**Impact of the COVID-19 pandemic on emergency department attendances and admissions for children, adolescents and young adults**

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**Online supplementary material**

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**Introduction**

The WHO defines the determinates of health as the social, economic and physical environment and the person’s individual characteristics and behaviours.1 Different factors can impact on the types of presentation to the Emergency Department (ED), with patterns of presentation correlating with biopsychosocial factors. These factors could include location, genetics, education level and gender. Emergency attendances for children, adolescents and young adults can occur for various reasons such as accidental injury resulting in trauma or medical illness and fever. Traumatic presentations in children are associated with socioeconomic deprivation and males, showing a bimodal age distribution peaking in pre-schoolers and adolescents.2 Paediatric ED usage is higher in infants, with presentation reducing as age increases per year during the first five years of life.3 Mental health presentations such as self-harm to the ED are frequently seen in older adolescents and young adults with the greatest severity of self-harm in those between 18 and 25 years old.4

**Methods**

Study design and participants

Date of birth was substituted with age in complete years. Postcode data was substituted with the decile of index of multiple deprivation via the Office of National Statistics (ONS) small area codes.5 Presentation dates were merged into week of presentation. Prior to September 2019, some children and adolescents were referred to a paediatric assessment unit by their general practitioner rather than to ED. Data from the paediatric assessment unit was merged with the ED data for this analysis. From September 2019, all those aged under 18 accessed the hospital via the Children’s ED. Data for a five year period was included in the study to check that these pathway changes had not altered any long-term trajectories. Data management and anonymisation was undertaken using Microsoft excel version 2008 within the hospital information technology system.

Population subgroups

Different subgroups were considered *a priori* to assess whether the impact of the pandemic was similar across the entire population. Participants were divided into the following age groups: 0-4, 5-10, 11-17 and 18-24 complete years of age. This was based on the developmental trajectory of children and adolescents and their expected emergency department usage: 0-4 years – pre-schoolers who are frequently presented to the emergency department; 5-10 years – primary school children who are less likely to be unwell; 11-17 years – adolescents who are developing their independence, are relatively well but have more adolescent presentations; 18-24 years – young adults who are usually independent but frequently use the emergency department of their healthcare. Additional subgroups were male/female sex, ethnicity (white verses non-white given the predominant white population) and deprivation (divided into high [decile of index of multiple deprivation 1-3], moderate [4-7] and low [8-10]).5

For tables and figures, ED presentations were divided into five time periods: Year 1: 01/04/2016 to 30/03/2017 (52 weeks); Year 2: 31/03/2017 to 29/03/2018 (52 weeks); Year 3: 30/03/2018 to 28/03/2019 (52 weeks); Year 4: 29/03/2019 to 12/03/2020 (50 weeks); Year 5: 13/03/2020 to 25/02/2021 (50 weeks). Year 5 included the first year of the pandemic in the United Kingdom with the Prime Minister saying that all non-essential contact and travel should stop on 16th March 2020.

Statistical analysis

A seasonal Holt Winters time series approach was used,6 this models the weekly data according to trend (long term change in presentations which invalidate a simple average of the preceding years), cycle (aperiodic oscillations around the trend), seasonal (increased presentations in autumn and winter) and random noise. The seasonal Holt Winters time series was used data from years 1 to 4 to estimate the number of presentations and admissions that would have occurred during year 5 had the pandemic not occurred. The primary analysis focused on presentations. Given the numbers, we were able to analyse the data as one week blocks to capture the granularity of the week to week changes in attendance while controlling for the regular pattern of differing numbers of patients presenting to ED on different days of the week.

The validity of the time series forecast was assessed in two ways. Firstly, the residual (difference) between the time series forecast and the observed data for each week pre-pandemic was reviewed to ensure it was minimal. Secondly the time series analysis was repeated using the observed data for years 1-3 to forecast year 4 data; the year 4 forecast and observed data were then compared. Where necessary the time series approach was altered to optimise the fit.

It has been suggested that 24 or more time points have more than 80% power to detect an effect size of 1 or greater, with a minimum of 8 time points per period needed for sufficient power in estimating regression coefficients.7 Five years of presentation data provides 260 time points, 50 of which were after the pandemic began. With approximately 500 attendance and 100 admissions per week block for primary analysis, this was expected to provide at least 80% power for primary analysis.

As a secondary analysis, we estimated the expected number of presentations and admissions using the average of the preceding two years on the basis that this minimised the impact of any long-term trends. We used this to assess whether the impact of the pandemic was similar for each subgroup for each presentation. This was assessed with a chi squared analysis to highlight overall differences.

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| --- | --- | --- | --- | --- | --- | --- |
|  | ED total sample | | Southampton local authority (only 0-24 years) | | Southampton local authority (all population) | |
| All usual residents | 166,459 | 100% | 86,135 | 100% | 236,882 | 100% |
| Total child and young people ages | 166,459 | 100% | 86,135 | 100% | 86,135 | 100% |
| Males | 86,164 | 52% | 44,154 | 51% | 119,453 | 50% |
| Females | 80,262 | 48% | 41,981 | 49% | 117,429 | 50% |
| 0 to 4 years | 57,166 | 34% | 15,407 | 18% | 15,407 | 18% |
| 5 to 10 years | 25,804 | 16% | 14,057 | 16% | 14,057 | 16% |
| 11 to 17 years | 31,042 | 19% | 16,685 | 19% | 16,685 | 19% |
| 18 to 24 years | 52,447 | 32% | 39,986 | 46% | 39,986 | 46% |
| Low deprivation (8-10) | 46,452 | 28% |  |  | 29\* | 20% |
| Moderate deprivation (4-7) | 63,385 | 38% |  |  | 68\* | 46% |
| High Deprivation (1-3) | 55,522 | 33% |  |  | 51\* | 34% |
| White ethnicity | 137,411X | 83% | 70,408 | 82% | 203,528 | 86% |
| Non-white ethnicity | 18,359X | 11% | 15,727 | 18% | 33,354 | 14% |
| *Mixed/multiple ethnic groups* | 3,781X | 2% | *3,597* | *4%* | *5,678* | *2%* |
| *Asian/Asian British* | 8,531X | 5% | *8,920* | *10%* | *19,892* | *8%* |
| *Black/African/Caribbean/Black British* | 2,436X | 1% | *2,053* | *2%* | *5,067* | *2%* |
| *Other ethnic group* | 3,611X | 2% | *1,157* | *1%* | *2,717* | *1%* |

**Table S1: Summary of participants attending emergency department and people living in Southampton local authority.** Emergency Department (ED) sample relates to the data set included in this study. These are compared with 0-24 year olds in Southampton local authority and all the population in that area. Local authority data from Office of National Statistics (<https://www.nomisweb.co.uk/census/2011/data_finder>, <https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/datasets/mappingincomedeprivationatalocalauthoritylevel>, accessed 14th June 2021). Deprivation data is not available for each age group. \*Represents number of areas in Southampton in each deprivation group. XInformation about ethnicity not available for all patients. Non-white ethnicity represents: mixed/multiple ethnic groups; Asian/Asian British; Black/African/Caribbean/Black British; and Other ethnic group.

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|  |  |  | **Pre-pandemic** | |  |  |  |  |  | **Pandemic** | |
|  | Year 1 |  | Year 2 |  | Year 3 |  | Year 4 |  |  | Year 5 |  |
| All | 6,870 | 100.0% | 6,706 | 100.0% | 7,246 | 100.0% | 7,568 | 100.0% |  | 5,293 | 100.0% |
| Males | 3,284 | 47.8% | 3,129 | 46.7% | 3,493 | 48.2% | 3,582 | 47.3% |  | 2,447 | 46.3% |
| Females | 3,586 | 52.2% | 3,576 | 53.3% | 3,751 | 51.8% | 3,983 | 52.7% |  | 2,842 | 53.7% |
| 0 to 4 years | 2,041 | 29.7% | 1,730 | 25.8% | 1,884 | 26.0% | 1,975 | 26.1% |  | 1,146 | 21.7% |
| 5 to 10 years | 622 | 9.1% | 606 | 9.0% | 648 | 8.9% | 755 | 10.0% |  | 501 | 9.5% |
| 11 to 17 years | 1,028 | 15.0% | 1,056 | 15.7% | 1,142 | 15.8% | 1,352 | 17.9% |  | 1,145 | 21.6% |
| 18 to 24 years | 3,179 | 46.3% | 3,314 | 49.4% | 3,572 | 49.3% | 3,486 | 46.1% |  | 2,501 | 47.3% |
| High Deprivation | 2,404 | 35.4% | 2,195 | 33.0% | 2,424 | 33.8% | 2,612 | 34.8% |  | 1,694 | 32.2% |
| Moderate deprivation | 2,582 | 38.0% | 2,660 | 40.0% | 2,820 | 39.3% | 2,803 | 37.4% |  | 2,045 | 38.9% |
| Low deprivation | 1,809 | 26.6% | 1,790 | 26.9% | 1,924 | 26.8% | 2,083 | 27.8% |  | 1,518 | 28.9% |
| White ethnicity | 5,801 | 88.3% | 5,764 | 90.0% | 6,137 | 89.9% | 6,223 | 88.2% |  | 4,260 | 88.3% |
| Non-white ethnicity | 770 | 11.7% | 639 | 10.0% | 692 | 10.1% | 833 | 11.8% |  | 567 | 11.7% |
| Own transport | 3,417 | 51.7% | 3,555 | 54.5% | 3,915 | 55.8% | 4,525 | 60.5% |  | 3,140 | 59.3% |
| Ambulance | 2,851 | 43.1% | 2,695 | 41.3% | 2,921 | 41.6% | 2,797 | 37.4% |  | 2,094 | 39.6% |
| Public transport | 294 | 4.4% | 220 | 3.4% | 155 | 2.2% | 131 | 1.8% |  | 37 | 0.7% |
| Other arrival mode | 53 | 0.8% | 51 | 0.8% | 28 | 0.4% | 27 | 0.4% |  | 22 | 0.4% |
| Self or carer referral | 4,588 | 66.9% | 4,918 | 73.3% | 5,829 | 80.4% | 6,026 | 79.6% |  | 3,990 | 75.8% |
| Ambulance and hospital referral | 1,105 | 16.1% | 677 | 10.1% | 217 | 3.0% | 161 | 2.1% |  | 92 | 1.7% |
| NHS 111 service | 561 | 8.2% | 561 | 8.4% | 671 | 9.3% | 552 | 7.3% |  | 644 | 12.2% |
| General Practitioner referral | 384 | 5.6% | 375 | 5.6% | 389 | 5.4% | 647 | 8.5% |  | 429 | 8.2% |
| Other referral pathway | 223 | 3.3% | 175 | 2.6% | 140 | 1.9% | 182 | 2.4% |  | 107 | 2.0% |

**Table S2: Summary of participants admitted to hospital.** Admission is defined as being in hospital for more than four hours. Data are number (column percentage). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). Information about sex and ethnicity not available for all patients. Other arrival mode includes custodial services, police and unknown. NHS 111 also includes NHS Direct and other NHS advice. Other referral pathway includes custodial services, police service, planned review and unknown. Trauma just covers head injuries, fractures and soft tissue injuries

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|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  | **Pre-pandemic** | | | | | | | | **Pandemic** | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Total number presentations | 1212 | 100% | 3152 | 100% | 4373 | 100% | 4853 | 100% | 1872 | 100% |  | 4613 | 100% |  |  | -2741 | -59.4% |
| Males | 678 | 56% | 1,734 | 55% | 2,452 | 56% | 2,653 | 55% | 985 | 53% |  | 2553 | 55% |  | **<0.05** | -1568 | -61.4% |
| Females | 534 | 44% | 1,418 | 45% | 1,921 | 44% | 2,200 | 45% | 887 | 47% |  | 2061 | 45% |  |  | -1174 | -57.0% |
| 0 to 4 years | 1,016 | 84% | 2,420 | 77% | 3,278 | 75% | 3,463 | 71% | 1,242 | 66% |  | 3371 | 73% |  | **<0.001** | -2129 | -63.2% |
| 5 to 10 years | 120 | 10% | 349 | 11% | 501 | 11% | 651 | 13% | 189 | 10% |  | 576 | 12% |  |  | -387 | -67.2% |
| 11 to 17 years | 76 | 6% | 154 | 5% | 212 | 5% | 293 | 6% | 138 | 7% |  | 253 | 5% |  |  | -115 | -45.3% |
| 18 to 24 years | 0 | 0% | 229 | 7% | 382 | 9% | 446 | 9% | 303 | 16% |  | 414 | 9% |  |  | -111 | -26.8% |
| Low deprivation | 361 | 30% | 913 | 29% | 1,144 | 26% | 1,315 | 27% | 517 | 28% |  | 1230 | 27% |  | 0.102 | -713 | -58.0% |
| Moderate deprivation | 475 | 39% | 1,204 | 38% | 1,591 | 36% | 1,842 | 38% | 736 | 39% |  | 1717 | 37% |  |  | -981 | -57.1% |
| High Deprivation | 374 | 31% | 1,029 | 33% | 1,602 | 37% | 1,663 | 34% | 614 | 33% |  | 1633 | 35% |  |  | -1019 | -62.4% |
| White ethnicity | 1,007 | 83% | 2,579 | 82% | 3,538 | 81% | 3,790 | 78% | 1,468 | 78% |  | 3664 | 79% |  | 0.877 | -2196 | -59.9% |
| Non-white ethnicity | 163 | 13% | 407 | 13% | 593 | 14% | 720 | 15% | 260 | 14% |  | 657 | 14% |  |  | -397 | -60.4% |

**Table S3:** **Respiratory infection presentations divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of presentations between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated presentations assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

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|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | | **Pandemic (year 5) estimated verses observed difference** | | | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | | Relative | |
| Total number presentations | 813 | 100% | 1,077 | 100% | 1,434 | 100% | 1,023 | 100% | 579 | 100% |  | 1229 | 100% |  |  | -650 | | -52.9% | |
| Males | 409 | 50% | 640 | 59% | 888 | 62% | 626 | 61% | 365 | 63% |  | 757 | 62% |  | 0.555 | -392 | | -51.8% | |
| Females | 404 | 50% | 437 | 41% | 546 | 38% | 397 | 39% | 214 | 37% |  | 472 | 38% |  |  | -258 | | -54.6% | |
| 0 to 4 years | 350 | 43% | 614 | 57% | 948 | 66% | 604 | 59% | 348 | 60% |  | 776 | 63% |  | 0.272 | -428 | | -55.2% | |
| 5 to 10 years | 185 | 23% | 201 | 19% | 264 | 18% | 225 | 22% | 124 | 21% |  | 245 | 20% |  |  | -121 | | -49.3% | |
| 11 to 17 years | 132 | 16% | 128 | 12% | 131 | 9% | 93 | 9% | 48 | 8% |  | 112 | 9% |  |  | -64 | | -57.1% | |
| 18 to 24 years | 146 | 18% | 134 | 12% | 91 | 6% | 101 | 10% | 59 | 10% |  | 96 | 8% |  |  | -37 | | -38.5% | |
| Low deprivation | 240 | 30% | 293 | 27% | 419 | 29% | 292 | 29% | 158 | 27% |  | 356 | 29% |  | 0.674 | -198 | | -55.6% | |
| Moderate deprivation | 293 | 36% | 407 | 38% | 536 | 37% | 341 | 33% | 218 | 38% |  | 439 | 36% |  |  | -221 | | -50.3% | |
| High Deprivation | 274 | 34% | 375 | 35% | 472 | 33% | 380 | 37% | 202 | 35% |  | 426 | 35% |  |  | -224 | | -52.6% | |
| White ethnicity | 668 | 82% | 887 | 82% | 1,142 | 80% | 808 | 79% | 436 | 75% |  | 975 | 79% |  | 0.115 | -539 | | -55.3% | |
| Non-white ethnicity | 113 | 14% | 150 | 14% | 220 | 15% | 163 | 16% | 106 | 18% |  | 192 | 16% |  |  | -86 | | -44.6% | |

**Table S4: Asthma and wheeze presentations divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of presentations between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated presentations assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

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|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Total number presentations | 286 | 100% | 618 | 100% | 1,056 | 100% | 1,199 | 100% | 473 | 100% |  | 1128 | 100% |  |  | -655 | -58.0% |
| Males | 146 | 51% | 313 | 51% | 545 | 52% | 587 | 49% | 246 | 52% |  | 566 | 50% |  | 0.479 | -320 | -56.5% |
| Females | 140 | 49% | 305 | 49% | 511 | 48% | 612 | 51% | 226 | 48% |  | 562 | 50% |  |  | -336 | -59.8% |
| 0 to 4 years | 176 | 62% | 344 | 56% | 582 | 55% | 615 | 51% | 229 | 48% |  | 599 | 53% |  | **<0.01** | -370 | -61.7% |
| 5 to 10 years | 71 | 25% | 103 | 17% | 229 | 22% | 271 | 23% | 91 | 19% |  | 250 | 22% |  |  | -159 | -63.6% |
| 11 to 17 years | 39 | 14% | 85 | 14% | 103 | 10% | 125 | 10% | 53 | 11% |  | 114 | 10% |  |  | -61 | -53.5% |
| 18 to 24 years | 0 | 0% | 86 | 14% | 142 | 13% | 188 | 16% | 100 | 21% |  | 165 | 15% |  |  | -65 | -39.4% |
| Low deprivation | 103 | 36% | 173 | 28% | 286 | 27% | 318 | 27% | 119 | 25% |  | 302 | 27% |  | 0.535 | -183 | -60.6% |
| Moderate deprivation | 107 | 37% | 259 | 42% | 429 | 41% | 441 | 37% | 174 | 37% |  | 435 | 39% |  |  | -261 | -60.0% |
| High Deprivation | 73 | 26% | 186 | 30% | 332 | 31% | 433 | 36% | 173 | 37% |  | 383 | 34% |  |  | -210 | -54.8% |
| White ethnicity | 239 | 84% | 502 | 81% | 793 | 75% | 886 | 74% | 362 | 77% |  | 840 | 74% |  | 0.397 | -478 | -56.9% |
| Non-white ethnicity | 39 | 14% | 82 | 13% | 191 | 18% | 229 | 19% | 80 | 17% |  | 210 | 19% |  |  | -130 | -61.9% |

**Table S5: Gastrointestinal infection presentations divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of presentations between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated presentations assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

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|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Total number presentations | 2,163 | 100% | 1,806 | 100% | 1,524 | 100% | 1,658 | 100% | 1,541 | 100% |  | 1591 | 100% |  |  | -50 | -3.1% |
| Males | 909 | 42% | 882 | 49% | 903 | 59% | 1,011 | 61% | 924 | 60% |  | 957 | 60% |  | 0.931 | -33 | -3.4% |
| Females | 1,254 | 58% | 924 | 51% | 621 | 41% | 647 | 39% | 616 | 40% |  | 634 | 40% |  |  | -18 | -2.8% |
| 0 to 4 years | 280 | 13% | 327 | 18% | 433 | 28% | 381 | 23% | 374 | 24% |  | 407 | 26% |  | 0.117 | -33 | -8.1% |
| 5 to 10 years | 285 | 13% | 271 | 15% | 244 | 16% | 321 | 19% | 266 | 17% |  | 283 | 18% |  |  | -17 | -5.8% |
| 11 to 17 years | 383 | 18% | 356 | 20% | 318 | 21% | 338 | 20% | 373 | 24% |  | 328 | 21% |  |  | 45 | 13.7% |
| 18 to 24 years | 1,215 | 56% | 852 | 47% | 529 | 35% | 618 | 37% | 528 | 34% |  | 574 | 36% |  |  | -46 | -7.9% |
| Low deprivation | 589 | 27% | 534 | 30% | 440 | 29% | 478 | 29% | 505 | 33% |  | 459 | 29% |  | **<0.05** | 46 | 10.0% |
| Moderate deprivation | 813 | 38% | 710 | 39% | 621 | 41% | 652 | 39% | 608 | 39% |  | 637 | 40% |  |  | -29 | -4.5% |
| High Deprivation | 743 | 34% | 553 | 31% | 456 | 30% | 516 | 31% | 423 | 27% |  | 486 | 31% |  |  | -63 | -13.0% |
| White ethnicity | 1,824 | 84% | 1,521 | 84% | 1,251 | 82% | 1,328 | 80% | 1,224 | 79% |  | 1290 | 81% |  | 0.953 | -66 | -5.1% |
| Non-white ethnicity | 221 | 10% | 165 | 9% | 158 | 10% | 199 | 12% | 171 | 11% |  | 179 | 11% |  |  | -8 | -4.2% |

**Table S6: Surgical presentations divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of presentations between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated presentations assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | | Relative |
| Total | 756 | 100% | 1,392 | 100% | 1,926 | 100% | 1,926 | 100% | 1,441 | 100% |  | 1,659 | 100% |  |  | -218 | -13.1% | |
| Males | 313 | 41% | 586 | 42% | 733 | 38% | 640 | 33% | 452 | 31% |  | 660 | 40% |  | **<0.001** | -208 | -31.5% | |
| Females | 443 | 59% | 805 | 58% | 1,192 | 62% | 1,285 | 67% | 986 | 68% |  | 999 | 60% |  |  | -13 | -1.3% | |
| 0 to 4 years | 18 | 2% | 47 | 3% | 49 | 3% | 39 | 2% | 36 | 2% |  | 48 | 3% |  | **<0.001** | -12 | -25.0% | |
| 5 to 10 years | 30 | 4% | 35 | 3% | 32 | 2% | 39 | 2% | 31 | 2% |  | 34 | 2% |  |  | -3 | -7.5% | |
| 11 to 17 years | 210 | 28% | 400 | 29% | 546 | 28% | 633 | 33% | 599 | 42% |  | 473 | 29% |  |  | 126 | 26.6% | |
| 18 to 24 years | 498 | 66% | 910 | 65% | 1,299 | 67% | 1,215 | 63% | 775 | 54% |  | 1,105 | 67% |  |  | -330 | -29.8% | |
| Low deprivation | 138 | 18% | 355 | 26% | 429 | 22% | 457 | 24% | 400 | 28% |  | 392 | 24% |  | **<0.05** | 8 | 2.0% | |
| Moderate deprivation | 310 | 41% | 562 | 40% | 807 | 42% | 775 | 40% | 560 | 39% |  | 685 | 41% |  |  | -125 | -18.2% | |
| High Deprivation | 292 | 39% | 445 | 32% | 660 | 34% | 670 | 35% | 474 | 33% |  | 553 | 33% |  |  | -79 | -14.2% | |
| White ethnicity | 662 | 88% | 1,199 | 86% | 1,675 | 87% | 1,642 | 85% | 1,197 | 83% |  | 1,437 | 87% |  | 0.898 | -240 | -16.7% | |
| Non-white ethnicity | 60 | 8% | 95 | 7% | 116 | 6% | 117 | 6% | 90 | 6% |  | 106 | 6% |  |  | -16 | -14.7% | |

**Table S7: Mental health presentations divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of presentations between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated presentations assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Total number presentations | 5,874 | 100% | 5,874 | 100% | 6,820 | 100% | 6,144 | 100% | 3,523 | 100% |  | 6482 | 100% |  |  | -2959 | -45.6% |
| Males | 3,298 | 56% | 3,388 | 58% | 3,985 | 58% | 3,595 | 59% | 2,058 | 58% |  | 3790 | 58% |  | 0.971 | -1732 | -45.7% |
| Females | 2,572 | 44% | 2,486 | 42% | 2,835 | 42% | 2,549 | 41% | 1,464 | 42% |  | 2692 | 42% |  |  | -1228 | -45.6% |
| 0 to 4 years | 1,563 | 27% | 1,461 | 25% | 1,456 | 21% | 1,253 | 20% | 958 | 27% |  | 1355 | 21% |  | **<0.001** | -397 | -29.3% |
| 5 to 10 years | 1,126 | 19% | 1,127 | 19% | 1,418 | 21% | 1,251 | 20% | 739 | 21% |  | 1335 | 21% |  |  | -596 | -44.6% |
| 11 to 17 years | 1,433 | 24% | 1,542 | 26% | 1,885 | 28% | 1,863 | 30% | 985 | 28% |  | 1874 | 29% |  |  | -889 | -47.4% |
| 18 to 24 years | 1,752 | 30% | 1,744 | 30% | 2,061 | 30% | 1,777 | 29% | 841 | 24% |  | 1919 | 30% |  |  | -1078 | -56.2% |
| Low deprivation | 1,710 | 29% | 1,734 | 30% | 2,076 | 30% | 1,811 | 29% | 1,125 | 32% |  | 1944 | 30% |  | 0.224 | -819 | -42.1% |
| Moderate deprivation | 2,123 | 36% | 2,204 | 38% | 2,520 | 37% | 2,306 | 38% | 1,313 | 37% |  | 2413 | 37% |  |  | -1100 | -45.6% |
| High Deprivation | 2,012 | 34% | 1,892 | 32% | 2,177 | 32% | 1,981 | 32% | 1,071 | 30% |  | 2079 | 32% |  |  | -1008 | -48.5% |
| White ethnicity | 5,056 | 86% | 5,036 | 86% | 5,884 | 86% | 5,127 | 83% | 2,916 | 83% |  | 5506 | 85% |  | 0.616 | -2590 | -47.0% |
| Non-white ethnicity | 483 | 8% | 529 | 9% | 606 | 9% | 543 | 9% | 316 | 9% |  | 575 | 9% |  |  | -259 | -45.0% |

**Table S8: Accidental injury and traumatic presentations divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of presentations between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated presentations assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Total number presentations | 485 | 100% | 407 | 100% | 389 | 100% | 446 | 100% | 379 | 100% |  | 418 | 100% |  |  | -39 | -9.2% |
| Males | 248 | 51% | 191 | 47% | 203 | 52% | 242 | 54% | 191 | 50% |  | 223 | 53% |  | 0.405 | -32 | -14.2% |
| Females | 237 | 49% | 216 | 53% | 186 | 48% | 204 | 46% | 188 | 50% |  | 195 | 47% |  |  | -7 | -3.6% |
| 0 to 4 years | 236 | 49% | 197 | 48% | 186 | 48% | 214 | 48% | 220 | 58% |  | 200 | 48% |  | **<0.05** | 20 | 10.0% |
| 5 to 10 years | 55 | 11% | 49 | 12% | 53 | 14% | 46 | 10% | 33 | 9% |  | 50 | 12% |  |  | -17 | -33.3% |
| 11 to 17 years | 43 | 9% | 45 | 11% | 48 | 12% | 80 | 18% | 47 | 12% |  | 64 | 15% |  |  | -17 | -26.6% |
| 18 to 24 years | 151 | 31% | 116 | 29% | 102 | 26% | 106 | 24% | 79 | 21% |  | 104 | 25% |  |  | -25 | -24.0% |
| Low deprivation | 145 | 30% | 113 | 28% | 84 | 22% | 122 | 27% | 91 | 24% |  | 103 | 25% |  | 0.654 | -12 | -11.7% |
| Moderate deprivation | 166 | 34% | 148 | 36% | 167 | 43% | 210 | 47% | 163 | 43% |  | 189 | 45% |  |  | -26 | -13.5% |
| High Deprivation | 174 | 36% | 144 | 35% | 137 | 35% | 113 | 25% | 125 | 33% |  | 125 | 30% |  |  | 0 | 0.0% |
| White ethnicity | 400 | 82% | 339 | 83% | 295 | 76% | 358 | 80% | 323 | 85% |  | 327 | 78% |  | 0.312 | -4 | -1.1% |
| Non-white ethnicity | 61 | 13% | 45 | 11% | 55 | 14% | 48 | 11% | 41 | 11% |  | 52 | 12% |  |  | -11 | -20.4% |

**Table S9: Burns/scalds presentations divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of presentations between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated presentations assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative | |
| Total number presentations | 310 | 100% | 335 | 100% | 296 | 100% | 295 | 100% | 219 | 100% |  | 296 | 100% |  |  | -77 | -25.9% |
| Males | 152 | 49% | 155 | 46% | 154 | 52% | 137 | 46% | 98 | 45% |  | 146 | 49% |  | 0.304 | -48 | -32.6% |
| Females | 158 | 51% | 180 | 54% | 142 | 48% | 158 | 54% | 121 | 55% |  | 150 | 51% |  |  | -29 | -19.3% |
| 0 to 4 years | 100 | 32% | 122 | 36% | 103 | 35% | 114 | 39% | 89 | 41% |  | 109 | 37% |  | **<0.01** | -20 | -18.0% |
| 5 to 10 years | 52 | 17% | 58 | 17% | 55 | 19% | 52 | 18% | 28 | 13% |  | 54 | 18% |  |  | -26 | -47.7% |
| 11 to 17 years | 64 | 21% | 61 | 18% | 34 | 11% | 44 | 15% | 49 | 22% |  | 39 | 13% |  |  | 10 | 25.6% |
| 18 to 24 years | 94 | 30% | 94 | 28% | 104 | 35% | 85 | 29% | 53 | 24% |  | 95 | 32% |  |  | -42 | -43.9% |
| Low deprivation | 111 | 36% | 105 | 31% | 80 | 27% | 82 | 28% | 66 | 30% |  | 81 | 27% |  | 0.437 | -15 | -18.5% |
| Moderate deprivation | 108 | 35% | 138 | 41% | 140 | 47% | 126 | 43% | 87 | 40% |  | 133 | 45% |  |  | -46 | -34.6% |
| High Deprivation | 90 | 29% | 88 | 26% | 74 | 25% | 83 | 28% | 66 | 30% |  | 79 | 27% |  |  | -13 | -15.9% |
| White ethnicity | 252 | 81% | 261 | 78% | 230 | 78% | 229 | 78% | 160 | 73% |  | 230 | 78% |  | 0.397 | -70 | -30.3% |
| Non-white ethnicity | 48 | 15% | 58 | 17% | 48 | 16% | 45 | 15% | 40 | 18% |  | 47 | 16% |  |  | -7 | -14.0% |

**Table S10:** **Allergy and anaphylaxis presentations divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of presentations between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated presentations assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Total number admissions | 81 | 100% | 455 | 100% | 713 | 100% | 843 | 100% | 359 | 100% |  | 778 | 100% |  |  | -419 | -53.9% |
| Males | 45 | 56% | 239 | 53% | 400 | 56% | 188 | 22% | 188 | 52% |  | 294 | 38% |  | **<0.05** | -106 | -36.1% |
| Females | 36 | 44% | 216 | 47% | 313 | 44% | 398 | 47% | 171 | 48% |  | 356 | 46% |  |  | -185 | -51.9% |
| 0 to 4 years | 65 | 80% | 325 | 71% | 466 | 65% | 519 | 62% | 178 | 50% |  | 493 | 63% |  | **<0.001** | -315 | -63.9% |
| 5 to 10 years | 9 | 11% | 25 | 5% | 50 | 7% | 78 | 9% | 21 | 6% |  | 64 | 8% |  |  | -43 | -67.2% |
| 11 to 17 years | 7 | 9% | 19 | 4% | 39 | 5% | 38 | 5% | 38 | 11% |  | 39 | 5% |  |  | -1 | -1.3% |
| 18 to 24 years | 0 | 0% | 86 | 19% | 158 | 22% | 168 | 20% | 122 | 34% |  | 163 | 21% |  |  | -41 | -25.2% |
| Low deprivation | 20 | 25% | 134 | 29% | 179 | 25% | 227 | 27% | 117 | 33% |  | 203 | 26% |  | **<0.05** | -86 | -42.4% |
| Moderate deprivation | 32 | 40% | 174 | 38% | 261 | 37% | 320 | 38% | 134 | 37% |  | 291 | 37% |  |  | -157 | -53.9% |
| High Deprivation | 29 | 36% | 147 | 32% | 268 | 38% | 293 | 35% | 107 | 30% |  | 281 | 36% |  |  | -174 | -61.9% |
| White ethnicity | 75 | 93% | 396 | 87% | 605 | 85% | 671 | 80% | 281 | 78% |  | 638 | 82% |  | 0.510 | -357 | -56.0% |
| Non-white ethnicity | 4 | 5% | 42 | 9% | 75 | 11% | 113 | 13% | 47 | 13% |  | 94 | 12% |  |  | -47 | -50.0% |

**Table S****11: Respiratory infection admissions divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of admissions between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated admissions assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Total number admissions | 196 | 100% | 378 | 100% | 620 | 100% | 494 | 100% | 314 | 100% |  | 557 | 100% |  |  | -243 | -43.6% |
| Males | 94 | 48% | 222 | 59% | 379 | 61% | 313 | 63% | 214 | 68% |  | 346 | 62% |  | 0.074 | -132 | -38.2% |
| Females | 102 | 52% | 156 | 41% | 241 | 39% | 181 | 37% | 100 | 32% |  | 211 | 38% |  |  | -111 | -52.6% |
| 0 to 4 years | 44 | 22% | 218 | 58% | 442 | 71% | 319 | 65% | 217 | 69% |  | 381 | 68% |  | 0.310 | -164 | -43.0% |
| 5 to 10 years | 52 | 27% | 64 | 17% | 96 | 15% | 87 | 18% | 58 | 18% |  | 92 | 16% |  |  | -34 | -36.6% |
| 11 to 17 years | 31 | 16% | 35 | 9% | 36 | 6% | 36 | 7% | 22 | 7% |  | 36 | 6% |  |  | -14 | -38.9% |
| 18 to 24 years | 69 | 35% | 61 | 16% | 46 | 7% | 52 | 11% | 17 | 5% |  | 49 | 9% |  |  | -32 | -65.3% |
| Low deprivation | 50 | 26% | 82 | 22% | 173 | 28% | 149 | 30% | 85 | 27% |  | 161 | 29% |  | 0.703 | -76 | -47.2% |
| Moderate deprivation | 73 | 37% | 169 | 45% | 243 | 39% | 153 | 31% | 111 | 35% |  | 198 | 36% |  |  | -87 | -43.9% |
| High Deprivation | 72 | 37% | 126 | 33% | 200 | 32% | 186 | 38% | 118 | 38% |  | 193 | 35% |  |  | -75 | -38.9% |
| White ethnicity | 171 | 87% | 323 | 85% | 498 | 80% | 389 | 79% | 240 | 76% |  | 444 | 80% |  | 0.612 | -204 | -45.9% |
| Non-white ethnicity | 21 | 11% | 46 | 12% | 100 | 16% | 78 | 16% | 53 | 17% |  | 89 | 16% |  |  | -36 | -40.4% |

**Table S12: Asthma and wheeze admissions divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of admissions between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated admissions assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Total number admissions | 21 | 100% | 53 | 100% | 106 | 100% | 162 | 100% | 69 | 100% |  | 134 | 100% |  |  | -65 | -48.5% |
| Males | 12 | 57% | 26 | 49% | 49 | 46% | 73 | 45% | 42 | 61% |  | 61 | 46% |  | **<0.05** | -19 | -31.1% |
| Females | 9 | 43% | 27 | 51% | 57 | 54% | 89 | 55% | 26 | 38% |  | 73 | 54% |  |  | -47 | -64.4% |
| 0 to 4 years | 14 | 67% | 26 | 49% | 61 | 58% | 78 | 48% | 25 | 36% |  | 70 | 52% |  | **<0.05** | -45 | -64.0% |
| 5 to 10 years | 4 | 19% | 10 | 19% | 20 | 19% | 38 | 23% | 10 | 14% |  | 29 | 22% |  |  | -19 | -65.5% |
| 11 to 17 years | 3 | 14% | 4 | 8% | 6 | 6% | 13 | 8% | 8 | 12% |  | 10 | 7% |  |  | -2 | -15.8% |
| 18 to 24 years | 0 | 0% | 13 | 25% | 19 | 18% | 33 | 20% | 26 | 38% |  | 26 | 19% |  |  | 0 | 0.0% |
| Low deprivation | 7 | 33% | 14 | 26% | 30 | 28% | 41 | 25% | 14 | 20% |  | 36 | 26% |  | 0.472 | -22 | -60.6% |
| Moderate deprivation | 6 | 29% | 21 | 40% | 42 | 40% | 58 | 36% | 31 | 45% |  | 50 | 37% |  |  | -19 | -38.0% |
| High Deprivation | 8 | 38% | 18 | 34% | 32 | 30% | 62 | 38% | 23 | 33% |  | 47 | 35% |  |  | -24 | -51.1% |
| White ethnicity | 20 | 95% | 46 | 87% | 81 | 76% | 122 | 75% | 56 | 81% |  | 102 | 76% |  | 0.438 | -46 | -44.8% |
| Non-white ethnicity | 1 | 5% | 4 | 8% | 18 | 17% | 31 | 19% | 10 | 14% |  | 25 | 18% |  |  | -15 | -59.2% |

**Table S13: Gastrointestinal infection admissions divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of admissions between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated admissions assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Total number admissions | 889 | 100% | 719 | 100% | 671 | 100% | 791 | 100% | 764 | 100% |  | 731 | 100% |  |  | 33 | 4.5% |
| Males | 350 | 39% | 292 | 41% | 353 | 53% | 444 | 56% | 430 | 56% |  | 399 | 55% |  | 0.472 | 32 | 7.9% |
| Females | 539 | 61% | 427 | 59% | 318 | 47% | 347 | 44% | 333 | 44% |  | 333 | 45% |  |  | 1 | 0.2% |
| 0 to 4 years | 63 | 7% | 54 | 8% | 79 | 12% | 74 | 9% | 105 | 14% |  | 77 | 10% |  | **<0.05** | 29 | 37.3% |
| 5 to 10 years | 80 | 9% | 78 | 11% | 95 | 14% | 128 | 16% | 114 | 15% |  | 112 | 15% |  |  | 3 | 2.2% |
| 11 to 17 years | 165 | 19% | 159 | 22% | 158 | 24% | 194 | 25% | 211 | 28% |  | 176 | 24% |  |  | 35 | 19.9% |
| 18 to 24 years | 581 | 65% | 428 | 60% | 339 | 51% | 395 | 50% | 334 | 44% |  | 367 | 50% |  |  | -33 | -9.0% |
| Low deprivation | 229 | 26% | 202 | 28% | 190 | 28% | 222 | 28% | 269 | 35% |  | 206 | 28% |  | **<0.05** | 63 | 30.6% |
| Moderate deprivation | 345 | 39% | 393 | 55% | 274 | 41% | 308 | 39% | 283 | 37% |  | 291 | 40% |  |  | -8 | -2.7% |
| High Deprivation | 303 | 34% | 221 | 31% | 200 | 30% | 255 | 32% | 208 | 27% |  | 228 | 31% |  |  | -20 | -8.6% |
| White ethnicity | 775 | 87% | 621 | 86% | 551 | 82% | 641 | 81% | 617 | 81% |  | 596 | 82% |  | 0.837 | 21 | 3.5% |
| Non-white ethnicity | 82 | 9% | 60 | 8% | 68 | 10% | 92 | 12% | 80 | 10% |  | 80 | 11% |  |  | 0 | 0.0% |

**Table S14: Surgical admissions divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of admissions between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated admissions assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Total number admissions | 318 | 100% | 669 | 100% | 1,038 | 100% | 989 | 100% | 771 | 100% |  | 1014 | 100% |  |  | -243 | -23.9% |
| Males | 127 | 40% | 245 | 37% | 349 | 34% | 296 | 30% | 209 | 27% |  | 323 | 32% |  | **<0.05** | -114 | -35.2% |
| Females | 191 | 60% | 423 | 63% | 689 | 66% | 692 | 70% | 560 | 73% |  | 691 | 68% |  |  | -131 | -18.9% |
| 0 to 4 years | 5 | 2% | 11 | 2% | 10 | 1% | 7 | 1% | 8 | 1% |  | 9 | 1% |  | **<0.01** | -1 | -5.9% |
| 5 to 10 years | 3 | 1% | 7 | 1% | 7 | 1% | 12 | 1% | 8 | 1% |  | 10 | 1% |  |  | -2 | -15.8% |
| 11 to 17 years | 110 | 35% | 214 | 32% | 327 | 32% | 358 | 36% | 321 | 42% |  | 343 | 34% |  |  | -22 | -6.3% |
| 18 to 24 years | 200 | 63% | 437 | 65% | 694 | 67% | 612 | 62% | 434 | 56% |  | 653 | 64% |  |  | -219 | -33.5% |
| Low deprivation | 56 | 18% | 176 | 26% | 236 | 23% | 225 | 23% | 199 | 26% |  | 231 | 23% |  | 0.355 | -32 | -13.7% |
| Moderate deprivation | 128 | 40% | 269 | 40% | 432 | 42% | 377 | 38% | 294 | 38% |  | 405 | 40% |  |  | -111 | -27.3% |
| High Deprivation | 125 | 39% | 204 | 30% | 359 | 35% | 375 | 38% | 274 | 36% |  | 367 | 36% |  |  | -93 | -25.3% |
| White ethnicity | 278 | 87% | 589 | 88% | 909 | 88% | 860 | 87% | 637 | 83% |  | 885 | 87% |  | 0.087 | -248 | -28.0% |
| Non-white ethnicity | 20 | 6% | 40 | 6% | 55 | 5% | 61 | 6% | 58 | 8% |  | 58 | 6% |  |  | 0 | 0.0% |

**Table S15: Mental health admissions divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of admissions between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated admissions assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | |  | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | | |
|  | Pre-pandemic | | | | | | | | Pandemic | |  |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative | |
| Total number admissions | 284 | 100% | 342 | 100% | 668 | 100% | 576 | 100% | 355 | 100% |  | 622 | 100% |  |  | -267 | -42.9% |
| Males | 174 | 61% | 226 | 66% | 447 | 67% | 375 | 65% | 232 | 65% |  | 411 | 66% |  | 0.818 | -179 | -43.6% |
| Females | 110 | 39% | 116 | 34% | 221 | 33% | 201 | 35% | 123 | 35% |  | 211 | 34% |  |  | -88 | -41.7% |
| 0 to 4 years | 54 | 19% | 48 | 14% | 90 | 13% | 92 | 16% | 49 | 14% |  | 91 | 15% |  | 0.566 | -42 | -46.2% |
| 5 to 10 years | 21 | 7% | 47 | 14% | 121 | 18% | 107 | 19% | 63 | 18% |  | 114 | 18% |  |  | -51 | -44.7% |
| 11 to 17 years | 45 | 16% | 65 | 19% | 138 | 21% | 121 | 21% | 88 | 25% |  | 130 | 21% |  |  | -42 | -32.0% |
| 18 to 24 years | 164 | 58% | 182 | 53% | 319 | 48% | 256 | 44% | 155 | 44% |  | 288 | 46% |  |  | -133 | -46.1% |
| Low deprivation | 79 | 28% | 117 | 34% | 206 | 31% | 176 | 31% | 114 | 32% |  | 191 | 31% |  | 0.871 | -77 | -40.3% |
| Moderate deprivation | 104 | 37% | 142 | 42% | 258 | 39% | 217 | 38% | 131 | 37% |  | 238 | 38% |  |  | -107 | -44.8% |
| High Deprivation | 97 | 34% | 81 | 24% | 191 | 29% | 178 | 31% | 108 | 30% |  | 185 | 30% |  |  | -77 | -41.5% |
| White ethnicity | 239 | 84% | 285 | 83% | 566 | 85% | 498 | 86% | 274 | 77% |  | 532 | 86% |  | 0.166 | -258 | -48.5% |
| Non-white ethnicity | 30 | 11% | 31 | 9% | 51 | 8% | 41 | 7% | 33 | 9% |  | 46 | 7% |  |  | -13 | -28.3% |

**Table S16: Accidental injury and trauma admissions divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of admissions between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated admissions assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | | |  | | **Estimated had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | | |
|  | Pre-pandemic | | | | | | | | Pandemic | | |  | |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | | |  | | Year 5 | |  | Absolute | Relative | |
| Total number admissions | 8 | 100% | 7 | 100% | 9 | 100% | 11 | 100% | 8 | 100% |  | | 10 | | 100% |  |  | -2 | -20.0% |
| Males | 6 | 75% | 5 | 71% | 4 | 44% | 7 | 64% | 5 | 63% |  | | 6 | | 55% |  | 0.729 | -1 | -9.1% |
| Females | 2 | 25% | 2 | 29% | 5 | 56% | 4 | 36% | 3 | 38% |  | | 5 | | 45% |  | -2 | -33.3% |
| 0 to 4 years | 3 | 38% | 0 | 0% | 1 | 11% | 4 | 36% | 2 | 25% |  | | 3 | | 25% |  | 0.409 | -1 | -20.0% |
| 5 to 10 years | 2 | 25% | 2 | 29% | 1 | 11% | 1 | 9% | 0 | 0% |  | | 1 | | 10% |  | -1 | -100.0% |
| 11 to 17 years | 0 | 0% | 2 | 29% | 0 | 0% | 3 | 27% | 0 | 0% |  | | 2 | | 15% |  | -2 | -100.0% |
| 18 to 24 years | 3 | 38% | 3 | 43% | 7 | 78% | 3 | 27% | 6 | 75% |  | | 5 | | 50% |  | 1 | 20.0% |
| Low deprivation |  | 0% | 2 | 29% | 1 | 11% | 6 | 55% | 2 | 25% |  | | 4 | | 35% |  | 0.598 | -2 | -42.9% |
| Moderate deprivation | 4 | 50% | 2 | 29% | 4 | 44% | 2 | 18% | 4 | 50% |  | | 3 | | 30% |  | 1 | 33.3% |
| High Deprivation | 4 | 50% | 3 | 43% | 4 | 44% | 3 | 27% | 2 | 25% |  | | 4 | | 35% |  | -2 | -42.9% |
| White ethnicity | 4 | 50% | 6 | 86% | 6 | 67% | 9 | 82% | 5 | 63% |  | | 8 | | 75% |  | 0.375 | -3 | -33.3% |
| Non-white ethnicity | 3 | 38% | 1 | 14% | 2 | 22% | 0 | 0% | 2 | 25% |  | | 1 | | 10% |  | 1 | 100.0% |

**Table S17: Burns and scalds admissions divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of admissions between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated admissions assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Observed** | | | | | | | | | | |  | **Estimated had there not been a pandemic** | | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  | Pre-pandemic | | | | | | | |  | Pandemic | |  |
|  | Year 1 | | Year 2 | | Year 3 | | Year 4 | |  | Year 5 | |  | Year 5 | | Absolute | Relative |
| Total number admissions | 75 | 100% | 78 | 100% | 69 | 100% | 56 | 100% |  | 59 | 100% |  | 63 | 100% |  | -4 | -5.6% |
| Males | 38 | 51% | 39 | 50% | 26 | 38% | 26 | 46% |  | 19 | 32% |  | 26 | 42% | 0.300 | -7 | -26.9% |
| Females | 37 | 49% | 39 | 50% | 43 | 62% | 30 | 54% |  | 40 | 68% |  | 37 | 58% | 4 | 9.6% |
| 0 to 4 years | 23 | 31% | 20 | 26% | 19 | 28% | 11 | 20% |  | 11 | 19% |  | 15 | 24% | **<0.05** | -4 | -26.7% |
| 5 to 10 years | 14 | 19% | 14 | 18% | 6 | 9% | 9 | 16% |  | 4 | 7% |  | 8 | 12% |  | -4 | -46.7% |
| 11 to 17 years | 7 | 9% | 16 | 21% | 7 | 10% | 5 | 9% |  | 20 | 34% |  | 6 | 10% |  | 14 | 233.3% |
| 18 to 24 years | 31 | 41% | 28 | 36% | 37 | 54% | 31 | 55% |  | 24 | 41% |  | 34 | 54% |  | -10 | -29.4% |
| Low deprivation | 28 | 37% | 28 | 36% | 17 | 25% | 15 | 27% |  | 28 | 47% |  | 16 | 26% | **<0.05** | 12 | 75.0% |
| Moderate deprivation | 25 | 33% | 29 | 37% | 33 | 48% | 23 | 41% |  | 24 | 41% |  | 28 | 45% |  | -4 | -14.3% |
| High Deprivation | 22 | 29% | 20 | 26% | 18 | 26% | 17 | 30% |  | 7 | 12% |  | 18 | 28% |  | -11 | -60.0% |
| White ethnicity | 65 | 87% | 59 | 76% | 53 | 77% | 38 | 68% |  | 46 | 78% |  | 46 | 73% | 0.443 | 1 | 1.1% |
| Non-white ethnicity | 8 | 11% | 18 | 23% | 14 | 20% | 12 | 21% |  | 9 | 15% |  | 13 | 21% |  | -4 | -30.8% |

**Table S18: Allergy and anaphylaxis admissions divided by population subgroups.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of admissions between the subgroups comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated admissions assuming no pandemic with the observed ones in year 5. Information about sex and ethnicity not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Observed** | | | | | | | | | |  | **Estimate had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  |  | Pre-pandemic | | | | | | | | Pandemic | |  |
|  |  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Male | 0-4 years | 10 | 3% | 28 | 5% | 29 | 4% | 16 | 2% | 18 | 4% |  | 23 | 3% |  | 0.813 | -5 | -20% |
|  | 5-10 years | 18 | 6% | 22 | 4% | 21 | 3% | 23 | 4% | 15 | 3% |  | 22 | 3% |  |  | -7 | -32% |
|  | 11-17 years | 69 | 22% | 139 | 24% | 165 | 22% | 169 | 26% | 119 | 26% |  | 167 | 24% |  |  | -48 | -29% |
|  | 18-24 years | 216 | 69% | 398 | 68% | 519 | 71% | 433 | 68% | 303 | 67% |  | 476 | 69% |  |  | -173 | -36% |
| Female | 0-4 years | 8 | 2% | 19 | 2% | 20 | 2% | 23 | 2% | 18 | 2% |  | 22 | 2% |  | **<0.001** | -4 | -16% |
|  | 5-10 years | 12 | 3% | 13 | 2% | 11 | 1% | 16 | 1% | 16 | 2% |  | 14 | 1% |  |  | 3 | 19% |
|  | 11-17 years | 141 | 32% | 262 | 33% | 381 | 32% | 465 | 36% | 482 | 49% |  | 423 | 34% |  |  | 59 | 14% |
|  | 18-24 years | 282 | 64% | 512 | 64% | 781 | 65% | 782 | 61% | 473 | 48% |  | 782 | 63% |  |  | -309 | -39% |

**Table S19: Mental health presentations divided by sex and age group.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of presentations between the age subgroups separately for male and female comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated presentations assuming no pandemic with the observed ones in year 5. Information about sex not available for all patients.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Observed** | | | | | | | | | |  | **Estimate had there not been a pandemic** | |  | P value (Chi squared) | **Pandemic (year 5) estimated verses observed difference** | |
|  |  | Pre-pandemic | | | | | | | | Pandemic | |  |
|  |  | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |  | Year 5 | |  | Absolute | Relative |
| Male | 0-4 years | 2 | 1% | 7 | 1% | 5 | 1% | 4 | 1% | 6 | 1% |  | 5 | 1% |  | 0.57 | 2 | 33% |
|  | 5-10 years | 1 | 0% | 4 | 1% | 5 | 1% | 7 | 1% | 2 | 0% |  | 6 | 1% |  |  | -4 | -67% |
|  | 11-17 years | 37 | 12% | 61 | 10% | 83 | 11% | 83 | 13% | 58 | 13% |  | 83 | 12% |  |  | -25 | -30% |
|  | 18-24 years | 87 | 28% | 174 | 30% | 256 | 35% | 203 | 32% | 145 | 32% |  | 230 | 33% |  |  | -85 | -37% |
| Female | 0-4 years | 3 | 1% | 4 | 0% | 5 | 0% | 3 | 0% | 2 | 0% |  | 4 | 0% |  | **0.005** | -2 | -50% |
|  | 5-10 years | 2 | 0% | 3 | 0% | 2 | 0% | 5 | 0% | 6 | 1% |  | 4 | 0% |  | 3 | 71% |
|  | 11-17 years | 73 | 16% | 154 | 19% | 244 | 20% | 276 | 21% | 264 | 27% |  | 260 | 21% |  | 4 | 2% |
|  | 18-24 years | 113 | 26% | 263 | 33% | 438 | 37% | 409 | 32% | 290 | 29% |  | 424 | 34% |  | -134 | -32% |

**Table S20: Mental health admissions divided by sex and age group.** The estimated year 5 values are calculated from an average of years 3 and 4 to reduce influence of long-term trends. Data are numbers (sub-column percentages). Year 1: 01/04/2016 to 31/03/2017 (365 days); Year 2: 01/04/2017 to 31/03/2018 (365 days); Year 3: 01/04/2018 to 31/03/2019 (365 days); Year 4: 01/04/2019 to 12/03/2020 (347 days); Year 5: 13/03/2020 to 26/02/2021(351). P value represents a Chi squared test assessing the difference in distribution of admissions between the age subgroups separately for male and female comparing the estimated and observed year 5 data. Absolute and relative differences compare the estimated admissions assuming no pandemic with the observed ones in year 5. Information about sex not available for all patients.

|  |  |
| --- | --- |
| **Diagnostic label** | **Presentations included** |
| Respiratory infection | Acute epiglottitis, Bronchiolitis, Bronchopneumonia, COVID-19, Croup, Cystic fibrosis, Empyema, Influenza, Lobar pneumonia, Lower respiratory tract infection, Pertussis / whooping cough, Quinsy / peritonsillar abscess, Tonsillitis, Tuberculosis, Upper respiratory tract infection |
| Asthma / wheeze | Asthma, Respiratory conditions - bronchial asthma, Viral wheeze |
| GI infections | Dysentery, Food poisoning, Infectious gastroenteritis, Infectious gastroenteritis with bloody diahorrea |
| Surgical presentations | Abscess: perianal or anal, Anal fissure, Anorectal bleeding, Appendicitis, Boil / abscess, Bowel obstruction, Complication of gastrostomy (PEG tube), Concretions, Diaphragmatic hernia, Epididymitis / orchitis / epidymo-orchitis, Foreign body: alimentary tract, Foreign body: penis, Foreign body: rectum, Foreskin problem anatomical: phimosis / paraphimosis, Foreskin problem infection: balanitis / balanoposthitis, Fractured penis, Gallstones with cholecystitis, Gastrointestinal conditions - acute abdominal pain, Gastrointestinal conditions – haemorrhage, Haemorrhoids, Hydrocele, Hydronephrosis, Incisional hernia, Indwelling urinary catheter: problem related to, Inguinal hernia, Intestinal malrotation, Intussusception, Ischaemic bowel, Lower gastrointestinal haemorrhage, Malignant tumour, Oesophageal perforation, Oesophageal stricture, Perforated / ruptured bowel, Pyloric stenosis, Rectal prolapse, Renal / ureteric colic due to stone, Sphincter of Oddi dysfunction, Stoma problem, Surgical procedure complication, Testicular torsion, Torsion of hydatid of Morgagni, Umbilical hernia, Undescended testis, Upper gastrointestinal hemorrhage, Urinary retention, Urological conditions (including cystitis), Volvulus |
| Mental health presentations | Adjustment disorder, Alcohol (ethanol) intoxication, Alcohol dependence syndrome , Alcohol withdrawal seizure, Alcohol withdrawal syndrome, Antidepressant overdose, Anxiety disorder, Benzodiazepine overdose, Bipolar affective disorder, Delirium (acute confusion), Dementia, Dependence on opioids, Dependence on sedatives or hypnotics, Depressive disorder, Dissociative (conversion) disorder, Eating disorder, Factitious disorder, NSAID overdose, Opiate overdose, Paracetamol overdose, Personality disorder, Pseudoseizure, Psychiatric conditions, Psychotic disorder, Recreational drug use, Schizophrenia, Somatisation disorder, Somatoform pain disorder |
| Accidental injuries/trauma | Closed fracture: ankle, Closed fracture: carpal bones, Closed fracture: cervical spine , Closed fracture: clavicle, Closed fracture: coccyx, Closed fracture: elbow joint, Closed fracture: facial bones / mandible, Closed fracture: femur (not NoF), Closed fracture : fibula (not ankle), Closed fracture: finger, Closed fracture: foot, Closed fracture: Galeazzi (frac rad: disloc ulna), Closed fracture: hand, Closed fracture: heel, Closed fracture: hip (NoF), Closed fracture: humerus, Closed fracture: knee, Closed fracture: lumbar spine, Closed fracture: Monteggia (frac ulna : disloc rad), Closed fracture: nose, Closed fracture: patella, Closed fracture: pelvis, Closed fracture: pubic rami, Closed fracture: radius, Closed fracture: radius AND ulna, Closed fracture: rib, Closed fracture: sacrum, Closed fracture: scaphoid, Closed fracture: scapula, Closed fracture: skull, Closed fracture: sternum, Closed fracture: thoracic spine, Closed fracture: thumb metacarpal, Closed fracture: thumb phalanx, Closed fracture: tibia (not ankle), Closed fracture: tibia AND fibula (not ankle), Closed fracture: toe, Closed fracture: ulna, Head injury – concussion, Head injury - other head injury, Minor traumatic brain injury (GCS more than 12): LOC less than 30s, Minor traumatic brain injury (GCS more than 12): LOC more than 30s, Minor traumatic brain injury (GCS more than 12): no LOC, Moderate traumatic brain injury (GCS less than 13), Severe traumatic brain injury (GCS less than 9), Sprain / ligament injury: ankle joint, Sprain / ligament injury: cervical spine, Sprain / ligament injury: elbow joint, Sprain / ligament injury: finger, Sprain / ligament injury: foot, Sprain / ligament injury: hand, Sprain / ligament injury: hip joint, Sprain / ligament injury: knee joint, Sprain / ligament injury: lumbar spine, Sprain / ligament injury: shoulder joint, Sprain / ligament injury: thoracic spine, Sprain / ligament injury: thumb, Sprain / ligament injury: toe, Sprain / ligament injury: wrist joint, Sprain/ligament injury |
| Burns/Scalds | Burn : buttock, Burn : elbow, Burn : eye, Burn: face, Burn: finger, Burn: foot, Burn: forearm, Burn: hand, Burn: head, Burn: knee, Burn: lower leg, Burn: neck, Burn: perineum, Burn: shoulder, Burn: thigh, Burn: thumb, Burn: toe, Burn: trunk, Burn: upper arm, Burns and scalds – chemical, Burns and scalds – electric, Burns and scalds – radiation, Burns and scalds – thermal |
| Allergies and anaphylaxis | Allergy (including anaphylaxis), Anaphylaxis, Other allergic reaction (see free text) |

**Table S21: Diagnostic labels included in each group presentation**

**(a) Males (b) Females**

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**Figure S1:** **Four weekly mental health presentations before and during the pandemic in the 11-17 and 18-24 year age groups for (a) males and (b) females.** Presentations to emergency department by four week period for one year before and after the start of the pandemic (marked with grey line). A four week period chosen due to the small number in each of these subgroups. Minimal change in presentations with the pandemic in the 11-17 year female group compared to the other females and male groups.

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**Figure S2.** **Weekly presentations for all.** Figures represent time series and observed presentations. Seasonal Holt Winters time series approach was used with data from weeks 1 to 206 (years 1 to 4) were used to estimate the presentations in year 5 had the pandemic not occurred. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

**(a) Males (b) Females**

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**Figure S3.** **Weekly presentations for (a) males and (b) females.** Figures represent time series and observed presentations by sex. Seasonal Holt Winters time series approach was used with data from weeks 1 to 206 (years 1 to 4) were used to estimate the presentations in year 5 had the pandemic not occurred. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

**(a) 0-4 years (b) 5-10 years**

**Figure S4.** **Weekly presentations for (a) 0-4 years, (b) 5-10 years, (c) 11-17 years and (d) 18-24 years.** Figures represent time series and observed presentations by sex. Seasonal Holt Winters time series approach was used with data from weeks 1 to 206 (years 1 to 4) were used to estimate the presentations in year 5 had the pandemic not occurred. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

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**(c) 11-17 years (d) 18-24 years**

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**(a) White ethnicity (b) Non-white ethnicity**

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**Figure S5.** **Weekly presentations and admissions by (a) white ethnicity and (b) non-white ethnicity.** Figures represent time series and observed presentations by ethnicity. Seasonal Holt Winters time series approach was used with data from weeks 1 to 206 (years 1 to 4) being used to estimate the presentations and admissions in year 5 had the pandemic not occurred. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

**(a) High deprivation (b) Moderate deprivation**

** **

**(c) Low deprivation**

**Figure S6.** **Weekly presentations by (a) high deprivation, (b) moderate deprivation and (c) low deprivation.** Figures represent time series and observed presentations by deprivation. Seasonal Holt Winters time series approach was used with data from weeks 1 to 206 (years 1 to 4) being used to estimate the presentations in year 5 had the pandemic not occurred. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

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**Figure S7.** **Weekly admissions for all.** Figures represent time series and observed admissions. Seasonal Holt Winters time series approach was used with data from weeks 1 to 156 (years 1 to 3) were used to estimate the admissions in year 5 had the pandemic not occurred. Year 4 data was excluded given the untypical large number of admissions in that year. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

**(a) Males (b) Females**

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**Figure S8.** **Weekly admissions for (a) males and (b) males.** Figures represent time series and observed admissions by sex. Seasonal Holt Winters time series approach was used with data from weeks 1 to 156 (years 1 to 3) were used to estimate the admissions in year 5 had the pandemic not occurred. Year 4 data was excluded given the untypical large number of admissions in that year. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

**(a) 0-4 years (b) 5-10 years**

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**Figure S9.** **Weekly admissions for (a) 0-4 years, (b) 5-10 years, (c) 11-17 years and (d) 18-24 years.** Figures represent time series and observed admissions by age group. Seasonal Holt Winters time series approach was used with data from weeks 1 to 156 (years 1 to 3 [years 1 to 2 for 5 to 10 year age group]) to estimate admissions in year 5. Year 4 data was excluded given the untypical large number of admissions in that year. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

**(c) 11-17 years (d) 18-24 years**

** **

**(a) White ethnicity (b) Non-white ethnicity**

** **

**Figure S10.** **Weekly admissions by (a) white ethnicity and (b) non-white ethnicity.** Figures represent time series and observed admissions by ethnicity. Seasonal Holt Winters time series approach was used with data from weeks 1 to 156 (years 1 to 3) to estimate admissions in year 5. Year 4 data was excluded given the untypical large number of admissions in that year. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

**(a) High deprivation (b) Moderate deprivation**

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**(c) Low deprivation**

**Figure S11.** **Weekly admissions by (a) high deprivation, (b) moderate deprivation and (c) low deprivation.** Figures represent time series and observed admissions by deprivation. Seasonal Holt Winters time series approach was used with data from weeks 1 to 156 (years 1 to 3 [years 1 to 2 for low deprivation]) used to estimate admissions in year 5. Year 4 data was excluded given the untypical large number of admissions in that year. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

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**Figure S12.** **Weekly respiratory infection presentations.** Figures represent time series and observed presentations. Seasonal Holt Winters time series approach was used with data from weeks 96 to 206 (years 1 to 4) were used to estimate the presentations in year 5 had the pandemic not occurred. Year 1 and 2 data untypical of other years. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

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**Figure S13.** **Weekly asthma and wheeze presentations.** Figures represent time series and observed presentations. Seasonal Holt Winters time series approach was used with data from weeks 1 to 206 (years 2 to 4) were used to estimate the presentations in year 5 had the pandemic not occurred. Year 1 data was untypically low compare to years 2-4. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

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**Figure S14.** **Weekly gastrointestinal infection presentations.** Figures represent time series and observed presentations. Seasonal Holt Winters time series approach was used with data from weeks 96 to 206 (years 1 to 4) were used to estimate the presentations in year 5 had the pandemic not occurred. Year 1 and 2 data untypical of other years. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

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**Figure S15.** **Weekly surgical presentations.** Figures represent time series and observed presentations. Seasonal Holt Winters time series approach was used with data from weeks 1 to 206 (years 1 to 4) were used to estimate the presentations in year 5 had the pandemic not occurred. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

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**Figure S16.** **Weekly mental health presentations.** Figures represent time series and observed presentations. Seasonal Holt Winters time series approach was used with data from weeks 80 to 206 (years 1 to 4) were used to estimate the presentations in year 5 had the pandemic not occurred. Year 1 data untypical of other years. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.



**Figure S17.** **Weekly accidental injury and trauma presentations.** Figures represent time series and observed presentations. Seasonal Holt Winters time series approach was used with data from weeks 1 to 206 (years 1 to 4) were used to estimate the presentations in year 5 had the pandemic not occurred. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.



**Figure S18.** **Weekly burn/scald presentations.** Figures represent time series and observed presentations. Seasonal Holt Winters time series approach was used with data from weeks 1 to 206 (years 1 to 4) were used to estimate the presentations in year 5 had the pandemic not occurred. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

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**Figure S19.** **Weekly allergy presentations.** Figures represent time series and observed presentations. Seasonal Holt Winters time series approach was used with data from weeks 1 to 206 (years 1 to 4) were used to estimate the presentations in year 5 had the pandemic not occurred. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.



**Figure S20.** **Weekly respiratory infection admissions.** Figures represent time series and observed admissions. Seasonal Holt Winters time series approach was used with data from weeks 80 to 206 (years 2 to 4) were used to estimate the admissions in year 5 had the pandemic not occurred. Year 1 data was untypical compared years 2-4. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.



**Figure S21.** **Weekly asthma and wheeze admissions.** Figures represent time series and observed admissions. Seasonal Holt Winters time series approach was used with data from weeks 80 to 206 (years 2 to 4) were used to estimate the admissions in year 5 had the pandemic not occurred. Year 1 data was untypical compared years 2-4. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.



**Figure S22.** **Weekly surgical admissions.** Figures represent time series and observed admissions. Seasonal Holt Winters time series approach was used with data from weeks 1 to 206 (years 1 to 4) were used to estimate the admissions in year 5 had the pandemic not occurred. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.



**Figure S23.** **Weekly mental health admissions.** Figures represent time series and observed admissions. Seasonal Holt Winters time series approach was used with data from weeks 80 to 206 (years 2 to 4) were used to estimate the admissions in year 5 had the pandemic not occurred. Year 1 data was untypical compared years 2-4. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.



**Figure S24.** **Accidental injury and trauma admissions.** Figures represent time series and observed admissions. Seasonal Holt Winters time series approach was used with data from weeks 80 to 206 (years 2 to 4) were used to estimate the admissions in year 5 had the pandemic not occurred. Year 1 data was untypical compared years 2-4. Year 1: weeks 1 to 52; year 2: weeks 53 to 104; year 3: weeks 105 to 156; year 3: weeks 157 to 206; year 4: weeks 207 to 256.

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