ARHAI Scotland

Antimicrobial Resistance and Healthcare Associated Infection

NHS National Services Scotland

Scottish One Health Antimicrobial Use and Antimicrobial Resistance in 2020

Annual Report

Infographic Summary

Publication date: 16 November 2021

COVID-19

COVID-19 has impacted healthcare delivery in both hospital and community settings. 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 and, for this reason, 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 Healthcare Associated Infection annual report.

hps.scot.nhs.uk/HAI-2020

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 **17.1% decrease** in **antibiotic use** between **2016** and **2020**

Antibiotic use in primary care

There has been a **20.9% decrease** in **antibiotic use** in **primary care** between **2016** and **2020**

22.3% of the **Scottish population** had at **least one course** of **antibiotics** in **2020**

76.8% of **antibiotic prescriptions** in **2020** were **Access** (first line) **antibiotic items**

Antibiotic use in acute hospitals

There has been a **2.3% increase** in **antibiotic use** in **acute hospitals** between **2016** and **2020**

63.1% of **antibiotic use** in **2020** was **Access** (first line) **antibiotics**

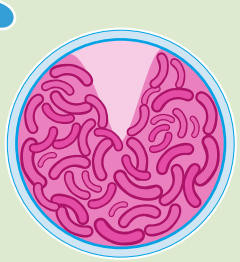
There has been a **10.4% decrease** in the use of **Watch and Reserve group antibiotics** between **2016** and **2020**

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.

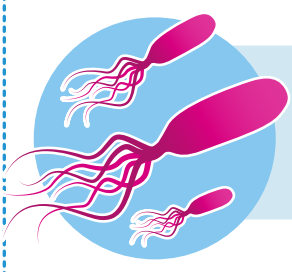
AMR burden

In **2020**, there were an **estimated** **1,312** **drug resistant bacteraemia**



of those, **86.4%** were **caused** by **drug resistant Gram-negative bacteria**

E. coli bacteraemia (ECB)



In **2020**, ***Escherichia coli* (*E. coli*)** was the **most common** **cause** of **Gram-negative bacteraemia**

The **incidence** of **ECB** was **76.9** per 100,000 population

The **incidence** has **decreased** **11.8%** **between 2019** and **2020**

The **incidence** has **decreased** **2.8%** **over** the **last 5 years**

Resistance in **ECB isolates** has **remained** **stable** **between 2019** and **2020**

Urinary tract infections

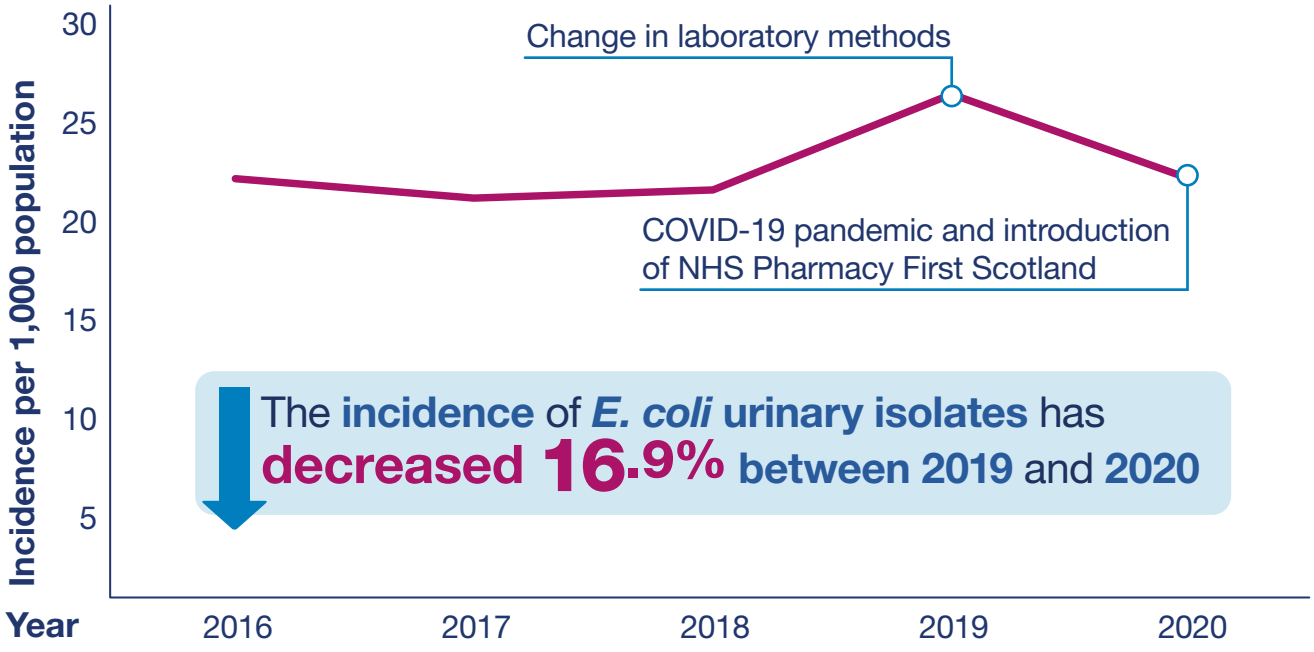
Urinary tract infections (UTI) are common in both community and healthcare settings. The development of resistance in urinary isolates can act as an early warning of resistance in bacteria causing more serious infections.

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

In 2020, there were **115,844 cases** of ***E. coli*** in **urinary isolates**

An **incidence** of **21.2** per 1,000 population

There was a **2.4% year-on-year decrease** in **UTI caused** by ***E. coli*** over the **last 5 years**



The **incidence** of ***E. coli* urinary isolates** has **decreased 16.9%** between **2019** and **2020**

Resistance in ***E. coli* urinary isolates** has **remained stable** between **2019** and **2020**

Other than resistance to

co-amoxiclav which has **decreased**

and **fosfomycin** which has **increased**

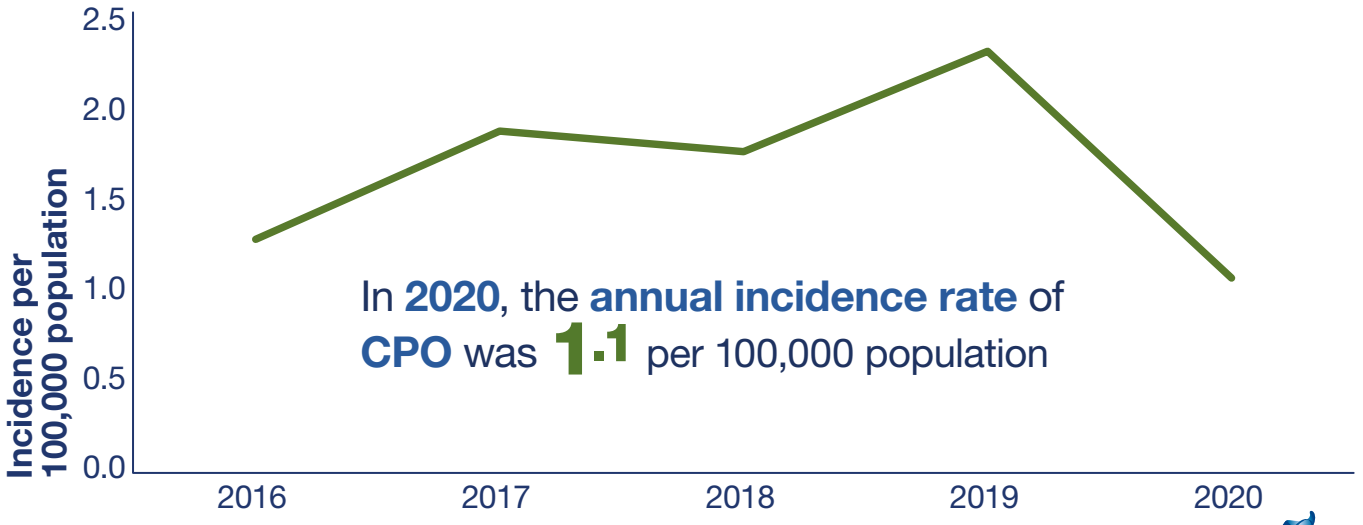
Carbapenemase-producing organisms

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

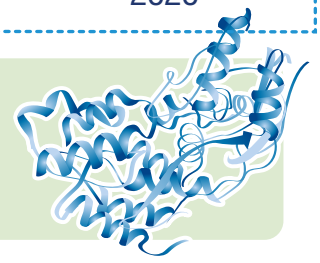
In **2020**, there were **59 CPOs**

Compared to **128 CPOs** in **2019**

Of **those identified** in **2020**, **94.9%** were **carbapenemase-producing Enterobacterales (CPE)**



In 2020, the **most frequently isolated enzymes** were **OXA-48** like enzymes, **NDM and VIM**



Enterococcal bacteraemia

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

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

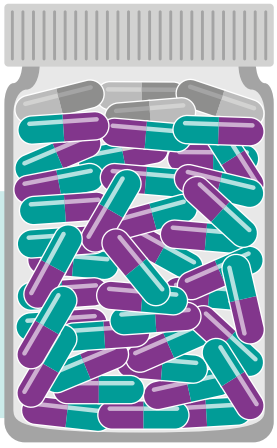
↔ **Resistance** in ***E. faecium*** **bacteraemia isolates** has **remained stable between 2019** and **2020**

45.6% of **isolates** are **resistant** to **vancomycin**

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.

16.2% of **consultations** for **companion animals** resulted in **prescriptions** of **antimicrobials** in **2020**, a **year-on-year decrease** of **4.4%** over the **last 5 years**



Over 90% of **antimicrobials prescribed** to **companion animals** are **not critical** to **human health**

AMR is **identifed** in **bacteria** from **cats**, **dogs** and **livestock**

Guidance on disease avoidance and antimicrobial stewardship for all animal sectors can be found on **Scotland's Healthy Animals website**

www.scotlandshealthyanimals.scot