Supplementary material

Table S1: Characteristics of patients who were included in and excluded from the analysis due to missing data

|  | Total | Excluded | Included | P |
| --- | --- | --- | --- | --- |
| **Research site** |  |  |  | <0.0001 |
| *Oxford* | 17,644 | 1,117 (6.3) | 16,527 (93.7) |  |
| *Manchester* | 22,961 | 2,353 (10.3) | 20,608 (89.8) |  |
| *Derby* | 18,854 | 990 (5.3) | 17,864 (94.7) |  |
| **Gender*a*** |  |  |  | <0.0001 |
| *Male* | 23,964 | 2,109 (8.8) | 21,855 (91.2) |  |
| *Female* | 35,473 | 2,329 (6.6) | 33,144 (93.4) |  |
| **Age group*a*** |  |  |  | <0.0001 |
| *10-24 years* | 20,413 | 1,889 (9.3) | 18,524 (90.7) |  |
| *25-54 years* | 34,913 | 2,391 (6.9) | 32,522 (93.1) |  |
| *55+ years* | 4,081 | 128 (3.1) | 3,953 (96.9) |  |
| **IMD quintiles** |  |  |  | <0.0001 |
| *1st-Least deprived* | 7,926 | 369 (4.7) | 7,557 (95.3) |  |
| *2nd-quintile* | 6,009 | 300 (5.0) | 5,709 (95.0) |  |
| *3rd quintile* | 8,448 | 571 (6.8) | 7,877 (93.2) |  |
| *4th quintile* | 10,382 | 857 (8.3) | 9,525 (91.7) |  |
| *5th-Most deprived* | 22,389 | 1,876 (8.4) | 20,513 (91.6) |  |
| *Missing IMD* | 4,305 | 487 (11.3) | 3,818 (88.7) |  |
| **Method of self-harm** |  |  |  | <0.0001 |
| *Self-poisoning alone* | 44,020 | 2,913 (6.6) | 41,107 (93.4) |  |
| *Self-cut to wrist/arm* | 8,271 | 782 (9.5) | 7,489 (90.5) |  |
| *Self-cut elsewhere involvedb* | 2,035 | 189 (9.3) | 1,846 (90.7) |  |
| *Self-cut to unknown site* | 1,623 | 168 (10.4) | 1,455 (89.6) |  |
| *Other self-injury alone* | 3,510 | 408 (9.4) | 3,102 (89.6) |  |
| **Psychosocial assessment** |  |  |  | <0.0001 |
| *Not assessed* | 26,254 | 2,570 (9.8) | 23,684 (90.2) |  |
| *Assessed* | 33,205 | 1,890 (5.7) | 31,315 (94.3) |  |
| **Previous self-harm** |  |  |  | <0.0001 |
| *No* | 9,619 | 593 (6.2) | 9,026 (93.8) |  |
| *Yes* | 38,309 | 2,830 (7.4) | 35,479 (92.6) |  |
| *Not known* | 11,531 | 1,037 (9.0) | 10,494 (91.0) |  |
| **Psychiatric care (present or past)** |  |  |  | <0.0001 |
| *No* | 9,893 | 694 (7.0) | 9,199 (93.0) |  |
| *Yes* | 37,108 | 2,622 (7.1) | 34,486(92.9) |  |
| *Not known* | 12,458 | 1,144 (9.2) | 11,314 (90.8) |  |

aAlso excludes patients with no information on gender and age i.e. refers to patients excluded for reasons other than gender and age

bCombining the two groups which include patients who cut elsewhere on the body, whether they fell into this group exclusively or also cut their wrist or arm in the same episode

Table S2: Characteristics of the study cohort by method of self-harm

|  |  |  | **Method of self-harm** | | |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Total | Self-poisoning alone | Self-cut to wrist/arm alonea | Self-cut elsewhereb | Self-cut to unknown site | Other self-injury alone |
|  | 54,999 | 41,107 | 7,489 | 1,846 | 1,455 | 3,102 |
| **Age group** |  |  |  |  |  |  |
| 10-24 years | 18,524 | 12,960 (31.5) | 3,192 (42.6) | 705 (38.2) | 592 (40.7) | 1,075 (34.7) |
| 25-54 years | 32,522 | 24,962 (60.7) | 3,977 (53.1) | 1,021 (55.3) | 783 (53.8) | 1,779 (57.4) |
| 55+ years | 3,953 | 3,185 (7.8) | 320 (4.3) | 120 (6.5) | 80 (5.5) | 248 (8.0) |
| **Psychosocial assessment** |  |  |  |  |  |  |
| Yes | 31,315 | 24,910 (60.6) | 3,489 (46.6) | 896 (48.5) | 569 (39.1) | 1,451 (46.8) |
| No | 23,684 | 16,197 (39.1) | 4,000 (53.4) | 980 (51.5) | 569 (60.9) | 1,651 (53.2) |
| **Previous self-harm** |  |  |  |  |  |  |
| Yes | 35,479 | 25,657 (62.4) | 5,408 (72.2) | 1,373 (74.4) | 1,064 (73.1) | 1,977 (63.7) |
| No | 9,026 | 7,827 (19.0) | 568 (7.6) | 140 (7.6) | 108 (7.4) | 383 (12.4) |
| Unknown | 10,494 | 7,623 (18.5) | 1,513 (20.2) | 333 (18.0) | 283 (19.5) | 742 (23.9) |
| **Psychiatric carec** |  |  |  |  |  |  |
| Yes | 34,486 | 25,410 (61.8) | 4,894 (65.3) | 1,300 (70.4) | 964 (66.3) | 1,918 (61.8) |
| No | 9,199 | 7,572 (18.4) | 890 (11.9) | 208 (11.2) | 141 (9.7) | 388 (12.5) |
| Unknown | 11,314 | 8,125 (19.8) | 1,705 (22.8) | 338 (18.3) | 350 (24.1) | 796 (25.7) |

aSelf-cut or stab involved only arm and/or wrist but no other bodily parts

bPresentations involving cutting or stabbing elsewhere on the body (than wrist or arm). Could also be in combination with wrist or arm in the same episode

cPast or current psychiatric care

Table S3: Suicide following presentation to hospital for self-harm by site of self-cut according to time of follow-up

|  |  | **Crude** | |  | **Adjusteda** | |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **N (n of suicides)** | **Odds ratio (95% CI)** | **P value** | **ICC (95% CI)** | **Odds ratio (95% CI)** | **P value** | **ICC (95% CI)** |
| ***One-year follow-up*** | 54,999 (201) |  |  |  |  |  |  |
| Self-poisoning alone | 41,107 (132) | 1.0 |  | 0.70 (0.57-0.80) | 1.0 |  | 0.67 (0.56-0.77) |
| Self-cut to wrist/arm aloneb | 7,489 (21) | 0.91 (0.54-1.54) | 0.73 |  | 1.04 (0.60-1.80) | 0.88 |  |
| Self-cut elsewherec | 1,846 (11) | 2.24 (1.07-4.75) | 0.04 |  | 2.28 (1.05-4.92) | 0.037 |  |
| Self-cut to unknown site | 1,455 (9) | 2.27 (1.01-5.12) | 0.05 |  | 2.53 (1.09-5.90) | 0.03 |  |
| Other self-injury alone | 3,102 (28) | 3.38 (2.02-5.67) | <0.0001 |  | 2.97 (1.75-5.05) | <0.0001 |  |
| **Specific site of self-cut/stab** | |  |  |  |  |  |  |
| Self-cut to neckd | 362 (4) | 4.40 (1.19-16.31) | 0.03 | 0.70 (0.57-0.80) | 3.49 (0.93-13.14) | 0.07 | 0.67 (0.56-0.77) |
| **Four-year follow-up** | 54,999 (333) |  |  |  |  |  |  |
| Self-poisoning alone | 41,107 (220) | 1.0 |  |  | 1.0 |  |  |
| Self-cut to wrist/arm aloneb | 7,489 (41) | 1.10 (0.76-1.60) | 0.63 | 0.60 (0.50-0.69) | 1.23 (0.83-1.82) | 0.31 | 0.62 (0.52-0.71) |
| Self-cut elsewherec | 1,846 (16) | 1.84 (1.02-3.33) | 0.04 |  | 1.82 (0.98-3.38) | 0.06 |  |
| Self-cut to unknown site | 1,455 (16) | 2.43 (1.33-4.42) | 0.004 |  | 2.65 (1.40-5.03) | 0.003 |  |
| Other self-injury alone | 3,102 (40) | 2.78 (1.85-4.17) | <0.0001 |  | 2.37 (1.55-3.64) | <0.0001 |  |
| **Specific site of self-cut/stab** | |  |  |  |  |  |  |
| Self-cut to neckd | 362 (7) | 4.18 (1.61-10.80) | 0.003 | 0.59 (0.49-0.69) | 3.48 (1.29-9.37) | 0.014 | 0.62 (0.52-0.71) |

aAdjusted for age (in years), gender, previous self-harm, psychiatric treatment and hospital

bSelf-cut or stab involved only arm and/or wrist but no other bodily parts

cPresentations involving cutting or stabbing elsewhere on the body (than wrist or arm). Could also be in combination with wrist or arm in the same episode

dRelative to presentations to hospital after self-poisoning alone

ICC=Interclass correlation coefficients

Table S4: The likelihood of suicide following presentation to hospital for self-harm by site of self-cut, mixed effect logistic regression - sensitivity analyses

|  |  | **Crude** |  |  | **Adjusteda** |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **N (n of suicides)** | **Odds ratio**  **(95% CI)** | **P value** | **ICC (95% CI)** | **Odds ratio**  **(95% CI)** | **P value** | **ICC (95% CI)** |
| **Presentations to hospital during 2005-2011** | | |  |  |  |  |  |
| Total | 43,286 (384) |  |  |  |  |  |  |
| Self-poisoning alone | 32,444 (260) | 1.0 |  | 0.60 (0.52-0.68) | 1.0 |  | 0.60 (0.51-0.69) |
| Self-cut to wrist/arm | 5,695 (46) | 1.10 (0.76-1.58) | 0.61 |  | 1.16 (0.80-1.69) | 0.43 |  |
| Self-cut elsewhereb | 1,362 (20) | 2.26 (1.29-3.97) | 0.005 |  | 2.16 (1.21-3.86) | 0.009 |  |
| Self-cut to unknown site | 1,342 (17) | 1.82 (1.01-3.28) | 0.045 |  | 1.90 (1.04-3.48) | 0.037 |  |
| Other self-injury alone | 2,443 (41) | 2.47 (1.64-3.72) | <0.0001 |  | 2.06 (1.35-3.15) | 0.001 |  |
| ***Specific site of self-cut/stab*** | |  |  |  |  |  |  |
| Self-cut to neckc | 267 (10) | 7.22 (2.96-17.58) | <0.0001 | 0.60 (0.52-0.68) | 6.00 (2.44-14.76) | <0.0001 | 0.60 (0.51-0.69) |
| **Psychiatric care status unknown excluded** | | | | | | |  |
| Total | 43,685 (395) |  |  |  |  |  |  |
| Self-poisoning alone | 32,982 (273) | 1.0 |  | 0.60 (0.52-0.69) | 1.0 |  | 0.60 (0.52-0.68) |
| Self-cut to wrist/arm | 5,784 (45) | 1.02 (0.71-1.47) | 0.91 |  | 1.08 (0.74-1.57) | 0.70 |  |
| Self-cut elsewhereb | 1,508 (18) | 1.68 (0.95-2.99) | 0.08 |  | 1.59 (0.88-2.88) | 0.13 |  |
| Self-cut to unknown site | 1,105 (21) | 2.88 (1.64-5.05) | <0.0001 |  | 2.87 (1.60-5.14) | <0.0001 |  |
| Other self-injury alone | 2,306 (38) | 2.34 (1.54-3.56) | <0.0001 |  | 1.90 (1.23-2.92) | 0.004 |  |
| ***Specific site of self-cut/stab*** | |  |  |  |  |  |  |
| Self-cut to neckc | 305 (9) | 4.49 (1.85-10.88) | 0.001 | 0.59 (0.52-0.67) | 3.64 (1.47-9.04) | 0.005 | 0.60 (0.52-0.68) |
| **Previous self-harm status unknown excluded** | | | | | |  |  |
| Total | 44,505 (381) |  |  |  |  |  |  |
| Self-poisoning alone | 33,484 (262) | 1.0 |  | 0.60 (0.52-0.67) | 1.0 |  | 0.62 (0.54-0.69) |
| Self-cut to wrist/arm | 5,976 (47) | 1.10 (0.77-1.58) | 0.61 |  | 1.17 (0.80-1.71) | 0.42 |  |
| Self-cut elsewhereb | 1,513 (17) | 2.68 (0.93-3.03) | 0.08 |  | 1.65 (0.89-3.04) | 0.11 |  |
| Self-cut to unknown site | 1,172 (20) | 2.68 (1.52-4.73) | 0.001 |  | 2.67 (1.48-4.83) | 0.001 |  |
| Other self-injury alone | 2,360 (35) | 2.18 (1.42-3.36) | <0.0001 |  | 1.85 (1.18-2.89) | 0.007 |  |
| ***Specific site of self-cut/stab*** | |  |  |  |  |  |  |
| Self-cut to neckc | 301 (10) | 5.66 (2.40-13.37) | <0.0001 | 0.60 (0.52-0.67) | 4.92 (2.03-11.91) | <0.0001 | 0.61 (0.53-0.69) |
| **Episodes of self-poisoning combined with self-cutting excluded** | | | | | |  |  |
| Total | 52,399 (449) |  |  |  |  |  |  |
| Self-poisoning alone | 41,107 (327) | 1.0 |  | 0.59 (0.50-0.66) | 1.0 |  | 0.61 (0.52-0.68) |
| Self-cut to wrist/arm | 5,935 (42) | 0.94 (0.65-1.36) | 0.74 |  | 0.97 (0.66-1.43) | 0.89 |  |
| Self-cut elsewhereb | 1,517 (19) | 1.82 (1.05-3.17) | 0.03 |  | 1.65 (0.92-2.94) | 0.09 |  |
| Self-cut to unknown site | 1,165 (19) | 2.52 (1.43-4.45) | 0.001 |  | 2.55 (1.41-4.62) | 0.002 |  |
| Other self-injury alone | 2,675 (42) | 2.25 (1.53-3.34) | <0.0001 |  | 1.89 (1.21-2.84) | 0.002 |  |
| ***Specific site of self-cut/stab*** | |  |  |  |  |  |  |
| Self-cut to neckc | 304 (10) | 5.57 (2.39-13.0) | <0.0001 | 0.58 (0.50-0.66) | 4.60 (1.92-11.0) | 0.001 | 0.60 (0.52-0.68) |
| **Presentations during 2005-2011 - psychiatric care status unknown excluded** | | | | | |  |  |
| Total | 33,482 (304) |  |  |  |  |  |  |
| Self-poisoning alone | 25,398 (211) | 1.0 |  | 0.61 (0.53-0.69) | 1.0 |  | 0.61 (0.51-0.70) |
| Self-cut to wrist/arm | 4,270 (35) | 1.11 (0.73-1.68) | 0.64 |  | 1.16 (0.75-1.78) | 0.51 |  |
| Self-cut elsewhereb | 1,073 (15) | 2.09 (1.09-4.03) | 0.03 |  | 1.98 (1.02-3.84) | 0.05 |  |
| Self-cut to unknown site | 1,022 (16) | 2.28 (1.21-4.30) | 0.01 |  | 2.39 (1.25-4.56) | 0.008 |  |
| Other self-injury alone | 1,719 (27) | 2.24 (1.36-3.69) | 0.002 |  | 1.79 (1.08-2.97) | 0.03 |  |
| ***Specific site of self-cut/stab*** | |  |  |  |  |  |  |
| Self-cut to neckc | 219 (8) | 6.88 (2.51-18.9) | <0.0001 | 0.61 (0.53-0.69) | 5.57 (2.03—15.31) | 0.001 | 0.61 (0.51-0.70) |
| **Presentations during 2005-2011 - previous self-harm status unknown excluded** | | | | | |  |  |
| Total | 34,718 (297) |  |  |  |  |  |  |
| Self-poisoning alone | 26,185 (204) | 1.0 |  | 0.61 (0.53-0.69) | 1.0 |  | 0.62 (0.52-0.70) |
| Self-cut to wrist/arm | 4,508 (37) | 1.19 (0.79-1.80) | 0.41 |  | 1.28 (0.83-1.95) | 0.26 |  |
| Self-cut elsewhereb | 1,113 (16) | 2.35 (1.24-4.46) | 0.009 |  | 2.33 (1.21-4.48) | 0.01 |  |
| Self-cut to unknown site | 1,091 (15) | 2.09 (1.09-3.98) | 0.025 |  | 2.16 (1.12-4.17) | 0.02 |  |
| Other self-injury alone | 1,821 (25) | 2.03 (1.22-3.37) | 0.006 |  | 1.73 (1.03-2.90) | 0.04 |  |
| ***Specific site of self-cut/stab*** | |  |  |  |  |  |  |
| Self-cut to neckc | 221 (10) | 10.18 (3.98-26.03) | <0.0001 | 0.61 (0.53-0.69) | 8.71 (3.38-22.43) | <0.0001 | 0.62 (0.52-0.70) |
| **Presentations during 2005-2011 - episodes of self-poisoning combined with self-cutting excluded** | | | | | |  |  |
| Total | 41,333 (357) |  |  |  |  |  |  |
| Self-poisoning alone | 32,444 (260) | 1.0 |  | 0.60 (0.52-0.68) | 1.0 |  | 0.62 (0.52-0.70) |
| Self-cut to wrist/arm | 4,573 (34) | 1.00 (0.66-1.50) | 0.98 |  | 1.03 (0.68-1.58) | 0.88 |  |
| Self-cut elsewhereb | 1,144 (17) | 2.25 (1.22-4.13) | 0.009 |  | 2.08 (1.11-3.88) | 0.02 |  |
| Self-cut to unknown site | 1,074 (14) | 1.95 (1.02-3.73) | 0.04 |  | 2.01 (1.04-3.91) | 0.04 |  |
| Other self-injury alone | 2,098 (32) | 2.19 (1.39-3.44) | 0.001 |  | 1.82 (1.14-2.90) | 0.01 |  |
| ***Specific site of self-cut/stab*** | |  |  |  |  |  |  |
| Self-cut to neckc | 228 (9) | 8.11 (3.12-21.14) | <0.0001 | 0.61 (0.52-0.69) | 6.77 (2.59-17.72) | <0.0001 | 0.60 (0.51-0.69) |

aAdjusted for age (in years), gender, previous self-harm, psychiatric treatment and hospital, all are assumed to be associated with specific method and with risk of suicide based previous research.

bCombining the two groups which include patients who cut elsewhere on the body, whether they fell into this group exclusively or also cut their wrist or arm in the same episode

cCompared to presentations to hospital following self-poisoning alone

ICC=Interclass correlation coefficients

**Table S5. Characteristics of patients who presented to hospital for self-cut/stab according to whether or not site of cut was known. Numbers and percentages are displayed by episodes, n=10,790**

|  |  | n (%) |  |  |
| --- | --- | --- | --- | --- |
|  | **Site of cut known** | **Unknown site of cut** | **Total** | P value |
|  | 9,335 (86.3) | 1,455 (13.5) | 10,790 |  |
| **Gender** |  |  |  |  |
| Male | 2,892 (86.3) | 587 (13.7) | 4,289 | 0.62 |
| Female | 4,597 (86.6) | 868 (13.4) | 6,501 |  |
| **Age group** |  |  |  |  |
| 10-24 years | 3,897 (86.8) | 592 (13.2) | 4,489 | 0.37 |
| 25-54 years | 4,998 (86.5) | 783 (13.5) | 5,781 |  |
| 55 years and over | 440 (84.6) | 80 (15.4) | 520 |  |
| **Research site** |  |  |  |  |
| Site 1 | 3,373 (99.8) | 5 (0.2) | 3,378 | <0.0001 |
| Site 2 | 3,261 (77.4) | 955 (22.6) | 4,216 |  |
| Site 3 | 2,701 (84.5) | 495 (15.5) | 3,196 |  |
| **Time of presentation to hospital** | | | |  |
| Working hours (9am-17pm) | 2,197 (86.3) | 350 (13.7) | 2,547 | <0.0001 |
| Out of working hours | 6,839 (87.4) | 987 (12.6) | 7,826 |  |
| Now known | 299 (71.7) | 118 (28.3) | 417 |  |
| **Self-harm Method** |  |  |  |  |
| Self-injury alone | 7,452 (86.5) | 1,165 (13.5) | 8,617 | 0.83 |
| Self-injury and self-poisoning | 1,883 (86.7) | 290 (13.3) | 2,173 |  |
| **Admitted to a hospital bed** | | | |  |
| No | 5,454 (86.8) | 827 (13.2) | 6,281 | <0.0001 |
| Yes | 2,960 (92.2) | 251 (7.8) | 3,211 |  |
| Not Known | 845 (71.0) | 346 (29.0) | 1,191 |  |
| **Psychosocial assessment** | | | |  |
| Not assessed | 4,950 (84.8) | 886 (15.2) | 5,836 | <0.0001 |
| Assessed | 4,385 (88.5) | 569 (11.5) | 4,954 |  |
| **History of self-harm** | | | |  |
| Yes | 708 (86.8) | 108 (13.2) | 816 | 0.93 |
| No | 6,781 (86.4) | 1,064 (13.6) | 7,845 |  |
| Unknown | 1,846 (86.7) | 283 (13.3) | 2,129 |  |
| **Psychiatric care (past or current)** | | | |  |
| Yes | 1,098 (88.6) | 141 (11.4) | 1,239 | 0.03 |
| No | 6,194 (86.5) | 964 (13.5) | 7,158 |  |
| Unknown | 2,043 (85.4) | 350 (14.6) | 2,393 |  |