ARHAI Scotland

Antimicrobial Resistance and Healthcare Associated Infection

NHS National Services Scotland

Scottish One Health Antimicrobial Use and Antimicrobial Resistance in 2021

Annual Report

Infographic Summary

Publication date:
15 November 2022

COVID-19

COVID-19 has impacted healthcare delivery in both hospital and community settings in 2020 and 2021. Priorities were adjusted to respond to the pandemic, leading to changes to delivery of services and to the patient population, including a new cohort of patients being treated for COVID-19. This will make comparisons with previous years difficult, therefore results presented in this report must be interpreted in the context of the pandemic and with due caution.

For further information on how COVID-19 has impacted healthcare delivery please see the ARHAI Scotland annual report.

nss.nhs.scot/publications/arhai-scotland-2021-annual-report

Antibiotic use in humans

One of the main drivers of resistance is antibiotic use and a key way of tackling resistance is to optimise antibiotic use.

Total antibiotic use

There has been a **16.9% decrease** in **antibiotic use** between **2017** and **2021**

Antibiotic use in primary care

There has been a **18.8% decrease** in **antibiotic use** in **primary care** between **2017** and **2021**

23.0% of the **Scottish population** had at **least one course** of **antibiotics** in **2021**

77.6% of **antibiotic prescriptions** in **2021** were **Access** (first line) **antibiotic items**

Antibiotic use in acute hospitals

There has been a **8.6% decrease** in **antibiotic use** in **acute hospitals** between **2017** and **2021**

62.4% of **antibiotic use** in **2021** was **Access** (first line) **antibiotics**

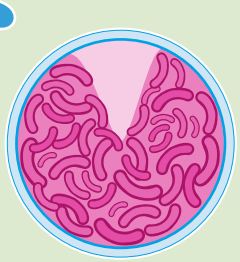
There has been a **20.6% decrease** in the use of **Watch and Reserve group antibiotics** between **2017** and **2021**

Antimicrobial resistance in humans

Antimicrobial resistance (AMR) is a global concern and the scale and threat is well described in the UK 5-year action plan for antimicrobial resistance 2019 to 2024.

AMR burden

In **2021**, there were an **estimated** **1,288** **drug resistant bacteraemia**



of those, **86.5%** were **caused** by **drug resistant Gram-negative bacteria**

E. coli bacteraemia (ECB)

In **2021**, ***Escherichia coli*** **(*E. coli*)** was the **most common** **cause** of **Gram-negative bacteraemia**

The **incidence** of **ECB** was **78.5** per 100,000 population

↔ The **incidence** has **remained stable** **between 2020** and **2021**

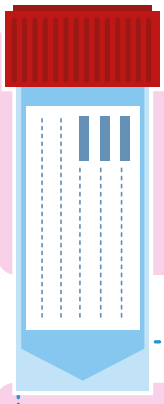
↓ There has been a **3.4%** **year-on-year** **decrease** in **incidence** **over** the **last 5 years**

↔ **Non-susceptibility** in **ECB isolates** has **remained** **stable** **between 2020** and **2021**

↓ **Other than non-susceptibility** to **co-amoxiclav** which has **decreased**

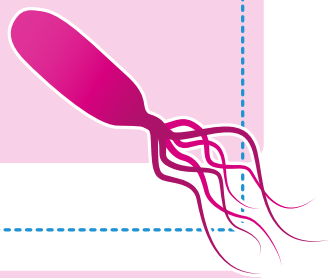
Urinary tract infections

Urinary tract infections (UTI) are common in both community and healthcare settings. The development of resistance in urinary isolates can act as an early warning of resistance in bacteria causing more serious infections.



***Escherichia coli* (*E. coli*)** is the **most common cause** of **UTI**

In 2021, there were **127,377 cases** of ***E. coli*** in **urinary isolates**



Non-susceptibility in ***E. coli* urinary isolates** has **decreased between 2020** and **2021**

Other than non-susceptibility to **fosfomycin** which has **increased**

Enterococcal bacteraemia

Enterococci cause a range of infections in both humans and animals.

In **2021**, the **incidence** of ***Enterococcus faecalis* bacteraemia** was **9.4** per 100,000 population and ***Enterococcus faecium* bacteraemia** was **5.0** per 100,000 population.

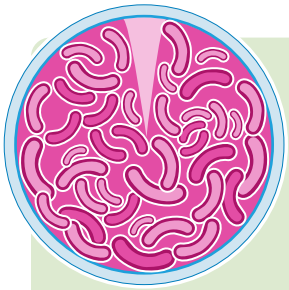
The **incidence** of ***E. faecalis*** and ***E. faecium* bacteraemia** has remained **stable** over the **last 5 years**

Non-susceptibility in ***E. faecium* bacteraemia isolates** has **remained stable between 2020** and **2021**

40.4% of **of *E. faecium* bacteraemia isolates** are **non-susceptible** to **vancomycin**

Carbapenemase-producing organisms

Carbapenemase-producing organisms (CPOs) can inactivate carbapenem antibiotics, leaving few therapeutic options for treatment.

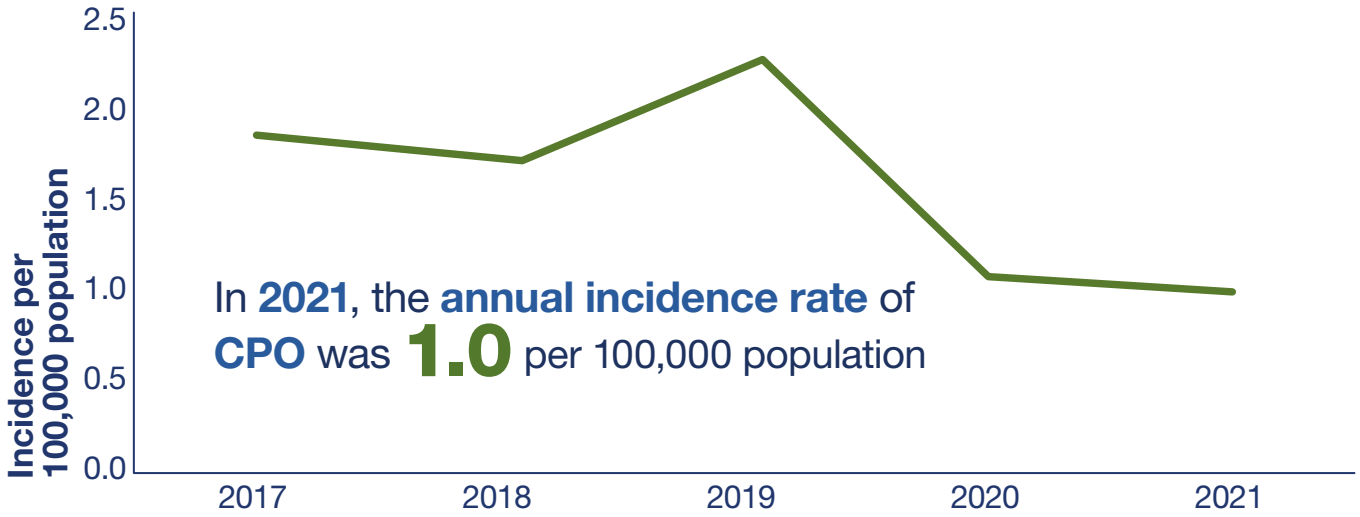


In **2021**, there were **55 CPOs** compared to **59 CPOs** in **2020**

↔ The **incidence** of **CPO** has **remained stable** between **2020 and 2021**

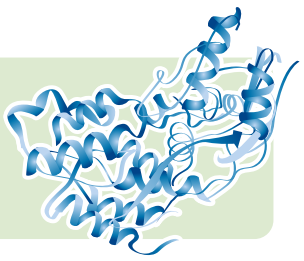
↓ There has been a **14.3% year-on-year decrease** in **CPO incidence** over the **last 5 years**

Of **those identified** in **2021**, **94.9%** were **carbapenemase-producing *Enterobacterales* (CPE)**



In **2021**, the **annual incidence rate** of **CPO** was **1.0** per 100,000 population

In 2021, the **most frequently isolated enzymes** were **OXA-48, NDM and VIM**



AMR and AMU in animals

Central to tackling AMR is a One Health approach that encompasses humans, animals, environment and food. Data on AMU in companion animals continue to build on existing intelligence on AMR in animals.

17.4% of **consultations** for **companion animals** resulted in **prescriptions** of **antibiotics** in **2021**.

There was a **7.3% increase** between **2020** and **2021**

There was a **1.8% year-on-year decrease** over the **last 5 years**

91.9% of **antibiotics prescribed** to **companion animals** are **not critical** to **human health**

There was a **3.9% year-on-year reduction** in the percentage of **highest priority critically important antibiotics (HP-CIA)** prescribed for **companion animals** over the **last 5 years**.

AMR is **identifed** in **bacteria** from **livestock** and **companion animals**

Guidance on keeping animals healthy and antimicrobial stewardship for all animal sectors can be found on the extensively revised **Scotland's Healthy Animals website**

www.scotlandshealthyanimals.scot