

# SURVEILLANCE OF INFECTIOUS DISEASES

IN ANIMALS AND HUMANS IN SWEDEN 2022

*Chapter excerpt:  
Psittacosis*



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**Reporting guidelines:** Reporting guidelines were introduced in 2018 for those chapters related to purely animal pathogens. The guidelines build on experiences from several EU projects, and have been validated by a team of international experts in animal health surveillance. The aim is to develop these guidelines further in collaboration within the global surveillance community and they have therefore been made available in the form of a wiki on the collaborative platform GitHub (<https://github.com/SVA-SE/AHSURED/wiki>). Feel free to contribute!

**Layout:** The production of this report continues to be accomplished using a primarily open-source toolset. The method allows the source text to be edited independently of the template for the layout which can be modified and reused for future reports. Specifically, the chapter texts, tables and captions are authored in Microsoft Word and then converted to the LaTeX typesetting language using a custom package written in the R software for statistical computing. The package uses the pandoc document conversion software with a filter written in the lua language. Most figures and maps are produced using R and the LaTeX library pgfplots. Development for 2022 has focused on generalising the R package to accommodate conversion into formats other than LaTeX and PDF, with a focus on markdown files which can be published as HTML websites using the Quarto publishing system. The report generation R package and process was designed by Thomas Rosendal, Wiktor Gustafsson and Stefan Widgren.

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# Psittacosis

## BACKGROUND

Psittacosis is caused by *Chlamydia psittaci*, an intracellular bacterium. In 1879, psittacosis was described for the first time in humans when an outbreak of pneumonia associated with exposure to tropical pet birds was diagnosed among Swiss patients. The organism was identified in the 1930s. Since then, outbreaks have been described worldwide.

The main reservoir is the bird population, and the organism is excreted in faeces and nasal discharges. Birds may become carriers of the organism and shed it intermittently for years without any clinical signs. People acquire the infection mainly via inhalation of contaminated dust or through contact with infected birds. Between birds the infection is transmitted via contact, by ectoparasites or contaminated equipment. *C. psittaci* may persist in dry faecal material for months.

In some countries, infections caused by *C. psittaci* have been described in mammals, such as cattle, sheep and horses.

Control of psittacosis in animals is very difficult since the organism exists in both domestic and wild birds.

## DISEASE

### Animals

Birds commonly develop clinical signs when stressed or when their immune system is suppressed. Clinical signs in birds range from an asymptomatic infection to conjunctivitis, sneezing, pneumonia, and generalised infection. Adult birds usually recover from the infection, but mortality can reach 90% among young birds.

### Humans

In humans, the symptoms often include fever, headache, rash, myalgia, chills and upper or lower respiratory tract infection. The disease is usually mild or moderate but can be severe especially in untreated elderly persons. Most human cases are considered sporadic, and many mild infections are likely not diagnosed. The incubation period is usually around 10 days but can vary from 1 to 4 weeks.

## LEGISLATION

### Animals

Psittacosis is notifiable in birds according to SJVFS 2021:10.

### Humans

Psittacosis in humans has been a notifiable disease since 1969 according to the Communicable Disease Act (SFS 2004:168 with the amendments of SFS 2022:217).

## SURVEILLANCE

### Animals

Surveillance in animals is passive. Notification is based on detection of the organism. At the National Veterinary Institute (SVA), since 2020, detection is performed by a real-time PCR targeting *Chlamydia psittaci*.

### Humans

Notification of human cases is mandatory, and surveillance is based on identification of the disease by a treating physician or by laboratory diagnosis. Both are obligated to report identified cases to the regional and national level to enable further analyses and adequate intervention measures. For laboratory verification of the infection, serology and, especially, PCR are the methods predominantly used.

## RESULTS

### Animals

In 2022, *C. psittaci* was detected in two out of five pet birds tested at SVA and also in one wild great tit.

### Humans

In 2022, 45 cases of psittacosis were reported which is slightly fewer than the year before (Figure 32). In Sweden, psittacosis is mainly a domestic infection and during this year none of the cases were reported to have been infected abroad. The highest number of cases were reported from the Region of Stockholm (n=12), followed by Västra Götaland (n=10), Kalmar (n=6) and Skåne (n=6). Of the 45 cases, 30 (67%) were male and 39 (87%) were older than 50 years old. The median age was 62 years (range 30–82 years). Contact with birds and bird droppings was considered an important route of transmission. For 28 of the cases, handling of poultry, cage birds or bird feeders were reported as likely vehicles of infection. Psittacosis usually exhibits a strong seasonal pattern with most reported illnesses occurring during the winter months. In 2022, this pattern was less pronounced than before as the cases were more evenly spread throughout the year.

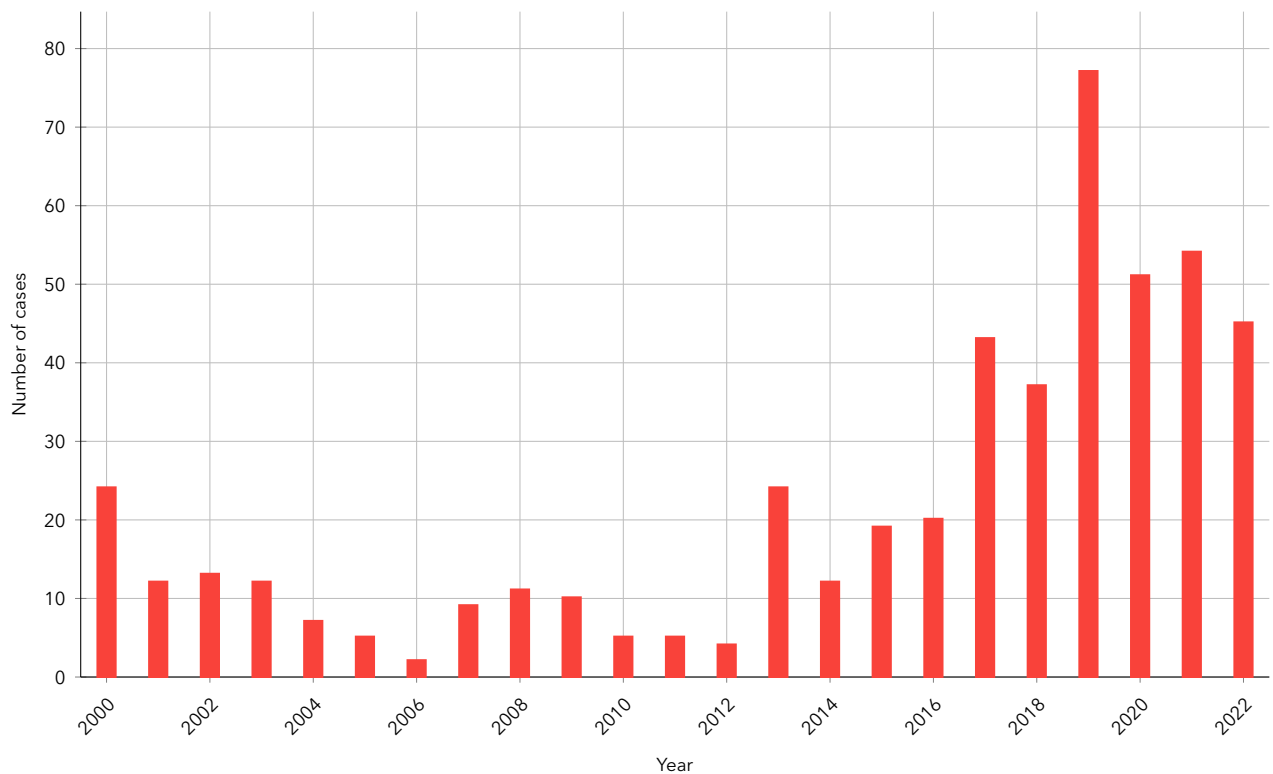


Figure 32: Number of notified human cases of psittacosis in Sweden 2000–2022.

## DISCUSSION

During the recent four years, there has been a marked increase in the number of notified cases of psittacosis in humans. The reasons for this increase are not known. One explanation could be the recently introduced PCR panels for screening of respiratory tract infections where *C. psittaci* is one of the target organisms. Without such screening, a clear suspicion from the physician is required which demands awareness of the illness. In 2019, a pilot questionnaire study aimed at clinical microbiological laboratories across Sweden showed a clear regional overlap between a larger number of notified cases and usage of a PCR screening approach that includes *C. psittaci*.

In Sweden, like in many other countries, human psittacosis is considered underdiagnosed and underreported. In published reports of psittacosis from other countries, the source has most often been associated with poultry, especially turkeys, or pet birds. In Sweden, however, contact with faeces from wild birds, for example when cleaning wild bird feeders, is considered a major source of infection. Exposure to infected pet birds and poultry species can lead to zoonotic transmission.

*C. psittaci* has been detected in a variety of wild bird species, most often in seabirds, doves and parids. At present, knowledge on the epidemiology of *C. psittaci* in domestic

and wild birds in Sweden is scarce. In a survey performed 2019 of wild garden birds collected during a ten-year period, *C. psittaci* was detected in 2.2% of the birds tested. No screening has so far been done among hobby poultry.

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