

UKHSA Advisory Board

Title of paper Update on preparedness for infectious diseases
Date 31 January 2024
Sponsor Susan Hopkins

1. Purpose of the paper

- 1.1. To update on UKHSA activities to support preparedness for infectious diseases.

2. Recommendations

- 2.1. The Advisory Board is asked to **NOTE** this update on activities that have occurred or under development to prepare for infectious diseases threats.

3. Background

- 3.1. The Board previously received an overarching report on preparedness for Infectious Diseases in January 2023 (Ref: AB/23/005). This report updates on key activities that have occurred over the last 12 months and highlight the ongoing work in this area.
- 3.2. Infectious diseases impact on, and is impacted by, all six strategic priorities in the UKHSA strategic plan 2023 to 2026. Preparing for infectious diseases ensures we are ready to respond to all hazards. The statistical and research outputs [ANNEX A] ensure that we improve health outcomes through vaccines and reduce the impact of infectious diseases and antimicrobial resistance (AMR). Horizon scanning, vector surveillance and work on mitigating the impact of climate change protects from threats in the environment. Data and insights, including data on inequalities [including groups and settings most impacted] improves action across the health, public health, and government to improve health security. Bringing together the range of skills and expertise across the organisation and implementing our science strategy including the pathogen genomics strategy will help us make faster and greater progress towards our priorities.
- 3.3. The work outlined is delivering government policy and national actions plans for a range of endemic infectious diseases. It also delivers components of the Government Biological Security Strategy, responds to threats on the national risk register. The work is underpinned by an evidence base with cost effective policy implementation, robust evaluation, and the production of statistical reports.

4. Summary of Infectious Diseases impacting on the UK

4.1 **Endemic infectious diseases:**

- Overall there is a mixed picture in terms of endemic disease. Inequalities are evident across a wide range of infectious diseases and the syndemic of infectious diseases in individuals from deprived communities, ethnic minorities, inclusion health groups remain stark. The summary of epidemiological changes and graphs are available in ANNEX B.
- While Winter 2022/23 had above seasonal levels of **respiratory** infectious diseases [influenza, respiratory syncytial virus (RSV), scarlet fever], the early surveillance for this Winter 23/24 suggests a return to patterns observed prior to the COVID-19 pandemic. COVID-19 caused a number of waves over the course of the year, though the magnitude of impact on the NHS has decreased with each successive wave, despite new variants emerging due to vaccination, though there remains low uptake in certain population groups. In Autumn 2023, increased reports of [Mycoplasma](#) were reported in the UK and globally, an expected occurrence in the 3 to 5 year epidemic cycle. Increasing detections were likely to be related to improved ascertainment of this infection due to increasing use of (polymerase chain reaction) PCR but the rapid increase in positive results during the autumn is likely to indicate that winter 2023/24 is an epidemic season (occurs every 3 to 5 years).
- The rate of decline in newly diagnosed tuberculosis (TB) cases has slowed and there is an observed rise in clusters associated with recently arrivals to the UK, especially those who have not had screening prior to arrival. Latent TB testing is not widely available in the UK.
- **Contact** related infections including healthcare associated infections have started to return to pre-pandemic levels with increased healthcare exposures and interactions. A new strain of *Closteroides difficile* [ribotype 955] has caused two clusters in hospitals and has characteristics similar to the ribotype 027 that was associated with high levels of transmission and mortality previously. Methicillin-resistant Staphylococcus aureus (MRSA) and Carbapenemase resistant infections remain extremely low, though resistance in Gram-negative bloodstream infections continues to rise.
- **Sexually** transmitted infections provide a varied picture, while cases of gonorrhoea and syphilis continue to rise from historically low reported numbers in the 1990s, the number of chlamydia cases is stable. There are continued declines in cases of genital warts related to human papillomavirus (HPV) vaccination programmes in teenagers. There have been continued sporadic detections of Mpox in men who have sex with men with domestic and imported cases, with rare importations of Mpox cases from Africa; all cases where clade sub-typing occurred were Clade 1 [West African lineage].
- The number of people newly diagnosed with **blood-borne viruses** such as human immunodeficiency virus (HIV) and Hepatitis C have declined over the last 5 years (though with fluctuations due to the pandemic effect on healthcare delivery) related to effective treatment, prophylaxis, and testing, though there are widening inequalities in access to pre-exposure prophylaxis and testing for women, certain ethnicities, and age groups. Continued progress has been made to reduce mother to child transmission of Hepatitis B with testing in pregnancy, treatment, immunoglobulin, and vaccination.
- There have been high rates of clusters of infections acquired through the **oral** route including Norovirus and gastrointestinal outbreaks – particularly related to imported poultry from Poland, imported infections from holidays in [Turkey](#) and Southern

Europe and from a variety of domestic food. Genome sequencing has enabled accurate detection of food-related clusters, associated epidemiological investigations has developed effective hypothesis and genomic comparative analysis from suspected food sources have enabled confirmation of the food source. With subsequent close working with the Food Standards Agency, a number of food sources were removed from the market.

- **Vector** borne diseases, with the exception of Lyme disease, are not yet endemic in the UK.

4.2 **Emerging and re-emerging infectious Diseases:**

- In the UK, we have continued to detect **re-emerging vaccine preventable diseases** in under vaccinated groups, for example, [diphtheria](#) associated with migrants and increased [measles](#) cases detected in London and from late November in the West Midlands. [Polio](#) was detected in wastewater in London in 2022 and required substantial public health actions to prevent wider community spread.
- Over the last 12 months, UKHSA have mounted substantial health protection responses to **zoonotic influenza** including H5N1 (avian) and H1N2 (swine) – human cases have been detected through prospective surveillance studies in poultry workers and primary care surveillance respectively demonstrating the effectiveness of these new and enhanced systems. These continue to highlight the importance of effective preparation for respiratory (especially influenza) pandemics.
- While the detection of **vectors** that could transmit vector borne diseases in the UK has remained similar to previous years and is highlighted in [Chapter 8 in the Health Effects of Climate Change report](#), there has been continued detection of Usutu virus in birds in England (a flavivirus that can cause neurological syndromes similar to West Nile Virus). Whilst no human cases have been detected in the UK, it is an example of how potential vector borne pathogens may become established. The risk of vector borne disease is increasing due to climate and environmental change and the capacity and capability of system partners is low in this area.
- There is increasing spread of vectors and vector borne diseases in Europe with the detection of clinical cases of Dengue in Paris and southern France, Zika and Chikungunya in Italy, West Nile Virus, and Crimean Congo Haemorrhagic Fever (CCHF) in Spain [and detection of CCHF within ticks in France], demonstrating the increasing threat of these infections in neighbouring countries.
- UKHSA updated the report on [Global high consequence infectious disease events: summary on 8 January 2024 \(www.gov.uk\)](#) summarising the emergence and spread of these infections.
- The emergence of Mpox, zoonotic influenza, vector borne disease and environmental AMR has highlighted the continued importance of One Health working with animal and environmental health experts to deliver our mandate.

5. **Specific work to improve preparedness**

- 5.1 **Risk Assessment:** The UKHSA Health Security Threat Assessment (HSTA) was developed and shared with the Advisory Board in February and July 2023. This aims to provide a systematic appraisal of the potential acute health threats that the agency is responsible for and seeks to consider and compare how health threats may evolve over the next 5 years through reasonable worst-case scenarios. This work continues to evolve and improve with engagement across government and internationally. The next phase will also include an inequalities assessment.

- 5.2 **Horizon Scanning:** A workstream on emerging infections horizon scanning has been developed. This is a systematic approach to detect early signs of changes in risk to the UK from infectious disease where the hazard may be a new pathogen, a re-emerging pathogen, or a change in behaviour of an existing disease either due to changes in a pathogen (a variant) or a contextual factor. A group for vector borne diseases has been established as a pilot in 2023.

In the next 12 months this approach will be standardised across all infection hazards, grouped by the five modes of transmission, using the capabilities across the organisation in a coordinated way and providing a complete view of the risks by synthesising multidisciplinary data with escalation points for action. These groups will undertake live current data assessments and will feed the HSTA with signals of changing risk as well as triggering appropriate immediate health protection actions.

- 5.3 **Data Analytics and Surveillance and Technology** have provided a step change in our technological, data platforms and advanced analytics tooling. The UKHSA Enterprise Data and Analytics Platform (**EDAP**) has been developed to provide UKHSA with a secure, modern, cloud hosted data and analytics platform that will enable us to consolidate our data assets with optimal data and governance standards and improve standardisation of both processes and tools used to analyse data, maturing our data capabilities whilst keeping costs down and delivering consistent reporting, insights, and analytical analysis to support our decision making and policy development, provide greater automation with automated data pipelines and dashboards streamlining resource intensive tasks, freeing up skilled analysts to focus on their specialised work. Multiple legacy COVID-19 datasets are available on EDAP with many more in scope in coming months. EDAP currently has 145 live users moving to 250 users (subject to cyber/governance approval and technology onboarding), in early March.

We have published the [UKHSA Data Strategy](#) in September 2023 and progress on this has been presented to the Advisory Board; the implementation will ensure that we can safely collect, store and analyse data to meet the agency objectives.

- 5.4 **Diagnostics:** UKHSA has developed a programme of work to ensure that the various components of UKHSA working on diagnostics are directing their effort to an agreed set of priorities. Initial work has focused on the evaluation of current diagnostic testing capacity and capabilities using molecular platforms in UKHSA and the NHS, with subsequent work planned with the Devolved Administrations and other Government Departments. Outcomes from this work will determine the critical commercial partners for future assay development. This programme of work was used to assess the influenza assays in use in the NHS to determine whether they could detect H5N1 and H1N2 in recent months and provided assurance that assays could detect influenza, but that additional work was required to improve influenza sub-typing capacity for the detection of new strains.

UKHSA also has work underway to implement a Diagnostic Accelerator capability, which, building on specialist expertise in assay development and high-containment microbiology and real-world diagnostic evaluation capabilities, will support preparedness to meet future pandemic threats by prioritising diagnostic development

related to pathogens of greatest pandemic potential, and the technologies that prove most promising to counter these threats. This includes maintaining surge PCR testing for Q1 24/25 and evaluating point of care tests for influenza, COVID-19, and RSV, including assessing them against the emerging zoonotic influenza viruses detected in 2023. The recent H1N2 incident response provided an important opportunity to work across agencies, most notably with the Animal and Plant Health Agency (APHA). A joint UKHSA / APHA workshop is planned for Q2 of 2024 to discuss opportunities for joint working on diagnostic development, evaluation, and deployment, with a focus on zoonotic pathogens of pandemic potential.

- 5.5 **Vaccines and Medical Countermeasures:** The UKHSA [Vaccine Development and Evaluation centre](#) (VDEC) was launched in August 2023 providing high-quality, cutting-edge science, building on over 100 years of innovative scientific research. VDEC works with external partners such as the Coalition for Epidemic Preparedness Innovations (CEPI) and the USA National Institute of Allergy and Infectious Diseases (NIAID), and other partners to accelerate progress towards the 100 days mission. VDEC provides pre-clinical and clinical evaluation of new vaccines for academia and industry ensuring that UKHSA is able to maintain the capabilities it needs, for example, to assess COVID-19 variants and their impact on available vaccines, assess vaccines against high consequence infectious diseases and support our work to tackle AMR. The facilities within UKHSA laboratories provide the infrastructure to perform in vitro and in vivo studies for all hazard group infections. This year UKHSA have built the evidence and presented to the Joint Committee on Vaccination and Immunisation (JCVI) on a wide range of infections culminating in recommendations and advice to Ministers on COVID-19, influenza, RSV, and varicella vaccines. UKHSA also provided evidence that informed JCVI advice to Ministers on Smallpox vaccine for Mpox and Bexsero [MenB vaccine] for gonorrhoea for high-risk attendees of sexual health services.

UKHSA continues to provide national expertise to support the delivery of NHS vaccination programme and will continue to work with NHS England (NHSE), to ensure delivery of their recently launched vaccination strategy including ensuring better data availability, optimised delivery routes, assessing vaccine misinformation and providing robust communications on the benefits of vaccination across the life course.

- 5.6 **Pathogen Genomics:** UKHSA has continued to build the capacity and capability for pathogen genomic surveillance and assessment. It published its Pathogen Genomics Strategy in January 2024 with 7 key aims and three areas of focus: AMR; pathogens which are vaccine preventable or have national/global elimination targets; and emerging infections. The work on emerging infections was prioritised in 2023 with the mSCAPE project to ingest metagenomic data from clinical and academic sources to a central data platform and to pilot processing it at scale for surveillance and biosecurity uses, forms part of a wider landscape of UK activities on metagenomics, including clinical metagenomics diagnostic service roll out in the NHS funded by NHSE and Office for Life Sciences (OLS), and independent research studies evaluating metagenomics in academic centres, including a large programme on respiratory metagenomics at Wellcome Sanger Institute (WSI).

UKHSA has partnered with academic collaborators across the UK and globally and is working closely with the World Health Organisation (WHO) to consider future global requirements for data sharing, data platforms to ensure transparent release of pathogen genomic data.

5.7 Development of Surveillance Protocols: Specific workstreams have been developed as part of the National Security Risk Assessment (NSRA) risks related to R78 (pandemic) and R79 (emerging infections) to develop surveillance studies and umbrella protocols and ensure they can be operationalised in a timely manner. We have a Health Research Authority (HRA) Research Ethics Committee (REC) approved umbrella protocol for diagnostic evaluation that has been used for a variety of point of care tests, including studies collaborating with the NHS. The First Few X cases and contacts (FFX) is being refreshed and operationalised for H1N2, which, enabled us to successfully deploy an enhanced local surveillance strategy. During the recent H2N1 incident we successfully stood up the FFX protocol and data operations. We have the ability to deploy field testing studies for zoonoses, piloted in poultry workers exposed to avian flu and now being developed as a more generic capability.

5.8 National and International Collaborations: We are working as part of the Health Protection Common Framework with our equivalents in devolved administrations.

UKHSA has led the development, on behalf of the Cabinet Office, of a list for priority pathogens to inform the implementation of the Biosecurity Strategy and decisions on Research and Development funding including the development of diagnostics, vaccines, and therapeutics. UKHSA will now lead a consultation with key partners to refine this further.

UKHSA is continuing to work on the 100 days mission to build rapid diagnostics, work with industry and academia to develop therapeutics and vaccines for an emerging infection or pandemic and is working with Coalition for Epidemic Preparedness Innovation (CEPI), FIND, WHO, and International Pathogen Surveillance Network (IPSN) to ensure that we are at the forefront of discovery and implementation.

The 8 WHO Collaborating Centres hosted within UKHSA laboratories continue to work closely with WHO to strengthen global preparedness for infectious diseases. We have a range of MOUs with other public health agencies, including European Centre for Disease Control (ECDC), and discussions are underway to develop collaborations with South Korea in preparedness and response to infectious disease threats.

We have met global elimination targets for mother to child transmission of Hepatitis B, in 2021 were considered to have eliminated Measles (though this is likely to be rescinded with the recent outbreaks), and in December 2023 were removed from the Polio watchlist having achieved 12 months without evidence of potential local transmission.

5.9 Health Protection Operations and Delivery: The ready to respond workstream has reported separately to the Advisory Board. Key components of this include the ability to coordinate and deliver effectively as an agency, including surge planning for testing and contact tracing to support the health protection system response. The Health Protection Operations group has contracts to deliver contact centres, national

pandemic flu service and delivers supplier management, forecasting and capacity planning, script, training and content management, project management, National Pandemic Flu Service (NPFs) test and assurance. The contact division are currently funded for FY24/25.

Health Protection Operations has also developed a Programme Delivery Unit (PDU) working alongside, and collaboratively, with UKHSA Regional teams to provide effective and agile assistance, supporting the provision of resilient and efficient health protection services (including mutual aid), amplifying best practice and knowledge mobilisation, and facilitating quality improvement and innovation.

5.10 Community Collaboration and System Leadership: UKHSA provides system leadership and coordination for infectious diseases – notable examples of work include:

- developing workshops with sexual health commissioners, local government, Directors of Public Health, professional and community sector organisations to develop deliverable actions to reduce sexually transmitted infections;
- partnership work with the Department for Environment, Food and Rural Affairs (DEFRA) and associated agency to consider One Health, Animal Infection Risk Assessments, zoonotic infections, environmental risks, and wastewater management;
- working with partners to deliver and optimise vaccine delivery;
- ensuring that parents, teachers, and schools have the right messages to support children in education; and
- providing communications to the public and media to ensure transparent and accurate messaging related to infectious diseases.

5.11 Research: UKHSA has presented research priorities on emerging infections to UK Research and Innovation (UKRI), which has subsequently funded FluMap2. In addition, the Department of Health and Social Care (DHSC) and National Institute for Health and Care Research (NIHR) have started the commissioning of the next round of Health Protection Research Units (HPRUs) with Stage 1 applications currently under review. UKHSA leads for these potential HPRUs have been appointed.

UKHSA has worked with DHSC and research funders to develop a government health and care research and innovation framework and governance structure to enable UK government research funders to collaborate more effectively by determining research infrastructure needs, research priorities, and appropriate funding routes to rapidly deliver research that may help to prepare for and respond to emerging infectious disease threats in the UK and contribute to improving global health security.

5.12 Workforce: UKHSA has developed a people strategy, worked on a Digital Data and Technology (DDaT) business case, and starting new work to focus on scientific, clinical (including infection prevention and control) and public health pathways in organisation. This year has required stabilisation of services and business units with recruitment of permanent staff where there were fixed term individuals appointed during the pandemic. We have developed a Health Protection Governance and Quality strategy and implementation plan to ensure that quality improvement, clinical governance, training is embedded within our teams.

5.13 **Health Equity:** UKHSA is committed to achieving more equitable outcomes and taking targeted action in the population groups and settings most impacted by infectious disease threats. Our Health Equity for Health Security strategy, published internally in June 2023 outlines actions we will take across four key themes to drive progress. This includes developing our data capabilities to be able to detect inequalities in disease risk, as described in our recent technical report on inequalities in COVID-19 and flu emergency hospital admissions ([COVID-19 and flu: inequalities in emergency hospital admission rates - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/118448/COVID-19_and_flu_inequalities_in_emergency_hospital_admission_rates_-_GOV.UK_(www.gov.uk).pdf)). In order to achieve elimination targets for infectious disease we need to take targeted action in specific groups. We recently published a TB toolkit for inclusion health, developed in close collaboration with NHS, local authority partners and the voluntary and community sector.

6. Conclusion

- 6.1 The last 12 months has given renewed focus to the wide range of current and emerging infectious diseases threats after 3 years of focus on COVID-19 and urgent/emergency work.
- 6.2 UKHSA, building on lessons identified from COVID-19 and other incidents and outbreaks managed over the last 3 years, has developed increased capacity and capability to detect and mitigate both known and future infectious diseases threats.
- 6.3 We need to have sufficient resources to deliver our strategic priorities, respond to incidents and outbreaks as they emerge, develop preparedness across a wide range of infectious diseases threats across the organisation and ensure we are effectively delivering our mission. While the assessment of capabilities has improved, there is significant implementation work to deliver the strategies that we have developed which will require sustained levels of funding, collaboration, and organisational leadership.
- 6.4 Further enhanced capabilities to improve pandemic readiness, such as rapid testing and genomics capacity, scaling call centre and digital services and modernising the technological platforms will require further choices by government.

Prof Susan Hopkins

UKHSA Chief Medical Advisor

ANNEX A. Communicating with Professionals, the Public and the Media

1. Official Statistics

UKHSA publishes the following releases as official statistics.

COVID-19

[National flu and COVID-19 weekly surveillance reports](#)

[Winter Coronavirus \(COVID-19\) Infection Study: estimates of epidemiological characteristics, England and Scotland: 2023 to 2024](#)

Immunisation

[Cover of vaccination evaluated rapidly \(COVER\) programme quarterly data](#)

[COVID-19 vaccine uptake in frontline healthcare workers \(published April to September\)](#)

[HPV vaccine coverage](#)

[Seasonal influenza vaccine uptake in children of school age: monthly data, 2023 to 2024](#)

[Seasonal flu vaccine uptake in children of school age: winter 2021 to 2022 \(annual report\)](#)

[Seasonal influenza and COVID-19 vaccine uptake in frontline healthcare workers: monthly data 2023 to 2024](#)

[Seasonal flu vaccine uptake in healthcare workers: winter 2021 to 2022 \(annual report\)](#)

[Seasonal influenza and vaccine uptake in GP patients \(published October to April\)](#)

[Seasonal flu vaccine uptake in GP patients: winter 2021 to 2022 \(annual report\)](#)

Infectious diseases: mandatory enhanced surveillance of healthcare associated infections

Monthly HCAI data sets

[C. difficile infection: monthly data by prior trust exposure](#)

[E. coli bacteraemia: monthly data by location of onset](#)

[Klebsiella species bacteraemia: monthly data by location of onset](#)

[MRSA bacteraemia: monthly data by location of onset](#)

[MSSA bacteraemia: monthly data by location of onset](#)

[P. aeruginosa bacteraemia: monthly data by location of onset](#)

Quarterly and annual HCAI reports

[MRSA, MSSA, Gram-negative bacteraemia and CDI: quarterly report](#)

[MRSA, MSSA and Gram-negative bacteraemia and CDI: 30-day all-cause fatality](#)

[MRSA, MSSA, Gram-negative bacteraemia and CDI: independent sector annual report](#)

[MRSA, MSSA, Gram-negative bacteraemia and CDI: annual report](#)

Releases associated with this report include:

- [C. difficile infection: annual data](#)
- [E. coli bacteraemia: annual data](#)
- [Klebsiella species bacteraemia: annual data](#)
- [MRSA bacteraemia: annual data](#)
- [MSSA bacteraemia: annual data](#)
- [P. aeruginosa bacteraemia: annual data](#)

Other infectious diseases

[National flu activity – weekly reports](#)

[National flu activity – annual reports](#)

[National norovirus and rotavirus reports](#)

[Reports of cases of tuberculosis to the national enhanced tuberculosis surveillance system](#)

[Tuberculosis in England: quarterly reports](#)

Mortality surveillance

[Weekly all-cause mortality surveillance](#)

Sexual and reproductive health

[HIV surveillance data tables](#)

[National chlamydia screening programme \(NCSP\) data tables](#)

[Sexually transmitted infections \(STIs\) in England data tables](#)

2. Other examples of statistical publications

Annual reports

English Surveillance Programme for Antimicrobial Usage and Resistance [ESPAUR]

HIV Monitoring and Evaluation Framework

HIV Positive Voices report

HCV Monitoring and Elimination Report

TB Annual Report

Health Equity Annual Report [first publication in 2024]

Shooting up report

Immunisation survey 2023: attitudes of young people and parents

Gonococcal resistance to antimicrobials surveillance programme report

STI annual report

UK One Health report with DEFRA, APHA and devolved administrations

Imported malaria in the UK: statistics

Bloodborne viruses: opt-out testing in emergency departments

Common animal-associated infections: 2023

Weekly reports

Syndromic Surveillance from primary care, NHS111, ambulance services, Emergency departments.

Health Protection Reports for other communicable diseases not included as national statistics and outbreak reports

Notifiable infectious diseases

Ad-hoc

Technical briefings on SARS-CoV-2, Avian Influenza, Mpox and other emerging infectious diseases

3. HAIRS risk assessment

The [Human Animal Infections and Risk Surveillance \(HAIRS\) group](#) is a multi-agency cross-government horizon scanning and risk assessment group. It aims to identify and risk assess emerging and potentially zoonotic infections which may pose a threat to UK public health. Since its establishment in early 2004, there has

been a steady evolution and development of the risk assessment processes used by the group.

[HAIRS risk assessment: Usutu virus](#) 20 December 2023

[HAIRS risk assessment: Brucella canis](#) 18 September 2023

[HAIRS risk assessment: avian influenza A\(H5N1\) in non-avian UK species](#) 27 July 2023

4. **Fingertips** for all statistical and other releases by Local Authority, GPs, ICBs, NHS region, Health Protection Regions for
 - a. AMR and HCAI
 - b. STI
 - c. HIV, Hepatitis B and C
 - d. Immunisation uptake
 - e. Vaccine preventable diseases
 - f. TB
 - g. Gastrointestinal infections
 - h. Zoonotic infections

5. UKHSA Data Dashboard

[UKHSA data dashboard](#)

Releases data weekly on influenza, COVID-19 and other respiratory viruses
Planning for wider data release

6. National Clinical and Health Protection Guideline updates

Approximately 350 updates to guidance, leaflets for NHS Use, PGDs for vaccine and therapeutic use, infection prevention and control for specific diseases and settings outside the NHS.

7. Peer reviewed publications

[Find Research outputs — UK Health Security Agency \(ukhsa.gov.uk\)](#)

466 individuals included in these outputs with research publications; with 105 individuals with 100+ publications recorded

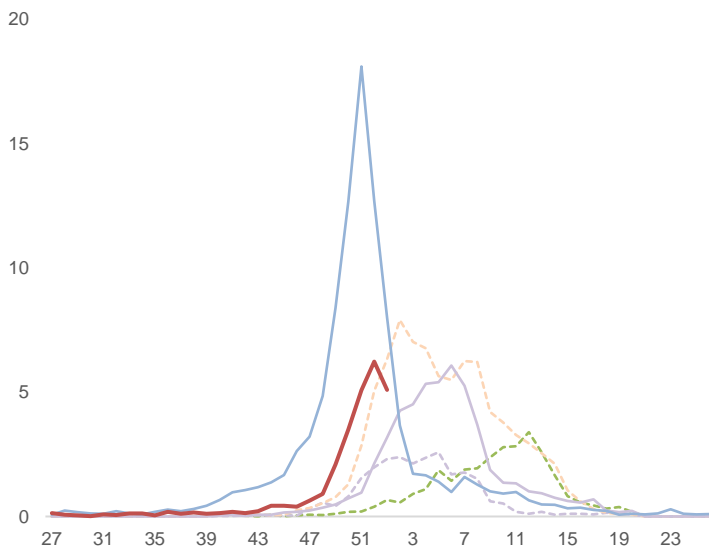
In 2023, 956 peer reviewed publications were captured by the research tools and available through the dedicated web-portal.

ANNEX B.

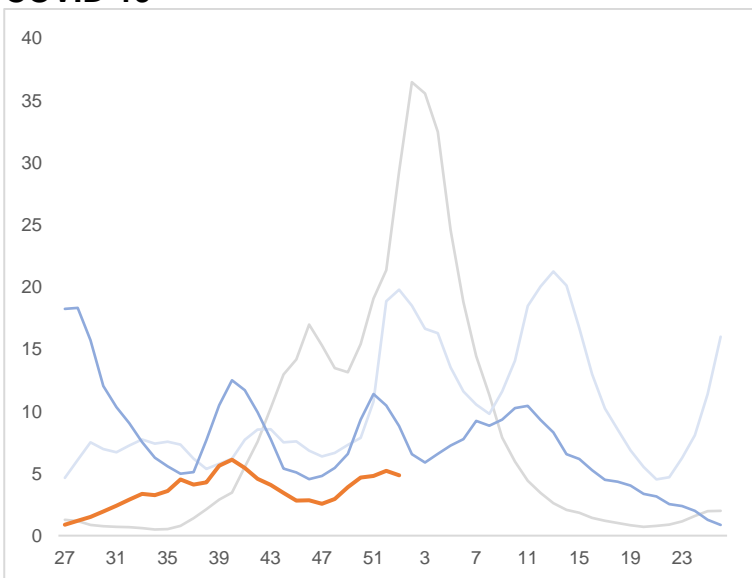
More detailed graphs and data on endemic and emerging infectious diseases specifically mentioned in the report – data available from statistical publications and dashboards

Seasonal Respiratory Diseases

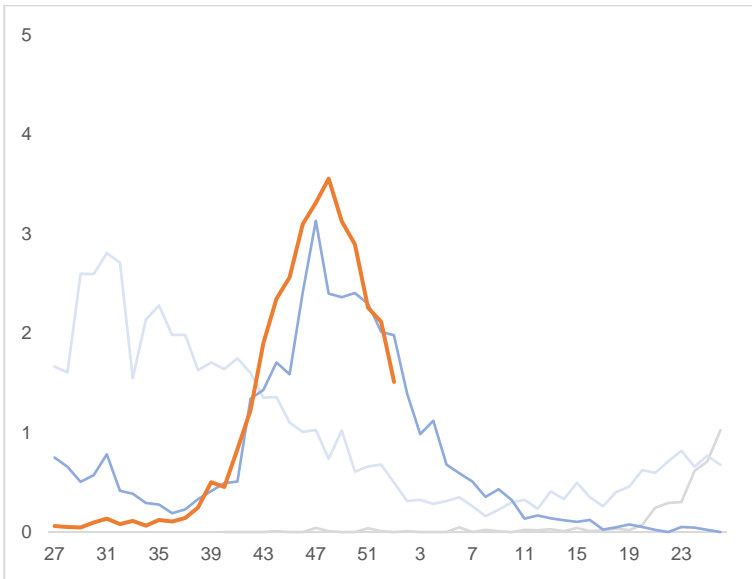
Winter Seasonal Infectious Hazards – season to date, historic comparisons, UKHSA
x axis – Epi week, y axis - admissions per week per 100k from sentinel SARI data
(influenza, COVID-19, RSV),
Influenza



COVID-19



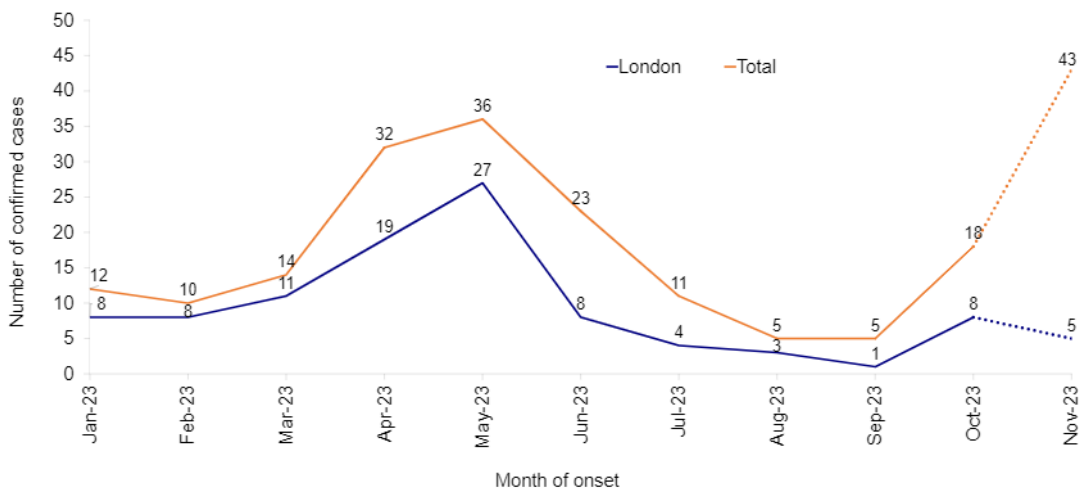
RSV



Measles

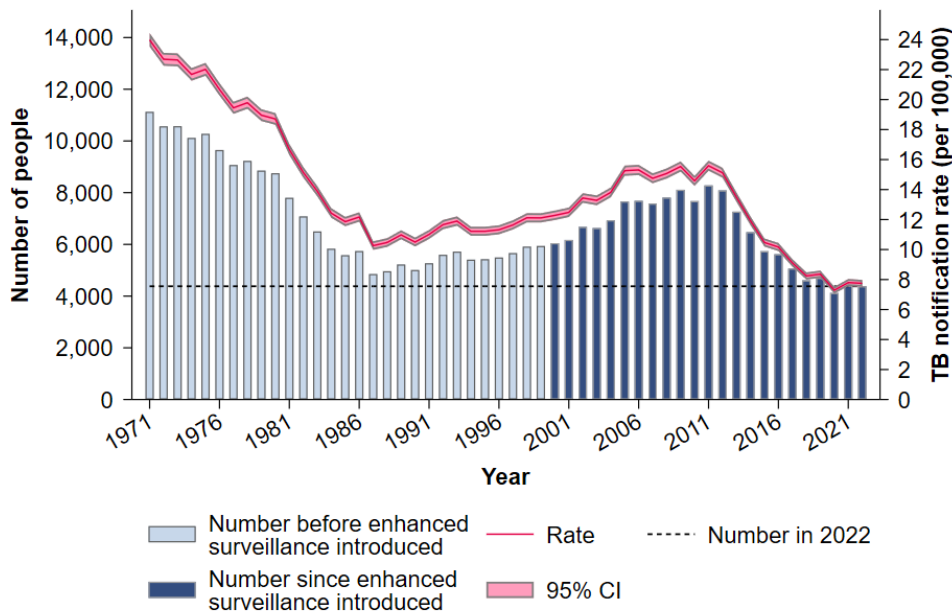
Year	N
2019	797
2020	79
2021	2
2022	53
2023 [to Nov 2023]	209

Laboratory confirmed cases of measles by month of onset of rash or symptoms reported, London and England: January 2023 to November 2023 [note 2]



Tuberculosis

Number of TB notifications and TB notification rate per 100,000, England, 1971 to 2022

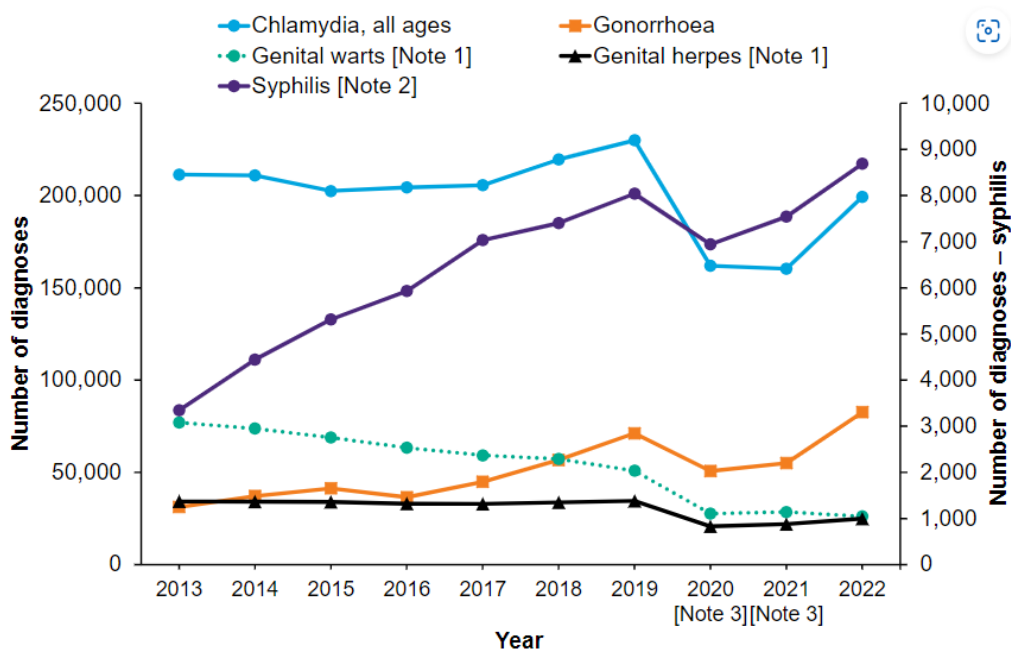


Sexually transmitted infections and blood borne infections

From 2021 to 2022

- chlamydia diagnoses (all ages) increased by 24.3% from 160,279 to 199,233
 - gonorrhoea diagnoses increased by 50.3% from 54,961 to 82,592
 - infectious syphilis diagnoses increased by 15.2% from 7,543 to 8,692
 - first episode genital warts diagnoses decreased by 8.5% from 28,497 to 26,079
- the impact of STIs remains greatest in young people aged 15 to 24 years, GBMSM, and some black ethnic groups

Number of new diagnoses of chlamydia, gonorrhoea, genital warts, genital herpes (primary y-axis), and syphilis (secondary y-axis) among England residents in SHS, 2013 to 2022



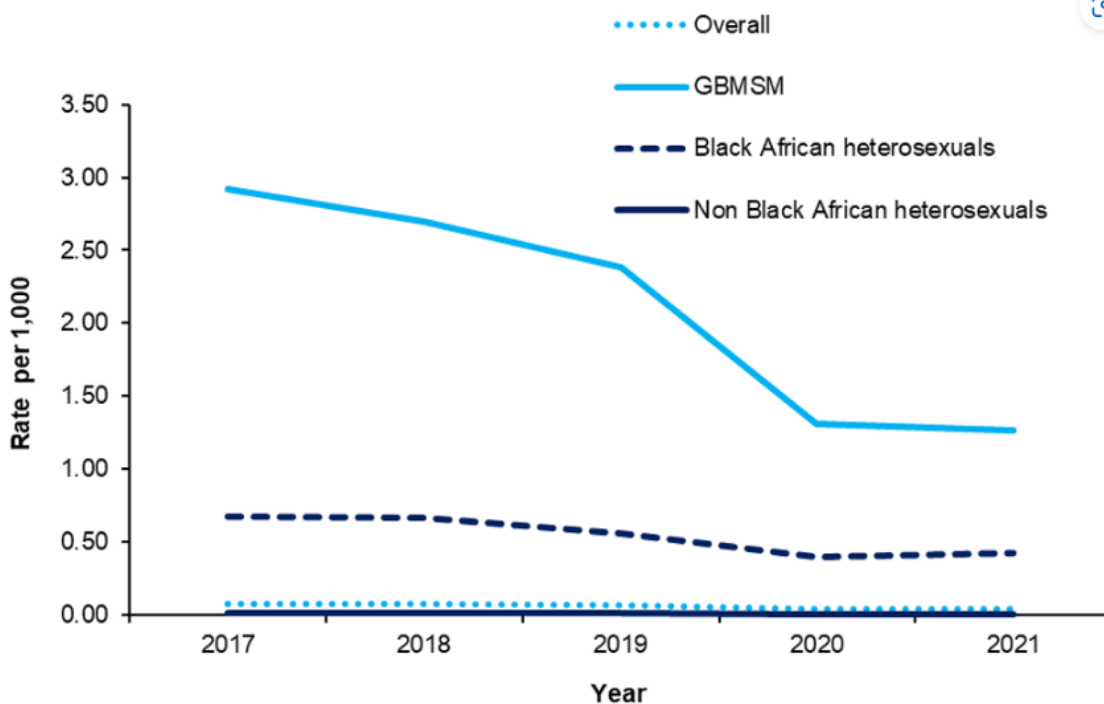
HIV

From 2019 to 2022:

- new HIV diagnoses first made in England decreased by 14% from 2,819 to 2,444
- a 42% fall in new diagnoses among gay, bisexual, and other men who have sex with men (GBMSM) with a 49% decrease in white ethnicity and a 27% fall in other ethnicities
- a 24% reduction in women exposed through sex with men
- among people exposed by sex between men and women, the number and proportion of people newly diagnosed in England who were of white ethnicity fell by 39% compared to 6% (396 to 374) among people of black African ethnicity and a slight increase in other ethnicities
- deaths occurring in people living with HIV fell by 18%

In 2022, England met the UNAIDS 2025 95-95-95 targets for the third time with 95% of all people with HIV being diagnosed, 98% of those diagnosed on treatment and 98% of those on treatment being virally suppressed and unable to pass on the virus.

New HIV diagnoses rate (per 1,000) among people first diagnosed in England, by specific population groups, ages 15 to 74, 2017 to 2021

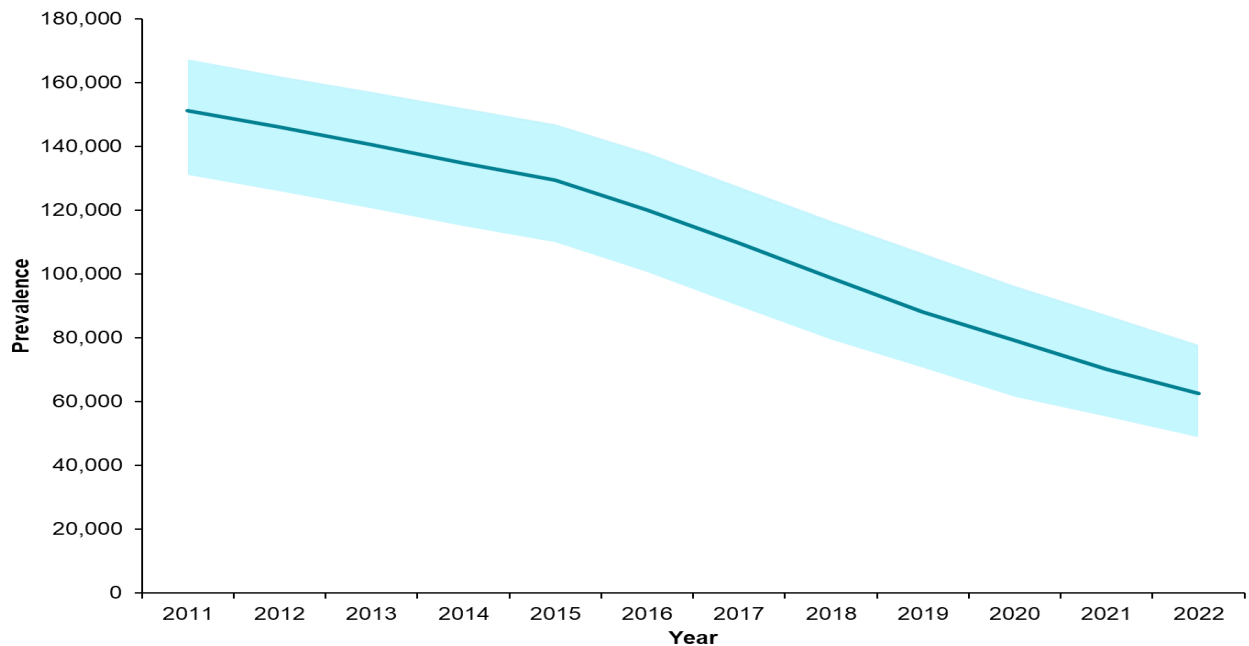


Hepatitis C in England

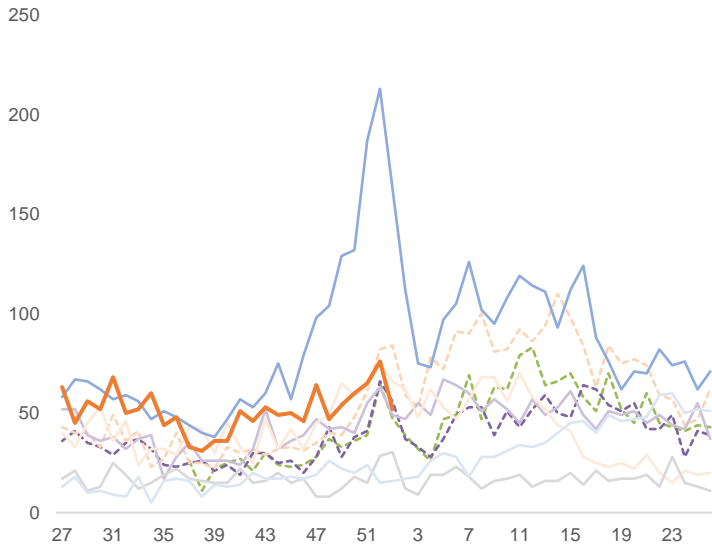
From 2015 to 2022, there was a

- 51.6% reduction in the estimated prevalence [from 129,400 to 62,600] of adults aged over 16 were estimated to be living with chronic HCV infection

Estimated prevalence of chronic HCV infection in England (with 95% CrI), 2011 to 2022 general adult population



**Contact
Invasive Group A Streptococcus, notifications per week (iGAS),**

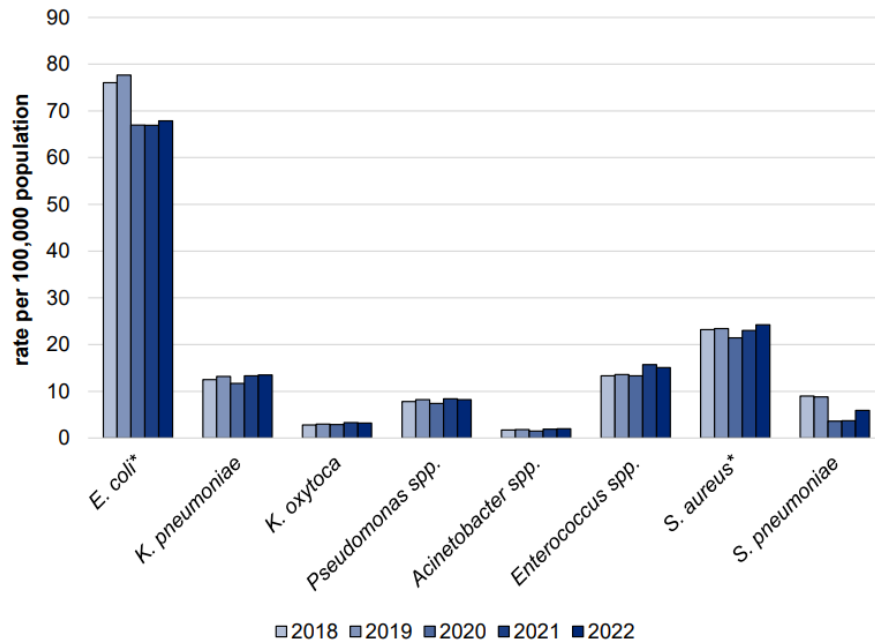


From 2018 to 2022, there was

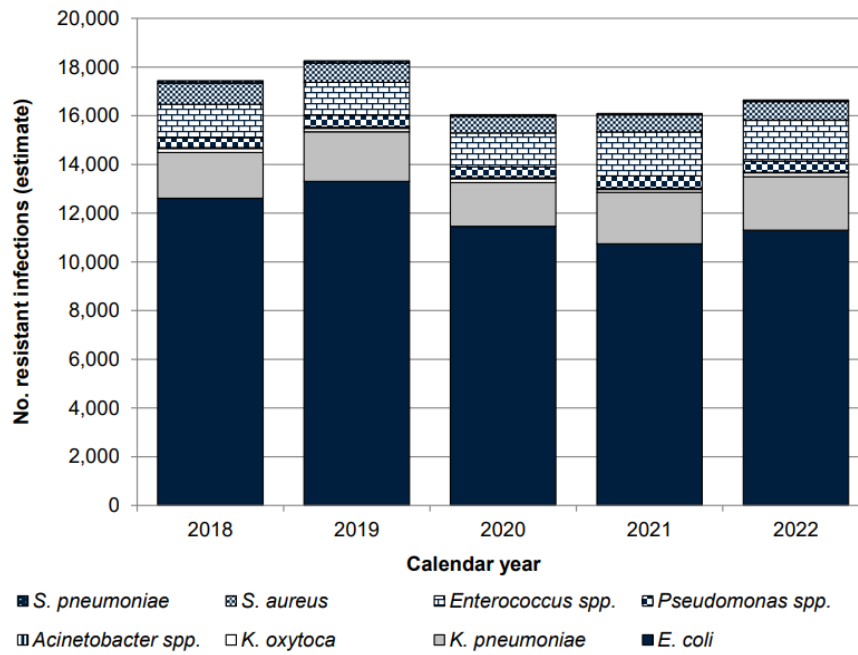
- 11.7% increase in patient episodes of bloodstream infections (BSIs) and/or fungaemia in England
- 1.6% decrease in the estimated overall burden of antimicrobial resistance (AMR) infections
- 4.6% decrease in the estimated burden of priority pathogen AMR BSIs

- While the rate of acquired carbapenemase producing Gram negative BSIs remain low [rate 1 in 1million of the population], it doubled from the start of official notifications in Q4, 2020 to Q2, 2023

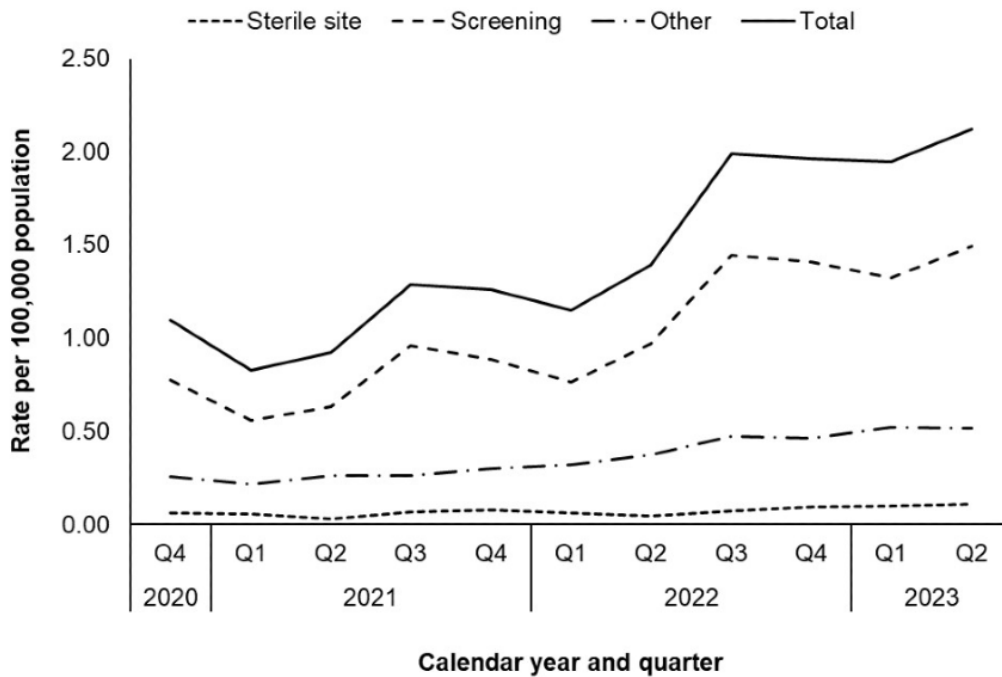
Annual incidence rate of key pathogen BSI, per 100,000 population, England 2018 to 2022



Annual estimated total of the burden of antibiotic-resistant bloodstream episodes, England 2018 to 2022



Rate of acquired carbapenemase-producing Gram-negative bacteria episodes by specimen type and quarter (England): October 2020 to June 2023



Oral

Norovirus laboratory reports in England by week during the 2023/2024 season, compared to 5-season average

