

Annual Report - 2018

Bristol Self-Harm Surveillance Register

Current Steering group: David Gunnell (Chief Investigator, Professor of Epidemiology), Salena Williams and Nic Munien (Clinical Team Manager, Liaison Psychiatry), Duleeka Knipe (ESRC Postdoctoral Fellow), Katharine Bramley (Audit and Research Assistant), Peter Kennedy-Watson (Audit and Research Assistant), Paul Moran (Professor of Psychiatry and Honorary Consultant Psychiatrist), Ben Ford (Clinical Team Manager Liaison Psychiatry, NBT), Matthew Gilbert (Liaison Psychiatry, Bristol Children's Hospital)

Report prepared by: Maria Theresa Redaniel, Sharea Ijaz, Joni Jackson, David Gunnell and Paul Moran



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1. Summary of key findings

- There were 1,750 episodes of self-harm presenting to the BRI in 2018. The ratio of female to male patients increased yearly from 1.4 in 2011, to 2.3 in 2017. This year the ratio has decreased to 1.65. The high female to male ratio for self-harm presentations has been most pronounced in the 15-24 year age group, however the year-on-year rises observed in previous years amongst this age group appear to have stopped.
- There were no data available for the year 2018 from Southmead Hospital. The complete data from 2017 shows that approximately equivalent numbers of self-harm patients are now seen at Southmead as the BRI.
- The median waiting time between Emergency Department (ED) attendance and ED clinical assessment in the BRI was 124 minutes in 2018. The median time from triage to ED clinician assessment has increased in recent years from 57 mins in 2011 to 107 mins in 2018. This is likely a reflection of increased pressures on hospital ED staff.
- Roughly 7.7% of individual episodes had experienced domestic violence. A higher prevalence was observed in women, particularly non-white women.
- The number of people self-poisoning with tricyclic antidepressants (n=39), remains at lower levels than in most earlier years.
- Self-harm attendances amongst students were higher in 2018 (15.8%) compared to previous years (range 8-13% in years 2010-2017). The majority of student presentations were female (78.5%).
- Sixty-three percent of self-harm presentations in the BRI in 2018 received a psychosocial assessment (versus 61% in 2017).
- In the BRI, the proportion of patients admitted (65%) to a medical bed is 2% higher than in 2017. The proportion of red matrix (high risk) patients admitted to a hospital bed (56) was the second highest (highest in 2015) since we began recording this in 2011.
- 68 episodes of self-harm at the BRI did not have a psychosocial assessment “for policy reasons which were unclear”; reasons for these decisions should be reviewed, perhaps in a local audit.

2. Introduction

Hospital presenting self-harm is a major public health concern. Not only does it account for an estimated 200,000 Emergency Department (ED) attendances annually in England, but up to a quarter of these individuals go on to repeat self-harm in the next 12 months.

Self-harm is also a major risk factor for suicide. A fifth of all people who die by suicide attend the ED following self-harm in the year prior to their death and half of all people who die by suicide have a past history of self-harm. The hospital treatment of people who self-harm provides an important opportunity for suicide prevention. For this reason, the recently (2016) refreshed National Suicide Prevention Strategy for England was extended to include self-harm prevention as a key area and hospital admission for self-harm is one of the standard outcome indicators used by Local Authorities to monitor population mental health and wellbeing.

It is important to note that whilst the term 'self-harm' includes acts of self-injury or overdose carried out both with and without suicidal intent (the latter also known as non-suicidal self-harm), most people who present to hospital following self-harm are suicidal or have attempted suicide. Furthermore, people who self-harm without suicidal intent have high levels of mental distress and are at high risk of making suicide attempts.

The Bristol Self-harm Surveillance Register has been recording detailed information on patients presenting to hospital for self-harm since 2010. The database is maintained in the Emergency Departments of the Bristol Royal Infirmary (BRI), part of University Hospitals Bristol NHS Foundation Trust (UHBT) since 2010, and Southmead Hospital (initially Frenchay Hospital, prior to the transfer of acute services from Frenchay to Southmead), North Bristol NHS Trust (NBT) since 2013.

Information recorded on the register enables an assessment of i) the incidence of hospital-presenting self-harm in Bristol and its geographical distribution, ii) trends in the incidence of self-harm and its management; iii) the impact of changes in service delivery on patient management and outcomes and iv) risk factors for repeat self-harm and suicide; v) the medicines taken in overdose. This information also contributes to local prevention efforts and to the STITCH (Services and Trusts Integrating to Transform Care in Self-harm) Health Integration Team (HIT). These data also provide insight into the management of patients for clinicians and managers while also allowing the evaluation of services against NICE guidelines for treatment of self-harm patients.

This report, our eighth annual report, outlines the annual data on self-harm patients collected in 2018. In this year's report we particularly focus on domestic violence and self-harm presentations to ED amongst students. We also consider data quality issues and evaluate the cost-effectiveness of the BRI Liaison Psychiatry service.

3. Methods

Potential self-harm attendances are identified using electronic searches of the Emergency Department records. For the purposes of the register we define self-harm as: “intentional self-injury or self-poisoning irrespective of motivation or degree of suicidal intent”. Once deliberate self-harm attendances have been confirmed the details of the attendance are recorded on an Access database developed by Bristol University. Numerous data sources are used in collecting the information describing patient attendances, these include: a) the hospital patient administration system (PAS), b) the local mental health trust’s PAS system RIO, c) the Liaison Psychiatry team’s assessment forms and d) local coroners records. A validation exercise in 2010 showed that this approach identifies 99% of all cases of self-harm presenting to hospital. Repeating this exercise in 2015 revealed our processes remain robust with 98% case ascertainment. Once all the details of identified cases of self-harm have been recorded on the database, the data are stored on a Trust server and anonymised uploads are sent to the University of Bristol for analysis.

Analyses in this report describe both individual people and episodes of self-harm. One person can have multiple episodes of self-harm (mean for 2018: 1.7 episodes; range 1-18 episodes), so the total number of episodes of self-harm is greater than the number of people who present to the hospital. Some analyses are on individual people, based on their first (index) attendance during the year, while other analyses are based on all episodes of self-harm during the year. These latter analyses reflect the overall amount of hospital care delivered to this vulnerable group of people.

Furthermore, some of the analyses included in this report are stratified by patient matrix risk category, or whether the patient had a psychosocial assessment. Matrix categories provide guidance for clinical staff in deciding whether a patient should be referred for an immediate psychosocial assessment. The matrix is used to assess patient risk at triage, with patients being categorised into one of three groups: green, amber or red. Higher risk patients are assigned a red or amber matrix risk category and therefore should receive a psychosocial assessment.

4. Ethics, clinical governance and funding

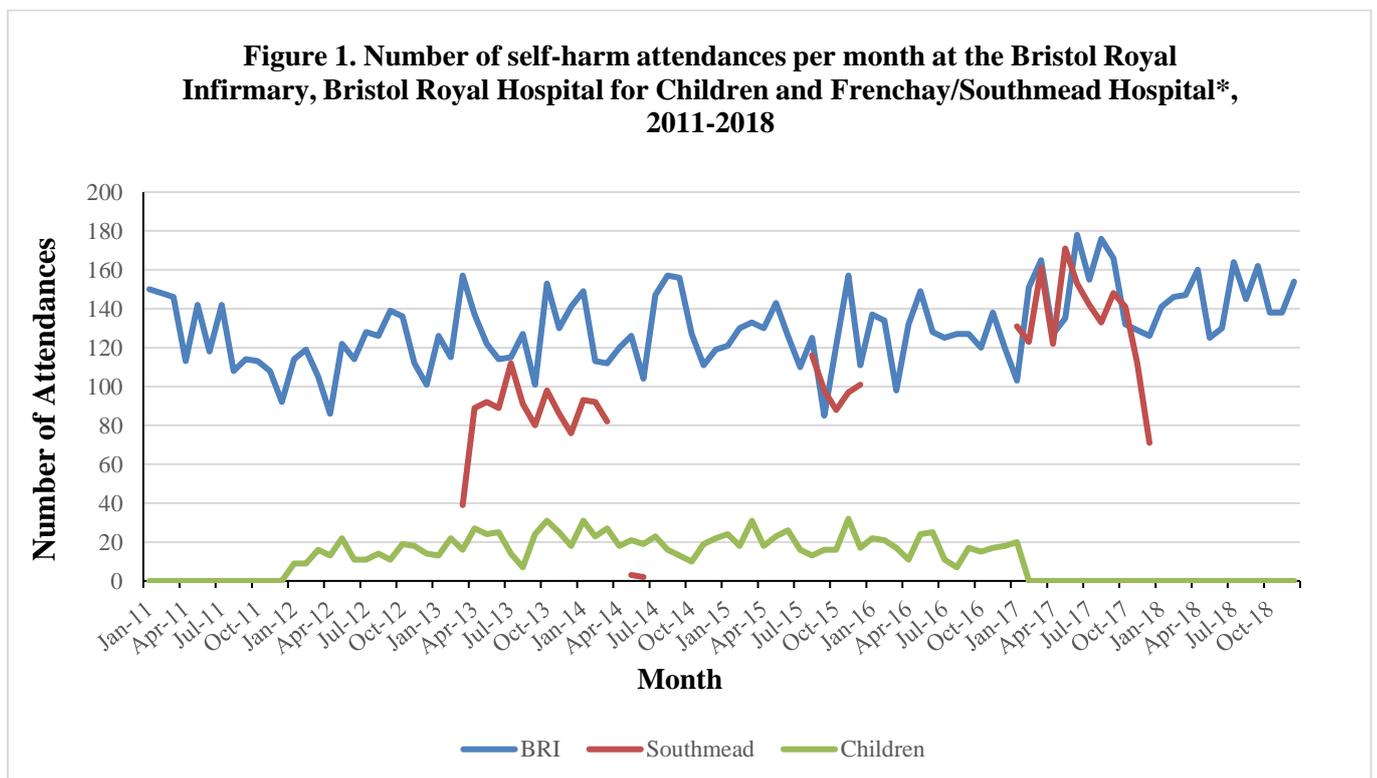
Southmead Research Ethics Committee approved the research database. University Hospitals Bristol NHS Foundation Trust have given ethical approval until 01/06/2019. CLAHRC West has applied for a renewal of the ethics approval for the next year. The surveillance system received start-up funding from NHS Bristol and Avon and Wiltshire Partnership NHS Trust and has since been funded by Avon and Wiltshire Partnership NHS Trust, Bristol City Council, Bristol Health Partners and CLAHRC West. Funding from all but one sources ends this year and identification of a source of long term funding is essential for the future of the surveillance register.

5. Findings

5.1 Number of people attending the ED following self-harm: 2011-2018

There were 1,750 self-harm presentations to the Bristol Royal Infirmary's Emergency Department in 2018, very similar to the previous year (presentations in 2017=1,743). The 1,750 attendances were made by 1,286 individuals, therefore roughly one in three attendances were repeat episodes. In 2018, the number of people attending the BRI following self-harm per month remained the same (146) as in 2017 (146). (Figure 1).

Due to problems with accessing computer systems, data for Southmead Hospital are only available for the year 2017 until (Jan-Dec) but not for the year 2018 (Figure 1). There were 1608 self-harm presentations at Southmead in 2017, representing 1183 individuals. The pattern of attendances appear similar to BRI in 2017. In 2017, the average monthly number of presentations to Southmead Hospital Emergency Department was 134, which is much higher than the average monthly presentations there between 2011 and 2016 (mean: 92 / month; available data only).



*Data include presentations made to Frenchay and subsequently to Southmead when services moved.

5.1.1 Number of people attending the ED following self-harm by age and gender

Over the last few years, the total number of presentations at the BRI has risen in females but has remained relatively stable in males. In 2018, male presentations were higher compared to the previous year.

Presentations were more often female in line with trends from previous years (Figure 2). However, compared to 2017 there has been an overall decrease in the female-to-male ratio (Figure 3). The highest female-to-male ratio was still in the under 25 year age group for 2018, as it was in 2017, although lower. This was partially because there were more male presentations in this age group this year but also because of fewer female presentations compared to 2017.

Until the write up of this report, only 2017 data from Southmead was available and is presented here. The pattern of presentations at Southmead appear to follow that seen in BRI in 2017 but with smaller numbers

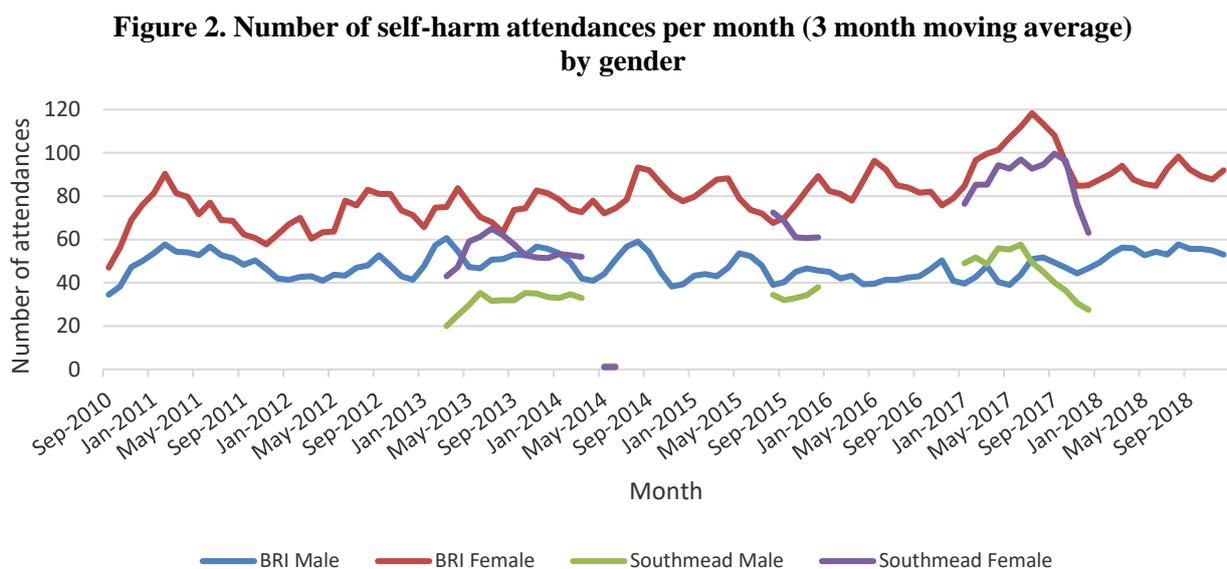
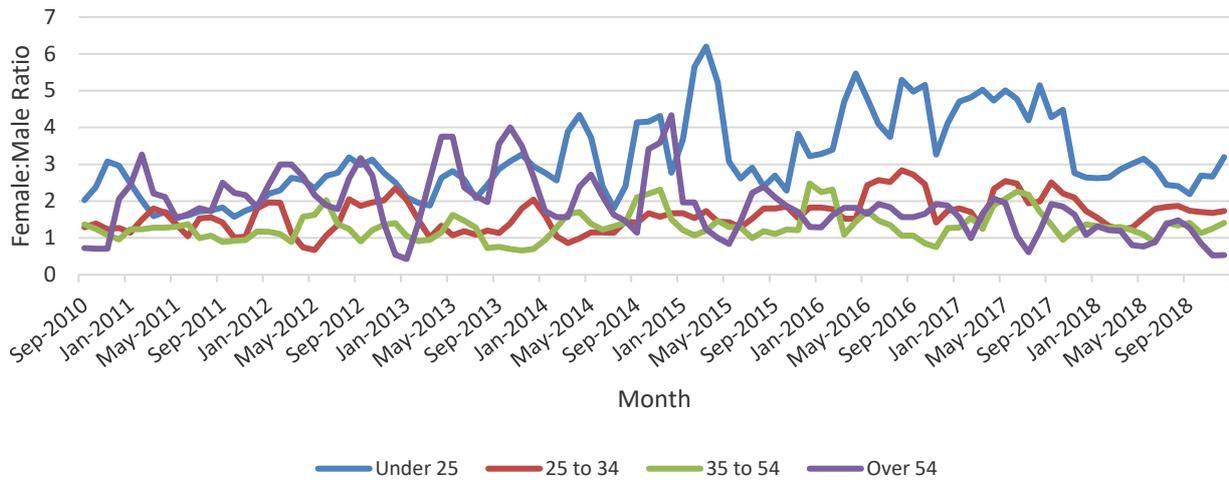
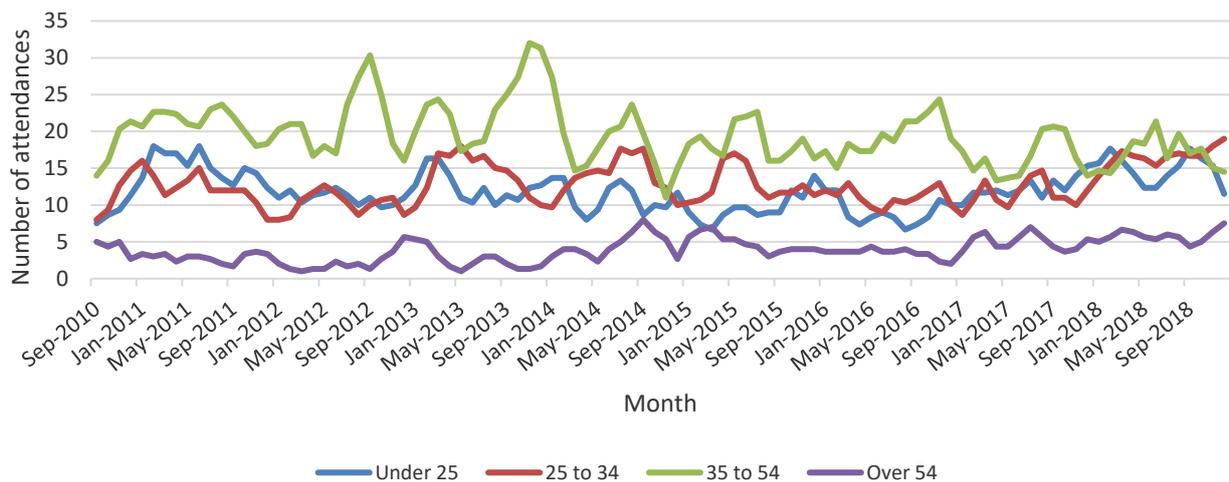


Figure 3. Female to male ratio of hospital presentations (3 month moving average) by age group BRI



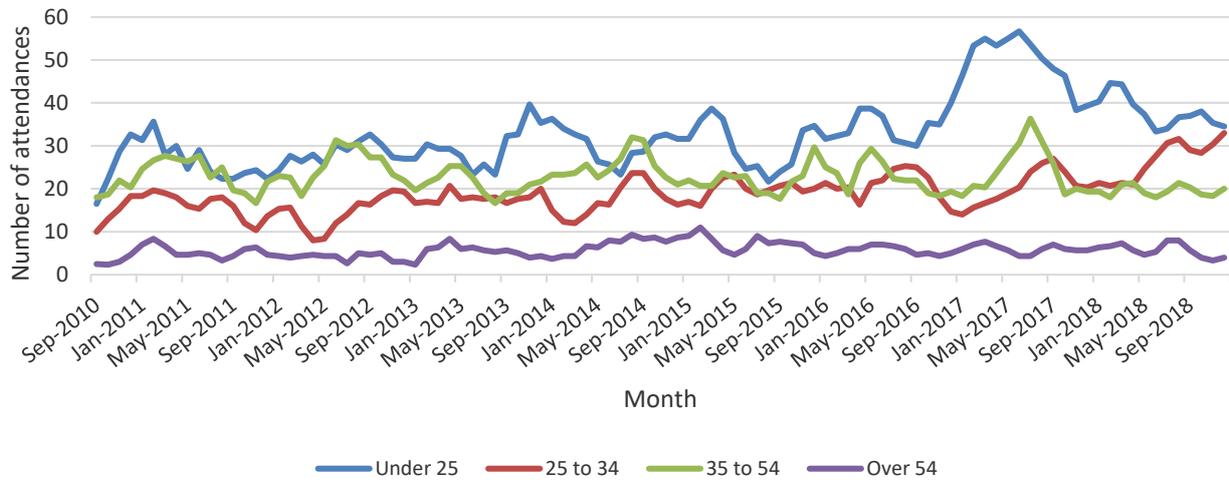
The under 25 age group had a higher female to male ratio in terms of self-harm presentations in the year 2018. This is similar to the trend seen in the previous years, however the year on year rises in the female to male ratio seen in previous years appear to have turned around in 2018.

Figure 4. Number of male self-harm attendances per month (3 month moving average) by age group BRI



Male self-harm attendances in 2018 were higher than those in 2017 for all age groups (Figure 4). The attendances were the highest in the under 25 year and 25-34 year age groups since the start of register in 2011.

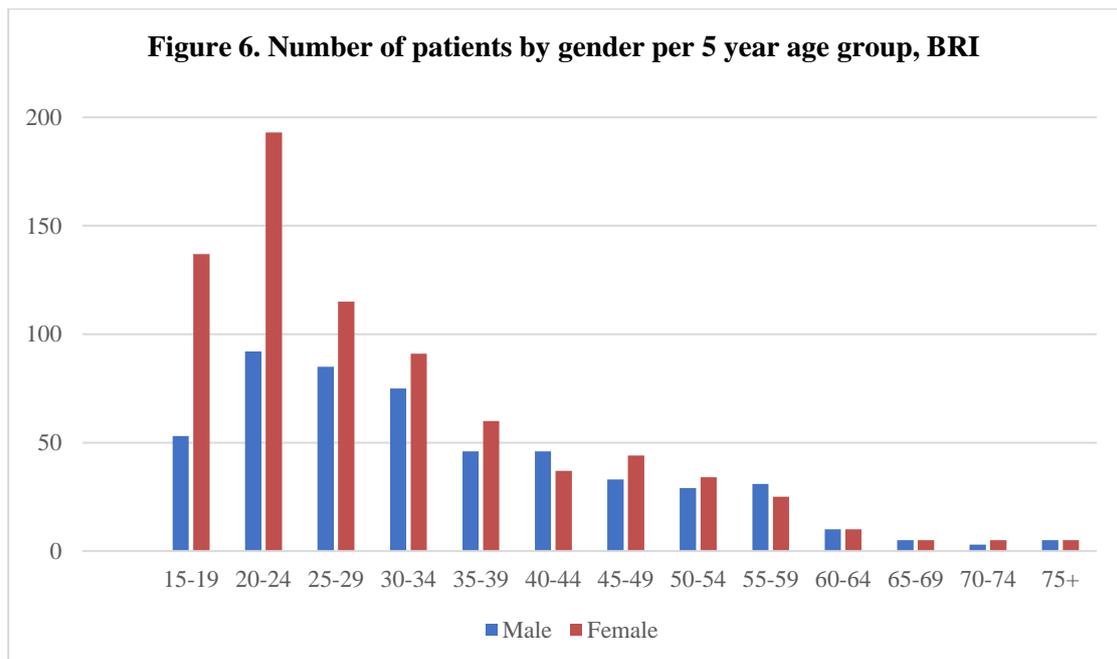
Figure 5. Number of female self-harm attendances per month (3 month moving average) by age group BRI



With the exception of the 25-34 year old group, female self-harm presentations were lower in 2018 than in 2017, although higher than the previous years in most age groups, with the greatest decrease amongst those aged under 25 (Figure 5).

5.2 Patient characteristics for presentations in 2018

Female patients made up a greater proportion of the self-harm patient population than males at the BRI (female vs. male: 59.8% vs. 40.2% (Figure 6). Females were on average younger than male patients (median age female vs. male: BRI: 26 vs. 31, $p < 0.0001$; Table 1).



The prevalence of unemployment was high in both genders but particularly so in male patients ($p < 0.001$, Table 1). This may partly reflect age patterns where more females were under the age of 24 and a higher percentage of women were full time students (24.4%) compared to males (13.2%).

Males were less likely to be living with family. The majority of the patients, whether male or female, were of white ethnicity. Around 7% of patients (86/1286 patients) cited debt, money, finance or gambling as precipitating factors for self-harm.

Table 1. Patient characteristics, based on first episode of self-harm in 2018 at the BRI*

	Male (n=514)	Female (n=765)	Total (n=1279*)
Median age	31	26	28
Age range	16-89	9-94	9-94
White	423 (93.2)	631 (91.2)	1054 (92.0)
Mixed	13 (2.9)	26 (3.8)	39 (3.4)
Asian	5 (1.1)	13 (1.9)	18 (1.6)
Black	8 (1.8)	15 (2.2)	23 (2.0)
Other (eg Chinese)	5 (1.1)	7 (1.0)	12 (1.1)
Employed	133 (30.7)	192 (29.8)	325 (30.2)
Unemployed	191 (44.1)	212 (32.9)	403 (37.4)
Retired	12 (2.8)	14 (2.2)	26 (2.4)
Full time student	57 (13.2)	158 (24.5)	215 (19.9)
Sickness	31 (7.2)	44 (6.8)	75 (7.0)
Other	9 (2.1)	25 (3.9)	34 (3.2)
Living Alone	136 (28.5)	136 (19.0)	272 (22.8)
With family	236 (49.5)	464 (64.9)	700 (58.7)
Other	105 (22.0)	115 (16.1)	220 (18.5)

* unknown data; 5 patients had no information on age, and 7 patients had no information on sex.

5.2.1 Self-harm among patients who experience domestic violence

From January 2017 onwards, domestic violence was recorded systematically on the matrix.

In 2018, Around 7.7% of episodes in the BRI (134 of 1750 episodes) were indicated to be in patients who had experienced domestic violence. This is half of what was seen in 2017 (14%). This could be partly due to the change in the definition used to code domestic violence in the BSHSR in 2018 to exclude historic child abuse. This definition change was adopted based on the advice of Tom Dalton, an expert in the field. The trend seen last year of a larger proportion of women than men and non-Caucasians experiencing domestic violence however continues (Table 2). A large amount of data on domestic violence was coded as unknown or missing.

Such instances were assumed not to have suffered domestic violence, so we are likely to have under-estimated the prevalence of domestic violence.

Table 2. Domestic violence data collected in 2018 at the BRI

	Yes (n=134)	No (n=54)	Unknown/ missing (n=1562)
Median age	32	30	27
Male	13 (2.0)	20 (3.1)	623 (95.0)
Female	121 (11.1)	34 (3.1)	931 (85.7)
White	110 (7.5)	46 (3.1)	1319 (89.4)
Mixed	3 (6.0)	3 (6.0)	44 (88.0)
Asian	3 (13.0)	1 (4.4)	19 (82.6)
Black	5 (21.7)	0 (0.0)	18 (78.3)
Other (eg Chinese)	2 (16.7)	0 (0.0)	10 (83.3)
Not Known	11 (6.6)	4 (2.4)	152 (91.0)

5.2.2 Self-harm amongst students

1,831 episodes of self-harm have been recorded amongst students (aged 15 and above) since the inception of the register (Figure 7; Table 3); these episodes account for 12.7 % of attendances.

Self-harm attendances were the highest in 2018 (15.8%) compared to previous years (range 8-13%). The majority of students were aged <25 years (95%) and were female (75.7%).

Majority of university entrants in the UK are 18 years of age (<https://www.ucas.com>). Restricting our analysis to those 18 year or older gives us the approximate figures for self-harm among university students (Table 3). They made up nearly 80% of self-harm presentations by students at the BRI in 2018.

The available data from the Southmead Hospital (between Jan- Dec 2017) showed a similar pattern of self-harm in students as seen in 2017 at the BRI.

Figure 7. Number of self-harm attendances by students per month 2010-2018

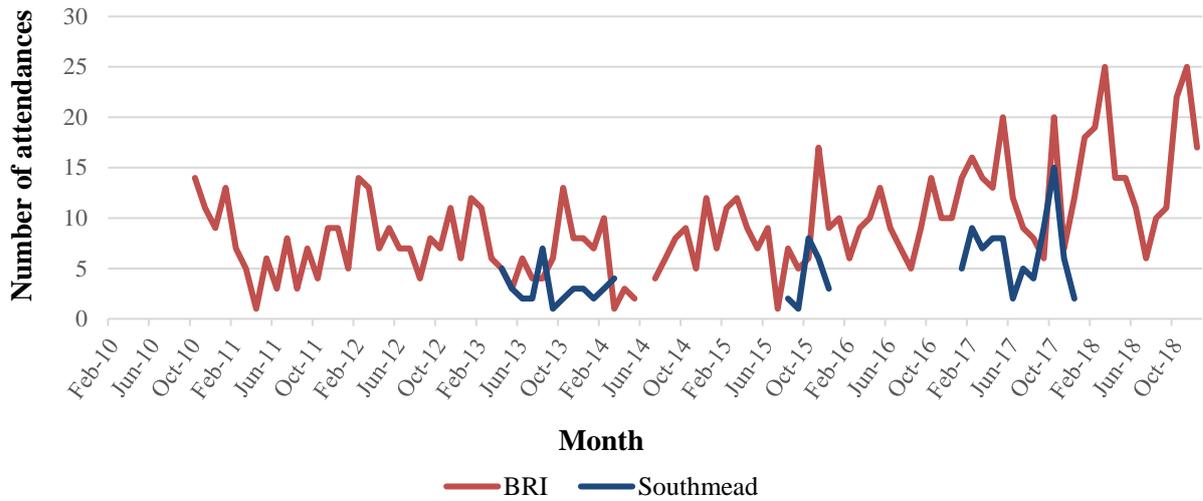


Table 3. Self-harm presentations by students

Year	All full time students over 15 years				Full time students over 18 years			
	BRI		Southmead		BRI		Southmead	
	Not a student	Student	Not a student	Student	Not a student	Student	Not a student	Student
2010	348 (89.0)	43 (11.0)			355 (90.8)	36 (9.2)		
2011	1367 (91.5)	127 (8.5)			1405 (94.0)	89 (6.0)		
2012	1233 (87.9)	169 (12.1)			1282 (91.4)	120 (8.6)		
2013	1366 (88.8)	172 (11.2)	782 (91.8)	70 (8.2)	1415 (92.0)	123 (8.0)	816 (95.8)	36 (4.2)
2014	1413 (91.7)	128 (8.3)	247 (90.8)	25 (9.2)	1463 (94.9)	78 (5.1)	256 (94.1)	16 (5.9)
2015	1320 (88.5)	172 (11.5)	452 (90.2)	49 (9.8)	1373 (92.0)	119 (8.0)	474 (94.6)	27 (5.4)
2016	1351 (88.0)	184 (12.0)	125 (92.6)	10 (7.4)	1409 (91.8)	126 (8.2)	131 (97.0)	4 (3.0)
2017	1515 (86.9)	228 (13.1)	1430 (88.9)	178 (11.1)	1569 (90.0)	174 (10.0)	1504 (93.5)	104 (6.5)
2018	1474 (84.2)	276 (15.8)			1530 (87.4)	220 (12.6)		

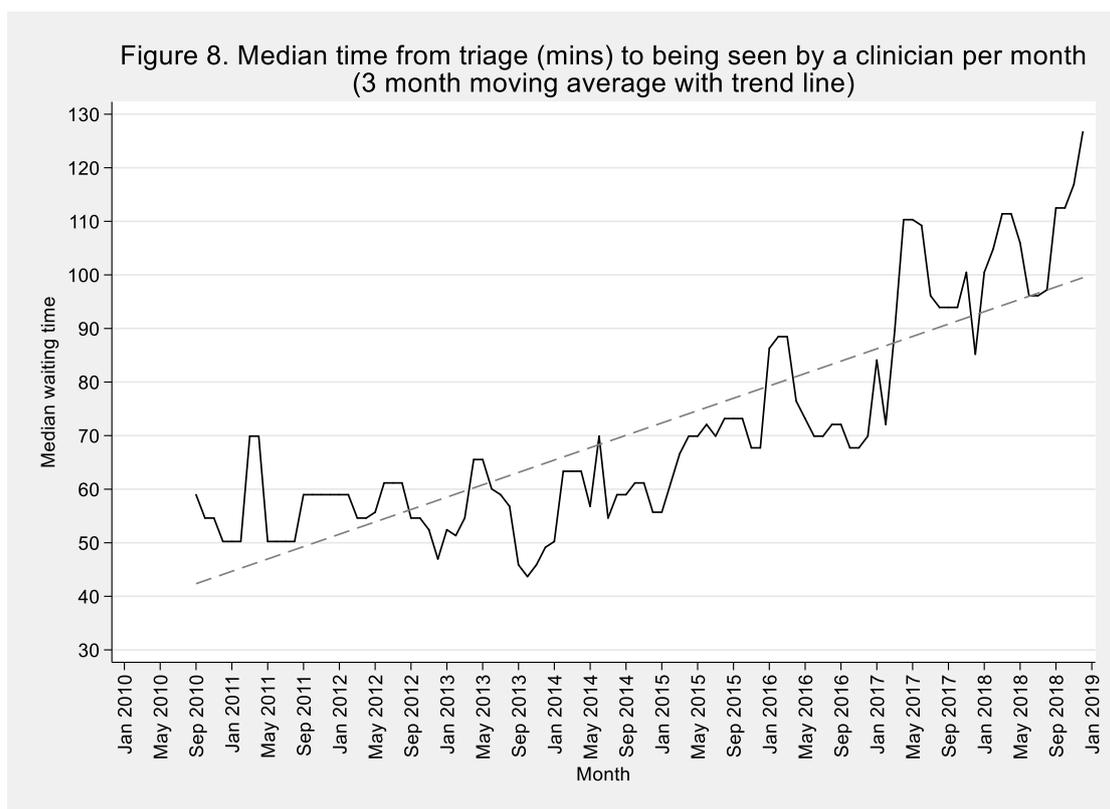
5.3 Waiting times

5.3.1 BRI

The median waiting time for self-harm patients between booking in and being assessed in triage was 15.3 minutes (mean 22, range 0-192)¹. This represents a decrease from the figure of 17.5 and 19.7 minutes reported in 2017 and 2016 respectively. The median waiting time for those patients who self-discharged after triage was slightly longer than those who did not self-discharge at 17.5 minutes (mean 24, range 0-100).

The median time from attendance to medical assessment by an ED clinician was 124.5 minutes². The average time from attendance to medical assessment was inversely associated with a patient's risk (as indexed by the risk matrix); higher risk patients waited less time for a medical assessment (high risk wait: 109 mins vs. low risk wait: 142 mins).

The median time from triage to ED clinician assessment has increased in recent years from 57 mins in 2011 to 107 mins in 2018 (Figure 8)³. This is likely a reflection of increased pressures on hospital ED staff.

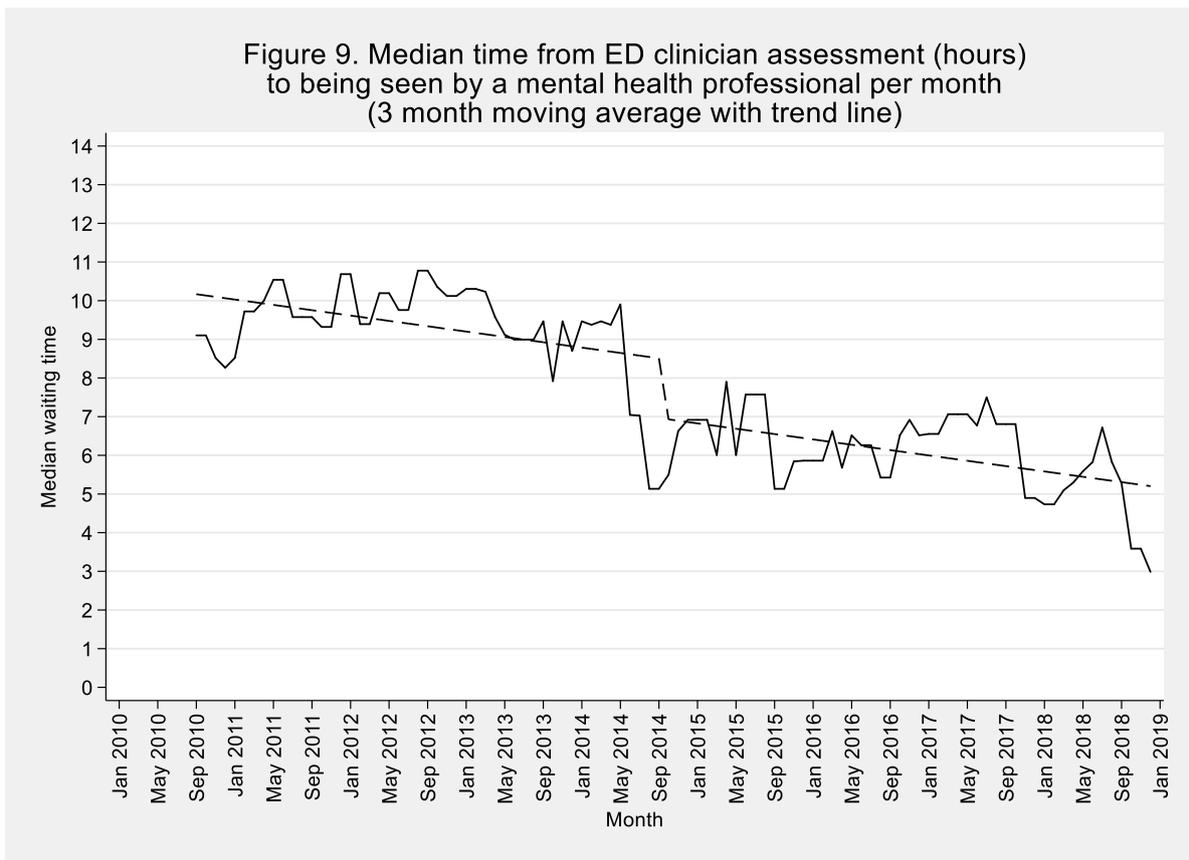


¹ These summary statistics were calculated for patients who were triaged within 200 minutes from attendance – 17 episodes were excluded

² These summary statistics were calculated for patients who were seen by a clinician within 330 minutes from attendance – 73 episodes were excluded.

³ These summary statistics were calculated for patients who were seen by a clinician within 330 minutes from triage – 48 episodes were excluded

For patients who had a mental health assessment, the median time from assessment by an ED clinician to being seen by a mental health professional was 5.5hours⁴. This is 1.5 hours shorter than the average time for the same in 2017. Unlike time to medical assessment, time to being seen by a mental health professional has decreased considerably and this decrease is likely related to the expansion of liaison psychiatry services at the BRI in 2014 (Figure 9).



⁴ These summary statistics were calculated for patients who were seen by a mental health professional within 120 hours from medical assessment. Five episodes were not included.

Table 4. Median Waiting times in 2018

Category	BRI
Arrival to triage (minutes)	15.3
Arrival to medical assessment (minutes)	124.5
Triage to medical assessment (minutes)	107
Medical assessment to Psychological assessment (hours)	5.5

5.4 Method of self-harm

Self-poisoning was the most frequently used method of self-harm and was involved in over two thirds of all episodes. About 8.8% of people used both self-injury and self-poisoning (Table 5).

More unusual and high lethality methods were rare (approximately 2.1% of all cases). Jumping occurred in 1.9% of cases. Inhalation of car exhaust gas fumes were used in less than 1% of cases. Attempted hanging occurred in under 2.8% of cases and the prevalence were similar between males and females. The number of people presenting at the BRI following an attempted hanging (n=15) was higher in 2018 compared to the previous year (n=7). This is probably due to the fact that a new definition of hanging was adopted in 2018, to include cases where evidence that body weight was applied to tighten a ligature, placed around a fixed anchor point or attachment (e.g. door handle / bed post / tree), even if this did not lead to full suspension. Prior to 2018, only events that involved hanging by suspension from an anchor point were included in this category.

Table 5. Method of self-harm (all episodes), BRI 2018

	Male n=514	Female n=765	Total n=1,279*
Self-poisoning and self-injury	58 (8.8)	96 (8.8)	154 (8.8)
Self-poisoning alone	430 (65.6)	724 (66.7)	1162 (66.4)
Self-injury alone	157 (23.9)	251 (23.1)	408 (23.3)
Unknown	11 (1.7)	15 (1.4)	26 (1.5)
<i>Rare methods</i>			
Hanging	6 (1.2)	9 (1.2)	15 (1.2)
Jumping	14 (2.7)	10 (1.3)	24 (1.9)
Car Fumes	2 (0.3)	0 (0.0)	2 (0.1)
Charcoal poisoning	1 (0.2)	1 (0.1)	2 (0.1)
Helium poisoning	0 (0.0)	1 (0.1)	1 (0.1)

*8 episodes had no data on gender

Paracetamol was by far the mostly commonly ingested drug taken as part of an episode of self-harm. While many people ingest several different medicines when they overdose, paracetamol (in its pure form) was used in 38.8% (511/1316) of episodes. Another drug class recently featuring in suicide statistics nationally are barbiturates (probably obtained on-line). We identified no cases of barbiturate poisoning in 2018.

Table 6. Top-ten most frequently ingested poisons, BRI 2018

Drug name	Episodes (%)*	Median no. pills ingested	IQR
Paracetamol**	511 (38.8)	16	10-32
Ibuprofen	177 (13.4)	16	8-20
Diazepam	133 (10.1)	10	4-23
Sertraline	133 (10.1)	13	7-24
Co-codamol	110 (8.4)	16	10-30
Mirtazapine	105 (8.0)	8	5-14
Zopiclone	89 (6.8)	8	4-14
Codeine	77 (5.9)	16	12-25
Pregabalin	74 (5.6)	14	7-28
Tramadol	63 (4.8)	14	8-30
Citalopram	60 (4.6)	10	5-23

* One episode can involve multiple drugs.

** Paracetamol can be one of a number of compounds in one pharmaceutical, paracetamol in forms such as this are not included in the above number of paracetamol poisonings.

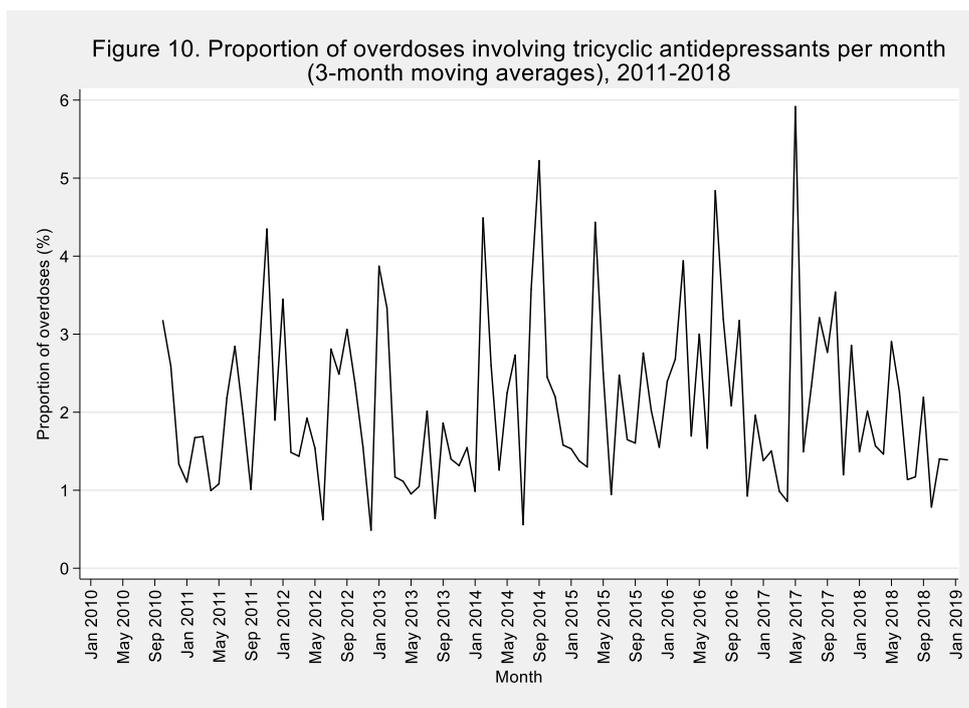
Investigating category of drug (Table 7), paracetamol, in either pure form or as the major element in a pharmaceutical, was the most commonly ingested poison. In the BRI, just under half (49%, 647/1,316) of all self-poisoning episodes fell into this category of drug. Antidepressant drugs were involved in 34% of cases of self-poisoning. The 'Other' drug category included drugs such as statins, antibiotics, insulin and antihistamines.

Table 7. Category of drug ingested during self-poisoning, BRI 2018

Drug category	BRI	
	Episodes	%*
Paracetamol (pure & compounds)	647	49%
Other	445	34%
Antidepressants	448	34%
Benzodiazepine	206	16%
NSAIs	210	16%
Other Analgesics	188	14%
Other Minor Tranquilizers	102	8%
Antipsychotic	107	3%
Aspirin	28	2%

* The denominator for these percentages is the total number of self-poisoning episodes (n=1,316). One episode may involve the ingestion of numerous drugs

In the BRI, there were a total of 39 (% , 39/1316) episodes of self-poisoning involving tricyclic antidepressants (TCA), all but two (one Dosulepin, one Lofepramine) involving Amitriptyline. Of the patients who took TCAs and had data on ward of admission (n=32), seven (21.8%, 7/32) were admitted to ITU. Trends in the use of TCAs look to have remained fairly stable (Figure 10). The majority of episodes involving TCAs were in individuals who had previously self-harmed (82%).



5.5 Previous self-harm and specialist psychiatric care

Excluding patients with missing data, four out of every five patients had a previous history of self-harm (Table 8). Previous psychiatric treatment was recorded in over two thirds of all index episodes. Approximately one-in-six first attendances at BRI had received psychiatric inpatient treatment in the past.

Table 8. Previous self-harm and psychiatric care in index self-harm presentations at the BRI, 2018

	Male (n=475)	Female (n=712)	Total (n=1187*)
Previous self-harm*			
Yes	382 (80.4)	608 (85.4)	990 (83.4)
No	93 (19.6)	104 (14.6)	197 (16.6)
Previous psychiatric treatment*			
Yes	315 (66.0)	521 (71.6)	836 (69.4)
No	162 (34.0)	207 (28.4)	369 (30.6)
Previous psychiatric inpatient*			
None	402 (86.1)	592 (83.6)	994 (84.6)
Within a year	32 (6.9)	72 (10.2)	104 (8.9)
Over a year	33 (7.1)	44 (6.2)	77 (6.6)

* Unknown data: 7 had no information on sex, 92 had no information on previous self-harm, 74 had no information on previous psychiatric treatment, 104 had no information on previous psychiatric inpatient stays.

5.6 Patient management

Of all self-harm episodes, 75% were assessed with the matrix.

Patients who did not get assessed with the matrix were less likely to receive a psychosocial assessment and were less likely to be admitted than those who were assessed as amber in the matrix risk category (Table 9).

In 2018, more people received psychosocial assessments (N=1111) compared to last year (N= 1057) despite a similar number of self-harm attendances.

Table 9. Episode Management by matrix risk category – 2018

	Green n=204	Amber n=994	Red n=119	Unknown n=433	Total n=1,750
Psychosocial Assessment* n (%)					
Yes	82 (40.6)	772 (77.9)	89 (75.4)	168 (39.2)	1111 (63.9)
No	120 (59.4)	219 (22.1)	29 (24.6)	261 (60.8)	629 (36.2)
Admitted to a bed* n (%)					
Yes	79 (39.1)	779 (78.8)	66 (55.9)	207 (47.9)	1131 (65.0)
No	123 (60.9)	210 (21.2)	52 (44.1)	225 (52.1)	610 (35.0)
Not assessed*					
	Green n= 120	Amber n=219	Red n=29	Unknown n=261	Total n=629
Not referred	57 (47.5)	50 (23.0)	7 (24.1)	41 (15.9)	155 (24.8)
Assessments were not deemed therapeutically helpful**	10 (8.3)	30 (13.8)	4 (13.8)	24 (9.3)	68 (10.9)
Took own discharge	26 (21.7)	80 (36.9)	12 (41.4)	125 (48.5)	243 (38.9)
Refused assessment	18 (15.0)	35 (16.1)	1 (3.5)	20 (7.8)	74 (11.9)
Other reason eg inpatient	9 (7.5)	22 (10.1)	5 (17.2)	48 (18.6)	84 (13.5)

* Unknown data: 31 episodes had no data on whether they received an assessment. 9 had no data on whether they were admitted. 5 had no data on reason for non-assessment

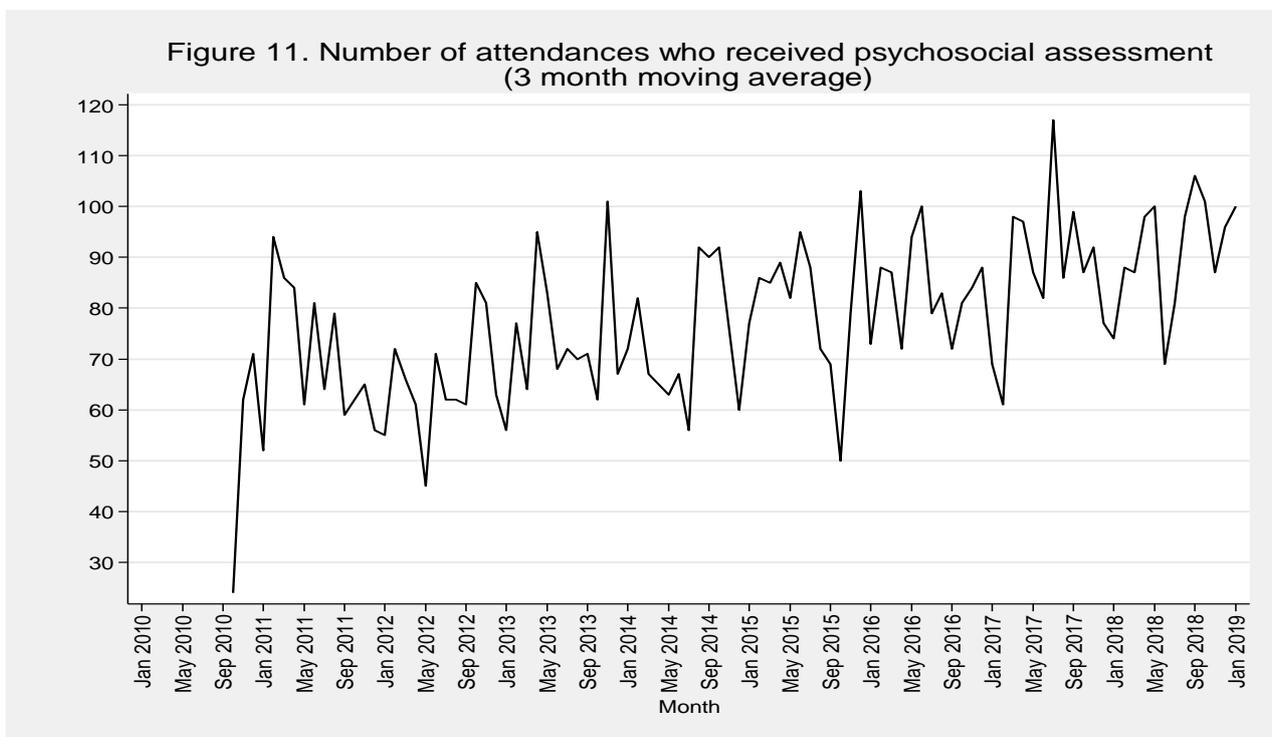
**labelled as “policy decision not to assess” in previous reports

Overall, 64% (95%CI 61.1 to 65.7) of patients attending for self-harm received a psychosocial assessment in 2018 at the BRI (3% higher compared to the 61% (95% CI 58.6 to 63.2 in 2017), and just under two thirds (65%) were admitted to a hospital bed. Patients who were categorised as higher risk on the matrix (amber or red) were more likely to be admitted and receive a psychosocial assessment compared to those marked green. The 55.9% of red matrix patients admitted to a hospital bed, is higher to the proportion in 2017 (45%) and in 2016 (42%). Taking own discharge was the most common reason for not having psychosocial assessment. High

proportions of patients with amber (36.9%) and red (41.4%) matrix risks who were not assessed took their own discharge from the ED compared to those with green matrix risk.

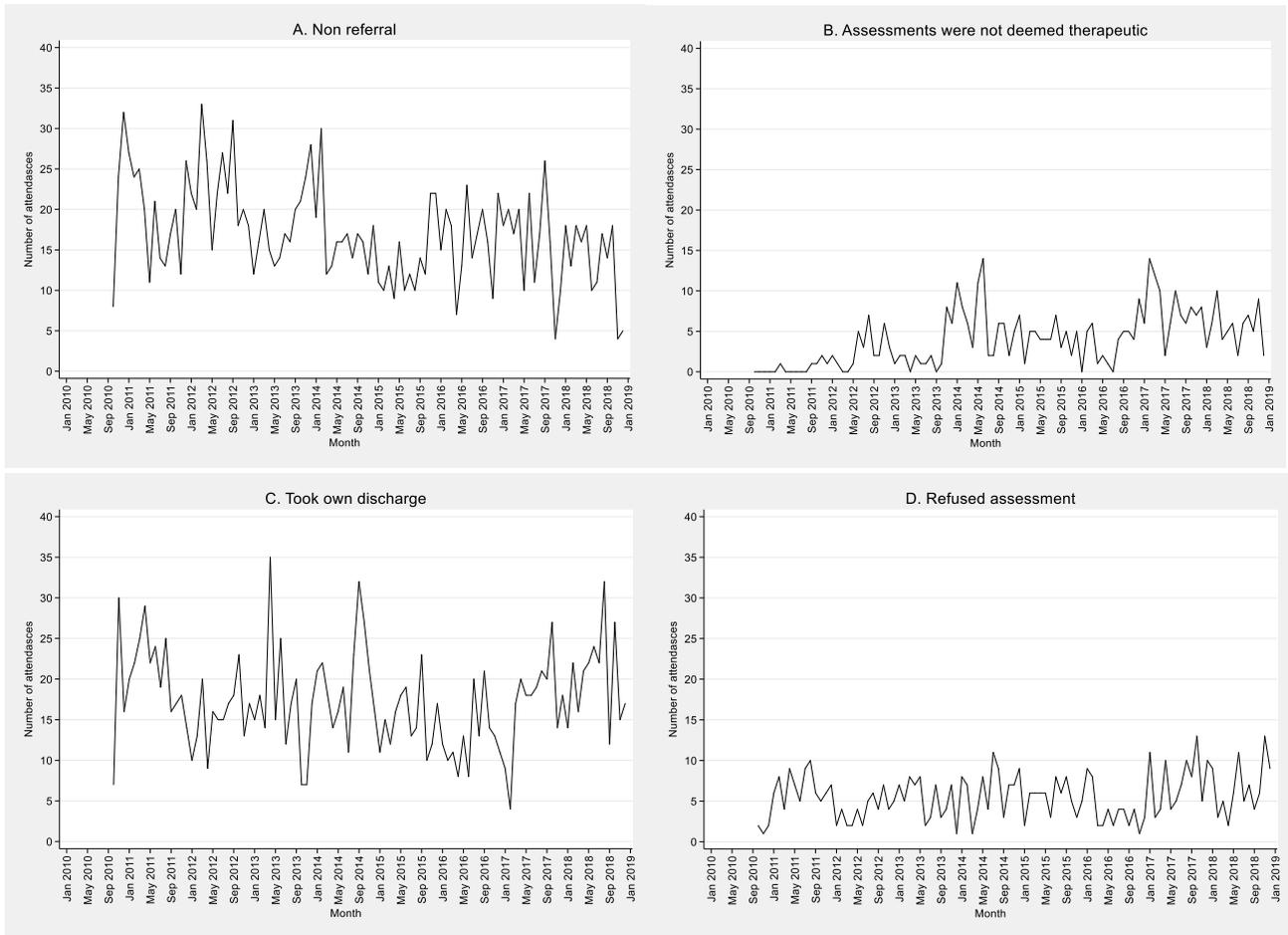
The vast majority of the presentations admitted to a hospital bed went to the observation ward (90%, 1,017/1129, 3 patients had no data on ward of admission). Altogether 3% (33/1129) of patients were admitted to ITU and 6.9% (78/11129) to other general hospital wards.

The patients who were admitted to general wards following their self-harm were generally older (mean age: 40) than those admitted to ITU (mean age 35) or observation wards (mean age 31.7). Self-poisoning alone was the commonest method of self-harm for majority of cases admitted to any ward and constituted nearly all (91%) of ward admissions to ITU (76% of observation ward and 69% of general ward admissions). Patients admitted to ITU were less likely to be in current contact with mental health services (38%, 13/34) compared to those admitted to other wards (43% and 45%).



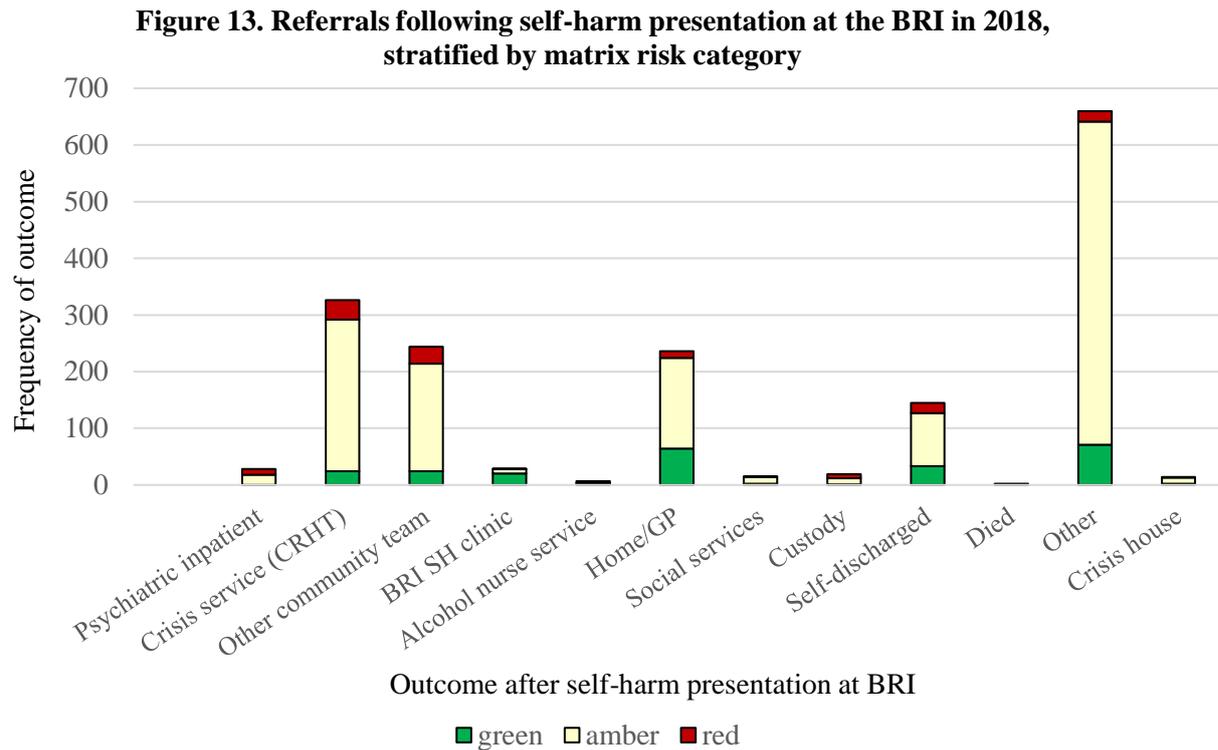
In the BRI, the number of patients receiving psychosocial assessment has increased, from 618 in 2012 to 1111 in 2018 (Figure 11). The number of attendances that were not assessed also increased from 404 in 2012 to 629 this year. This is down from 670 in 2017. Of the patients who were not assessed, between 2012 and 2018, the number of attendances who were not referred decreased from 168 to 155, those who took their own discharge increased from 115 to 243, and those who refused assessment increased from 44 to 74 (Figure 12). The number of attendances who were not assessed on the grounds that assessments were not deemed therapeutically useful increased from 17 in 2012 to 68 in 2018.

Figure 12. Number of attendances who were not assessed (3 month moving average) by reason for non-assessment



5.7 Referral following discharge (BRI)

Episodes of self-harm most frequently resulted in patients being referred to “other services”. This category includes a range of services including CAMHS (<1%), Off the Record (<1%) and ROADS (Recovery Orientated Alcohol & Drugs Service, <1%). Referral to Community mental health services and Crisis service was the most frequent outcomes in Red and Amber matrix risk patients (Figure 13) while referral to a GP was the most common outcome in Green matrix risk patients.



5.8 Patient characteristics by matrix risk category

The characteristics of patients differed both across matrix risk categories and between those who did and did not receive a psychosocial assessment. Age was significantly associated with matrix risk category at the BRI (Table 10). Those patients with red and amber matrix scores were more likely to be assessed than those triaged as low risk (green). Higher matrix risk patients at the BRI more often had a history of self-harm compared to green risk category.

More patients who received a psychosocial assessment had a previous history of self-harm, were in current contact with services and had taken an overdose.

People who had self-injured were considerably less likely to receive a psychosocial assessments compared to people who self-poisoned (SI vs SP % assessment: 16.5% vs 74.4. %).

Table 10. Characteristics of BRI self-harm patients' index episode by matrix risk category and psychosocial assessment – 2018

	Matrix				Psychosocial Assessment*	
	Green (n = 167)	Amber (n = 742)	Red (n =78)	Unknown (n = 299)	No (n =415)	Yes (n =845)
Median age (IQR)	23 (20-33)	28 (21-39)	33 (25-43)	32 (24-46)	28 (21-39)	28 (22-41)
	p=0.000				p=0.2	
Gender*						
<i>Male</i>	50 (30.1)	311 (42.1)	34 (44.2)	119 (39.9)	166 (40.1)	335 (39.9)
<i>Female</i>	116 (69.9)	427 (57.9)	43 (55.8)	179 (60.1)	248 (59.9)	504 (60.1)
	$\chi^2 = 8.6670$ df=2 p=0.013				$\chi^2 = 0.0033$ df=1 p=0.954	
Previous SH						
<i>Yes</i>	108 (64.7)	594 (80.1)	65 (83.3)	230 (76.9)	305 (73.5)	674 (79.8)
<i>no</i>	51 (30.5)	111 (15.0)	7 (9.0)	28 (9.4)	59 (14.2)	132 (15.6)
<i>Unknown</i>	8 (4.8)	37 (5.0)	6 (7.7)	41 (13.7)	51 (12.3)	39 (4.6)
	$\chi^2 = 27.0471$ df=2 p=0.000				$\chi^2 = 0.0052$ df=1 p= 0.942	
Repeat SH within 2018						
<i>Yes</i>	9 (5.4)	68 (9.2)	8 (10.3)	23 (7.7)	30 (7.2)	74 (8.8)
<i>no</i>	158 (94.6)	674 (90.8)	70 (89.7)	276 (92.3)	385 (92.8)	771 (91.2)
	$\chi^2 = 2.76$ df=2 p=0.252				$\chi^2 = 0.8586$ df=1 p=0.354	
In current contact with services						
<i>Yes</i>	54 (32.3)	344 (46.4)	43 (55.1)	135 (45.2)	170 (41.0)	395 (46.8)
<i>no</i>	104 (62.3)	378 (50.9)	32 (41.0)	136 (45.5)	199 (48.0)	438 (51.8)
<i>Unknown</i>	9 (5.4)	20 (2.7)	3 (3.9)	28 (9.4)	46 (11.1)	12 (1.4)
	$\chi^2 = 13.53$ df=2 p=0.001				$\chi^2 = 0.19$ df=1 p=0.66	
Psychological assessment*						
<i>Yes</i>	70 (42.7)	598 (82.4)	60 (76.9)	117 (40.1)	-	-
<i>no</i>	94 (57.3)	128 (17.6)	18 (23.1)	175 (59.9)	-	-
	$\chi^2 = 113.13$ df=2 p=0.000					
Method of SH*						
<i>SI & SP</i>	10 (6.1)	63 (8.6)	6 (7.7)	17 (5.8)	18 (4.4)	76 (9.1)
<i>SP</i>	99 (60.0)	535 (73.2)	46 (59.0)	204 (69.4)	243 (59.9)	622 (74.4)
<i>SI</i>	56 (33.9)	133 (18.2)	26 (33.3)	73 (24.8)	145 (35.7)	138 (16.5)
	$\chi^2 = 25.87$ df=4 p=0.000				$\chi^2 = 60.38$ df=2 p= 0.000	

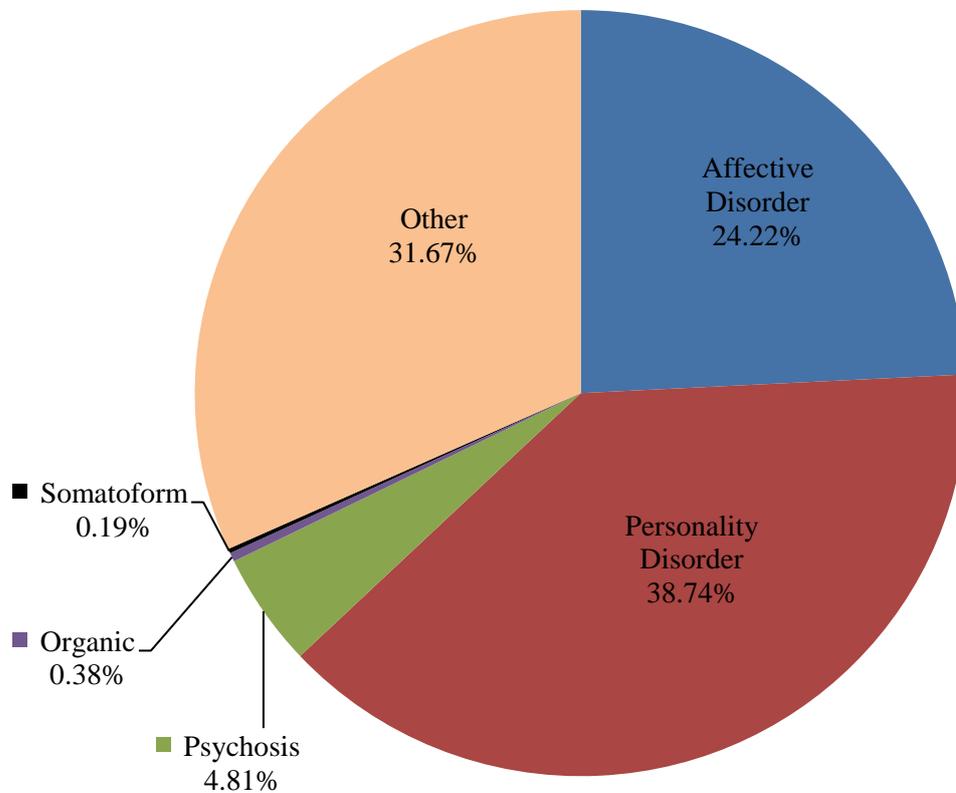
Chi squared test does not include unknown as a category. *Unknown data: 7 patients had no information on gender, 92 had no information on previous self-harm, 60 had no information on current contact with services, 26 patient had no data on psychosocial assessment, and 18 had no data on method of self-harm.

5.9 Diagnostic categories

Sixty-one percent of patients that were assessed were allocated to a diagnostic category. In the BRI, more than half of these patients were classed as either having an affective disorder (24.2%) or a personality disorder (38.7%) (Figure 14). Patients with psychosis comprised 4.8%.

Conditions described in “Other” predominantly included social (27.3%), PTSD (14%), anxiety (8.7%) and ADHD (5.5%). Substance misuse comprised only 0.6% of the total categorised as ‘Other’ diagnosis.

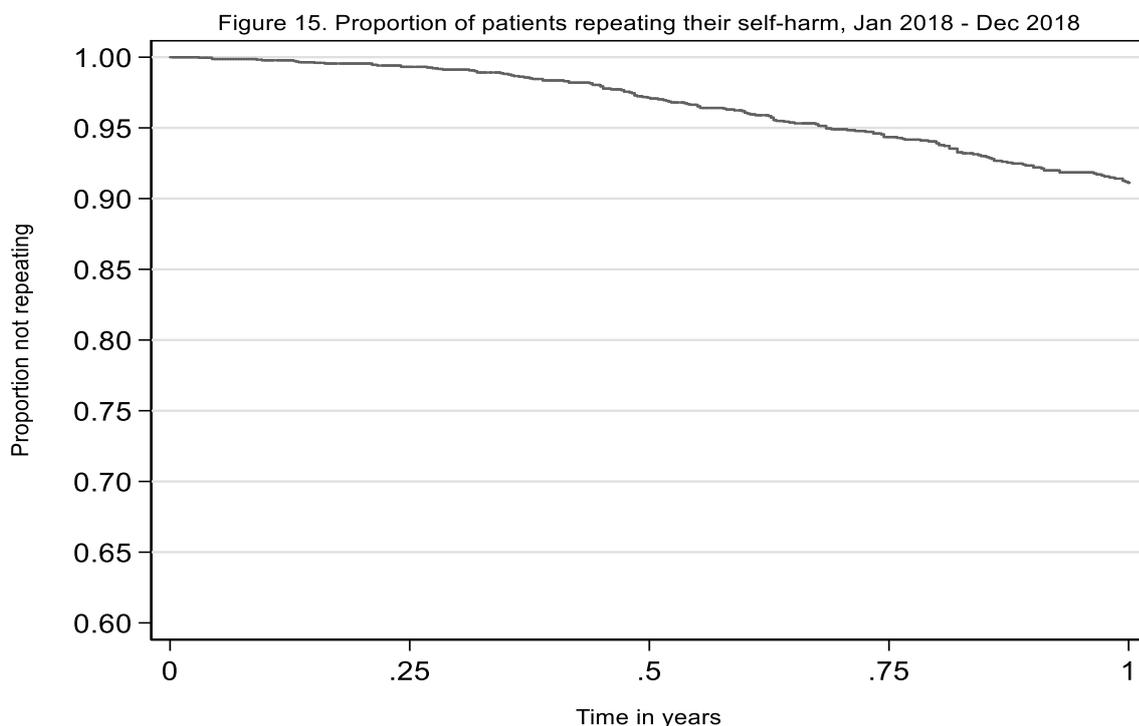
Figure 14. Diagnostic categories of people presenting for self-harm in 2018 at BRI



5.10 Repeat self-harm

In 2018 a total of 1,286 people presented to the Bristol Royal Infirmary. Of those people, 228 (17.7%, 228/1,286) made at least one repeat attempt within 2018. This figure is higher than that of 2017, when 15% of patients repeated within-year.

To determine the 12 month repetition rate, we used data from people presenting to the BRI in 2017 and followed up until the end of 2018. These patients will have had a full year follow-up in which they could have made a repeat presentation. We use the Kaplan-Meier survival analysis to determine the rate of repeat self-harm attempts (rate until first repeat episode).



5.11 Suicide

Probable deaths from suicide (hereafter referred to as suicides) that occurred after an episode of hospital presenting self-harm were identified from the Avon Coroner's records. Data for suicide is only available until 2017.

Overall, 77 people who attended the BRI following self-harm subsequently died by suicide. The characteristics of these people are described in Table 10. Patients who went on to have a fatal outcome are older, more often male, have higher matrix risk categorisation and more likely to have a psychosocial assessment than the general self-harm patient population.

There was some evidence to suggest the level of psychiatric morbidity (based on diagnostic categories assigned at psychosocial assessment) was different between self-harm patients who had a fatal outcome compared to those with a non-fatal outcome. The prevalence of personality disorder appeared to be higher in non-fatal compared to fatal episodes (prevalence non-fatal vs. fatal: 44% vs. 20%). There was a higher prevalence of

psychosis in those who died by suicide (prevalence in non-fatal vs. fatal: 8.6% vs. 12.2%). However, due to the small numbers of events this should be interpreted with caution. When recorded, those episodes that resulted in a fatal outcome had a higher average suicide intent score (mean=11) compared to non-fatal episodes (mean=8).

Table 11. Characteristics of episodes that resulted in probable suicide compared to those with a non-fatal outcome at the BRI (data up to 2017)

Variable	Category	Non-fatal n=11059	Suicide n=77
Age	Median	30	39
	range	5 -97	16-87
Gender	Male	4086 (37.1)	45 (58.4)
	Female	6942 (62.9)	32 (41.6)
Method	SI&SP	861 (7.8)	6 (7.8)
	SP	7797 (70.5)	51 (66.2)
	SI	2314 (20.9)	20 (26.0)
	Unknown	87 (0.8)	0 (0.0)
Matrix risk	Green	1708 (15.4)	6 (7.8)
	Amber	5640 (51.0)	36 (46.8)
	Red	988 (8.9)	10 (13.0)
	Unknown	2723 (24.6)	25 (32.5)
Self-discharge	Yes	1623 (14.7)	9 (11.7)
	No	9436 (85.3)	68 (88.3)
Psychosocial assessment	Yes	6438 (59.2)	53 (72.6)
	No	4430 (40.8)	20 (27.4)
Personality disorder*	Yes	2367 (43.9)	9 (20.0)
	No	3028 (56.1)	36 (80.0)
Psychosis*	Yes	343 (8.6)	5 (12.2)
	No	3665 (91.4)	36 (87.8)
Suicide intent score*	Mean (SD)	8.4 (5.6)	11 (6.2)

*Data only available for those patients who had a psychosocial assessment.

6. STITCH Objectives

6.1 Time trends in key indicators (BRI data only)

STITCH (Services and Trusts Integrating to Transform Care in Self-harm) is one of Bristol's Health Integration Teams (HITs), led by Salena Williams (Nic Munien and Lucy Biddle from March 2019). The group aims to work towards reducing the incidence of self-harm and improving services for Bristol residents who self-harm. The STITCH group have focused on a number of key indicators and the annual prevalence of these indicators is described in Table 12.

The number of self-harm attendances rose in 2018 compared to the levels observed in 2013 and 2014. The use of TCA in overdose fell from a high in 2014, but levels are still at the third highest level since the inception of the register. The proportion of people receiving a psychosocial assessment was lower than in 2016. Medical admission rates rose slightly in 2018. The proportion of red matrix risk patients being medically admitted increased slightly from 45.45% in 2017 to 55.46% in 2017. The proportion of patients admitted to ITU were higher compared to the past three years. Length of stay (LOS) has increased slightly compared to 2017.

Table 12. STITCH group's key indicators over time

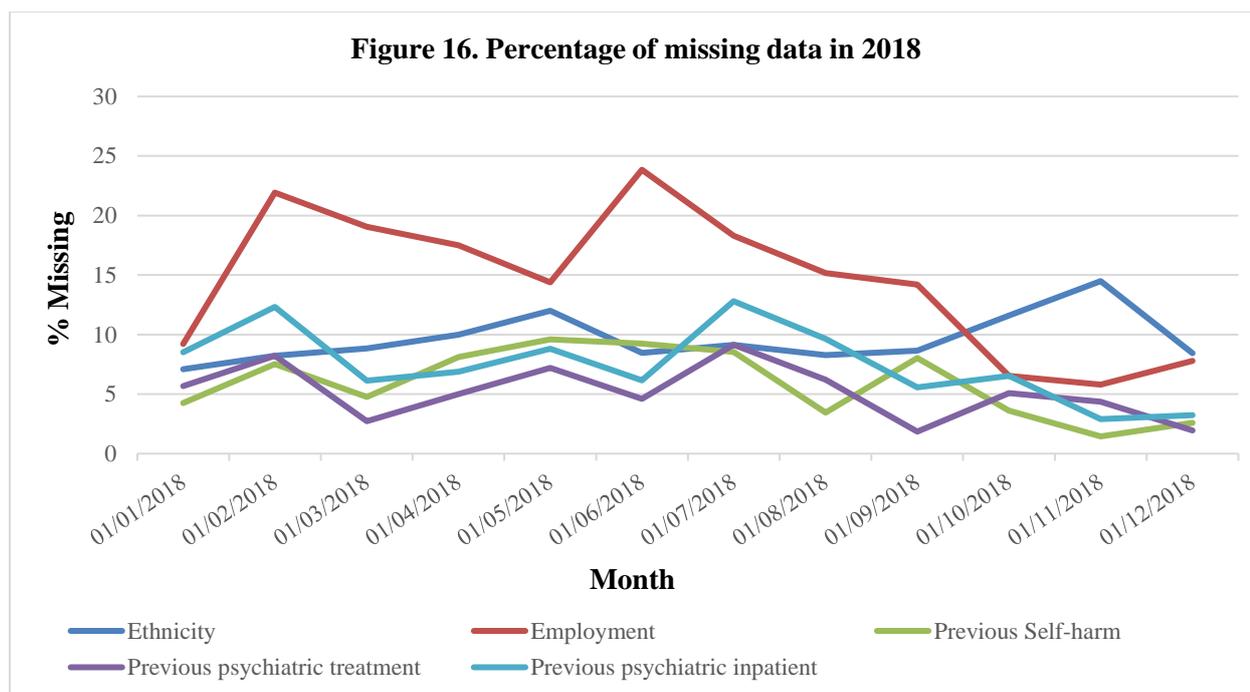
	2011	2012	2013	2014	2015	2016	2017	2018
No. of attendances (n)	1,494	1,402	1,538	1,541	1,492	1,535	1,743	1,750
Use of TCA's in overdose (n (%))	50 (4.16)	44 (3.97)	33 (2.77)	65 (5.27)	49 (4.22)	59 (4.87)	39 (3.01)	39 (2.96)
Psychosocial assessment (%)	56.41%	55.47%	58.59%	57.05%	64.93%	64.1%	59.93%	63.41%
Medical admission (all patients) (%)	64.7%	63.3%	64.8%	65.3%	67.5%	61.9%	62.5%	64.6%
Medical admission (red matrix risk patients) (%)	43.8%	50%	45.8%	47.2%	70.6%	41.5%	45.4%	55.5%
ITU admission (%)	2.3%	3.5%	2.2%	3.9%	1.4%	1.5%	1.6%	3 %
Self-discharges (%)	18.41%	13.77%	14.3%	15.65%	11.74%	12.31%	15.09%	17.43%
Mean LOS (days)*	2.4	4	1.9	5.7	3.9	2	1.8	1.9

*Excludes outliers: <0 or >10, only includes admitted patients, and is based on date of attendance to date of discharge.

** Figures may change over time

7. Data quality

The quality of the data collected as part of the register is generally very good. For this report we looked at the level of missing data over the last 12 months for variables where over 5% of the main data variables were missing. Since the start of this year there has been a decrease in the percentage of missing data (Figure 16).



8. Acknowledgements

The surveillance register is currently supported by small grants from NHS Bristol and AWP NHS Trust. We are grateful for the continuing advice we receive from staff working on the Oxford Monitoring System for Attempted Suicide and the Manchester Self-Harm (MaSH) project in establishing the Bristol register. We would like to thank: all members of the Emergency Department Staff and the Liaison Psychiatry team at the Bristol Royal Infirmary and Southmead hospitals for helping with the project and recording relevant data; Pete Shiarly, Olive Bennewith and Robert Carroll for their help establishing the register; Chris Davies, UHB, for help setting the register up within UHB system.

The register is now a key part of the Bristol Health Partners (BHP) supported HIT (Health Improvement Team) – Services and Trusts Integrating to Transform Care in Self-harm, “STITCH”.

NIHR CLAHRC West at UHB Trust analysed the data and produced this year’s report.

Appendix: Data collection sheet

Data collection sheet (version 8 – 09/01/2019)

STUDY ID [bshr_id]:

1. Surname
[bshr_surname]

2. Forenames
[bshr_forename]

3. Address:.....
[bshr_add1-3]

Postcode :.....
[bshr_postcode1-2]

4. Sex [bshr_sex] 1 Male 2 Female

5. DoB [bshr_dob]:

6. Ethnicity [bshr_ethnicity]
1 White 2 Mixed 3 Asian
4 Black 5 'Other' (Please specify)
9 N/K

7. a) Date of attendance.....
[bshr_ddattend]

b) Time of attendance
[bshr_hattend/mattend]

8. (a) Date seen at triage/'see & treat [bshr_ddtriage]

(b) Time seen at triage/'see & treat
[bshr_htriage/bshr_mtriage]

9.(a)Date seen by doctor/ENP
[bshr_ddmedic]

(b) Time seen by doctor/ENP
[bshr_hmedic/bshr_nmedic]

10.(a)Self-poisoning [bshr_sp] YES NO

Please state all drugs taken No. of tablets
[bshr_drugs] [bshr_drugsgs/number]
.....
.....
.....

10.(b) Self-injury [bshr_si] YES NO

10.(c) What was the category of self-injury?
(Select ALL that apply)

- 1 Cutting/laceration arm [bshr_si_cat1_cutarm]
- 2 Cutting/laceration non-arm [bshr_si_cat2_cutnoarm]
- 3 Stabbing [bshr_si_cat3_stabbing]
- 4 Hanging [bshr_si_cat4_hanging]
- 5 Gassing [bshr_si_cat5_gassing]
- 6 Jumping [bshr_si_cat6_jumping]
- 9 Other [bshr_si_cat7_other]

10.(d) Give details of the self-injury (esp site / need for stitches) [bshr_si_txt]

.....
.....

Where applicable:-

11.(a) Date of self-discharge
[bshr_ddselfdis]

(b) Time of self-discharge
[bshr_hselfdis/mselfdis]

(c) Actions taken
[bshr_sdprevent]

(d) Was self-discharge before triage? YES NO
[bshr_sdbeftriag]

(e) Was self-discharge before seen by doctor?
YES NO
[bshr_sdbefdoc]

12. Date/time of O/D or S/I
[bshr_datesh/bshr_htimesh/mtimesh]

13.(a) Had alcohol been consumed as part of the act or within 6 hours of the act? [bshr_alc]

YES NO N/K

(b) If YES, approximate amount taken (units)
[bshr_alcxt]

(c) Had illicit drugs been used as part of the act or within 6 hours of the act? [bshr_illiciti]

YES NO N/K

Please state all illicit drugs taken Quantity taken
[bshr_idrugname] [bshr_idrugquant]

.....
.....

14. Precipitating Problem(s) [bshr_precip]

1.

2.

3.

15. Physical illness? [bshr_ill]

YES NO N/K

If YES, what is this? [bshr_illtxt]

16.(a) Admission to a hospital bed? YES NO N/K
[bshr_admitbri]

(b) If YES, specify where 1 OBS 2 ITU 3 Other
[bshr_wardbri]

(c) Time of admission
[bshr_timeh/timem]

17. Patients not given a psychosocial assessment
[bshr_noassess]

0 Not identified by team

1 Policy decision not to assess

2 Took own discharge

3 Refused assessment

4 Other reason (eg. inpatient) (Please specify) [bshr_noasssoth]

.....

8 Not applicable (i.e. assessed)

18.(a) Was the Matrix completed? YES NO
[bshr_matrix]

(b) Who completed the Matrix?
[bshr_complmtrx]

(c) Matrix risk category assigned:
[bshr_risk]

Green Amber Red NK

19.(a) Date of referral for psych assessment
[bshr_daterefer]

(b) Time of referral for psych assessment
[bshr_himrefer/mtimerefer]

(c) Who carried out the initial psych assessment?
[bshr_psychassess]

1 Psychiatrist (Consultant/SpR/other doctor)

2 Liaison Nurse

3 Joint assessment

4 Other professional (Please specify) [bshr_assesstxt]

.....

0 Not assessed

9 N/K

(d) Date of initial psychosocial assessment
[bshr_dateassess]

(e) Time (start) of initial assessment
[bshr_htimeassess/mtimeassess]

(f) Where initial assessment was carried out
[bshr_locassess]

20. Beck Suicide Intent Scale

a) Score 1..... b) Score 2 c) Total

[bshr_sis1] [bshr_sis2] [bshr_sis_total]

21.(a) Use of the Internet
[bshr_internet]

YES NO N/K

22.(b) If YES, how?
[bshr_internetxt]

