

**TABLE E-1 Postoperative Complications in Each Disease Group**

|                                 | No. of Patients | No. (%) of Postop. Complications | Multivariate Analysis |         |
|---------------------------------|-----------------|----------------------------------|-----------------------|---------|
|                                 |                 |                                  | OR (95% CI)           | P Value |
| Primary bone tumor              |                 |                                  |                       |         |
| Total                           | 587             | 53 (9.0)                         |                       |         |
| Sex                             |                 |                                  |                       |         |
| Male                            | 315             | 28 (8.9)                         | Reference             |         |
| Female                          | 272             | 25 (9.2)                         | 1.09 (0.61-1.94)      | 0.779   |
| Age in yr                       |                 |                                  |                       |         |
| ≤49                             | 314             | 24 (7.6)                         | Reference             |         |
| 50-69                           | 152             | 29 (19.1)                        | 1.99 (1.03-3.84)      | 0.040   |
| ≥70                             | 121             | 20 (13.2)                        | 1.02 (0.44-2.37)      | 0.958   |
| Type of surgery                 |                 |                                  |                       |         |
| Tumor resection w/o prosthesis  | 370             | 29 (7.8)                         | Reference             |         |
| Resection + prosthesis          | 181             | 23 (12.7)                        | 1.57 (0.85-2.89)      | 0.145   |
| Amputation                      | 36              | 1 (2.8)                          | 0.34 (0.05-2.76)      | 0.325   |
| Duration of anesthesia in min*  |                 |                                  |                       |         |
| <120                            | 54              | 1 (1.9)                          | Reference             |         |
| 120-240                         | 157             | 12 (7.6)                         | 3.97 (0.50-31.9)      | 0.194   |
| >240                            | 375             | 40 (10.7)                        | 5.75 (0.74-44.8)      | 0.095   |
| At least one preop. comorbidity | 60              | 5 (8.3)                          | 0.80 (0.29-2.20)      | 0.664   |
| Hospital volume                 |                 |                                  |                       |         |
| Low                             | 89              | 9 (10.1)                         | Reference             |         |
| Medium                          | 225             | 20 (8.9)                         | 0.65 (0.27-1.56)      | 0.338   |
| High                            | 273             | 24 (8.8)                         | 0.65 (0.28-1.53)      | 0.329   |
| Soft-tissue tumor               |                 |                                  |                       |         |
| Total                           | 3163            | 201 (6.4)                        |                       |         |
| Sex                             |                 |                                  |                       |         |
| Male                            | 1666            | 121 (7.3)                        | Reference             |         |
| Female                          | 1497            | 80 (5.3)                         | 0.78 (0.58-1.04)      | 0.094   |
| Age in yr                       |                 |                                  |                       |         |
| ≤49                             | 771             | 41 (5.3)                         | Reference             |         |
| 50-69                           | 1265            | 76 (6.0)                         | 1.07 (0.72-1.59)      | 0.745   |
| ≥70                             | 1127            | 84 (7.5)                         | 1.32 (0.89-1.97)      | 0.172   |
| Type of surgery                 |                 |                                  |                       |         |
| Tumor resection w/o prosthesis  | 3052            | 187 (6.1)                        | Reference             |         |
| Resection + prosthesis          | 34              | 6 (17.6)                         | 2.64 (1.06-6.56)      | 0.036   |
| Amputation                      | 77              | 8 (10.4)                         | 1.65 (0.77-3.52)      | 0.200   |
| Duration of anesthesia in min*  |                 |                                  |                       |         |
| <120                            | 662             | 25 (3.8)                         | Reference             |         |
| 120-240                         | 1425            | 67 (4.7)                         | 1.24 (0.77-1.99)      | 0.370   |
| >240                            | 1070            | 109 (10.2)                       | 2.84 (1.81-4.47)      | <0.001  |
| At least one preop. comorbidity | 401             | 41 (10.2)                        | 1.60 (1.10-2.37)      | 0.015   |
| Hospital volume                 |                 |                                  |                       |         |
| Low                             | 894             | 66 (7.4)                         | Reference             |         |
| Medium                          | 1173            | 68 (5.8)                         | 0.69 (0.48-0.98)      | 0.039   |
| High                            | 1096            | 67 (6.1)                         | 0.79 (0.55-1.13)      | 0.199   |

**TABLE E-1 (continued)**

|                                       | No. of Patients | No. (%) of Postop.<br>Complications | Multivariate Analysis |         |
|---------------------------------------|-----------------|-------------------------------------|-----------------------|---------|
|                                       |                 |                                     | OR (95% CI)           | P Value |
| Metastatic bone tumor                 |                 |                                     |                       |         |
| Total                                 | 1053            | 94 (8.9)                            |                       |         |
| Sex                                   |                 |                                     |                       |         |
| Male                                  | 550             | 55 (10.0)                           | Reference             |         |
| Female                                | 503             | 39 (7.8)                            | 0.80 (0.51-1.23)      | 0.307   |
| Age in yr                             |                 |                                     |                       |         |
| ≤49                                   | 93              | 9 (9.7)                             | Reference             |         |
| 50-69                                 | 477             | 34 (7.1)                            | 0.66 (0.30-1.46)      | 0.307   |
| ≥70                                   | 483             | 51 (10.6)                           | 1.03 (0.48-2.25)      | 0.932   |
| Type of surgery                       |                 |                                     |                       |         |
| Tumor resection w/o prosthesis        | 544             | 48 (8.8)                            | Reference             |         |
| Resection + prosthesis                | 474             | 40 (8.4)                            | 0.91 (0.58-1.44)      | 0.688   |
| Amputation                            | 35              | 6 (17.1)                            | 2.32 (0.90-6.00)      | 0.083   |
| Duration of anesthesia in min*        |                 |                                     |                       |         |
| <120                                  | 126             | 12 (9.5)                            | Reference             |         |
| 120-240                               | 508             | 37 (7.3)                            | 0.82 (0.41-1.64)      | 0.578   |
| >240                                  | 417             | 45 (10.8)                           | 1.39 (0.69-2.77)      | 0.354   |
| At least one preop. comorbidity       | 189             | 19 (10.1)                           | 1.07 (0.62-1.83)      | 0.815   |
| Hospital volume                       |                 |                                     |                       |         |
| Low                                   | 602             | 61 (10.1)                           | Reference             |         |
| Medium                                | 214             | 19 (8.9)                            | 0.83 (0.47-1.44)      | 0.501   |
| High                                  | 237             | 14 (5.9)                            | 0.54 (0.29-1.00)      | 0.051   |
| *Data were missing for nine patients. |                 |                                     |                       |         |

**TABLE E-2 In-Hospital Mortality in Each Disease Group**

|                                 | No. of Patients | No. (%) of<br>In-Hospital Deaths | Multivariate Analysis |         |
|---------------------------------|-----------------|----------------------------------|-----------------------|---------|
|                                 |                 |                                  | OR (95% CI)           | P Value |
| Primary bone tumor              |                 |                                  |                       |         |
| Total                           | 587             | 8 (1.4)                          |                       |         |
| Sex                             |                 |                                  |                       |         |
| Male                            | 315             | 6 (1.9)                          | Reference             |         |
| Female                          | 272             | 2 (0.7)                          | 0.46 (0.09-2.40)      | 0.359   |
| Age in yr                       |                 |                                  |                       |         |
| ≤49                             | 314             | 3 (1.0)                          | Reference             |         |
| 50-69                           | 152             | 5 (3.3)                          | 3.03 (0.67-13.6)      | 0.150   |
| ≥70                             | 121             | 0 (0.0)                          | 0                     | 0.996   |
| Type of surgery                 |                 |                                  |                       |         |
| Tumor resection w/o prosthesis  | 370             | 5 (1.4)                          | Reference             |         |
| Resection + prosthesis          | 181             | 1 (0.6)                          | 0.53 (0.06-4.74)      | 0.529   |
| Amputation                      | 36              | 2 (5.6)                          | 4.45 (0.78-26.2)      | 0.099   |
| At least one preop. comorbidity | 60              | 1 (1.7)                          | 1.62 (0.17-15.1)      | 0.674   |
| Hospital volume                 |                 |                                  |                       |         |
| Low                             | 89              | 3 (3.4)                          | Reference             |         |
| Medium                          | 225             | 3 (1.3)                          | 0.51 (0.09-2.76)      | 0.431   |
| High                            | 273             | 2 (0.7)                          | 0.26 (0.04-1.69)      | 0.158   |
| Soft-tissue tumor               |                 |                                  |                       |         |
| Total                           | 3163            | 23 (0.7)                         |                       |         |
| Sex                             |                 |                                  |                       |         |
| Male                            | 1666            | 17 (1.0)                         | Reference             |         |
| Female                          | 1497            | 6 (0.4)                          | 0.40 (0.16-1.02)      | 0.055   |
| Age in yr                       |                 |                                  |                       |         |
| ≤49                             | 771             | 2 (0.3)                          | Reference             |         |
| 50-69                           | 1265            | 10 (0.8)                         | 2.58 (0.56-11.9)      | 0.227   |
| ≥70                             | 1127            | 11 (1.0)                         | 2.88 (0.62-13.4)      | 0.177   |
| Type of surgery                 |                 |                                  |                       |         |
| Tumor resection w/o prosthesis  | 3052            | 22 (0.7)                         | Reference             |         |
| Resection + prosthesis          | 34              | 0 (0.0)                          | 0                     | 0.998   |
| Amputation                      | 77              | 1 (1.3)                          | 1.68 (0.22-13.0)      | 0.620   |
| At least one preop. comorbidity | 401             | 6 (1.5)                          | 1.74 (0.67-4.56)      | 0.257   |
| Hospital volume                 |                 |                                  |                       |         |
| Low                             | 894             | 16 (1.8)                         | Reference             |         |
| Medium                          | 1173            | 6 (0.5)                          | 0.30 (0.12-0.76)      | 0.012   |
| High                            | 1096            | 1 (0.1)                          | 0.06 (0.01-0.39)      | 0.004   |
| Metastatic bone tumor           |                 |                                  |                       |         |
| Total                           | 1053            | 85 (8.1)                         |                       |         |
| Sex                             |                 |                                  |                       |         |
| Male                            | 550             | 45 (8.2)                         | Reference             |         |
| Female                          | 503             | 40 (8.0)                         | 0.99 (0.63-1.55)      | 0.949   |
| Age in yr                       |                 |                                  |                       |         |
| ≤49                             | 93              | 5 (5.4)                          | Reference             |         |
| 50-69                           | 477             | 36 (7.5)                         | 1.26 (0.47-3.32)      | 0.648   |
| ≥70                             | 483             | 44 (9.1)                         | 1.40 (0.53-3.69)      | 0.503   |

**TABLE E-2 (continued)**

|                                 | No. of Patients | No. (%) of<br>In-Hospital Deaths | Multivariate Analysis |         |
|---------------------------------|-----------------|----------------------------------|-----------------------|---------|
|                                 |                 |                                  | OR (95% CI)           | P Value |
| Type of surgery                 |                 |                                  |                       |         |
| Tumor resection w/o prosthesis  | 544             | 39 (7.2)                         | Reference             |         |
| Resection + prosthesis          | 474             | 40 (8.4)                         | 1.06 (0.66-1.71)      | 0.800   |
| Amputation                      | 35              | 6 (17.1)                         | 2.60 (1.00-6.72)      | 0.049   |
| At least one preop. comorbidity | 189             | 20 (10.6)                        | 1.34 (0.79-2.30)      | 0.281   |
| Hospital volume                 |                 |                                  |                       |         |
| Low                             | 602             | 58 (9.6)                         | Reference             |         |
| Medium                          | 214             | 18 (8.4)                         | 0.92 (0.52-1.61)      | 0.761   |
| High                            | 237             | 9 (3.8)                          | 0.39 (0.19-0.81)      | 0.012   |