

SURVEILLANCE OF INFECTIOUS DISEASES IN ANIMALS AND HUMANS IN SWEDEN 2020

Chapter excerpt -
Psittacosis



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Cover: Juvenile mink in hand. Photo: Elina Kähkönen

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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, produced by authors, 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 using pandoc and R to the LaTeX typesetting language. Most figures and maps are produced using the R software for statistical computing and the LaTeX library pgfplots. Development for 2020 has further improved the importing of content from Excel files to automatically build figures in the pgfplots LaTeX library. The tool is available as an R-package on GitHub (<https://github.com/SVA-SE/mill/>). The report generation R-package and process was designed by Thomas Rosendal, Wiktor Gustafsson and Stefan Widgren. In 2020, final typesetting was done primarily by Wiktor Gustafsson with contributions from the report authors.

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Psittacosis

BACKGROUND

Psittacosis is caused by *Chlamydia psittaci*, an intracellular bacterium. In 1879, psittacosis was described for the first time when an outbreak of pneumonia associated with exposure to tropical pet birds was detected 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. In birds, the infection is transmitted via contact, by ectoparasites or contaminated equipment. *C. psittaci* may persist in dry faecal material for months.

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 recover from the infection, but mortality can be up to 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 animals according to SJVFS 2013:23.

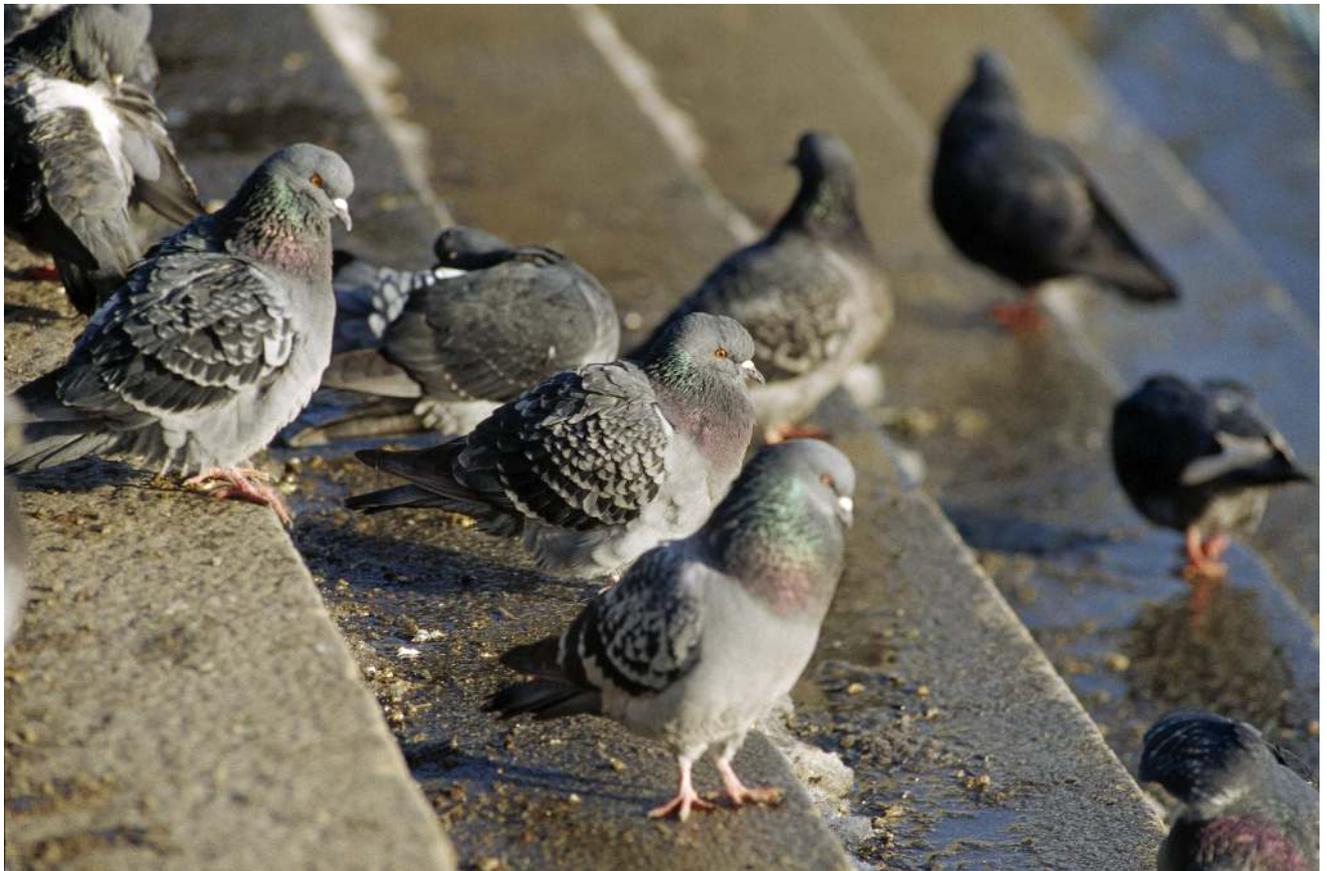
Humans

Psittacosis in humans has been a notifiable disease since 1969 according to the Communicable Disease Act (SFS 2004:168) with the amendments of SFS 2013:634.

SURVEILLANCE

Animals

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



Many domestic and wild bird species may harbour *Chlamydia psittaci*. Photo: SVA.

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 2020, one pet bird and one pigeon were tested at SVA for *C. psittaci* with negative results.

Humans

In 2020, 51 cases of psittacosis were reported which is more than during the entire 2000s so far except for 2019 when 77 cases were reported (Figure 15). In Sweden, psittacosis is mainly a domestic infection and only five of the cases were suspected to have been infected abroad. Of the cases 42 (82%) were male and 37 (73%) over 60 years old. Contact with birds and bird droppings were considered an important route of transmission. For nearly half (n=24) of the cases, handling of poultry, cage birds or bird feeders were reported as likely vehicles for infection. Psittacosis exhibits a strong seasonal pattern with most reported illnesses during the winter months. In 2020, 31 (61%) of the cases were reported in January-March and December.

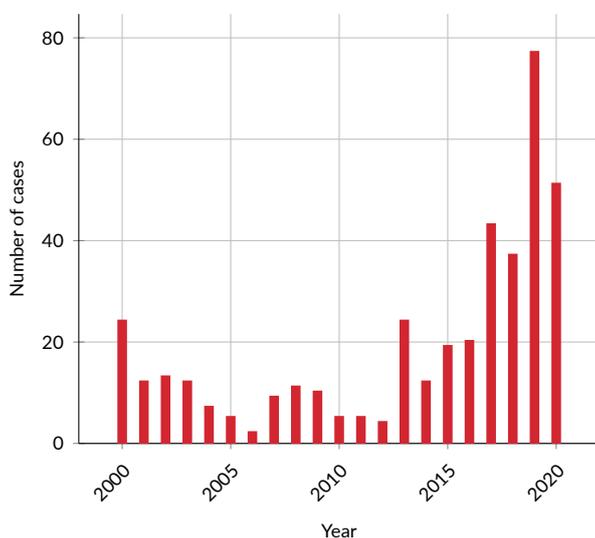


Figure 15: Number of notified human cases of psittacosis in Sweden 2000–2020.

DISCUSSION

During the last four years, there has been a marked increase in the number of notified cases of psittacosis. 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 although pet birds and hobby poultry are also well documented risk factors for psittacosis.

C. psittaci has been detected in a variety of wild bird species, most often in water birds, doves, and pigeons. 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.

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