**Supplementary Table 1: Associations between age, sex, reason for catheter use and type of catheter**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Catheter type** | **Reason for catheter** | **Age group in years, subsequently analysed as a continuous variable** |
|  |  | **N** | **Urethral** | **Supra****pubic** | **Chi squared test** **p value** | **N** | **Not neuro** | **Neurol****-ogical** | **Chi squared test** **p value** | **N** | **Less than 50** | **50-59.99** | **60-69.99** | **70-79.99** | **80-89.99** | **90 and over** | **Unpaired t test****p value** |
| **Sex** | **Female** | 226 | 10245.1% | 12454.9% | <0.0005 | 245 | 7129.0% | 17471.0% | <0.0005 | 245 | 208.2% | 4217.1% | 4920.0% | 4618.8% | 5924.1% | 2911.8% | <0.0005 |
| **Male** | 340 | 24271.2% | 9828.8% | 364 | 19152.5% | 17347.5% | 367 | 195.2% | 174.6% | 297.9% | 8523.2% | 16043.6% | 5715.5% |
| **Total** | 566 | 34460.8% | 22239.2% |  | 609 | 26243.0% | 34757.0% |  | 612 | 396.4% | 599.6% | 7812.7% | 13121.4% | 21935.8% | 8614.1% |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Catheter type** | **Urethral** |  |  |  |  | 334 | 16348.8 | 17151.2% | <0.0005 | 336 | 133.9% | 185.4% | 267.7% | 7422.0% | 14142.0% | 6419.0% | <0.0005 |
| **Supra****pubic** |  |  |  |  | 218 | 6529.8% | 15370.2% | 218 | 2310.6% | 3917.9% | 4721.6% | 4420.2% | 5223.9% | 136.0% |
| **Total** |  |  |  |  | 552 | 22841.3% | 32458.7% |  | 554 | 366.5% | 5710.3% | 7313.2% | 11821.3% | 19334.8% | 7713.9% |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Reason for catheter** | **Not neuro** |  |  |  |  |  |  |  |  | 257 | 51.9% | 31.2% | 197.4% | 6123.7% | 11845.9% | 5119.8% | <0.0005 |
| **Neruol****-ogical** |  |  |  |  |  |  | 342 | 339.6% | 5415.8% | 5917.3% | 6920.2% | 9427.5% | 339.6% |
| **Total** |  |  |  |  |  |  |  | 599 | 386.3% | 579.5% | 7813.0% | 13021.7% | 21235.4% | 8414.0% |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Supplementary Table 2: Catheter-related service use, and costs, over 12 months, N=624 people with long-term catheters, from GP records [249, 39.9% female; 375, 60.1% male]**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **N** | **Zeros** | **Service Use** | **Costs £2011** |
| **Service** | **Type** | **N, %** | **Mean** | **Median** | **SD** | **IQR** | **Mean** | **Median** | **SD** | **IQR** |
| GP | At surgery | 601 | 398, 66.2% | 0.86 | 0 | 2.07 | 0 to 1 | 31.14 | 0 | 74.64 | 0 to 36 |
| By phone | 601 | 346, 57.6% | 1.34 | 0 | 2.68 | 0 to 2 | 29.57 | 0 | 59.01 | 0 to 44 |
| At home | 601 | 414, 68.9% | 0.67 | 0 | 1.51 | 0 to 1 | 81.56 | 0 | 182.22 | 0 to 121 |
| Any of above | 601 | 222, 36.9% |   |   |   |   |   |   |   |   |
| Total |   | 601 |   | 2.88 | 1 | 4.51 | 0 to 4 | 142.26 | 44 | 235.98 | 0 to 184.25 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Other professionals (community) | At clinic | 601 | 525, 87.4% | 0.76 | 0 | 5.63 | 0 to 0 | 29.52 | 0 | 21.62 | 0 to 0 |
| By phone | 601 | 510, 84.9% | 0.43 | 0 | 1.49 | 0 to 0 | 2.38 | 0 | 8.19 | 0 to 0 |
| At home | 601 | 439, 73.0% | 1.81 | 0 | 5.72 | 0 to 1 | 51.77 | 0 | 162.86 | 0 to 28.5 |
| Total |   | 601 |   |   |   |   |   | 83.67 | 0 | 275.18 | 0 to 56.94 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Out of Hours | Call to nurse | 596 | 410, 68.8% | 1.37 | 0 | 3.74 | 0 to 1 | 45.24 | 0 | 123.48 | 0 to 33 |
| Call to GP | 596 | 508, 85.2% | 0.25 | 0 | 0.72 | 0 to 0 | 8.13 | 0 | 23.88 | 0 to 0 |
| Call to 999 | 596 | 582, 97.7% | 0.03 | 0 | 0.23 | 0 to 0 | 0.97 | 0 | 7.02 | 0 to 0 |
| Nurse visit | 596 | 570, 95.6% | 0.06 | 0 | 0.34 | 0 to 0 | 4.54 | 0 | 24.47 | 0 to 0 |
| ECP visit | 596 | 589, 98.8% | 0.02 | 0 | 0.22 | 0 to 0 | 2.36 | 0 | 25.65 | 0 to 0 |
| Any of above | 596 | 340, 57.0% |   |   |   |   |   |   |   |   |
| Total |   | 596 |   | 1.73 | 0 | 3.93 | 0 to 2 | 61.27 | 0 | 133.77 | 0 to 66 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Tests | Blood | 603 | 575, 95.4% | 0.11 | 0 | 0.75 | 0 to 0 | 0.19 | 0 | 1.28 | 0 to 0 |
| Urine analysis | 602 | 348, 57.8% | 1.07 | 0 | 2.08 | 0 to 1 | 0.09 | 0 | 0.17 | 0 to 0.08 |
| Urine culture | 602 | 284, 47.2% | 1.61 | 0 | 2.58 | 0 to 2 | 7.59 | 4.71 | 12.16 | 0 to 9.42 |
| Swab | 602 |  560, 93.0% | 0.14 | 0 | 0.71 | 0 to 0 | 1.46 | 0 | 7.57 | 0 to 0 |
| Total |   | 602 |   |   |   |   |   | 9.32 | 4.71 | 15.7 | 0 to 11.50 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Hospital | Outpatient | 613 | 511\*, 83.4% | 0.44 | 0 | 1.27 | 0 to 0 | 77.02 | 0 | 221.83 | 0 to 0 |
| Day stays | 613 | 534, 88.6% | 0.18 | 0 | 0.58 | 0 to 0 | 122.81 | 0 | 401.32 | 0 to 0 |
| Inpatient days | 602 | 520, 86.4% | 1.84 | 0 | 9.01 | 0 to 0 | 363.63 | 0 | 957.84 | 0 to 0 |
| A&E | 608 | 514, 84.5% | 0.22 | 0 | 0.60 | 0 to 0 | 23.94 | 0 | 63.94 | 0 to 0 |
| Total |   | 600 |   |   |   |   |   | 582.84 | 0 | 1181.84 | 0 to 511.50 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| GP supplies and medications |   | 604 |   |   |   |   |   | 305.43 | 249.63 | 304.25 | 123.68 to 386.80 |
|  |  |  |  |  |  |  |  |  |  |  |  |
| ALL COSTS |   | 590 |   |   |   |   |   | 1190.74 | 637.73 | 1361.86 | 343.74 to 1324.04 |
| SD: Standard Deviation; IQR: Interquartile Range; \* Never or less than once a year (because annual outpatient appointments are routine)1 Unit costs used in the calculations: GP consultations at practice (11.7 minutes) £36; GP phone calls (7.1 minutes) £22; GP home visit (23.4 minutes, includes travel) £121; GP nurse at practice (15.5 minutes) £39; other community professional (home visit 23.4 minutes, phone call 7 minutes) £28.50, £5.50 [Curtis, 2011]. Out of hours doctor home visit, nurse phone calls, nurse home visits based on previous unit costs with 1.5 multiplier for unsocial hours. All hospital services from NHS Reference costs 2011 [NHS Reference Costs, 2012]. Tests: blood £1.71 / test; urine analysis £0.08 / strip, culture £4.71; wound swab £10.60, from local hospital finance department. Medications and supplies from Prescription Cost Analysis, 2010 [NHS Digital, 2011]. |

**Supplementary Table 3: Catheter related costs1, over 12 months, N=624 people with long term catheters, [249, 39.9% female; 375, 60.1% male]**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |  Costs: | GP | Other Community | Out of Hours | Tests | Hospital | Medicines, Supplies | Total |
|    |    | N  | MeanSD | 95% Cis  | N  | MeanSD | 95% Cis  | 95%  CIs | MeanSD | 95% CIs | N  | MeanSD | 95% CIs | N  | MeanSD | 95%  CIs | N  | MeanSD | 95% CIs | N  | MeanSD | 95%  CIs |
| Sex | Female  | 242 | 110.41 | 86.3 | 242 | 81.85 | 46.39 | 241 | 57.60 | 43.07 | 243 | 8.18 | 6.69 | 243 | 345.24 | 230.7 | 244 | 362.77 | 320.57 | 238 | 952.84 | 817.61 |
|   | 190.36 | 134.51 |   | 280.03 | 117.31 |   | 114.56 | 72.14 |   | 11.77 | 9.67 |   | 906.46 | 459.79 |   | 334.61 | 404.96 |   | 1059.01 | 1088.08 |
| Male  | 359 | 163.74 | 136.71 | 359 | 84.90 | 56.64 | 355 | 63.72 | 48.53 | 359 | 10.10 | 8.25 | 357 | 744.57 | 607.79 | 360 | 266.56 | 238,00 | 352 | 1351.58 | 1192.93 |
|   | 260.35 | 190.76 |   | 272.25 | 113.15 |   | 145.47 | 78.9 |   | 17.85 | 11.95 |   | 1314.07 | 881.35 |   | 275.58 | 295.13 |   | 1513.49 | 1510.24 |
| Unpaired t test, p value | 0.004 | 0.894 | 0.584 | 0.112 | <0.0001 | <0.0001 | <0.0001 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Catheter type | Urethral  | 328 | 156.17 | 131.70 | 328 | 91.80 | 60.32 | 325 | 71.52 | 55.44 | 330 | 9.18 | 7.69 | 328 | 564.89 | 434.23 | 330 | 268.46 | 239.57 | 323 | 1165.73 | 1015.00 |
|   | 225.29 | 180.64 |   | 289.84 | 123.29 |   | 147.39 | 87.61 |   | 13.70 | 10.66 |   | 1202.89 | 695.55 |   | 266.77 | 297.35 |   | 1376.95 | 1316.46 |
| Supra public  | 215 | 122.67 | 87.97 | 215 | 86.76 | 48.18 | 213 | 52.38 | 35.83 | 214 | 10.20 | 7.63 | 214 | 617.11 | 460.54 | 216 | 370.50 | 323.24 | 209 | 1272.05 | 1087.16 |
|   | 258.19 | 157.38 |   | 287.04 | 125.35 |   | 122.54 | 68.93 |   | 19.10 | 12.77 |   | 1162.01 | 773.69 |   | 352.37 | 417.75 |   | 1355.80 | 1456.94 |
| Unpaired t test, p value | 0.111 | 0.842 | 0.116 | 0.467 | 0.617 | <0.0001 | 0.382 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Reason for catheter | Not neurological  | 249 | 143.7 | 112.81 | 249 | 84.37 | 54.76 | 244 | 60.81 | 43.29 | 249 | 8.93 | 7.21 | 247 | 619.58 | 475.05 | 249 | 241.63 | 216.33 | 243 | 1163.05 | 994.11 |
|   | 247.54 | 174.60 |   | 237.20 | 113.97 |   | 138.99 | 78.35 |   | 13.79 | 10.65 |   | 1153.27 | 764.12 |   | 202.72 | 266.94 |   | 1336.93 | 1331.99 |
| Neurological  | 345 | 137.76 | 114.18 | 345 | 84.67 | 52.66 | 345 | 62.12 | 48.20 | 346 | 9.45 | 7.68 | 346 | 559.56 | 431.37 | 348 | 351.60 | 314.22 | 340 | 1212.62 | 1064.06 |
|   | 222.68 | 161.34 |   | 302.32 | 116.69 |   | 131.38 | 76.03 |   | 16.76 | 11.23 |   | 1212.35 | 687.75 |   | 354.51 | 388.98 |   | 1392.71 | 1361.19 |
| Unpaired t test, p value | 0.76 | 0.989 | 0.908 | 0.688 | 0.544 | <0.0001 | 0.667 |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Age in Years | Under 70  | 171 | 108.03 | 80.16 | 171 | 82.51 | 39.12 | 172 | 60.24 | 41.77 | 172 | 9.35 | 6.81 | 173 | 433.99 | 281.69 | 173 | 429.12 | 364.29 | 169 | 1123.71 | 940.35 |
|   | 184.67 | 135.91 |   | 287.42 | 125.89 |   | 122.74 | 78.71 |   | 16.88 | 11.89 |   | 1014.89 | 586.30 |   | 431.97 | 493.94 |   | 1207.43 | 1307.07 |
| ≥70  | 426 | 155.89 | 131.76 | 426 | 84.92 | 59.06 | 420 | 62.08 | 48.78 | 426 | 9.22 | 7.77 | 423 | 648.16 | 529.29 | 427 | 258.11 | 237.63 | 417 | 1226.35 | 1089.34 |
|   | 253.32 | 180.01 |   | 271.65 | 110.78 |   | 138.70 | 75.38 |   | 15.18 | 10.66 |   | 1243.76 | 767.03 |   | 215.38 | 276.61 |   | 1423.29 | 1363.35 |
| Unpaired t test, p value | 0.011 | 0.923 | 0.88 | 0.926 | 0.03 | <0.0001 | 0.377 |
|  | Spearman Rho\* | Rho=0.051, p=0.215 | Rho=-0.009, p=0.826 | Rho=0.068, p=0.100 | Rho=0.10, p=0.812 | Rho=0.049, p=0.236 | Rho=-0.181, p<0.0001 | Rho=-0.026, p=0.532 |

\* Age as continuous variable

1 Unit costs used in the calculations: GP consultations at practice (11.7 minutes) £36; GP phone calls (7.1 minutes) £22; GP home visit (23.4 minutes, includes travel) £121; GP nurse at practice (15.5 minutes) £39; other community professional (home visit 23.4 minutes, phone call 7 minutes) £28.50, £5.50 [Curtis, 2011]. Out of hours doctor home visit, nurse phone calls, nurse home visits based on previous unit costs with 1.5 multiplier for unsocial hours. All hospital services from NHS Reference costs 2011 [NHS Reference Costs, 2011]. Tests: blood £1.71 / test; urine analysis £0.08 / strip, culture £4.71; wound swab £10.60, from local hospital finance department. Medications and supplies from Prescription Cost Analysis, 2010 [NHS Digital, 2011].

**Supplementary Figure 1: Costs for 624 individual participants plotted in increasing order**

     