Healthier Together

Improving health and care in Bristol,
North Somerset and South Gloucestershire

Understanding self-harm in Children and Young People aged 10-24 years in Bristol, North Somerset and South Gloucestershire (2019-20 to 2022-23)

An analysis of Emergency Department attendances and hospital admissions for self-harm using a Population Health Management linked dataset.

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1. Executive Summary

This briefing is a review of self-harm Emergency Department (ED) attendances and hospital admissions in Children and Young People (CYP) aged 10-24 years old over a four-year period across Bristol, North Somerset, and South Gloucestershire Integrated Care System (BNSSG ICS) using a linked population health dataset to understand self-harm across BNSSG in greater detail.

A report undertaken by Office for Health Improvement and Disparities found that the South West has the second highest emergency admissions rate for intentional self-harm in England and the highest rate of repeat emergency admissions for intentional self-harm nationally. The report also found that young adults aged 15-24 years old had higher emergency admissions in comparison to all other age groups.

Hospital admissions for intentional self-harm are the tip of the iceberg and indicate more broadly the mental health and well-being of children and young people as it can be linked to mental health conditions such as depression and anxiety as well as emotional distress. In some areas of BNSSG, rates of attendances to emergency departments are increasing, including increasing rates in younger age groups.

The analysis has shown that for ED attendances, approximately 43% of attendances are repeat attendances. There are increasing attendances and admissions for the 10-14yr old age group, particularly for females, and increasing presentations at ED for males. There have been significant increases in ED attendances in North Somerset in the last 2 years, particularly in and around Weston-super-Mare. We know that attendances at ED for self-harm in BNSSG are strongly correlated with deprivation across all three Local Authority areas.

The analysis for non-elective hospital admissions has shown that the highest rate of admissions is in 15-19 year olds, especially for females. Across BNSSG, non-elective hospital admissions have been reducing over time, however, there has been no significant reduction in North Somerset, which had the highest rate of self-harm admissions in the most recent time period. Rates of admissions for self-harm between the most deprived areas compared to least deprived show that in Bristol, rates are 2.1 times higher, in North Somerset rates are 2.2 times higher and for South Gloucestershire, 2.2 times higher.

There are key pressure points in the system, particularly for multiple attendances at Primary Care, A&E Attendances and repeat 999/111 calls, which can indicate gaps in provision for community services. The analysis of the dataset has demonstrated the ability to understand how CYP who self-harm are interacting with the system and allows for a targeted approach, for example, with high intensity users of secondary care.

This project was a data profile to help system partners understand characteristics and different risk factors among CYP who either present to ED or who are admitted due to self-harm across BNSSG to enable interventions and actions to be shaped and targeted to address self-harm.

Opportunities for the next phase of this work could be broadened to explore preventive opportunities, identifying gaps in provision and opportunities for capacity building, such as engaging with parents, teachers, and pupils; and a system-wide needs assessment or provision mapping across BNSSG.

2. Data Considerations and Limitations

Scope: The purpose of this analysis is to understand attendances to the emergency department (ED) and admissions to hospital due to self-harm in children and young people aged <25 years in greater depth across BNSSG ICS. The analysis was focused on understanding:

- The demographic characteristics of CYP who are attending emergency department or admitted due to self-harm or a mental health condition.
- Factors associated with higher risk of attendance to ED or admission for self-harm or mental health condition.
- Services being accessed before and/or after attendance at emergency department (ED) hospital admission.

Definition: Individuals aged 10-24 years old who are **registered** with a GP in Bristol, North Somerset or South Gloucestershire (BNSSG) and who have had **one or more presentations or admissions to the four hospitals across BNSSG** (Bristol Royal Infirmary, Southmead Hospital, Weston General Hospital and Bristol Royal Hospital for Children) **between 01/04/2019 and 31/03/2023.**

Data Sources:

System Wide Dataset (SWD) The analysis for this briefing has come from the BNSSG SWD which is a linked pseudonymised dataset containing data from primary care, secondary care, mental health and community services, social care, and other sources. This helps to build a better understanding of people's health, the circumstances in which they live, their needs, and the type of care they receive. Find out more here: Population Health Management - NHS BNSSG ICB

Emergency Department (ED) Attendances: Data for Emergency Department attendances comes from the national dataset called the Emergency Care Data Set (ECDS). It is important to note that this does not include attendances to minor injury units.

Hospital Admissions for self-harm: The data source for hospital admissions is from NHS Secondary Uses Services (SUS) data . Nationally published data uses Hospital Episodes Statistics (HES) data and is based on resident population. The analysis of this data is for GP registered population and as such *data will not be directly comparable to nationally published data on OHID's Fingertips website*. The methodology for identifying self-harm related hospital admissions has been applied using appropriate ICD-10 codes (See

Appendix 1: Definitions)

System Wide Dataset (SWD) – Opt Outs: GP Practices in BNSSG can opt-out of data being used for analysis. A total of 72 out of 77 practices opted into the analysis. A full list is available in Appendix 2: GP Practices included in analysis. There will also be data missing for anyone who has personally opted out of sharing their data and this could be with any practice. In BNSSG, opt out rates vary across practices from 2% to 15%.

3. What is self-harm?

Self-harm includes all non-fatal intentional acts of self-poisoning (such as intentional drug overdoses) or self-injury (such as self-cutting), regardless of the degree of suicidal intent or other types of motivation.

Self-harm and suicide are the result of a complex interplay between genetic, biological, psychiatric, psychosocial, social, cultural, and other factors. Self-harm also has major impacts on family members and friends. It also places pressure on busy emergency departments, wards and clinicians, as well as having major financial costs for the NHS**Error! Bookmark not defined.**.

Rates of self-harm are of increasing concern in most countries, particularly in the Northern Hemisphere, sub-Saharan Africa, India and parts of East Asia[1]. It is associated with an increased risk of future suicide and research shows that repetition of self-harm, further increases the risk of suicide[2]. Evidence also suggests that the suicide rate is highest in the year following hospital discharge for self-harm, particularly in the first month[3]. Due to the strong links between deliberate self-harm and suicide the role of early intervention is particularly important[4].

3.1 Who is at risk?

There are a number of significant at-risk groups for self-harm including[3]:

- Looked after children and young people.
- People who are LGBTQ+
- People who have psychiatric disorders, particularly mood disorders.
- Victims of sexual and domestic violence
- Those in contact with criminal justice system
- People who are inclusion health groups
- People experiencing multiple disadvantage (experiencing 2 or more of the following: homelessness, substance misuse, victim of interpersonal violence and abuse, poor mental health and contact with the criminal justice system)

There are also additional considerations around the role of intersectionality and complexity of additional risk factors such as early adversity, including structural determinants that result in poverty and discrimination, mental-ill health, parental separation of divorce, substance use or exposure to self-harm in others or in the media.

[1] Institute for Health Metrics and Evaluation (2019) Global Metrics: Self-harm—Level 3 cause, Available: Self-harm — Level 3 cause | Institute for Health Metrics and Evaluation (healthdata.org)
[2] Cochrane UK (2023) Interventions for self-harm: the latest Cochrane evidence on what might help adults, children and young people, Available: Interventions for self-harm: the latest Cochrane evidence on what might help adults, children and young people - Evidently Cochrane
[3] Self-harm Prevention in Children and Young People - South West Population Health Tools - FutureNHS Collaboration Platform
[4] Suicide prevention in England: 5-year cross-sector strategy - GOV.UK (www.gov.uk)

3.2 What works?

The evidence base for universal prevention programmes for all CYP in educational settings is currently limited. There is also currently a lack of evidence that universal prevention programmes significantly impact self-harm behaviours. There is some limited evidence of the benefits of universal prevention programmes in terms of their impact on knowledge, attitudes, reduction of urge to self-harm and perceived likelihood of future self-harm[5]. There are four trials currently taking place internationally for Universal Prevention programmes in Germany, Sweden and China, which may add to the evidence base in the future[5].

A Cochrane review[6] reported that interventions for CYP who self-harm such as psychosocial interventions, pharmacological or dietary supplements found that Dialectical Behaviour Therapy (DBT-A) resulted in a lower rate of self-harm repetition, and recommendations were made for further development and evaluation of individual CBT based psychotherapy in CYP. There is some evidence for reduced self-harm for direct interventions, for example within educational settings, however, more research is required in this area[7].

The importance of co-designing services with people with lived experience and engagement with specialists in developing evidence based pathways and expanding the evidence base for self-harm was a recommendation of the All-Party Parliamentary Group Inquiry into the support available for young people who self-harm.

3.3 What do we know about self-harm in the South West[8]?

A report undertaken by the Office for Health Improvement and Disparities found that the South West has the 2nd highest emergency admissions rate for intentional self-harm in England and the highest rate of repeat emergency admissions for intentional self-harm nationally. The report also found that young adults aged 15-24 years old had higher emergency admissions in comparison to all other age groups. Another key finding from the analysis was that "The relatively high levels of repeat admissions in the South West may be due to incomplete psychosocial assessments or a lack of adequate follow up and referral to other services when intentional self-harm patients are discharged from hospital."[8]

Stakeholder engagement identified that the reasons for higher admissions may include variations in recording admissions, adherence to clinical guidelines, differences in health seeking attitudes and engagement with health services as well as issues with service provision, pathways and mental health services in Emergency Departments. Other barriers to access to services include being considered too high risk for primary support services and not meeting threshold for secondary mental health services[9].

[5] UKHSA (2023) Evidence Briefing: What is the evidence for school-based interventions to prevent self-harm in children and young people? [Online] Available at: Evidence Briefing Self Harm Interventions 2023.pdf - South West Population Health Tools - FutureNHS Collaboration Platform
[6] Witt KG et al. Interventions for self-harm in children and adolescents. Cochrane Database of Systematic Reviews 2021, Issue 3. Art. No.: CD013667. DOI: 10.1002/14651858.CD013667.pub2
[7] Nawaz RF, Anderson JK, Colville L, Fraser-Andrews C, Ford TJ. Review: Interventions to prevent or manage self-harm among students in educational settings -a systematic review. Child and adolescent mental health. 2023. https://dx.doi.org/10.1111/camh.12634
[8] OHID (2022) Understanding Emergency Hospital Admissions for Intentional Self-harm in the South West
[9] UK Parliament (2021) Children and young people's mental health: Eighth Report of session Children and young people's mental health - Health and Social Care Committee (parliament.uk)

3.4 What do we already know about self-harm in BNSSG?

This work has been developed in collaboration with the Self-harm Matters Health Integration Team run by Bristol Health Partners. The Self-harm Matters HIT brings together researchers, clinicians, managers and colleagues with an interest in self-harm. The HIT aims to support access to services for those who self-harm, increase awareness of some of the underlying reasons that can cause self-harm and reduce presentation to A&E departments through more tailored pathways that support access to mental health services within the community.

Across BNSSG, analysis to date has focused on hospital admissions for self-harm. From this data we know that younger people who are aged 25 and under were more likely to be admitted for self-harm and in-particular females. We also know that there is an association between self-harm and deprivation. A review of hospital admissions by South Gloucestershire for Self-Harm in 2017 showed that rates among the 20% most deprived areas in South Gloucestershire were 97% higher than in the least deprived 20%[10]. More recently there has been analysis produced by BNSSG ICB for the CYP Mental Health sub-group in relation to increases in Self-Harm among CYP aged under 18, which provided a breakdown of rates by Primary Care Networks (PCNs) across BNSSG. In addition to this, a CYP working group in South Gloucestershire scoped a project to look at ED presentations for a further deep dive to understand more about self-harm in BNSSG. Similar work has also taken place in North Somerset localities.

Findings from pupil surveys within Local Authorities also demonstrate that young people are struggling with their mental health and report self-harming to cope with a problem. The Bristol Pupil Voice Report in 2022 reported that 4% of male pupils and 10% of female pupils reported that they 'cut or hurt' themselves in response to problem[11]. The Pupil Survey in South Gloucestershire is comprehensive and highlights additional understanding about self-harm in school age children. The South Gloucestershire Pupil Survey in 2021, 26% of pupils reported that they had self-harmed[12]. In answer to, "who have you told about your self-harming/overdose" they were most likely to discuss their self-harming with friends (47%), no-one (38.6%) or a parent (30.1%). There was also variation by gender. Females were more likely to report speaking to friends (51.3%). Males were more likely to respond 'no-one' (48.9%). Data regarding the prevalence of self-harm from such surveys is not currently available for North Somerset but plans are underway to commission a CYP survey.

There are currently several qualitative research projects in progress across BNSSG ICS to understand experiences of people using services for self-harm support services[13] with findings due later in 2024. BNSSG has also been identified as one of four areas for a research project being led by the University of Bristol and University of Exeter[14] with the National Institute for Health Research – School for Public Health Research to work with health professionals and people working with children and young people in relation to the quality of guidance and support for self-harm that is available and to help develop principles of practice. The expected completion date for this is mid-July 2025.

[10] South Gloucestershire Public Health Intelligence Team (2017) Hospital admission data for self-harm in South Gloucestershire - Presentation for STITCH HIT meeting.
[11] Bristol Pupil Voice Report (2022) Bristol Pupil Voice Survey [Online] Every Child Matters in Bristol
[12] South Gloucestershire Council (2021) Health and Wellbeing Online Pupil Survey 2021 Online Pupil Survey Summary - 2021
[13] Self injury support – Bristol Self Injury Support
[14] University of Exeter – The 4s Study: Support Systems for self-harm and suicide The 4S Study (exeter.ac.uk)

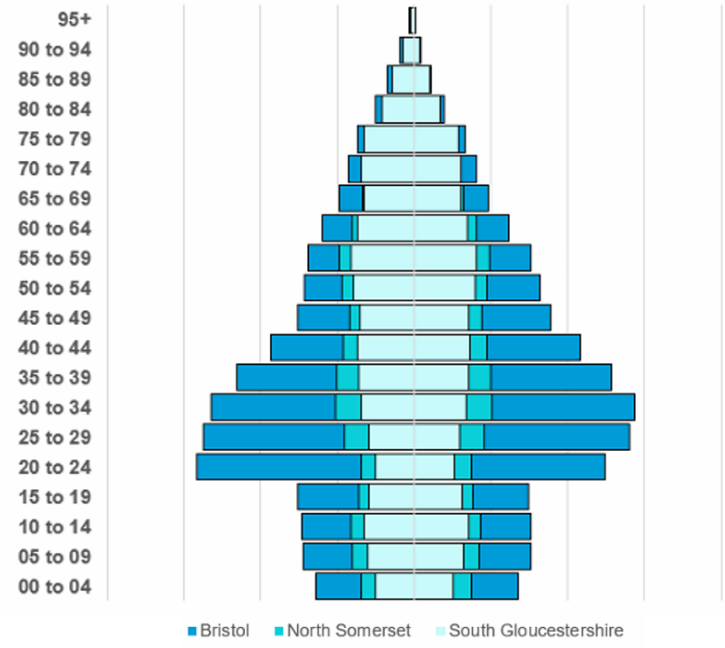
4. Background

4.1 What does the population of Children and Young People look like in BNSSG?

The population[15] of children and young people (CYP) aged 10-24 years old and registered with a GP in BNSSG is 195,515 and accounts for approximately 18% of the whole population across BNSSG.

However, at local authority level there are differences in population structure. For example, Bristol has a younger population, in comparison to North Somerset and South Gloucestershire. Around 20% of the population in Bristol is aged 10-24 years old compared to 16% in North Somerset and South Gloucestershire. The 10–14 and 15-19 year old age groups make the largest proportion of CYP in North Somerset and South Gloucestershire.

Figure 1 BNSSG GP Registered population by Local Authority (2022)



Produced by Population Health Specialist Team (Healthier Together)

Table 1 Number of CYP aged 10-14 years by Local Authority (GP Registered Population, September 2022)

Bristol	North Somerset	South Gloucestershire
113,150 (20.4%)	36,209 (15.9%)	46,156 (16.5%)

[15] GP registered Population as at September 2022

4.2 What is the estimated need in BNSSG?

Hospital admissions or emergency department attendances for self-harm are only part of the story. Research by Geulayov et al (2018) proposed an 'iceberg model' to convey the 'hierarchical yet dynamic nature' of self-harm. This adaptation of their model shows three levels of self-harm, with suicide (fatal self-harm) as the uncommon but overt tip, self-harm that is admitted to hospital as a more common visible behaviour, and self-harm in the community as the covert but far more common submerged part of the iceberg[8]

The prevalence of self-harm in the community is likely to be much higher than is evident from data regarding the rate of people who are admitted to hospital or who present to Emergency Departments. A model developed by Devon ICS, which uses age and sex specific prevalence estimates applied to local populations to estimate community occurring self-harm[3] has been applied to the CYP population in BNSSG.

Using this methodology, it is estimated that across BNSSG, there are approximately 26,590 young people aged 10-24 years self-harming in the community.

Figure 2 BNSSG Annualised hospital admissions, actual self-harm events and estimated self-harm in the community (Males, Females, Persons)

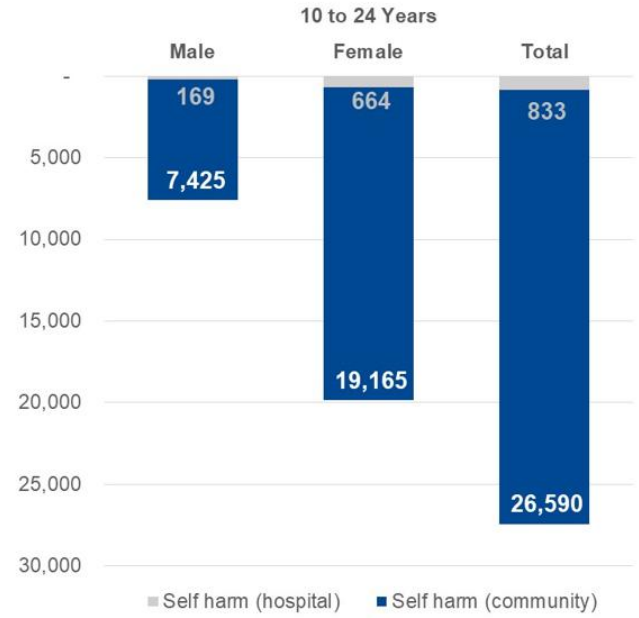


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Table 2 Annualised hospital admissions (3yr average[16]) actual self-harm events and estimated self-harm in the community by Local Authority

	Bristol	North Somerset	South Gloucestershire	BNSSG (Total)
Self-harm Admissions (Actual)	447	160	226	833
Self-harm Community (Estimated)	16,118	4,573	5,899	26,590

[16] Average hospital admissions for self-harm between 2020-21 and 2022-23

4.3 Self-harm is a Local and Regional Priority

The *Our Future Health* report[17] highlighted that hospital admissions for mental health conditions and self-harm in children and young people (CYP) are higher than the national average rates in each local authority area with around 1,320 admissions for self-harm per year. It is therefore a priority to understand data regarding these admissions in greater depth. There is a commitment in the BNSSG ICS strategy to improving mental health and wellbeing of the population across BNSSG, in addition to a new system mental health strategy, due to be published shortly.

A commitment to reduce harm due to self-harm is present in ICB Joint Forward Plans across the South West and the Regional Inequalities Group have confirmed that self-harm prevention among children and young people (CYP) is a shared priority. Self-harm in CYP is frequently a focus in local Health and Wellbeing Board strategies and in local authority Children's Plans across the region[3].

4.4 Key Policy & Guidance

There are a number of key government policies and guidance documents which reflect a commitment to the mental health of children and young people, including specific recommendations around support for people who self-harm, and including prevention approaches at every stage of the life course. Self-harm prevention is core to CYP Core20PLUS5, building on the NHS Long Term Plan's new integrated models of primary and community mental health care supporting those with severe mental illnesses, and supporting individuals who self-harm[3].

The All-Party Parliamentary Group Inquiry into the support available for young people who self-harm reported that the single most impactful change to improve support for young people who self-harm was to move away from reliance on crisis interventions and to strengthen preventative models of support. The APPG recommended investment in NHS Mental Health support and the key roles that community-based services, delivered by the third sector as key to progressing this further.

The Suicide prevention strategy 2023 to 2028 for England has outlined a number of recommendations to support priority groups which include children and young people who have self-harmed. The overarching priority is to improve support for people who have self-harmed to be achieved through:

- Improving access to Mental Health Support up to age 25 as part of NHS Long Term Plan (NHS LTP)
- Recognition of importance of role of Voluntary, Community and Social Enterprise (VCSE) & Social Care sectors, which must be in collaboration.
- Expanding mental health Support in schools
- Relationships, Sex and Health Education (RSHE) Guidance to include suicide and self-harm prevention in curriculum.
- Funding for school mental health leads
- Work with universities to embed suicide-safer universities guidance.
- Improve mental health support and suicide prevention in higher education.

[17] Our Future Health (2022) - Healthier Together ICS BNSSG

- National research to understand increases of suicide in certain age groups.
- Improving health and wellbeing of looked after children up to age 25.

The government's response to the Health and Social Care Committee report: children and young people's mental health (March 2022) recommends early intervention support for suicide and self-harm and proposes training for education mental health practitioners (EMHPs) within Mental Health Support Teams (MHSTs) [3]

NICE Guidelines are evidence-based recommendations for health and care in England. The NICE Guideline [NG225]: Self-harm: assessment, management and preventing recurrence recommends the following as best practice for managing people who present to health and care services after an episode of self-harm[18]:

- People who attend hospital following an episode of self-harm should have a psychosocial assessment.
- Referring people who have self-harmed for a cognitive behavioural therapy informed intervention aimed at reducing self-harm.
- If there are ongoing safety concerns for the person after an episode of self-harm, the mental health team, GP, team who conducted the psychosocial assessment or the team responsible for their care should provide initial aftercare within 48 hours of the psychosocial assessment (recommendation 1.10.2). Evidence shows that people who have self-harmed are at the greatest risk of recurrence in the first 2 to 3 days following an episode of self-harm.

Implementing the guideline may reduce repeat episodes of self-harm and suicide, improve engagement with mental health services in people who have self-harmed and improve access to interventions for people who have self-harmed.

4.5 Return on Investment (ROI) for self-harm interventions

Return on Investment (ROI) is a way of quantifying the benefits, either financial or societal, of investing in health-related activities compared to the costs of delivering them.

Investing in integrated and comprehensive psychosocial assessments in emergency departments is vital. The report into self-harm in the South West recommended that a first priority for the region is to ensure hospitals have NICE-compliant self-harm services, supported by the National Confidential Inquiry into Suicide and Safety in Mental Health (NCISH) toolkit for self-assessment based on NICE Self Harm Quality Standard.

It is anticipated that implementing this intervention could result in an estimated total saving £4.4 million excluding productivity and intangible costs and nearly £76 million including productivity and intangible costs over the ten-year period. Additionally, the increased use of psychosocial assessments in A&Es would save near 2100 quality-adjusted life years (QALYs) across the South West[3].

[18] NICE (2022) Self-harm: assessment, management and preventing recurrence, Resource Impact Summary Report, Available: Resource impact summary report | Self-harm: assessment, management and preventing recurrence | Guidance | NICE

5. Emergency Department (ED) Attendances

5.1 Key Points

- There were 7,195 attendances of children and young people aged 10-24 years to Emergency Departments (ED) across BNSSG between 2019-21 and 2022-23. This is approximately 1,200 children and young people per year.

- Around 43% of attendances to Emergency Departments are repeat attendances and this has varied little over the four-year time-period.

- Attendances are highest in those aged 15-19 years across each of the three Local Authority areas.

- There have been statistically significant increases in ED attendances in North Somerset over the last 2 years. During the latest time period 2022-23, the attendance rate to the ED due to self-harm is significantly higher in North Somerset (11.2 per 1,000 population) compared to Bristol (8.7 per 1,000 population) and South Gloucestershire (7.8 per 1,000 population).

- The rate of ED attendances by locality area shows that these are increasing in Weston, Worle and Villages and have been since 2020-21, whilst there has been little change in other locality areas.

- Rates of attendance are increasing among 10-14 year olds, particularly for females where rates have increased from 4.8 per 1,000 population in 2019-20 to 7.1 per 1,000 population in 2022-23.

- Attendances at ED for self-harm in BNSSG are strongly correlated with deprivation across all three Local Authority areas. When comparing rates of attendances between the most deprived areas compared to least deprived, in Bristol, rates are 2.1 times higher, in North Somerset rates are 2.7 times higher and for South Gloucestershire, 2.6 times higher.

Figure 3 Rate of emergency department (ED) attendances due to self-harm, rate per 1,000 population aged 10-24, by Local Authority (2019-20 – 2022-23)

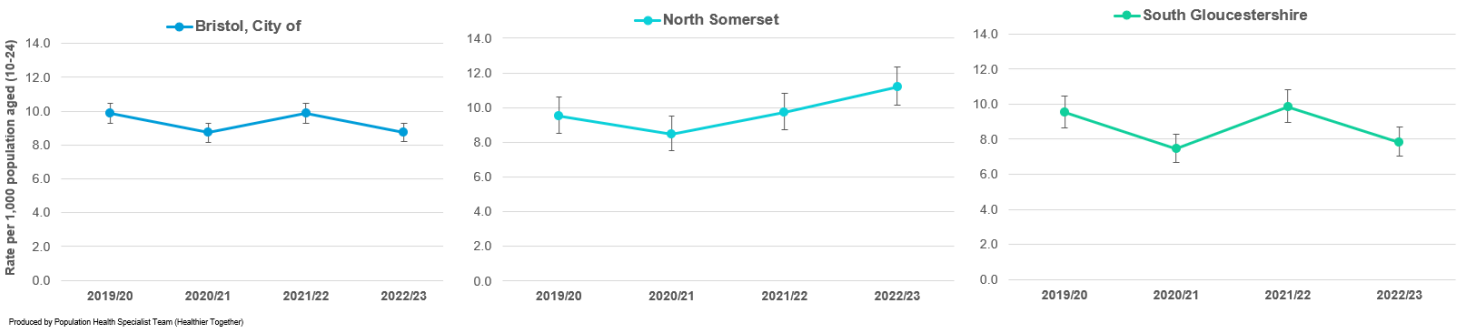
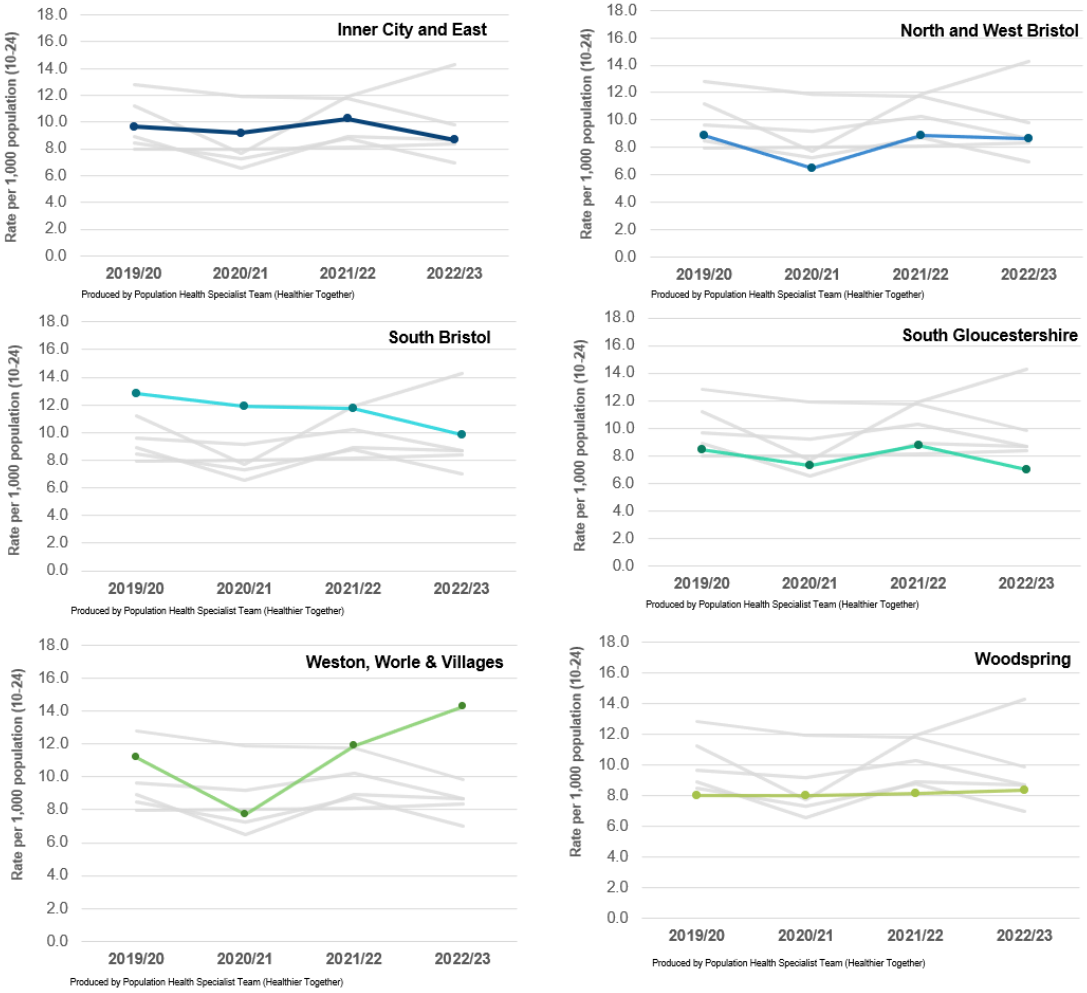


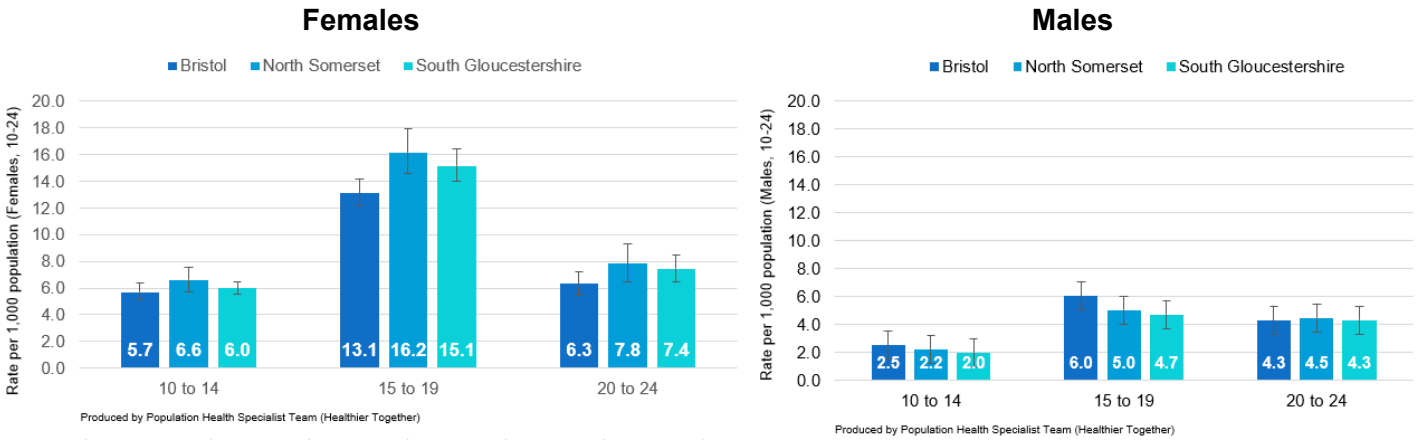
Figure 4 Rate of ED Attendances due to self-harm, rate per 1,000 population aged 10-24 by Locality (2019-20 – 2022-23)



5.2 How do attendances to the Emergency Department vary with age, gender, and geography?

Across BNSSG the highest rate of attendances are for females in the 15-19 year old age group (Figure 5) with the highest rates in North Somerset. For males, the highest rates are in the 15-19 year old age group and the highest rates are in Bristol.

Figure 5 Rate of ED Attendances due to self-harm, rate per 1,000 population, aged 10-24, 2019-20 - 2022-23, by Age Group, Gender and Financial Year



Over the four-year period between 2019-20 and 2022-23, there have been a significant increase in attendances in the 10-14 year old age group. It is also of note that in the 10-14 and 15–19-year-old age groups for males, rates of attendances have been increasing over time, although the numbers are small.

Figure 6 Rate of ED Attendances due to self-harm, rate per 1,000 population, aged 10-24, 2019-20 - 2022-23, by Age Group, Gender and Financial Year

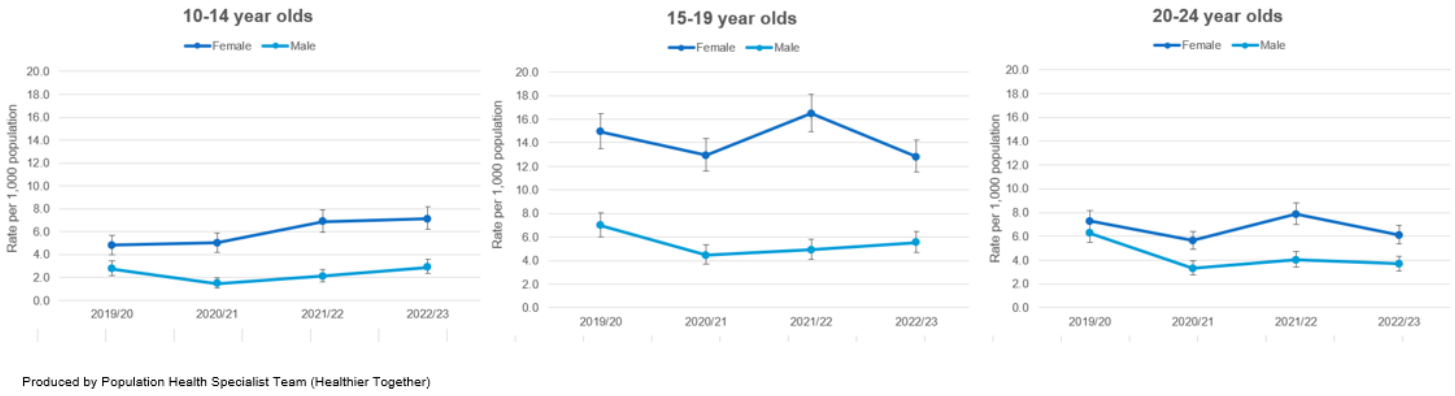
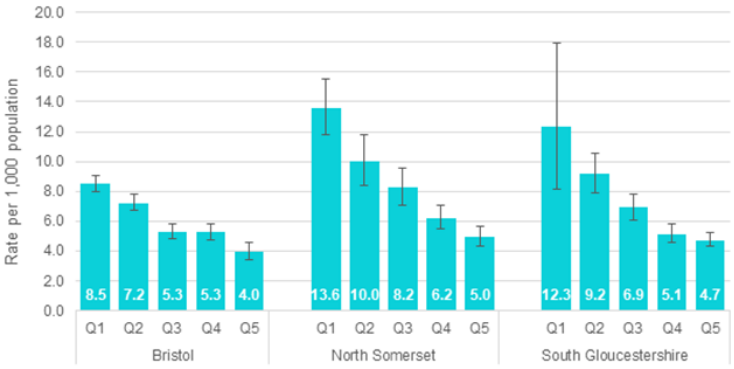


Figure 7 Rate of ED Attendances due to self-harm by IMD Quintile as a rate per 1,000 population, aged 10-24, 2019-20 - 2022-23, by Age Group, Gender and Financial Year

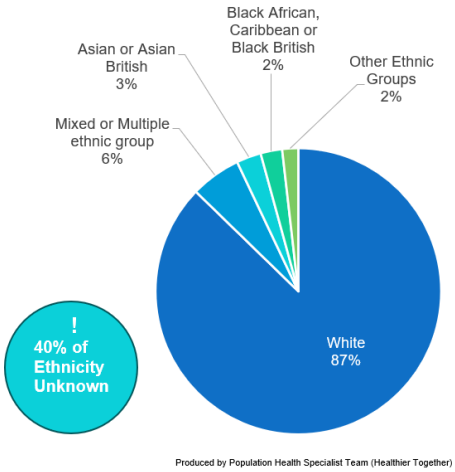


There is a strong correlation with deprivation and rates are significantly higher in the most deprived areas compared to the least deprived areas. When comparing rates of attendances between the most deprived areas compared to least deprived, in Bristol, rates are 2.1 times higher, in North Somerset rates are 2.7 times higher and for South Gloucestershire, 2.6 times higher.

5.3 What are the limitations of demographic data?

In the dataset used for this analysis approximately **40% of data is missing for ethnicity**, therefore it has not been possible to calculate rates per 1,000 population. Figure 8 below shows the breakdown by ethnicity where this data was available.

Figure 8 ED attendances by Ethnicity where data was recorded (2022-23)



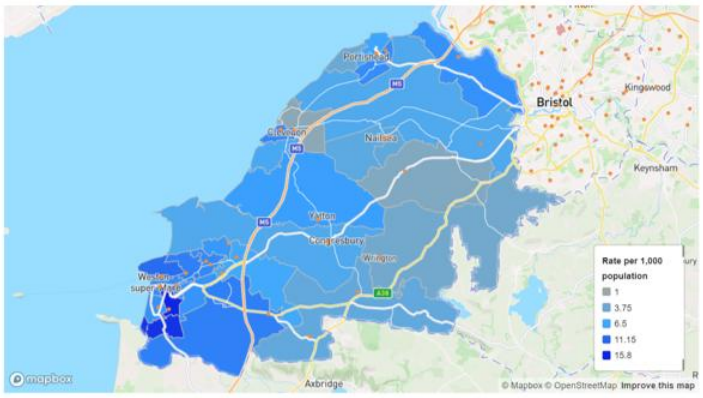
There were other data fields which were available in the dataset to use including first language and sexual orientation. However, this information is currently poorly recorded and therefore unsuitable to generate meaningful analysis. Other information, around high-risk groups for self-harm, such as Looked After Children, was also not available in the SWD and demonstrates a current gap in knowledge and understanding for this group in BNSSG. Following engagement with system partners there may be opportunities to use certain practices as proxy indicators for groups, for example, asylum seeker, refugee and migrant populations which could be explored further in any future analysis.

5.4 Where are the attendances coming from?

Figure 9 Self-harm attendances at Emergency Departments as a rate per 1,000 GP registered population - Bristol by MSOA (2019-20 to 2022-23)

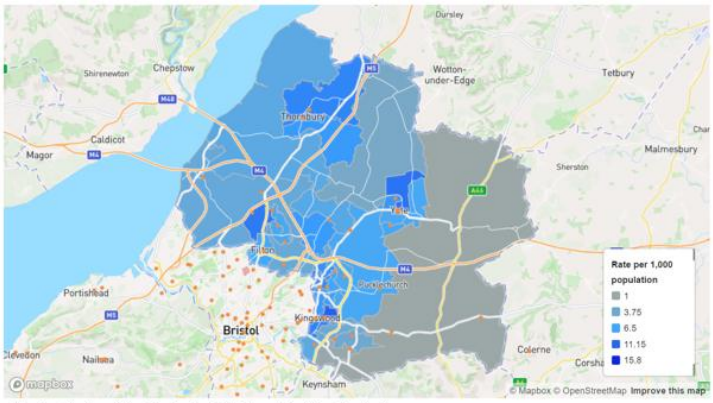
Produced by Population Health Specialist Team (Healthier Together)

Figure 10 Self-harm attendances at Emergency Departments as a rate per 1,000 GP registered population - North Somerset by MSOA (2019-20 to 2022-23)



Produced by Population Health Specialist Team (Healthier Together)

Figure 11 Self-harm attendances at Emergency Departments as a rate per 1,000 GP registered population - South Gloucestershire by MSOA (2019-20 to 2022-23)



Produced by Population Health Specialist Team (Healthier Together)

Data notes: The maps above show the rate of attendances for children and young people based on where they registered with a GP in BNSSG. There are a small number of practices who opted out of use of data for this analysis and therefore, in some areas, this means that there may be an underrepresentation of attendances across an area. More information is available in 2. Data Considerations and Limitations.

5.5 Attributes among those attending Emergency Departments for self-harm

Using the system wide dataset, we can understand more about the population who are presenting for self-harm at emergency departments. Figure 12 below shows the attributes of the self-harm cohort identified from the System Wide Dataset. Attributes are patient demographics and clinical characteristics obtained from the GP record. The attributes shown below are shown as a proportion of the cohort within each age group who have presented to the ED for self-harm. Figure 12 below illustrates that a high proportion of the population have a mental health need or condition. For 10-14 year olds, self-harm (23.6%), stress, anxiety and depression (13.0%) and learning disability (6.3%). For 15-19 year olds, self-harm (31.8%), stress, anxiety and depression (30.9%) and depression (25.9%) and for 20-24 year olds QOF: Depression (formal diagnosis of depression, 54.1%), stress anxiety or depression (47.4%) and depression (45.1%) were the most common attributes. A full breakdown of the attribute definitions is available in Appendix 3: Attribute Definitions.

Figure 12 Attributes for Children and Young People attending ED for Self-harm in BNSSG by age group (2022-23) - 10-24 year olds.

	10-14 Years	15-19 Years	20-24 Years
QOF: Depression	0.0%	14.3%	54.1%
Stress, Anxiety & Depression	13.0%	30.9%	47.4%
Depression	3.7%	25.9%	45.1%
Self Harm	23.6%	31.8%	37.6%
Smoking	0.0%	15.2%	36.5%
Personality Disorder	1.0%	4.8%	14.2%
Dependancy: Alcohol	1.7%	5.7%	11.1%
QOF: Obesity	0.0%	1.0%	8.8%
Eating Disorder	1.3%	5.1%	8.5%
ADHD	4.0%	6.7%	8.0%
Neurological conditions & Neuropathic pain	4.3%	5.5%	8.0%
Learning Disabilty	6.3%	6.5%	6.5%
PTSD	0.7%	2.1%	5.2%
Dependancy: Drugs	0.0%	0.2%	3.9%
Autism	4.0%	3.8%	3.6%
QOF: Mental Health	0.0%	1.1%	3.6%
Hearing Impairment	3.7%	4.6%	3.6%
QOF: Learning Disability	1.7%	1.0%	2.8%
Has Carer	1.3%	2.3%	1.8%
Epilepsy	1.0%	1.3%	1.6%
Is Carer	1.0%	0.8%	0.8%
Learning Difficulty	1.0%	1.1%	0.8%
Visual Impairment	1.0%	0.2%	0.8%
Fatigue	0.3%	1.3%	0.5%
Homeless	0.0%	0.0%	0.3%
Physical Disability	0.0%	0.0%	0.0%

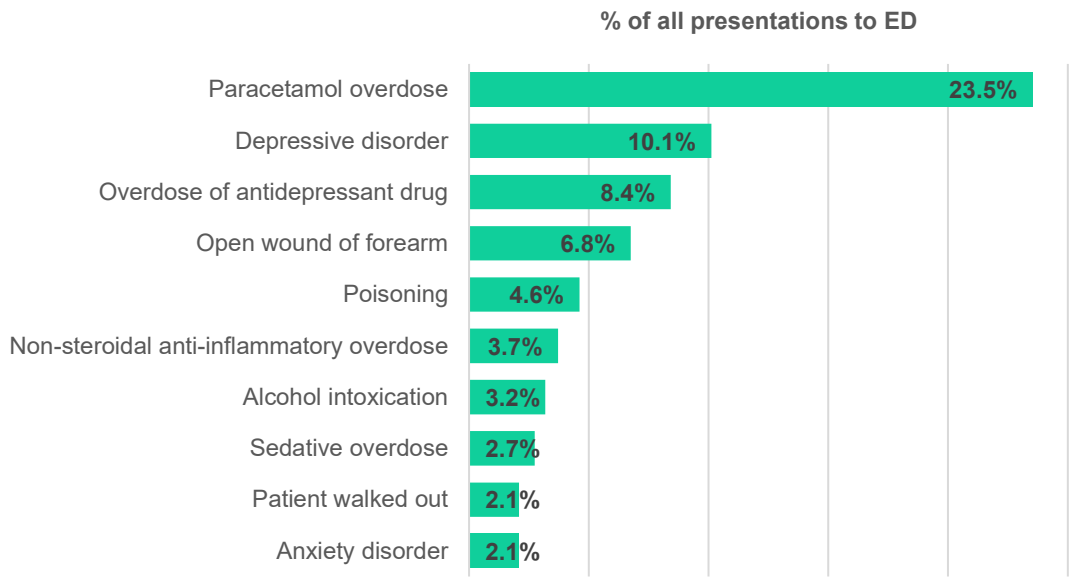
Produced by Population Health Specialist Team (Healthier Together)

Points to consider
It is important to note that individuals may have more than one type of attribute and that many young people under the age of 18 are less likely to have a formal diagnosis of a mental health condition on their GP record, as a presentation of mental illness can be transient in nature. From the age of 18 upwards CYP are therefore more likely to have formal diagnosis of a mental health condition, including Serious Mental Illness, recorded on their GP record.

5.6 What are the reasons for presentation at Emergency Departments?

Figure 13 below illustrates the top 10 reasons for presentation at Emergency Departments based on primary diagnosis for self-harm across BNSSG. This accounts for around two-thirds (67.2%) of all presentations. The top three reasons are for paracetamol overdose (23.5%), depressive disorder (10.1%) and overdose of anti-depressant drug (8.4%).

Figure 13 Top 10 Primary Diagnosis for Self-Harm Attendances at Emergency Department (2019-20 to 2022-23)



Produced by Population Health Specialist Team (Healthier Together)

Points to consider:
There is evidence that routinely collected hospital data, such as Hospital Episode Statistics, does not always accurately capture all hospital presentations for self-harm – although this is variable by hospital site and over time. It is important that researchers, policymakers, clinicians and the media are aware of this potential underestimate when using or quoting routinely collected hospital data and may be particularly important in relation to commissioning services for people who self-harm[19].

Through the analysis of the data, it was identified that the emergency department codes used to extract data could benefit from further refinement and scoping. This includes looking at grouping categories more broadly for more meaningful analysis and ensuring that this cohort is fully represented within the data. This is taking place in collaboration with the Self-Harm Matters HIT run by Bristol Health Partners as well as Emergency Department Consultants working in Southmead Hospital.

[19] Clements, C., Hawton, K., Geulayov, G., Waters, K., Ness, J., Rehman, M., Townsend, E., Appleby, L., Kapur, N. (2019). Self-harm in midlife: analysis using data from the Multicentre Study of Self-harm in England. BJPsych doi: 10.1192/bjp.2019.90 [Online] Available at: Multicentre studies — Department of Psychiatry (ox.ac.uk)

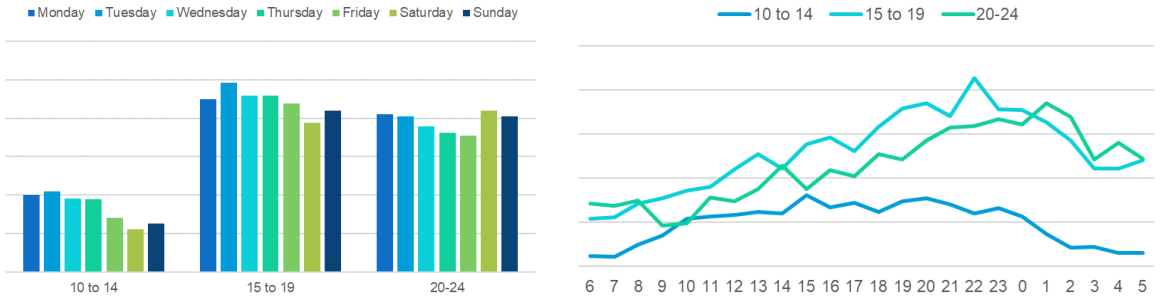
5.7 Where do people attend Emergency Departments and when do they visit?

Figure 15 shows that across BNSSG, in the most recent year the highest proportion of attendances were at Bristol Royal Infirmary (39%) followed by Southmead (28%), Bristol Childrens Hospital (22%) and Weston General (11%).

Figure 14 shows that there are notable variations in attendances by age group, by day of the week and by hour of the day. 10-14yr and 15–19-year-olds are more likely to attend throughout the week with highest attendances on Monday and Tuesday and tapering off throughout the week. For the 20-24yr old age group, the highest number of attendances are during the weekend, with peaks on Saturday, Sunday and Monday.

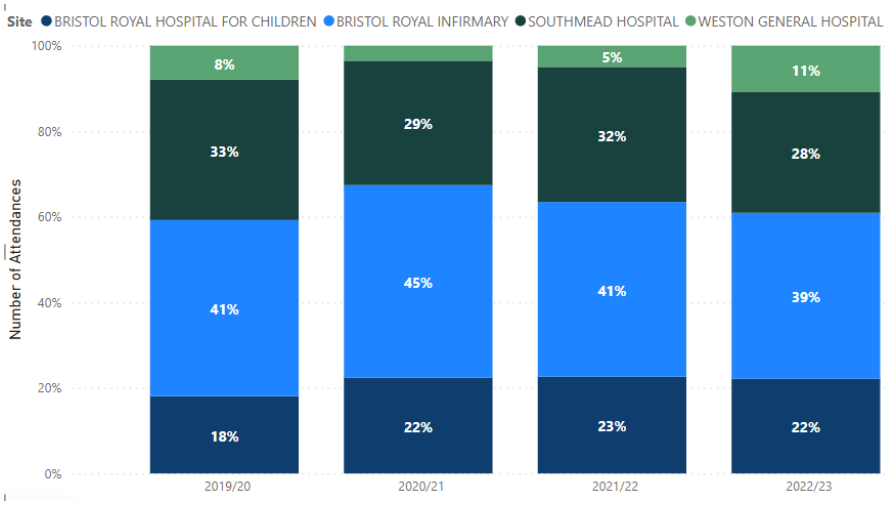
The highest number of attendances for 10-14yr olds by time are between the hours of 15:00-20:00hrs. For 15-19yr olds, are 18:00 to 22:00hrs and for 20-24yr olds between 22:00 to 04:00hrs. Just over half (53%) of all arrivals to ED are from people arriving by their own transport and just under 40% by emergency road ambulance.

Figure 14 Self-harm Attendances at Emergency Department by days of the week (left) and time of day (right) and Age Group (2019-20 to 2022-23) 10-24 year olds.



Produced by Population Health Specialist Team (Healthier Together)

Figure 15 Self-harm Attendances at Emergency Department Hospital Site (2019-20 to 2022-23) 10-24 year olds, Percentage



Produced by Population Health Specialist Team (Healthier Together)

5.8 What happens during and after an attendance at Emergency Department or hospital admission?

In BNSSG, both Southmead Hospital and Bristol Royal Infirmary are accredited sites for psychiatric liaison and people who attend the emergency department or who are admitted for self-harm should receive a psychosocial assessment in keeping with Psychiatric Liaison Accreditation Network (PLAN) Standards[20].

Children and young people aged under 18 are assessed by the Child and Adolescent Mental Health Service intensive outreach team. This an off-site service and will assess anyone during the day across all four hospital sites across BNSSG. The service operates seven days a week with a cut-off period for referral at 22:00hrs. For young people aged over 18, an assessment will be carried out by the mental health liaison service in BNSSG and operates until 20:00hrs. There is currently no 24 hour mental health liaison service across BNSSG.

If a child or young person arrives in the emergency department late at night or in the early hours of the morning, they are unlikely to be offered a timely assessment. If a young person is identified as a red on the mental health matrix for risk[21], they will be assessed by the in-house crisis team otherwise, they will be asked to wait for assessment in the morning. In addition to this, it is of note that Weston General closes to new admissions during the evening and anyone in North Somerset would either be directed to another local hospital, either Bristol Royal Infirmary, Southmead or Musgrove Park in Taunton.

In the cohort identified, a total of 548 onward referrals were made following presentation at ED for self-harm. This represents 6.5% of all presentations. Of that, approximately 50% had an onward referral to liaison psychiatry, 17.5% to general medical service and 10.8% to acute internal medicine. Following discussion with ED Consultants, it has been highlighted that 6.5% figure for onward referrals is likely to be an underestimate. Further investigation is required to understand this in more detail to understand the reasons for this.

Following attendance at ED around 50% (48.5%) were discharged to home and over a quarter are discharged to a hospital ward (29.6%). Around 6.9% left before being seen, 4.7% left before initial treatment was completed and 2.8% left before having an initial assessment.

Points to consider

There is a gap in knowledge and understanding about what happens to people following an attendance or admission for self-harm. Currently, there is no tailored intervention following a self-harm attendance or admission in BNSSG as recommended by NICE Guidance: Initial aftercare after an episode of self-harm. There is currently no routine recording of where people are referred onto, for example, crisis teams, VCSE partners or secondary mental health services.

Children up to the age of 18 will be offered a one off follow up appointment by the CAMHS Intensive Outreach Service. For adults who are assessed whilst attending the ED or following an admission, they may be referred to the Self-Injury Support service for a one off signposting and support meeting. For people who are not assessed during attendance or admission, they may return to their GP. This could be an area for further review by system partners for any future projects or system work in this area.

[20] Royal College of Psychiatrists (2022) Psychiatric Liaison Accreditation Network Standards 7th Edition, Available at: plan-7th-edition-standards.pdf (rcpsych.ac.uk)

[21] Actively psychotic and/or at risk of immediate harm to self and others

6. Non-Elective (NEL) Hospital Admissions

6.1 Key Points

- There were a total of 4,545 NEL Admissions to hospitals in BNSSG between 2019-20 and 2022-23
- Around 43% of Non-Elective hospital admissions are repeat admissions, which has varied little over the last 4 year period.
- The highest rate of admissions is evident among 15-19 year olds, especially for females.
- Non-elective hospital admissions are reducing over time. There have been statistically significant reductions over time for both Bristol from 6.2 1,000 population in 2019-20 to 4.8 1,000 population in 2022-23 and in South Gloucestershire from 8.3 per 1,000 population in 2019-20 to 5.5 per 1,000 population in 2022-23. There has been no significant reduction in North Somerset and the highest rate of self-harm admissions were in North Somerset in the most recent time period. .
- When comparing rates of admissions for self-harm between the most deprived areas compared to least deprived, in Bristol, rates are 2.1 times higher, in North Somerset rates are 2.2 times higher and for South Gloucestershire, 2.2 times higher.

Figure 16 Rate of hospital admissions due to self-harm, rate per 1,000 population aged 10-24, by Local Authority (2019-20 – 2022-23)

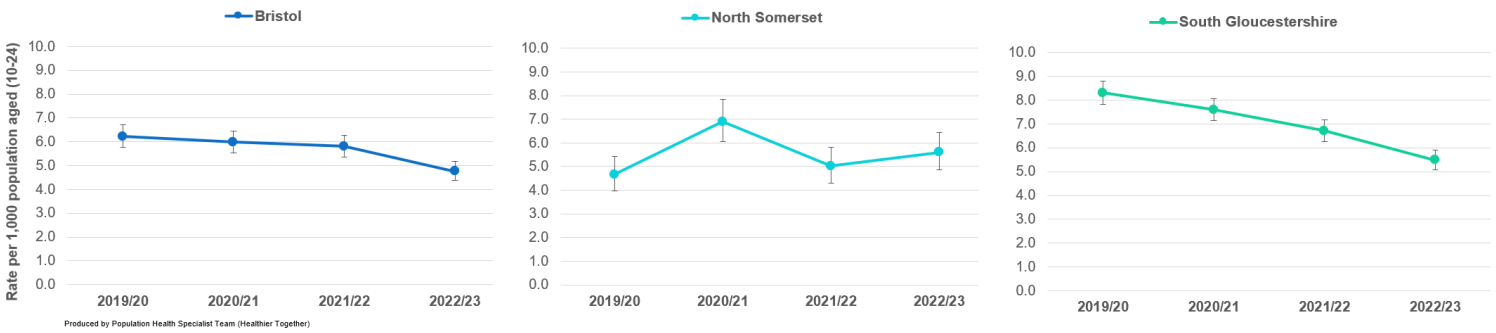
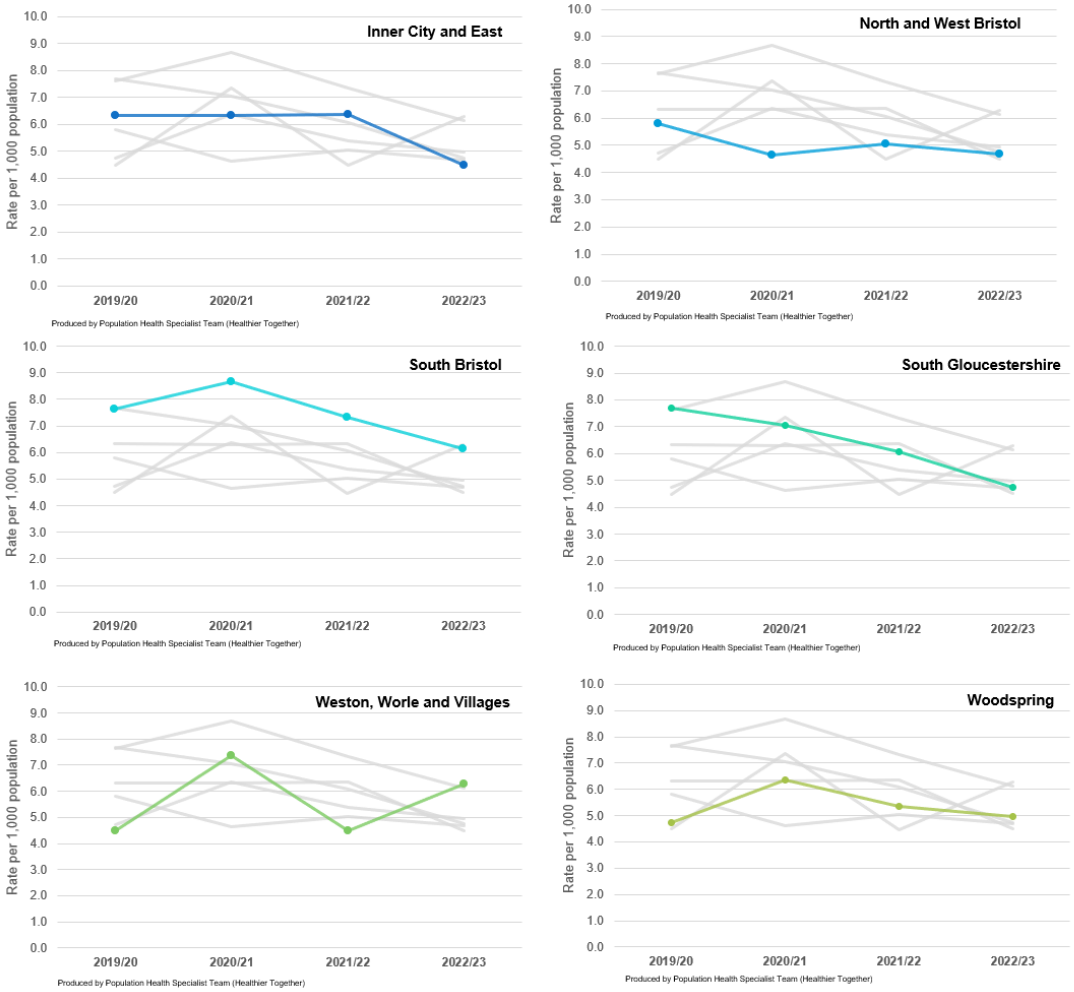


Figure 17 Rate of hospital admissions due to self-harm, rate per 1,000 population aged 10-24 by Locality (2019-20 – 2022-23)



6.2 How do admissions to hospital for self-harm vary with age, gender and geography?

There is some variation across each of the local authority areas in relation to age groups and admissions. For all Local Authority areas rates of Non-Elective admissions are highest in the 15-19yr old females as shown in Figure 18.

North Somerset has the highest rate of admissions in 10–14-year-old females across the three local authority areas and South Gloucestershire has significantly higher rates in 20-24yr olds for both females and males.

Figure 18 Rate of Hospital Admissions due to self-harm, rate per 1,000 population, aged 10-24, 2019-20 - 2022-23, by Age Group, Gender and Financial Year

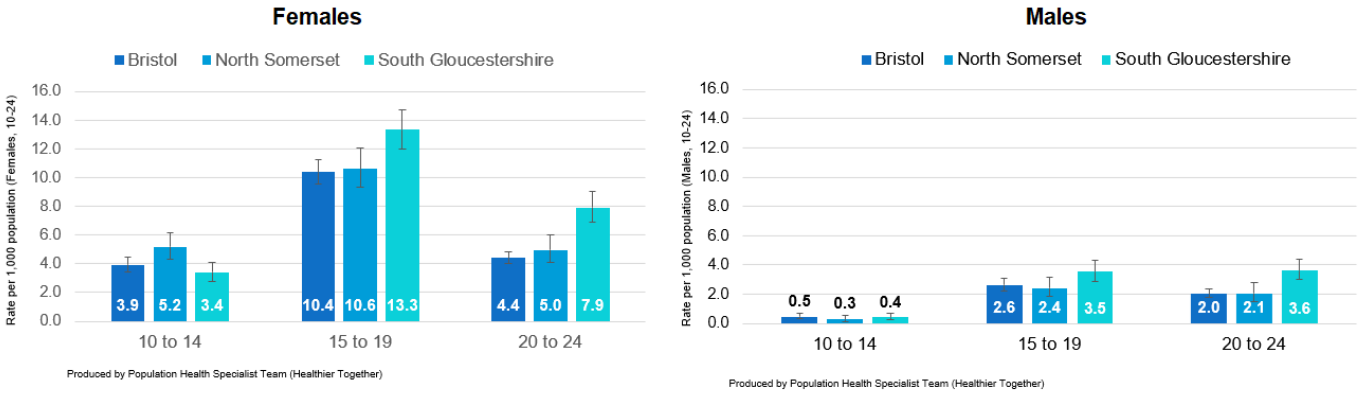


Figure 19 shows that over the four-year period, there have been statistically significant reductions in hospital admissions in 15–19 year-old females with a reduction in admission rates from 12.0 to 9.0 per 1,000 population and for males from 3.6 to 2.8 per 1,000 population between 2019-20 and 2022-23. In 20-24 year old males there was a significant reduction from 3.5 to 1.7 per 1,000 population between 2019-20 and 2022-23. There was no significant reduction in admissions for 10-14 year old females and males and 20-24 year old females.

Figure 19 Rate of Hospital Admissions due to self-harm, rate per 1,000 population aged 10-24, 2019-20 - 2022-23, by Age Group, Gender and Financial Year

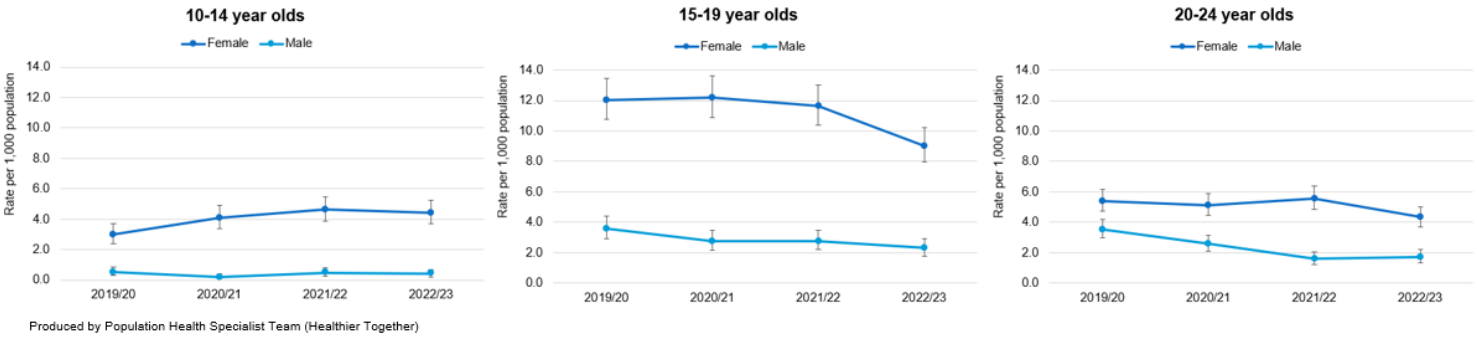
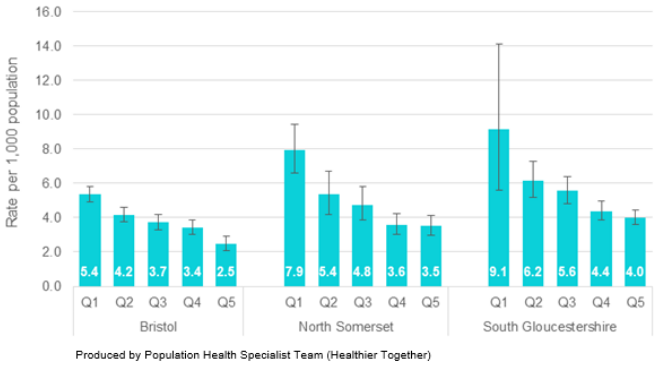


Figure 20 Rate of Hospital admissions due to self-harm by IMD Quintile as a rate per 1,000 population, aged 10-24, 2019-20 - 2022-23, by Age Group, Gender and Financial Year

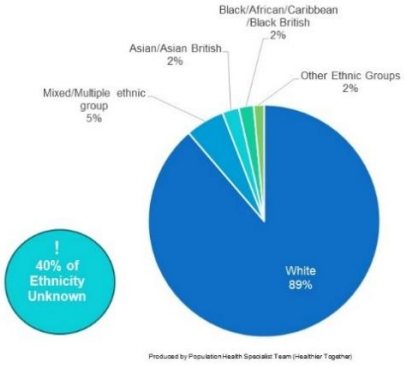


There is a strong correlation with deprivation and rates are significantly higher in the most deprived areas compared to the least deprived areas. For females, rates are significantly higher in all 3 Local Authority areas by deprivation. For males, rates are significantly higher in the most deprived 20% compared to the least deprived 20% in Bristol and North Somerset. When comparing rates of admissions for self-harm between the most deprived areas compared to least deprived, in Bristol, rates are 2.1 times higher, in North Somerset rates are 2.2 times higher and for South Gloucestershire, 2.2 times higher.

6.3 What are the limitations of demographic data?

In the dataset used for this analysis 39.9% of data is missing for ethnicity, therefore it has not been possible to calculate rates per 1,000 population. Figure 21 below shows the breakdown by ethnicity where this data was available.

Figure 21 Hospital admissions for self-harm by ethnicity where data was recorded (2022-23)



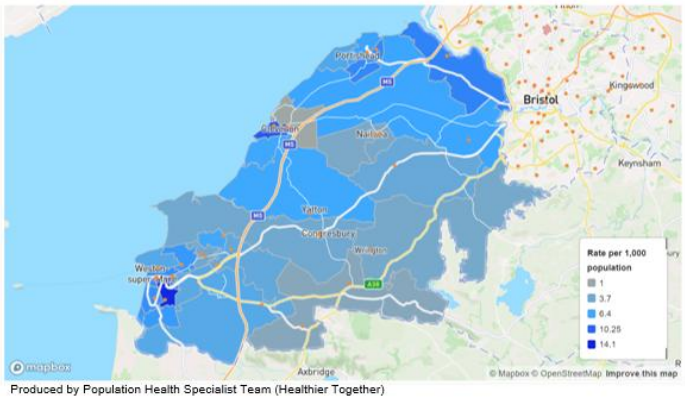
There were other data fields which were available in the dataset to use including first language and sexual orientation. However, this information is currently poorly recorded and therefore unsuitable to generate meaningful analysis. Other information, around high-risk groups for self-harm, such as Looked After Children, was also not available in the SWD and demonstrates a current gap in knowledge and understanding for this group in BNSSG. Following engagement with system partners there may be opportunities to use certain practices as proxy indicators for groups, for example, asylum seeker, refugee and migrant populations which could be explored further for any future analysis.

6.4 Where are admissions coming from?

Figure 22 Hospital admissions for self-harm as a rate per 1,000 population - Bristol by MSOA (2019-20 to 2022-23)

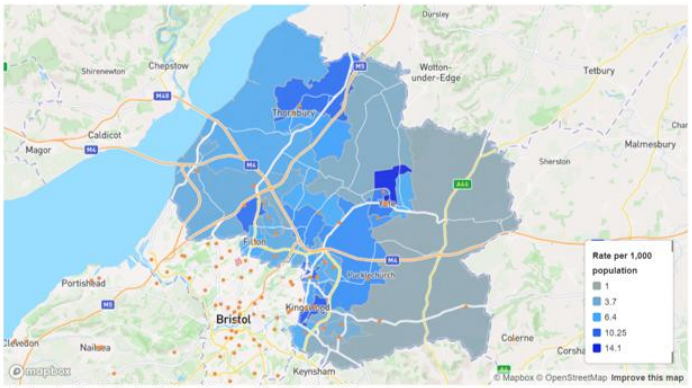
Produced by Population Health Specialist Team (Healthier Together)

Figure 23 Hospital admissions for self-harm as a rate per 1,000 population – North Somerset by MSOA (2019-20 to 2022-23)



Produced by Population Health Specialist Team (Healthier Together)

Figure 24 Hospital admissions for self-harm as a rate per 1,000 population – South Gloucestershire by MSOA (2019-20 to 2022-23)



Produced by Population Health Specialist Team (Healthier Together)

Data notes: The maps above show the rate of admissions for children and young people based on where they registered with a GP in BNSSG. There are a small number of practices who opted out of use of data for this analysis and therefore, in some areas, this means that there may be an underrepresentation of attendances across an area. More information is available in 2. Data Considerations and Limitations.

6.6 Attributes among those admitted to hospital for self-harm

Using the System Wide Dataset, we can understand more about the population who are admitted to hospital for self-harm. Figure 25 below shows the attributes of the self-harm cohort identified from the System Wide Dataset. Attributes are patient demographics and clinical characteristics which are obtained from the GP record.

The attributes shown below are shown as a proportion of the cohort within each age group who have been admitted to hospital for self-harm. The figure below illustrates that a high proportion of the population have a mental health need or condition. For 10-14 year olds, self-harm (29.4%), stress, anxiety and depression (14.0%) and depression (7.7%). For 15-19 year olds, stress, anxiety and depression (39.6%), self-harm (37.1%) and depression (35.0%) and for 20-24 year olds QOF: Depression (formal diagnosis of depression, 62.3%), depression (57.3%) and stress anxiety or depression (54.0%) were the most common attributes. A full breakdown of the attribute definitions is available in Appendix 3: Attribute Definitions

Figure 25 Attributes for Children and Young People admitted for Self-harm in BNSSG by age group (2022-23) - 10-24 year olds.

	10-14 Years	15-19 Years	20-24 Years
QOF: Depression	0.0%	20.6%	62.3%
Depression	7.7%	35.0%	57.3%
Stress, Anxiety & Depression	14.0%	39.6%	54.0%
Self Harm	29.4%	37.1%	40.2%
Smoking	1.4%	14.4%	36.4%
Personality Disorder	1.4%	5.2%	19.7%
Eating Disorder	2.8%	7.1%	10.9%
Dependancy: Alcohol	2.1%	6.4%	9.6%
Neurological conditions & Neuropathic pain	3.5%	8.0%	9.6%
PTSD	0.7%	3.1%	8.8%
QOF: Obesity	0.0%	1.5%	8.8%
Learning Disability	3.5%	5.5%	7.5%
ADHD	1.4%	5.5%	5.9%
Hearing Impairment	2.8%	3.7%	5.4%
Autism	2.8%	4.0%	5.0%
QOF: Mental Health	0.0%	0.9%	3.3%
Epilepsy	0.0%	0.9%	2.1%
Has Carer	1.4%	3.1%	2.1%
QOF: Learning Disability	0.7%	0.9%	2.1%
Dependancy: Drugs	0.0%	0.3%	1.3%
Is Carer	2.1%	1.2%	0.8%
Homeless	0.0%	0.0%	0.8%
Learning Difficulty	0.0%	1.5%	0.8%
Fatigue	0.0%	0.9%	0.4%
Visual Impairment	0.7%	0.0%	0.4%
Physical Disability	0.0%	0.0%	0.0%

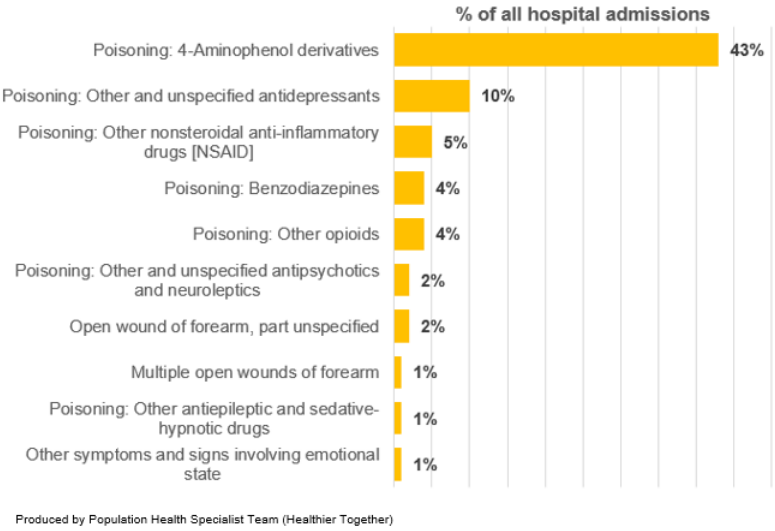
Produced by Population Health Specialist Team (Healthier Together)

Points to consider
It is important to note that individuals may have more than one type of attribute and that many young people under the age of 18 are less likely to have a formal diagnosis of a mental health condition on their GP record, as a presentation of mental illness can be transient in nature. From the age of 18 upwards CYP are therefore more likely to have formal diagnosis of a mental health condition, including Serious Mental Illness, recorded on their GP record.

6.7 What are the reasons for hospital admissions and where do people go to?

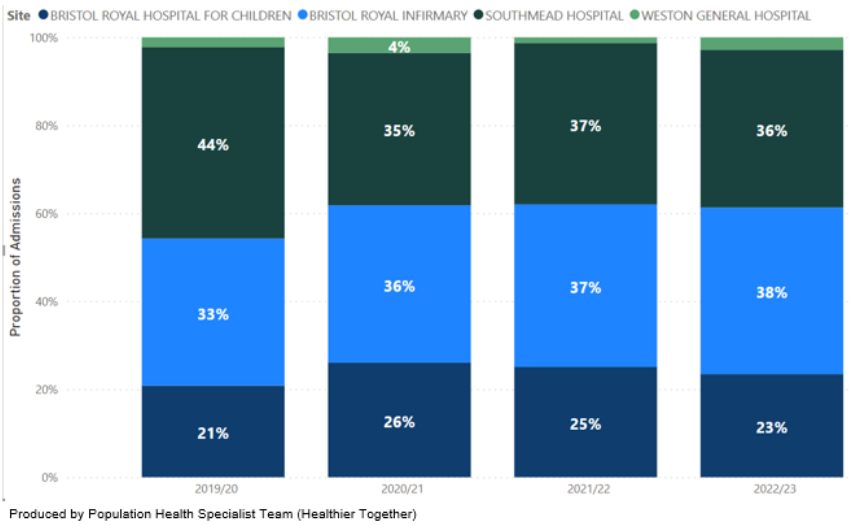
Figure 26 illustrates shows the top ten reasons for admissions based on primary diagnosis which accounts for 75% of all reasons for hospital admissions for self-harm across BNSSG. A high proportion of admissions relate to poisoning with various substances (69%) with a smaller proportion of methods involving cutting (3%)

Figure 26 Top 10 Primary Diagnosis for Self-Harm Admissions at Emergency Department (2019-20 to 2022-23)



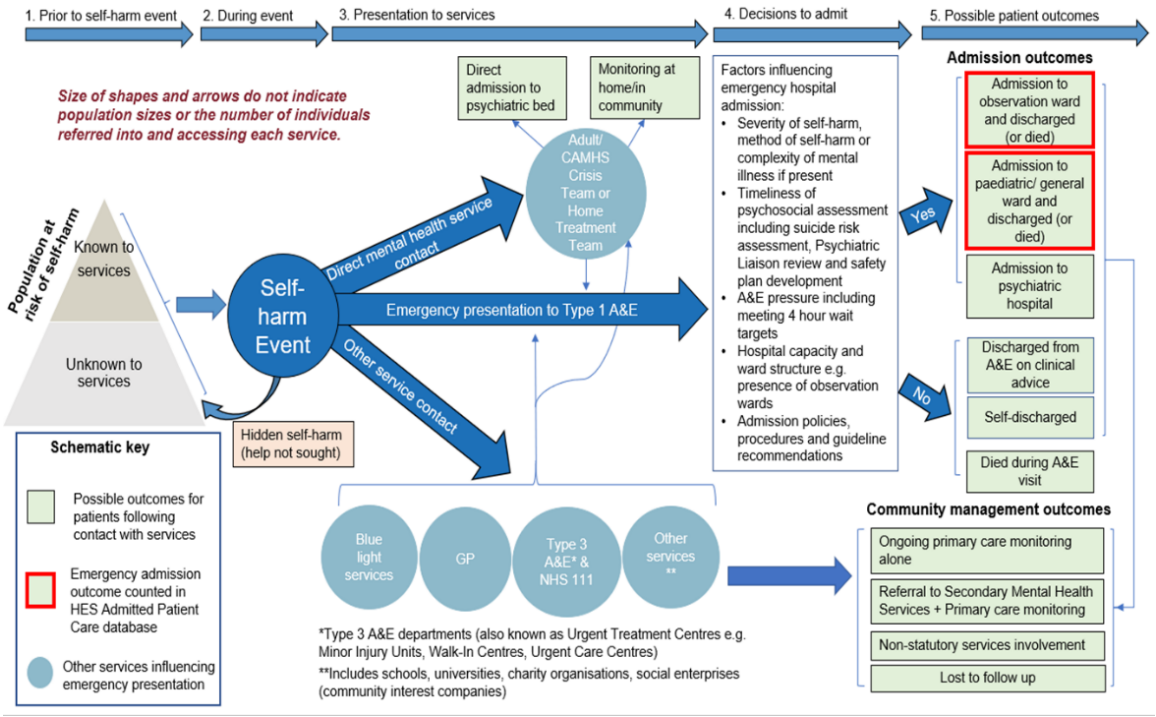
In the most recent year the highest admissions were at BRI (38%) followed by Southmead (36%), Bristol Childrens Hospital (23%) and Weston General (3%). 95% of people who are admitted return to their usual place of residence with the remaining 5% being discharged to a temporary place of residence or transferred to a ward. For further information about what happens after an admission see section 5.8 What happens during and after an attendance at Emergency Department or hospital admission?.

Figure 27 Self-harm Admissions at Hospital Site (2019-20 to 2022-23) 10-24 year olds, Percentage



7. What can a pathway through the system look like for a self-harm event?

Figure 28 Schematic representation for self-harm and patient pathways through services[22]



7.1 How are people interacting with the system in BNSSG?

Using pathway analysis, we can understand how the identified population who self-harm in BNSSG are interacting with the healthcare system at different points of delivery. This is achieved by using a Theoplot which visualises a person's journey and shows the variation in use of services. A red line represents a hospital admission for self-harm and the different coloured dots indicate interaction with different points in the system. For example, a yellow dot represents a GP appointment and purple dot represents an ED Attendance.

The following visuals represent the different interactions with the system which have been divided into quartiles of the identified cohort of CYP aged 10-24 who either attend ED or have an admission for self-harm in BNSSG. This is based on the number of events in the year before a self-harm event. Quartile 1 represents the bottom 25% in this cohort and Quartile 4 represents the top 25%.

A comparison between the top 25% (Quartile 4) and the bottom 25% (Quartile 1) showed that individuals in the top 25% had 8.5 times higher use of GP Appointments, 4 times higher use of ED Attendances and 2 times higher use of 999/111, demonstrating key pressure points in the system across Primary and Secondary care.

[22] Used with permission from Local Knowledge and Intelligence Service South West, Office for Health Improvement and Disparities (2022) "Understanding Emergency Hospital Admissions for Intentional Self-Harm in the South West"

Figure 29 Number of events in the 365 days prior to the last self-harm event (ED Attendance or Admission) - Quartile 1

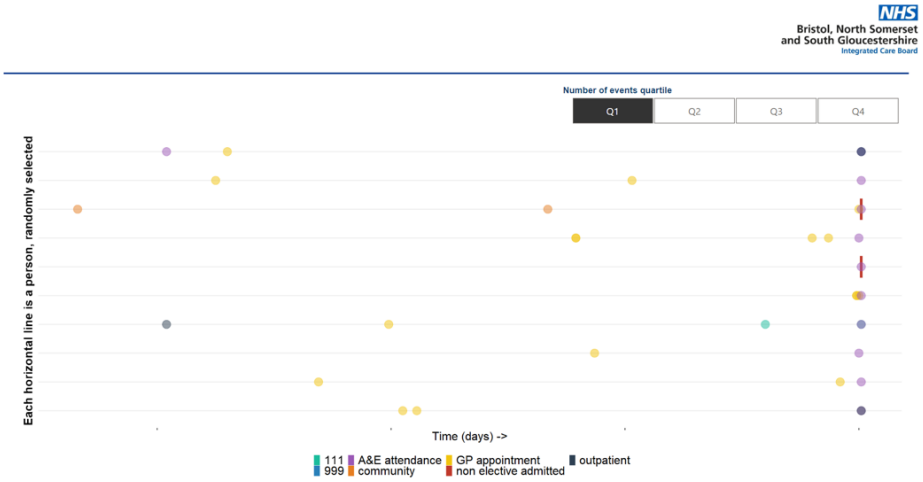


Figure 30 Number of events in the 365 days prior to the last self-harm event (ED Attendance or Admission) - Quartile 2

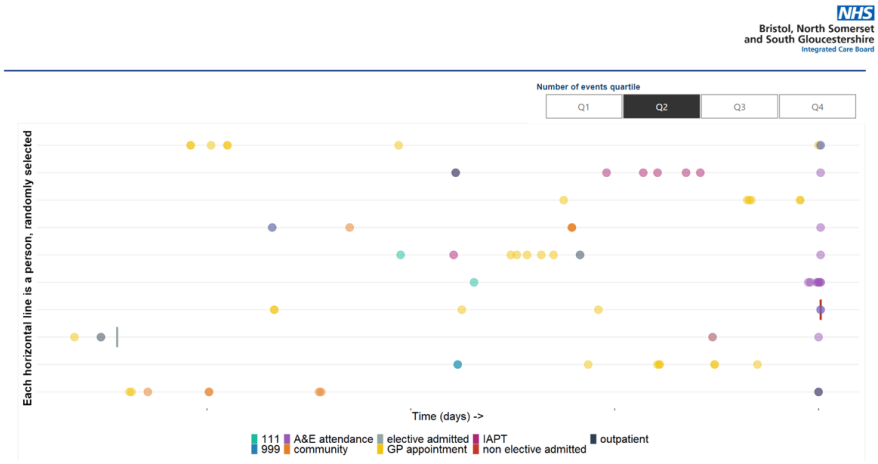


Figure 31 Number of events in the 365 days prior to the last self-harm event (ED Attendance or Admission) - Quartile 3

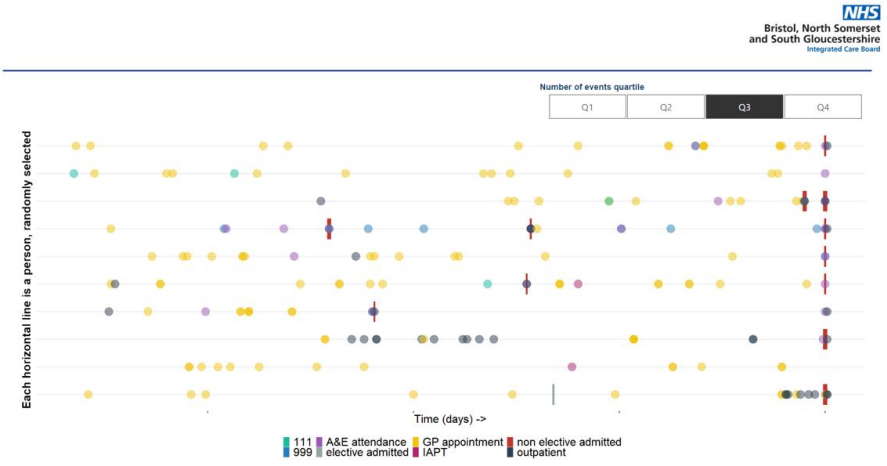
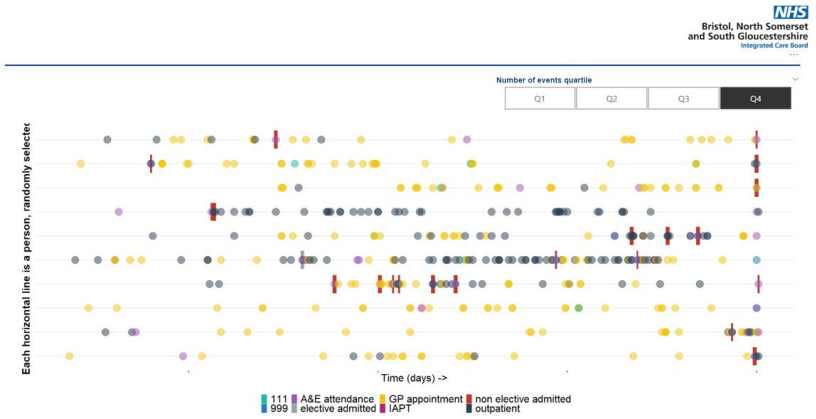


Figure 32 Number of events in the 365 days prior to the last self-harm event (ED Attendance or Admission) - Quartile 4



7.2 High Intensity Users in Emergency Departments

The South West OHID conducted analysis looking at high intensity users across the South West[23]. A high-intensity user (HIU) is defined as a person who has 5 or more attendances at ED in a year. This methodology has also been applied to the BNSSG data. Table 3 below shows the total number of attendances attributable to HIUs by financial year, the proportion of overall attendances and how many individuals this relates to. There has been an increase in the proportion of high intensity user attendances across BNSSG from 14.8% to 19.1% between 2019-20 and 2022-23.

Table 3 Emergency Department attendances for High Intensity Users in BNSSG (2019-20 to 2022-23) 10-24 year olds, Number and Percentage

	2019/20	2020/21	2021/22	2022/23
Total Attendances - HIU	268	362	314	336
% of total attendances	14.8%	22.9%	16.8%	19.1%
No individuals	30	33	27	32

Points to consider
There is ongoing work in collaboration with system partners and members of the self-harm matters HIT to explore this data in further detail to develop an understanding of gaps in provision or opportunities to understand interactions in primary care, including type of health professional (GP/Mental Health Professional), type of appointment (virtual/face to face or telephone) and time of appointment (on the day, next day or 1-8 days).

There is also opportunity for work across the system to look more broadly at opportunities for early intervention, which was beyond the scope of this analysis. This could include engagement with schools, colleges, universities as well as understanding CAMHS referrals and community provision

[23] OHID (2022) Understanding Emergency Hospital Admissions for Intentional Self-Harm in the South West – Full Report

8. Next Steps

Data

There is no national definition for Emergency Department attendances for self-harm. Each area defines this in a slightly different way. There are discussions both locally and regionally to work towards developing an agreed definition.

There is additional work taking place in collaboration with ED clinicians to review ED Attendances and to further refine the data. This will improve data quality and also support improvements in the ED department about how data is entered into the system. This will support work at a system level to monitor changes in attendances over time with a locally agreed definition of self-harm emergency department attendances within BNSSG.

Emergency Department attendances and Non-Elective hospital admissions

Develop a clearer understanding of the pathway prior to admission or attendance at the time people present to services, particularly for frequent attenders, for example, where there has been a notable high use of primary care, A&E, 999/111. There is opportunity to understand the extent and nature of engagement with Primary Care in more detail.

There is a gap in knowledge and understanding about what happens to people following an attendance or admission for self-harm. There is currently no routine recording of where people are referred onto, for example, crisis teams, VCSE partners or secondary mental health services. This could be an area for further review by system partners for any future projects or system work in this area.

Wider System Opportunities

Any future work around self-harm could focus more broadly on exploring preventative opportunities in relation to self-harm particularly understanding where there are gaps in provision and identification of opportunities for capacity building and strengthening support for example with parents, teachers and pupils, which could be in the form of a system-wide needs assessment or provision mapping across BNSSG.

Engagement with stakeholders as part of this project has highlighted a need to understand the awareness of services that are available to people working with CYP to support people presenting with self-harm. This could be achieved through engagement with health care practitioners and wider stakeholders.

9. Further Resources

A set of resources around Self-harm prevention for Children and Young people is available on Future NHS platform,which has been produced by the South West Population Health Team and includes resources on the following areas:

- Case for Change
- Policy Drivers
- Case Studies
- Data & Evidence
- Interventions and Actions
- Key Enablers
- Prevention Resources (including educational settings)

This tool aims to bring together local and national evidence and experience, brought together by a range of South West stakeholders to seek to explain what factors are driving self-harm across the region.

The aim is to mobilise stakeholders and decision makers to implement strategies to prevent self-harm. We acknowledge that the tool is limited to secondary care and CYP, but hope that the richness of information in this tool is applicable more widely to adults and wider care services. The ambition is to broaden this fact-finding tool through feedback, Quality Improvement shared learning and increased understanding of evidence-based interventions.

The resource can be accessed by NHS Futures and a login is required

Appendix 1: Definitions

Definitions	
Time Period	2019-20 to 2022-23 by Financial Year
Age Groups	10-24 year olds
Registered Population in Organisation Code	'5A3','12A','5QJ','11H','5M8','11T','15C','QUY' **Registered in BNSSG ICS**
Geographical Area	Registered population in BNSSG (Registered with a GP practice) Breakdowns provided to Local Authority, Locality and MSOA (Mapping)
Emergency Department Attendances - Self-Harm Definition	**WHERE** [Chief Complaint Description] is like: %psych%', '%Self-Injur%', '%Suicid%','%Depres%', '%Anxiety%' , '%Behaviour%', '%Hallucinations%' or '%delusions%' **OR** [Diagnoses_Code_1-5] like: '%Dementia%', '%Delirium%', '%Personality disorder%', '%eating disorder%',,'%anxiety%' ,'%depres%' , '%delusion%', '%bipolar%' ,%schizophrenia%','%psychotic disorder%','%somatoform pain disorder%', '%dissociative disorder%' ,'%factitious disorder%','%Paracetamol overdose%' , '%non-steroidal anti-inflammatory overdose%', '%overdose of antidepressant drug%' , '%Benzodiazepine overdose%', '%overdose of opiate%' , '%self-harm%' , '%adjustment disorder%' or '%sedative overdose%' **AND** [Injury Intention Description] is 'Self inflicted injury' or [Chief Complaint Description] = 'Self-injurious behaviour' OR [Injury Intent Description] = 'Self inflicted injury'
Self-Harm Definition (Admissions)	In-patient **Non-Elective** admissions for self-harm - **diagnosis codes in any position** between “X60” – “X84”

Appendix 2: GP Practices included in analysis

Practices included in analysis = 72 out of 77

Locality		Practice Code	Practice Name
Bristol	Inner City & East	L81012	MONTPELIER HEALTH CENTRE
		L81015	CHARLOTTE KEEL MEDICAL PRACTICE
		L81023	EAST TREES HEALTH CENTRE
		L81061	THE WELLSPRING SURGERY
		L81089	LAWRENCE HILL HEALTH CENTRE
		Y02578	BROADMEAD MEDICAL CENTRE
		L81013	FISHPONDS FAMILY PRACTICE
		L81038	AIR BALLOON SURGERY
		L81087	BEECHWOOD MEDICAL PRACTICE
		L81062	FIRECLAY HEALTH
		L81075	THE OLD SCHOOL SURGERY
		Y02873	COMPASS HEALTH
	North & West	L81017	WESTBURY ON TRYM PRIMARY CARE CENTRE
		L81098	GREENWAY COMMUNITY PRACTICE
		L81131	FALLODON WAY MEDICAL CENTRE
		L81077	SEA MILLS SURGERY
		L81081	PEMBROKE ROAD SURGERY
		L81090	THE FAMILY PRACTICE
		L81091	WHITELADIES MEDICAL GROUP
		L81133	STUDENT HEALTH SERVICE
		L81008	SHIREHAMPTON GROUP PRACTICE
		L81037	PIONEER MEDICAL GROUP
		L81022	HORFIELD HC
		L81078	GLOUCESTER ROAD MEDICAL CENTRE
	South Bristol	L81007	BRIDGE VIEW MEDICAL
		L81009	STOCKWOOD MEDICAL CENTRE
		L81033	NIGHTINGALE VALLEY PRACTICE
		L81084	PRIORY SURGERY
		L81125	WELLS ROAD SURGERY
		L81031	THE ARMADA FAMILY PRACTICE
		L81041	HILLVIEW FAMILY PRACTICE
		L81053	THE LENNARD SURGERY
		L81054	GRANGE ROAD SURGERY
		L81082	BEDMINSTER FAMILY PRACTICE
		L81083	HARTWOOD HEALTHCARE
		L81094	THE MERRYWOOD PRACTICE
		L81095	THE CREST FAMILY PRACTICE
North Somerset	Weston Worle & Villages	L81016	GRAHAM ROAD SURGERY
		L81021	WINSCOMBE SURGERY
		L81044	TUDOR LODGE SURGERY
		L81051	168 MEDICAL GROUP
		L81058	THE MILTON SURGERY
		L81066	STAFFORD MEDICAL GROUP
		L81643	THE CEDARS SURGERY
		L81670	HORIZON HEALTH CENTRE
	Woodspring	L81004	PORTISHEAD MEDICAL GROUP
		L81040	CLEVEDON MEDICAL CENTRE
		L81085	HEYWOOD FAMILY PRACTICE
		L81600	HARBOURSIDE FAMILY PRACTICE
		L81034	TYNTESFIELD MEDICAL GROUP
South Gloucestershire	South Gloucestershire	L81050	CLOSE FARM SURGERY
		L81063	KINGSWOOD HEALTH CENTRE
		L81079	HANHAM HEALTH
		L81130	CADBURY HEATH HEALTHCARE
		L81019	CONCORD MEDICAL CENTRE

		L81026	THE DOWNEND HEALTH GROUP
		L81029	THREE SHIRES MEDICAL PRACTICE
		L81046	LEAP VALLEY MEDICAL CENTRE
		L81055	ORCHARD MEDICAL CENTRE
		L81632	EMERSONS GREEN MEDICAL CENTRE
		L81018	SEVERN VIEW FAMILY PRACTICE
		L81103	ST MARY STREET SURGERY
		L81106	STREAMSIDE SURGERY
		L81117	PILNING SURGERY
		L81127	ALMONDSBURY SURGERY
		L81118	STOKE GIFFORD MEDICAL CENTRE
		L81649	BRADLEY STOKE SURGERY
		L81014	FROME VALLEY MEDICAL CENTRE
		L81024	COURTSIDE SURGERY
		L81042	KENNEDY WAY SURGERY
		L81047	WEST WALK SURGERY
		L81642	WELLINGTON ROAD SURGERY

Appendix 3: Attribute Definitions

Attribute Descriptions	Broad Definition
ADHD	ADHD with or without stimulant therapy
Autism	Autistic spectrum disorder
Dep: Alcohol	Alcohol dependence syndrome including active/controlled dependence or rehabilitation. Mental behavioural disorders due use of Alcohol
Dep: Benzo	Benzodiazepine dependence including detoxification
Dep: Cannabis	Cannabis type drug dependence
Dep: Cocaine	Mental behavioural disorders due use of cocaine including active/controlled dependence or rehabilitation
Dep: Opioid	Opioid type drug dependence Mental behavioural disorders due use of due to use opioids
Dep: Other	Dependence to: Heroin, Methadone, hypnotic/anxiolytic, diazepam, amphetamine or psychostimulants, solvents, hallucinogens and barbiturates.
Depression	Depression classified as mild, moderate or severe including single episode/recurrent and with/without psychotic symptoms
Eating Disorder	Eating disorders including diagnosis, referral to service/clinic or seen in eating disorder clinic
Personality Disorder	Personality disorders
Epilepsy	Epilepsy
Fatigue	Chronic Fatigue Syndrome (CFS) – Mild, Moderate, Severe, Myalgic encephalomyelitis (ME)
Has Carer	Carer – paid, informal, parent or older
Is Carer	Carer for friend, neighbour, relative, family member or parent
Homeless	Homeless including referrals to homelessness teams, advocacy services or drop-in centres.
Learning Difficulties	Dyslexia, Developmental co-ordination disorder (Dyspraxia)
Learning Disabilities	Mild, Moderate, Severe Learning disabilities
Migraine/MND/MS/Neuro Pain/Neuro Various	Migraine, Motor neurone Disease, Multiple sclerosis,
Neurovarious	Neurological conditions including ataxia, memory loss, memory disturbance, aphasia, dysphasia, cerebral palsy,
Neuropain	Neuropathic pain including Neuralgia, fibromyalgia, chronic pain,
Obesity	BMI > 30
Physical Disability	Chronic physical disability, multiple and complex disability with a physical disability
PTSD	Including PTSD Acute/Chronic or Delayed including intervention programmes for Complex PTSD
QOF_Depression	QOF Definition for Depression further details available here Quality and Outcomes Framework, 2022-23 - NHS Digital
QOF_Learning Disability	QOF Definition for Learning Disabilities further details available here Quality and Outcomes Framework, 2022-23 - NHS Digital

QOF_Mental	QOF Definition for Severe Mental Illness further details available here Quality and Outcomes Framework, 2022-23 - NHS Digital
QOF_Obesity	QOF Definition of Obesity with BMI =>30 and Obese Class I, II and III
SAD	Stress, Anxiety and Depression which includes anxiety disorders and depression episodes classed as mild, moderate, severe which can be either single or recurrent.
Self_Harm	Includes self-harm, intentional self-harm, deliberate self-harm, self-inflicted injuries and suicide including attempted and risk of suicide.
Smoking	Current/Ex Smoker
Visual Impairment	Blindness and low vision (Active)
Hearing Impairment	Hearing Loss (Active)

Appendix 4: Figures and Tables

Emergency Department (ED) Attendances

Number of ED Attendances due to self-harm, count, population aged 10-24 by Local Authority (2019/20 – 2022/23)

Area	2019/20	2020/21	2021/22	2022/23	Total
Bristol, City of	1048	953	1079	988	4068
North Somerset	331	297	345	406	1379
South Gloucestershire	431	333	446	362	1572
Out of area	56	33	40	47	176
Total	**1866**	**1616**	**1910**	**1803**	**7195**

Rate of ED Attendances due to self-harm, rate per 1,000 population aged 10-24, by Local Authority (2019/20 – 2022/23)

Area	2019/20	(95% CI)	2020/21	(95% CI)	2021/22	(95% CI)	2022/23	(95% CI)
Bristol, City of	9.9	(9.3-10.5)	8.7	(8.2-9.3)	9.9	(9.3-10.5)	8.7	(8.2-9.3)
North Somerset	9.5	(8.5-10.6)	8.5	(7.5-9.5)	9.7	(8.7-10.8)	11.2	(10.1-12.4)
South Gloucestershire	9.5	(8.7-10.5)	7.4	(6.7-8.3)	9.9	(9-10.8)	7.8	(7.1-8.7)

Number of ED Attendances due to self-harm, count, population aged 10-24 by Locality (2019/20 – 2022/23)

Area	2019/20	2020/21	2021/22	2022/23	Total
Inner City & East	329	324	360	320	1333
North & West	406	308	416	419	1549
South Bristol	339	318	322	274	1253
South Gloucestershire	382	326	396	322	1426
Weston Worle & Villages	167	115	178	218	678
Woodspring	158	161	166	175	660
Not in Locality	15	23	24	16	78
Unknown	14	8	8	12	42
Total	**1810**	**1583**	**1870**	**1756**	**7019**

Rate of ED Attendances due to self-harm, rate per 1,000 population aged 10-24, 24 by Locality (2019/20 – 2022/23)

Area	2019/20	(95% CI)	2020/21	(95% CI)	2021/22	(95% CI)	2022/23	(95% CI)
Inner City & East	9.6	(8.6-10.7)	9.2	(8.2-10.2)	10.3	(9.2-11.4)	8.7	(7.8-9.7)
North & West	8.9	(8.1-9.8)	6.5	(5.8-7.3)	8.9	(8.1-9.8)	8.7	(7.8-9.5)
South Bristol	12.8	(11.5-14.2)	11.9	(10.6-13.3)	11.8	(10.5-13.1)	9.8	(8.7-11.1)
South Gloucestershire	8.5	(7.6-9.3)	7.3	(6.5-8.1)	8.7	(7.9-9.7)	7.0	(6.2-7.8)
Weston Worle & Villages	11.2	(9.6-13)	7.7	(6.4-9.2)	11.9	(10.2-13.8)	14.3	(12.5-16.3)
Woodspring	8.0	(6.8-9.3)	8.0	(6.8-9.3)	8.1	(6.9-9.4)	8.3	(7.2-9.7)

Number of Repeat ED Attendances due to self-harm, count and %, population aged 10-24, (2019/20 – 2022/23)

	2019/20	2020/21	2021/22	2022/23	Total
Repeat	720	778	788	750	**3036**
No Repeat	1090	805	1082	1006	**3983**
Repeat Attendances (%)	**40%**	**49%**	**42%**	**43%**	**43%**

Number of ED Attendances due to self-harm, count, population aged 10-24 by Local Authority and Gender (2019/20 – 2022/23)

Females	Bristol	North Somerset	South Gloucestershire
10 to 14	322	168	189
15 to 19	750	369	424
20 to 24	702	162	212
Total	**1774**	**699**	**825**

Males	Bristol	North Somerset	South Gloucestershire
10 to 14	147	61	66
15 to 19	338	120	139
20 to 24	419	96	131
Total	**904**	**277**	**336**
Ratio (F:M)	*2:1*	*2.5:1*	*2.5:1*

Rate of ED Attendances due to self-harm, rate per 1,000 population aged 10-24, 2019-20 - 2022-23, by Local Authority and Gender

Females	Bristol	(95% CI)	North Somerset	(95% CI)	South Gloucestershire	(95% CI)
10 to 14	5.7	(5.1-6.4)	6.6	(5.7-7.7)	6.0	(5.1-6.9)
15 to 19	13.1	(12.2-14.1)	16.2	(14.6-17.9)	15.1	(13.7-16.7)
20 to 24	6.3	(5.9-6.8)	7.8	(6.7-9.1)	7.4	(6.5-8.5)

Males	Bristol	(95% CI)	North Somerset	(95% CI)	South Gloucestershire	(95% CI)
10 to 14	2.5	(2.1-3)	2.2	(1.7-2.9)	2.0	(1.5-2.5)
15 to 19	6.0	(5.4-6.7)	5.0	(4.2-6)	4.7	(4-5.5)
20 to 24	4.3	(3.9-4.7)	4.5	(3.6-5.5)	4.3	(3.6-5.1)

Rate of ED Attendances due to self-harm, rate per 1,000 population aged 10-24, 2019-20 - 2022-23, by Age Group, Gender and Financial Year

	Area	2019/20	(95% CI)	2020/21	(95% CI)	2021/22	(95% CI)	2022/23	(95% CI)
10 to 14	Female	4.8	(4-5.7)	5.0	(4.2-5.9)	6.9	(5.9-7.9)	7.1	(6.2-8.2)
	Male	2.7	(2.2-3.4)	1.5	(1.1-2)	2.1	(1.6-2.7)	2.9	(2.3-3.6)
15 to 19	Female	14.9	(13.5-16.5)	12.9	(11.6-14.4)	16.5	(15-18.1)	12.8	(11.5-14.2)
	Male	7.0	(6-8.1)	4.4	(3.7-5.3)	4.9	(4.1-5.8)	5.5	(4.7-6.5)
20 to 24	Female	7.3	(6.4-8.1)	5.6	(4.9-6.4)	7.9	(7-8.8)	6.1	(5.4-6.9)
	Male	6.3	(5.5-7.1)	3.3	(2.7-3.9)	4.0	(3.4-4.7)	3.7	(3.1-4.3)

Rate of ED Attendances due to self-harm, rate per 1,000 population aged 10-24, females, 2019-20 - 2022-23, by Deprivation Quintile

Deprivation Quintile	Bristol	(95% CI)	North Somerset	(95% CI)	South Gloucestershire	(95% CI)
Q1 = Most Deprived	10.9	(10.1-11.8)	19.1	(16.1-22.4)	18.7	(11.4-28.8)
Q2	9.4	(8.5-10.3)	14.0	(11.3-17.1)	12.5	(10.5-14.8)
Q3	7.7	(6.9-8.6)	12.4	(10.3-14.8)	9.8	(8.4-11.3)
Q4	7.1	(6.2-8)	8.9	(7.7-10.4)	7.7	(6.6-8.8)
Q5 = Least Deprived	5.5	(4.6-6.4)	7.9	(6.7-9.2)	7.2	(6.4-8)

Rate of ED Attendances due to self-harm, rate per 1,000 population aged 10-24, males, 2019-20 - 2022-23, by Deprivation Quintile

Deprivation Quintile	Bristol	(95% CI)	North Somerset	(95% CI)	South Gloucestershire	(95% CI)
Q1 = Most Deprived	6.2	(10.1-11.8)	8.0	(2.9-6)	6.3	(2-11.7)
Q2	5.1	(8.5-10.3)	6.2	(1.8-4.5)	6.0	(3.1-5.6)
Q3	2.9	(6.9-8.6)	4.3	(1.8-4)	4.1	(3.4-5.4)
Q4	3.4	(6.2-8)	3.7	(1.7-3.1)	2.8	(2.5-3.8)
Q5 = Least Deprived	2.5	(4.6-6.4)	2.3	(1.3-2.4)	2.5	(2-3)

Hospital Admissions for Self-Harm

Number of Hospital Admissions due to self-harm, count, population aged 10-24, 2019-20 - 2022-23 by Local Authority

Area	2019/20	2020/21	2021/22	2022/23	Total
Bristol, City of	661	654	634	539	2488
North Somerset	162	242	178	203	785
South Gloucestershire	375	340	304	253	1272
Out of area	40	44	32	28	144
Total	**1238**	**1280**	**1148**	**1023**	**4689**

Rate of Hospital Admissions due to self-harm, rate per 1,000 population aged 10-24, 2019-20 - 2022-23, by Local Authority

Area	2019/20	(95% CI)	2020/21	(95% CI)	2021/22	(95% CI)	2022/23	(95% CI)
Bristol, City of	6.2	(5.8-6.7)	6.0	(5.5-6.5)	5.8	(5.4-6.3)	4.8	(4.4-5.2)
North Somerset	4.7	(4-5.4)	6.9	(6.1-7.8)	5.0	(4.3-5.8)	5.6	(4.9-6.4)
South Gloucestershire	8.3	(7.5-9.2)	7.6	(6.8-8.5)	6.7	(6-7.5)	5.5	(4.8-6.2)

Number of Hospital Admissions due to self-harm, count, population aged 10-24, 2019-20 - 2022-23 by Locality.

Area	2019/20	2020/21	2021/22	2022/23	Total
Inner City & East	216	223	223	166	828
North & West	265	219	236	227	947
South Bristol	202	232	201	171	806
South Gloucestershire	347	315	275	219	1156
Weston Worle & Villages	67	110	67	96	340
Woodspring	94	128	110	104	436
Not in Locality	<7	<7	<7	9	19
Unknown	<7	<7	<7	<7	13
Total	**1198**	**1236**	**1116**	**995**	**4545**

Rate of Hospital Admissions due to self-harm, rate per 1,000 population aged 10-24, 2019-20 - 2022-23, by Locality.

Area	2019/20	(95% CI)	2020/21	(95% CI)	2021/22	(95% CI)	2022/23	(95% CI)
Inner City & East	6.3	(5.5-7.2)	6.3	(5.5-7.2)	6.4	(5.5-7.2)	4.5	(3.8-5.2)
North & West	5.8	(5.1-6.6)	4.6	(4-5.3)	5.1	(4.4-5.7)	4.7	(4.1-5.3)
South Bristol	7.6	(6.6-8.7)	8.7	(7.6-9.9)	7.3	(6.4-8.4)	6.1	(5.3-7.1)
South Gloucestershire	7.7	(6.9-8.5)	7.0	(6.3-7.9)	6.1	(5.4-6.8)	4.7	(4.1-5.4)
Weston Worle & Villages	4.5	(3.5-5.7)	7.4	(6.1-8.9)	4.5	(3.5-5.7)	6.3	(5.1-7.7)
Woodspring	4.7	(3.8-5.8)	6.4	(5.3-7.6)	5.4	(4.4-6.5)	5.0	(4.1-6)

Number of Hospital Admissions due to self-harm, count, population aged 10-24, 2019-20 - 2022-23 by Local Authority and Gender

Females	Bristol	North Somerset	South Gloucestershire
10 to 14	222	132	108
15 to 19	595	242	373
20 to 24	490	103	226
Total	**1307**	**477**	**707**

Males	Bristol	North Somerset	South Gloucestershire
10 to 14	27	8	14
15 to 19	148	58	105
20 to 24	200	44	110
Total	**375**	**110**	**229**
Ratio (F:M)	*3.5:1*	*4.3:1*	*3.1:1*

Rate of Hospital Admissions due to self-harm, rate per 1,000 population aged 10-24, 2019-20 - 2022-23, by Local Authority and Gender

Females	Bristol	(95% CI)	North Somerset	(95% CI)	South Gloucestershire	(95% CI)
10 to 14	3.9	(3.4-4.5)	5.2	(4.3-6.2)	3.4	(2.8-4.1)
15 to 19	10.4	(9.6-11.2)	10.6	(9.3-12)	13.3	(12-14.7)
20 to 24	4.4	(4-4.8)	5.0	(4.1-6)	7.9	(6.9-9)

Males	Bristol	(95% CI)	North Somerset	(95% CI)	South Gloucestershire	(95% CI)
10 to 14	0.5	(0.3-0.7)	0.3	(0.1-0.6)	0.4	(0.2-0.7)
15 to 19	2.6	(2.2-3.1)	2.4	(1.9-3.2)	3.5	(2.9-4.3)
20 to 24	2.0	(1.8-2.3)	2.1	(1.5-2.8)	3.6	(3-4.4)

Rate of Hospital Admissions due to self-harm, rate per 1,000 population aged 10-24, 2019-20 - 2022-23, by Age Group, Gender and Financial Year

	Area	2019/20	(95% CI)	2020/21	(95% CI)	2021/22	(95% CI)	2022/23	(95% CI)
10 to 14	Female	3.0	(2.4-3.7)	4.1	(3.4-4.9)	4.6	(3.9-5.5)	4.4	(3.7-5.3)
	Male	0.5	(0.3-0.9)	0.2	(0.1-0.4)	0.5	(0.3-0.8)	0.4	(0.2-0.7)
15 to 19	Female	12.0	(10.8-13.4)	12.2	(10.9-13.6)	11.6	(10.4-13)	9.0	(8-10.2)
	Male	3.6	(2.9-4.4)	2.7	(2.2-3.4)	2.8	(2.2-3.5)	2.3	(1.8-2.9)
20 to 24	Female	5.4	(4.7-6.2)	5.1	(4.4-5.9)	5.6	(4.9-6.4)	4.3	(3.7-5)
	Male	3.5	(3-4.2)	2.6	(2.1-3.2)	1.6	(1.2-2)	1.7	(1.3-2.2)

Rate of Hospital Admissions due to self-harm, rate per 1,000 population aged 10-24, females, 2019-20 - 2022-23, by Deprivation Quintile

Deprivation Quintile	Bristol	(95% CI)	North Somerset	(95% CI)	South Gloucestershire	(95% CI)
Q1 = Most Deprived	8.3	(7.6-9.1)	12.7	(10.3-15.4)	14.9	(8.5-24.2)
Q2	6.1	(5.4-6.8)	8.8	(6.7-11.3)	9.6	(7.8-11.6)
Q3	6.1	(5.4-7)	7.6	(6-9.5)	7.8	(6.6-9.2)
Q4	5.4	(4.6-6.2)	6.0	(4.9-7.2)	6.8	(5.8-7.9)
Q5 = Least Deprived	4.0	(3.2-4.8)	6.3	(5.3-7.5)	6.6	(5.8-7.4)

Rate of Hospital Admissions due to self-harm, rate per 1,000 population aged 10-24, males, 2019-20 - 2022-23, by Deprivation Quintile

Deprivation Quintile	Bristol	(95% CI)	North Somerset	(95% CI)	South Gloucestershire	(95% CI)
Q1 = Most Deprived	2.4	(2-2.8)	3.1	(2-4.6)	3.6	(1-9.2)
Q2	2.2	(1.8-2.7)	2.1	(1.2-3.5)	2.9	(2-4.1)
Q3	1.3	(1-1.7)	2.1	(1.3-3.2)	3.3	(2.5-4.3)
Q4	1.4	(1.1-1.9)	1.4	(0.9-2)	2.2	(1.7-2.8)
Q5 = Least Deprived	1.0	(0.6-1.5)	0.9	(0.6-1.4)	1.6	(1.3-2)