

Self-harm presentations in A&E in Cambridgeshire and Peterborough by deprivation (September 2020)

The aim of this document is to monitor the trend of self-harm presentations in A&E across Cambridgeshire and Peterborough and determining whether health inequalities are present. Data is split in (age standardised) quintiles of deprivation and rates presented over time. Additionally, we analysed presentations by age, sex and ethnicity.

Inequality analysis

The rate of self-injurious presentations was cross-referenced with the deprivation score of the LSOA address where the A&E patients were registered. According to this analysis, in Cambridgeshire and Peterborough **we do not observe the presence of a socio-economic gradient in A&E presentations for self-harm presentations** (figure 1). There has been a reduction in presentations around April for all quintiles of deprivation probably due to the Covid-19 lockdown measures. However, the number of presentations appear to have resumed back up again since May, especially for quintile 4 and 5 (the two most deprived) where the rate ratio between July and April increased 2- and 2.3-fold, respectively. However, if we sum the monthly presentations rates of the last 12 months period, it is quintile 3 and 4 that display more presentations.

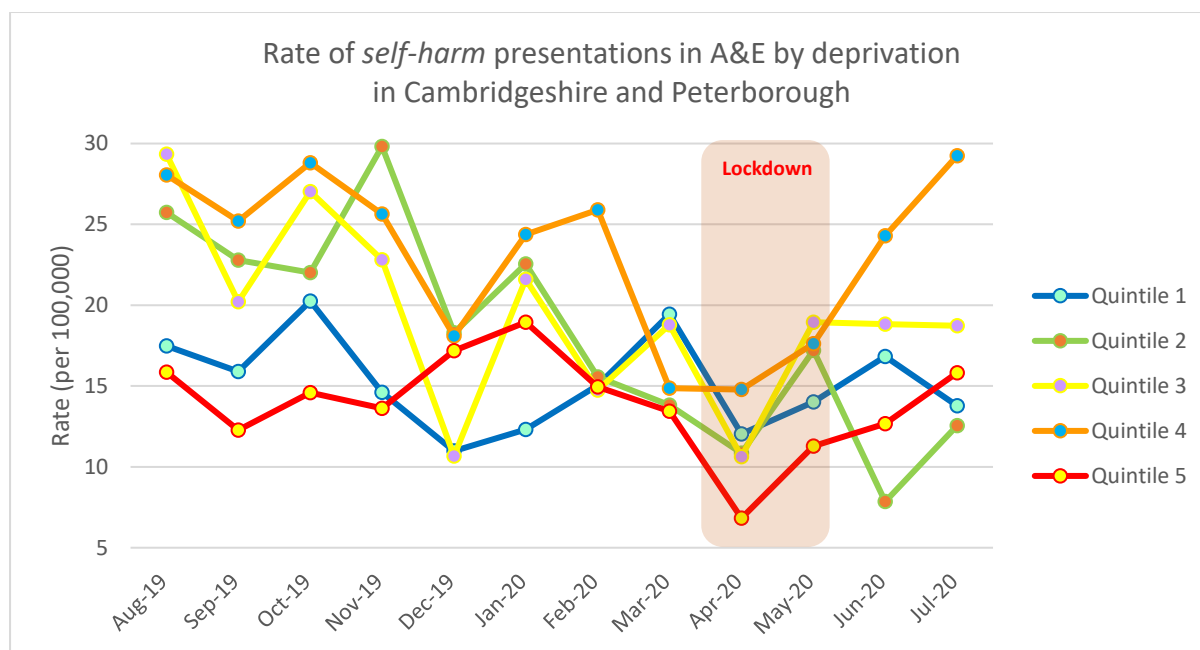


Figure 1. Directly age standardised rates of self-injurious behaviour presentations in A&E in Cambridgeshire and Peterborough by deprivation quintiles between August 2019 and July 2020. We do not observe the presence of a socio-economic gradient in A&E presentations for self-harm presentations. Quintile 1, least deprived; quintile 5, most deprived. The lockdown period is highlighted in a light red area. See table S1 in the appendix for exact values and confidence intervals.

Comparison with the previous year

The trend of presentations for self-harm attends in the last 12 months is comparable to the one the year before (figure 2). Despite having comparable ranges, the only apparent trait that somewhat differs between the current and the previous year appears to be the drop during the spring 2020 lockdown. Interestingly, we can notice a far more increase in presentations for the least deprived quintile during the past autumn (Sept 2019 to Nov 2019), but this is in line with the previous year's spring period rates (Mar 2019 to May 2019).

Similarly to the last 12 months, in the year before it was quintile 3 and 4 that displayed more presentations for self-injurious behaviour, confirming that self-harm presentations in Cambridgeshire and Peterborough are independent of the socio-economic status and span the whole population uniformly (table S1 in the appendix).

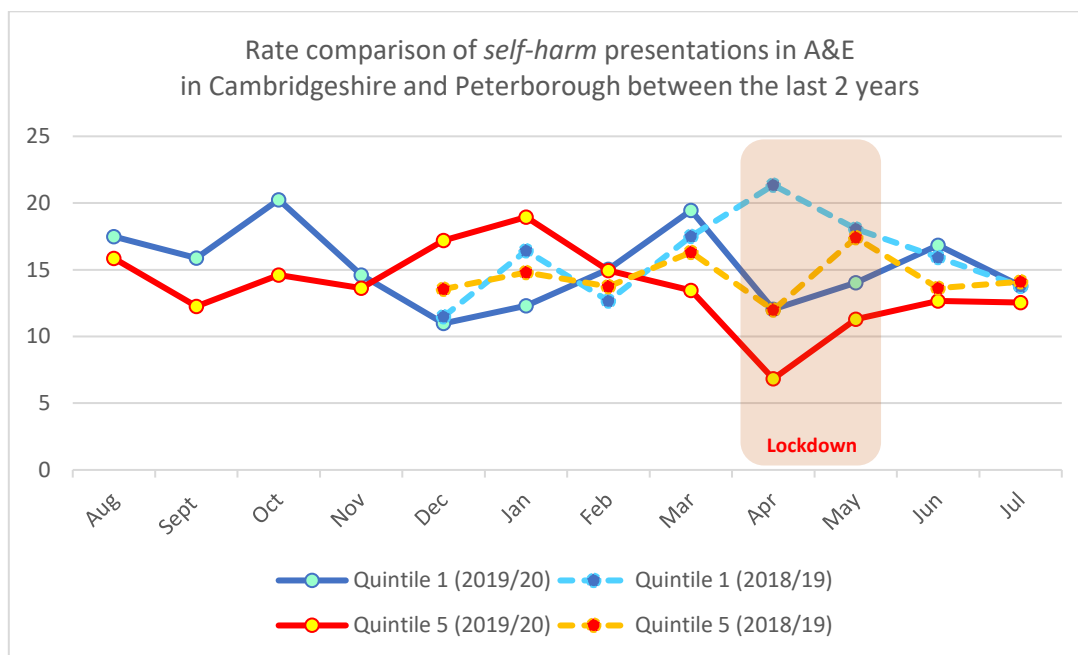


Figure 2. Comparison of the directly standardised rates of self-injurious behaviour A&E presentations in Cambridgeshire and Peterborough by deprivation quintiles between Aug 2019 and July 2020 and the year before. Even when we compare with the year before (Dec 2018 to July 2019 only), we do not observe the presence of a socio-economic gradient in A&E presentations for self-harm presentations. The lockdown period is highlighted in a light red area. For simplicity, only data for quintiles 1 (least deprived) and 5 (most deprived) are presented. See table S1 in the appendix for exact values and confidence intervals.

Analysis by age, sex and ethnicity

The highest proportion of people that attended in A&E in Cambridgeshire and Peterborough belongs to the age group 20-29 with 32% of overall presentations. Teenager years (aged between 13 and 19) account for more than a fourth of presentations with 26% (table 1). However, if we take into consideration the population size of age groups, **teenagers aged 13-19 display the highest rate with 73.5 presentations per 10,000 population versus a rate of 55.2 per 10,000 for the 20-29 age group** (figure 3A and table 1). Percentages (and rates) decrease gradually thereafter proportionally with age with 17%, 11% and 10% for age groups 30-39, 40-49 and 50-64, respectively (table 1).

	Age 0-12	Age 13-19	Age 20-29	Age 30-39	Age 40-49	Age 50-64	Age 65+	Total
Presentations count	13	515	618	337	222	201	50	1956
Percentage	0.7%	26.3%	31.6%	17.2%	11.3%	10.3%	2.6%	100%
Age group population	145,678	70,038	111,892	117,723	117,853	165,672	160,256	889,112
Rate (per 10,000)	0.9	73.5	55.2	28.6	18.8	12.1	3.1	22.0*
CI (upper)	1.5	80.2	59.8	31.9	21.5	13.9	4.1	23.0
CI (lower)	0.5	67.3	51.0	25.7	16.4	10.5	2.3	21.0

*Crude rate

Table 1. Percentages and rates of self-injurious presentations in A&E in Cambridgeshire and Peterborough by age group between August 2019 and July 2020. The percentages are relative to the overall number of presentations while the rate is taking into consideration the population size of that age group (crude rate). CI = confidence interval.

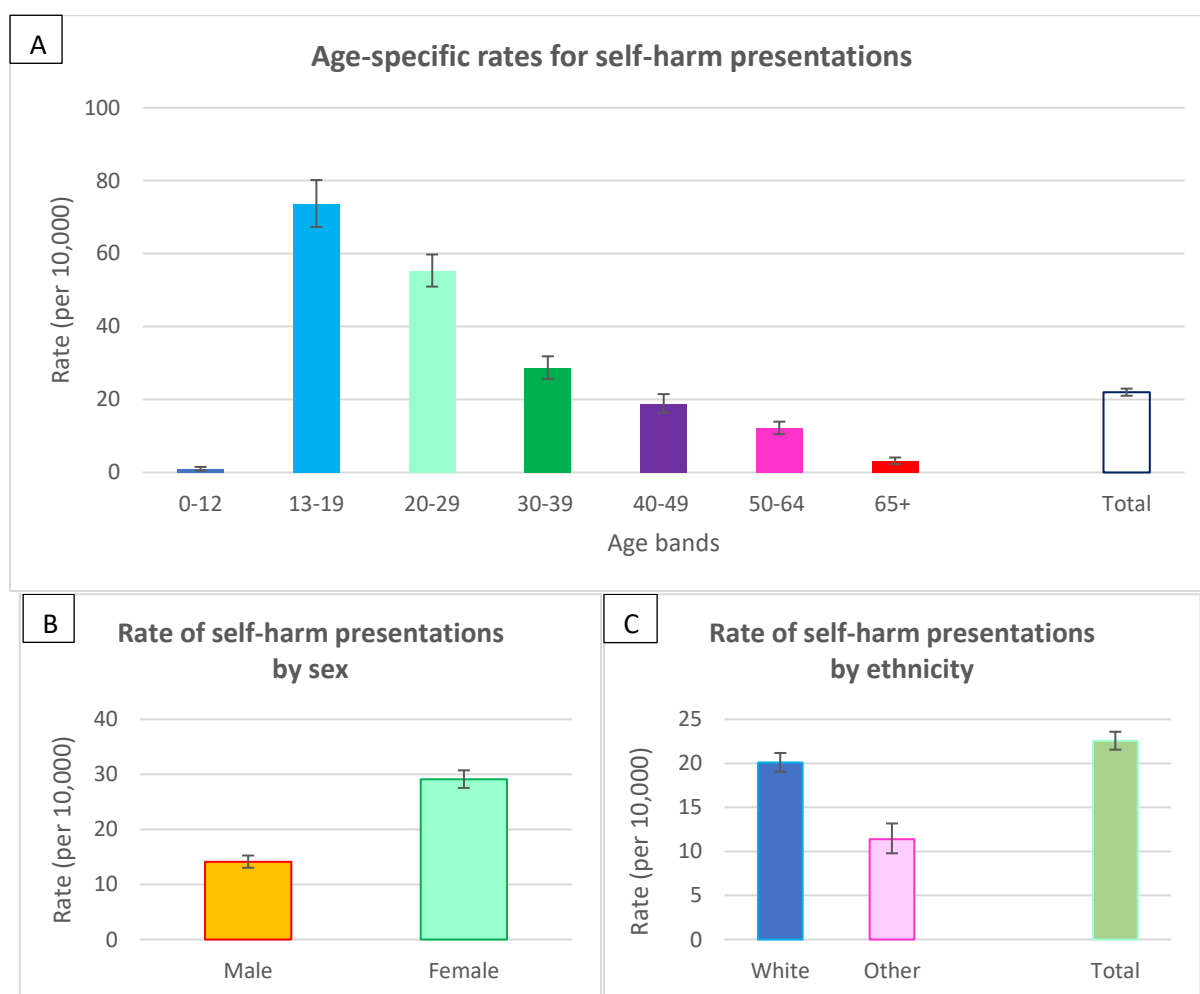


Figure 3. Analysis of self-injurious behaviour presentations in A&E in Cambridgeshire and Peterborough by age (A), sex (B) and ethnicity (C) in the last 12 months. The majority of self-harm presentations in A&E occur among people aged between 13 and 29. Strikingly, two thirds of presentations are from women, while, not surprisingly, the majority of cases occurred among white people.

There is an astonishing disproportion in the sex of the people with self-injurious behaviours as **two out of three patients that present in A&E are women** (66.8% female vs 33.2% male) (Figure 3B). This sex split is in line with data from the previous year (67.3% female vs 32.7% male) (data not shown). Considering that the male to female ratio in Cambridgeshire and Peterborough is 1:1 (444,863 vs 444,249, respectively (1)), this difference is statistically significant (see rates in table 2). This is a somewhat worse scenario than the national picture as a study by the Multicentre Study of Self-Harm in England found that over the period 2003 and 2012 women made up 58.6% of attendances at A&E for self-harm (2).

	Male	Female	Total
Presentations count	628	1293	1921
Percentage	32.7	67.3	100%
Population			
	444,863	444,249	889,112
Rate (per 10,000)	14.1	29.1	21.6
CI (upper)	15.3	30.7	22.6
CI (lower)	13.0	27.5	20.7

Table 2. Percentages and sex-specific rates of self-injurious presentations in A&E in Cambridgeshire and Peterborough between August 2019 and July 2020. The percentages are relative to the overall number of presentations while the rate takes into consideration the population of the sex group. CI = confidence interval

In the last 12 months in Cambridgeshire and Peterborough, **the vast majority of self-harm episodes in A&E occurred among white people** with 72.5% of overall presentations (figure 1C and table 3). Owing to small numbers of ethnic groups other than white, non-white ethnicities were grouped together for this analysis and account for 9.4% of all presentations. However, almost a fifth of presentations (18.1%) did not have the ethnicity recorded. To better appreciate the contribution of presentations from ethnic minorities, we calculated the rate by dividing the number of presentations for the number of either white or non-white. The rate for the white population is 20.1 presentations per 10,000 people while the rate for other ethnicities is about half that, with 11.4 per 10,000 (table 3). This data is in line with the year before (data not shown). However, this data should be taken into consideration with caution due to the high number of presentations with no ethnicity information recorded.

	White	Other ethnic back-grounds	Not stated	Total
Presentations count	1394	181	348	1923
Percentage	72.5%	9.4%	18.1%	100%
Ethnicity population				
	693,645	15,8877		852,522*
Rate (per 10,000)	20.1	11.4		22.6*
CI (upper)	21.2	13.2		23.6
CI (lower)	19.1	9.8		21.6

Table 3. Percentages and ethnicity-specific rates of self-injurious presentations in A&E in Cambridgeshire and Peterborough between August 2019 and July 2020. The percentages are relative to the overall number of presentations while the rate is adjusted for the population of that ethnicity group. CI = confidence interval

*The population size (and hence the rate) from table 1-2 and table 3 are estimates and differ due to the fact that the recording of ethnicity is calculated from the ONS Census 2011 (table QS211EW) and applied to ONS Mid-2018 population estimates (3).

Summary

- In Cambridgeshire and Peterborough, in the last two years (between August 2018 and July 2020) **there was no socio-economic inequality in self-harm presentations in A&E** when analysed at LSOA-level.
- There was a reduction in presentations around April 2020 for all quintiles of deprivation probably due to the Covid-19 lockdown measures. However, the number of presentations increased again since May 2020 and **the largest rate of increase following lockdown has been in the two most deprived deciles.**
- **The majority of presentations between August 2019 and July 2020 occurred among patients aged between 13 and 29 years (with teenage years having the highest rate).**
- **Two out of three patients that present in A&E with self-injurious behaviour are women.**
- **The majority of self-harm cases in the last two years are among white people.**

Methods:

In order to assess whether between Dec 2018 and July 2020 we displayed inequality in A&E for self-harm presentations across the Cambridgeshire and Peterborough population, we obtained the raw ECDS data with the number of daily A&E presentations (for Addenbrooke's Hospital, Hinchingbrooke, Peterborough City Hospital and The Queen Elizabeth Hospital). These presentations considered were those that fall under the **chief complaints recorded as 'self-injurious behaviour'**. To detect any inequality, daily patient presentations in A&E were cross-referenced with the deprivation score of the LSOA from where the A&E patients were registered from. LSOAs were first ranked by their deprivation score using the Index of Multiple Deprivation (IMD) Score from 2019 (low value, least deprived; high value, most deprived) and the data was then split into quintiles of comparable populations. Data was split into monthly presentations and for comparison reasons we calculated the rate per 100,000 population and their confidence intervals (see table S1 in the appendix). Directly standardised rates (ESR) were age-standardised by treating each quintile as a different population (4). Population estimates for analysis by deprivation at LSOA-level were from ONS Mid-2018 population estimates (5).

For the age, sex and ethnicity analysis, the population was split, respectively, in seven age groups (0-12, 13-19, 20-29, 30-39, 40-49, 50-64 and over 65 years of age), two sex groups (male and females) and three groups for ethnicity (white, non-white and 'not stated'). The rate per 10,000 was calculated by dividing for the respective population size of that group using the ONS Mid-2018 population estimates (5) - except for the ethnicity were population estimates were taken from Cambridgeshire Insight which were calculated from the ONS Census 2011 (Table QS211EW) and applied to ONS Mid-2018 population estimates (3).

Limitations:

Unfortunately, around 2% of the A&E attends recorded as self-injurious behaviour lacked LSOA registration, hence have been omitted from the inequality analysis. Data before December 2018 was not included as data from Peterborough City Hospital was not provided. LSOA population numbers are population estimates rather than actual counts, hence rates might not be 100% accurate. 2 out of 1923 presentations were recorded under the sex category as 'not known', hence have been omitted from the analysis by sex. Unfortunately, for the majority of presentations, the '*diagnosis*' field was not satisfactorily populated with details of the type of self-harm e.g. overdose, cutting or hanging, hence this additional breakdown analysis has been omitted. Caution is still needed in interpreting these results as other studies have found that routine data on attendances may substantially underestimate the actual number of attendances for self-harm (6).

References

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Source: ECDS data kindly extracted by M.T. (Business Intelligence);

Cambridgeshire and Peterborough Clinical Commissioning Group

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Appendix

2019/20												
	Aug-19			Sep-19			Oct-19			Nov-19		
	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)
Quintile 1	17.5	11.7	25.2	15.9	10.4	23.2	20.3	14.0	28.4	14.6	9.4	21.6
Quintile 2	25.7	18.8	34.4	22.8	16.3	31.1	22.0	15.6	30.2	29.8	22.3	39.0
Quintile 3	29.3	21.9	38.5	20.2	14.1	28.0	27.0	19.9	35.9	22.8	16.3	31.1
Quintile 4	28.1	20.9	36.9	25.2	18.4	33.7	28.8	21.6	37.6	25.6	18.9	34.0
Quintile 5	15.9	10.6	22.8	12.3	7.6	18.7	14.6	9.6	21.3	13.6	8.7	20.3
2019/20												
	Dec-19			Jan-20			Feb-20			Mar-20		
	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)
Quintile 1	11.0	6.7	17.0	12.3	7.7	18.7	15.0	9.9	21.9	19.4	13.3	27.4
Quintile 2	18.3	12.5	25.8	22.5	16.1	30.7	15.6	10.3	22.5	13.8	8.9	20.4
Quintile 3	10.7	6.4	16.7	21.6	15.3	29.7	14.7	9.6	21.6	18.8	12.9	26.4
Quintile 4	18.1	12.4	25.4	24.4	17.7	32.6	25.9	19.0	34.5	14.9	9.9	21.5
Quintile 5	17.2	11.7	24.4	18.9	13.2	26.4	14.9	9.8	21.8	13.4	8.5	20.2
2019/20												
	Apr-20			May-20			Jun-20			Jul-20		
	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)
Quintile 1	12.0	7.3	18.6	14.0	9.0	20.9	16.8	11.2	24.3	13.8	8.9	20.4
Quintile 2	10.8	6.5	17.0	17.2	11.7	24.4	7.9	4.3	13.2	12.6	7.9	19.0
Quintile 3	10.6	6.3	16.8	18.9	13.1	26.5	18.8	13.0	26.5	18.7	12.8	26.5
Quintile 4	14.8	9.7	21.5	17.6	12.0	24.9	24.3	17.7	32.5	29.2	21.9	38.3
Quintile 5	6.8	3.5	12.0	11.3	7.0	17.3	12.7	8.0	19.0	15.8	10.6	22.8
2018/19												
	Dec-18			Jan-19			Feb-19			Mar-19		
	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)
Quintile 1	11.5	7.0	17.8	16.4	10.8	24.0	12.7	7.9	19.2	17.5	11.7	25.2
Quintile 2	15.7	17.8	22.7	14.0	24.0	20.7	18.1	19.2	25.4	14.6	25.2	21.5
Quintile 3	14.8	9.7	21.8	18.4	12.6	26.1	27.0	19.8	35.9	22.7	16.2	30.9
Quintile 4	25.0	18.2	33.5	26.5	19.5	35.2	20.3	14.3	28.0	20.8	14.7	28.6
Quintile 5	13.6	8.7	20.2	14.8	9.7	21.6	13.8	8.9	20.3	16.3	10.9	23.5
2018/19												
	Apr-19			May-19			Jun-19			Jul-19		
	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)	Rate	CI (low)	CI (up)
Quintile 1	21.3	15.0	29.5	18.1	12.2	25.7	15.9	10.4	23.3	13.8	8.9	20.3
Quintile 2	25.7	29.5	34.4	15.7	25.7	22.6	17.9	23.3	25.2	22.8	20.3	31.1
Quintile 3	21.4	15.1	29.4	29.5	21.9	38.8	21.4	15.1	29.4	21.4	15.2	29.5
Quintile 4	16.1	10.8	23.1	15.3	10.2	22.2	31.4	23.7	40.8	24.0	17.3	32.4
Quintile 5	12.0	7.5	18.2	17.4	11.9	24.5	13.6	8.8	20.2	14.1	9.2	20.7

Table S1: Rate of self-injurious presentations in A&E in Cambridgeshire and Peterborough by deprivation quintiles between August 2018 and July 2020. Deprivation is calculated at LSOA level.