed (%) |
| Acute cardiac event | 17800 | 71.71 | 11155 | 67.41 | 28955 | 69.99 |
| Chronic heart disease | 16465 | 66.33 | 10431 | 63.04 | 26896 | 65.01 |
| Heart failure | 15147 | 61.02 | 10277 | 62.11 | 25424 | 61.46 |
| Arrhythmia | 9788 | 39.43 | 6626 | 40.04 | 16414 | 39.68 |
| Hypertension | 8903 | 35.87 | 6744 | 40.76 | 15647 | 37.82 |
| Pulmonary infection | 9296 | 37.45 | 6182 | 37.36 | 15478 | 37.41 |
| Respiratory failure | 5436 | 21.90 | 3548 | 21.44 | 8984 | 21.72 |
| Diabetes | 4881 | 19.66 | 3912 | 23.64 | 8793 | 21.26 |
| Kidney failure | 5044 | 20.32 | 3210 | 19.40 | 8254 | 19.95 |
| Cerebrovascular disease | 3977 | 16.02 | 2813 | 17.00 | 6790 | 16.41 |
| Gastrointestinal disease | 2356 | 9.49 | 1733 | 10.47 | 4089 | 9.88 |
| COPD | 2146 | 8.65 | 881 | 5.32 | 3027 | 7.32 |
| Valvular heart disease | 1306 | 5.26 | 1006 | 6.08 | 2312 | 5.59 |
| Coagulopathy | 999 | 4.02 | 701 | 4.24 | 1700 | 4.11 |
| Malignant tumors | 1058 | 4.26 | 567 | 3.43 | 1625 | 3.93 |
| Septicemia | 555 | 2.24 | 333 | 2.01 | 888 | 2.15 |
| Peritonitis | 370 | 1.49 | 304 | 1.84 | 674 | 1.63 |
| Burn | 12 | 0.05 | 12 | 0.07 | 24 | 0.06 |

Table S11 The concomitant disease in patients with hypovolemic shock

| Concomitant disease | Male | | Female | | Total | |
|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | Cases numbers | Diagnosed (%) | Cases numbers | Diagnosed (%) | Cases numbers | Diagnosed (%) |
| Organ hemorrhage | 35055 | 45.19 | 13427 | 29.67 | 48482 | 39.47 |
| Pulmonary infection | 15168 | 19.55 | 7169 | 15.84 | 22337 | 18.18 |
| Liver failure | 15081 | 19.44 | 5690 | 12.57 | 20771 | 16.91 |
| Gastrointestinal disease | 15215 | 19.61 | 4908 | 10.84 | 20123 | 16.38 |
| Organ injury | 14557 | 18.76 | 5083 | 11.23 | 19640 | 15.99 |
| Hypertension | 11960 | 15.42 | 6194 | 13.69 | 18154 | 14.78 |
| Malignant tumors | 12553 | 16.18 | 4794 | 10.59 | 17347 | 14.12 |
| Fracture | 11590 | 14.94 | 5037 | 11.13 | 16627 | 13.54 |
| Chronic heart disease | 7176 | 9.25 | 3952 | 8.73 | 11128 | 9.06 |
| Respiratory failure | 7242 | 9.34 | 3062 | 6.77 | 10304 | 8.39 |
| Kidney failure | 6880 | 8.87 | 3206 | 7.08 | 10086 | 8.21 |
| Intracranial hemorrhage | 7074 | 9.12 | 2931 | 6.48 | 10005 | 8.15 |
| Postpartum hemorrhage | - | - | 3179 | 7.02 | 3179 | 7.02 |
| Coagulopathy | 5213 | 6.72 | 3090 | 6.83 | 8303 | 6.76 |
| Coagulopathy | 4955 | 6.39 | 1984 | 4.38 | 6939 | 5.65 |
| Burn | 1803 | 2.32 | 853 | 1.88 | 2656 | 2.16 |
| Septicemia | 1629 | 2.10 | 792 | 1.75 | 2421 | 1.97 |

Table S12 The concomitant disease in patients with obstructive shock

| Concomitant Disease | Male | | Female | | Total | |
|-----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | Cases numbers | Diagnosed (%) | Cases numbers | Diagnosed (%) | Cases numbers | Diagnosed (%) |
| Pulmonary infection | 661 | 39.46 | 405 | 34.12 | 1066 | 37.25 |
| Respiratory failure | 572 | 34.15 | 349 | 29.40 | 921 | 32.18 |
| Hypertension | 360 | 21.49 | 310 | 26.12 | 670 | 23.41 |
| Kidney failure | 387 | 23.10 | 271 | 22.83 | 658 | 22.99 |
| Chronic heart disease | 369 | 22.03 | 287 | 24.18 | 656 | 22.92 |
| Heart failure | 337 | 20.12 | 236 | 19.88 | 573 | 20.02 |
| Cerebrovascular disease | 293 | 17.49 | 194 | 16.34 | 487 | 17.02 |
| Gastrointestinal disease | 257 | 15.34 | 184 | 15.50 | 441 | 15.41 |
| Peritonitis | 245 | 14.63 | 184 | 15.50 | 429 | 14.99 |
| Pulmonary embolism | 165 | 9.85 | 171 | 14.41 | 336 | 11.74 |
| Septicemia | 198 | 11.82 | 136 | 11.46 | 334 | 11.67 |
| Malignant tumors | 204 | 12.18 | 129 | 10.87 | 333 | 11.64 |
| Arrhythmia | 188 | 11.22 | 122 | 10.28 | 310 | 10.83 |
| Diabetes | 152 | 9.07 | 136 | 11.46 | 288 | 10.06 |
| Acute cardiovascular events | 159 | 9.49 | 126 | 10.61 | 285 | 9.96 |
| COPD | 166 | 9.91 | 65 | 5.48 | 231 | 8.07 |
| Coagulopathy | 94 | 5.61 | 86 | 7.25 | 180 | 6.29 |
| Fracture | 62 | 3.70 | 41 | 3.45 | 103 | 3.60 |
| Aortic dissection | 52 | 3.10 | 31 | 2.61 | 83 | 2.90 |
| Valvular heart disease | 21 | 1.25 | 21 | 1.77 | 42 | 1.47 |

Table S13 Intervention of single types of shock

| | Septic shock; (N=114214) | Cardiogenic shock (N=41369) | Hypovolemic shock (N=122836) | Obstructive shock (N=2862) |
|---------------------------------------|-----------------------------|--------------------------------|---------------------------------|-------------------------------|
| Invasive mechanical ventilation (IMV) | 16460 (14.41) | 5716 (13.82) | 8062 (6.56) | 200 (6.99) |
| IMV <96h | 8007 (48.65) | 3796 (66.41) | 5421 (67.24) | 122 (61.00) |
| IMV ≥96h | 7924 (48.14) | 1677 (29.34) | 2467 (30.60) | 77 (38.50) |
| Unknown | 529 (3.21) | 243 (4.25) | 174 (2.16) | 1 (0.50) |
| CRRT | 4458 (3.90) | 1477 (3.57) | 1389 (1.13) | 71 (2.48) |
| Coronary artery stenting | 100 (0.09) | 7444 (17.99) | 179 (0.15) | 4 (0.14) |
| Blood infusion | 2129 (1.86) | 418 (1.01) | 4790 (3.90) | 10 (0.35) |
| CPR | 2321 (2.03) | 2562 (6.19) | 1938 (1.58) | 44 (1.54) |
| Non-invasive mechanical ventilation | 2293 (2.01) | 1092 (2.64) | 750 (0.61) | 42 (1.47) |
| ECMO | 260 (0.23) | 442 (1.07) | 36 (0.03) | 9 (0.31) |

Table S14 Diagnosis rate of various diagnoses in single shock patients (in descending order of total diagnosis rate)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|-----------------|---------------|---------------|-----------------|---------------|---------------|-----------------|---------------|---------------|
| | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) |
| DCS | 95863 | 173383 | 55.29 | 57925 | 107898 | 53.68 | 153788 | 281281 | 54.67 |
| DDS | 99049 | 173383 | 57.13 | 51041 | 107898 | 47.3 | 150090 | 281281 | 53.36 |
| DRS | 95946 | 173383 | 55.34 | 52025 | 107898 | 48.22 | 147971 | 281281 | 52.61 |
| ENMD | 90404 | 173383 | 52.14 | 56388 | 107898 | 52.26 | 146792 | 281281 | 52.19 |
| DBDIM | 58811 | 173383 | 33.92 | 39597 | 107898 | 36.7 | 98408 | 281281 | 34.99 |
| SSACL | 55839 | 173383 | 32.21 | 31529 | 107898 | 29.22 | 87368 | 281281 | 31.06 |
| DGS | 47578 | 173383 | 27.44 | 34251 | 107898 | 31.74 | 81829 | 281281 | 29.09 |
| IPD | 37295 | 173383 | 21.51 | 21542 | 107898 | 19.97 | 58837 | 281281 | 20.92 |
| IPEC | 37035 | 173383 | 21.36 | 16709 | 107898 | 15.49 | 53744 | 281281 | 19.11 |
| FIHSCHS | 25487 | 173383 | 14.7 | 17859 | 107898 | 16.55 | 43346 | 281281 | 15.41 |
| Neoplasms | 25570 | 173383 | 14.75 | 13290 | 107898 | 12.32 | 38860 | 281281 | 13.82 |
| PCP | - | - | - | 12985 | 107898 | 12.03 | 12985 | 107898 | 12.03 |
| DNS | 19716 | 173383 | 11.37 | 10441 | 107898 | 9.68 | 30157 | 281281 | 10.72 |
| DMSCT | 11858 | 173383 | 6.84 | 8279 | 107898 | 7.67 | 20137 | 281281 | 7.16 |
| COPP | 918 | 173383 | 0.53 | 940 | 107898 | 0.87 | 1858 | 281281 | 0.66 |

Table S15 Diagnosis rate of various diagnoses in mixed shock patients (in descending order of total diagnosis rate)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|-----------------|---------------|---------------|-----------------|---------------|---------------|-----------------|---------------|---------------|
| | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) | Patient numbers | Total numbers | Diagnosed (%) |
| DRS | 3960 | 5048 | 78.45 | 2355 | 3099 | 75.99 | 6315 | 8147 | 77.51 |
| DCS | 3694 | 5048 | 73.18 | 2332 | 3099 | 75.25 | 6026 | 8147 | 73.97 |
| DBDIM | 3466 | 5048 | 68.66 | 2179 | 3099 | 70.31 | 5645 | 8147 | 69.29 |
| DDS | 3296 | 5048 | 65.29 | 1855 | 3099 | 59.86 | 5151 | 8147 | 63.23 |
| SSACL | 2585 | 5048 | 51.21 | 1518 | 3099 | 48.98 | 4103 | 8147 | 50.36 |
| DGS | 2347 | 5048 | 46.49 | 1342 | 3099 | 43.3 | 3689 | 8147 | 45.28 |
| DBDIM | 2109 | 5048 | 41.78 | 1297 | 3099 | 41.85 | 3406 | 8147 | 41.81 |
| IPD | 1643 | 5048 | 32.55 | 954 | 3099 | 30.78 | 2597 | 8147 | 31.88 |
| FIHSCHS | 916 | 5048 | 18.15 | 589 | 3099 | 19.01 | 1505 | 8147 | 18.47 |
| IPEC | 899 | 5048 | 17.81 | 526 | 3099 | 16.97 | 1425 | 8147 | 17.49 |
| DNS | 880 | 5048 | 17.43 | 503 | 3099 | 16.23 | 1383 | 8147 | 16.98 |
| Neoplasms | 793 | 5048 | 15.71 | 452 | 3099 | 14.59 | 1245 | 8147 | 15.28 |
| DMSCT | 455 | 5048 | 9.01 | 340 | 3099 | 10.97 | 795 | 8147 | 9.76 |
| PCP | - | - | - | 57 | 3099 | 1.84 | 57 | 3099 | 1.84 |
| COPP | 7 | 5048 | 0.14 | 4 | 3099 | 0.13 | 11 | 8147 | 0.14 |

Table S16 Diagnostic mortality in patients with septic shock (in descending order of total mortality)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|------------------|---------------------|---------------|------------------|---------------------|---------------|------------------|---------------------|---------------|
| | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) |
| Neoplasms | 4061 | 12548 | 32.36 | 2190 | 7130 | 30.72 | 6251 | 19678 | 31.77 |
| SSACL | 8935 | 30411 | 29.38 | 4829 | 18030 | 26.78 | 13764 | 48441 | 28.41 |
| DNS | 3418 | 11746 | 29.1 | 1673 | 6190 | 27.03 | 5091 | 17936 | 28.38 |
| DCS | 12399 | 44069 | 28.14 | 6966 | 28117 | 24.78 | 19365 | 72186 | 26.83 |
| DRS | 14753 | 54929 | 26.86 | 7515 | 31201 | 24.09 | 22268 | 86130 | 25.85 |
| DBDIM | 6296 | 23222 | 27.11 | 3601 | 15709 | 22.92 | 9897 | 38931 | 25.42 |
| IPEC | 2079 | 8311 | 25.02 | 1141 | 4620 | 24.7 | 3220 | 12931 | 24.9 |
| ENMD | 11922 | 45635 | 26.12 | 6720 | 30648 | 21.93 | 18642 | 76283 | 24.44 |
| DMSCT | 1500 | 5979 | 25.09 | 1081 | 4818 | 22.44 | 2581 | 10797 | 23.9 |
| DGS | 7337 | 27602 | 26.58 | 3767 | 19490 | 19.33 | 11104 | 47092 | 23.58 |
| IPD | 6619 | 26828 | 24.67 | 3452 | 17372 | 19.87 | 10071 | 44200 | 22.79 |
| FIHSCHS | 3023 | 12430 | 24.32 | 1541 | 7620 | 20.22 | 4564 | 20050 | 22.76 |
| DDS | 9428 | 43342 | 21.75 | 5241 | 26950 | 19.45 | 14669 | 70292 | 20.87 |
| COPP | 101 | 725 | 13.93 | 52 | 501 | 10.38 | 153 | 1226 | 12.48 |
| PCP | - | - | - | 53 | 613 | 8.65 | 53 | 613 | 8.65 |

Table S17 Diagnostic mortality in patients with cardiogenic shock (in descending order of total mortality)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|------------------|---------------------|---------------|------------------|---------------------|---------------|------------------|---------------------|---------------|
| | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) |
| Neoplasms | 581 | 1263 | 46 | 349 | 773 | 45.15 | 930 | 2036 | 45.68 |
| DBDIM | 1688 | 4326 | 39.02 | 1239 | 3370 | 36.77 | 2927 | 7696 | 38.03 |
| DGS | 2906 | 7955 | 36.53 | 1720 | 4622 | 37.21 | 4626 | 12577 | 36.78 |
| SSACL | 2730 | 7840 | 34.82 | 1860 | 5165 | 36.01 | 4590 | 13005 | 35.29 |
| DMSCT | 490 | 1415 | 34.63 | 378 | 1128 | 33.51 | 868 | 2543 | 34.13 |
| IPD | 791 | 2309 | 34.26 | 451 | 1331 | 33.88 | 1242 | 3640 | 34.12 |
| PCP | 4859 | 14508 | 33.49 | 3636 | 10599 | 34.31 | 8495 | 25107 | 33.84 |
| ENMD | 476 | 1473 | 32.32 | 420 | 1194 | 35.18 | 896 | 2667 | 33.6 |
| IPEC | 16 | 52 | 30.77 | 19 | 53 | 35.85 | 35 | 105 | 33.33 |
| DNS | 928 | 2861 | 32.44 | 640 | 1897 | 33.74 | 1568 | 4758 | 32.96 |
| FIHSCHS | 1566 | 4890 | 32.02 | 957 | 2848 | 33.6 | 2523 | 7738 | 32.61 |
| DRS | 4995 | 15830 | 31.55 | 3376 | 10273 | 32.86 | 8371 | 26103 | 32.07 |
| DCS | 8177 | 26267 | 31.13 | 5683 | 17433 | 32.6 | 13860 | 43700 | 31.72 |
| DDS | 2756 | 9055 | 30.44 | 1859 | 5951 | 31.24 | 4615 | 15006 | 30.75 |
| COPP | - | - | - | 24 | 90 | 26.67 | 24 | 90 | 26.67 |

Table S18 Diagnostic mortality in patients with hypovolemic shock (in descending order of total mortality)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|------------------|---------------------|---------------|------------------|---------------------|---------------|------------------|---------------------|---------------|
| | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) |
| Neoplasms | 3919 | 13123 | 29.86 | 1583 | 6133 | 25.81 | 5502 | 19256 | 28.57 |
| DNS | 1724 | 6614 | 26.07 | 770 | 3179 | 24.22 | 2494 | 9793 | 25.47 |
| SSACL | 5821 | 22233 | 26.18 | 2595 | 10973 | 23.65 | 8416 | 33206 | 25.34 |
| DCS | 6854 | 31778 | 21.57 | 3444 | 16216 | 21.24 | 10298 | 47994 | 21.46 |
| DRS | 6662 | 31878 | 20.9 | 2975 | 14509 | 20.5 | 9637 | 46387 | 20.78 |
| ENMD | 7113 | 36221 | 19.64 | 3487 | 18755 | 18.59 | 10600 | 54976 | 19.28 |
| IPD | 2085 | 11069 | 18.84 | 796 | 4489 | 17.73 | 2881 | 15558 | 18.52 |
| DDS | 9107 | 52407 | 17.38 | 3752 | 21232 | 17.67 | 12859 | 73639 | 17.46 |
| DGS | 3259 | 16119 | 20.22 | 1575 | 12359 | 12.74 | 4834 | 28478 | 16.97 |
| DBDIM | 5941 | 35110 | 16.92 | 2794 | 22751 | 12.28 | 8735 | 57861 | 15.1 |
| IPEC | 4203 | 28791 | 14.6 | 1769 | 11809 | 14.98 | 5972 | 40600 | 14.71 |
| FIHSCHS | 1750 | 9816 | 17.83 | 917 | 8425 | 10.88 | 2667 | 18241 | 14.62 |
| DMSCT | 727 | 5289 | 13.75 | 457 | 2927 | 15.61 | 1184 | 8216 | 14.41 |
| PCP | 13 | 131 | 9.92 | 16 | 378 | 4.23 | 29 | 509 | 5.7 |
| COPP | - | - | - | 116 | 12375 | 0.94 | 116 | 12375 | 0.94 |

Table S19 Diagnostic mortality in patients with obstructive shock (in descending order of total mortality)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|------------------|---------------------|---------------|------------------|---------------------|---------------|------------------|---------------------|---------------|
| | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) |
| PCP | - | - | - | 10 | 22 | 45.45 | 10 | 22 | 45.45 |
| Neoplasms | 79 | 236 | 33.47 | 55 | 166 | 33.13 | 134 | 402 | 33.33 |
| SSACL | 178 | 589 | 30.22 | 140 | 446 | 31.39 | 318 | 1035 | 30.72 |
| DRS | 380 | 1313 | 28.94 | 219 | 805 | 27.2 | 599 | 2118 | 28.28 |
| DCS | 368 | 1229 | 29.94 | 228 | 886 | 25.73 | 596 | 2115 | 28.18 |
| ENMD | 73 | 288 | 25.35 | 56 | 196 | 28.57 | 129 | 484 | 26.65 |
| DNS | 288 | 1046 | 27.53 | 203 | 802 | 25.31 | 491 | 1848 | 26.57 |
| IPD | 111 | 411 | 27.01 | 67 | 277 | 24.19 | 178 | 688 | 25.87 |
| DBDIM | 105 | 419 | 25.06 | 100 | 390 | 25.64 | 205 | 809 | 25.34 |
| DGS | 168 | 644 | 26.09 | 120 | 496 | 24.19 | 288 | 1140 | 25.26 |
| IPEC | 68 | 269 | 25.28 | 35 | 153 | 22.88 | 103 | 422 | 24.41 |
| DDS | 23 | 92 | 25 | 19 | 95 | 20 | 42 | 187 | 22.46 |
| DMSCT | 200 | 903 | 22.15 | 149 | 652 | 22.85 | 349 | 1555 | 22.44 |
| FIHSCHS | 45 | 206 | 21.84 | 29 | 156 | 18.59 | 74 | 362 | 20.44 |
| PCP | 4 | 24 | 16.67 | 4 | 16 | 25 | 8 | 40 | 20 |

Table S20 Risk factors for hospital death in patients with different type of shock

| | Total | | | Septic Shock | | | cardiogenic shock | | | Hypovolemic shock | | | obstructive shock | | |
|--------------------------|-------|-----------|--------|--------------|-----------|--------|-------------------|-----------|--------|-------------------|-----------|--------|-------------------|-----------|-------|
| | OR | 95% CI | P | OR | 95% CI | P | OR | 95% CI | P | OR | 95% CI | P | OR | 95% CI | P |
| Age, y (vs. 0–10) | | | | | | | | | | | | | | | |
| 0–20 | 1.05 | 0.94–1.17 | 0.4 | 1 | 0.84–1.18 | 0.97 | 1.15 | 0.87–1.51 | 0.34 | 1.29 | 1.10–1.53 | 0.002 | 1.42 | 0.41–4.86 | 0.58 |
| 21–30 | 1.01 | 0.92–1.11 | 0.84 | 1.22 | 1.06–1.40 | 0.005 | 0.96 | 0.74–1.23 | 0.72 | 1.13 | 0.98–1.31 | 0.09 | 1.09 | 0.40–2.94 | 0.87 |
| 31–40 | 1.17 | 1.08–1.27 | <0.001 | 1.24 | 1.10–1.41 | <0.001 | 0.81 | 0.65–1.00 | 0.05 | 1.5 | 1.31–1.71 | <0.001 | 1.8 | 0.77–4.20 | 0.18 |
| 41–50 | 1.2 | 1.12–1.30 | <0.001 | 1.11 | 0.99–1.24 | 0.06 | 0.88 | 0.73–1.06 | 0.18 | 1.61 | 1.42–1.83 | <0.001 | 2.13 | 0.99–4.56 | 0.05 |
| 51–60 | 1.26 | 1.18–1.36 | <0.001 | 1.04 | 0.93–1.15 | 0.5 | 0.98 | 0.82–1.16 | 0.78 | 1.79 | 1.58–2.03 | <0.001 | 1.53 | 0.73–3.21 | 0.26 |
| 61–70 | 1.29 | 1.20–1.39 | <0.001 | 1.04 | 0.94–1.15 | 0.46 | 1.01 | 0.86–1.20 | 0.88 | 1.87 | 1.65–2.12 | <0.001 | 1.57 | 0.76–3.24 | 0.22 |
| >70 | 2.01 | 1.87–2.15 | <0.001 | 1.76 | 1.59–1.94 | <0.001 | 1.51 | 1.28–1.78 | <0.001 | 2.76 | 2.44–3.13 | <0.001 | 2.75 | 1.34–5.63 | 0.006 |
| Gender (Female vs. Male) | 0.91 | 0.89–0.93 | <0.001 | 0.86 | 0.83–0.88 | <0.001 | 1.01 | 0.97–1.06 | 0.55 | 0.93 | 0.90–0.96 | <0.001 | 0.92 | 0.77–1.09 | 0.32 |
| GDP (vs. Tertile 1) | | | | | | | | | | | | | | | |
| Tertile 2 | 0.94 | 0.91–0.96 | <0.001 | 0.97 | 0.94–1.00 | 0.05 | 0.79 | 0.75–0.83 | <0.001 | 0.96 | 0.92–0.99 | 0.02 | 1.3 | 1.05–1.61 | 0.02 |
| Tertile 3 | 0.91 | 0.89–0.93 | <0.001 | 0.97 | 0.94–1.00 | 0.08 | 0.81 | 0.77–0.85 | <0.001 | 0.9 | 0.87–0.94 | <0.001 | 1.13 | 0.89–1.42 | 0.32 |

Table S20 (continued)

Table S20 (continued)

| | Total | | | Septic Shock | | | cardiogenic shock | | | Hypovolemic shock | | | obstructive shock | | |
|----------------------------|-------|-----------|--------|--------------|-----------|--------|-------------------|-----------|--------|-------------------|-----------|--------|-------------------|------------|--------|
| | OR | 95% CI | P | OR | 95% CI | P | OR | 95% CI | P | OR | 95% CI | P | OR | 95% CI | P |
| Discharge Diagnosis | | | | | | | | | | | | | | | |
| IPD (yes vs. no) | 0.95 | 0.92–0.97 | <0.001 | 0.99 | 0.96–1.02 | 0.4 | 1.04 | 0.96–1.12 | 0.34 | 1.02 | 0.97–1.07 | 0.43 | 1.05 | 0.86–1.29 | 0.61 |
| Neoplasms (yes vs. no) | 2 | 1.95–2.05 | <0.001 | 2.04 | 1.97–2.12 | <0.001 | 1.75 | 1.60–1.92 | <0.001 | 2.27 | 2.18–2.36 | <0.001 | 1.81 | 1.43–2.29 | <0.001 |
| DBDIM (yes vs. no) | 0.98 | 0.96–1.00 | 0.02 | 1.13 | 1.10–1.17 | <0.001 | 1.24 | 1.17–1.31 | <0.001 | 0.85 | 0.82–0.88 | <0.001 | 0.96 | 0.79–1.17 | 0.7 |
| ENMD (yes vs. no) | 1.13 | 1.11–1.16 | <0.001 | 1.12 | 1.09–1.16 | <0.001 | 1.17 | 1.12–1.22 | <0.001 | 1.1 | 1.06–1.14 | <0.001 | 1.12 | 0.93–1.34 | 0.23 |
| DNS (yes vs. no) | 1.24 | 1.21–1.28 | <0.001 | 1.22 | 1.17–1.26 | <0.001 | 1 | 0.93–1.07 | 0.95 | 1.56 | 1.48–1.64 | <0.001 | 0.96 | 0.77–1.21 | 0.75 |
| DCS (yes vs. no) | 1.63 | 1.59–1.66 | <0.001 | 1.49 | 1.44–1.54 | <0.001 | 1.14 | 0.98–1.33 | 0.09 | 1.33 | 1.28–1.37 | <0.001 | 1.41 | 1.16–1.72 | <0.001 |
| DRS (yes vs. no) | 1.21 | 1.19–1.24 | <0.001 | 1.59 | 1.53–1.65 | <0.001 | 0.9 | 0.86–0.94 | <0.001 | 1.17 | 1.13–1.21 | <0.001 | 1.43 | 1.18–1.74 | <0.001 |
| DDS (yes vs. no) | 0.76 | 0.74–0.77 | <0.001 | 0.8 | 0.78–0.83 | <0.001 | 0.82 | 0.78–0.86 | <0.001 | 0.94 | 0.91–0.98 | 0.002 | 0.79 | 0.66–0.94 | 0.006 |
| DMSCT (yes vs. no) | 0.89 | 0.86–0.92 | <0.001 | 1.02 | 0.97–1.07 | 0.47 | 1.02 | 0.94–1.11 | 0.64 | 0.71 | 0.66–0.76 | <0.001 | 0.87 | 0.60–1.25 | 0.44 |
| DGS (yes vs. no) | 1.02 | 0.99–1.04 | 0.17 | 1.03 | 1.00–1.06 | 0.03 | 1.26 | 1.20–1.32 | <0.001 | 0.97 | 0.93–1.01 | 0.087 | 0.98 | 0.82–1.17 | 0.78 |
| PCP (yes vs. no) | 0.13 | 0.11–0.15 | <0.001 | 0.63 | 0.47–0.84 | 0.002 | 1.02 | 0.63–1.66 | 0.94 | 0.12 | 0.10–0.14 | <0.001 | 5.33 | 1.97–14.44 | 0.001 |
| COPP (yes vs. no) | 1.13 | 0.97–1.33 | 0.12 | 1.07 | 0.88–1.30 | 0.52 | 1.39 | 0.89–2.16 | 0.14 | 1.32 | 0.89–1.97 | 0.17 | 1.56 | 0.54–4.49 | 0.41 |
| SSACL (yes vs. no) | 1.64 | 1.61–1.67 | <0.001 | 1.66 | 1.61–1.71 | <0.001 | 1.22 | 1.17–1.28 | <0.001 | 1.98 | 1.92–2.05 | <0.001 | 1.57 | 1.32–1.87 | <0.001 |
| IPEC (yes vs. no) | 1.04 | 1.01–1.07 | 0.007 | 1.2 | 1.14–1.25 | <0.001 | 1.05 | 0.97–1.15 | 0.25 | 1.18 | 1.13–1.22 | <0.001 | 1.05 | 0.82–1.34 | 0.7 |
| FIHSCHS (yes vs. no) | 0.93 | 0.90–0.95 | <0.001 | 0.94 | 0.90–0.97 | <0.001 | 0.97 | 0.92–1.02 | 0.27 | 0.85 | 0.81–0.89 | <0.001 | 0.67 | 0.51–0.89 | 0.005 |

Table S21 Diagnostic mortality in patients with single shock (in descending order of total mortality)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|------------------|---------------------|---------------|------------------|---------------------|---------------|------------------|---------------------|---------------|
| | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) |
| Neoplasms | 7891 | 25570 | 30.86 | 3759 | 13290 | 28.28 | 11650 | 38860 | 29.98 |
| SSACL | 15477 | 55839 | 27.72 | 8189 | 31529 | 25.97 | 23666 | 87368 | 27.09 |
| DNS | 5409 | 19716 | 27.43 | 2758 | 10441 | 26.42 | 8167 | 30157 | 27.08 |
| DCSS | 24719 | 95863 | 25.79 | 14488 | 57925 | 25.01 | 39207 | 153788 | 25.49 |
| DRS | 23579 | 95946 | 24.58 | 12284 | 52025 | 23.61 | 35863 | 147971 | 24.24 |
| ENMD | 21377 | 90404 | 23.65 | 12437 | 56388 | 22.06 | 33814 | 146792 | 23.04 |
| DGS | 11666 | 47578 | 24.52 | 6149 | 34251 | 17.95 | 17815 | 81829 | 21.77 |
| IPD | 8299 | 37295 | 22.25 | 4080 | 21542 | 18.94 | 12379 | 58837 | 21.04 |
| DMSCT | 2391 | 11858 | 20.16 | 1699 | 8279 | 20.52 | 4090 | 20137 | 20.31 |
| FIHSCHS | 5673 | 25487 | 22.26 | 2995 | 17859 | 16.77 | 8668 | 43346 | 20 |
| DBDIM | 12331 | 58811 | 20.97 | 6717 | 39597 | 16.96 | 19048 | 98408 | 19.36 |
| DDS | 18958 | 99049 | 19.14 | 9607 | 51041 | 18.82 | 28565 | 150090 | 19.03 |
| IPEC | 6156 | 37035 | 16.62 | 2964 | 16709 | 17.74 | 9120 | 53744 | 16.97 |
| PCP | 130 | 918 | 14.16 | 91 | 940 | 9.68 | 221 | 1858 | 11.89 |
| COPP | - | - | - | 174 | 12985 | 1.34 | 174 | 12985 | 1.34 |

Table S22 Diagnostic mortality in patients with mixed shock (in descending order of total mortality)

| Discharge diagnosis | Male | | | Female | | | Total | | |
|---------------------|------------------|---------------------|---------------|------------------|---------------------|---------------|------------------|---------------------|---------------|
| | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) | Number of deaths | Number of diagnoses | Mortality (%) |
| Neoplasms | 371 | 793 | 46.78 | 206 | 452 | 45.58 | 577 | 1245 | 46.35 |
| SSACL | 1076 | 2585 | 41.62 | 608 | 1518 | 40.05 | 1684 | 4103 | 41.04 |
| DGS | 989 | 2347 | 42.14 | 510 | 1342 | 38 | 1499 | 3689 | 40.63 |
| DCS | 1516 | 3694 | 41.04 | 904 | 2332 | 38.77 | 2420 | 6026 | 40.16 |
| DNS | 358 | 880 | 40.68 | 188 | 503 | 37.38 | 546 | 1383 | 39.48 |
| DBDIM | 838 | 2109 | 39.73 | 501 | 1297 | 38.63 | 1339 | 3406 | 39.31 |
| DRS | 1584 | 3960 | 40 | 890 | 2355 | 37.79 | 2474 | 6315 | 39.18 |
| ENMD | 1384 | 3466 | 39.93 | 793 | 2179 | 36.39 | 2177 | 5645 | 38.57 |
| IPD | 350 | 916 | 38.21 | 222 | 589 | 37.69 | 572 | 1505 | 38.01 |
| FIHSCHS | 644 | 1643 | 39.2 | 340 | 954 | 35.64 | 984 | 2597 | 37.89 |
| DDS | 1249 | 3296 | 37.89 | 689 | 1855 | 37.14 | 1938 | 5151 | 37.62 |
| IPEC | 333 | 899 | 37.04 | 198 | 526 | 37.64 | 531 | 1425 | 37.26 |
| DMSCT | 172 | 455 | 37.8 | 116 | 340 | 34.12 | 288 | 795 | 36.23 |
| COPP | - | - | - | 14 | 57 | 24.56 | 14 | 57 | 24.56 |
| PCP | 2 | 7 | 28.57 | 0 | 4 | 0 | 2 | 11 | 18.18 |

Table S23 Mortality of various complications in patients with cardiogenic shock

| Comorbidity | Male | | Female | | Total | |
|-----------------------------|---------------------|-------------------------------------|---------------------|-------------------------------------|---------------------|-------------------------------------|
| | Number of diagnoses | Number of diagnoses [Mortality (%)] | Number of diagnoses | Number of diagnoses [Mortality (%)] | Number of diagnoses | Number of diagnoses [Mortality (%)] |
| Coagulopathy | 999 | 432 (43.24) | 701 | 305 (43.51) | 1700 | 737 (43.35) |
| Malignant tumors | 1058 | 460 (43.48) | 567 | 243 (42.86) | 1625 | 703 (43.26) |
| Kidney failure | 5044 | 1975 (39.16) | 3210 | 1266 (39.44) | 8254 | 3241 (39.27) |
| Respiratory failure | 5436 | 2041 (37.55) | 3548 | 1384 (39.01) | 8984 | 3425 (38.12) |
| Diabetes | 4881 | 1831 (37.51) | 3912 | 1497 (38.27) | 8793 | 3328 (37.85) |
| Septicemia | 555 | 207 (37.30) | 333 | 111 (33.33) | 888 | 318 (35.81) |
| Hypertension | 8903 | 3084 (34.64) | 6744 | 2457 (36.43) | 15647 | 5541 (35.41) |
| Cerebrovascular disease | 3977 | 1375 (34.57) | 2813 | 1002 (35.62) | 6790 | 2377 (35.01) |
| Burn | 12 | 4 (33.33) | 12 | 4 (33.33) | 24 | 8 (33.33) |
| Acute cardiovascular events | 17800 | 5657 (31.78) | 11155 | 3885 (34.83) | 28955 | 9542 (32.95) |
| Chronic heart disease | 16465 | 5008 (30.42) | 10431 | 3428 (32.86) | 26896 | 8436 (31.37) |
| Heart failure | 15147 | 4615 (30.47) | 10277 | 3344 (32.54) | 25424 | 7959 (31.31) |
| Valvular heart disease | 1306 | 395 (30.25) | 1006 | 326 (32.41) | 2312 | 721 (31.19) |
| Peritonitis | 370 | 115 (31.08) | 304 | 92 (30.26) | 674 | 207 (30.71) |
| Arrhythmia | 9788 | 2872 (29.34) | 6626 | 2041 (30.80) | 16414 | 4913 (29.93) |
| Pulmonary infection | 9296 | 2735 (29.42) | 6182 | 1895 (30.65) | 15478 | 4630 (29.91) |
| COPD | 2146 | 589 (27.45) | 881 | 233 (26.45) | 3027 | 822 (27.16) |
| Gastrointestinal disease | 2356 | 601 (25.51) | 1733 | 438 (25.27) | 4089 | 1039 (25.41) |

Table S24 Analysis of risk factors for death in patients with cardiogenic shock

| Factors | OR | 95% CI | P |
|-----------------------------|------|------------|---------|
| Age (ref=0–10) | | | |
| 11–20 | 1.01 | 0.76, 1.35 | 0.9437 |
| 21–30 | 0.82 | 0.63, 1.06 | 0.1265 |
| 31–40 | 0.67 | 0.54, 0.83 | 0.0003 |
| 41–50 | 0.71 | 0.59, 0.85 | 0.0002 |
| 51–60 | 0.75 | 0.63, 0.89 | 0.0009 |
| 61–70 | 0.75 | 0.63, 0.88 | 0.0007 |
| ≥71 | 1.11 | 0.94, 1.31 | 0.2168 |
| Gender (female vs. male) | 1.04 | 0.99, 1.08 | 0.1325 |
| GDP (ref=high) | | | |
| mid | 0.86 | 0.82, 0.91 | <0.0001 |
| low | 0.85 | 0.80, 0.89 | <0.0001 |
| Malignant tumors | 1.90 | 1.71, 2.11 | <0.0001 |
| Coagulopathy | 1.62 | 1.46, 1.80 | <0.0001 |
| Respiratory failure | 1.53 | 1.45, 1.61 | <0.0001 |
| Acute cardiovascular events | 1.45 | 1.38, 1.52 | <0.0001 |
| Kidney failure | 1.44 | 1.37, 1.52 | <0.0001 |
| Diabetes | 1.34 | 1.27, 1.41 | <0.0001 |
| Hypertension | 1.19 | 1.13, 1.24 | <0.0001 |
| Septicemia | 1.18 | 1.02, 1.37 | 0.0247 |
| Cerebrovascular disease | 1.13 | 1.07, 1.20 | <0.0001 |
| Valvular heart disease | 1.12 | 1.02, 1.23 | 0.0222 |
| Chronic heart disease | 1.05 | 1.00, 1.10 | 0.0583 |
| Peritonitis | 1.04 | 0.88, 1.24 | 0.6378 |
| Heart failure | 1.02 | 0.98, 1.07 | 0.3752 |
| Burn | 0.98 | 0.41, 2.36 | 0.9671 |
| Arrhythmia | 0.96 | 0.92, 1.00 | 0.0715 |
| Pulmonary infection | 0.78 | 0.74, 0.81 | <0.0001 |
| Gastrointestinal disease | 0.75 | 0.70, 0.81 | <0.0001 |
| COPD | 0.74 | 0.67, 0.80 | <0.0001 |

Table S25 Mortality rate of comorbidity in patients with cardiogenic shock combined septic shock

| Comorbidity | Male | | Female | | Total | |
|-----------------------------|---------------------|-------------------------------------|---------------------|-------------------------------------|---------------------|-------------------------------------|
| | Number of diagnoses | Number of diagnoses [Mortality (%)] | Number of diagnoses | Number of diagnoses [Mortality (%)] | Number of diagnoses | Number of diagnoses [Mortality (%)] |
| Malignant tumors | 126 | 73 (57.94) | 79 | 44 (55.70) | 205 | 117 (57.07) |
| Diabetes | 349 | 198 (56.73) | 221 | 108 (48.87) | 570 | 306 (53.68) |
| Cerebrovascular disease | 326 | 171 (52.45) | 204 | 110 (53.92) | 530 | 281 (53.02) |
| Kidney failure | 623 | 333 (53.45) | 338 | 168 (49.70) | 961 | 501 (52.13) |
| Hypertension | 536 | 272 (50.75) | 312 | 156 (50.00) | 848 | 428 (50.47) |
| Coagulopathy | 255 | 131 (51.37) | 162 | 78 (48.15) | 417 | 209 (50.12) |
| Septicemia | 578 | 298 (51.56) | 375 | 179 (47.73) | 953 | 477 (50.05) |
| Gastrointestinal disease | 160 | 72 (45.00) | 104 | 59 (56.73) | 264 | 131 (49.62) |
| MODS | 409 | 205 (50.12) | 223 | 108 (48.43) | 632 | 313 (49.53) |
| Organ hemorrhage | 174 | 82 (47.13) | 108 | 57 (52.78) | 282 | 139 (49.29) |
| Arrhythmia | 520 | 253 (48.65) | 340 | 166 (48.82) | 860 | 419 (48.72) |
| Acute cardiovascular events | 752 | 372 (49.47) | 459 | 213 (46.41) | 1211 | 585 (48.31) |
| Respiratory failure | 825 | 400 (48.48) | 460 | 219 (47.61) | 1285 | 619 (48.17) |
| Chronic heart disease | 818 | 392 (47.92) | 488 | 235 (48.16) | 1306 | 627 (48.01) |
| Liver failure | 267 | 131 (49.06) | 163 | 70 (42.94) | 430 | 201 (46.74) |
| Pulmonary infection | 1069 | 505 (47.24) | 692 | 299 (43.21) | 1761 | 804 (45.66) |
| Heart failure | 881 | 395 (44.84) | 559 | 246 (44.01) | 1440 | 641 (44.51) |
| Valvular heart disease | 89 | 37 (41.57) | 55 | 27 (49.09) | 144 | 64 (44.44) |
| COPD | 233 | 102 (43.78) | 78 | 30 (38.46) | 311 | 132 (42.44) |
| Peritonitis | 124 | 50 (40.32) | 87 | 38 (43.68) | 211 | 88 (41.71) |
| Burn | 3 | 0 (0.00) | 1 | 1 (100.00) | 4 | 1 (25.00) |

Table S26 Analysis of risk factors of death in patients with cardiogenic shock combined with septic shock

| Factors | OR | 95% CI | P |
|--------------------------|------|------------|--------|
| Age (ref=0–10) | | | |
| 11–20 | 2.92 | 0.95, 8.91 | 0.0605 |
| 21–30 | 1.25 | 0.48, 3.29 | 0.6522 |
| 31–40 | 0.82 | 0.34, 2.00 | 0.6620 |
| 41–50 | 1.10 | 0.50, 2.44 | 0.8148 |
| 51–60 | 1.30 | 0.62, 2.75 | 0.4914 |
| 61–70 | 1.14 | 0.55, 2.38 | 0.7267 |
| ≥71 | 1.79 | 0.87, 3.71 | 0.1159 |
| Gender (female vs. male) | 0.95 | 0.80, 1.13 | 0.5867 |
| GDP (ref=high) | | | |
| Mid | 0.67 | 0.54, 0.83 | 0.0002 |
| Low | 0.80 | 0.65, 0.98 | 0.0328 |
| Malignant tumors | 1.74 | 1.28, 2.35 | 0.0004 |
| Diabetes | 1.41 | 1.14, 1.73 | 0.0012 |
| Kidney failure | 1.38 | 1.15, 1.66 | 0.0006 |
| MODS | 1.37 | 1.13, 1.66 | 0.0017 |
| Respiratory failure | 1.27 | 1.06, 1.51 | 0.0087 |
| Chronic heart disease | 1.23 | 1.02, 1.47 | 0.0278 |

Table S26 (continued)**Table S26** (continued)

| Factors | OR | 95% CI | P |
|-----------------------------|------|------------|--------|
| Septicemia | 1.21 | 1.01, 1.44 | 0.0346 |
| Cerebrovascular disease | 1.18 | 0.96, 1.46 | 0.1252 |
| Arrhythmia | 1.16 | 0.97, 1.39 | 0.1146 |
| Acute cardiovascular events | 1.15 | 0.97, 1.37 | 0.1112 |
| Gastrointestinal disease | 1.11 | 0.85, 1.47 | 0.4437 |
| Coagulopathy | 1.10 | 0.87, 1.39 | 0.4438 |
| Organ hemorrhage | 1.06 | 0.82, 1.38 | 0.6627 |
| Hypertension | 1.01 | 0.84, 1.22 | 0.9154 |
| Valvular heart disease | 0.98 | 0.69, 1.41 | 0.9204 |
| Liver failure | 0.97 | 0.77, 1.23 | 0.8177 |
| Pulmonary infection | 0.93 | 0.76, 1.14 | 0.4823 |
| Peritonitis | 0.83 | 0.60, 1.13 | 0.2269 |
| Heart failure | 0.81 | 0.67, 0.97 | 0.0188 |
| COPD | 0.80 | 0.62, 1.05 | 0.1061 |
| Burn | 0.47 | 0.05, 4.59 | 0.5141 |