Empowering Futures: Growing up Well in Warwickshire JSNA

Data Methodologies and Processing

This JSNA seeks to tell a story about the physical health of children and young people, using an interactive dashboard with 6-10 data and insight rich pages. With a smaller real-estate, it's not practical to include full methodologies for the data presented on each page. In this document, we detail the sources, transformation, aggregation, and assumptions made of the data.

Contents

High Impact Area 1: Improving Resilience and Wellbeing:

Empowering Futures Survey Results:

A survey was designed to collect the views of professionals that work or volunteer with children or young people.

For this high impact area, responses from the survey were used on the following themes:

- Using physical health interventions with the aim of also supporting mental health.
- Whether physical health is considered when supporting mental health.
- Confidence is offering advice and guidance on mental/physical health.
- Confidence talking about mental/physical health.
- Knowledge of mental/physical health resources and services available.
- The balance of time spent on mental and physical health needs.

Summary data on each theme has been presented but the full survey results can be found here - https://api.warwickshire.gov.uk/documents/WCCC-1350011118-3347.

High Impact Areas 2: Improving Health Behaviours and Reducing Risk Taking:

Injuries

To best represent the level of injuries within the community, we spoke with NHS colleagues and decided that it would be more representative to measure attendances at A&E than hospital admissions. This is because many minor injuries are treated without an admission, for example cuts and small fractures.

The data fluctuates month to month, so we have taken the decision to smooth the data out using a rolling rate – helping the user to spot medium and longer term trends. To compare areas, crude rates per 100,000 children/young people were calculated.

To calculate these rolling rates per 100,000, the NHS Emergency Care Data Set was queried to find A&E attendances with a chief complaint in the following categories:

Intentional Injuries	Unintentional Injury
Self-injurious behaviour	Injury of upper extremity
Poisoning	Injury of lower extremity
Substance misuse	Injury of head
	Laceration - injury
	Injury of face
	Lower back injury
	Injury of nose
	Injury of eye region

	Puncture wound - injury
	Chest injury
	Injury of neck
	Injury of ear
	Upper back injury
	Traumatic injury

The data was filtered at source to those under 26. Upon analysis of the data, we determined that we would need to carefully design measures that would give as much insight but also stay within data suppression rules of the dataset.

The top visual shows the different rolling rates per 100,000 for each district within Warwickshire in addition to a total Warwickshire figure. This is for all children/young people aged under 26 and is split by filter into intentional/unintentional injuries.

The bottom visual shows a Warwickshire total rate per 100,000 that is calculated per each 5-year age band and intentional/unintentional injury category.

Drugs and Alcohol

Like the above section on injuries, we decided to use A&E attendance data to show the impacts of harmful drug and alcohol use. The data was sourced from the NHS 'Emergency Contact Data Set', where the 'chief complaint' data item is coded as either drugs or alcohol.

Attendances were included when there was a mention of alcohol or drugs as a contributor to the attendance. For example, a person may have broken their arm, but they were intoxicated and it had a contributing effect to the injury.

These attendances were then used to calculate rolling rates per 100,000 for those under 26 in each district for both alcohol and drug related attendances. In the second section of the page, rolling rates per 100,000 were calculated at Warwickshire level for 5-year age bands, separated by drugs and alcohol.

Sexual Health

This section contrasts indicators from the Office of Health Improvement and Disparities (OHID) with local health needs assessment responses.

Data Points:

HPV Vaccine Coverage - Indicators on two dose coverage of HPV vaccine in those age 13/14 year olds for both Warwickshire and England were sourced from OHID Fingertips.

Chlamydia Detection - Two data points were taken from OHID, the screening rate of 15-24 year olds and the number of chlamydia cases found by district. An estimated number of chlamydia cases was calculated using results from a systematic review of prevalence studies, which found positivity of 8.1% of those aged 15-19 and 5.2% aged 20-24.

Views of Warwickshire Year 9s - Health needs assessment data is presented for 2022/23 school year, filterable by district. Three questions are presented covering contraceptives, sexuality, and sexual activity.

Smoking

There are no local estimates for smoking and vaping in young people. After meeting with Public Health professionals and trading standards, then conducting research, it was decided that the focus should be on the general decline in smoking and the rise in vaping amongst young people. To tell this story, three data sources were used:

Preferred method of e-cigarette – Use of e-cigarettes among young people in GB (ASH)

Proportion of class young people thought smoked/vapes – Health Needs Assessment data

Smoking/Vaping Prevalence – This visual is broken down by age band (11-15, 16-24) and smoking/vaping. For the 11-15 age category, prevalence figures are sourced from NHS Smoking, Drinking and Drug Use among Young People in England, 2021

For the 16-24 age category, ONS data from two sources is used:

Adult smoke habits in England, 2022

E-cigarette use in England, 2022

To align these two data sources, data is taken from 'current smoker' section of the NHS dataset which combines 'Regular smoker' with 'Occasional smoker'. This is in line with how ONS defines a 'current smoker'

Note: for vaping prevalence from ONS 16-24, to compare over years, the values for 'daily user' and 'occasional user' have been summed for data from 2020-2022 to compare with years where the categories were 'current e-cigarette user, or vaper' and 'ex-vaper'. This is in line with ONS methodology.

Teenage Conceptions

On this page, there are three measures:

Under-18 conception rate

Under-18 conceptions leading to abortion

Under-18 birth rate

All are sourced from ONS data on Conceptions in England and Wales.

High Impact Area 3: Supporting Healthy Lifestyles:

This page displays health indicators on a JSNA area map. Joint strategic needs assessment areas are a geography created by Warwickshire County Council that are larger than middle super output areas but smaller than local authority districts.

The health indicators included in this section are obesity levels, nutrition, oral health and physical activity. Obesity levels are calculated using National Child Measurement Programme data whilst nutrition, oral health and physical activity are indicators created using school health needs assessment responses.

Obesity Levels:

The National Child Measurement Programme is undertaken yearly by most Warwickshire schools and provides a rich source of data on the weight classification of children. In this analysis, levels of obesity will be calculated both at school level and JSNA level. To smooth out yearly fluctuations and to comply

with NCMP disclosure rules, results will be calculated using three years of combined data from 2018/19, 2019/20 and 2021/22. After combining this data, some schools still may not meet disclosure rules if they have only completed one year of the programme or have very small class sizes. These will be marked with a label of 'Data supressed' on the map, those schools with no NCMP data will be marked as 'No data available'

To create school level Reception and Year 6 obesity indicators:

- The number of (R or Yr6) pupils at the school placed within the "very overweight" BMI category as a proportion of all (R or Yr6) pupils at the school whose BMI was recorded.

To create JSNA level Reception and Year 6 obesity indicators:

- The number of (R or Yr6) pupils residing within the JSNA placed within the "very overweight" BMI category as a proportion of all (R or Yr6) pupils at the school whose BMI was recorded.

Health Needs Assessment Indicators: Nutrition, Oral Health and Physical Activity

The health needs assessment is a systematic approach to understanding the needs of a population, considering social, economic, cultural, and behavioural factors that influence health.

In Warwickshire, the school nursing service carries out the assessment which consists of a survey of school pupils aged reception, year 6, and year 9. Parents fill the survey out on behalf of their children at reception, using a school-readiness questionnaire (SRQ), and pupils answer themselves for year 6 and 9. For the purpose of this analysis, SRQ and HNA will be treated as the same data source.

Schools do not have to participate in this process and so the coverage of results is not exhaustive.

To create JSNA level health indicators:

- Relevant questions were selected for each health theme – nutrition, oral health and physical activity. Answers indicating unhealthy lifestyles were flagged.
- Data from multiple years of HNA is combined. This equates to a maximum of four years for year 6 and 9 and two years for Reception.
- The HNA is conducted at school level and data is per pupil. However, pupil postcode is not available so school level data has been aggregated to calculate a JSNA level indicator.
- For each health theme, the % of flagged responses was calculated for each school that took part.

Data from the school census is available showing for all children living in a JSNA the split of schools that they attend. Using this, in combination with the school level data calculated previously, a weighted average can be calculated for each JSNA and theme. For JSNA indicators, school years will be combined to reduce sampling issues.

To produce a JSNA figure for each theme, covering children aged 4-13, values for Reception, Year 6 and Year 9 were calculated by this formula:

$$\text{JSNA} = \frac{\text{NOR(S1)} \times \%\ \text{flagged(S1)} + \text{NOR(S2)} \times \%\text{flagged(S2)} + \text{NOR(S3)} \times \%\text{flagged(S3)} \ldots}{\text{NOR(S1)} + \text{NOR(S2)} + \text{NOR(S3)} \ldots}$$

NOR(S1) – the number of pupils in the year group (R, Year 6 or Year 9) who attend a particular school (S1/S2... refers to school 1, school 2...) and reside in the JSNA being calculated.

% flagged(S1) - the % flagged values for each school as explained above

Schools were only included where they had both a % flagged figure and pupils on roll of the year group that reside within the JSNA.

The mean average of the Reception, Year 6 and Year 9 values was then calculated for each theme to give an overall JSNA value.

High Impact Area 4 – Reducing vulnerabilities and improving life chances:

Demographics of Vulnerable Groups:

In this section, we highlighted groups of children and young people that may have additional health needs. Data was collected on each group, to the most granular level possible to show roughly where the children and young people are across the county and their age breakdown where possible. Additional data was included where appropriate to explain the group.

Armed Forces Families:

There are two data sources included on this page. The first is the annual school census, which flags children where one or more parent is serving in the regular armed forces or the forces of another nation but stationed in England. This data is held locally by Warwickshire County Council

The second source is the Department for Education. This is a measure of how many children per local authority receive service child pupil premium funding. This is a payment made to schools for every pupil who has a parent within the military (and as such, counted in the school census) but also any child that has been recorded as a service child in the last six years and those whose armed forces parents have died. The release is public and can be found below under the category "Pupil premium: allocations and conditions of grant".

Pupil premium and other school premiums - GOV.UK (www.gov.uk)

Children Open to Social Care:

The local authority holds data on all children open to social care. This dataset was queried to show the proportion of children within each sub-section of the umbrella term 'Total Children in Need' which includes:

- Total children in need – a legally defined group of children assessed as needing help and protection due to risks to their development or health. It includes the following categories.
- No. children with children in need plans – this is an intervention that has been designed between the guardians of the child and the local authority to meet identified developmental needs of the child and any services required.
- No. children in care – This is defined as children who are looked after by their local authority. A child is 'looked after' if they are in the care of their local authority for more than 24 hours within a reporting year and includes circumstances such as living with foster carers, living in residential homes or secure units and at home with guardians under supervision of social care.
- No. care leavers - a care leaver is someone who has been in the care of the Local Authority for a period of 13 weeks or more spanning their 16th birthday.
- No. children subject to a Child Protection Plan – These are children who have been identified as being at risk of hard of experiencing harm.

On the bottom half of the page, these counts of children are expressed as rates per 10,000 to allow comparisons across areas. This is in line with reporting sent to central government as part of the children looked after return. This data is calculated using ONS 2022 mid-year estimates.

Young Mothers:

Data on young mothers is collected by NHS trusts as they attend maternity and neonatal appointments. This data is flowed to NHS Digital as part of the 'Maternity Services Data Set' collection. This secondary dataset is defined by NHS Digital and submitters must adhere to definitions which standardises the data.

There are publicly released maternity statistics, however as this section looks specifically at young mothers which is defined as under 20, the source dataset needed to be queried for the level of detail needed on this subgroup.

The MSDS is queried using the dimension "AgeAtBookingMotherGroup" which has different age categories for the age at time of the mother's first appointment. For the visuals on this page, the data is filtered to those "Under 20" and is broken down by NHS trust over time. The indicator is a count of women being seen by the maternity system each month, aggregated to quarters and years. These are not distinct counts when aggregated.

The data will include thee three hospital trusts Warwickshire residents can attend but will include non-Warwickshire residents in their totals.

Refugees, Migrants and Asylum Seekers:

Warwickshire County Council has access to data on refugees, migrants and asylum seekers that are housed within the locality. There are separate sources for each category; asylum, Ukraine, Hong Kong and resettlement.

For asylum, Ukraine and resettlement schemes data on migrants is provided by central government and then local teams supplement this data whenever there is an update such as someone moving out of area or within the county. For this report, the data is filtered to those aged 6-25, this is based on age at time of data export, calculated using date of birth. Those who have moved out of the area or left the country are also filtered out of the data.

For data on children and young people under the BNO Hong Kong scheme, data is sourced from the local WCC education system where there is a specific flag.

For the figures in the 'asylum' and 'resettlement' category, WCC receive data from a national system run by Serco. The data source for Ukrainian refugees is a central government system called Foundry, which was set up by Palantir, commissioned by DLHUC.

Families at risk of homelessness:

Data on families at risk of homelessness is sourced from Statutory Homelessness in England, Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government.

Data is presented for the most recent full financial year. Table A5P – household composition (threatened with homelessness) is used for the prevention duty data and Table A5R – household composition (homeless) is used for the relief duty data. The numbers presented are for all household compositions that include children:

- Single parent with dependent children (male, female and other / gender not known)
- Couple / two adults with dependent children
- Three or more adults with dependent children

As mentioned on the page, this may involve some double counting as multiple duties can be granted to the same household in a single financial year if they are repeatedly made homeless or threatened with homelessness. This also does not include all young people as children are defined as 17 and under, so anyone in the 18-25 range would not appear here unless in a household with other children.

Young Carers:

The data presented on this page is sourced from the Census 2021. Respondents were asked how many unpaid hours of care they provided per week. This variable was queried against area and age.

The first visual shows a count of children and young people, split by age band and area, that provide some unpaid care a week. A crude rate for each age band was calculated by dividing the number of CYP in each age and area combination that provided some care by the total number of children that share those characteristics.

The second visual shows Warwickshire level data on children that provide unpaid care by number of hours and age.

Youth Justice:

The number of children and young people open to Youth Justice is held locally within WCC by the Youth Justice Service. The dataset was queried to provide a total broken down by district as gender. Health data is available on this cohort but, due to the small numbers involved, it isn't appropriate to publish.

Health impacts

Acknowledging a lack of local data and research on the populations included in the reducing vulnerabilities and improving life chances section, a literature review was undertaken to pull together an overview of health inequalities experienced by these populations. The following table gives the references for each of the health inequalities shown on this page.

Population	Health inequality identified	Reference
Care experienced young people	Have issues accessing services – care experienced individuals may be removed from services when they move out of the area, due to potential unstable living conditions.	Wilshire R. *Care Experienced to be seen as a Protected Characteristic*. West Northamptonshire Council. 2023
	Undertake risky behaviours – care experienced young people are more likely to take up risky behaviours, particularly around sexual health, alcohol, and drug use.	Mooney A, Statham J, Monck E. *Looked After Children: A Study to Inform Revision of the 2002 Guidance*. Institute of Education, University of London. Research Report Number: DCSF-RR125, 2009.
	A long-term condition or disability – 24% of care leavers report having a disability or long term health problem compared to 14% in the general population.	Briheim-Crookall L, Michelmore O, Baker C, Oni O, Taylor S, Selwyn J. *What makes life good? Care leavers' views on their well-being*. Coram Voice and The Rees Centre. 2020.
	Having a child at a young age – young women who are looked after are 3 times more likely to be a parent by age 18, compared to the general population.	Walker S, Hadley A. *Teenage Pregnancy Prevention Framework: Supporting young people to prevent unplanned pregnancy and develop healthy relationships*. Public Health England. PHE publications gateway number: 2018096, 2018.
	More hospital admissions – For example, children in care have double the number of potentially avoidable hospitalisations related to diabetes.	Miall N, Fergie G, Pearce A. *Health Inequalities in Scotland: Trend in deaths, health and wellbeing, health behaviours, and health services since 2000*.

		University of Glasgow. Doi: 10.36399/gla.pubs.282637, 2022.
	Poorer self-reported health – care leavers are 3-4 times more likely to report health as 'not good' in adulthood.	Nuffield Foundation and UCL. *The lifelong health and well-being of care leavers*. Nuffield Foundation and UCL. 2021
	Having a shorter life than their peers – adults who spend time in care as children were 70% more likely to die prematurely than those who did not.	Murray E.T, Lacey R, Maughan B. et al. *Association of childhood out-of-home care status with all-cause mortality up to 42-years later: Office of National Statistics Longitudinal Study*. BMC Public Health 20, 735, 2020.
Children and young people in military families	Move frequently – Military families may be redeployed or moved, requiring moving house and/or school.	Public Health England. *Supporting the health and wellbeing of military families*. Public Health England, PHE publications gateway number: 2015458, 2015.
	Anxiety and stress – Children in military families may experience high levels of anxiety and stress due to regularly moving home and school.	
	Having issues accessing services – The continuity of care and health records may be disrupted due to regularly moving home and school.	
	Have increased parental separation – Children in military families may experience extended and repeated periods of parental separation due to deployment.	NHS England. *Armed Forces family life*. www.england.nhs.uk/commissioning/armed-forces/armed-forces-family-life/ [Accessed 15th March 2024)
	Get sudden caring responsibilities – A child may need to care for a serving family member who has an injury or a physical and/or mental condition.	
	Hyperactivity – Military fathers with probable PTSD has been associated with child hyperactivity in boys and those under 11 years of age.	Fear N, Reed R, Rowe S, Burdett H, Pernet D, Mahar A, Iversen A, Ramchandani P, Stein A, Wessely S. *Impact of paternal deployment to the conflicts in Iraq and Afghanistan and paternal post-traumatic stress disorder on the children of military fathers*. The British Journal of Psychiatry. 212, 347-355. Doi 10.1192/bjp.2017.16, 2018.
	Feeling lonely – 78% of surveyed military children felt lonely or isolated due to a posting move.	Carrell J. *AFF Listening to our Service Children survey*. Army Families Federation. 2019
	Difficulty forming attachments to others – Someone who has experienced childhood instability in their relationships may struggle with relationships with others as an adult.	Potter C. *The Deep Scars of Dysfunctional Family Dynamics: Impact on Adults and Children*. https://www.hopefulminds.co.uk/the-deep-scars-of-dysfunctional-family-dynamics-impact-on-adults-and-children/#:~:text=The%20relational%20challenges%20experienced%20during,observed%20in%20their%20own%20families. [Accessed 15th May 2024]
	Increased low self-esteem, anxiety, and depression – Patterns established in childhood can continue into adulthood and become a feature of their lives.	
	Poor coping skills – Not all children from military families develop resilience and an ability to cope with adverse experiences which can impact adulthood.	Daines, C.L., Hansen, D., Novilla, M.L.B. *Effects of positive and negative childhood experiences on adult family health*. BMC Public Health. 21, 651. 2021.
	Undiagnosed health issues – Due to re-location, assessments or diagnosis may not be completed,	Shi Q, Castillo F, Viswanathan K, Kupferman F, MacDermid JC. *Facilitators and Barriers to Access to Pediatric Medical Services in a Community*

	leading to entering adulthood with an undiagnosed health issue.	*Hospital*. J Prim Care Community Health. doi: 10.1177/2150132720904518. PMID: 31997703; PMCID: PMC6993153. 2020
Families at risk of homelessness	Have issues accessing services – There are multiple barriers to services which can relate to lack of permanent address and difficulty registering with GP.	Amery J, Tomkins A, Victor C. *The prevalence of behavioural problems amongst homeless primary school children in an outer London borough: a feasibility study*. The Society of Public Health. 0033-3506/95, 1995.
	Get less sleep – Homelessness may lead to families living in overcrowded temporary housing, which may disturb sleep patterns.	Reynolds L, Robinson N. *Full house? How overcrowded housing affects families*. Shelter. ISBN 1 903595 51 7, 2015.
	Be less likely to be vaccinated – In a focus group, low immunisation uptake was noted amongst children in families experiencing homelessness.	Homeless link, The Queen's Nursing Institute, Young People's Health Partnership, Association for Young People's Health, VCSE health & wellbeing alliance. *Addressing health inequalities in homeless children, young people and families: A learning resource for Public Health Nurses.* 2022. https://ayph.org.uk/wp-content/uploads/2022/02/Homeless-Families-Learning-Resource.pdf. [accessed 18/03/2024].
	Struggle with a healthy diet – Homeless families can struggle with having a healthy diet due to a lack of access to cooking facilities, food storage, and finances.	
	Respiratory issues – Temporary accommodation may be poorer quality. Children in damp housing conditions were 3x more likely to suffer from wheezing.	Strachan DP. *Damp housing and childhood asthma: validation of reporting of symptoms*. BMJ. 12;297(6658):1223-6, 1988.
	More hospital admissions – Homeless children were found to be more likely to be admitted to hospital.	Lissauer T, Richman S, Tempia M, Jenkins S, Taylor B. *Influence of homelessness on acute admissions to hospital*. Arch Dis Child. 69(4):423-9. 1993.
	Catching infectious diseases – Children have a six-fold risk of meningitis in overcrowded living conditions.	Stanwell-Smith RE, Stuart JM, Hughes AO, Robinson P, Griffin MB, Cartwright K. *Smoking, the environment and meningococcal disease: a case control study*. Epidemiol Infect. 112(2):315-28. 1994.
	Having a shorter life than their peers – There is significant correlation between housing density and childhood mortality in 5-14 year olds.	Brennan ME, Lancashire R. *Association of childhood mortality with housing status and unemployment*. Journal of Epidemiology & Community Health. 32:28-33. 1978.
	Abnormal growth – In overcrowded households, 44% of people were short of stature compared to 16.4% of those from the least crowded households.	Montgomery SM, Bartley MJ, Wilkinson RG. *Family conflict and slow growth*. Archives of Disease in Childhood. 77:326-330. 1997.
	A long-term condition or disability – Children growing up in bad housing have up to a 25% higher risk of severe ill-health and disability during childhood and early adulthood.	Harker, L. *Chance of a lifetime: The impact of bad housing on children's lives.* Shelter. ISBN 1 903595 64 9. 2006.
	Respiratory issues – Adults with crowded housing in childhood were more likely to suffer from chronic cough or have a lower peak flow rate at age 36.	Britten N, Davies JMC, Colley JRT. *Early respiratory experience and subsequent cough and peak expiratory flow rate in 36 year old men and women*. British Medical Journal. Volume 294, 1317. 1987.

Gypsy, Roma, and Traveller communities	Be less likely to be vaccinated – Traveller children were found to have significantly lower coverage for all vaccinations in the routine childhood immunisation schedule.	Dixon K C, Mullis R, Blumenfeld T. *Vacine uptake in the Irish Travelling community: an audit of general practice records*. Journal of Public Health, Volume 39, Issue 4, Pages e235-e241, 2017.
	Have issues accessing services – There are multiple barriers to services which can relate to lack of permanent address, difficulty registering with GP, hostility, fear of discrimination.	Cleemput P V. *Health care needs of Travellers*. Arch Dis Child. 82:32-37. 2000.
	Undertake risky behaviours – There are higher rates of smoking in young Roma children and young people.	Cook B, Wayne G F, Valentine A, Lessions A, Yeh E. *Revisiting the evidence of health and health care disparities among the Roma: a systematic review 2003-2012*. International Journal of Public Health. Volume 58, pages 885-911. 2013.
	A long-term condition or disability – Roma, Gypsy, and Traveller children have between 1.5 to 2 times the rate of self-reported poor health or disability compared to other background.	Burchardt T, Obolenskaya P, Vizard P, Battaglini M. *Experience of multiple disadvantage among Roma, Gypsy, and Traveller children in England and Wales.* The London School of Economics and Political Science. Case paper 208. 2018.
	More hospital admissions – A&E attendance rates are almost two and a half times as high in Gypsy-traveller children, potentially due to attending A&E as opposed to a GP.	Beach H. *Comparing the use of an Accident and Emergency Department by children from two Local Authority Gypsy sites with that of their neighbours*. Journal of the Royal Institute of Public Health. 120, 882-884. 2006.
	A long-term condition or disability – Gypsies and Travellers were found to be more likely to have a long-term illness, health problem or disability, which limits their daily activities.	Parry G, Van Cleemput P, Peters J, Walters S, Thomas K, Cooper C. *Health status of Gypsies and Travellers in England*. J Epidemiol Community Health. 61(3):198-204. 2007.
	Having a shorter life than their peers – The average life expectancy is 10 to 12 years less than that of a non-traveller population.	Parliament.UK. *What we know about inequalities facing Gypsy, Roma, and Traveller communities*. Publications. Publications.parliament.uk. [accessed 18/03/2024].
Refugees, asylum seekers, and migrants	Have issues accessing GPs – Challenges may be experienced when registering with a GP as there may be barriers to providing proof of address or identity.	Stevens A J. *How can we meet the health needs of child refugees, asylum seekers and undocumented migrants?*. Arch Dis Child. 105: 191-196, 2020.
	Have issues accessing services – This can includes mistakes when determining eligibility and ability to pay impacting the provision of urgent and immediately necessary care.	
	More hospital admissions – Child refugees have higher hospital attendances and lower GP registration.	
	Health deterioration – Children may arrive in relatively good health but deteriorate due to immigration policy, barriers to services, and unawareness of entitlement.	
	Be less likely to be vaccinated – Asylum seeking children are three times less likely to be vaccinated than the local population.	Perry M, Townson M, Cottrell S, Fagan L, Edwards J, Saunders J, Roisin O, Richardson G. *Inequalities in vaccination coverage and differences in follow-up procedures for asylum-seeking children*

		arriving in Wales, UK. European Journal of Pediatrics. Volume 179, pages 171-175. 2020.
	Abnormal growth – 75% of accompanied refugee and asylum-seeking children had abnormal growth. This includes 41% that were overweight or obese.	Harkensee C, Andrew R. *Health needs of accompanied refugee and asylum-seeking children in a UK specialist clinic*. Acta Paediatricia. 110:2396-2404. 2021.
	Oral health issues – 11% of accompanied refugee and asylum-seeking children had severe dental decay (3 or more teeth).	
	Respiratory issues – 15% of accompanied refugee and asylum-seeking children had respiratory conditions including asthma.	
Young Carers	Get less sleep – Carers were more likely to report that they had less than 3 hours or between 3 and 5 hours sleep than their non-caring peers.	Robinson O. *Young carers in Glasgow: health, wellbeing, and future expectations*. Glasgow Centre for Population Health. 2017.
	Respiratory issues – 21% of carers reported asthma compared to 15% in the non-caring population.	
	Do less physical activity – Young carers have less time to participate in exercise.	Haugland BSM, Hysing M, Sivertsen B. *Study progress, recreational activities, and loneliness in young adult carers: a national student survey.* BMC Psychol. 26;10(1):43, 2022.
	Undertake risky behaviours – In the safe and well at school survey 44% of young carers had tried alcohol and 17% had tried drugs compared to 38% and 11% of non-carers.	Brighton & Hove City Council Public Health team and the University of Sussex. *Safe and Well at School Survey 2021*. https://infogram.com/safe-and-well-at-school-survey-2021-1hxr4zxezq8xq6y?live [accessed 18/03/2024].
	Poorer self-reported health – Young carers are 1.75 times more likely to report a physical health condition than non carers.	Robison O.M.E.F, Inglis G, Egan J. *The health, well-being and future opportunities of young carers: a population approach*. The Royal Society for Public Health. 0033-3506. 2020.
	A long-term condition or disability – One-fifth of young adult carers (22%) have a long-term illness or disability, compared with 11% of non-carers.	Scottish Government. *Scotland's Carers.* Scottish Government. ISBN 9781785442384. 2015.
	Accidents and injuries – Young carers have an increased risk of injury due to tiredness and a statistically higher risk of accidents in the home.	University of Birmingham. *Young Adult Carer UK full report.* https://www.birmingham.ac.uk/Documents/college-social-sciences/college/staff/becker-saul/publications/2008/yac-uk-full-report-dec.pdf [accessed 23/11/2023]
	Having a shorter life than their peers – Young carers have a significantly increased mortality risk, with the more mortality risk increasing the more intense the caregiving.	Tseliou F, Rosato M, Maguire A, Wright D, O'Reilly D. *Variation of Caregiver Health and Mortality Risks by Age: A Census-Based Record Linkage Study*. American Journal of Epidemiology. Vol. 187, No. 7. 2018.
Young Parents	Undertake risky behaviours – Mothers under the age of 20 are three times more likely to smoke throughout their pregnancy.	Local Government Association. *Good progress but more to do: Teenage pregnancy and young parents*. Local Government Association. Ref 15.7. 2018.
	Infant mortality – Infant mortality is 75% higher in young mothers, and they are three times more likely to experience sudden unexpected death in infancy.	

	Poorer child health outcomes – There is a higher risk of low birth weight and lower initiation and prevalence of breastfeeding.	
	Pregnancy complications – Adolescent mothers had higher odds of pre-eclampsia worldwide but this was not significant in one UK study.	Marvin-Dowle K, Kilner K, Burley JV. *Impact of adolescent age on maternal and neonatal outcomes in the Born in Bradford Cohort*. BMJ Open. 8:e016258. 2018.
	Cardiovascular and metabolic disorders – There is an association between age at first birth and several cardiometabolic biomarkers, with the worst outcomes for younger parents.	Sironi M, Ploubidis G B, Grundy E M. *Fertility History and Biomarkers Using Prospective Data: Evidence From the 1958 National Child Development Study*. Demography. 57 (2): 529-558. 2020.
	Being overweight or obese – Men who became fathers before the age of 23 had a 31% greater chance of reaching an unhealthy weight than those who were aged 23-27.	
	Respiratory issues – Young mothers had a lower expiratory volume than older mothers.	
Young People Open to Youth Justice	Undertake risky behaviours – A high proportion of young people in contact with the justice system have histories of high levels of smoking and illegal drug misuse.	Department of Health, Department for Children, Schools and Families. *Healthy lives, brighter futures: The strategy for children and young people's health.* Department for children, schools and families, Department for Health. 285374a 1p 20k. 2009.
	Oral health issues – There are high levels of dental health problems in young people who are in contact with the justice system.	
	Catching infectious diseases – There are high levels of STIs and other infectious disease such as hepatitis B and C in young people who are in contact with the justice system.	
	Respiratory issues – Young people in contact with the justice system are noted to have high prevalence of asthma.	
	A long-term condition or disability – 30% of young people in contact with the youth justice system have a physical disability.	
	Have previously experienced traumatic brain injury – TBI has been linked with earlier, more frequent, and more violent offending, and is a barrier to accessing services.	Kent H, Williams H. *Traumatic Brain Injury*. HM Inspectorate of Probation. ISBN: 978-1-914478-40-6. 2021.
	Having a shorter life than their peers – Children and young people who offend in their adolescences are more likely to die prematurely than later offenders.	Skinner G C M, Farrington D P, Jolliffe D. *Criminal Careers and Early Death: Relationships in the Cambridge Study in Delinquent Development.* The British Journal of Criminology. Volume 62, Issue 4. 2022.

High Impact Area 5: Supporting additional and complex health needs:

Asthma:

When we began researching data available on children and young people with asthma, we found that there was not a good measure of asthma prevalence in young people at a local level. QOF prevalence,

available at GP, was a combined prevalence for all those aged 6 and over. As asthma can develop in adulthood, we wanted a measure that indicated regional differences in childhood asthma.

The NHS Business Services Authority authored a data science product: "Child health insights: Take up of NHS Dental, NHS Prescribing and Supporting Schemes". This produced a measure, at ward level, of proportion of child (0-17) population receiving an asthma medication prescription. This is not a substitute for prevalence as other conditions such as viral wheeze are often treated with medication and children can grow out of this.

Prescribing of medication associated in the treatment of asthma peak in children aged 2-5 years, although asthma cannot be diagnosed before the age of 5. This data will include children receiving asthma prescriptions that do not, and will not, have asthma. It can be used to highlight areas that may have higher levels of asthma or require further investigation.

Diabetes:

For diabetes, a similar issue was faced as with asthma, there wasn't an age-specific prevalence figure. It was decided that service provision and condition maintenance data from the National Paediatric Diabetes Audit would be used. This data showed regional differences and improvements over time that have been highlighted. This data is released annually, at a trust level, but the frequency may be increased. It's not a measure of only Warwickshire residents, but all children and young people that attend the paediatric diabetes department of each trust.

National Paediatric Diabetes Audit (NPDA) | RCPCH

Epilepsy:

There was a real lack of data on the local population with epilepsy. Estimates, per age group, were sourced from Key facts about epilepsy (youngepilepsy.org.uk) and applied to the local population using ONS mid-2022 population estimates.

The epilepsy12 audit is similar in scope to the National Paediatric Diabetes Audit discussed above, but it covers new referrals to epilepsy teams in the period, rather than all those seen by the unit. The data was often suppressed or not submitted and so it was highlighted which trusts had and had not submitted.

Speech, Language and Communication Needs

This page uses data from the School Census which is taken three times each year. This page uses the January Census which is the most detailed. The Census is taken by all pupils in Warwickshire state funded schools. As part of the Census, it is noted whether pupils have an SEN need identified and there SEN provision is noted as either E (pupil has an Educational Health Care Plan), K (receiving SEN support) or N (no identified SEN need). The Census also records a Primary SEN need and also a secondary SEN need in some cases. For this page, data is displayed for pupils who are either E or K with either a Primary or Secondary SEN need of SLCN (speech, language and communication needs).

Data given at District and Borough level is based on the home postcode of the pupils where it could be matched to a Warwickshire District or Borough. The values for most and least deprived areas are done using the home postcode of the pupils where that postcode could be matched to a Warwickshire LSOA with a IMD Decile given in the English indices of deptivation 2019. The most deprived 20% is for those pupils in an LSOA recorded as IMD Decile 1 or 2, the least deprived 20% are those in an IMD Decile 9 or 10.

Comparisons to national data can be made using publicly available school Census data but this only uses the Primary SEN need and is only available at a Warwickshire level.

High Impact Area 6: Supporting Self Care and Improving Health Literacy:

Self Care:

As part of the annual Health Needs Assessment that is carried out in WCC maintained schools at reception, year 6 and year 9, children are asked multiple questions that relate to self care and health literacy. Answers which indicate an improvement could be made, such as answering 'no' to have you been to the dentist in the last year, are flagged and the % of flagged answers is the measure shown on this page.

The questions highlighted and answers which are flagged are:

Theme	Question	Flagged Answer
Wellness	Do you feel generally well	No
Happiness	How often do you feel happy/is your child generally happy	Never/Rarely/Sometimes
Dentist	Have you/your child visited the dentist in the last year	No
Hearing	Can you hear clearly/ has anyone expressed concerns about your child's hearing	No/Yes
Sleep	Does your child have a good bedtime routine/Do you have any problems falling asleep/Do you get between 7-8 hours of sleep a night	Never/Sometimes, Always, No
Sun Protection	Do you apply sunscreen to protect from sunburn	No
Vision	Have you had a sight test/visited opticians in the last two years	No/Don't know

Data from multiple school years, 2020/21, 2021/22 and 2022/23 were combined. The results, the % flagged answers, were reported against the district of the school and the school year of respondent. To see regional differences, data at school level was extrapolated to create JSNA modelled estimates. The methodology from the supporting healthy lifestyles section was replicated.

Immunisations:

This page uses Warwickshire and England data from the Health Protection profile on Fingertips.

Three indicators are used:

- 4-in-1 pre-school booster uses Population vaccination coverage: DTaP and IPV booster (5 years) which measures the proportion of children who complete the booster course of vaccines for diphtheria, tetanus, pertussis and polio by their fifth birthday.
- Two doses for MMR uses Population vaccination coverage: MMR for two doses (5 years old) which measures the proportion of children who have received two doses of the MMR vaccine by their fifth birthday.
- Estimates at GP level uses the combined indicator of Children, aged 5, who received a reinforcing dose of DTaP/IPV and at least 2 doses of an MMR vaccine between the ages of 1 and 5 yrs which measures the proportion of children who have received the booster course of vaccines for diphtheria, tetanus, pertussis and polio along with two doses of the MMR vaccine by their fifth birthday. This is done at GP level as a proportion of all children on their patient register who reached their fifth birthday in the preceding 12 months.

School Absences:

Data is sourced from Pupil Absence in England, Explore Education Statistics.

Five measures are used:

- Overall absence rate. This is the percentage of possible sessions marked absent. Each day is split into a morning and afternoon session. This includes all reasons for absence, except where a school closure was enforced. For 2020/21 and 21/22 data it also doesn't include absences where pupils were absent for COVID related reasons. For 2020/21 data this includes reasons such as self-isolating or shielding, including where class bubbles were isolating. For 2021/22 data this is mainly where pupils were absent from school with symptoms while awaiting the result of a test.
- Unauthorised absence rate. This is the percentage of possible sessions marked absent where no reason or no valid reason for absence was given.
- Illness rate. This is the percentage of possible sessions marked absent where illness was given as the reason, this does not include absence due to medical or dental appointments.
- Persistent absentees (10%). This is the percentage of pupils who were absent for 10% or more of the possible sessions within the school year.
- Persistent absentees (50%). This is the percentage of pupils were absent for at least half of the possible sessions within the school year.

Data is reported by academic school year (from September to July) and for pupils attending state funded Warwickshire schools compared to those attended all state funded schools in England. State funded schools includes primary, secondary, and special schools, including academies and free schools, but not private schools. The Warwickshire figure will include pupils who live outside of Warwickshire where they attend Warwickshire schools.

Data for District/Boroughs is calculated in the same way as the rates above but uses the raw School Census data held by the Education BI team at Warwickshire County Council, which is the source data for the above. The values for District/Borough are based on the pupil's home postcode, so it is a rate for all pupils living in each District/Borough who attend a state funded Warwickshire school, rather than for those who attend schools in each District/Borough.

Transitions:

This section of the report was designed to showcase the different points at which children and young people face transitions and changing circumstances. Transitions are shown from the perspective of the general population, what all children and young people may go through, those with a long-term health condition, and those from vulnerable communities.

Children and young people with a long-term health condition face more complicated transitions as they have to manage their condition and stress or disruption may make this more difficult. Vulnerable communities, which are explored in high impact area 4, are displayed here to highlight unique transition characteristics.

The text displayed for this section was created following conversations with subject matter experts and the following resources:

Institute of Health Equity – Improving school transitions for health equity

NHS – Moving from children's social care to adults' social care

Department for Education - Supporting pupils at school with medical conditions

Understanding Society – Vulnerable young people and post-16 educational aspirations during COVID-19

Law Stuff – At what age timeline