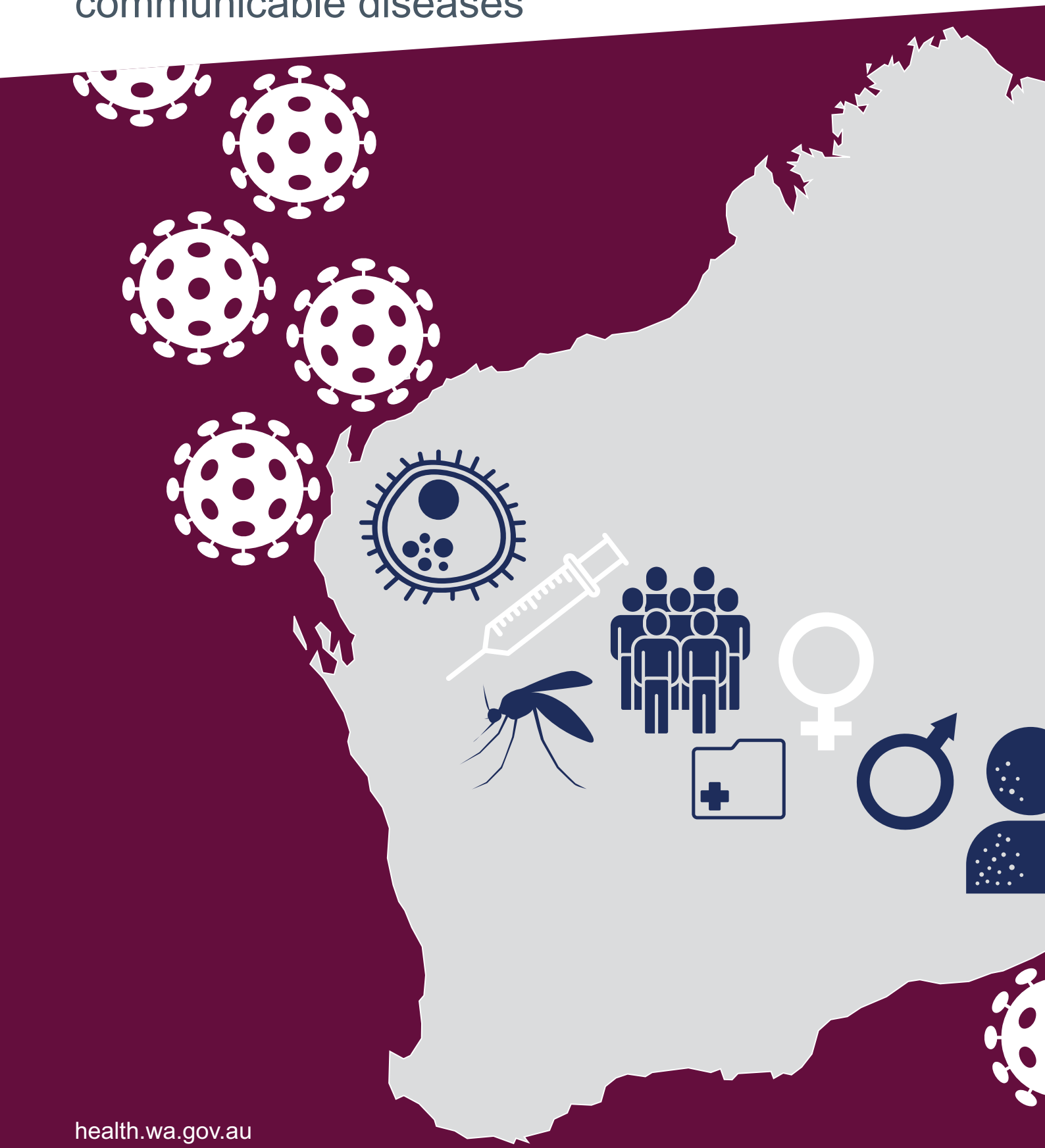
Government of **Western Australia**
Department of **Health**

healthway

COVID-19 in Western Australia

Bulletin 3: The impact on other communicable diseases



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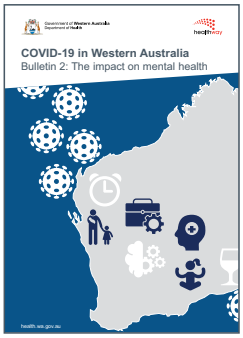
Introduction

COVID-19 has resulted in unprecedented changes to the daily lives of Western Australians.

This bulletin is the third in a series of bulletins produced by the Epidemiology Branch of the Department of Health investigating the impact of COVID-19 on various aspects of the lives of Western Australians. This bulletin investigates the impact of the COVID-19 restrictions on the transmission of communicable diseases other than COVID-19 in Western Australia (WA). Bulletin 1 presents an introduction to the project and an overview of the COVID-19 control measures in WA, as well as lifestyle impacts of the COVID-19 control measures. Bulletin 2 presents an overview of the mental health impacts of the COVID-19 control measures.

Please find Bulletins 1 and 2 here:

https://ww2.health.wa.gov.au/Reports-and-publications/COVID19-in-WA-bulletins



With the significant attention and action focused on preventing the spread of COVID-19, there was interest in whether these same control measures would also impact the prevalence of other communicable diseases. Initial reports of lower than average numbers of certain communicable diseases being detected seem to support this idea, however it was unclear whether the downturn was due to a true reduction in disease transmission, or due to changes in healthcare seeking behaviours. Previous pandemics have demonstrated decreased healthcare seeking behaviour can be due to; i) fear of getting infected from attending health services ii) closure of certain health services iii) increased difficulties in accessing health services and iv) not wanting to overwhelm the health system.

This bulletin reports on data from the WA Notifiable Infectious Disease Database (WANIDD) to describe changes in the reporting of selected notifiable diseases. The identification of any impacts on communicable diseases is important for future understanding and planning.

COVID-19 control measures

For WA, the major impacts of the COVID-19 control measures, so far, have been felt during March, April and May 2020. For a timeline of COVID-19 interventions and case counts for WA during this period, please see Bulletin 1.

Responses to COVID-19 during this time included stay-at-home orders, physical distancing recommendations, the closure of recreation facilities and non-essential businesses, limits on the sale of medicines, recommendations for home-schooling and purchase limits on staple food items and takeaway alcohol.

Methods

To better understand the impact of COVID-19 on communicable diseases in the WA population, the WA Department of Health used data from WANIDD. This database contains information on notifiable infectious diseases that have been reported to the Department of Health as mandated by the *Public Health Act 2016*, and is maintained by the Communicable Disease Control Directorate, Public and Aboriginal Health Division.

Reporting of notifiable diseases varies and depends on the particular characteristics of the disease, which then determines; if people seek medical attention or are screened opportunistically, whether doctors request specimen collection and testing, the availability of diagnostic methods and the completeness of notification by the doctor and laboratory. Notification is usually more complete and timely for serious infections such as invasive meningococcal disease compared to more common and less serious infections such as chickenpox and chlamydia.

Analysis and Interpretation

All WANIDD diseases were extracted from the database and then grouped according to their allocated categories; i) vaccine preventable ii) food and water borne iii) sexually transmitted iv) vector borne v) blood borne vi) zoonotic vii) other. Diseases with reported numbers less than 12 each month were excluded from further analysis. Diseases presented in this bulletin were selected in consultation with communicable disease experts and epidemiologists to show the effects that COVID-19 restrictions have had on notifiable diseases in WA.

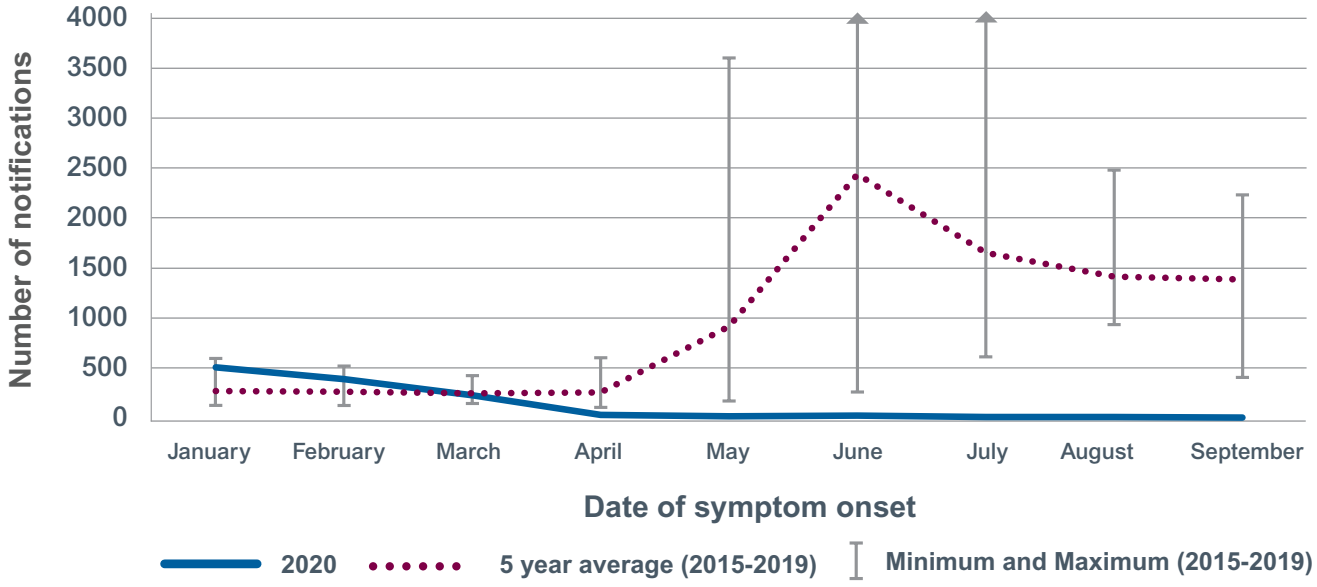
Diseases were analysed by averaging monthly notifications from 2015 to 2019 (previous 5-year average), which is referred to as the ‘baseline period’. The baseline notifications for each month were then graphed and compared to the monthly notifications for 2020. The minimum and maximum values for each month within the baseline period are shown as grey bars on the graph. This is to indicate the range of notifications that occurred during the month within the previous 5-year time period.

As newly diagnosed syphilis had a continued annual increase from 2015 to 2019, numbers were not averaged but presented as they are over that time.

When interpreting trends in notification data, changes over time in case definitions, laboratory diagnostic tests and notification requirements can affect how the data is reported. A list of case definitions for notifiable diseases can be found here. Diagnosis and notification of a disease in WA does not mean that the disease was acquired in WA. For some diseases such as Dengue fever, all reported cases acquired their infection either overseas or interstate.

Vaccine preventable diseases

Influenza



Background

Seasonal influenza is a common, highly contagious virus that affects the respiratory system. The virus is spread through the droplets of an infected person when they cough, sneeze or, less commonly, through someone touching surfaces where the droplets have landed and then touching their nose, mouth or eyes. An influenza vaccination is recommended each year as the virus rapidly changes from season to season. In the temperate regions of WA, influenza occurs during the colder months of the year.

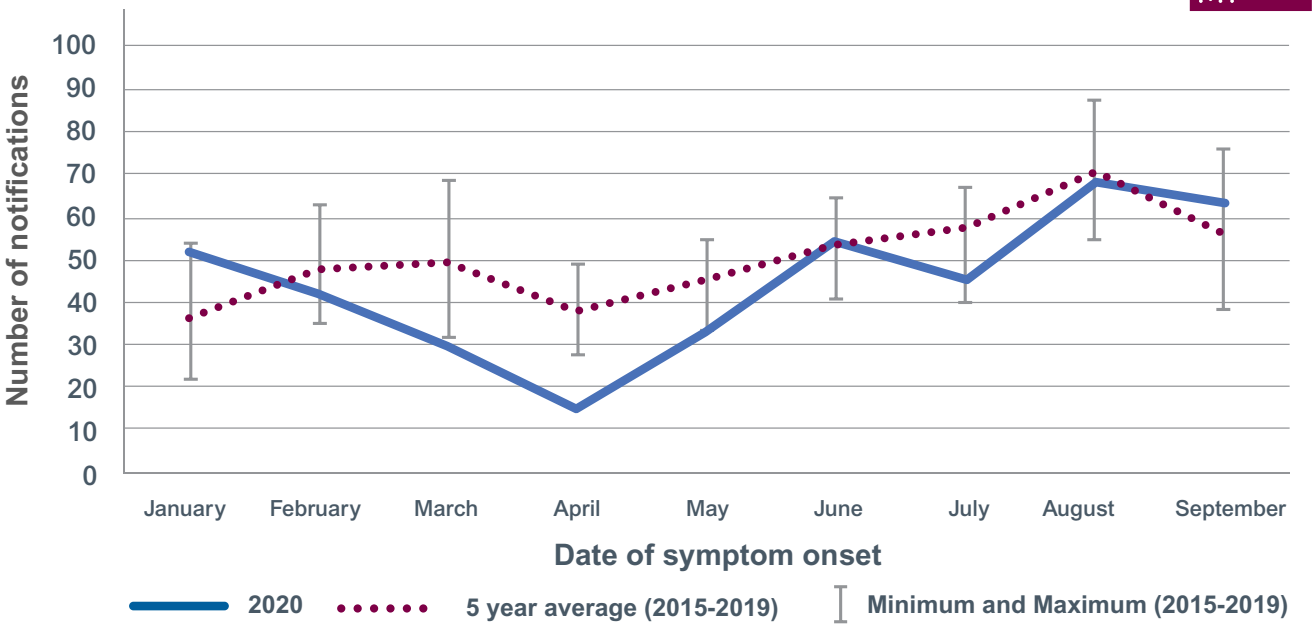
Signs and symptoms

Influenza is usually mild in the general population but can be very serious in young children, the elderly and other vulnerable population groups. Typical symptoms of influenza include fever, headache, fatigue, body aches, sore throat and runny nose. People usually develop symptoms between 1 to 4 days after being infected. Most people will recover after a few days and do not need medical attention.

Influenza in 2020

The number of influenza notifications was above the five-year average in January and February 2020 but has since decreased and reported at very low numbers since April 2020. Closure of the international and state border is believed to have stopped importation of new influenza virus strains into WA. As influenza is spread in a similar way to COVID-19, the initial social distancing restrictions, closure of non-essential businesses and decreased school attendance were likely to have reduced transmission of influenza between people. The increased awareness around hand hygiene practices, coughing etiquette and encouragement of people to stay at home if symptomatic is believed to have kept transmission low, even as restrictions were lifted. It is also likely that early influenza vaccination uptake and high coverage rates for 2020 has further contributed to decreasing the risk.

Chickenpox



Background

Chickenpox is caused by the varicella-zoster virus, which is very contagious and spread through sneezing, coughing or having direct contact with an infected person. Chickenpox is most commonly seen in children who usually have a mild illness. The disease however can be more severe in adults. Pregnant women and people with compromised immune systems are most at risk of serious outcomes from chickenpox. The chickenpox vaccine is part of the childhood immunisation program and can prevent the disease from occurring.

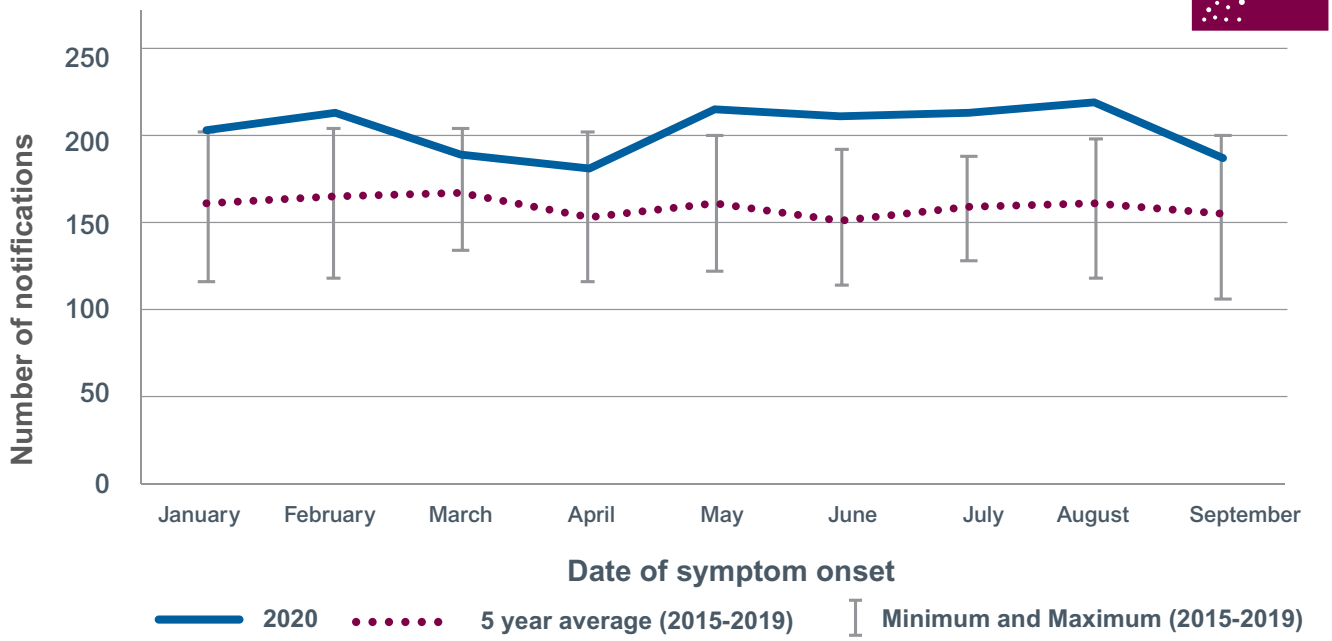
Signs and symptoms

Symptoms of chickenpox usually take around 2 weeks to develop after being exposed to an infected person. The main symptom is an itchy, red rash that blisters and then heals over. Other symptoms are similar to the common cold and include fever, headache and runny nose. For most people, chickenpox can be managed by rest, taking pain relievers and applying lotions to soothe the itching. People usually recover around 7 to 10 days after symptoms arise.

Chickenpox in 2020

At the beginning of the COVID-19 pandemic, many parents took their children out of schools and kindergarten and were encouraged to home-school during April. Closure of playgrounds and recreation facilities also reduced interactions between children, and the decline in chickenpox notifications in April reflects this trend. As restrictions eased and students returned back to school at the end of April, the number of chickenpox cases returned to baseline levels.

Shingles



Background

Shingles is an infection that is caused by the reactivation of the varicella-zoster virus, which also causes chickenpox. You can only get shingles if you have had chickenpox previously. It is not possible to catch shingles from someone else that has shingles. It is thought that shingles is triggered by stressful events or when a person's immune system is run down. Shingles can occur at any age, but typically affects people over 60 years of age. A shingles vaccine is available and is an effective way to protect against the disease.

Signs and Symptoms

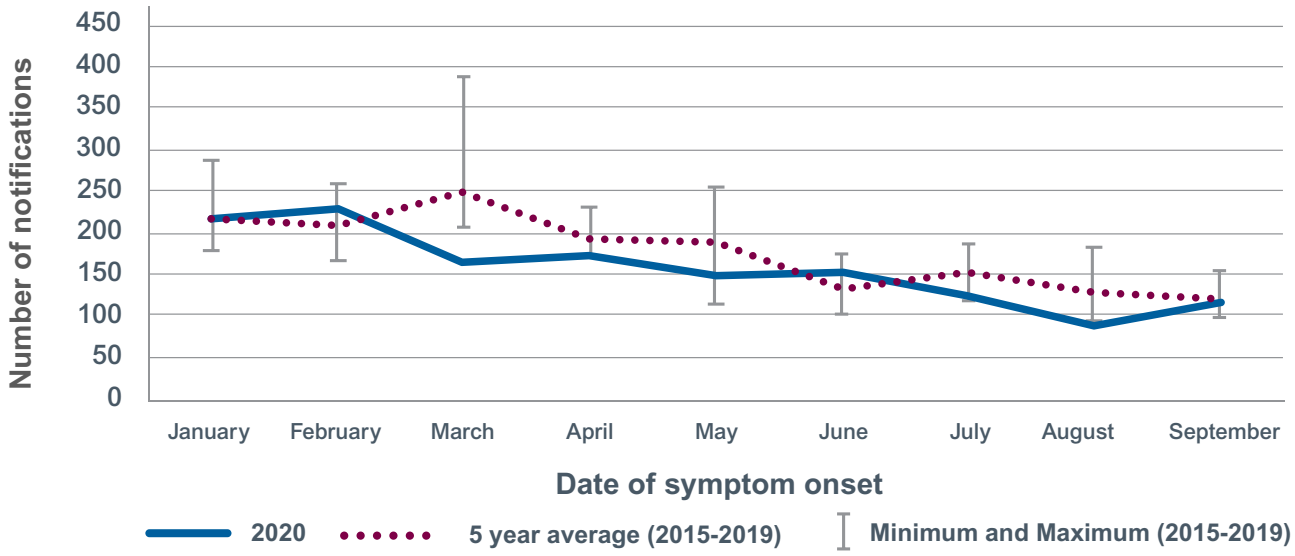
Shingles can cause a painful rash that can persist with a tingling or burning sensation on the skin for weeks to months. People may also have a headache or feel tired. Shingles can sometimes lead to more serious problems such as pneumonia, hearing and eye problems.

Shingles in 2020

The number of shingles notifications in 2020 has remained consistently higher than the baseline, and there was only a small downturn in notifications in April. As shingles is not spread from person to person, the restrictions on social mixing and hand hygiene practices do not affect the incidence of the disease. Therefore, the changes in notifications may be due to a minor decrease in healthcare seeking behaviour. The pain often associated with shingles may have made seeking healthcare a priority over the perceived risks from accessing health services during the pandemic, which would explain why the downturn in notifications was only minor.

Food and water borne diseases

Salmonella infection



Background

Salmonella is a bacteria that causes an infection of the digestive tract. There are many different types of salmonella that are found in animals and the environment. People can become infected from salmonella by eating contaminated foods such as raw or undercooked meat or eggs, drinking contaminated water or by handling pets and animals and not properly washing their hands. Ensuring safe food preparation, appropriate hand hygiene and proper cleaning of contaminated surfaces is important to stop the spread of salmonella.

Signs and symptoms

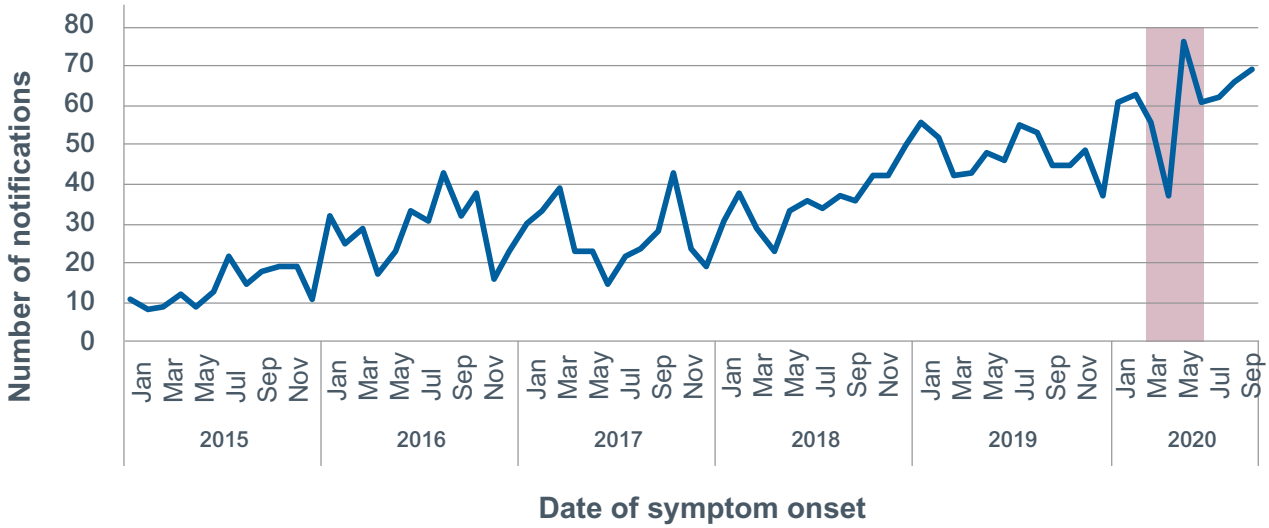
Common symptoms of salmonella infection include diarrhoea, stomach cramps, nausea and vomiting, fever and headache. People usually develop symptoms between 1 to 3 days after ingesting the bacteria and recover without medical treatment.

Salmonella in 2020

The number of salmonella disease notifications has not been greatly affected by the COVID-19 control measures and restrictions. Whilst the number of notifications were slightly lower during March, numbers remained similar to baseline levels in the following months, even through the lockdown period of April.

Sexually transmitted diseases

Syphilis (newly diagnosed)



Background

Syphilis is a highly infectious sexually transmitted infection caused by a bacteria. If left untreated, syphilis can cause serious health problems and can affect a person's brain, heart, bones and other organs. If a pregnant woman has syphilis, her baby can have deformities or be stillborn. Syphilis is spread by unprotected vaginal, anal or oral sex and through intimate skin to skin contact.

In WA, an infectious syphilis outbreak was first identified in the Kimberley region in 2014. Since then, syphilis has been detected in other regions of the state. There is now a state-wide public health response to manage and control the outbreak.

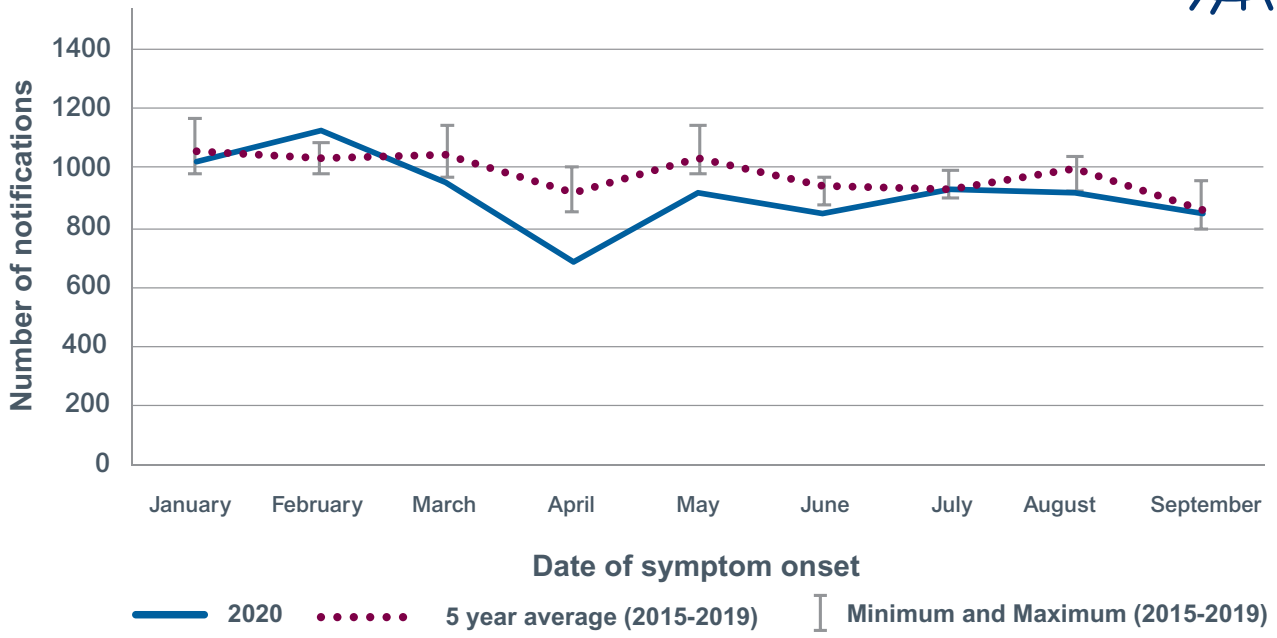
Signs and symptoms

Symptoms of syphilis usually appear between 10 to 90 days after exposure, with an average time of 21 days. Initially, people may have an ulcer or sore around the mouth, genital or anal area, which is often painless. Some people may not have any symptoms at all. Syphilis will further progress to the secondary and tertiary stages if not treated and can eventually cause death.

Syphilis in 2020

Due to the ongoing syphilis outbreak around WA, there have been increasing numbers of new syphilis notifications in 2020 compared to previous years. During April, there was a substantial reduction in the number of syphilis cases reported. This decrease is thought to be due to reduced healthcare seeking behaviour rather than a reduction in transmission, as during May, there was a substantial increase in notifications indicating a 'rebound effect'. This 'rebound' in notifications is thought to be due to infections that would have normally been detected in April, but due to change in healthcare seeking behaviours, were not actually detected until May.

Chlamydia



Background

Chlamydia is a common sexually transmitted bacterial infection that can affect both men and women. Chlamydia is passed on through unprotected vaginal, oral or anal sex by an infected person. Pregnant women who have chlamydia can pass the infection onto their newborn baby, causing serious eye and lung problems. In WA, chlamydia is most prevalent in people aged 15 to 24 years and four times higher among Aboriginal people compared to non-Aboriginal people.

Signs and symptoms

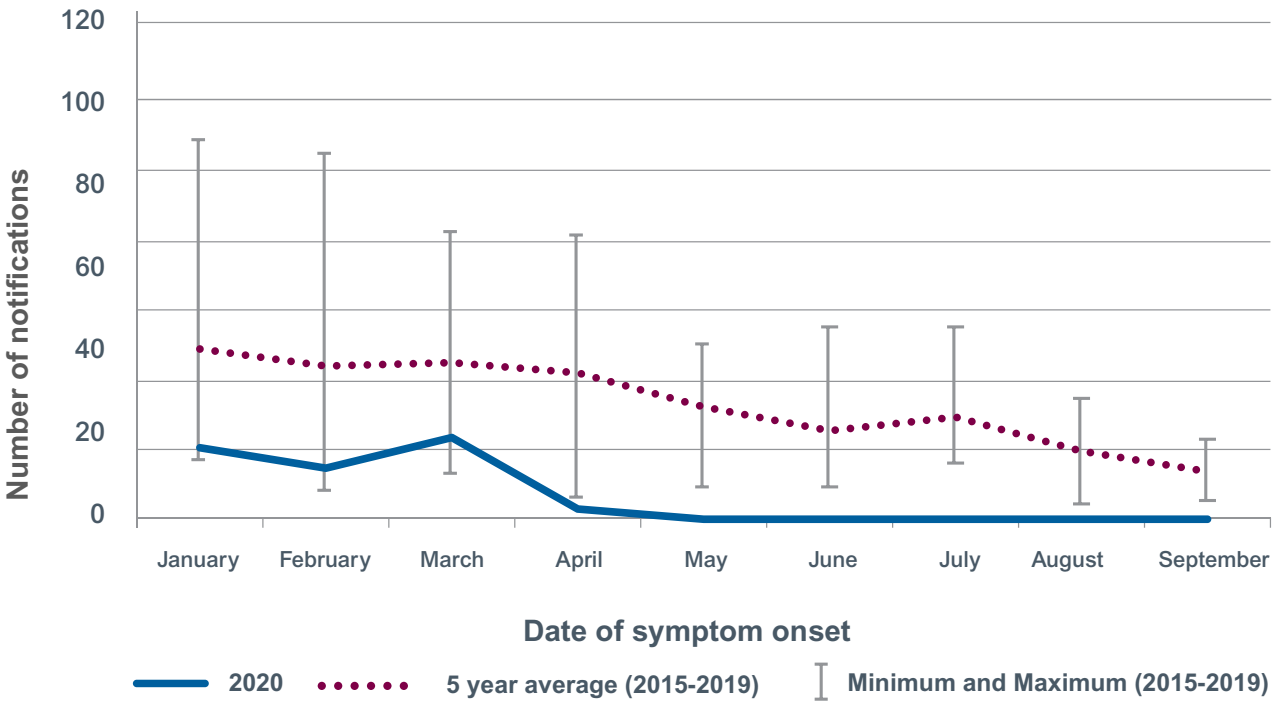
People who have chlamydia often do not have any symptoms. If symptoms do arise, they include pain or burning whilst urinating, unusual discharge from the vagina, abnormal bleeding and abdominal pain. If left untreated, chlamydia can cause infertility in both men and women. Symptoms usually appear 7 to 14 days after exposure from an infected person.

Chlamydia in 2020

The restrictions on public gatherings, stay at home orders and closure of non-essential businesses during March and April saw a reduction in the places where people could gather socially. However, it was reported that people were still having sexual encounters through other ways of meeting up. During April and May, there was a slight decrease in the number of chlamydia notifications compared to baseline levels. The decrease is thought to be due to fewer people getting infected during that time, rather than people not attending healthcare services, as notification numbers returned to baseline levels as restrictions eased and there was no evidence of a ‘rebound effect’ such as occurred with syphilis. Differences in the demographic characteristics of the risk groups for chlamydia and syphilis may explain why two diseases with a similar mode of transmission were impacted differently by the COVID-19 control measures.

Vector borne diseases

Dengue fever



Background

Dengue fever is a viral illness spread by the *Aedes aegypti* mosquito. The dengue virus is not normally found in Australia. In WA, the majority of dengue fever cases are from returning travellers infected overseas, particularly from Bali, Indonesia. Worldwide, dengue fever is found mainly in tropical areas, such as South East Asia, Africa, the Americas and Western Pacific region.

Signs and symptoms

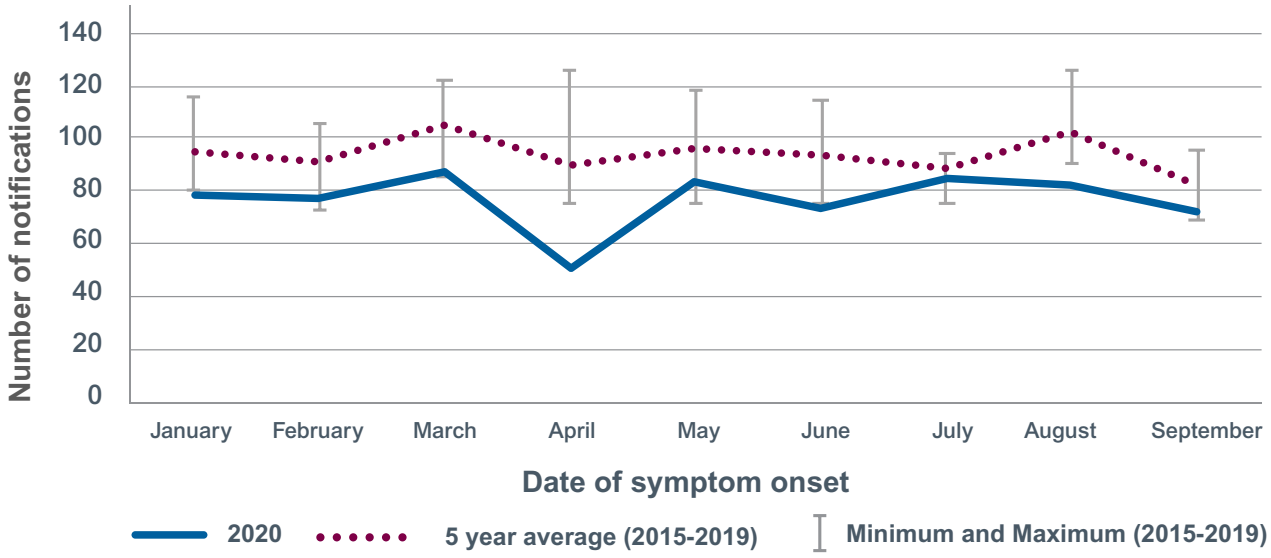
Symptoms of dengue fever are headaches, fever, joint and muscle pain, pain behind the eyes, nausea and vomiting, rash and fatigue. People with dengue fever usually have symptoms within 4 to 10 days after being bitten by an infected mosquito. The illness can last up to a week and in some cases can be severe or fatal.

Dengue in 2020

The number of dengue fever notifications in the early part of 2020 were already lower than average. Additionally, the national border closure and overseas travel bans contributed to further decreasing the number of dengue fever cases. There have been no dengue fever notifications reported for the past five months in WA.

Blood borne diseases

Hepatitis C



Background

Hepatitis C is a blood borne virus that can cause inflammation of the liver. The virus is spread by contact with contaminated blood such as through unsafe injecting practices or transfusion of unscreened blood. Whilst there is no hepatitis C vaccination, there are new medications taken orally that have minimal side effects and are highly effective at treating the virus.

Signs and symptoms

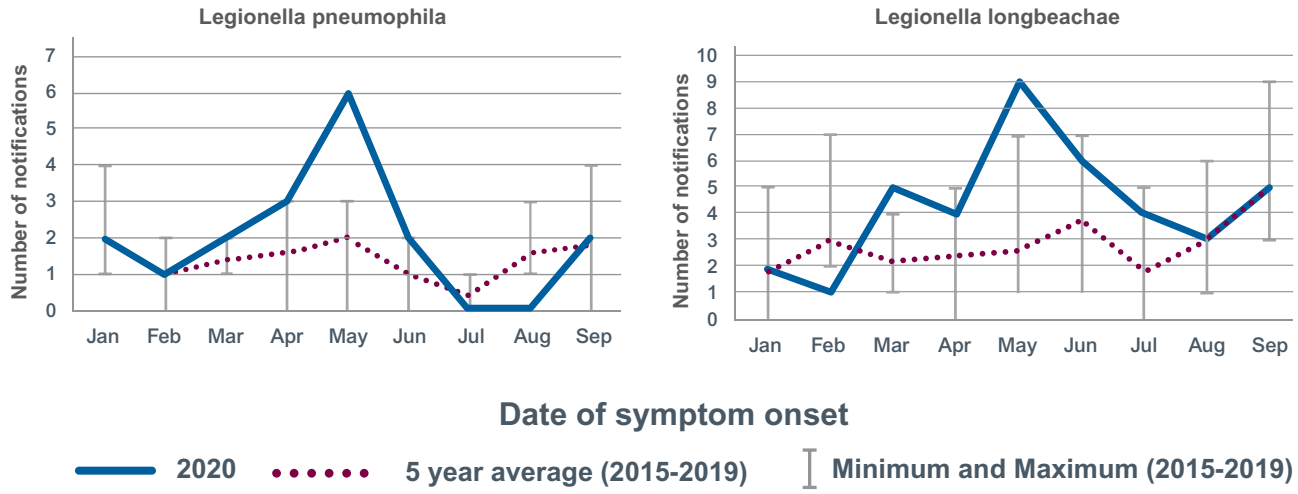
People with new hepatitis C infections often do not have any symptoms. If people do get symptoms, these usually occur between 2 weeks to 6 months after exposure and include fatigue, aches and pains, fever, nausea and abdominal pain.

Hepatitis C in 2020

Hepatitis C notifications were already below the baseline level from the beginning of 2020. However, COVID-19 concerns may have led to reduced healthcare seeking behaviour, resulting in a decrease of hepatitis C notifications during April. The number of notifications increased during May as restrictions eased and people attended healthcare services.

Other diseases

Legionella



Background

Legionnaire's disease is a severe form of pneumonia caused by bacteria found in wet or damp environments. In WA, the most common legionella species that cause human disease are *Legionella pneumophila* and *Legionella longbeachae*. *Legionella pneumophila* is found in warm water environments such as air conditioning cooling towers, evaporative air conditioners, showers and hot water systems, spas and water fountains. *Legionella longbeachae* is found in potting mixes, gardening soils, mulches and composts.

Signs and Symptoms

It usually takes around 5 to 6 days after exposure to legionella bacteria for symptoms to appear. Initial symptoms are similar to influenza and include fever, muscle pain, headache, tiredness and dry cough. Almost all patients diagnosed with legionella will need to be admitted to hospital for treatment. Early medical management and treatment is important to reduce the severity of the disease.

Legionella in 2020

There were increases in notification numbers for both *Legionella pneumophila* and *Legionella longbeachae* during March to June in 2020 compared to baseline levels.

Phase 2 easing of restrictions on the 18 May 2020 meant that non-essential businesses such as restaurants and cafes could reopen after being closed for 6 weeks. The increase in *Legionella pneumophila* notifications may have been due to water stagnation in water systems and cooling towers during business closure and insufficient cleaning undertaken before reopening in May. The increase in *Legionella longbeachae* notifications may have been due to increased interest in gardening activities as a result of more time spent at home.

Conclusions

The COVID-19 control measures that were used in WA resulted in disruptions to many routine services and dramatic changes to everyday life. This bulletin has investigated the impact of control measures on the reporting of other communicable diseases.

The results show that different diseases, even those that may have the same transmission route, have been affected differently by the control measures. This highlights that the impact of the COVID-19 control measures on the incidence of other communicable diseases is not uniform, but influenced by both the attributes of the disease and the characteristics of the affected population. The disease context will be important when considering the issues that could arise if restrictions are required to be reintroduced in the future.

Acknowledgements

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References

1. Australian Government Department of Health. Australia Influenza Surveillance Report No.15, 2020 Australia [Available from: https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-ozflu-flucurr.htm/$File/flu-15-2020.pdf.
2. Department of Health Western Australia, Communicable Disease Control Directorate. Virus Watch week ending 27 September 2020 [Available from: https://ww2.health.wa.gov.au/-/media/Corp/Documents/Health-for/Infectious-disease/VirusWAtch/2020/20200927-virus-watch.pdf.
3. Department of Health Western Australia, Communicable Disease Control Directorate. Quarterly Surveillance Report Notifialbe Sexually Transmitted Infections and Bloodborne Viruses in Western Australia 2020.
4. Department of Health Western Australia, Communicable Disease Control Directorate. Surveillance Case Definitions for Notifiable Infectious Diseases and Related Conditions in Western Australia 2020.
5. Department of Health Western Australia, Communicable Disease Control Directorate. Guide to interpreting notifiable infections disease data for Western Australia 2016.

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Enquiries

Communicable Diseases Control Division +61 8 9222 2486 ISDC@health.wa.gov.au

Epidemiology Branch +61 8 9222 2496 epi@health.wa.gov.au

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