



*Press Release 15 November 2022*

## **Consumption of antibiotics dropped significantly during the pandemic**

**The number of antibiotics prescribed by general practitioners dropped significantly during the COVID-19 pandemic. The level of antibiotic resistance dropped jointly. These are some of the main findings from DANMAP 2021, the surveillance report issued by the Danish Technical University and Statens Serum Institut.**

Since 2013, the consumption of antibiotics has been declining steadily. During the COVID-19 pandemic consumption dropped even further, which was also reflected in markedly lower levels of antibiotic resistance in the bacteria under surveillance from both primary care and hospital sectors. Despite this, at hospitals the use of broad-spectrum combination penicillins increased while the use of narrow spectrum penicillins dropped.

These are among the most important observations described in the new DANMAP 2021-report published by the National Food Institute at DTU and the AMR reference laboratory at Statens Serum Institut. The DANMAP-programme monitors the consumption of and resistance to antibiotics in humans, animals and food in Denmark.

### **Fewer prescriptions from general practitioners**

In 2021, general practitioners prescribed 30 % fewer antibiotics compared to 2015. On average 279 prescriptions on antibiotics were prescribed per 1000 inhabitants in the primary sector.

Especially for respiratory tract infections, the numbers of prescriptions issued dropped. In very young children (aged 0 to 4), there were 51 % fewer prescriptions during the pandemic.

The number of prescriptions for treatment of urinary tract infections saw a notably smaller drop. For these infections, the consumption of antibiotics is driven by infections in the elderly. These are less associated with circulating transmissible infections and happen most often in chronically diseased or patients with indwelling urinary catheters. About one third of the elderly over the age of 70 were prescribed antibiotics in 2021.

### **Antibiotic consumption in hospitals**

At hospitals, the total consumption of antibiotics remained unchanged during the COVID-19 pandemic compared to the preceding years. However, there were changes in which types of antibiotics were used.

The consumption of narrow spectrum penicillins dropped by 6 %, whereas 17 % more broad-spectrum combination penicillins were consumed in 2021 as compared to 2019.

“We assume that there were fewer non-COVID-19-related acute respiratory infections and pneumonias in the hospitals during the pandemic. And we know that the number of planned surgical procedures, and therefore the usage of prophylactic antibiotics was lower due to changes

in hospital activity” says Ute Wolff Sönksen, chief physician in the department for Bacteria, Parasites and Fungi at SSI.

### **Lower numbers of infections with antibiotic-resistant *E. coli* and *K. pneumoniae***

The monitoring of antibiotic resistance in the most common infectious bacteria in humans also showed decreasing levels of resistance. The average resistance in invasive infections with *E. coli* and *K. pneumoniae* dropped by 12 % and 11 % from 2019 to 2021, respectively. Likewise, lower resistance was also observed in urinary tract infections with the same bacteria. *E. coli* accounts for nearly half of all monitored invasive infections but is also the most common cause of urinary tract infections. *K. pneumoniae* is more commonly associated with hospital-acquired infections.

The number of methicillin-resistant *S. aureus* (MRSA) also dropped from 3,657 cases in 2019 to 2,715 cases in 2021. Especially the number of MRSA found by screening, i.e. from people without infection, dropped.

“The consumption of antibiotics has always been relatively low in Denmark, and we have been unsure of whether even lower consumption would be beneficial. Towards the end of 2021, the consumption increased again and approached pre-pandemic levels. Our numbers indicate that active measures aimed at lowering the consumption continues to make sense in the primary care sector and in hospitals. This needs to be combined with even better use of infection control, with a focus on preventing infections and limiting the spread of highly resistant bacteria in healthcare. These are still on the rise,” explains Ute Wolff Sönksen.

### **The 2021 DANMAP-report**

The DANMAP-programme monitors antibiotic consumption and the occurrence of resistance in bacteria from humans, food and animals in Denmark.

[Download the full 2021 DANMAP-report here](#)

[Download the 2021 DANMAP Short Report here](#)

### **Facts about antibiotics and resistance**

Antibiotics are used to treat bacterial infections in humans and animals. When bacteria are exposed to antibiotics, they can develop resistance to that antibiotic. As a result, the bacteria survive and the infection can get worse.

Antibiotic-resistant bacteria can spread between humans and animals, and bacteria can pass resistance traits to each other. Resistant bacteria fare better than sensitive bacteria if antibiotics are present. Therefore, prudent use of antibiotics is vital.

The spread of antibiotic-resistant bacteria remains a major health and social problem globally. This leads to problems in treating infections as well as preventing them, for example in surgical procedures.

Bacteria know no borders and antibiotic-resistant bacteria in one country can spread to other countries. This means that although the situation in Denmark compares favourably with other countries, inappropriate use of antibiotics in both animals and humans and the consequent development of resistance can cause health problems in Denmark.

### **Facts about DANMAP**

Since 1995, the DANMAP-programme has monitored the consumption of antibiotics in animals and humans and the occurrence of antibiotic resistance in animals, humans and food. Continuous monitoring is essential for authorities to follow developments and take timely action.

DANMAP is a collaborative surveillance programme between the National Food Institute at DTU and the Reference Laboratory for Antibiotic Resistance at SSI, funded by the Ministry of Health and the Ministry for Food, Agriculture and Fisheries.



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