

Health Protection Needs Assessment 2023

SOMERSET

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Contents:

Executive Summary	5
1 Scope/Purpose	7
2 Background.....	8
2.1 Somerset Social Demographics	8
2.1.1 Age and Sex	8
2.1.2 Socioeconomic Status and Deprivation	9
2.1.3 Sexual orientation	10
2.1.4 Ethnicity & Country of Birth	10
2.1.5 Educational attainment	11
2.1.6 Employment.....	11
3 Key Outcomes:	12
3.1 Acute Respiratory Infection/Influenza like illness (ARIs/ILIs)	12
3.1.1 Introduction and Context.....	12
3.1.1.1 Flu	12
3.1.1.2 Covid	13
3.1.1.3 Other ARVs	13
3.1.2 Acute Respiratory Infection/Influenza like illness: Risk Factors and At risk groups.....	14
3.1.3 Acute Respiratory Infection/Influenza like illness Policies	20
3.2 TB	20
3.2.1 Introduction and Context.....	20
3.2.2 TB at risk population & risk factors	21
3.2.3 TB Policies.....	21
3.3 Vaccine Preventable Diseases	22
3.3.1 Introduction and Context.....	22
3.3.1.1 Hib	22
3.3.1.2 HPV	24
3.3.1.3 MMR - Measles, mumps, rubella	25
3.3.1.4 Meningococcal.....	27
3.3.1.5 Polio	28
3.3.1.6 Pneumococcal	29
3.3.1.7 Rotavirus	30
3.3.1.8 Tetanus	30
3.3.2 Vaccine preventable diseases at risk groups & risk factors:	32

3.3.3 Vaccine Preventable Diseases Policies	32
3.4 Gastrointestinal Infections.....	33
3.4.1 Introductions and Context.....	33
3.4.1.1 Shiga toxin-producing Escherichia coli (STEC)	34
3.4.1.2 Campylobacter	35
3.4.1.3 Cryptosporidium (Crypto)	37
3.4.1.4 Hepatitis A	38
3.4.2 Gastrointestinal at-risk groups & risk factors.....	38
3.4.3 Gastrointestinal Policies	39
3.5 Common infections that present with a rash.	40
3.5.1 Scarlet Fever	40
3.5.2 iGAS - Invasive group A streptococcal disease	41
3.6 Blood Borne Virus (BBVs).....	42
3.6.1 Introduction and Context.....	42
3.6.1.1 Hepatitis	42
3.6.1.1.1 Hepatitis B	42
3.6.1.1.2 Hepatitis C.....	43
3.6.1.2 Human Immunodeficiency Virus (HIV).....	45
3.6.2 Blood Borne Virus at risk groups & risk factors.....	48
3.6.3 Blood Borne Virus Policy	49
3.7 Healthcare Associated Infections.....	50
3.7.1 Introduction and Context.....	50
3.7.2 Hospital Acquired Policy	53
3.8 New and Emerging Infections	54
3.8.1 Introduction and Context.....	54
3.8.1.1 Avian Influenza (Bird Flu)	54
3.8.1.2.Travel acquired Infection	54
4 Recommendations.....	56
5 References	58

Abbreviations

Abbreviation	Meaning
AIDS	Acquired immunodeficiency syndrome
AMR	Antimicrobial resistance
ARI/ILI	Acute respiratory infection/Influenza like illness
ART	Antiretroviral
ARV	Acute Respiratory Viruses
BBV	Blood borne virus
CCG	Clinical Commissioning Group
GBMSM	Gay and bisexual men and other men who have sex with men
HCV	Hepatitis C virus
HES	Hospital episode statistics
HIV	Human immunodeficiency virus
HPV	Human papillomavirus
HPZone	Health Protection Zone
ICB	Integrated Care Board
IMD	Index of multiple deprivation
JCVI	Joint Committee on Vaccination and Immunisation
LSOA	Lower layer super output area
MMR	Measles, mumps, and rubella
MRSA	methicillin-resistant Staphylococcus aureus
NHS	National Health Service
OHID	Office of Health Improvement and Disparities
ONS	Office of National Statistics
PHE	Public Health England
PHOF	Public Health Outcomes Framework
PWID	People who inject drugs
SES	Socioeconomic Status
STI	Sexually transmitted infection
SWAT	South West and Taunton
TB	Tuberculosis
UKHSA	UK Health Security Agency
WHO	World Health Organisation

Executive Summary

This Health Needs Assessment (HNA) shows the data we have available for the most common/relevant infectious diseases in Somerset and where there are gaps. Recommendations are made to reduce the burden or mitigate the impact of these diseases.

About 7% of admissions to hospital in the UK have a primary infection diagnosis and at least one third of emergency admissions to hospital receive an antimicrobial therapy to treat an infection¹. Armed with accurate data, Somerset can reduce this burden of disease through early and targeted interventions.

Influenza (flu) is a highly infectious viral illness spread by droplet infection. This is a seasonal infection that occurs every winter. In Somerset, over the 12-week period of 13/11/22 – 05/02/23, there were 7 reported outbreaks of influenza in all settings². Rates of hospital admissions because of flu were very high in 2022-23 compared to previous years (although data and immunity were affected by the Covid-19 pandemic).

Flu vaccinations in the over 65 population in Somerset has shown a trend since 2019/20 of increasing uptake. Somerset has 84.7% (2021/22) coverage which is higher than the goal of 75%. Health and care workers are at high risk of acquiring influenza virus infection due to increased exposure to the patients and risk further spread particularly to vulnerable individuals³. For Somerset, the vaccine uptake for frontline healthcare workers is 54.3%. This was lower than previous years. The rate of smoking is higher in Somerset than in the UK. People who smoke are more at risk of acute respiratory infections.

Tuberculosis (TB) is a bacterial infection. The data shows that in Somerset the incidence of TB has increased slightly over the last 5 years, with an incidence rate of 2.4 per 100,000 (2019-2021) as compared to 1.3 (2015-2017)⁴: The rate in Somerset is lower than nationally and regionally. In Somerset April 2022/23, there were 15 TB cases⁵. Additionally, there were <5 cases of multi-drug resistant TB (MDRTB) in Somerset in 2022⁶.

Vaccine preventable diseases include Hib, measles, mumps and rubella, and others. Vaccine coverage for these diseases is higher than nationally, but there is a national and local declining trend over time. The 95% target vaccination coverage, required to achieve herd immunity, is not met in Somerset, like other areas.

Outbreaks of vaccine-preventable diseases have been reported in developed countries in recent years, including outbreaks of measles in the European Union in 2017⁷.

There are specific groups of the population that are prioritised due to known difficulties in achieving high vaccination rates, one of these are children who are looked after.

Somerset is a rural county, with many residents working on farms and having contact with animals. There are also a substantial number of factories producing food items across Somerset, with a large number in the dairy industry. Additionally, there are many households on private water supplies, of which there are over 1000 in Somerset. Some of these private supplies are risk assessed every 5 years⁸. There were 5 outbreaks of notifiable food poisoning in Somerset April 2022/23.

Common childhood infections are usually mild, however, since the pandemic lockdowns, there has been a change in the epidemiology of some of these infections with some of them posing an increased risk, for a variety of reasons. An example is scarlet fever, a contagious infection that mostly affects young children in the spring, caused by the *Streptococcus A* bacteria. Scarlet fever infections rose in the winter of 2022, at a time when influenza and Covid viruses were in circulation; this resulted in an increase in invasive disease. Scarlet fever rates spiked in December 2022 in the UK, leading to extra surveillance from UKHSA. It is now back to expected levels⁹.

There are some gaps in data for blood borne viruses (BBV), such as hepatitis B, C and HIV, which makes it difficult to address the needs of the population. Rates of BBV in Somerset appear lower on the data available, but this is quite old. However, HIV diagnosis is often late.

Healthcare Associated infections (HCAI) are caused by a wide range of microorganisms, which have gained entry into the body. HCAI can exacerbate existing or underlying conditions, prolong hospital stay, delay recovery and adversely affect quality of life. The most common HCAI are:

- methicillin-resistant *Staphylococcus aureus* (MRSA)
- methicillin-sensitive *Staphylococcus aureus* (MSSA)
- *Clostridium difficile* (*C.difficile*)
- *Escherichia coli* (*E.coli*)

Somerset is the lowest prescriber in the region for UTIs, but our admission rates are higher, particularly for pyelonephritis.

People of lower socioeconomic status in Somerset, and people in inclusion health groups (such as migrants, the homeless) are at more risk of nearly all of these infections, and some people will become co-infected. Most of these infections, however, are preventable, whether that's through vaccination programmes or Infection, Prevention and Control¹⁰.

Anti-Microbial Resistance was not covered in detail in this Health Needs Assessment, however, the above population groups are also the most affected by antibiotic resistance, and therefore, this reinforces the recommendation of this paper of a need for prevention of infection⁵. Focus should be on closing the ever-increasing health gap, and a strategic approach that prevents and controls diseases in those most at risk.

1 Scope/Purpose

Infectious diseases are caused by organisms such as bacteria, viruses, fungi or parasites. Since the Covid-19 pandemic there has been a resurgence in infectious diseases, such as flu, scarlet fever and norovirus. Less common infections, such as tuberculosis (TB) have also risen slightly, although they are still lower than they were in 2019¹¹. The economic burden of infectious disease in the UK is around £30 billion annually¹².

This Health Needs Assessment (HNA) will show the data we have available for the most common/relevant infectious diseases in Somerset and where there are gaps. Recommendations are made to reduce the burden or mitigate the impact of these diseases. About 7% of admissions to hospital in the UK have a primary infection diagnosis and at least one third of emergency admissions to hospital receive an antimicrobial therapy to treat an infection¹³. Armed with accurate data, Somerset can reduce this burden of disease through early and targeted interventions.

This HNA will feed into the Somerset Infection Prevention & Control Strategy and the Health Protection Board workplan, identifying what work should be prioritised and a focus on preventing Somerset residents from either contracting infections or entering hospital with infections in the first place.

In writing this HNA, it is noted that transmission of many infections was disturbed during mitigations put in place to control the pandemic of SARS CoV-19 and so rates of infection for 2020 and 2021 are difficult to interpret. Additionally, many routine data collection systems were put on hold during the pandemic, and this has resulted in gaps in data collection.

2 Background

2.1 Somerset Social Demographics

Somerset is a very rural county, with low levels of ethnic diversity, and pockets of deprivation, generally around more urban areas. Additionally, Somerset has an ageing population, with those 65 years and older equating to almost 25% of the population, compared to approximately 19% nationally.

The population of Somerset was 571,600 (2021), an increase of around 41,600 people since 2011. This is a rise of 7.8% since 2011 and a 36.9% rise in 40 years since 1981.

2.1.1 Age and Sex

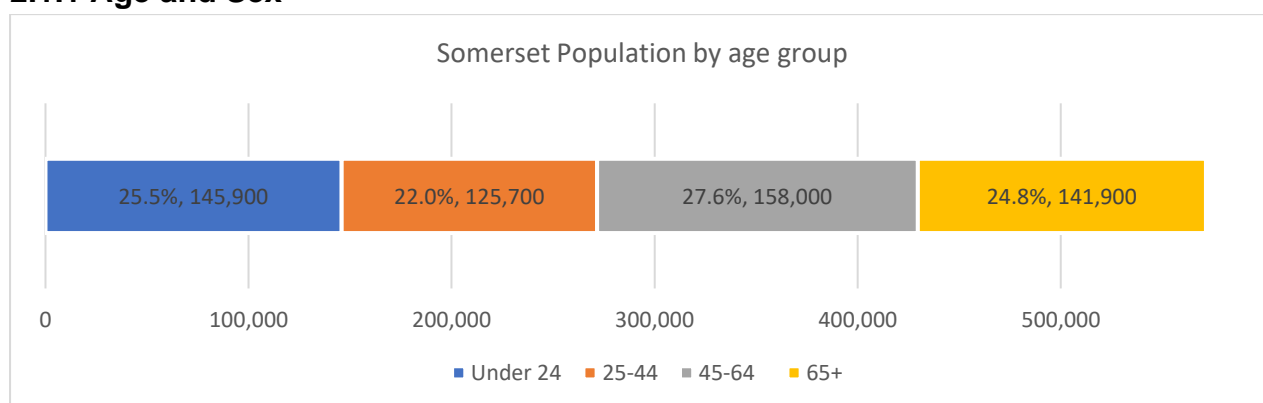


Figure 1 - Somerset populations by age. Total population 571,600. Source: Census 2021¹⁴ (Note: totals may not sum, due to rounding in dataset)

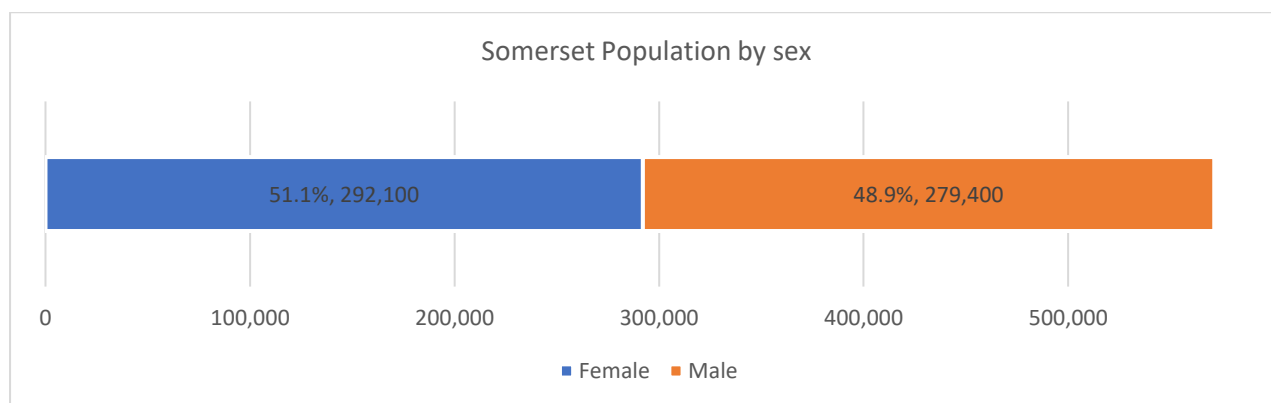


Figure 2 - Somerset populations by sex. Total population 571,600. Source: Census 2021 (Note: totals may not sum, due to rounding in dataset)

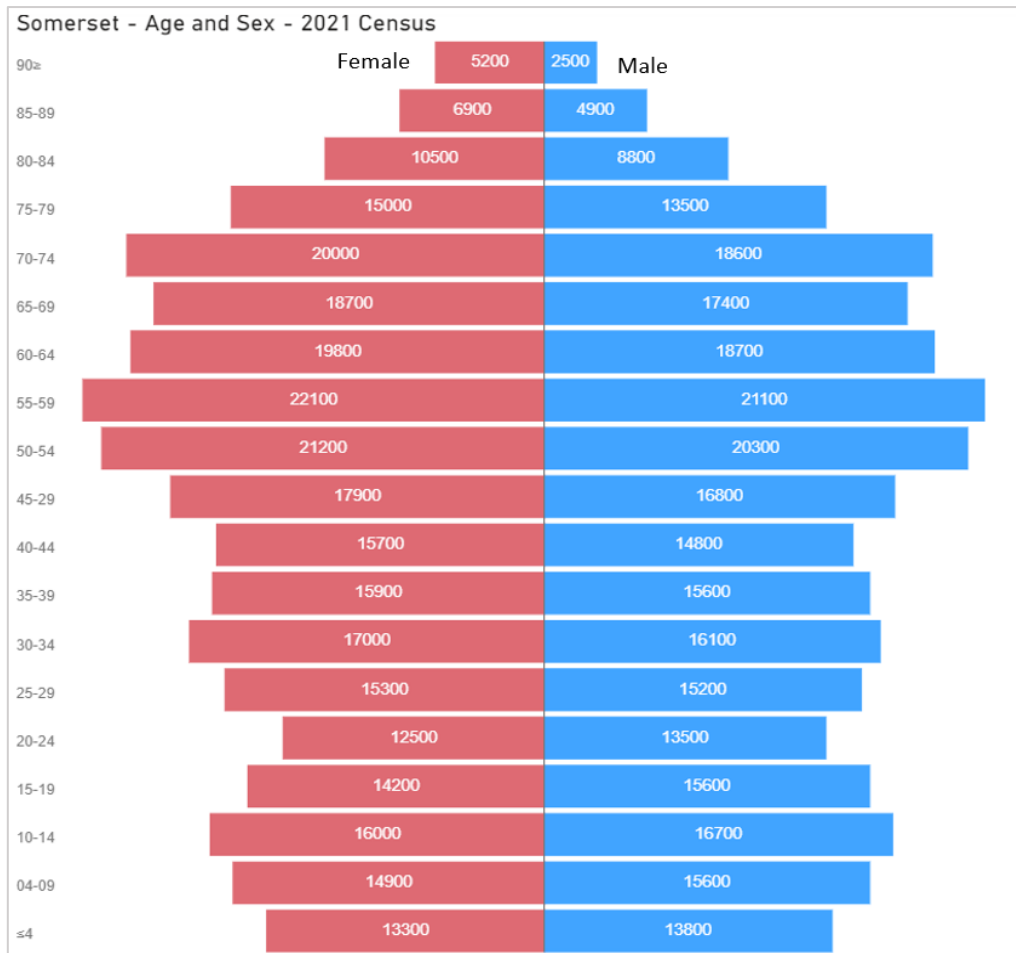


Figure 3 – 2021 population break down of Somerset by sex. Source: 2021 Census

The age bands with the highest population are 50-54 and 55-59. In 2021 84,700 people were in their 50s, accounting for nearly 15% of the total population.

2.1.2 Socioeconomic Status and Deprivation

47,806 people in Somerset live in one of the 20% most deprived areas in England, but 61,253 live in one of England’s 20% least deprived areas (This compares to 40,000 and 74,000 in IMD 2015). The Index of Multiple Deprivation (IMD), assesses 7 domains of deprivation, including: income, employment, education, health, crime, barriers to housing/services and living environment creating a rank and score; scores are calculated by taking the population weighted average of the combined scores for the neighbourhoods in a larger area. This measure also covers the whole area including both deprived and less-deprived neighbourhoods.

In Somerset 2019 IMD score was 18.6, compared to 21.7 nationally, and 19.6 in the South West (South) NHS region. Sedgemoor is the most deprived area of Somerset with an overall IMD rank of 121 out of 317. Nine Somerset LSOAs are amongst the most deprived 10% nationally; these are in parts of Taunton (3), Bridgwater (3), Yeovil (1), Highbridge (1), Glastonbury (1).

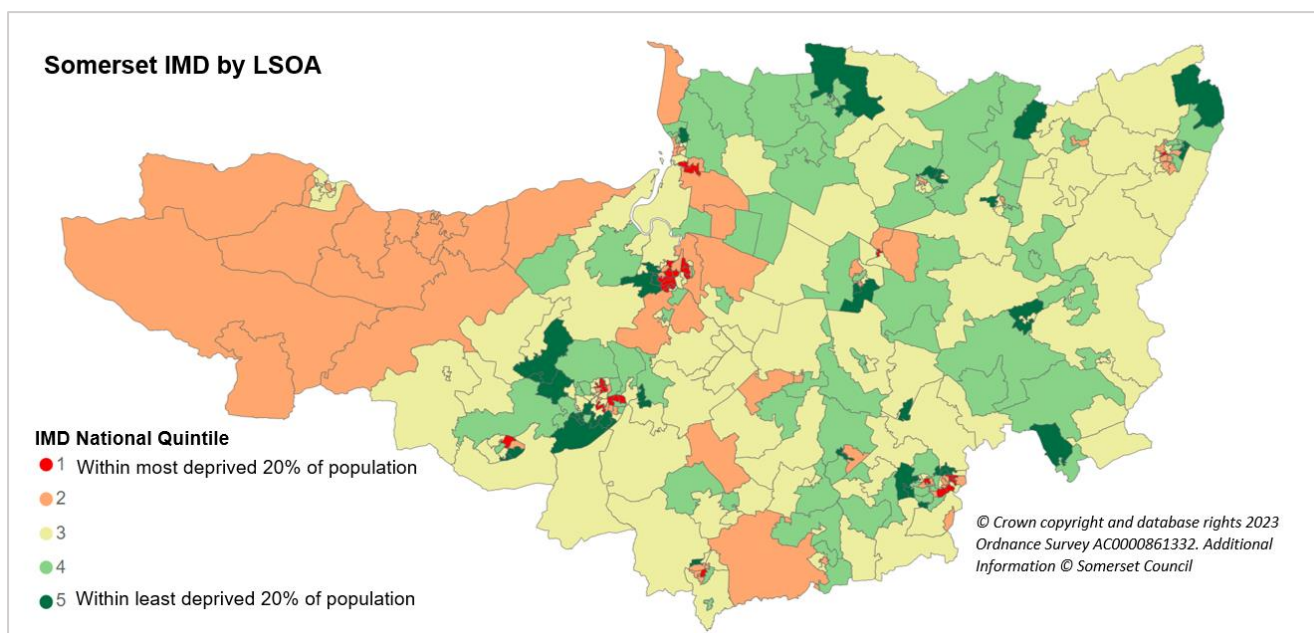


Figure 4 – IMD by LSOA in Somerset. Source: IMD 2019¹⁵

2.1.3 Sexual orientation

In Somerset, 89.9% of individuals identified as being Straight or Heterosexual. The next largest groups were Gay or Lesbian (1.2%), Bisexual (1.1%), and Pansexual (0.2%).

Approximately 12,000 Somerset residents selected a sexual orientation other than Straight or Heterosexual; around 1 in 45. 7.5% of the Somerset population did not respond to this question. Nationally, the proportion of people with a sexual orientation other than Straight or Heterosexual was slightly higher, at 3.2%; around 1 in 31 people (Census, 2021).

2.1.4 Ethnicity & Country of Birth

Somerset is less diverse than nationally, 96.4% of the population in Somerset are 'White', compared to 81.1% nationally. 1.5% are 'Asian, Asian British, or Asian Welsh'. 1.3% 'Mixed or Multiple Ethnic groups', 0.4% 'Black, Black British, Caribbean, or African', and 0.4% 'Other ethnic group' (Census, 2021).

The greatest relative change since 2011 comes amongst those from black ethnic groups, with the number of residents from those groups having more than doubled from 1,013 in 2011 to 2,436 in 2021. 91.5% of the Somerset population was born in the UK Poland is the most common non-UK county of birth for Somerset residents (1.3%), followed by Romania (0.75%). Since the previous census (2011) the number of Somerset residents born in Romania has seen the biggest percentage change, with an almost 4,000 population increase (from 377 in 2011).

2.1.5 Educational attainment

38.4% undergraduate degree or equivalent¹⁶, this is lower compared to nationally (43.6%) and regionally (42.0%) Jan 2021 – Dec 2021.

2.1.6 Employment

October 2021 – September 2022, 78.5% of the Somerset population was economically active. 76.1% in employment, 2.8% unemployed.

The unemployment rate is slightly higher than regionally (2.7%), but lower than nationally (3.7%)¹⁷. 64.0% of the Somerset population in employment were full-time, 35.1% part-time (2021).

3 Key Outcomes*:

3.1 Acute Respiratory Infection/Influenza like illness (ARIs/ILIs)

3.1.1 Introduction and Context

3.1.1.1 Flu

Influenza (flu) is a highly infectious viral illness spread by droplet infection. The flu vaccination is offered to people who are at greater risk of developing serious complications if they catch flu and workers in key professional groups. The seasonal influenza programme for England is set out in the Annual Flu Letter¹⁸. Seasonal influenza is characterized by a sudden onset of fever, cough (usually dry), headache, muscle and joint pain, severe malaise (feeling unwell), sore throat and a runny nose.

Many cases of human influenza are clinically diagnosed. However, during periods of low influenza activity and outside of epidemics situations, the infection of other respiratory viruses e.g., rhinovirus, respiratory syncytial virus, parainfluenza and adenovirus can also present as Influenza-like Illness (ILI) which makes the clinical differentiation of influenza from other pathogens difficult¹⁹.

In Somerset over the 12-week period of 13/11/22 – 05/02/23, there were 7 reported outbreaks of influenza in all settings²⁰. Rates of hospital admissions because of flu were very high in 2022-23; see figure below for comparison to previous years (although data and immunity were affected by the Covid-19 pandemic).

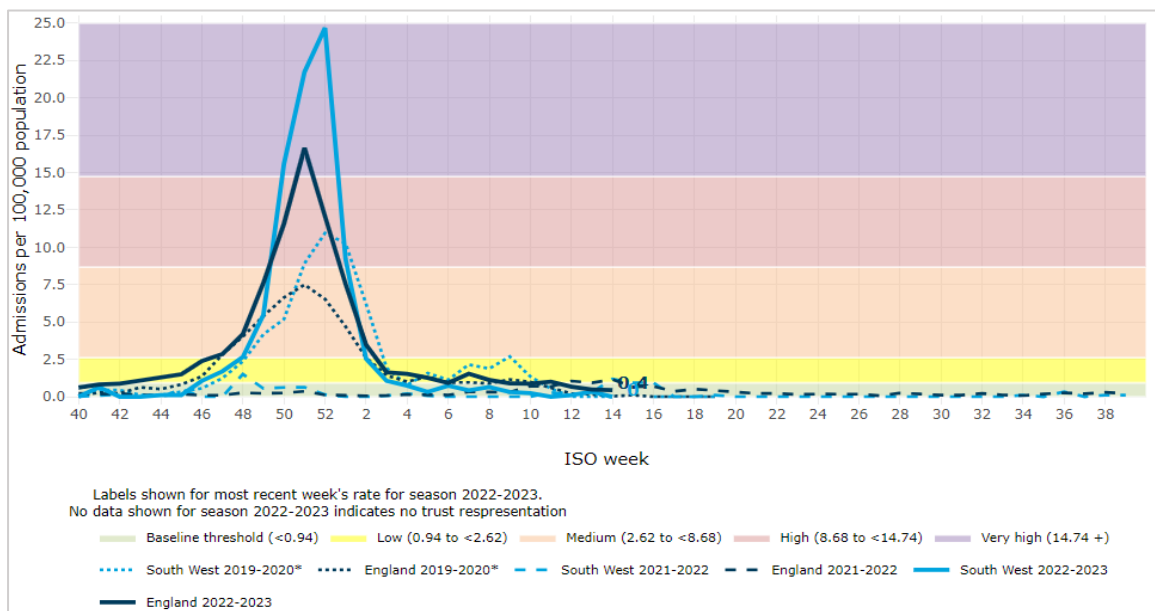


Figure 5 - Hospital admissions with confirmed influenza with MEM thresholds – SARI Watch (Sentinel Surveillance) (note rates in some regions may not include all influenza surveillance sentinel sites from week to week.)

* Much surveillance was stood down or impacted by the Covid-19 pandemic, and patterns of infectious disease were significantly impacted. Much of the data in this HNA is from 2018 for this reason.

3.1.1.2 Covid

Covid - 19 is an infectious respiratory disease caused by the SARS-CoV-2 Virus. Transmission occurs predominantly through droplets and small air borne particles, with transmission more likely to occur in close proximity of an infected individual. Symptoms of Covid can include: a new continuous cough, headache, sore throat, aching, shortness of breath, loss of appetite. Formal diagnosis is through a PCR or lateral flow test, however in the UK most free testing has been removed. Most individuals recover without treatment; illness severity from most Covid-19 strains is reduced if someone has been vaccinated, but some will become seriously ill and require medical attention.

In the 12-week period (13/11/22 – 05/02/23), across all situations there were 80 reported outbreaks of Covid-19. This is a 35% decrease compared to the 4-week average from the previous 12 weeks. In this period, 79 were in care settings.

Across the whole pandemic there have been 177,639 cases throughout Somerset: a rate of 31,504.6 per 100,000. Not all cases will be counted as not all will have been tested and reported.

The total number of Covid-19 patients admitted to hospital reported up to 17th Apr 2023 was 5,770. Additionally, the total number of people who died within 28 days of being identified as a Covid-19 case by a positive test since the start of the pandemic in Somerset is 1,591 (a rate of 282.2 per 100,000 population)²¹.

In Somerset 465,908 individuals have had the 1st dose of the Covid-19 vaccination, which is 86.6% of the population. Additionally, 83.6% (449,759) have has a 2nd dose, with 70.5% (379,001) having had their 3rd or booster dose in the aged 12+ population.

3.1.1.3 Other ARVs

RSV usually causes a mild illness, similar to the common cold. It can also cause lung infections in children and is the most common cause of hospitalisation in younger children. In 2022/23, Respiratory Syncytial Virus (RSV) rates increased. This could be due to lack of RSV circulating during restrictions in the pandemic, leading to reduced immunity, or more testing for RSV happening in hospitals²².

Table 1 – Somerset - Reported cases of influenza and other respiratory viruses in the last four weeks (Weeks 10-14, 2023) by UTLA – Second Generation Surveillance System (SGSS)

	Adenovirus	hMPV	Influenza A	Influenza B	Parainfluenza	RSV	Rhinovirus	SARS- CoV-2
Reported Cases	6	6	<5	14	<5	8	8	1104

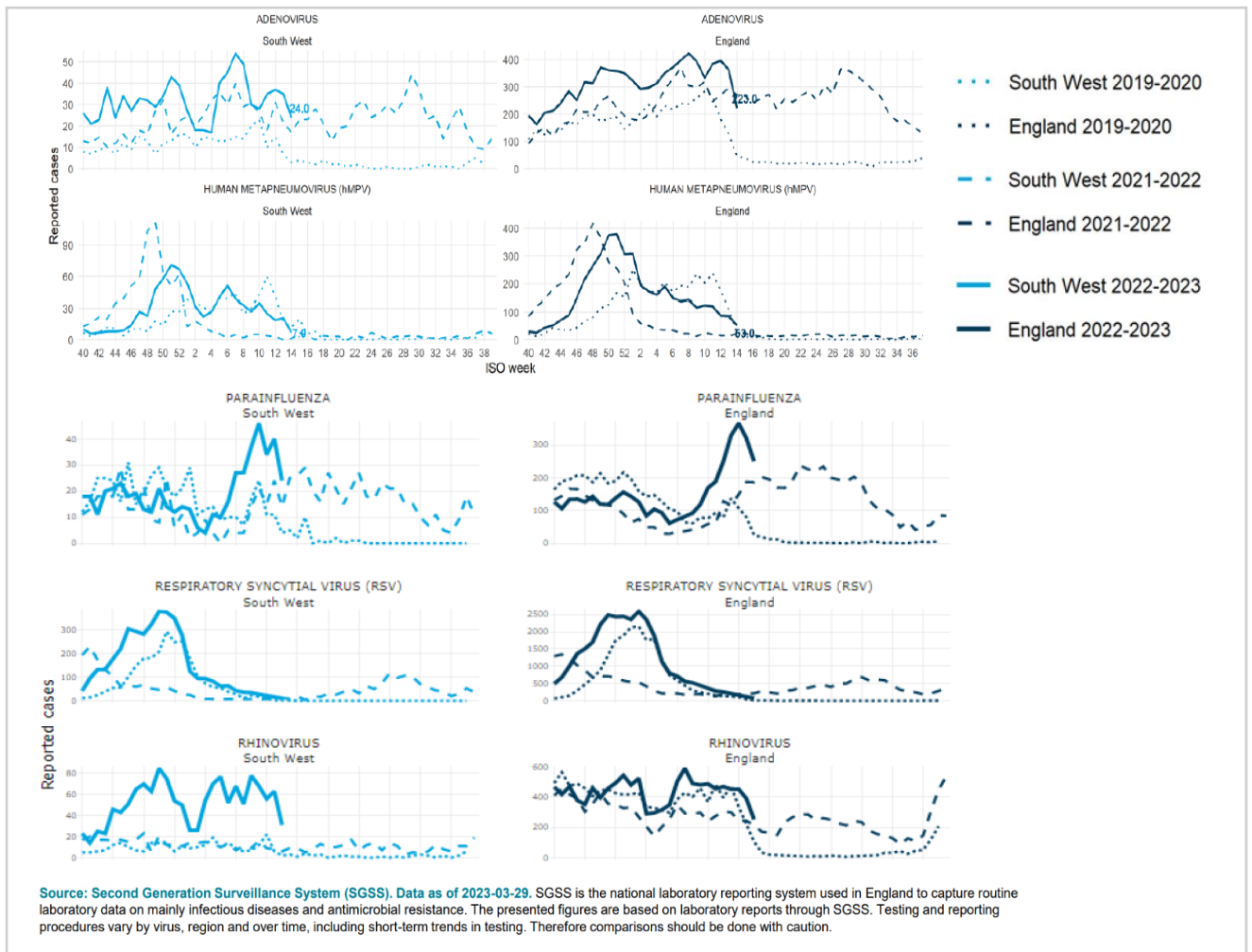


Figure 6 – Other ARV: Reported cases – Adenovirus, hMPV, RSV, and Rhinovirus, week 12 2023.

Recommendation: Vaccination for influenza and Covid-19 significantly reduces the impact of these infections on the severity of the infection and also at a population level reducing transmission – vaccination for flu and Covid-19 must be prioritised to ‘at risk’ populations and to health and care staff

3.1.2 Acute Respiratory Infection/Influenza like illness: Risk Factors and At risk groups

3.1.2.1 Smoking

Smoking is one of the main risk factors for infections in the respiratory tract. For example, smokers incur a 2- to 4-fold increased risk of invasive pneumococcal disease. Smoking cessation can reduce the risk of infection. 15.8% adults (15+) are current smokers in Somerset, which is higher than the national figure (15.4%), and regional average (15.1%) (2021/22)²³. Furthermore, the rate of smoking (per 100k smokers) has increased from 1380 (2018/19) to 1657 (2019/20), while in England and many other counties in the SW, it has reduced. Some individuals are more at risk of

serious infection, such as older individuals, or individuals with pre-existing medical condition, such as CVD, diabetes, and chronic respiratory illness.

Recommendation: target stop smoking activities to those with chronic health conditions and those being admitted to hospital as a result of ARVs

3.1.2.2 At Risk Groups

People at greater risk of severe disease or complications when infected with flu are: pregnant people, children under 59 months, the elderly, individuals with chronic medical conditions (such as chronic cardiac, pulmonary, renal, metabolic, neurodevelopmental, liver or hematologic diseases) and individuals with immunosuppressive conditions (such as HIV/AIDS, receiving chemotherapy or steroids, or malignancy). People in these risk groups should be offered the free flu vaccine. Table 2 shows the mortality rate from flu for various at-risk groups, noting that 40% of deaths recorded as flu deaths were not among those individuals who would be identified as in an 'at risk groups.

Table 2 - Influenza-related population mortality rates and relative risk of death among those aged 6 months to under 65 years by clinical risk group in England, September 2010 to May 2011.

	Number of fatal flu cases (%)	Mortality rate per 100,000 population	Age-adjusted relative risk*
In a risk group	213 (59.8)	4.0	11.3 (9.1-14.0)
Not in any risk group	143 (40.2)	0.4	Baseline
Chronic renal disease	19 (5.3)	4.8	18.5 (11.5-29.7)
Chronic heart disease	32 (9.0)	3.7	10.7 (7.3-15.7)
Chronic respiratory disease	59 (16.6)	2.4	7.4 (5.5-10.0)
Chronic liver disease	32 (9.0)	15.8	48.2 (32.8-70.6)
Diabetes	26 (7.3)	2.2	5.8 (3.8-8.9)
Immunosuppression	71 (19.9)	20.0	47.3 (35.5-63.1)
Chronic neurological disease (excluding stroke/transient ischaemic attack)	42 (11.8)	14.7	40.4 (28.7-56.8)
Total (including 22 cases with no information on clinical risk factors)	378	0.8	

Health and care workers are at high risk acquiring influenza virus infection due to increased exposure to the patients and risk further spread particularly to vulnerable individuals²⁴. In Somerset there are approximately 44,000 health and social care workers.

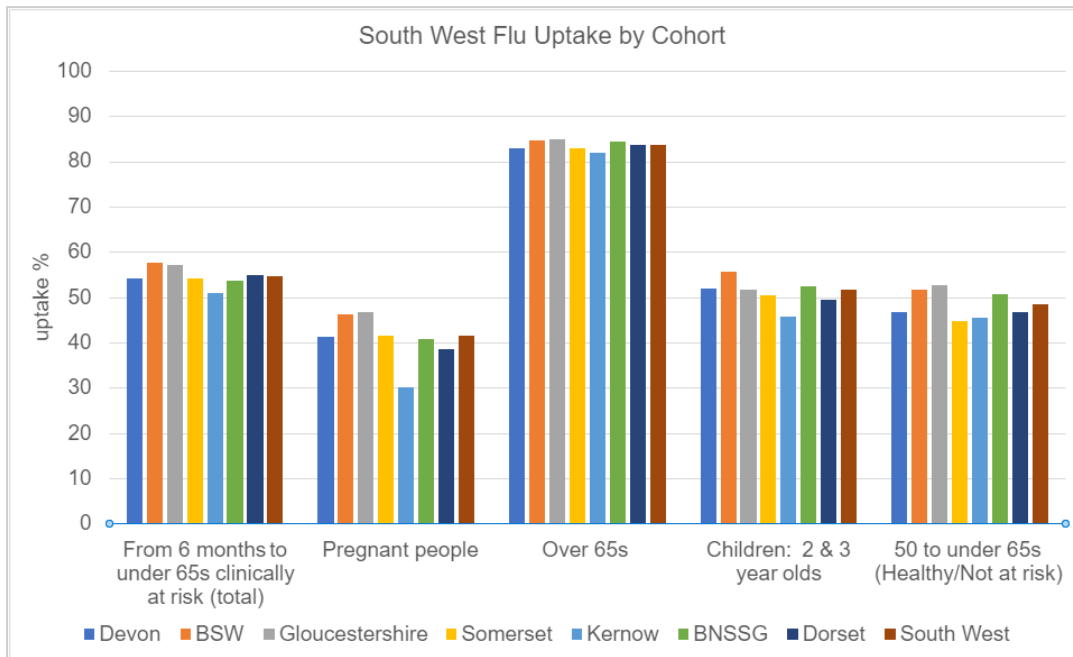


Figure 7 - Overall South West Flu Vaccine Uptake by priority cohorts (Activity to end of Feb)²⁵. There are differences in uptake across the systems – mainly seen in cohorts: Pregnant people, 2–3-year-olds, Healthy 50-65 year olds. Highest uptake is seen in the over 65 cohort.

Population flu vaccine coverage - 65+

Flu vaccinations in the over 65 population in Somerset has shown a trend since 2019/20 of increasing uptake. Somerset has 84.7% (2021/22) coverage which is higher than the goal of 75%. Somerset when compared to nationally (82.3%) is significantly better but compared to regional averages (85.3%) is significantly worse²⁶. As of February 2023, there is 83% flu vaccination coverage in the 65+ population²⁷.

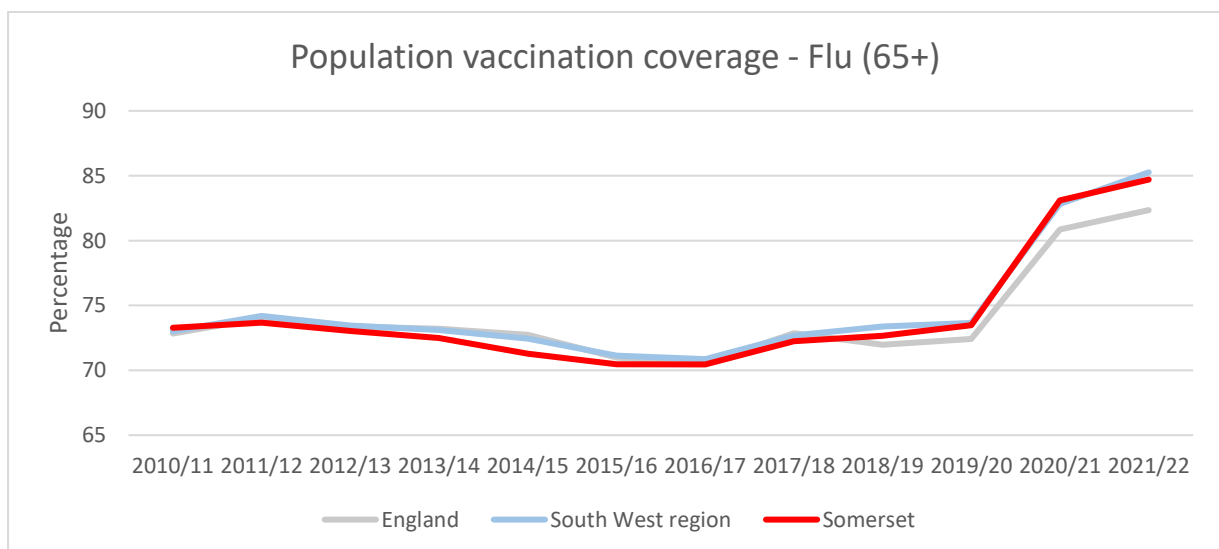


Figure 8 – Source: [Vaccine uptake guidance and the latest coverage data - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/vaccine-uptake-guidance-and-the-latest-coverage-data)

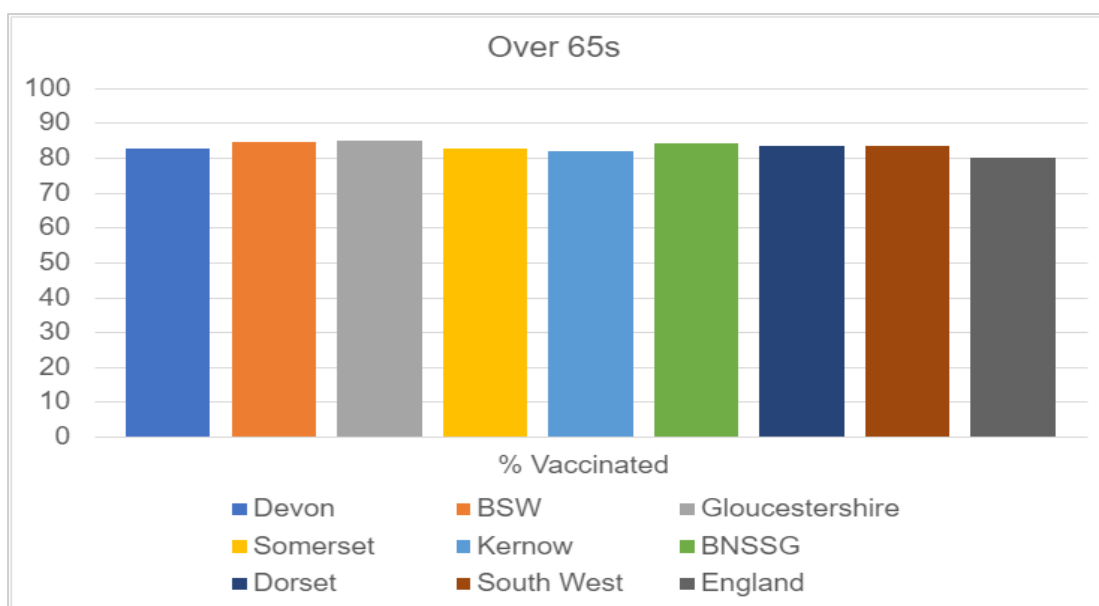


Figure 9 - South West Flu Vaccination percentage coverage, over 65. Flu Season 22/23. This cohort had the lowest variance of uptake across the South West systems, with a range of 3%

LA	GP Patients					School Children
	65 and over	Under 65 (at-risk only)	Pregnant	All 2 year olds (combined)	All 3 year olds (combined)	All primary school age (age 4 to 11 years old)
England	79.9%	49.1%	35.0%	42.3%	45.1%	55.9%
South West	83.6%	55%	42%	50.9%	52.9%	60.7%
Somerset	82.8%	54.1%	41.5%	48.0%	60.1%	63.5%

Figure 10 - Vaccination uptake – Influenza Vaccine Uptake Monitoring Programme - from 1 September 2022 to 31 February 2023 for GP patients and frontline healthcare workers and from 1 September 2022 to 31 January 2023 for school children

For the South West Commissioning Region, the vaccine uptake for frontline healthcare workers is 54.3%. For England the vaccine uptake for frontline healthcare workers is 49.9%. In 2022-23 this rate was lower than previous years.

Recommendation: target communications for frontline healthcare workers to encourage and increase flu vaccine uptake and ensure barriers to accessing vaccination are removed wherever possible.

In Somerset there has also been a recent trend of increasing flu vaccine uptake since 2019/20, in the at-risk population (under 65, excluding pregnant people), with uptake being better than the goal of over 55% at 58.4% (2021/22). Compared to nationally (52.9%) this is significantly better, and it is similar to regionally (58.2%)²⁸. As of February 2023, there is 54% flu vaccination coverage (in Somerset) of individuals under 65 - in an at risk category; this does not reach the target of 65% coverage²⁹.

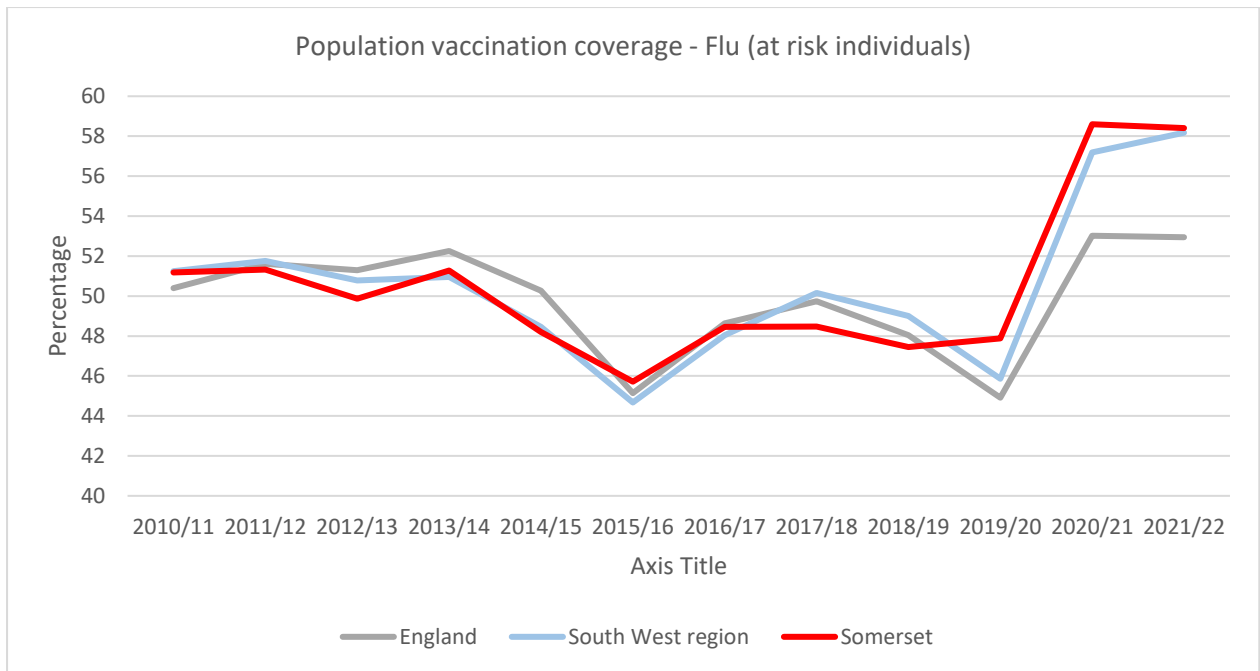


Figure 11 – Population vaccination coverage – Flu – at risk individuals Denominator of 86,480 in Somerset (2021/22). Source: [Vaccine uptake guidance and the latest coverage data - GOV.UK \(www.gov.uk\)](http://www.gov.uk)³⁰

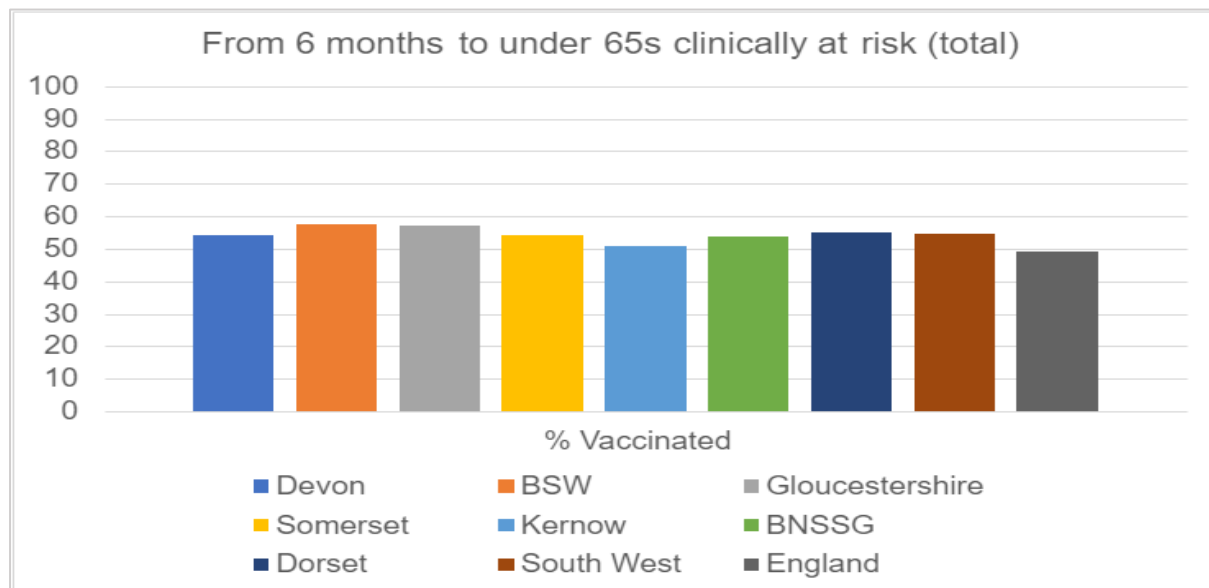


Figure 12 – South West Flu Vaccination percentage coverage, under 65 clinically at risk. Flu Season 22/23. Uptake across systems is largely similar, with all higher than England average (49.1%).

Children – 2-3 years and Primary school

Primary school aged children in Somerset have a flu vaccination coverage of 64.5% (2021), this is significantly higher than nationally (57.4%) and regionally (56.8%). Children aged 2-3 flu vaccination in Somerset is 55.5% (2021/22), this is significantly higher than nationally (50.1%), but significantly worse than regionally (56.8%) – there is a trend of increasing uptake.

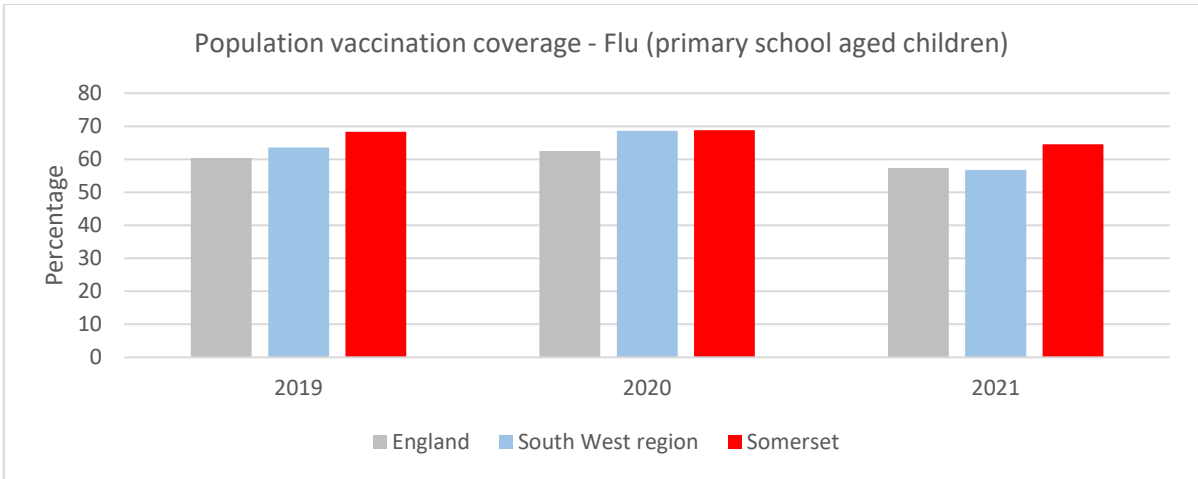


Figure 13 – Population vaccination coverage – Flu – Primary aged children. Source: [Vaccine uptake guidance and the latest coverage data - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/vaccine-uptake-guidance-and-the-latest-coverage-data)³¹

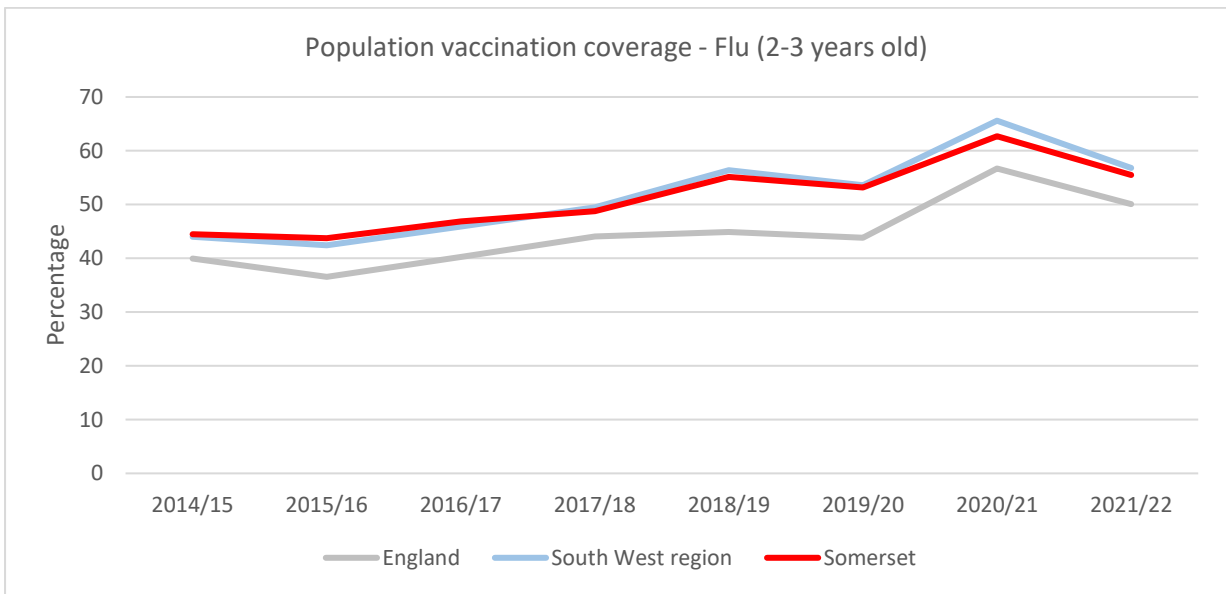


Figure 14 – Population vaccination coverage – Flu – Aged 2-3. Source: [Vaccine uptake guidance and the latest coverage data - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/vaccine-uptake-guidance-and-the-latest-coverage-data)³²

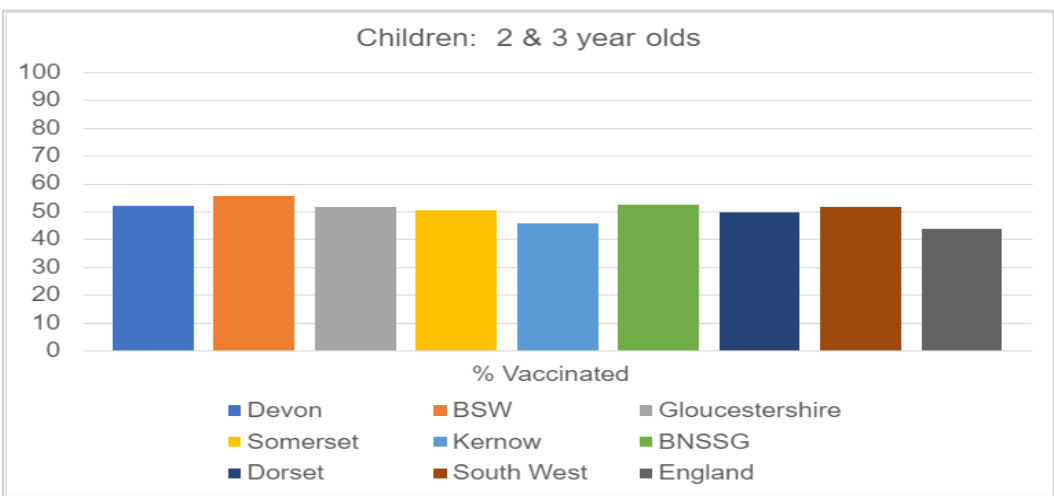


Figure 15 - South West Flu Vaccination percentage coverage, children – 2- & 3-year-olds. Flu Season 22/23. All in South West achieved higher uptake than the England average of 43.7%

3.1.3 Acute Respiratory Infection/Influenza like illness Policies

On notification of an infectious disease case and or outbreak to UKHSA, the Health Protection teams conduct a risk assessment, implement control measures to prevent further spread, develop evidence-based guidance, recommend treatment and testing, provide training education³³ and communicate this risk to any affected populations. There are no current Covid-19 restrictions in the UK. It is advised that if you have Covid-19 you should stay at home.

Relevant NICE Guidelines:

- [Overview | Flu vaccination: increasing uptake | Guidance | NICE](#)
- [Overview | Flu vaccination: increasing uptake | Quality standards | NICE](#)
- [Overview | COVID-19 rapid guideline: managing COVID-19 | Guidance | NICE](#)
- [Overview | COVID-19 rapid guideline: managing the long-term effects of COVID-19 | Guidance | NICE](#)

3.2 Tuberculosis (TB)

3.2.1 Introduction and Context

Tuberculosis (TB) is a bacterial infection spread through inhaling tiny droplets from coughs/sneezes on an infected person. The lungs are mainly affected, but any part of the body including the abdomen, glands, bones, and nervous system can be impacted. TB can potentially be serious but can be cured if treated with the right antibiotics. Symptoms can include: persistent cough, weight loss, night sweats, fatigue, swelling in the neck, high temperature.

Although the prevalence of infectious diseases in the UK has reduced dramatically over the last century, there has been a resurgence of “old diseases”, such as TB and measles. Progress towards TB elimination has however stalled, with low incidence in England continuing, but the decline in rates has levelled off³⁴. The data shows that in Somerset the incidence of TB has increased slightly over the last 5 years, with an incidence rate of 2.4 per 100,000 (2019-2021) as compared to 1.3 (2015-2017)³⁵: The rate in Somerset is lower than nationally and regionally (figure 16).

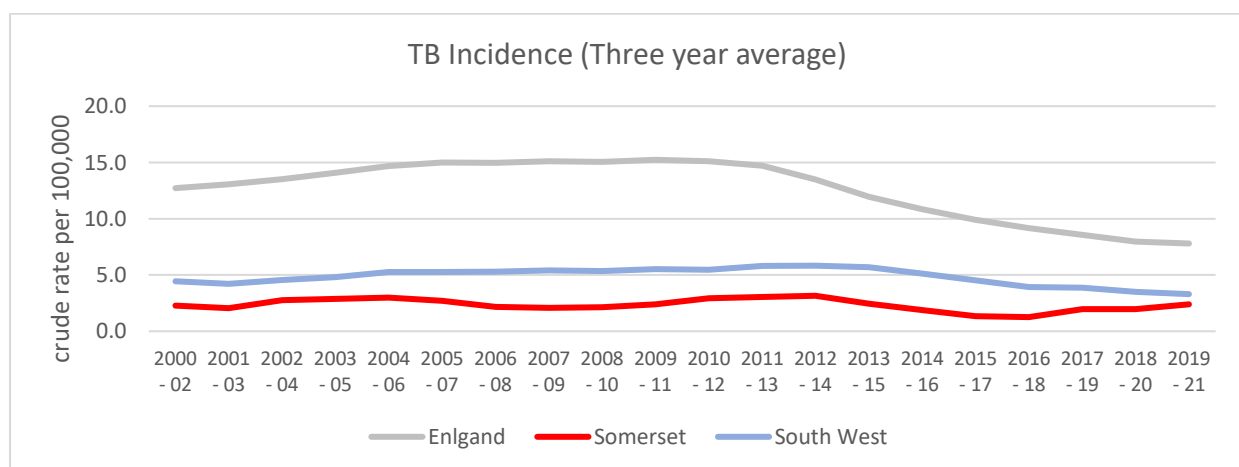


Figure 16 – TB Incidence (three-year average), crude rate per 100,000 (Somerset, South-west, and England). Source: OHID fingertips

In Somerset April 2022/23, there were 15 TB cases³⁶. Additionally, there were <5 cases of multi-drug resistant TB (MDRTB) in Somerset in 2022³⁷.

The BCG vaccine offers limited protection against TB and is recommended for babies, children, and adults under the age of 35 who are considered at risk of catching TB, due to connections with high incidence countries. In 2021/22, there were 275 children in Somerset who received a dose of BCG at any time by their first birthday³⁸.

There is no data presented for Somerset for the measure of 'Proportion of pulmonary TB cases starting treatment within 4 months of symptom onset'³⁹.

3.2.2 TB at risk population & risk factors

TB is more common in people born abroad, with highest rates in people from Asia and sub-Saharan Africa⁴⁰. People born in Eastern Europe also have a higher rate of MDR-TB⁴¹. Somerset is a low incidence area for TB; however the county is seeing a change in demographic, with many migrants from high incidence countries coming to fill job vacancies in care homes, the NHS, farm work and factories⁴². As the demographic of Somerset changes, there is a risk of the TB rate increasing. Additionally, homeless population, people who use drugs, and prison population are at greater risk of TB infection and social risk factors of treatment non-adherence are high in these groups. Treatment non-adherence can lead to MDR-TB, which is difficult and expensive to treat and can result in serious morbidity and mortality, and increased transmission risk⁴³. TB disproportionately impacts disproportionately impacts certain people due to barriers to access to diagnostic and treatment services; ability to self-administer treatment and attendance at follow-ups⁴⁴. Somerset ICB have written a business case for a TB service to reduce the burden of disease on the county and it was approved in 2023.

3.2.3 TB Policies

TB action plan 2021-2026. The aim is to improve the prevention, detection, and control of TB in England. The Action Plan focuses on the needs of those affected by TB and TB services whilst recognising the impact and learning of the Covid-19 pandemic. The TB Action Plan supports a year-on-year reduction in TB incidence and in-UK TB transmission and enable the UK to meet its commitment to the World Health Organization (WHO) elimination targets by 2035⁴⁵.

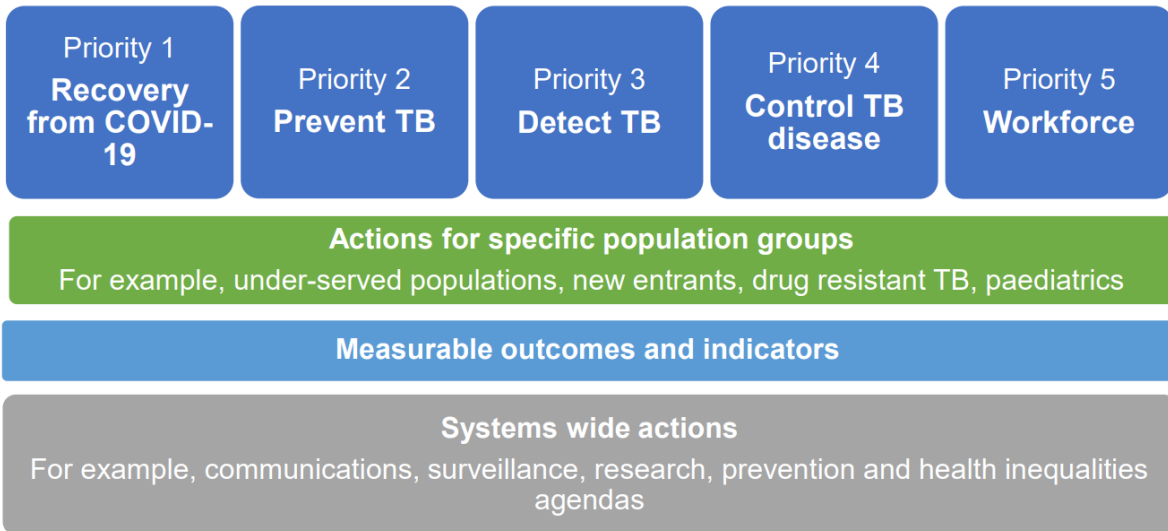


Figure 17 – Priorities for the TB Action Plan for England, 2021 – 2026 (Summary) Source: TB Action Plan

Relevant NICE Guidance:

- [Overview | Tuberculosis | Guidance | NICE](#)

3.3 Vaccine Preventable Diseases

3.3.1 Introduction and Context

The figure below shows a summary of childhood vaccination coverage in Somerset.

Summary of latest period (2022-23 Q3)

Area	12m				24m					5yr				
	DTaPI..	MenB	PCV	Rota	DTaPI..	HibMe..	MenB_..	MMR1	PCV_..	DTaPI..	DTaPI..	HibMe..	MMR1	MMR2..
NHS BATH AND NO..	95.2%	94.8%	95.2%	92.1%	96.6%	94.8%	94.3%	95.0%	94.5%	90.9%	96.2%	94.9%	96.0%	91.6%
NHS BRISTOL, NOR..	94.5%	94.3%	95.7%	91.1%	95.5%	92.2%	91.2%	91.9%	92.0%	87.0%	95.2%	93.0%	94.0%	88.3%
NHS CORNWALL A..	93.2%	93.3%	94.9%	89.9%	95.6%	91.3%	90.7%	91.4%	91.4%	86.2%	96.3%	94.1%	94.5%	89.2%
NHS DEVON INTEG..	96.3%	95.9%	97.4%	93.3%	96.2%	94.2%	93.3%	94.2%	94.2%	90.5%	96.4%	95.3%	95.9%	92.0%
NHS DORSET INTE..	94.5%	94.2%	95.7%	91.8%	94.9%	92.6%	92.1%	92.2%	92.5%	88.9%	95.5%	93.4%	95.7%	90.9%
NHS GLOUCESTER..	94.8%	94.7%	95.2%	92.2%	94.2%	92.8%	91.9%	93.1%	93.1%	90.2%	95.3%	93.8%	94.8%	90.4%
NHS SOMERSET IN..	93.4%	93.0%	95.0%	89.2%	95.9%	92.9%	92.0%	92.6%	92.6%	88.7%	96.2%	95.3%	95.9%	92.2%

Figure 18 - Childhood vaccinations – Source: COVER quarterly data future.nhs.uk (extracted 19/04/23)

3.3.1.1 Hib⁴⁶

Haemophilus influenzae type b (Hib) is a bacterial infection that can cause serious illness, especially in young children. Routine immunisations are given to babies in the UK, meaning infections are now rare. Most cases impact adults with long-term underlying medical conditions. Hib bacteria can cause infections including: meningitis,

sepsis, pneumonia, cellulitis, osteomyelitis. Hib is spread in a similar way to cold and flu viruses.

The combined DTaP IPV Hib is the first in a course of vaccines offered to babies to protect them against diphtheria, pertussis (whooping cough), tetanus, Haemophilus influenzae type b (an important cause of childhood meningitis and pneumonia) and polio (IPV is inactivated polio vaccine). In Somerset there is no significant change with population vaccination coverage (1 year old) being 94.3%, this is better than nationally (91.8%), but similar to regionally (94.8%) (2021/22)⁴⁷. For 2-year-olds, population vaccination coverage is 95.8%, which is similar to regionally (95.7%) and better than nationally (93.0%). In Somerset there is however a trend of vaccination coverage decreasing based on the most recent 5 years. Benchmarked against the goal of 95% coverage, this is met in the 2-year-old population coverage, but not in the 1 years old.

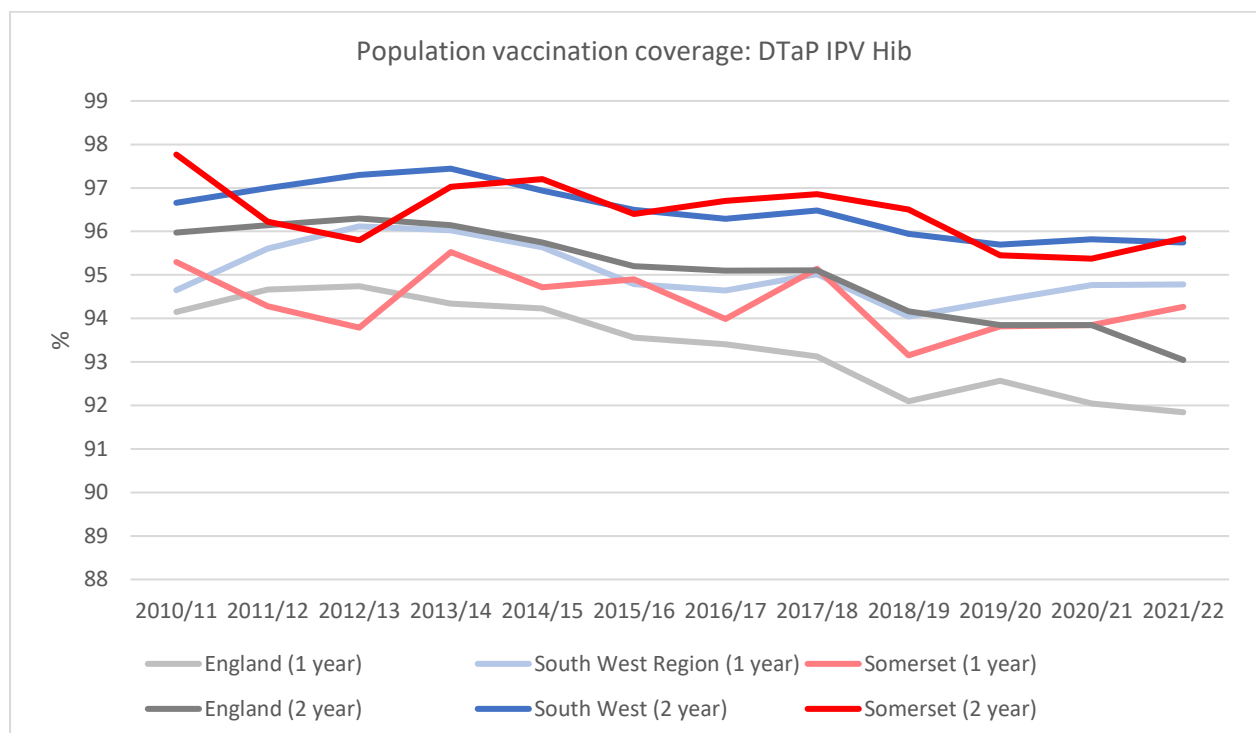


Figure 19 – Population Vaccination coverage: DTaP IPV Hib, 1 and 2 years. Source: OHID fingertips

The Hib and MenC booster increase the protection a child gets from the first course of Hib vaccine when they are 8, 12 and 16 weeks old, and the MenC vaccine when they are 12 and 16 weeks. This boosted immunity lasts into adulthood. Vaccination coverage is the best indicator of the level of protection a population will have against vaccine preventable communicable diseases, with coverage correlating with levels of disease. In Somerset population vaccination coverage for Hib and MenC booster at 24 months is 93.2%. This is better than nationally (89.0%), and similar to regionally (93.2%) (2021/22). For boosters at 5 years old, population vaccination coverage is 94.8% in Somerset, this is also better than nationally (91.7%) and similar to regionally (94.6%) (2021/22)⁴⁸. When benchmarked against the goal of 95% this is not met by either group in Somerset.

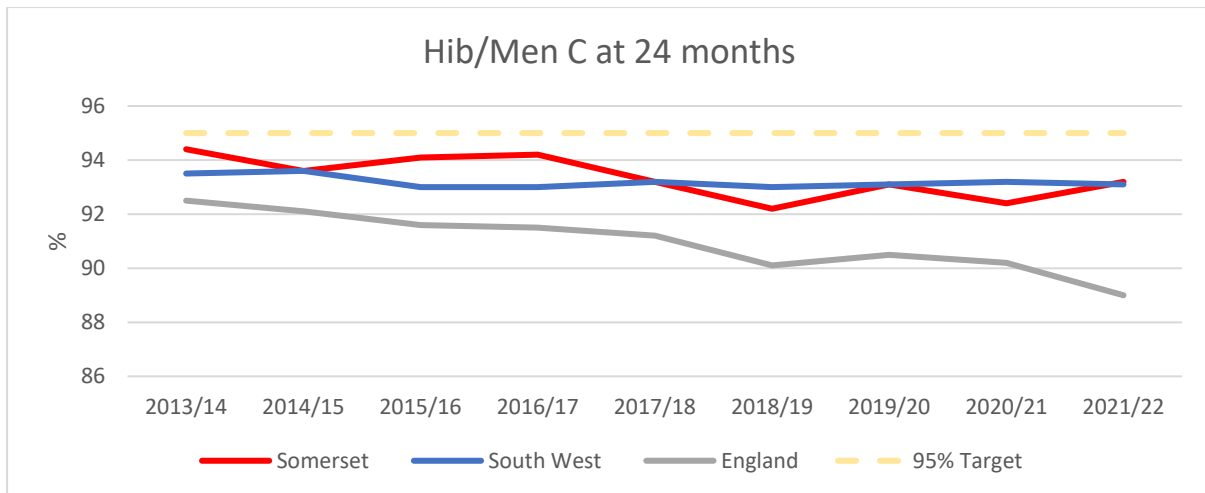


Figure 20 – Trends of Hib/Men C vaccination at 24 months, with the 95% target. Source: NHS Digital

3.3.1.2 HPV

Human papillomavirus (HPV)⁴⁹ has over 100 different types. Some types cause genital warts and cervical cancer, but there are usually no symptoms.

The HPV immunisation programme was introduced in 2008 for female ages 12-13 (year 8) to protect them against the main causes of cervical cancer. A two-dose vaccination programme has been in place since September 2014. The first dose is offered to females aged 12-13, and the second 12 months later in Year 9. As of September 2019, 12- to 13-year-old males became eligible for HPV immunisation alongside females, based on JCVI advice. Population vaccination coverage targets for HPV vaccine are 90%. 2021/22 population vaccination coverage of one dose of HPV (females 12-13) has a worsening trend in Somerset with 68.1% coverage. This is worse to nationally (69.6%), and regionally (68.5%). HPV vaccination coverage (2 doses – 13–14-year-old, females), in Somerset, 73.1%, which is better than nationally (67.3%) and regionally (61.6%). In Somerset this is significantly improved from 24.1% coverage in 2020/21. This reduction in coverage was largely as it is a vaccination that is delivered through the school-based immunisation teams, whose access to children was reduced when schools were closed in 2020 and 2021, due to Covid-19 pandemic lockdowns. Distribution of the Covid vaccine in schools also affected the HPV vaccination programme. Additionally, population vaccination coverage for 1 HPV dose (12–13-year-old, male) is 56.9% (worse than nationally – 62.4% and regionally – 58.6%)⁵⁰.

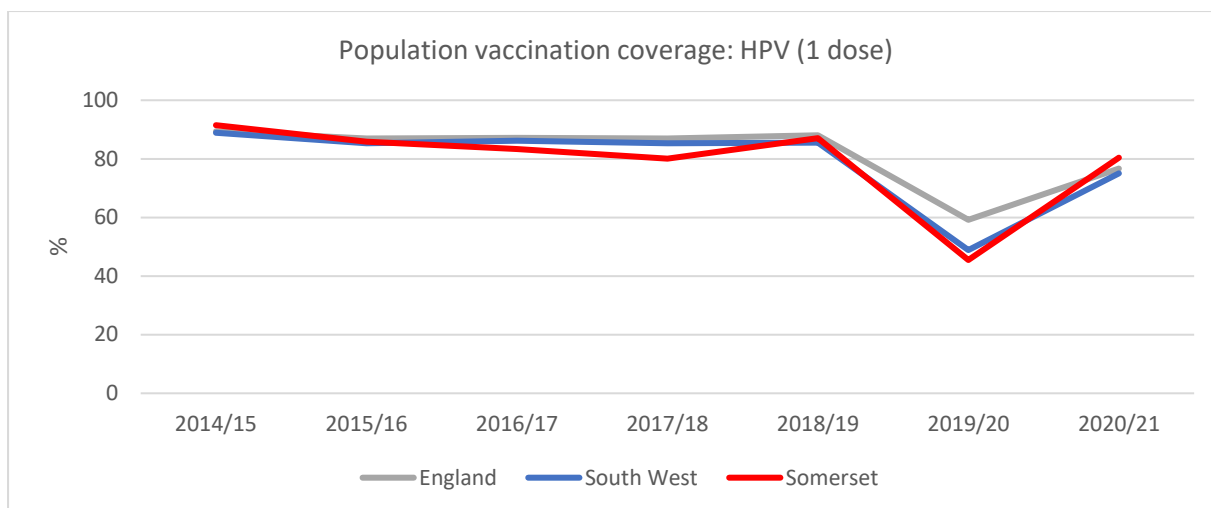


Figure 21 – Trends of population vaccination coverage: HPV (1 dose). Source: OHID fingertips

3.3.1.3 MMR - Measles, mumps, rubella

Measles⁵¹ is an infection that spreads easily and can cause serious illness. Symptoms are usually cold-like initially followed by a rash (some people may also get small spots in their mouth). Measles is spread when an infected person coughs or sneezes. Measles can lead to pneumonia, meningitis, blindness and seizures. Severe complications are rare, but some individuals are at a higher risk, including babies, and individuals with weakened immune systems. Measles in pregnancy can cause miscarriage, premature birth and low birthweights.

Mumps⁵² is a viral infection, most recognisable by painful swellings in the side of the face (parotid glands), other symptoms may include headaches, joint pain, and high temperature. Mumps usually passes without causing serious damage to a person's health. Serious complications are rare. But mumps can lead to viral meningitis if the virus moves into the outer layer of the brain. Other complications include swelling of the testicles or ovaries (if the affected person has gone through puberty).

Rubella⁵³ (also known as German measles), is a mild disease caused by togavirus. Transmission is through direct contact with an infected person or droplet spread. Rubella can cause serious complications for pregnant people and their unborn baby. Symptoms of rubella include: transient red rash, swollen lymph glands around the ears and back of the head, occasionally arthritis, and arthralgia in adults. Rubella is a notifiable disease in England and Wales.

MMR Vaccination⁵⁴:

In Somerset 95.7% of 5-year-olds have had one dose of the MMR vaccine, meeting the 95% vaccination coverage target (2021/22). This significantly better than nationally (93.4%) and similar to regionally (95.4%). Additionally, 91.2% of the Somerset population (aged 5) have had 2 doses of the MMR vaccine, this is significantly better

than nationally (85.7%), and similar to regionally (90.6%), but in Somerset does not meet the 95% vaccination coverage target (2021/22). As of March 2023, MMR 1 coverage (at 24 months) was at 93%⁵⁵, and the percentage vaccinated aged 60 months (5 years) was 88.9%.

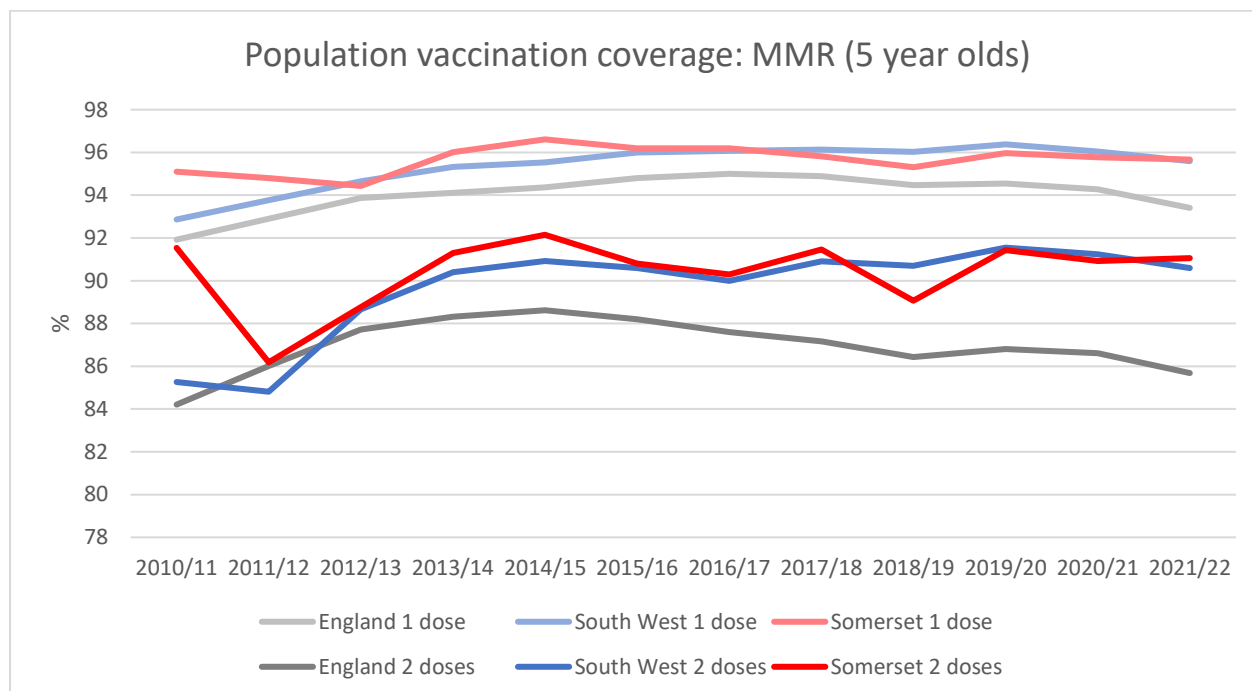


Figure 22 – Trends, population vaccination coverage: MMR (5-year-olds). Source: OHID fingertips

Information:

Data source - ImmForm (Early Childhood Baseline Data Collection)
Data for May 2022 has not been included whilst data quality is investigated.

Somerset Total	Month	Financial Year	FY Quarter	% Aged 60 Months Vaccinated with Two Doses of MMR	% Aged 60 Months Vaccinated with DTaP/IPV Booster
Total	April	2022/2023	Q1	87.7	87.5
Total	June	2022/2023	Q1	87	11.4
Total	July	2022/2023	Q2	86.2	73.3
Total	August	2022/2023	Q2	91.3	79.3
Total	September	2022/2023	Q2	93.4	84.3
Total	October	2022/2023	Q3	92.2	81.6
Total	November	2022/2023	Q3	88.8	78.4
Total	December	2022/2023	Q3	90	79.8
Total	January	2022/2023	Q4	89.3	81.1
Total	February	2022/2023	Q4	91.2	81.1
Total	March	2022/2023	Q4	88.9	77.7

Figure 23 – Childhood Immunisations MMR and DTaP/IPV Booster – Monthly Somerset Averages. Source: ImmForm

Measles incidence in Somerset was 0 per 100,000 (2021), with the 5-year incidence rate in Somerset being 0.1 per 100,000 (count of <5) (2017-2021)⁵⁶. The 5-year incidence of mumps (2012-2016), in Somerset was 1.2 per 100,000 (count of 33), the one-year incidence rate (2018) was 0.9 per 100,000 (count of 5). In Somerset in the year of 2022/23 there were 13 cases of mumps, and <5 measles (to February 2023)⁵⁷.

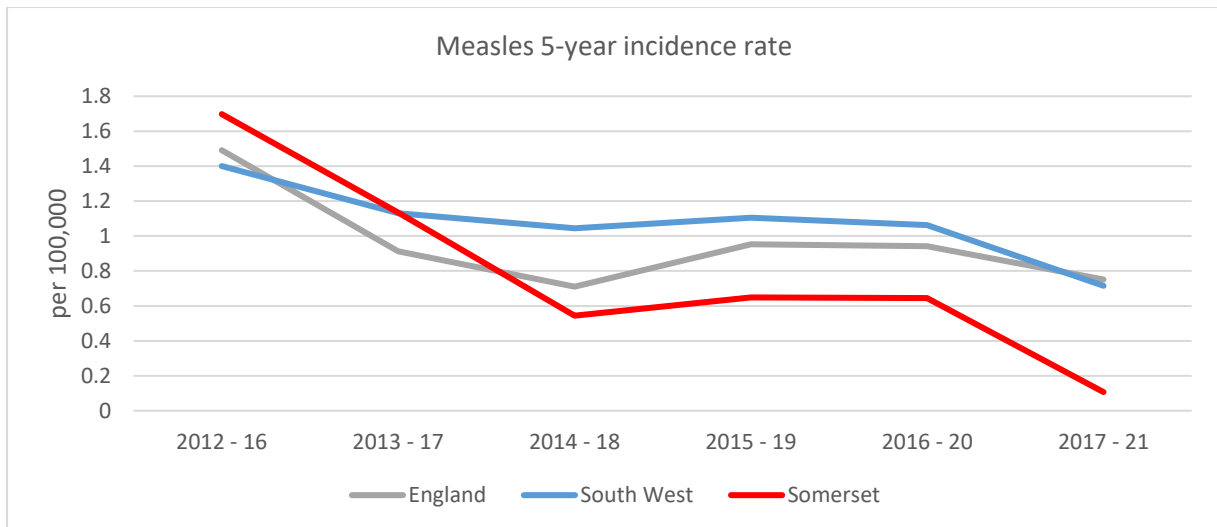


Figure 24 – Trends measles 5-year incidence rate per 100,000. Source: OHID fingertips

In the South West of England there was 423 confirmed cases of mumps in 2020. The majority of these (176) were in the aged 20-24 age group⁵⁸. This was a decrease from confirmed cases in 2019 - 596 in the South West, but a significant increase from 2018, which saw 55 confirmed cases in the South West. In the 4-week period 08/01/23 – 05/02/23 cases rate per 100,000 population of mumps in Somerset was 0.2, in the same time period across the South West this was 0.5 per 100,000, this was the same for both geographies in the previous 4 week period⁵⁹. In weeks 1 to 13 of 2022 there were 64 suspected cases of rubella in the UK (0 samples were IgM positive or viral detection)⁶⁰.

3.3.1.4 Meningococcal

Humans are the only known reservoir for *Neisseria meningitidis*⁶¹ (also known as the meningococcus). Around 10% of the population carries the meningococcus in the back of their throat or nose without causing any illness. It is transmitted from person to person by inhaling respiratory secretions from the mouth and throat or by direct contact. Close and prolonged contact is usually needed for transmission. Meningococcus can cause invasive disease, including meningitis, septicaemia, and pneumonia. Early signs and symptoms of meningococcal disease may be non-specific and, therefore, difficult to distinguish from common and self-limiting viral illnesses. Meningococcal disease is a notifiable disease in England and Wales. Most Meningococcal infection is vaccine preventable. In Somerset there were 0 confirmed cases of Invasive Meningococcal Disease (July 2020 – July 2021), with 80 in England (rate of 0.1 per 100,000), and 9 in the South West Region (0.2 per 100,000)⁶². In Somerset for Q3 2022, the meningococcal infection rate was 0.2 per 100,000, this is slightly higher than the South West average rate for the same time period of 0.1 per 100,000⁶³.

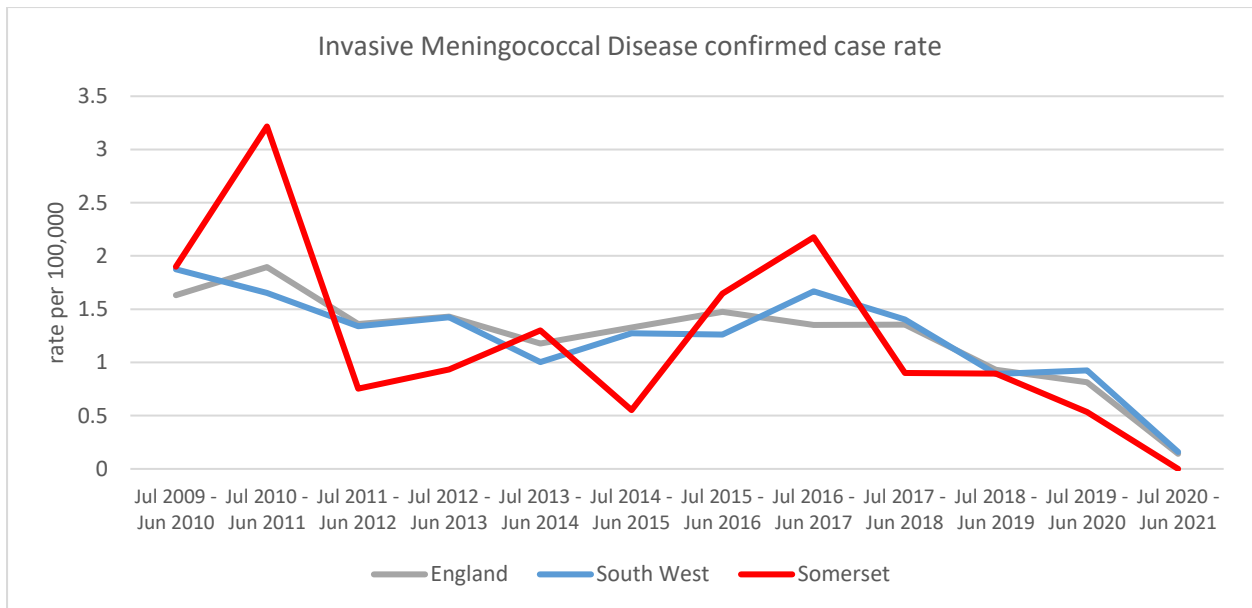


Figure 25 – Trends Invasive Meningococcal Disease confirmed case rate per 100,000. Source: OHID fingertips

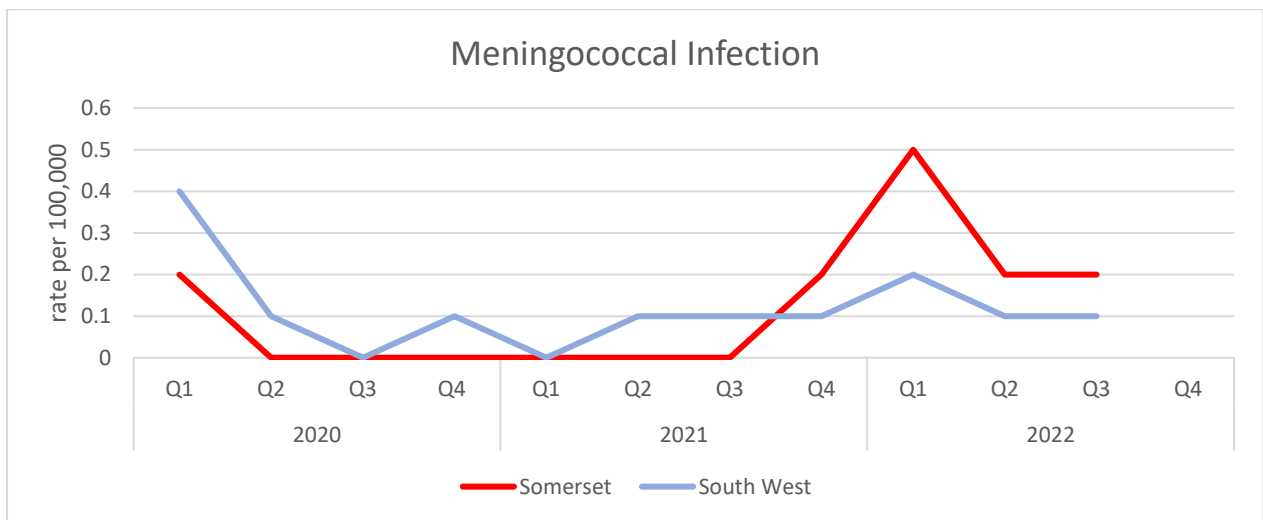


Figure 26 - Meningococcal Infection. Source: Quarterly Health Protection Surveillance Report, UKHSA South West. Data up to December 2022

3.3.1.5 Polio

Polio⁶⁴ is a serious infection that's now very rare because of the vaccination programme. It's only found in a few countries and the chance of getting it in the UK is extremely low. Polio is caused by a virus that spreads easily from person to person. It usually spreads through contact with the faeces of an infected person. For example, from not washing your hands properly and putting them in your mouth, or from contaminated food or water; it can also spread through coughs or sneezes, but this is less common.

Most people who get polio do not have symptoms. Some people get mild, flu-like symptoms, such as: high temperature, fatigue, headaches, vomiting, stiff neck, and muscle pain. These symptoms usually last up to 10 days. Polio can lead to more

serious symptoms that affect the brain and nerves, such as weakness in your muscles (paralysis), usually in the legs. This can happen over hours or days.

There is a continued small risk of exposure to polio in the UK. On 22 June 2022, UKHSA announced a national enhanced incident after finding traces of poliovirus in London sewage. This constituted the first evidence of poliovirus transmission in the UK since 1984. Prior to this, the UK was declared polio-free in 2003. An emergency vaccination-booster campaign in London last summer reached more than 370,000 children. In November, the latest tests found less of the virus, but 12 months of no detections is needed by the World Health Organization to declare that the UK is no longer an infected country⁶⁵.

More information can be found at: [Polio: guidance, vaccination, data and analysis - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/polio-guidance-vaccination-data-and-analysis)

3.3.1.6 Pneumococcal

Pneumococcal⁶⁶ infections are caused by the bacterium *Streptococcus pneumoniae* and can lead to pneumonia, blood poisoning (sepsis) and meningitis. There are 2 types of pneumococcal vaccines, Pneumococcal conjugate vaccine (PCV) and Pneumococcal polysaccharide vaccine (PPV). PCV is used for vaccinating children under the age of 2, and PPV is for individuals aged 65+, and individuals who are high risk due to health conditions.

In Somerset PCV coverage at 12 months, was 96.2%. This is similar to regionally (95.9%) and higher than nationally (93.8%) (2021/22). PCV booster at 2 years in Somerset is 93.3% (regionally 93.2%, nationally 89.3%) (2021/22)⁶⁷. PPV vaccination coverage in Somerset is 69.0%, this is worse than nationally (70.6%) and regionally (70.6%) (2020/21)⁶⁸.

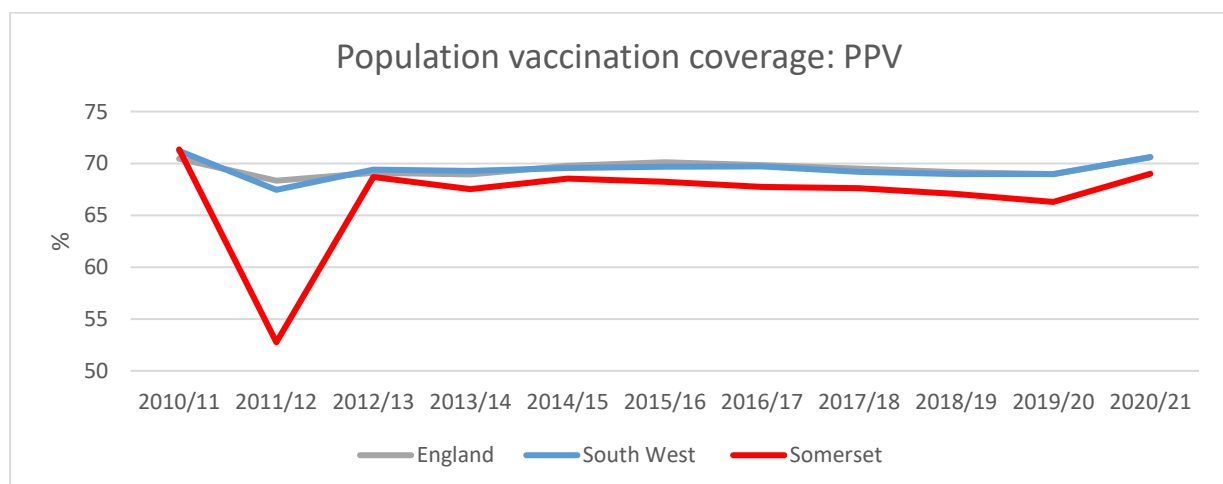


Figure 27 – Trends population vaccination coverage: PPV. Source: OHID fingertips

Recommendation – focused work to improve coverage of PPV vaccination of over 65 years should be undertaken to help prevent hospital admissions related to pneumonia⁶⁹.

3.3.1.7 Rotavirus

Rotavirus⁷⁰ is a highly infectious stomach bug that typically affects babies and young children, causing diarrhoea and vomiting, tummy ache and a high temperature. Most children recover at home within a week. Rarely treatment is needed for complications such as severe dehydration. The rotavirus vaccine prevents against gastroenteritis and is part of routine 8 and 12 week vaccines for babies. Vaccination coverage is a good indicator of population protection, with coverage being closely correlated with levels of disease. In Somerset there is population vaccination coverage at age 1 for Rotavirus is 92.1%; this is similar to nationally (89.9%) and regionally (92.9%) (2021/22)⁷¹.

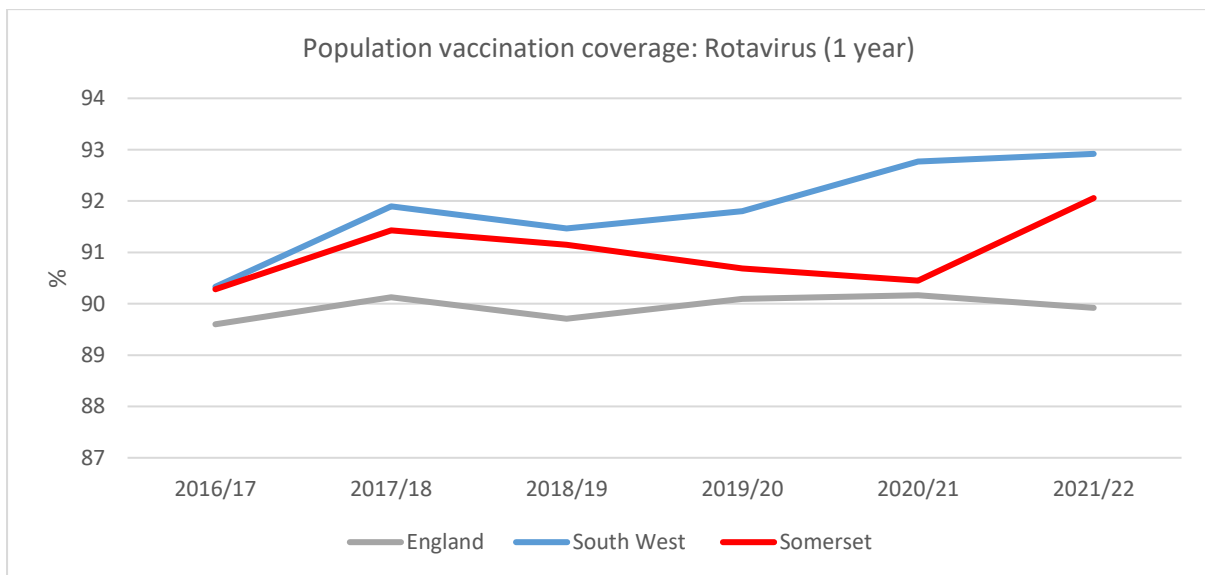


Figure 28 – trends population vaccination coverage: Rotavirus (1 year), percent coverage. Source: OHID fingertips

More information can be found at: [National norovirus and rotavirus surveillance reports: 2022 to 2023 season - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/national-norovirus-and-rotavirus-surveillance-reports-2022-to-2023-season)

3.3.1.8 Tetanus

Tetanus⁷² is a serious but rare condition caused by bacteria getting into a wound. In 2019 there were only 4 cases of tetanus reported in England. Most people who get tetanus have either not been vaccinated against it or did not complete the entire vaccination schedule. Symptoms of tetanus usually start around 4 to 21 days after infection. On average, they start after around 10 days. The main symptoms of tetanus include: lockjaw, painful muscle spasms, a high temperature, sweating, and rapid heartbeat. If it's not treated, the symptoms can get worse over the following hours and days.

Vaccination coverage of DTaP-IPV-Hib-HepB (a 6-in-1 vaccine which protects against diphtheria, tetanus, pertussis (whooping cough), polio, Hib, and hepatitis B) at 12 months is 94.3% in Somerset, this is similar to the South West region (94.8%), and

higher than nationally (91.8%) (2021/22). At 24 months coverage is 95.8% in Somerset, compared to 95.7% regionally, and 93.0% nationally (2021/22)⁷³.

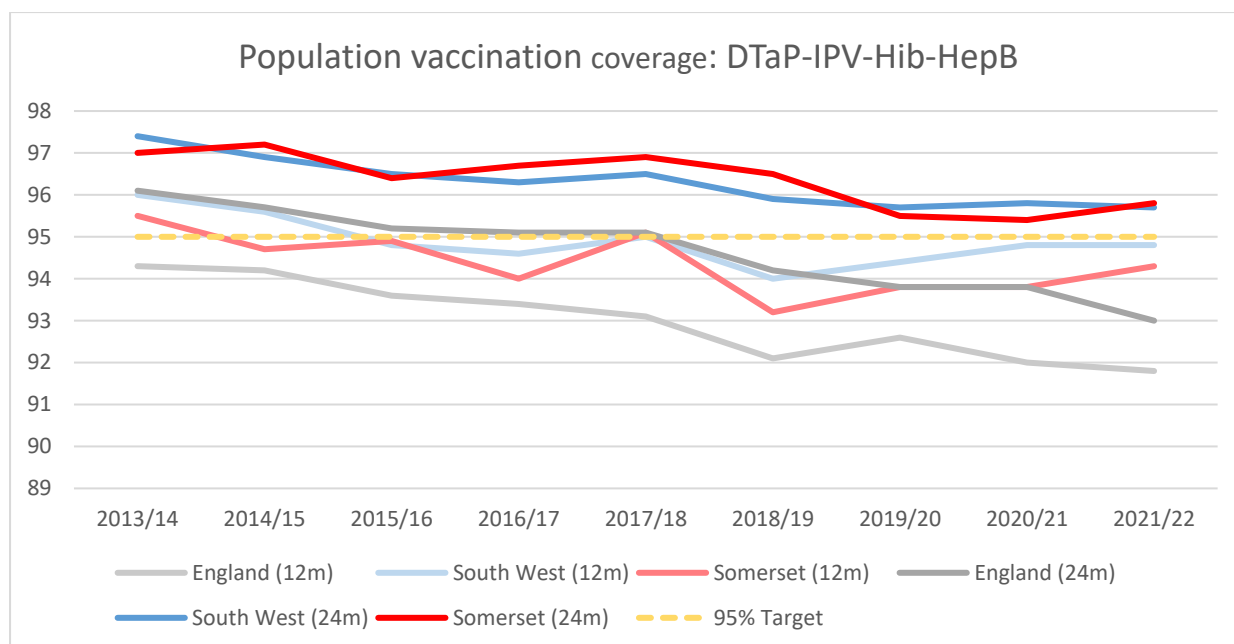


Figure 29 – Trends population vaccination coverage DTaP-IPV-Hib-HepB, at 12 months and 24 months. Source: NHS Digital

A school leaver booster (Td/IPV) is offered to 14-year-olds, if they attend an education setting or are home schooled. This boosts protection against tetanus, diphtheria, and polio. In Somerset this is routinely offered, through schools and GP. The percentage uptake was 77.4% in "School year 10 in 2020 to 2021 (14- to 15-year-olds)", and 77.3% in "School year 9 in 2020 to 2021 (13- to 14-year-olds)" (September 2020-August 2021). This is lower than vaccination coverage in England for 14–15-year-olds (80.3%) but higher than coverage in 13–14-year-olds (76.4%). Somerset has higher coverage when compared to the South West region (14–15-year-olds – 76.8%, 13–14-year-olds – 71.3%)⁷⁴.

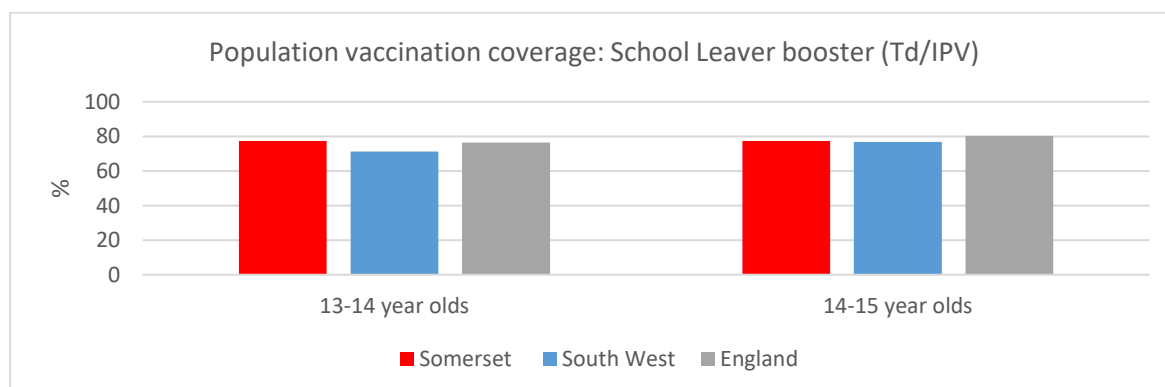


Figure 30 - Population vaccination coverage: School Leaver booster (Td/IPV). Source: gov.uk

Recommendation: recognising the impact of school closures during lockdowns on school-based delivery of vaccination – system to support an annual summer holiday catch up campaign for HPV and adolescent booster

3.3.2 Vaccine preventable diseases at risk groups & risk factors:

There are 84,000 children under 15 in Somerset (Census 2021), which represents about 15% of the total Somerset population. There are 141,000 children and young people (Census 2021), which represents about 25% of the Somerset population⁷⁵. High rates of vaccination are essential for prevention of disease⁷⁶. Outbreaks of vaccine-preventable diseases have been reported in developed countries in recent years, including outbreaks of measles in the European Union in 2017⁷⁷. In the UK, childhood vaccination rates showed a small but significant fall before the second wave of Covid in 2021. Coverage for the MMR vaccination programme in the UK have also fallen to the lowest level in a decade. Updated epidemiological data shows a marked increase in confirmed measles cases in the UK over recent months, including cases arising from community transmission.

Reductions in coverage could cause further disparities in health outcomes for different ethnic, socioeconomic and geographical groups; it is important that the rates are closely monitored⁷⁸. In Somerset, the population is changing due to migration; for example, there are about 25,000 White (other) in Somerset (Census 2021). Half of all reported measles outbreaks from 2000 - 2020 were associated with people from Eastern European countries⁷⁹. As the population changes, factors related to ethnicity and travel patterns should be considered when understanding immunisation decisions and targeting to increase uptake⁸⁰. A better awareness of vaccine access and intent is needed for different migrant groups⁶⁰.

Looked after children can be at an increased risk of missing out on childhood vaccinations. Children in care immunisations in Somerset (as a percentage of children in care who are up to date with vaccinations in the NHS routine list) are significantly worse than both regionally, and nationally. In Somerset this is a trend of no significant change (over the last 5 years) and is 77.0% (2022), compared to Nationally (85.0%), and regionally (81.0%)⁸¹.

Recommendation: to increase children looked after immunisation rates, to at least 90% for all antigens and if there are high refusal rates, explore the reasons behind these

Recommendation: check the elective home educated children are still being offered the full school aged vaccination offer

3.3.3 Vaccine Preventable Diseases Policies

Vaccines offered through the national immunisation programme in the UK are not mandatory. Vaccinations are also not currently mandatory in the UK during a pandemic. Pre-school and adult vaccinations are usually delivered by GP surgeries. They are commissioned through the NHS GP contract. School-age services are delivered through School Immunisation Teams⁸².

General practices and school providers must demonstrate a 100% offer this season by ensuring all eligible patients are offered the opportunity to be vaccinated by active call and recall mechanisms, supplemented with opportunistic offers where pragmatic. The aim of the influenza programme for 2022 to 2023 is to demonstrate a 100% offer and to achieve at least the uptake levels of 2021 to 2022 for each cohort, and ideally exceed them. Community pharmacy service providers do not have a fixed patient list from which to undertake call and recall activities. High quality dedicated and interculturally competent engagement with local communities, employers, faith and advocacy groups will therefore be required.

WHO recommends annual vaccination for:

- pregnant people at any stage of pregnancy
- children aged between 6 months to 5 years.
- elderly individuals (aged more than 65 years)
- individuals with chronic medical conditions
- health-care workers

In the UK routine immunisations provide protection against: diphtheria, tetanus, pertussis (whooping cough), polio, Haemophilus influenzae type b (Hib), hepatitis B, Meningococcal (MenB & MenACWY), Rotavirus gastroenteritis, pneumococcal, measles, mumps, rubella (German measles), influenza, HPV, and shingles⁸³.

Relevant NICE Guidance:

- [Overview | Vaccine uptake in the general population | Guidance | NICE](#)
- [Overview | Meningitis \(bacterial\) and meningococcal septicaemia in under 16s: recognition, diagnosis and management | Guidance | NICE](#)
- [Overview | Reducing sexually transmitted infections | Guidance | NICE](#)

3.4 Gastrointestinal Infections

3.4.1 Introductions and Context

Somerset is a rural county, with many residents working on farms and having contact with animals. There are also a substantial number of factories producing food items across Somerset, with a large number in the dairy industry.

Somerset has the highest rates of GI illness in the South West, and the most samples submitted. Additionally, there are many households on private water supplies, of which there are over 1000 in Somerset. Some of these private supplies are risk assessed every 5 years⁸⁴, but many supply single households, who will not ask for sampling.

There were 5 outbreaks of notifiable food poisoning in Somerset April 2022/23.

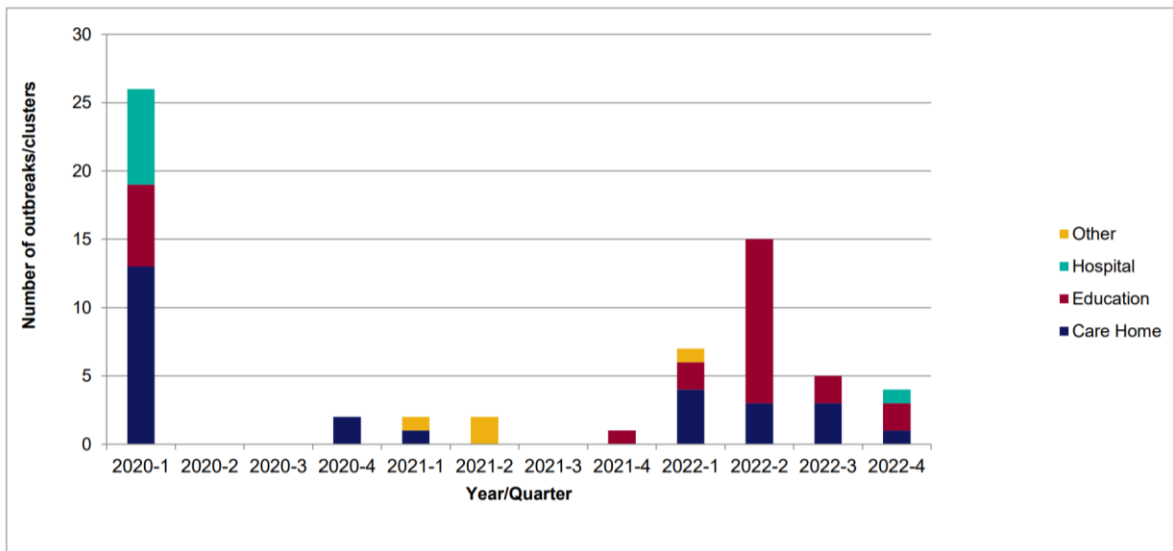


Figure 31 – Gastrointestinal Outbreaks – Somerset. All reports of outbreaks/clusters of gastrointestinal infection (suspected or laboratory confirmed) by setting, including food poisoning outbreaks. Source: Quarterly Health Protection Surveillance Report, UKHSA South West. Data up to December 2022

3.4.1.1 Shiga toxin-producing *Escherichia coli* (STEC)

Shiga toxin-producing *Escherichia coli* (STEC), (also known as Vero cytotoxin-producing *Escherichia coli* (VTEC)), are a group of bacteria that cause infectious gastroenteritis. The most frequently reported STEC strain to cause illness in England and Wales is *E. coli* O157. STEC is relatively rare in England, with approximately 800 cases diagnosis annually. Symptoms can range from mild gastroenteritis to severe bloody diarrhoea. Rarely STEC can cause more serious conditions: haemolytic uraemic syndrome (HUS), and thrombotic thrombocytopenic purpura (TTP), both of which affect the blood, kidneys, and sometimes central nervous system. Ruminants, such as cattle are the main reservoir for STEC, with transmission to humans occurring through: consumption of contaminated food or water, and exposure to contaminated environments (direct or indirect contact with animals or faeces)⁸⁵.

STEC (serogroup O157) incidence rate is 0.9 per 100,000 (count of 5) (2018), this is similar to nationally (1.0 per 100,000) and regionally (1.2 per 100,000). The 5-year incidence rate (2014-2018) across Somerset is 1.05 per 100,000, this is similar to nationally (1.15 per 100,000) and significantly better than regionally (1.69 per 100,000) (Figure 32)⁸⁶. In Somerset Q4 2022 there was a rate of 1.4 per 100,000 *Escherichia coli* STEC infection rate, this was higher than the South West, recent trends can be seen in the figure below (Figure 32)⁸⁷.

Approx. 10% of cases will progress to Haemolytic uraemic syndrome (HUS), which is a serious complication of the disease, leading to serious illness, and sometimes kidney failure.

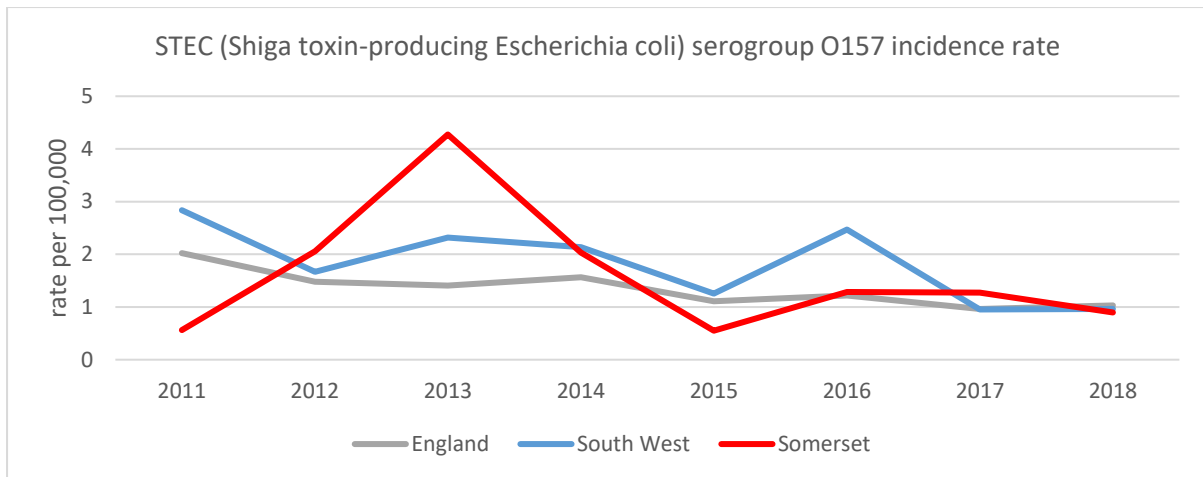


Figure 32 - STEC (Shiga toxin-producing *Escherichia coli*) serogroup O157 incidence rate. Source: OHID fingertips

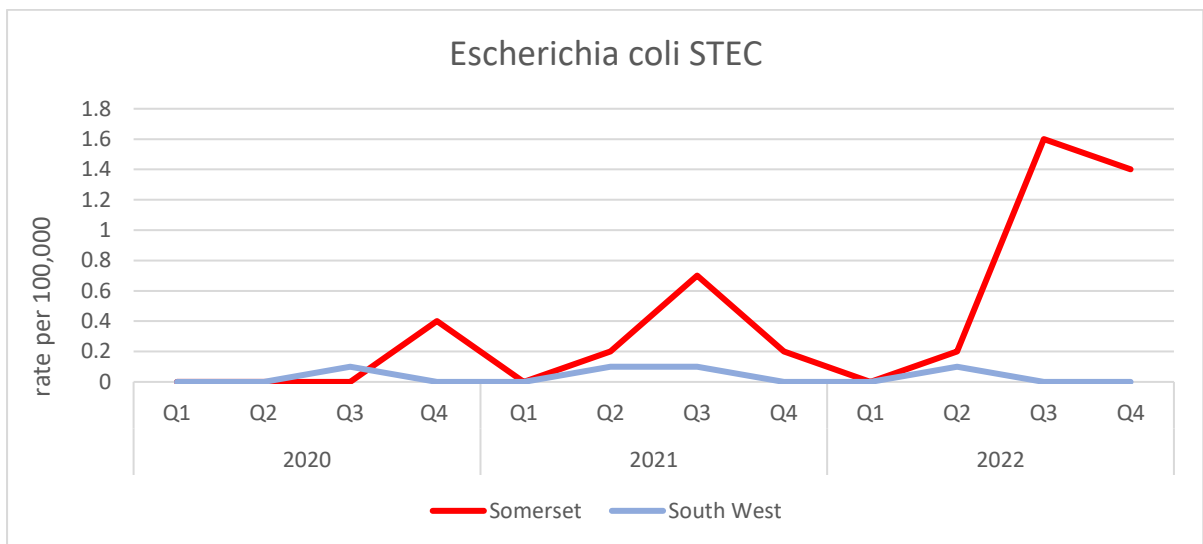


Figure 33 - *Escherichia coli* STEC, rate per 100,000. Source: Quarterly Health Protection Surveillance Report, UKHSA South West. Data up to December 2022

E. Coli was unseasonably high at the end of 2022, possibly due to the large amounts of heavy rain and flooding in the county.

2.4.1.2 *Campylobacter*

Campylobacter is one of the most common bacterial causes of gastroenteritis, and is 1 of 4 key global causes of diarrhoeal diseases. Infections are generally mild, however in infants, elderly, or immunosuppressed individuals, can be fatal. Additionally, complications such as bacteraemia (bacteria in the blood), hepatitis, pancreatitis, and miscarriage have been reported with various degrees of frequency.

Campylobacter is prevalent in animals such as poultry, cattle, sheep, pigs, as well as pets (cats and dogs); transmission is generally foodborne, or from contaminated water. Onset of symptoms usually occurs 2 to 5 days post infection with the bacteria. Symptoms most commonly are diarrhoea, abdominal pain, fever, headaches, nausea, and vomiting, lasting for approximately 3 to 6 days. Treatment is generally not

required, beyond electrolyte and rehydration; in invasive cases antimicrobial treatment may be used⁸⁸.

In Somerset campylobacter incidence in Somerset is 129.0 per 100,000, this is significantly worse than nationally (96.9 per 100,000) and regionally (118.3 per 100,000) (2017)⁸⁹. In the 4-week period (08/01/23 – 05/02/23), there was a rate of 7.8 per 100,000, this was higher than across the South West, which had a rate of 6.4 per 100,000 over the same time period. Somerset saw a 22% increase on the previous 4-week period, compared to 6% increase in the South West⁹⁰.

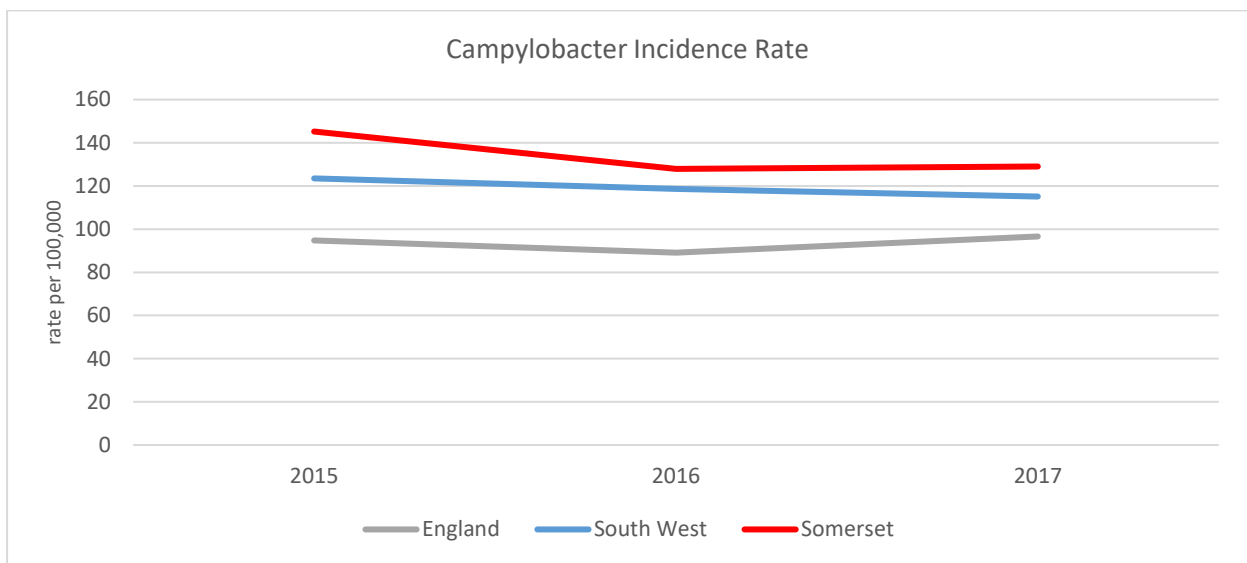


Figure 34 – Campylobacter incidence rate per 100,000. Source: OHID Fingertips

As of Q4 2022 in Somerset there was a rate of 35.1 per 100,000, and the recent trend can be seen in the figure below⁹¹.

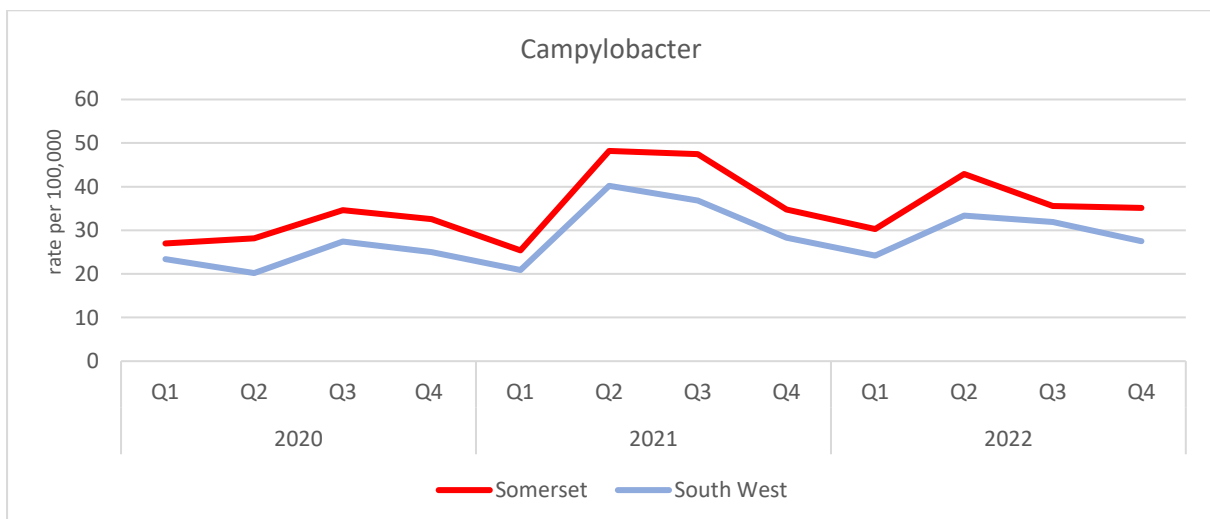


Figure 35 – Campylobacter infection rate per 100,000 population. Source: Quarterly Health Protection Surveillance Report, UKHSA South West. Data up to December 2022

3.4.1.3 *Cryptosporidium* (Crypto)

Crypto is caused by a microscopic parasite - *Cryptosporidium*. Individuals with weakened immune systems are more likely to have severe, potentially life-threatening symptoms. Symptoms most commonly are diarrhoea, dehydration, nausea, vomiting, fever, and stomach cramps; symptoms generally begin 2 – 10 days after infection with the parasite (lasting approximately 1 to 2 weeks). Symptoms can come and go for a period of 30 days. Diagnosis occurs through stool samples, or PCR, with most individuals recovering without treatment, but nitazoxanide may also be used⁹².

In Somerset the incidence is 17.1 per 100,000 (2017). When benchmarked against nationally (7.3 per 100,000) and regionally (10.7 per 100,000), this is significantly worse; with Somerset having the highest incidence in the South-West region⁹³. In the time period of 08/01/23 – 05/02/23, the rate in Somerset was 0.2 per 100,000, this is lower than in the South West region (0.5 per 100,000). In Somerset this was a 75% decrease on the previous 4-week period, with the South West Region having a 22% increase⁹⁴.

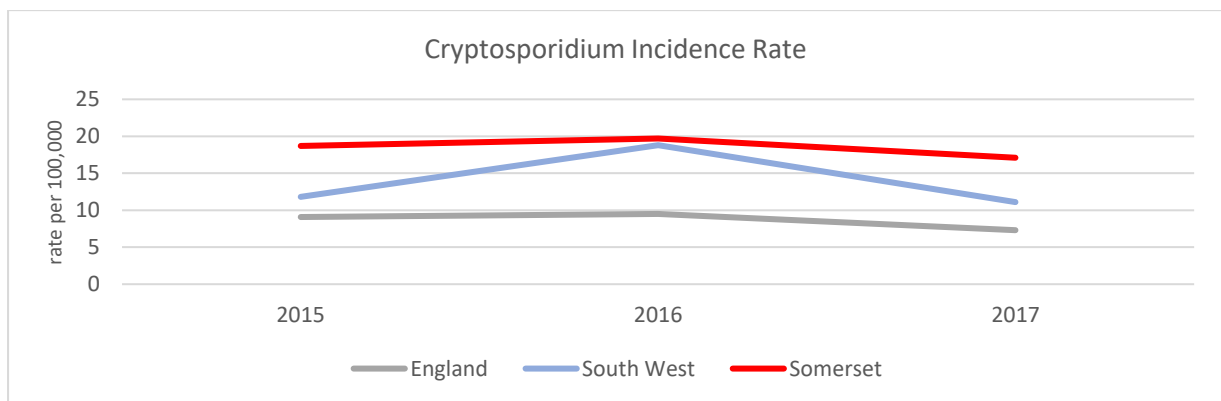


Figure 36 – *Cryptosporidium* incidence rate per 100,000

In Somerset Q4 2022, the *Cryptosporidium* infection rate was 2.3 per 100,000, trends and comparison to the South West region can be seen in the figure below⁹⁵.

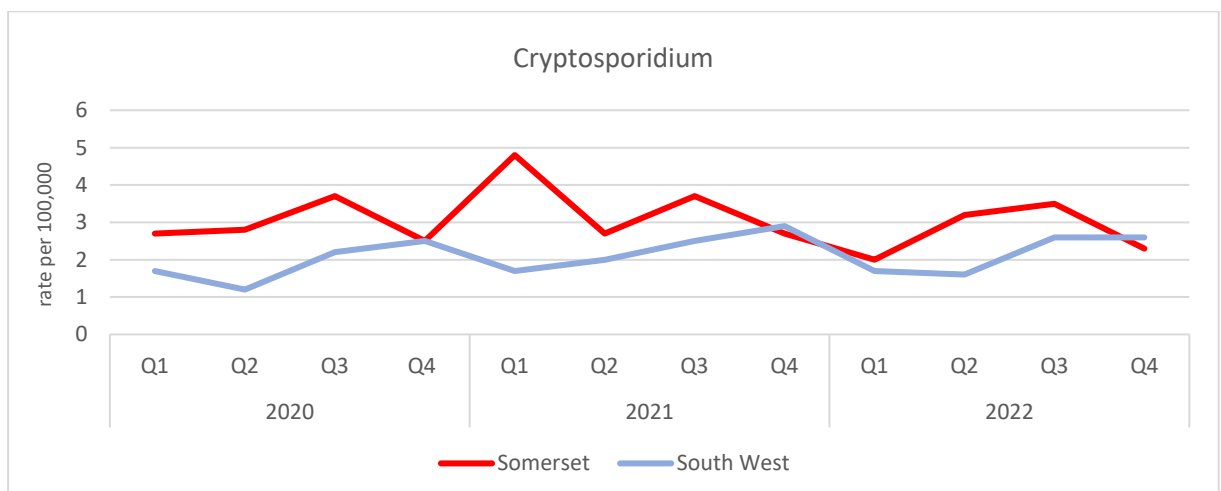


Figure 37 – *Cryptosporidium*. Source: Quarterly Health Protection Surveillance Report, UKHSA South West. Data up to December 2022

3.4.1.4 Hepatitis A

Hepatitis A is not common in the UK, but it is common in other parts of the world; such as Africa, Asia, Central, and South America. Hepatitis A is caused by a virus that spreads in faeces. Infection can occur from: drinking unclean water, eating food washed/grown in unclean water, eating food handled by an infected person, and close physical contact with an infected person, including having sex and sharing needles to take drugs. Vaccination is the most effective way to prevent hepatitis A; vaccines are not routinely offered in the UK as the risk of getting infected is low. Hepatitis A usually clears up on its own within 3 to 6 months. A small number of people with hepatitis A may get liver complications⁹⁶.

3.4.2 Gastrointestinal at-risk groups & risk factors

Food is an excellent vehicle by which many pathogens can infect a new host. High-risk groups to poor outcomes from GI infections vary by pathogen⁹⁷. Many factors influence the prevalence of these diseases, and the importance of these factors is still unclear. Foodborne bacterial pathogens are evolving in response to environmental challenges and are occupying new niches; the susceptibility of the human population to such infections is also changing as a result of declining acquired immunity with improved hygiene and increasing proportions of immunocompromised individuals⁹⁸ In developed countries between 15% and 20% of the population are more susceptible than the general population to foodborne disease. In addition to the immunosuppressed are diabetics, people suffering from liver or kidney disease or with excessive iron in the blood, pregnant people, infants, and the elderly. Diets for vulnerable people in care should exclude higher-risk foods, such as seafood and undercooked meat. Vulnerable people in the community should receive clear advice about food safety⁹⁹.

Campylobacter is the most reported disease to UKHSA in Somerset. Figure 38 shows the high proportion of cattle in Somerset. Farm workers and people who have private water supplies which could be contaminated by farm run off are more at risk of GI illness.

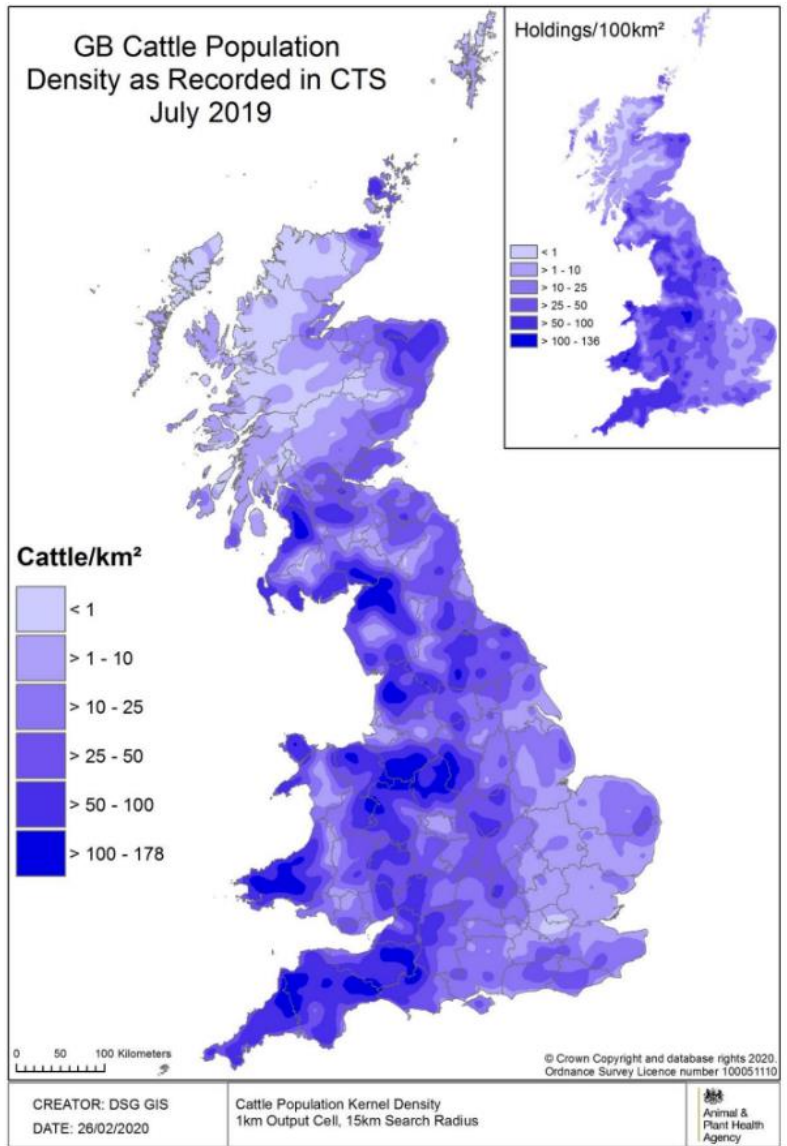


Figure 38 – Cattle population density in GB (CTS) with holding density inset. 2020. Source: Animal and Plant Agency

3.4.3 Gastrointestinal Policies

- [General food law | Food Standards Agency](#)
- [Food hygiene for your business | Food Standards Agency](#)
- [Food safety inspections and enforcement | Food Standards Agency](#)
- [The Private Water Supplies \(England\) Regulations 2016 \(legislation.gov.uk\)](#)
- [Gastrointestinal infections: guidance for public health management - GOV.UK \(www.gov.uk\)](#)
- [Travel-associated infections in England, Wales and Northern Ireland: 2020 and 2021 -GOV.UK \(www.gov.uk\)](#)

3.5 Common infections that present with a rash.

3.5.1 Scarlet Fever

Common childhood infections are usually mild, however, since the pandemic lockdowns, there has been a change in the epidemiology of some of these infections with some of them posing an increased risk, for a variety of reasons. An example is scarlet fever.

Scarlet fever is a contagious infection that mostly affects young children, caused by the Streptococcus A bacteria. Initially symptoms can be flu-like symptoms, including a high temperature, a sore throat and swollen neck glands, a rash appears 12 to 48 hours later, along with a white coating on the tongue. Treatment is through antibiotics. Scarlet fever lasts for approximately 1 week, with individuals being infectious until 24 hours post 1st dose of antibiotics (if no antibiotics taken can be infectious for 2-3 weeks)¹⁰⁰. Scarlet fever is a notifiable disease.

In Somerset, scarlet fever notification rate (aged 0-9yrs) is 230 per 100,000, with a count of 140, this is similar to nationally (230 per 100,000) and regionally (253 per 100,000) (2016)¹⁰¹. Scarlet fever infections rose in the winter of 2022, at a time when influenza and Covid viruses were in circulation; this resulted in an increase in the invasive disease. leading to extra surveillance from UKHSA. It is now back to expected levels¹⁰². Scarlet fever infection rate in Somerset Q4 2022, was 17.8 per 100,000 (See figure below)¹⁰³.

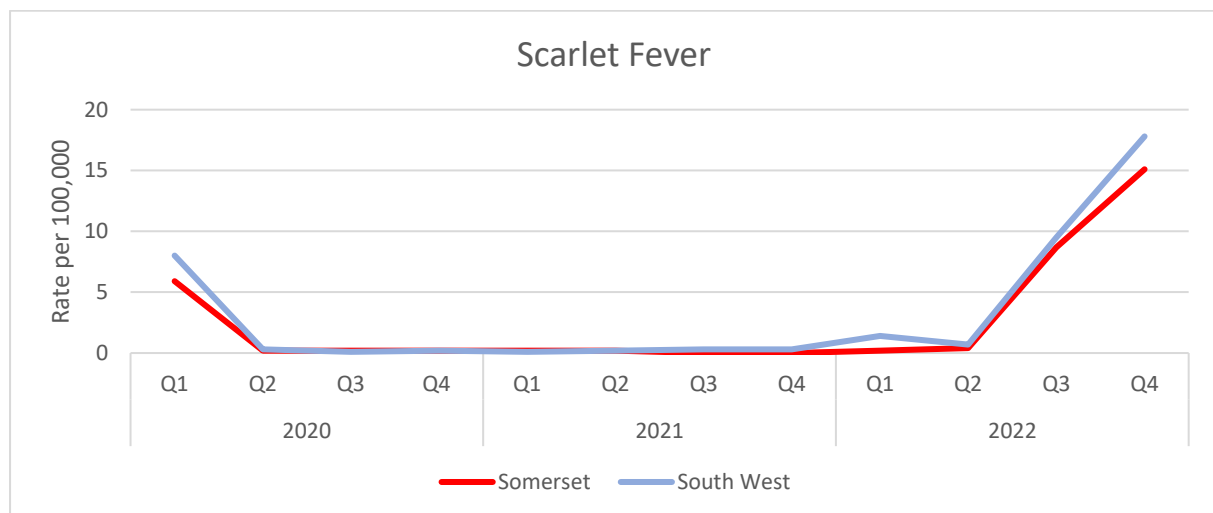


Figure 39 – Scarlet fever infection. Source: Quarterly Health Protection Surveillance Report, UKHSA South West. Data up to December 2022

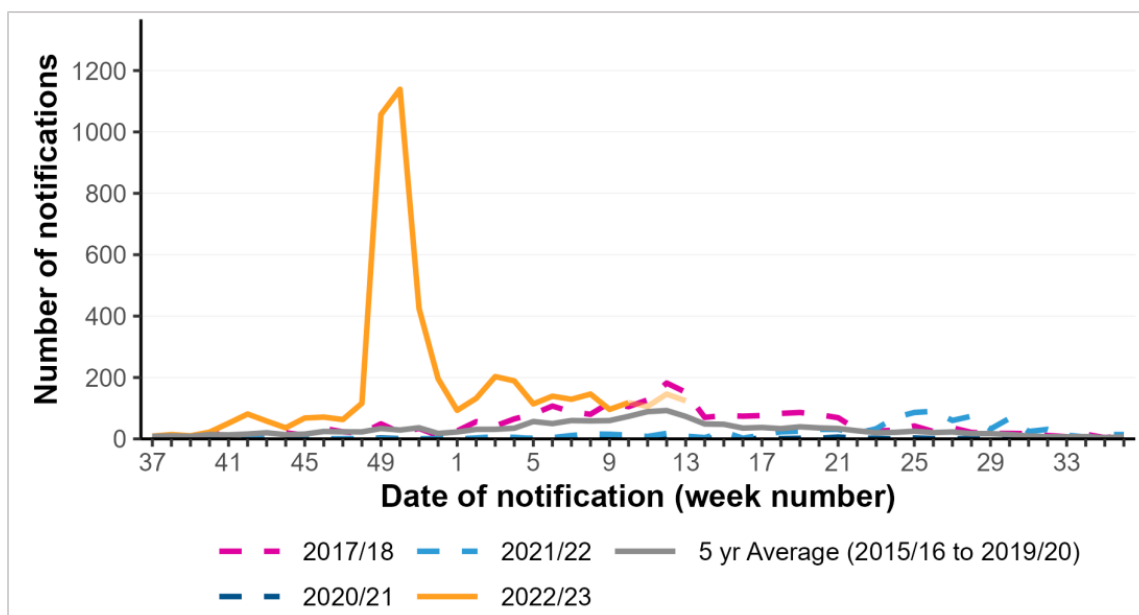


Figure 40 – Weekly number of scarlet Fever notifications (NOIDS) up to week 13 2023 South West

3.5.2 iGAS - Invasive group A streptococcal disease¹⁰⁴

GAS (Group A streptococcus) is a bacterium which can colonise the throat, skin, and anogenital tract. It is spread by close contact with individuals, through respiratory particles, direct skin contact, and environmentally e.g., through contaminated objects. GAS causes a variety of skin, soft tissue, and respiratory tract infections, including but not limited to: tonsillitis, scarlet fever, pneumonia, cellulitis, impetigo – occasionally infections can be severe. Invasive GAS (iGAS) is caused by GAS, and occurs when GAS is isolated from a usually sterile body site, e.g., blood. iGAS is a notifiable disease. but is often underreported.

In Somerset in the period 08/01/23 – 05/02/23, there was a rate of 1.2 per 100,000, which is similar to the rate across the South West (1.1 per 100,000). In the same time period there were <5 outbreaks of streptococcus (Group A) – in care setting and children/education settings¹⁰⁵. A total of 292 iGAS confirmed cases were reported through laboratory surveillance in South West for the period between 12 September and 04 April 2023, compared to 169 for the similar period up to and including week 13 in the last peak year (2017/18). There have been no deaths of children from iGAS in Somerset during 2022-23.

In Somerset iGAS infection Q4 2022, was 3.7 per 100,000 population, as is shown in the figure below.

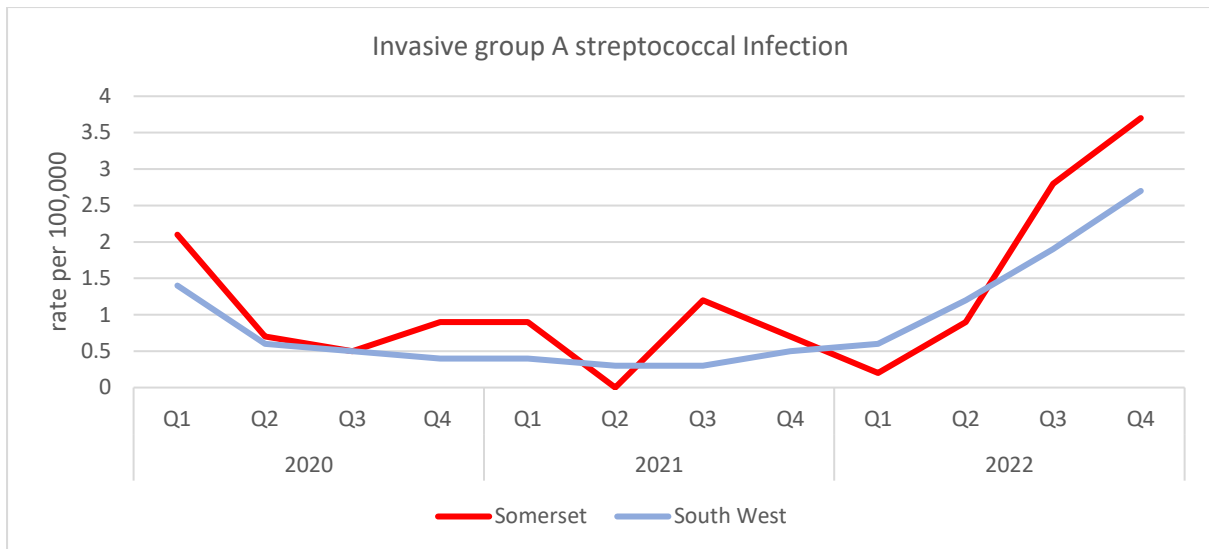


Figure 41 - Invasive group A streptococcal Infection. Source: Quarterly Health Protection Surveillance Report, UKHSA South West. Data up to December 2022

In the South West the number of all-cause deaths within 7 days of and invasive group A streptococcus (iGAS) (2022 to 2023, weeks 37 to 15) was 40, with a percent case rate fatality of 13%¹⁰⁶. Nationally the highest rate was in the age group '75 years and over' - 12.4 per 100,000, followed by those aged 1 to 4 years - 12.1 per 100,000 and group of those aged under one year - 10.2 per 100,000.

3.6 Blood Borne Virus (BBVs)

3.6.1 Introduction and Context

3.6.1.1 Hepatitis

Hepatitis refers to inflammation of the liver, this can be due to infectious or non-infectious causes. Not all hepatitis infections are blood borne.

3.6.1.1.1 Hepatitis B

Hepatitis B (HBV) is a small DNA virus in the Hepadnaviridae family - currently there are 8 known genotypes (A to H), with an incubation period ranging from 1-6 months. Most HBV infections are self-limiting with cases self-clearing in a few months. However, some acute cases have severe symptoms, 1 in 20 will go on to develop a chronic infection. Chronic infections can result in liver cirrhosis (scarring of liver tissue) and can cause liver cancer¹⁰⁷. Symptoms can take from 40-160 days to appear, and some may remain asymptomatic. Symptoms can include: flu like symptoms, nausea, vomiting, lack of appetite, and jaundice.

Hepatitis B is vaccine preventable, which in the UK is routinely offered as part of a 6-in-1 vaccine to all babies¹⁰⁸. Vaccination is also offered to individuals thought to be at increased risk of infection or complications from infection. For the uptake of the 6-in-1 vaccine (DTaP-IPV-Hib-(HepB)) (see section 3.3.1.8 Tetanus). Coverage of ante-natal

screening is at 99% in the UK. In Somerset, <5 babies per quarter are identified for the selective neonatal immunisation programme, where the babies are at risk of acquiring HBV from their mother’s blood or bodily fluids, especially around birth¹⁰⁹.

There is low prevalence of HBV in the UK. Across the South West PHE Centre there was an incidence rate of 0.41 per 100,000 of acute hepatitis B, nationally this was 0.69 per 100,000¹¹⁰ (2018). In Somerset under 75 mortality rate from hepatitis B related end-stage liver disease/hepatocellular carcinoma was 0.13 per 100,000 (2017-2019), this is higher than across the South West region (0.06 per 100,000), and the same as nationally. Nationally in 2020 there were 155 cases of acute HBV, with males accounting for 69% where sex was known, the median age was 41 years old for males, and 34 for females, with the highest proportion of cases being in the 25-34 (19.4%) and 35-44 (19.4%) age bands generally. 15-24 was the age group with the highest proportion in females (28.3%)¹¹¹.

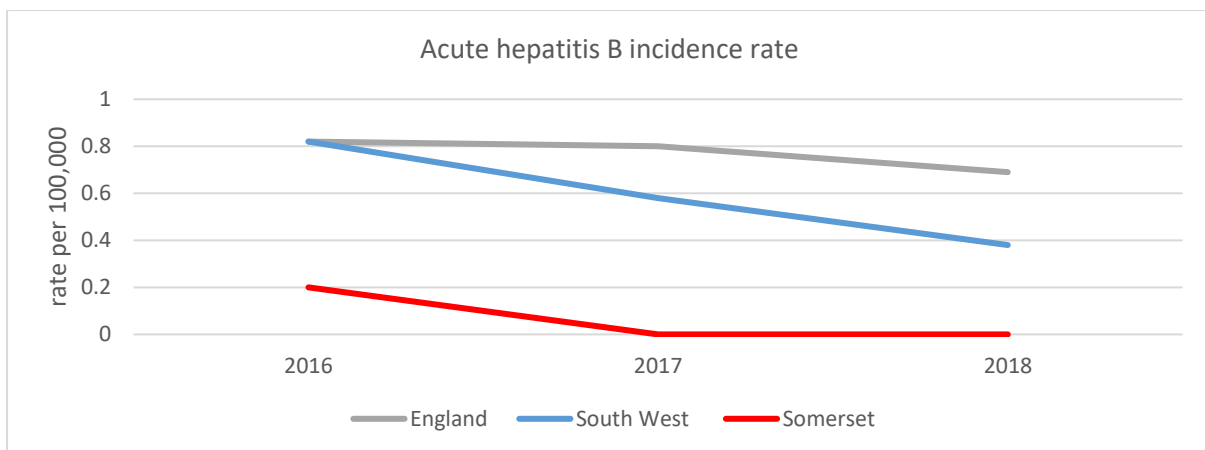


Figure 42 - trend Acute hepatitis B incidence rate per 100,000. Source: OHID Fingertips

Due to a lack of sources for routinely collected data, no complete information is available on the prevalence of hepatitis B in the local population or the proportion of infected persons who are receiving treatment for hepatitis B.

3.6.1.1.2 Hepatitis C

Hepatitis C is a blood borne infection affecting the liver caused by the Hepatitis C virus (HCV). HCV is a small RNA virus in the Flaviviridae family, with six recognised genotypes of HCV - most common in the UK are genotypes 1 and 3¹¹². The incubation period for HCV ranges from 2 weeks to 6 months. HCV however often does not have any noticeable symptoms until the liver has been significantly damaged. When symptoms do occur they can include: flu-like symptoms, fatigue, nausea.

Roughly 90% of cases with acute infection will become chronically infected, 75% will have a degree of active liver disease¹¹³. HCV is usually spread through blood-to-blood transmission, and can also be spread through unprotected sex (this is rare though). Around 90% of those with chronic infections in the UK are PWID. HCV infection is not

vaccine preventable. However, over 90% of individuals with hepatitis C may be cured using the newest forms of DAAT treatment.

Hepatitis C detection rate in Somerset is 11.7 per 100,000. This is lower than national rates (18.4 per 100,000) (2017)¹¹⁴. In individuals who are in drug misuse treatment, who inject drugs 87.5% of eligible persons received hepatitis C tests (2017/2018), this is better than nationally (84.2%) and similar to regionally (87.6%).

Table 3 - HCV Operational delivery network profile for the South West Peninsula¹¹⁵

Prevalence Estimates (end of 2017)				
Risk Group	Risk Size	Group	Chronic Infections	% Prevalence
PWID		5,390	1,260	23.4%
Ex-PWID		20,490	2,190	10.7%
South Asian never injectors		8,900	20	0.22%
White/other never injectors		1,956,000	270	0.01%
Total population		1,990,780	3,770	0.19%
Credible interval for total chronic infections	2,990 – 4,680			

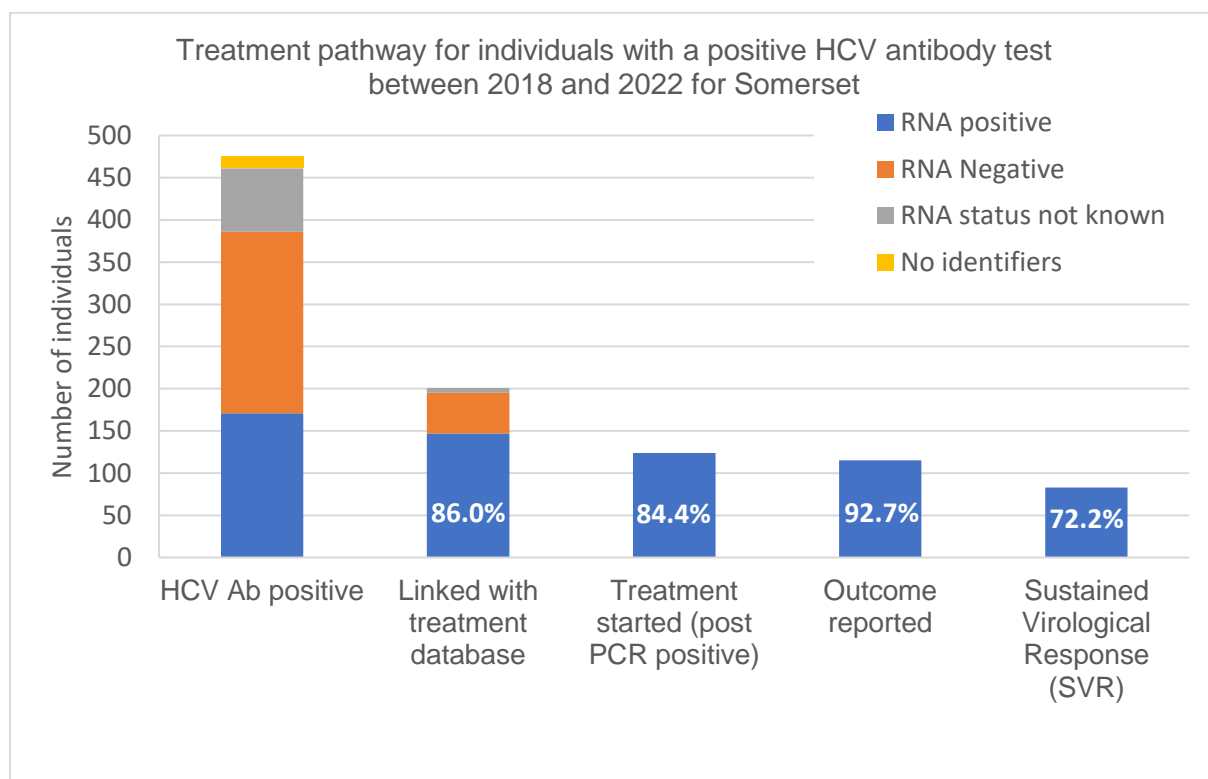


Figure 43 - Data sources: Second Generation Surveillance System of routine laboratory reports of HCV diagnoses; Sentinel Surveillance of Blood Borne Virus testing; NHSE NHS England data from the Hepatitis C Patient Registry and Treatment Outcome System.

RNA and antigen tests were linked to the NHS England's Hepatitis C Patient Registry and Treatment Outcome System using NHS Number, Name, DOB, hospital number and excludes children aged under one. Patient identifiable data submitted by sentinel laboratories is variable, particularly from sexual health and drug and alcohol services, which limits the ability to link data sets or de-duplicate. Data is de-duplicated subject to availability of date of birth, Soundex, NHS number and first initial. All data is provisional. Individuals with a positive HCV Ab result between 2018 and 2022 were included. Local Authorities included South Somerset, Bath and North East Somerset, North Somerset, West Somerset and Somerset West and Taunton. The care pathway is among those who a positive RNA result was available for at the time of or after their HCV ab positive result. 19% of those diagnosed Ab positive had an unknown RNA status.

Recommendation – there is an ODN dashboard, however, it has proven difficult to report this data on an ICB footprint which impacts the Integrated Care Board ability to prioritise this and see impact of actions

Recommendation – request UKHSA to gather surveillance data on Hepatitis as it is a notifiable infection and up to date data will inform interventions required to eliminate Hepatitis C, which is a national priority.

3.6.1.2 Human Immunodeficiency Virus (HIV)

HIV targets the immune system and weakens people's defence against common infections and disease. As the virus destroys and impairs the function of immune cells, infected individuals gradually become immunodeficient. Immune function is typically measured by CD4 cell count. The most advanced stage of HIV infection is acquired immunodeficiency syndrome (AIDS), which can take many years to develop if not treated, depending on the individual^{116,117}.

HIV can be transmitted via the exchange of a variety of body fluids from infected people, such as blood, breast milk, semen and vaginal secretions. HIV can also be transmitted from a mother to her child during pregnancy and delivery. Individuals with HIV who are taking ART (antiretroviral therapy) and are virally suppressed do not transmit HIV to their sexual partners. Early access to ART and support to remain on treatment is therefore critical not only to improve the health of people with HIV but also to prevent HIV transmission.

Most individuals experience short flu-like illness 2-6 weeks post HIV infection, which then lasts a few weeks; once these symptoms end there may not be any others although the virus will continue to damage an individual's immune system – therefore meaning individuals frequently do not know they are infected. HIV is tested for by a blood or saliva test, early identification of potential infection can lead to use of post-exposure prophylaxis (PEP) which can prevent an individual becoming infected if started within 72 hours of possible exposure¹¹⁸

Testing

HIV testing data is not included due to the reason outlined below:

'We are contacting you to notify you of an anomaly with the HIV testing coverage indicator in the Sexual and Reproductive Health Profiles on Fingertips. In some areas, there may be lower numbers presented in this indicator, especially in recent years. The testing coverage indicator currently only uses data from Level 3 specialist sexual health services, which will typically exclude data from online services. This is because we are not currently able to track individuals between a Level 3 attendance and a test via a digital provider. This has become an issue with the indicator in light of the shift towards online testing and is particularly acute for local authorities where a digital provider constitutes the clear majority of all testing.

We are looking to create a new indicator or modifying existing indicators, as a more long-term solution. In the interim, a caveat will soon be added to the indicator definition which explains that more explicitly that online testing currently is excluded from the HIV testing data.'

From April 2022 to April 2023 100% of new patients have been offered a HIV blood test and from April 2022 to April 2023 84% of new patients have accepted a HIV blood test¹¹⁹.

Diagnosis

In Somerset HIV diagnosed prevalence (aged 15-59) is 0.93/1,000, which is significantly better than the national prevalence of 2.32/1,000 (2021). New HIV diagnosis rate (all ages) (2021) in Somerset are 1.4/100,000, this is significantly better than nationally (4.8/100,000).

New HIV diagnosis amongst those first diagnosed in the UK was 45.5% in Somerset (2019-21), which is significantly better than the national value of 43.4%¹²⁰.

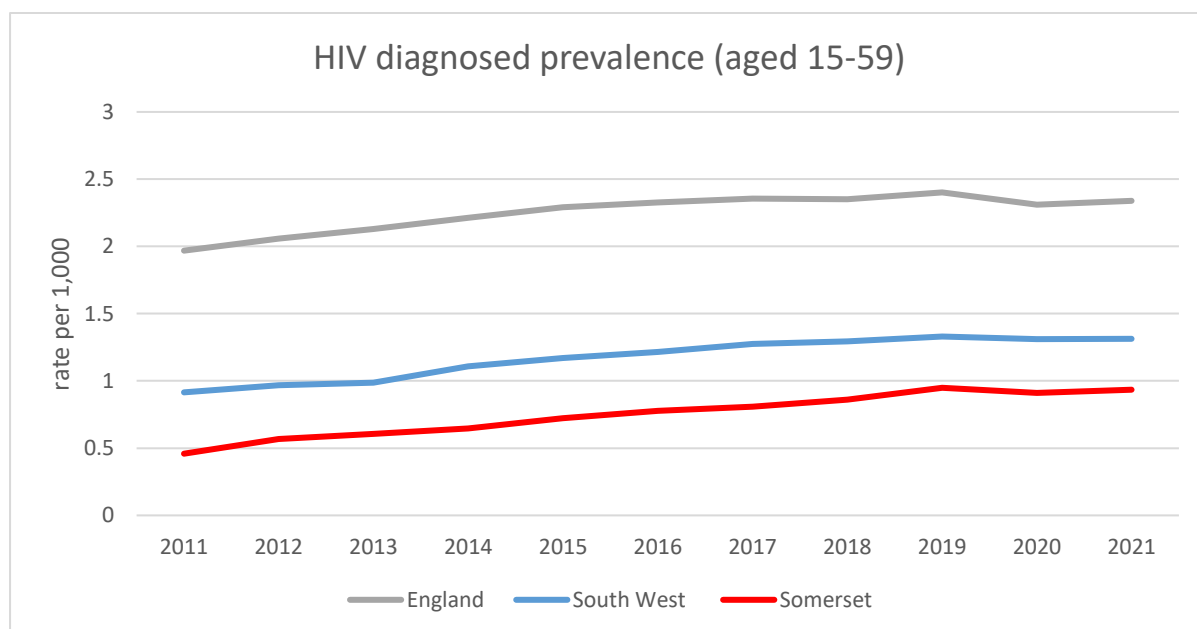


Figure 44 – People aged 15 to 59 years seen at HIV services in the UK, presented by area of residence. Rate per 1,000

Late diagnosis

Late diagnosis is a crucial predictor of HIV-related morbidity, as well as short-term mortality. Monitoring can also be used to assess the success of HIV testing. HIV late diagnosis in gay, bisexual and other MSM first diagnosed in the UK (2019-2021) is 60.0% in Somerset compared to 31.4% nationally, and 42.7% regionally. HIV late diagnosis in heterosexual men first diagnosed in the UK (2019-21) in Somerset was 100%, compared to 63.0% regionally, and 58.1% nationally.

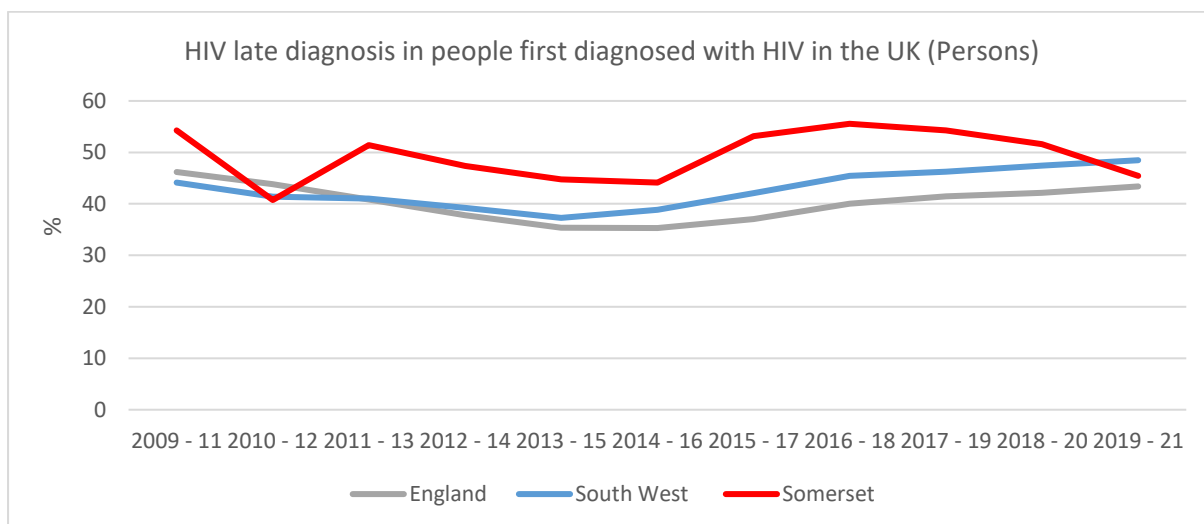


Figure 45 - Percentage of adults (aged 15 years or more) newly diagnosed with HIV with a CD4 count less than 350 cells per mm³ within 91 days of diagnosis, excluding those with evidence of recent seroconversion. These include only reports of HIV diagnoses first made in the UK (which excludes those previously diagnosed with HIV abroad).

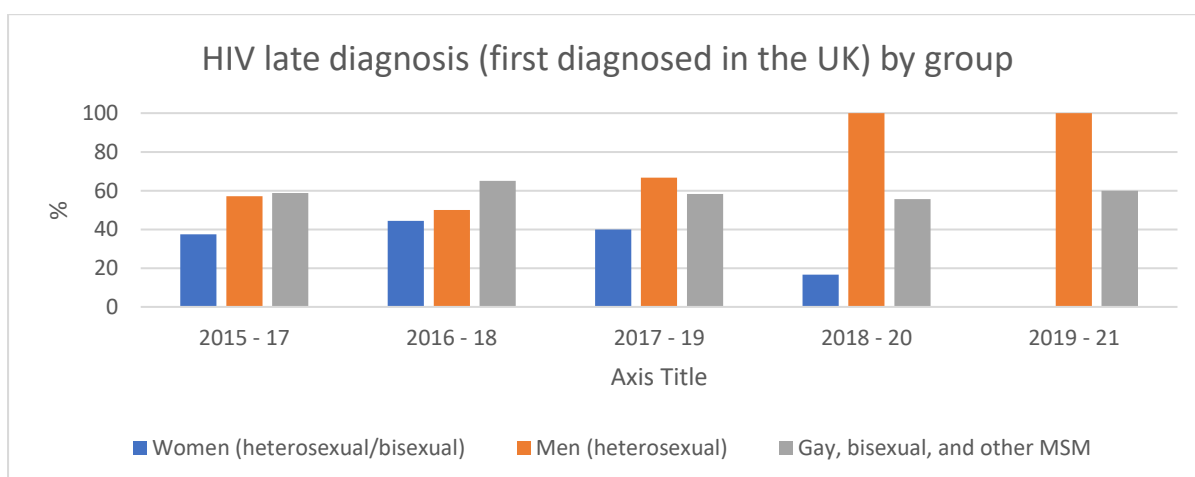


Figure 46 - Percentage of each group newly diagnosed with HIV with a CD4 count less than 350 cells per mm³ within 91 days of diagnosis, excluding those with evidence of recent seroconversion.

Treatment and Care

In England the UN AIDS 95-95-95 targets were met, with 95% of all diagnosed, 99% of those in care on treatment, 97% of those with treatment being virally suppressed. Antiretroviral therapy (ART) coverage in people accessing HIV care (all ages) (2021), in Somerset was 98.9% (regionally was also 98.9%) nationally is 98.3%. Prompt antiretroviral therapy (ART) initiation in people newly diagnosed with HIV (all ages)

(2019-21) in Somerset was 80.5% this is similar nationally (83.5%) and regionally (86.8%). Subsequently virological success in those adults accessing HIV care (2021) in Somerset was 98.6% similar to the rate nationally of 90.7%¹²¹.

PrEP - Pre-exposure prophylaxis is a drug taken by HIV-negative individuals before they have sex to stop them acquiring HIV. As part of a combination approach to HIV prevention, the roll out of routine PrEP commissioning began in England in the autumn of 2020. Specialist sexual health services (SHS) are responsible for the delivery of PrEP to those at higher risk of acquiring HIV.

Proportion of all HIV negative individuals accessing specialist sexual health services (SHS) with pre-exposure prophylaxis (PrEP), determining the PrEP need in Somerset is 4.5%, this is lower than nationally (7.4%), and regionally (4.9%) (2021). The initiation or continuation of PrEP among those with PrEP need in Somerset is 60.4%,.This is lower than nationally (69.6%), and regionally (62.6%). The majority of those accessing PrEP in Somerset are GBMSM.

Table 4 – PrEP attendances by Somerset residents by quarter, 2022-23. Source: SWISH.

	New	Continuation	Discontinued/lost to follow up/moved
Q1	30	84	22
Q2	39	112	18
Q3	40	128	27
Q4	50	143	24

3.6.2 Blood Borne Virus at risk groups & risk factors

PWID are the primary risk group for BBV infection. Tattooing and piercing, and unprotected sex are an additional risk factor for people acquiring infection. Sharing of equipment used for injecting drugs contributes to BBV transmission. During the Covid-19 pandemic, many harm reduction services, including needle exchanges were reduced or suspended to redeploy staff or to facilitate social and physical distancing measures.

Injecting drug use is the biggest risk factor for HCV infection in the UK. During 2021, when compared with chronic HCV prevalence among PWID overall (14%), prevalence was higher among people who reported stimulant injection in the past year (20%), homelessness in the past year (19%), injecting any drug in the past year (18%) and ever imprisonment (17%). Most people who have HCV in England are poorly reached by health services and experience significant health inequalities. However, HIV infection remains low in the UK amongst PWID ¹²²; risk factors for HIV in the UK include being a man who has sex with other men, engage in high risk sexual practices, such as ‘chemsex’, and history or current sex working, amongst others¹²³ Services should aim to reduce the health inequalities experienced, particularly those who are more vulnerable, such as women and the homeless population¹²⁴.

Reported incidents of occupational exposure of healthcare workers to BBVs may be increasing, with particular staff groups at higher risk of exposure (anaesthetists). Many occupational exposures are preventable by following infection control practices and guidelines for the prevention, management, testing and reporting of occupation exposure¹²⁵.

3.6.3 Blood Borne Virus Policy

The WHO advocate for the elimination of HBV and HCV¹²⁶, including that individuals at risk of HIV should be tested; and offered antiretroviral treatment if positive¹²⁷. National policies, guidance, and interventions are in place to support the monitoring, control, and prevention of BBVs and to support this target.

HBV

Guidance is made available at: www.gov.uk/government/collections/hepatitis-b-guidance-data-and-analysis

This selection of guidance includes information on:

- Diagnosis and management
- Vaccination
- Infants born to hepatitis B infected mothers
- Data collection
- Epidemiology

HCV

Eliminating HCV is a WHO target by 2030 (at latest), in England prevalence of chronic HCV infection is declining, additionally England has surpassed WHO impact targets on reducing HCV-related mortality. However accessibility of testing has been impacted by the Covid-19 pandemic, impacting diagnosis rates¹²⁸.

National guidance is available at: www.gov.uk/government/collections/hepatitis-c-guidance-data-and-analysis

This includes:

- Diagnosis and management
- Data collection
- Epidemiology
- Occupational exposure
- Commissioning healthcare services

Recommendation – all those in ‘at risk’ groups to be offered regular HCV testing and promote the at-home testing kits offered by the NHS to Somerset residents

HIV

HIV guidance has been collated by UKHSA and is available at:

www.gov.uk/government/collections/hiv-surveillance-data-and-management

This guidance includes:

- Commissioning local HIV sexual and reproductive health services (2018)
- Health Promotion for Sexual and Reproductive Health and HIV: Strategic Action Plan 2016 to 2019 (2015)

Preventing the transmission of BBVs through health promotion, diagnosis, treatment and support of infected, and at risk, individuals aligns to the national priorities set out in the NHS Long Term Plan (2019)¹²⁹, the strategic priorities of Somerset Council's Improving lives in Somerset strategy (2019-2028)¹³⁰.

Relevant NICE Guidance:

- [Overview | Hepatitis B and C testing: people at risk of infection | Guidance | NICE](#)
- [Overview | Hepatitis B \(chronic\): diagnosis and management | Guidance | NICE](#)

3.7 Healthcare Associated Infections

3.7.1 Introduction and Context

Healthcare Associated infections (HCAI) are caused by a wide range of microorganisms, which have gained entry into the body. HCAI can exacerbate existing or underlying conditions, prolong hospital stay, delay recovery and adversely affect quality of life.

The most common HCAI are:

- methicillin-resistant *Staphylococcus aureus* (MRSA)
- methicillin-sensitive *Staphylococcus aureus* (MSSA)
- *Clostridium difficile* (*C.difficile*).
- *Escherichia coli* (*E.coli*)

Around 300,000 people a year in England acquire a HCAI which can develop either as a direct result of healthcare interventions for example medical or surgical treatment, or from being in contact with a healthcare setting such as hospital, care home, GP or dentist surgery etc. The most common types of HCAI are:

- Respiratory infections - 22.8%
- Urinary tract infections (UTI) – 17.2%
- Surgical site infections - 15.7%

HCAI are transmitted via:

- Blood, bodily fluids or excretions
- Contaminated environment or equipment
- Inhalation of droplets or airborne infections
- Inoculation
- Indwelling devices

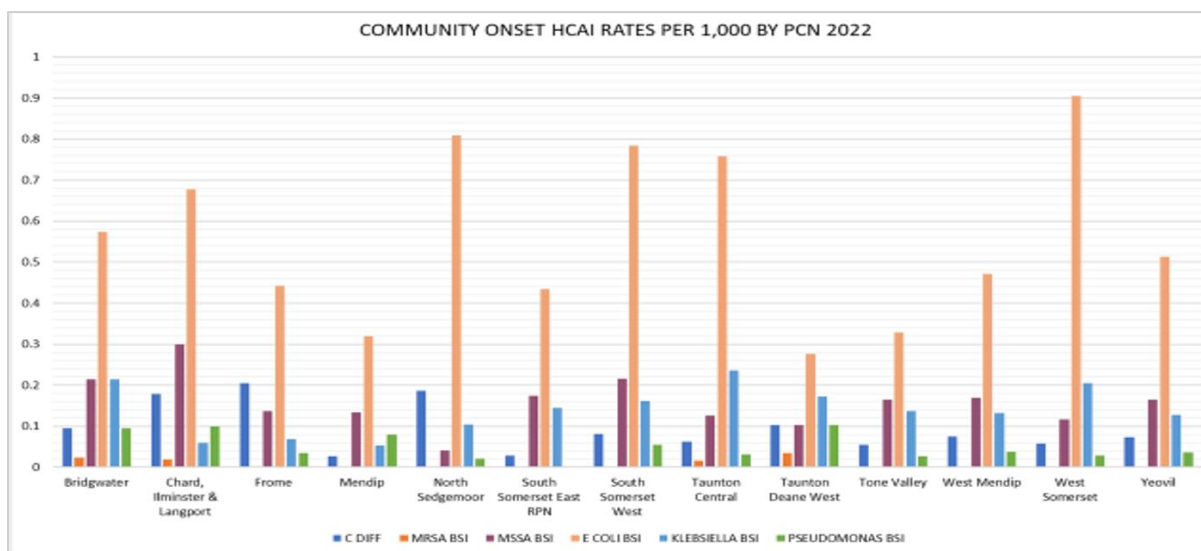


Figure 47 47 - Community onset HCAI rates per 1,000 by PCN 2022

Table 5 – Case numbers by calendar year

Year	MRSA BSI	MSSA BSI	C Difficile	E Coli BSI	Klebsiella BSI	Pseud BSI
2019	<5	174	105	514	126	48
2020	5	139	139	464	165	43
2021	14	167	148	471	141	41
2022	8	164	135	497	149	50
Total	29	644	527	1946	581	182

Benchmarking Somerset and region against the national picture. UTI admission rates in 95+ is very high for men, the second highest nationally, and much higher than in women 95+. Up to the age of 65 the admission rates are higher in females, then from 65 upwards rates are higher in males. Additionally, whilst Somerset is the lowest prescriber in the region for UTIs, admission rates are higher, particularly among very elderly men (95 years and older) and particularly for pyelonephritis.

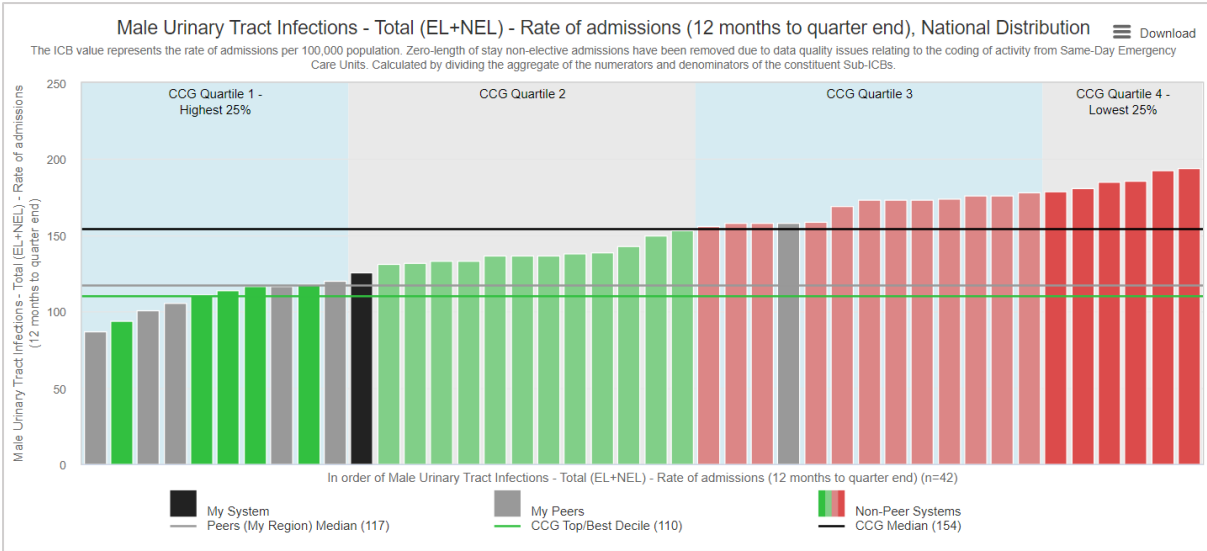


Figure 48 48 – Male urinary tract infections – Total (EL+NEL) – Rate of admissions (12 months to quarter end). The ICB value represents the rate of admissions per 100,000 population. (Zero-length of stay non-elective have been removed due to data quality issues relating to the coding of activity from same-day emergency care units)

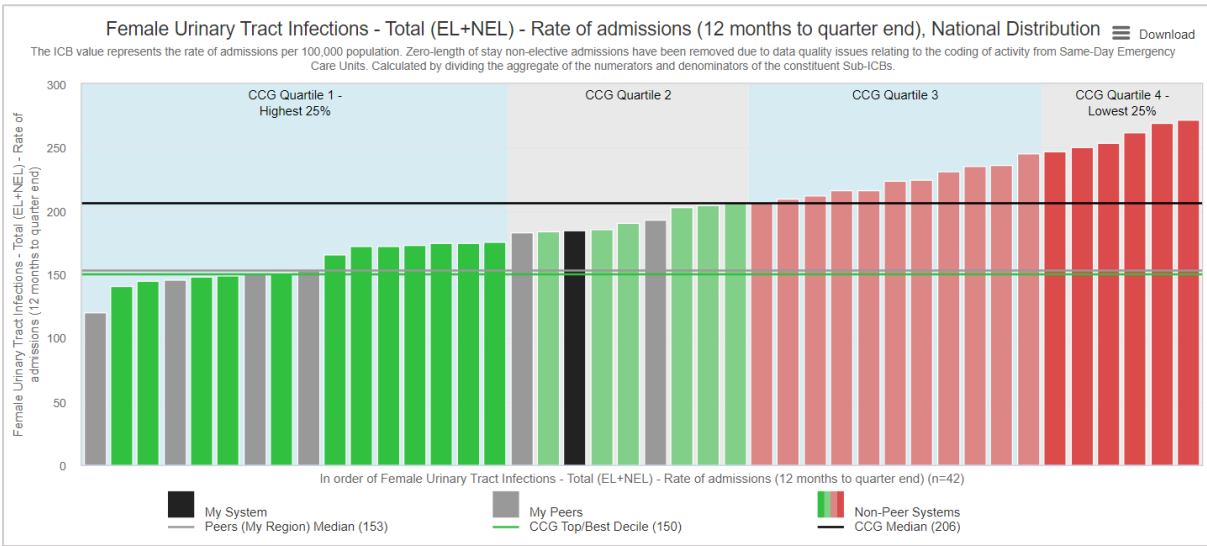


Figure 49 49 - Female urinary tract infections – Total (EL+NEL) – Rate of admissions (12 months to quarter end). The ICB value represents the rate of admissions per 100,000 population. (Zero-length of stay non-elective have been removed due to data quality issues relating to the coding of activity from same-day emergency care units)

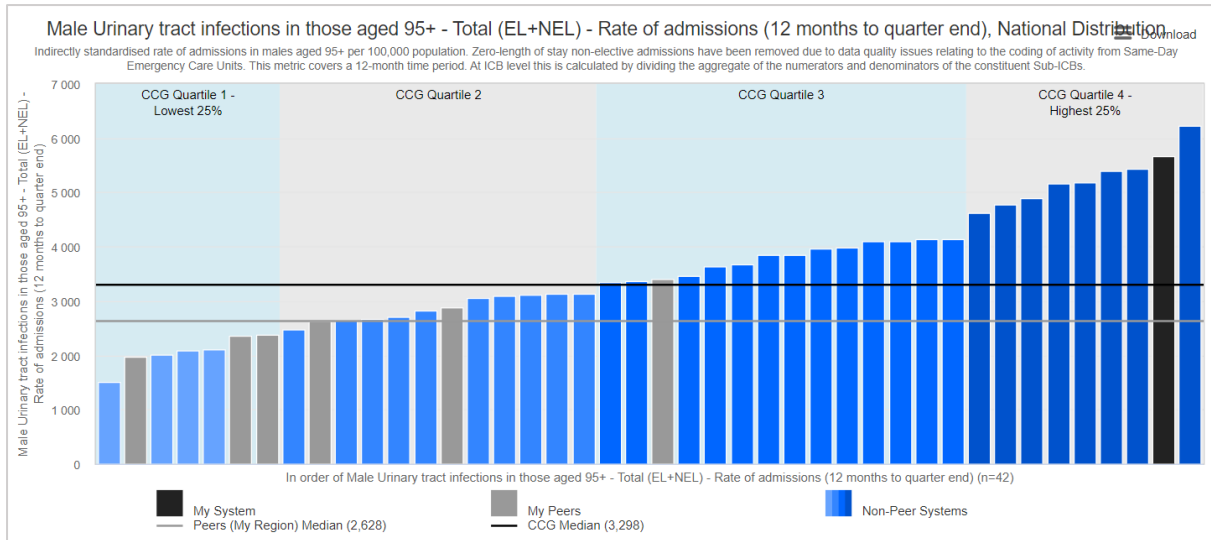


Figure 50 50 - Somerset (my system) - Female Urinary tract infections in those aged 95+ - Total (EL+NEL) – Rate of Admissions (12 month quarter end). Indirectly standardised rate of admissions on females aged 95+ per 100,000 population. (Zero-length of stay non-elective have been removed due to data quality issues relating to the coding of activity from same-day emergency care units).

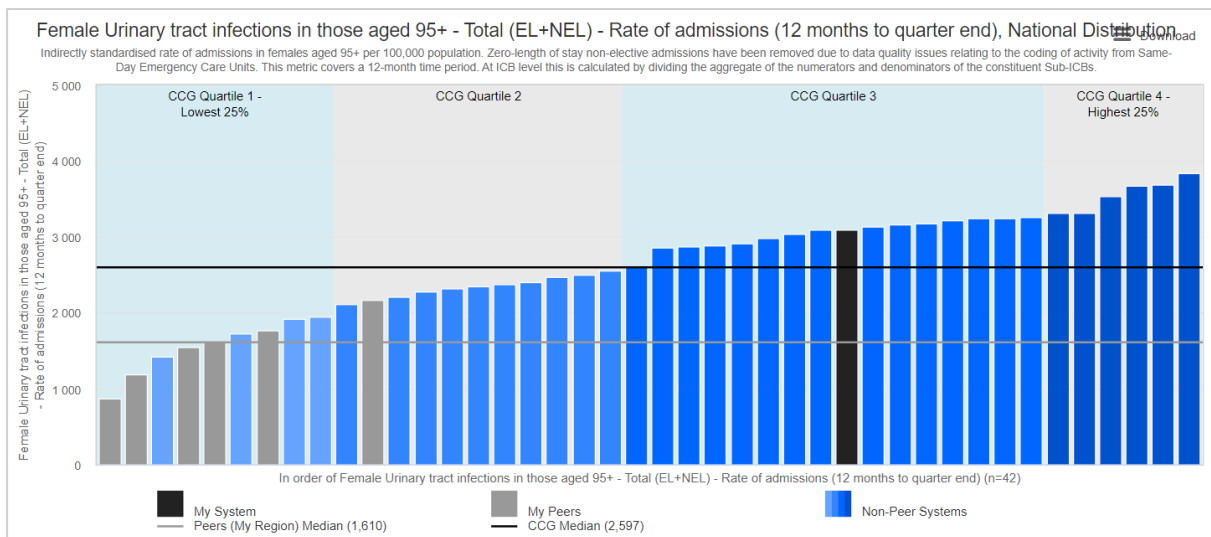


Figure 51 51 – Somerset (my system) - Female Urinary tract infections in those aged 95+ - Total (EL+NEL) – Rate of Admissions (12 month quarter end). Indirectly standardised rate of admissions on females aged 95+ per 100,000 population. (Zero-length of stay non-elective have been removed due to data quality issues relating to the coding of activity from same-day emergency care units).

[Recommendation – promote the prevention of UTIs through the ICB’s hydration project.](#)

3.7.2 Hospital Acquired Policy

Relevant NICE Guidelines:

- [Overview | Healthcare-associated infections: prevention and control | Guidance | NICE](#)

3.8 New and Emerging Infections

3.8.1 Introduction and Context

It is likely that as the climate in the Northern Hemisphere changes, in response to rising CO₂ levels, the incidence of new and emerging infections will increase; the latest example of this is tick borne encephalitis¹³¹. UKHSA is the lead agency that will notify local systems should there be new infections to be aware of.

3.8.1.1 Avian Influenza (Bird Flu)

Birds infected with the most serious strain of bird flu, called highly pathogenic avian influenza (HPAI), usually show some (or all) of the following signs: sudden death, swollen head, closed and runny eyes, lethargy and depression, lying down and unresponsiveness, lack of coordination, eating less than usual, sudden increase or decrease in water consumption. head and body shaking, drooping of the wings, and dragging of legs¹³².

Birds infected with the less serious strain of bird flu - low pathogenic avian influenza (LPAI) - may not show clear signs of infection. They may have mild breathing problems. These signs can indicate bird flu, but the avian influenza virus can only be confirmed through laboratory tests.

In the UK there has been 175 confirmed cases of HPAI, since 1st October 2022, 148 of which have been in England. Additionally there has been 283 cases of H5N1 (HPAI) in England since the beginning of the outbreak in October 2021¹³³.

Bird Flu disease control map - [APHA Interactive Avian Influenza Disease Map \(arcgis.com\)](https://arcgis.com)

The risk of the currently circulating strain of H5N1 is that it develops the potential to infect humans and to become transmissible from human to human; this then could cause a new pandemic. International surveillance systems are monitoring this situation

3.8.1.2. Travel acquired Infection

International travel has become more common for both work and leisure reasons, which exposes UK residents to infections that are not normally prevalent in their normal place of residence. This places our residents at increased risk of contracting these infections, unless preventative measures are adopted prior to travel. Additionally, if people do contract infections during periods of travel, when individuals return and present with clinical symptoms, clinicians may not be aware of locally endemic infections in the areas travelled – a good source of information is [NaTHNaC - Country List \(travelhealthpro.org.uk\)](https://travelhealthpro.org.uk).

Since the beginning of the Covid-19 pandemic in 2020 there has been a significant decrease in worldwide travel as many countries, including the UK, imposed restrictions on arriving and departing travellers¹³⁴. In line with falling numbers of travellers arriving in the UK, the number of travel-associated infections diagnosed in the UK also decreased.

Data on travel to and from the UK was obtained from the Office of National Statistics International Passenger Survey. In 2020, UK residents made 23.8 million visits abroad, which was a 74% decrease from 2019, and there were 11.1 million visits made by overseas residents to the UK, a 73% decrease compared to 2019¹³⁵. There is no data available on the travel patterns of Somerset residents.

Surveillance of travel associated infections is undertaken by the Travel Health and International Health Regulations (IHR) team in the Clinical and Emerging Infections Directorate, UK Health Security Agency (UKHSA). The latest report for England is available at [Travel-associated infections in England, Wales and Northern Ireland: 2020 and 2021 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/travel-associated-infections-in-england-wales-and-northern-ireland-2020-and-2021). This does not capture all travel related infections.

Table 6 - Travel-associated infections in England, Wales and Northern Ireland (EWNI): 2015 to 2021 – this contains small numbers but has been published by UKHSA¹³⁶

Disease (Organism)	2015	2016	2017	2018	2019	2020	2021
Chikungunya	101	154	92	57	98	36	17
Cholera (Vibrio cholerae serogroup O1 or O139)	15	16	14	17	15	2	1
Dengue	421	464	442	411	787	102	95
Yellow fever	–	–	–	1	–	–	–
Zika	4	275	21	4	6	1	1

Case numbers presented in this report include both confirmed and probable cases for chikungunya, dengue and Zika and confirmed cases for cholera and yellow fever.

[Recommendation – help people to be aware of where they can get trusted free advice from around precautions to take prior to travel](#)

4 Recommendations

People of lower socioeconomic status in Somerset, and people in inclusion health groups (such as migrants, the homeless) are at more risk of nearly all of these infections, and some people will become co-infected. Most of these infections, however, are preventable, whether that's through vaccination programmes or Infection Prevention and Control¹³⁷. IPC is an under researched area, but effective hand washing is one of the most cost-effective interventions to manage infections. AMR and IPC interventions should be higher on the research agenda¹³⁸.

Anti-Microbial Resistance was not covered in detail in this Health Needs Assessment, however, the above population groups are also the most affected by antibiotic resistance, and therefore, this reinforces the recommendation of this paper of a need for prevention of infection 5: the theme of the below recommendations is how we can use vaccinations, and good quality, accessible data to reduce the burden of disease in Somerset. Ensuring vaccine rates are high will prevent people from acquiring secondary bacterial infections, meaning that fewer antibiotics are prescribed. Historically, infectious diseases have been targeted individually, however, these groups are at risk, regardless of the infection. Focus should be on closing the ever-increasing health gap, and a strategic approach that prevents and controls diseases in those most at risk.

- Vaccination for flu and covid-19 must be prioritised to 'at risk' populations and to health and care staff
- Target stop smoking activities to those with chronic health conditions and those being admitted to hospital as a result of ARIs
- Target communications for frontline healthcare workers to encourage and increase flu vaccine uptake and ensure barriers to accessing vaccination are removed wherever possible
- Focused work to improve coverage of PPV vaccination of over 65 years should be improved to help prevent hospital admissions related to pneumonia. Reduce the rate of hospital admissions for pneumonia among older adults
- Recognising the impact of school closures during lockdowns on school based delivery of vaccination – system to support a summer holiday catch up campaign for HPV and adolescent booster
- Increase children looked after immunisation rates, to at least 90% for all antigens and if there are high refusal rates, explore the reasons behind these
- Check the elective home educated children are still being offered the full school aged vaccination offer
- Request UKHSA to gather up-to-date HBV intel as notifiable - to inform interventions
- All those in 'at risk' groups to be offered regular HCV testing and promote the at-home testing kits offered by the NHS to Somerset residents

- There is a HCV ODN dashboard, however, it has proven difficult to report this data on an ICB footprint which impacts the IVCB ability to prioritise this and see impact of actions
- Request UKHSA to gather surveillance data on Hepatitis as it is a notifiable infection and up to date data will inform interventions required to eliminate Hepatitis C, which is a national priority.
- Promote the prevention UTIs through the ICB's hydration project
- Help people to be aware of where they can get trusted free advice from around precautions to take prior to travel

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