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The European Union One Health 2021 Zoonoses Report

Disclaimer

- This plain language summary (PLS) is a simplified communication of the One Health 2021 Zoonoses report.
- Its purpose is to enhance transparency and inform interested parties on the topic using simplified language.
- Anyone interested in the more analytical results and interpretation, should consult the full report which can be found [here](#).

2021 Zoonoses report – an overview

Zoonoses are infectious diseases that are transmitted between animals and humans and are caused by harmful microorganisms such as bacteria, viruses, fungi and parasites. People may be infected by zoonotic microorganisms through direct contact with infected animals, indirect contact with the environment, and objects (*fomites*) or surfaces that have been contaminated by zoonotic agents. Other sources of infection, such as contact with, or bites from, arthropod vectors (vector-borne diseases) or consumption of foodstuffs, including water, contaminated by zoonotic agents (foodborne and waterborne diseases).

Data sources

Every year, the European Centre for Disease Prevention and Control (ECDC) and the European Food Safety Authority (EFSA) collect data from the EU Member States and other European countries on zoonotic diseases. These data cover the occurrence of zoonotic microorganisms in food and feed sources, food-producing animals, companion and wild animals, as well as human zoonotic illnesses and human cases related to foodborne outbreaks. ECDC and EFSA analyse the collected data and prepare an annual report describing the occurrence of zoonotic agents in the different sources and the trends for zoonotic agents in humans, food and animals. Descriptive statistics and trend analyses are produced for each zoonosis, taking into account the data quality and the data collection scheme (e.g. coverage of the population for data deriving from surveillance in humans; sampling design for data concerning food and animals). These analyses aim to provide veterinary and food safety authorities and policy makers with information useful for planning actions to reduce the burden of disease associated with zoonotic pathogens and, eventually, the number of human cases. The collection, analyses and interpretation of these data are conducted following a “One Health” approach, which brings together human, animal and environmental health.

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Scope of this report

The annual report provides detailed occurrence data on the main zoonoses reported by the EU Member States and other European countries. Data are reported to EFSA by the food safety and veterinary authorities and to ECDC by public health authorities. Besides the zoonoses for which data reporting is mandatory, data on other zoonoses may be reported, depending on how frequently they occur. The former includes well-known agents causing food poisoning, such as *Salmonella*, *Campylobacter* and *Listeria monocytogenes*, while the latter includes less common and emerging zoonotic agents such as *Yersinia enterocolitica* and West Nile virus. Data on bacterial toxins and biological amines such as histamine are also collected, and data concerning foodborne disease outbreaks occurring in each Member State are reported annually to EFSA.

Main findings and trends in 2021

In 2021, the two most commonly reported zoonoses in humans were the gastrointestinal diseases campylobacteriosis and salmonellosis with a total of 127,840 and 60,050 human cases, respectively. An increase of around 7,000 cases for both pathogens was reported in 2021 in comparison with 2020, corresponding to +0.86 and +1.96 confirmed cases per 100,000 population for campylobacteriosis and salmonellosis, respectively.

In 2020, two major events affected data collection and analysis at the EU level: the United Kingdom withdrew from the European Union,¹ which caused a reduction of the absolute number of reported cases; and partial or total lockdowns due to the COVID-19 pandemic influenced the likelihood of exposure to foodborne pathogens. Therefore, the apparent increase of reported cases in 2021 must be carefully interpreted in light of the progressive withdrawal of the more severe non-pharmaceutical initiatives, primarily easing of lockdowns, against COVID-19 in 2021. Whereas human data from the United Kingdom as a whole have not been collected by ECDC since 2020, Northern Ireland submitted data and national zoonoses reports in 2021 on their monitoring results for food, animals, feed and foodborne outbreaks, in accordance with the Withdrawal of the United Kingdom from the European Union¹.

Controlling the presence of zoonotic microorganisms in food-producing animals is one of the most effective² ways of reducing the burden of human illness. National *Salmonella* control programmes have been implemented for many years in poultry populations (breeding hens, laying hens, broilers, and fattening and breeding turkeys): these programmes aim at reducing the prevalence of those serovars (subgroups with shared distinctive surface structures) of *Salmonella* responsible for the vast majority of human cases.

In 2021, 16 Member States and the United Kingdom (Northern Ireland) achieved all the established targets for reduction in *Salmonella* prevalence for the relevant serovars in specific poultry populations. Trends in the prevalence of *Salmonella* target serovar-positive flocks have been reasonably stable in the EU over recent years for the specified poultry populations. For 2021, within the category of the 'ready-to-eat' food samples overall, a very low proportion (0.23%) of *Salmonella*-positive units was found, with the highest percentages of positive samples described for 'meat and meat products from pigs' (0.82%) and 'spices and herbs' (0.72%).

Samples collected by competent authorities at the slaughterhouse for the detection of *Salmonella* on carcasses of different species were more frequently positive than those reported from own-check controls by food business operators themselves. The same finding was observed for poultry populations tested in the context of national *Salmonella* control programmes at farm level, as well as for *Campylobacter* quantification results on broiler carcasses at EU-level. This discrepancy should be further investigated as food business operators in the EU are primarily responsible for preventing food contamination with zoonotic pathogens at all levels of the food chain and own-checks are an important component of their control programmes.

¹ Agreement on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community, OJ L 29, 31.1.2020, p. 7 ("Withdrawal Agreement").

The third most commonly reported zoonosis in humans in 2021 was yersiniosis, a disease caused by *Y. enterocolitica* (or *Y. pseudotuberculosis*), which is generally associated with eating undercooked pork or vegetables. Shiga toxin-producing *Escherichia coli* (STEC) infections and listeriosis caused by *L. monocytogenes* followed *Yersinia* infection in terms of the number of reported cases. Both agents may cause severe and even fatal foodborne illnesses, especially in high-risk population subgroups, such as immunocompromised persons, children, pregnant women and the elderly. Infections by *L. monocytogenes* and West Nile virus were the most severe zoonoses in 2021 with the highest proportions of hospitalisations and of deaths among infected patients. With regard to *L. monocytogenes*, data on 'ready-to-eat' (RTE) foods confirm that contamination, when present, remained largely within the designated limits.

The report also provides updates on tuberculosis due to brucellosis, *Coxiella burnetii* (Q fever), echinococcosis, rabies, toxoplasmosis, trichinellosis, tuberculosis due to *Mycobacterium bovis* or *M. caprae*, and tularaemia.

Foodborne outbreaks

In 2021, 27 Member States and the United Kingdom (Northern Ireland) reported 4,005 foodborne outbreaks (29.8% more than in 2020) and 32,543 human cases (a 62.6% increase). These data are close to what was reported in the 2017-2019 period before the COVID-19 pandemic, indicating a likely progressive return to pre-COVID-19 food consumption habits in 2021 with regard to restaurants, canteens and other food administration facilities that may be involved in the transmission of foodborne pathogens. *Salmonella*, in particular *S. Enteritidis*, remained the most frequently reported causative agent in foodborne outbreaks. *Salmonella* in the category 'eggs and egg products' and in 'mixed foods' were the agent/food pairs most often involved in foodborne outbreaks, according to the data provided by the Member States. Outbreaks linked to the consumption of products in the category 'vegetables and juices and other products thereof' rose considerably in 2021 compared with previous years.