**Supplementary Material**

**Table S1.** Available bed numbers, average occupancy, and lines of constant turn-away.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Beds** | **0.001% Turn-away** | **0.01% Turn-away** | **0.1% Turn-away** | **1% Turn-away** | **3% Turn-away** | **5% Turn-away** | **20% Turn-away** | **50% Turn-away** |
| 1 | 0.0% | 0.0% | 0.1% | 1.0% | 3.0% | 5.0% | 20.0% | 50.0% |
| 2 | 0.2% | 0.7% | 2.5% | 7.5% | 13.6% | 17.9% | 40.0% | 68.3% |
| 3 | 1.3% | 2.9% | 6.3% | 15.2% | 23.1% | 28.3% | 51.5% | 76.5% |
| 4 | 3.2% | 5.9% | 11.0% | 21.6% | 30.5% | 35.8% | 59.0% | 81.3% |
| 5 | 5.0% | 9.0% | 15.2% | 27.0% | 36.4% | 41.9% | 64.2% | 84.4% |
| 6 | 7.8% | 12.1% | 19.2% | 31.6% | 41.0% | 46.5% | 68.1% | 86.7% |
| 7 | 10.4% | 15.0% | 22.6% | 35.5% | 44.9% | 50.4% | 71.2% | 88.6% |
| 8 | 12.5% | 17.8% | 25.6% | 38.9% | 48.3% | 53.5% | 73.7% | 89.4% |
| 9 | 15.0% | 20.3% | 28.4% | 41.7% | 51.1% | 56.3% | 75.7% | 90.6% |
| 10 | 17.2% | 22.6% | 30.9% | 44.2% | 53.6% | 59.1% | 77.5% | 91.4% |
| 11 | 18.7% | 24.7% | 33.2% | 46.6% | 55.7% | 60.7% | 79.3% | 92.3% |
| 12 | 20.6% | 26.8% | 35.3% | 48.7% | 57.6% | 62.5% | 80.0% | 92.5% |
| 13 | 22.7% | 28.5% | 37.2% | 50.5% | 59.3% | 64.1% | 81.2% | 93.1% |
| 14 | 24.2% | 30.3% | 38.9% | 52.2% | 60.8% | 65.6% | 82.3% | 93.6% |
| 15 | 25.5% | 31.9% | 40.5% | 53.5% | 62.4% | 67.3% | 83.2% | 94.0% |
| 16 | 26.8% | 33.4% | 42.0% | 55.1% | 63.5% | 68.0% | 84.0% | 94.4% |
| 17 | 28.1% | 34.8% | 43.4% | 56.4% | 64.9% | 69.1% | 84.7% | 94.7% |
| 18 | 29.5% | 36.1% | 44.7% | 57.6% | 65.6% | 70.1% | 85.3% | 95.0% |
| 19 | 30.8% | 37.3% | 45.9% | 58.7% | 66.7% | 71.1% | 85.9% | 95.3% |
| 20 | 32.1% | 38.5% | 47.0% | 59.6% | 67.9% | 72.4% | 86.5% | 95.4% |
| 21 | 33.1% | 39.6% | 48.1% | 60.7% | 68.7% | 72.7% | 86.9% | 95.7% |
| 22 | 34.1% | 40.7% | 49.1% | 61.6% | 69.5% | 73.5% | 87.6% | 95.7% |
| 23 | 35.2% | 41.7% | 50.1% | 62.5% | 70.3% | 74.2% | 88.0% | 95.9% |
| 24 | 36.2% | 42.5% | 51.0% | 63.3% | 71.0% | 74.8% | 88.3% | 96.0% |
| 25 | 37.2% | 43.5% | 51.8% | 63.9% | 71.7% | 75.9% | 88.7% | 96.3% |
| 26 | 38.0% | 44.2% | 52.7% | 64.8% | 72.2% | 76.0% | 88.9% | 96.3% |
| 27 | 38.8% | 45.2% | 53.5% | 65.5% | 72.8% | 76.5% | 89.5% | 96.5% |
| 28 | 39.6% | 46.1% | 54.2% | 66.1% | 73.3% | 77.1% | 89.7% | 96.6% |
| 29 | 40.5% | 46.9% | 54.9% | 66.8% | 73.7% | 77.5% | 89.9% | 96.7% |
| 30 | 41.3% | 47.5% | 55.6% | 67.1% | 74.6% | 78.5% | 90.2% | 96.9% |
| 31 | 41.9% | 48.1% | 56.3% | 67.9% | 74.9% | 78.4% | 90.6% | 96.9% |
| 32 | 42.6% | 48.8% | 56.9% | 68.4% | 75.3% | 78.9% | 90.8% | 97.0% |
| 33 | 43.2% | 49.4% | 57.5% | 69.0% | 75.7% | 79.2% | 90.9% | 97.1% |
| 34 | 43.9% | 50.0% | 58.1% | 69.4% | 76.3% | 79.6% | 91.3% | 97.2% |
| 35 | 44.6% | 50.7% | 58.6% | 69.7% | 76.8% | 80.6% | 91.4% | 97.3% |
| 36 | 45.1% | 51.4% | 59.2% | 70.4% | 76.9% | 80.3% | 91.6% | 97.4% |
| 37 | 45.7% | 51.9% | 59.7% | 70.8% | 77.4% | 80.7% | 91.7% | 97.4% |
| 38 | 46.3% | 52.4% | 60.2% | 71.2% | 77.7% | 81.0% | 92.0% | 97.5% |
| 39 | 46.9% | 52.8% | 60.6% | 71.7% | 78.2% | 81.3% | 92.1% | 97.6% |
| 40 | 47.5% | 53.4% | 61.1% | 71.8% | 78.5% | 82.2% | 92.3% | 97.6% |
| 41 | 48.0% | 53.8% | 61.6% | 72.4% | 78.8% | 82.5% | 92.5% | 97.7% |
| 42 | 48.6% | 54.2% | 62.0% | 72.8% | 79.0% | 82.7% | 92.6% | 97.7% |
| 43 | 49.1% | 54.8% | 62.4% | 73.1% | 79.4% | 83.0% | 92.8% | 97.8% |
| 44 | 49.6% | 55.2% | 62.8% | 73.5% | 79.6% | 83.2% | 92.9% | 97.8% |
| 45 | 50.1% | 55.7% | 63.2% | 73.8% | 80.0% | 83.5% | 93.0% | 97.9% |
| 46 |  | 56.0% | 63.6% | 74.1% | 80.2% | 83.7% | 93.2% | 97.9% |
| 47 |  | 56.5% | 64.0% | 74.4% | 80.5% | 84.0% | 93.3% | 98.0% |
| 48 |  | 56.8% | 64.3% | 74.7% | 80.6% | 84.2% | 93.3% | 98.0% |
| 49 |  | 57.3% | 64.7% | 75.0% | 81.0% | 84.4% | 93.6% | 98.1% |
| 50 |  | 57.7% | 64.8% | 75.3% | 81.1% | 84.6% | 93.6% | 98.1% |
| 51 |  | 58.0% | 65.1% | 75.6% | 81.4% | 84.8% | 93.6% | 98.1% |
| 52 |  | 58.4% | 65.4% | 75.8% | 81.7% | 85.0% | 93.8% | 98.1% |
| 53 |  | 58.8% | 65.7% | 76.1% | 81.8% | 85.2% | 93.9% | 98.2% |
| 54 |  | 59.0% | 66.0% | 76.3% | 82.1% | 85.4% | 94.1% | 98.2% |
| 55 |  | 59.4% | 66.3% | 76.6% | 82.2% | 85.5% | 94.1% | 98.2% |
| 60 |  | 60.9% | 67.7% | 77.7% | 83.2% | 86.4% | 94.5% | 98.4% |
| 65 |  | 62.4% | 69.0% | 78.7% | 84.0% | 87.1% | 94.9% | 98.5% |
| 66 |  | 62.7% | 69.2% | 78.9% | 84.2% | 87.2% | 94.9% | 98.5% |
| 67 |  | 62.9% | 69.4% | 79.1% | 84.3% | 87.4% | 95.0% | 98.6% |
| 70 |  | 63.6% | 70.1% | 79.6% | 84.7% | 87.8% | 95.2% | 98.6% |
| 72 |  | 64.1% | 70.5% | 80.0% | 84.9% | 88.0% | 95.3% | 98.6% |
| 75 |  | 64.7% | 71.1% | 80.4% | 85.4% | 88.3% | 95.5% | 98.7% |
| 80 |  | 65.8% | 72.0% | 81.2% | 86.0% | 88.8% | 95.7% | 98.7% |
| 85 |  | 66.8% | 72.8% | 81.8% | 86.5% | 89.3% | 96.0% | 98.8% |
| 90 |  | 67.6% | 73.6% | 82.4% | 87.0% | 89.7% | 96.2% | 98.8% |
| 95 |  | 68.5% | 74.3% | 83.0% | 87.4% | 90.1% | 96.3% | 98.9% |
| 100 |  | 69.2% | 74.9% | 83.5% | 87.9% | 90.5% | 96.5% | 99.0% |
| 105 |  | 70.4% | 75.6% | 84.0% | 88.2% | 91.0% | 96.6% | 99.0% |
| 110 |  | 70.6% | 76.1% | 84.4% | 88.6% | 91.1% | 96.8% | 99.1% |
| 115 |  | 71.2% | 76.7% | 84.8% | 88.9% | 91.4% | 96.9% | 99.1% |
| 120 |  | 72.4% | 77.2% | 85.2% | 89.3% | 91.7% | 97.1% | 99.2% |
| 125 |  | 72.7% | 77.6% | 85.6% | 89.5% | 91.9% | 97.1% | 99.2% |
| 130 |  | 72.8% | 78.1% | 85.9% | 89.8% | 92.1% | 97.2% | 99.3% |
| 135 |  | 73.3% | 78.5% | 86.3% | 90.0% | 92.3% | 97.3% | 99.3% |
| 140 |  | 73.8% | 78.9% | 86.6% | 90.3% | 92.5% | 97.4% | 99.3% |
| 143 |  | 74.0% | 79.1% | 86.8% | 90.4% | 92.7% | 97.5% | 99.3% |
| 144 |  | 74.2% | 79.2% | 86.8% | 90.5% | 92.7% | 97.5% | 99.3% |
| 150 |  | 74.7% | 79.6% | 87.1% | 90.7% | 92.9% | 97.6% | 99.4% |
| 155 |  | 75.4% | 80.0% | 87.4% | 90.9% | 93.0% | 97.7% | 99.4% |
| 160 |  | 75.4% | 80.3% | 87.6% | 91.1% | 93.2% | 97.8% | 99.4% |
| 165 |  | 75.7% | 80.6% | 87.9% | 91.3% | 93.4% | 97.7% | 99.4% |
| 170 |  | 76.2% | 80.9% | 88.1% | 91.5% | 93.5% | 97.8% | 99.4% |
| 175 |  | 76.5% | 81.2% | 88.3% | 91.6% | 93.6% | 97.9% | 99.4% |
| 200 |  | 78.0% | 82.5% | 89.3% | 92.4% | 94.3% | 98.2% | 99.5% |
| 210 |  | 78.5% | 82.9% | 89.6% | 92.6% | 94.5% | 98.2% | 99.5% |
| 220 |  | 79.0% | 83.3% | 89.9% | 92.9% | 94.7% | 98.3% | 99.6% |
| 225 |  | 79.2% | 83.5% | 90.1% | 92.9% | 94.7% | 98.3% | 99.6% |
| 230 |  | 79.5% | 83.7% | 90.2% | 93.1% | 94.9% | 98.4% | 99.7% |
| 240 |  | 79.9% | 84.1% | 90.5% | 93.3% | 95.0% | 98.4% | 99.7% |
| 250 |  | 80.3% | 84.4% | 90.7% | 93.4% | 95.2% | 98.5% | 99.4% |
| 260 |  | 80.7% | 84.8% | 90.9% | 93.6% | 95.4% | 98.6% | 99.5% |
| 300 |  | 82.0% | 86.0% | 91.8% | 94.2% | 95.8% | 98.7% | 99.6% |
| 350 |  | 83.4% | 86.9% | 92.6% | 94.8% | 96.3% | 98.8% | 99.7% |
| 365 |  | 84.0% | 87.3% | 92.8% | 95.0% | 96.6% | 98.9% | 99.7% |
| 400 |  | 84.5% | 87.8% | 93.2% | 95.3% | 96.7% | 99.0% | 99.8% |
| 450 |  | 85.4% | 88.6% | 93.7% | 95.7% | 97.0% | 99.1% | 99.8% |
| 500 |  | 86.2% | 89.2% | 94.2% | 95.8% | 97.2% | 99.2% | 99.8% |
| 1000 |  | 90.4% | 92.6% | 96.5% | 97.5% | 98.4% | 99.4% | 99.9% |
| 1100 |  | 90.9% | 93.1% | 96.7% | 97.7% | 98.5% | 99.6% | 99.9% |

For a spreadsheet version of this table contact Dr Rodney Jones at hcaf\_rod@yahoo.co.uk

**Figure S1.** Correlation between Clinical Commissioning Group avoidable ASMR versus matching all-cause ASMR for local authorities.

**Figure S1.** CCG avoidable ASMR versus Local Authority all-cause ASMR. Data from [4,5]. ASMR uses the European Standard Population.

In this correlation, CCG avoidable ASMR was first extrapolated to 2019 by linear regression of the avoidable ASMR between 2011 and 2019. This was then matched against the local authority ASMR in 2019. Some 46 CCGs had a matching local authority ASMR. See Figure S1.1. The correlation in Figure S1.1. was then used to estimate CCG all-cause ASMR where no matching local authority was available.