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This toolkit supports public health authorities in Washington and provides needed information and tools about the winter 2016-2017 mumps outbreak, and explains how to streamline the case sample testing process. Intended users are local health jurisdiction staff and other similar public health workers.

Contents (click to go directly to that page):

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- [MMR Coverage Maps by State, County, and ZIP code](#)
- [Exclusion Guidance Regarding Mumps in Schools, Preschools, and Child Care](#)

For more information about this toolkit, contact:

Office of Immunization and Child Profile
Washington State Department of Health
360-236-3595 or 1-866-397-0337
oi cp@doh.wa.gov or immunematerials@doh.wa.gov

Some additional resources that may help you:

- **Washington mumps outbreak news and resources:** www.doh.wa.gov/mumps
- The Department of Health will hold a webinar for schools and child cares January 10 to answer exclusion questions and offer guidance for the outbreak. Health jurisdiction staff also are invited to participate. See the included invitation.
- [Nationwide mumps outbreak news](#)
- [Mumps is a notifiable condition](#)
- [Mumps information from the Immunization Action Coalition](#)
- [CDC Pink Book chapter on mumps](#)

Mumps Vaccine: Our Best Protection

Mumps is a contagious disease that causes fever, aches, and swelling in the cheek or jaw area. It also can lead to other problems like hearing loss and brain damage. There is no treatment for mumps, but there is a way to prevent it: the combination measles, mumps, and rubella (MMR) vaccine. It protects you and helps stop the spread of the mumps virus to others.

Sometimes people who have MMR vaccine still get mumps. Why is that?

The vaccine is effective at preventing mumps, but it is not perfect. There is still a small chance of getting mumps if you're vaccinated. Nearly **9 out of 10 people get lasting protection** from the vaccine.

Number at Risk of Getting Mumps



“Because some people do not get lasting protection from the vaccine and mumps spreads easily from person to person, outbreaks can still occur in vaccinated populations. But, if unvaccinated, many, many, more people would become ill.”

~ Dr. Jeff Duchin, Public Health—Seattle King County

MMR vaccine is 88% effective against mumps in people who have had two doses. That means of every 100 vaccinated people exposed, only 12 of them are at risk for getting infected with mumps. In contrast, **all unvaccinated people are at risk. The number of people who get mumps in an outbreak would be much larger if fewer people were vaccinated.** In addition, complications happen more often and are more serious among unvaccinated people who get mumps. Luckily, more than 9 out of 10 Washington kindergartners have both of their MMR vaccine doses.

Even though vaccinated people might get sick in an outbreak, the risk of getting sick is much greater for people who haven't been vaccinated. For example, in one recent summer camp outbreak, 43% of the unvaccinated people got mumps when they were exposed, but less than 4% of vaccinated people got it. But because there were so many more vaccinated campers than campers who didn't have the vaccine, the number of cases in vaccinated people was higher.

Did You Know?

Before the vaccine program started, the U.S. saw more cases of mumps in a week than we see now in an entire year.

How does mumps vaccine help?

- MMR vaccine provides **significant protection** from mumps, and greatly reduces the risk of complications.
- Since the widespread use of MMR vaccine in the U.S., there has been a **99% decrease** in the number of people with mumps.
- MMR vaccine doesn't just protect against mumps—**it also protects against measles and rubella**, which are even deadlier diseases.

What you can do

- **Get vaccinated.** Make sure you and your kids are up to date on MMR vaccine. Check with your healthcare provider. MMR vaccine is available to all Washington kids at no cost.
- **Find the vaccination rate of your school** at www.schooldigger.com.
- **Sign up for MyIR**, which lets you see your family's vaccinations at home and get reminders. Go to doh.wa.gov/immsrecords.

Vacuna contra las paperas: nuestra mejor protección

Las paperas es una enfermedad contagiosa que causa fiebre, dolor e hinchazón en las mejillas o en el área de mandíbula. También pueden causar otros problemas como pérdida auditiva y daño cerebral. No hay tratamiento para las paperas, pero se pueden prevenir con la vacuna triple vírica contra el sarampión, las paperas y la rubéola (MMR). La vacuna te protege y ayuda a detener la propagación del virus a otras personas.

¿Por qué a veces las personas que reciben la vacuna MMR aún enferman de paperas?

La vacuna es efectiva previniendo paperas, pero no es perfecta. Existe una pequeña probabilidad de que contraigas paperas aunque hayas sido vacunado. Alrededor de **9 de cada 10 personas reciben protección permanente** de la vacuna. **La vacuna MMR es efectiva hasta un 88% en contra de las paperas** en las personas que han recibido dos dosis de la vacuna. Esto significa que de cada 100 personas vacunadas expuestas al virus, sólo 12 corren el riesgo de enfermar con paperas. En cambio, **todas las personas sin vacunar corren el riesgo de enfermar** si se exponen al virus.

Número de personas en riesgo de contraer paperas



“Debido a que algunas personas no logran mantener una protección duradera contra las paperas después de vacunarse y ya que el virus puede propagarse fácilmente de persona a persona, aún pueden ocurrir brotes en poblaciones vacunadas. Sin embargo, si la gente no se vacunara, muchas más personas enfermarían”.

~ Dr. Jeff Duchin, Salud Pública del Condado de Seattle King

El número de personas que enferman durante un brote de la enfermedad sería más grande si menos personas fueran vacunadas. Adicionalmente, las complicaciones ocurren más seguido y son más graves entre los que no han sido vacunados. Afortunadamente, más de 9 de cada 10 niños en el kínder o jardín de niños han sido vacunados con las dos dosis de la vacuna MMR.

Aunque más personas vacunadas podrían enfermar durante un brote, el riesgo de adquirir la enfermedad es mucho mayor para las personas que no han sido vacunadas. Por ejemplo, en un brote reciente de la enfermedad en un campamento de verano, el 43% de las personas sin vacunar enfermaron de paperas al ser expuestos al virus, pero menos del 4% de las personas vacunadas enfermaron. Pero debido a que el número de personas vacunadas era mayor que el de las personas sin vacunar, el número de casos de la enfermedad fue mayor en las personas vacunadas.

¿Sabías que?

Antes de que el programa de vacunación empezara, en los EE. UU. se veían más casos de paperas en una semana que los que se ven ahora en un año.

¿Cómo ayuda la vacuna MMR?

- La vacuna MMR ofrece una buena protección en contra de las paperas y reduce el riesgo de complicaciones considerablemente.
- Desde que empezó a usarse la vacuna MMR ampliamente en los EE. UU., **ha disminuido** el número de personas con paperas **hasta un 99%**.
- La vacuna MMR no sólo protege contra las paperas, **también protege contra el sarampión y la rubéola**, las cuales son dos enfermedades aún más mortales.

Lo que puedes hacer

- **Vacúnate.** Asegúrate de que tu y tus niños hayan recibido la vacuna MMR. Verifica con tu proveedor médico. La vacuna MMR está disponible para todos los niños en Washington sin costo alguno.
- **Encuentra las tasas de vacunación de tu escuela** en www.schooldigger.com.
- **Regístrate en MyIR** para acceder al registro de vacunación tuyo y de tu familia desde la comodidad de tu casa y para recibir recordatorios. Visita doh.wa.gov/immsrecords.

This guide walks providers through the process of collecting and transporting potential Mumps specimens to the Washington Public Health Lab.

Serologic Testing for Mumps

In most cases if serologic testing is desired, send serum commercially and request both IgM and IgG results.

Collection of Specimens for PCR Testing

- On days 0-3 after onset of parotitis, collect a buccal swab only.
- On days 4-10 after onset of parotitis, collect both a buccal swab and urine.
- Please consult with your Local Health Jurisdiction about what testing can be considered if more than 10 days has elapsed since onset of parotitis.

1. Collect the Mumps Specimen, following Mumps RT-PCR collection guidelines:

<http://www.doh.wa.gov/Portals/1/Documents/5240/SCSI-Mumps-RTPCR-V2.pdf>

2. Complete the WAPHL Virology Specimen Submission form:

<http://www.doh.wa.gov/Portals/1/Documents/5230/302-017-SerVirHIV.pdf>

Make sure all of the following information is filled out:

- Patient name, second identifier (e.g. date of birth), and county of residence
- Specimen type, date of collection, onset date and test requested (Mumps RT-PCR)
- Submitter name, address, and telephone/FAX numbers

3. Once the Mumps specimen has been collected, prepare the specimen securely:

- Make sure the cap of the transport tube is securely closed.
- Make sure the patient's name and second identifier are listed on the specimen tube and match the specimen submission form.
- Prepare a Biohazard Ziploc (plastic) bag containing a piece of super absorbent paper.
- Place the taped or para-filmed tube in the bag prevent potential leaking.
- Place the WAPHL submission form in the outer pouch of the Biohazard bag. **DO NOT** place any paperwork inside the pouch with the specimen tube.

4. Prepare the Mumps specimen for shipment:

- Place the Mumps Specimen contained in the Biohazard bag into a Saf-T-Pak plastic bag. Place the Saf-T-Pak plastic bag into a white Tyvek bag.
- Place the white Tyvek bag into a large plastic bag with frozen ice packs or dry ice, and place everything into the Saf-T-Pak cardboard box.
- Add packing material as needed to prevent contents from shifting during shipment.

For persons with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).

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- Place specimen into a special shipping container labeled as “Biological Substance, Category B.”

5. Ship the Mumps specimen:

- Choose a delivery service with package delivery within 24 hours.
- Lab receiving hours are 8am to 5pm Monday through Friday, and 10am to 12pm on Saturday. Saturday delivery is discouraged.
- Reusable shippers should be covered in clear packing tape and indicate a ‘Please return to’ address on the outer box so WAPHL can ship it back.

Suspect Mumps Case Checklist

[This document is modifiable with your contact information. Copy and paste the text into your own letterhead Word document.]

Consider mumps in the differential diagnosis of patients with compatible symptoms, including:

- Non-specific prodrome of low-grade fever, malaise, headache, myalgia, and anorexia.
- Swollen tender salivary glands near lower ears on one or both sides (parotitis).
- Orchitis (may develop in <10% of males with mumps infection).

The current outbreak includes a cultural dimension in that 40% of cases in WA State are in patients who are Marshallese.

- Call Your Health Jurisdiction name here at (XXX) XXX-XXXX during business hours, or (XXX) XXX-XXXX after hours, for guidance on testing and to report possible mumps case.**
- Use droplet and standard precautions.** Ensure suspect mumps cases wear a mask that covers the nose and mouth and ensure that only staff with documented immunity to mumps are allowed to enter the patient's room.
- Order RT-PCR tests for mumps through public health:**
 - On days 0-3 after onset of parotitis (with the day of onset being day 0), collect a buccal swab.
 - Massage the parotid gland for about 30 second prior to collecting specimen. Place a Dacron (or polyester, NOT cotton) swab between the rear molars and cheek (on the affected side if parotitis is unilateral) and leave in place 10-15 second. Place swab in a tube containing 2-3 mL of cold viral transport medium.
 - Tape or parafilm the tubes to prevent leaking. Make sure patient name and second identifier are on the samples.
 - On days 4-10 after onset of parotitis (with the day of onset being day 0), collect both a buccal swab and urine.
 - Collect buccal swab as described above.
 - Collect urine (at least 50 ccs) in a sterile cup. Keep cold after collection and during shipment. Send urine in a sputum cup if possible as these leak less in shipment.
 - Tape or parafilm the tubes to prevent leaking. Make sure patient name and second identifier are on the samples.
 - When ordering, indicate that specimens are to be shipped to Washington State Public Health Lab for RT-PCR for mumps.
 - Complete a requisition form for the Washington State Public Health Laboratories for each specimen submitted: <http://www.doh.wa.gov/Portals/1/Documents/5230/302-017-SerVirHIV.pdf>. Make sure all of the following information is filled out:
 - Patient name, second identifier (e.g. date of birth) and county of residence.
 - Specimen type, date of collection, onset date, and test requested (mumps RT-PCR).
 - Submitter name, address, and telephone/fax numbers.
 - Consider ordering serology for IgG and IgM in addition to the above tests, but not in place of the above tests as laboratory detection of mumps is challenging, particularly in vaccinated individuals. Serology can be ordered and performed commercially (do not send to WA DOH Public Health Lab).
- Instruct patient to isolate.** Suspect mumps cases should not return to work or school and should avoid contact with others until the 6th day after onset of parotitis.

Call Your Health Jurisdiction name here at (XXX) XXX-XXXX during business hours, or (XXX) XXX-XXXX after hours, for guidance on testing and to report possible mumps case.

I. Clinical presentation of mumps

The most common symptoms include:

- Swollen and tender salivary glands under the ears on one or both sides (parotitis)
- Non-specific prodromal symptoms can include:
 - Low-grade fever
 - Malaise
 - Headache
 - Myalgia
 - Anorexia
- Orchitis or oophritis (*clinically diagnosed as opposed to subjective testicular or pelvic pain*)

The classic symptom of mumps is parotitis (i.e., acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary glands), lasting at least two days, but may persist up to ten days or longer. Nonspecific prodromal symptoms may precede parotitis by several days, including low-grade fever which may last three to four days, myalgia, anorexia, malaise, and headache. However, mumps infection may present only with nonspecific or symptoms or may be a subclinical infection. Rates of classic parotitis among all age groups typically range from 31% to 65%, but in specific age groups can be as low as 9% or as high as 94% depending on the ages and immunization histories of the individuals in the group. Parotitis may be unilateral or bilateral, and any combination of single or multiple salivary glands may be affected. Parotitis tends to occur within the first 2 days and may first be noted as earache and tenderness on palpation of the angle of the jaw. Symptoms tend to decrease after one week and usually resolve after 10 days.

Persons with history of potential exposure to mumps who have pain in their testes (males) or pelvic area (females) should be evaluated by their health care provider for potential orchitis (testicular inflammation) or oophoritis (ovarian inflammation not related to bacterial infection).

Before the introduction of the mumps vaccine in the United States in 1967, 15% to 27% of infections were asymptomatic. The proportion of infections that are asymptomatic since the introduction of the vaccine has not been clearly determined. Persons with asymptomatic infection can transmit the virus.

Mumps complications

- **Orchitis** (testicular inflammation) is the most common complication of mumps in post-pubertal males. In the pre-vaccine era, orchitis was reported in 12 – 66% of males who get mumps after puberty. Orchitis usually occurs 1-2 weeks (average 4-8 days) after onset of parotitis. In mumps-associated orchitis, the onset is usually abrupt and includes swelling, tenderness, nausea, vomiting, and fever. Only one testicle is affected in 60-83% of male mumps cases with orchitis. Mumps orchitis rarely leads to sterility but it may contribute to subfertility. An estimated 1 in 10 men experience a decrease in their sperm count. However, this drop is very rarely large enough to cause infertility.

- **Oophritis.** Historically, about one in 20 females who got mumps after puberty experienced swelling of the ovaries or oophritis (ovarian inflammation). In the 2006 and 2009–2010 U.S. mumps outbreaks, oophoritis rates were 1% or lower among post-pubertal females. The symptoms of oophoritis (lower abdominal pain, high temperature, feeling sick) usually pass once the underlying mumps infection is cleared. It may mimic appendicitis. There is no known relationship to impaired fertility.
- **Aseptic meningitis.** In the pre-vaccine era, mumps accounted for approximately 10% of cases of symptomatic aseptic meningitis (inflammatory cells in cerebrospinal fluid resulting in headache or stiff neck). Men were afflicted three times as often as women. Aseptic meningitis resolves without sequelae in 3 to 10 days.
- **Mumps encephalitis** accounted for 36% of all reported encephalitis cases in the United States in 1967. The incidence of mumps encephalitis is reported to range from 1 in 6,000 mumps cases (0.02%) to 1 in 300 mumps cases (0.3%).
- **Pancreatitis** was reported in 3.5% of persons infected with mumps in one community during a two year period prior to the availability of vaccine, and was also described in case reports. Pancreatitis is infrequent, but occasionally occurs without parotitis. It causes hyperglycemia that is transient and reversible. Although single instances of diabetes mellitus have been reported, a causal relationship with mumps virus infection has yet to be conclusively demonstrated.
- **Deafness.** In the pre-vaccine era, mumps caused transient deafness in 4.1% of infected adult males (in a military population). Permanent unilateral deafness caused by mumps occurred in 1 of 20,000 infected persons. Bilateral, severe hearing loss was very rare.

In the post-vaccine era, among all persons infected with mumps, reported rates of meningitis, encephalitis, pancreatitis, and deafness have all been less than 1%. Permanent sequelae such as paralysis, seizures, cranial nerve palsies, and hydrocephalus occurred very rarely, even in the pre-vaccine era. Although, in the United States during 1966–1971 there were two deaths per 10,000 reported mumps cases, there were no mumps-related deaths in recent U.S. outbreaks.

II. Epidemiology of mumps

Case-defining symptoms

Persons with 2 or more days of clinically diagnosed parotitis.

Persons suspected to have mumps that have *clinically diagnosed* orchitis or oophoritis.

Incubation period

Symptoms typically appear 16-18 days after exposure, but this period can range from 12-25 days.

Period of communicability

Mumps virus has been isolated from 7 days before and up to 14 days after parotitis onset, but is most infectious in the several days before and after parotitis onset. If 2008 the period of

isolation was changed from the 9 days following onset to the 5 days following the date of onset. The recommended period for contact tracing is 2 days before and 5 days after parotitis onset. Mumps is spread through droplet transmission or by direct contact with infected droplet nuclei or saliva.

III. Laboratory diagnosis of mumps

The period of communicability also informs the recommended times for collection of specimens for laboratory testing. Mumps virus is most reliably present in oral secretions in the few days before and up to 5 days after onset of parotitis. It persists somewhat longer in the urine (10 days to 2 weeks following onset). In general collection of specimens for culture or polymerase chain reaction (PCR) is not recommended more than 10 days following onset.

Specimen collection guidance

- On days 0-3 from onset of parotitis (or *clinically diagnosed* orchitis/oophoritis) with date of onset being day 0 → collect a buccal swab only.
- On days 4-10 from onset → collect both a buccal swab and urine.
- Please consult with the DOH Office of Communicable Disease Epidemiology about what testing can still be considered if more than 10 days has elapsed since onset of parotitis (or *clinically diagnosed* orchitis/oophoritis).

Testing schedule at the Washington Public Health Laboratories (WAPHL)

Due to the high volume of specimens received for PCR testing by WAPHL in December 2016, WAPHL recommends that serologic testing be done at a commercial laboratory, if desired. Both IgG and IgM results should be requested.

The mumps PCR testing schedule at WAPHL for the outbreak that began in November 2016 and continues through December 2016 is as follows:

- Specimens received in virology **by 1pm** Monday – Thursday will be processed for an overnight run with results available by 10am the following morning.
- Specimens received in virology **by 11am** on Fridays will be processed, run, and reported by close of business the same day.
- Specimens received in virology **after 11am on Fridays** will be processed the following Monday and run overnight with results available by 10am on Tuesday.

Serologic testing and interpretation of results

In general serum specimens should be sent to a commercial laboratory for testing. Both an IgM and an IgG should be ordered.

Follow up to determine IgG results will be important for patients with unknown vaccination status, since **a negative PCR cannot rule out mumps on a person previously exposed to mumps antigen, either by vaccination or previous infection.**

Please note: False negative mumps IgM results (i.e., a negative serologic test for mumps-specific IgM antibody) in a vaccinated person with true mumps is common.

Mumps testing at PHL in the absence of an outbreak

Under non-outbreak circumstances, mumps PCR testing is performed Mondays, Wednesdays, and Fridays with results available the same day. Mumps serology testing is performed on Tuesdays and Thursdays with results available the same day.

IV. Evidence of immunity, exclusion, and return

Evidence of immunity through documentation of vaccination is currently defined as:

- 1 dose of live mumps vaccine for preschool-aged children and for adults not at high risk for exposure and infection, and
- 2 doses of live mumps vaccine for school-aged children (i.e., grades K–12) and for adults at high risk for exposure and infection (i.e., health-care workers, international travelers, and students at post-high-school education institutions)

Exclusion:

All children or staff with symptoms consistent with mumps should be excluded from school, preschool, child care, or job site until they have been evaluated for possible mumps. A person deemed to have mumps can return to the environment on the 6th day after onset of symptoms with the date of onset being day 0.

Susceptible asymptomatic children or staff of schools, preschools, or child cares should be excluded through the 26th day after the onset of parotitis (swelling of salivary glands in one or both cheeks that starts front of the ear and can spread down to the neck or jaw), in the last person with mumps in your facility. The local health jurisdiction should assist the facility in determining this date.

- Susceptible children or staff include those who lack:
 - Documentation of two doses of MMR vaccine for school-aged children one dose of MMR vaccine for children in preschool or child care, OR
 - Laboratory evidence of immunity for mumps or laboratory confirmation of mumps disease, OR Children with an exemption on file for mumps vaccine.
 - Staff who are born before 1957 are presumed to be immune to mumps, so they are NOT required to get MMR vaccine or be tested

Return to school, preschool, or child care:

For districts or buildings with ongoing cases – the 26-day count down until the date that **susceptible** children or staff may return is pushed forward with each new case that occurs.

Allow under or unvaccinated children and staff to return to school, preschool, or child care immediately after receiving a dose of MMR or MMRV vaccine (i.e., persons with no doses can return after receiving a first dose; persons with one prior dose should receive a second dose.)

Q: Can an unimmunized child return to school early if they have a positive titer?

A: Yes. However, if a child had an exemption on file prior to the occurrence of an outbreak and then has a positive IgG serology result on a specimen collected after mumps cases have occurred in the school or in the child’s family or social group, it may indicate that the child has recently had mumps. The ordering health care provider should be encouraged to add a mumps-specific IgM antibody test on the specimen. Mumps IgM antibody is reliably present by

5 days after onset of symptoms (if present), and persists for at least 30 days in an infected person (with or without symptoms) that had not previously been exposed to mumps antigen.

References:

CDC Manual for the Surveillance of Vaccine-Preventable Diseases
Mumps – Chapter 9

<http://www.nhs.uk/Conditions/Mumps/Pages/Introduction.aspx>

Epidemiology and Prevention of Vaccine-Preventable Diseases
The Pink Book Course Textbook – 13th Edition

Mumps – Chapter 15

<https://www.cdc.gov/vaccines/pubs/pinkbook/mumps.html>

National Health Service – U.K.:

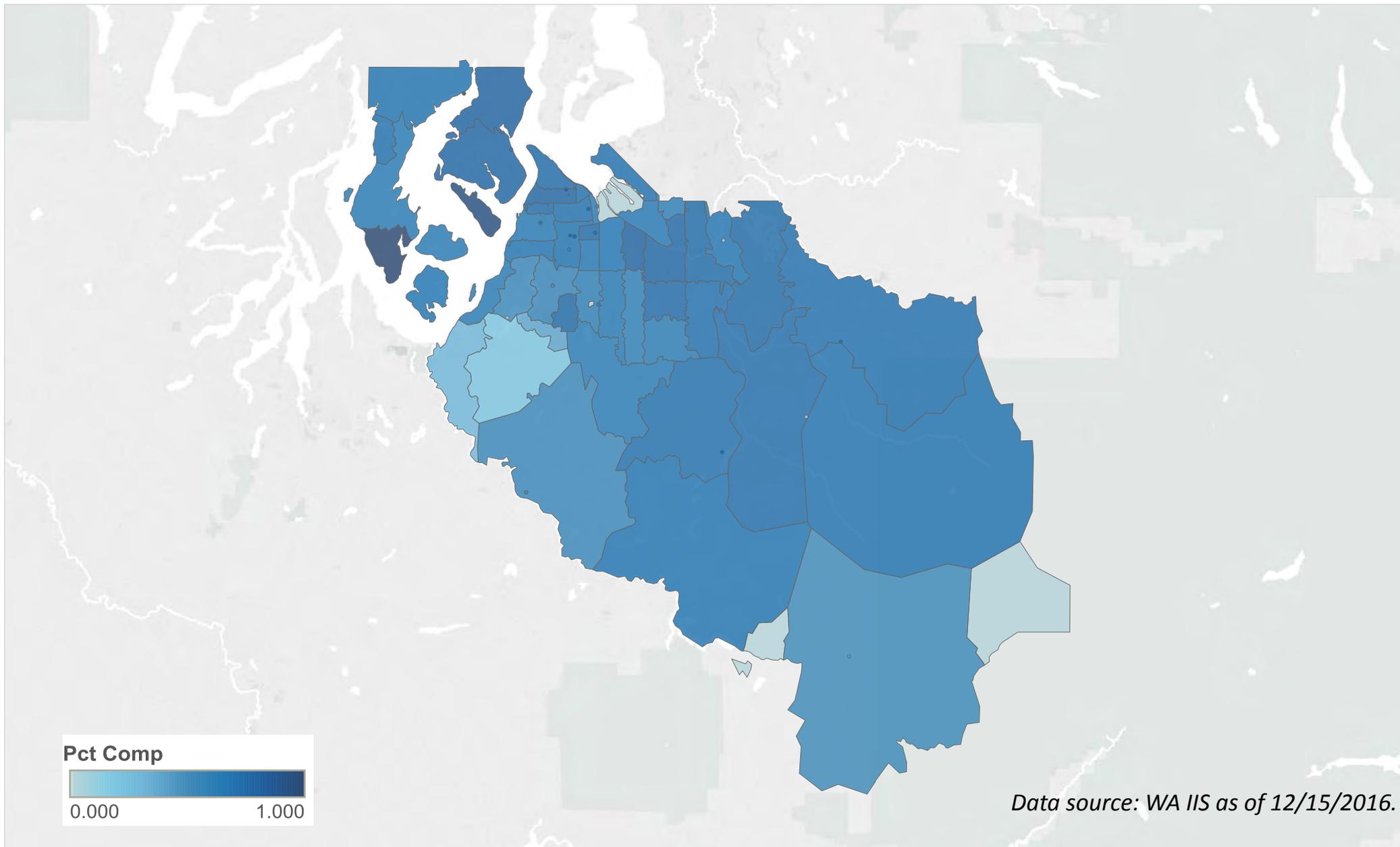
Mumps – General Information

<http://www.nhs.uk/Conditions/Mumps/Pages/Introduction.aspx>

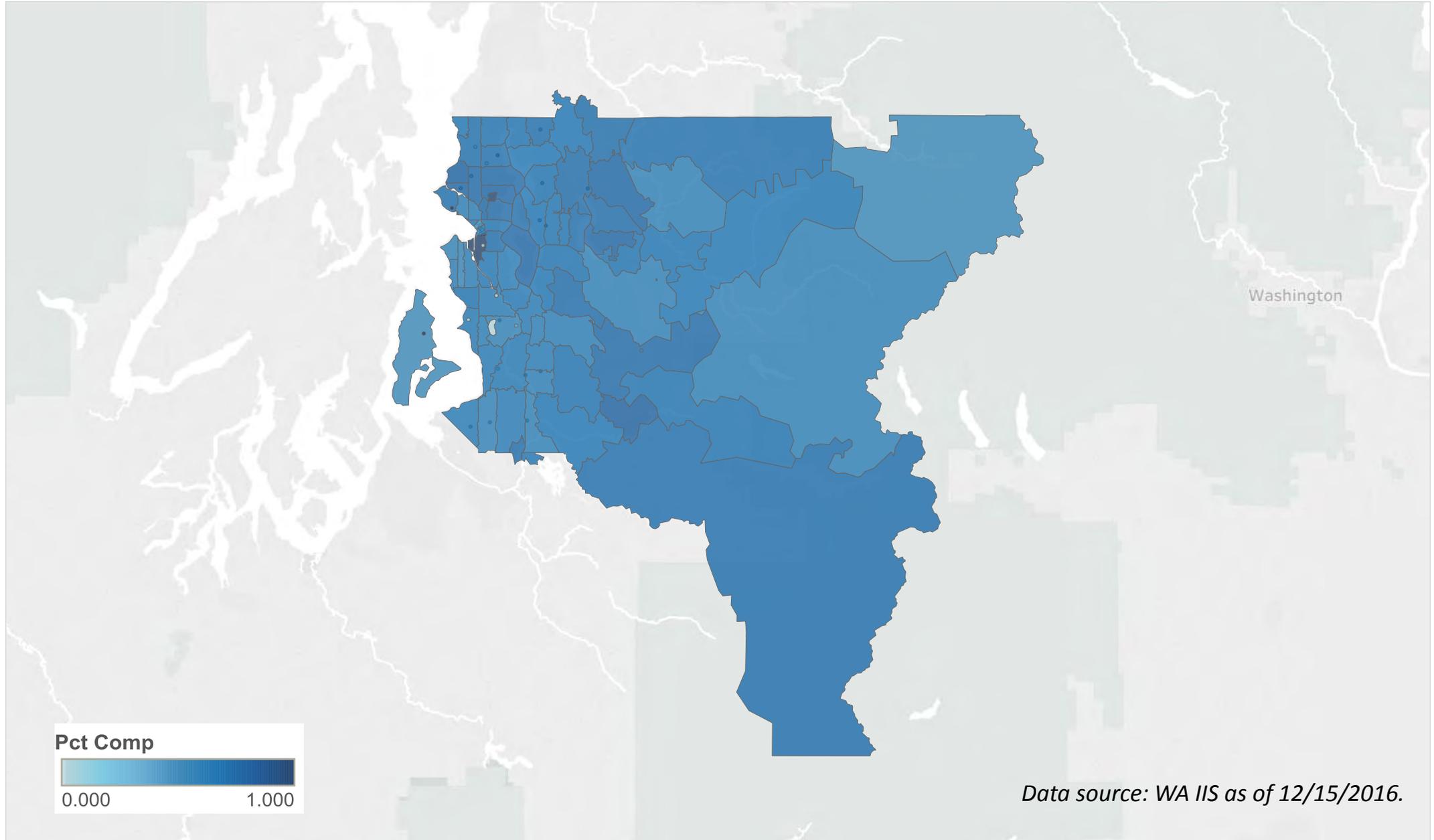
Mumps – Complications

<http://www.nhs.uk/Conditions/Mumps/Pages/Complications.aspx>

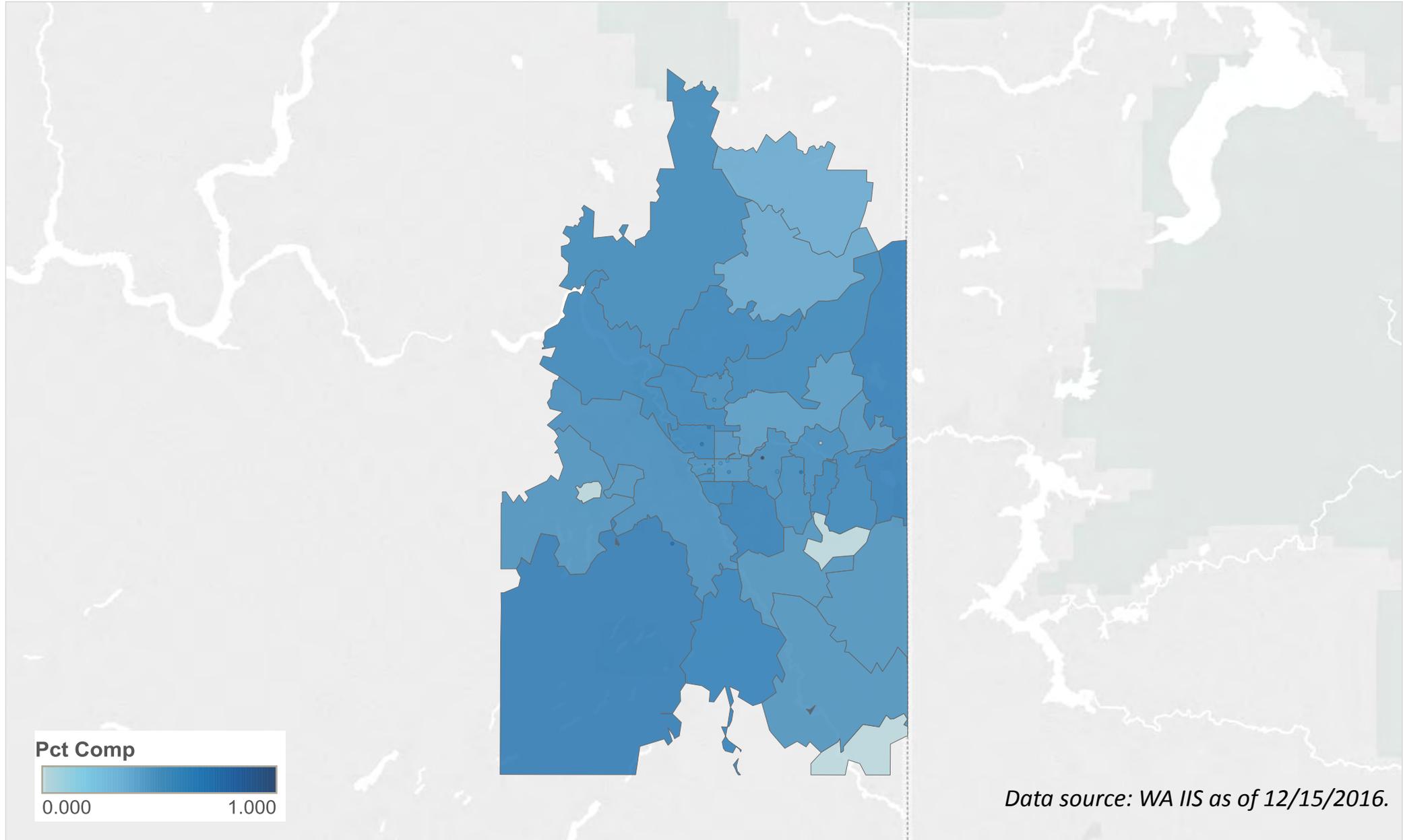
One dose MMR Completion among 12-18 month-olds, Pierce County by ZIP code



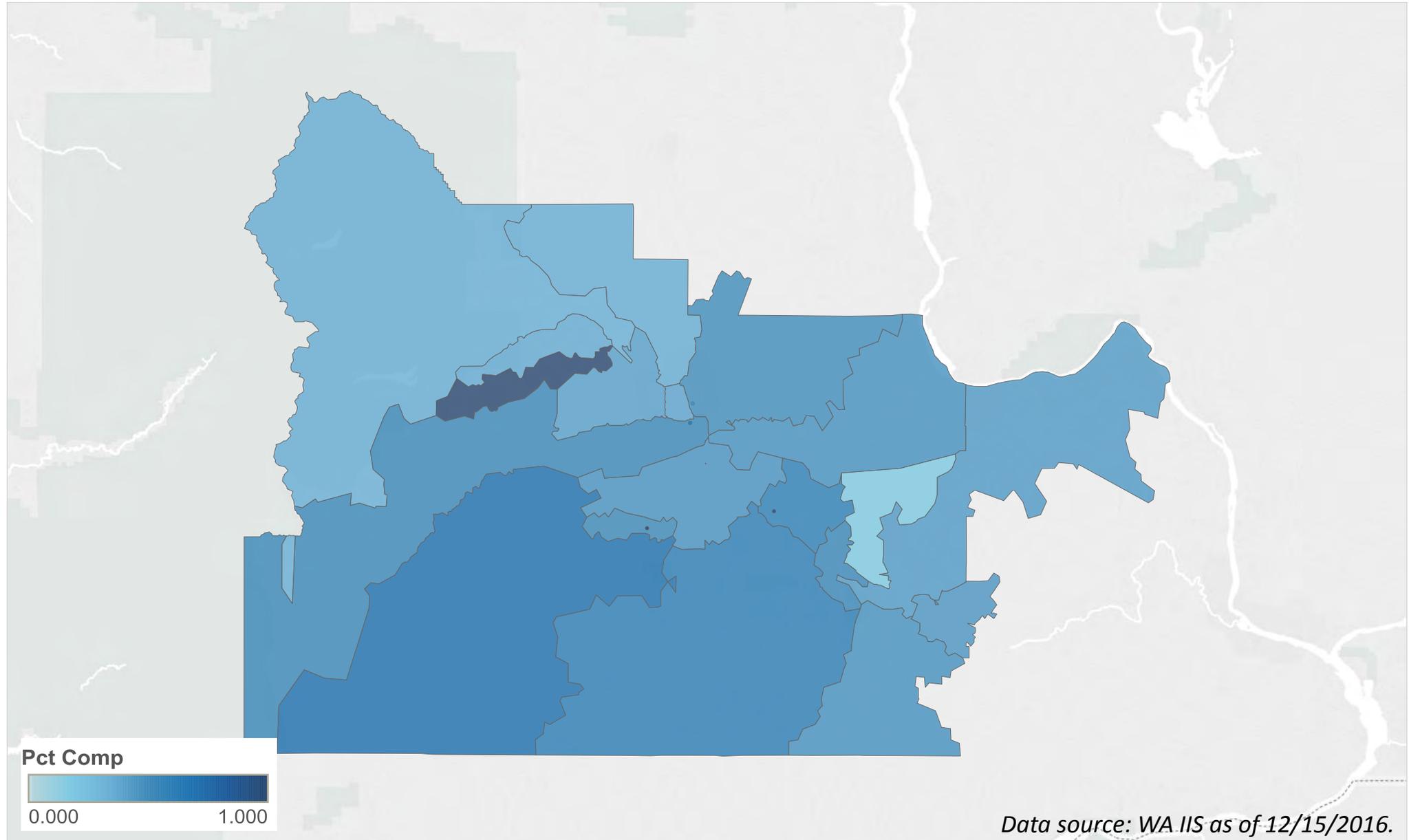
One dose MMR Completion among 12-18 month-olds, King County by ZIP code



One dose MMR Completion among 12-18 month-olds, Spokane County by ZIP code



One dose MMR Completion among 12-18 month-olds, Yakima County by ZIP code



The Washington Department of Health is coordinating a statewide response to the outbreak, working closely with local health jurisdictions (LHJs). The department's goal is to prevent the outbreak from spreading further. Washington rules and regulations require exclusion of children from school, preschool, or child care when certain diseases occur in these facilities if they are not fully immunized according to immunization requirements set by the State Board of Health. Although schools, preschools, and child cares are required by law to work with LHJs during a disease outbreak, the rules do not specifically address school exclusion policies and procedures during an outbreak. LHJs should work together with schools, preschools, and child cares to develop policies and procedures for exclusion of children and staff in the event of a mumps outbreak. Guidance for the development of these policies and procedures is outlined below.

Exclusion Guidelines during a Mumps Outbreak:

- All children or staff with symptoms consistent with mumps should be excluded from school, preschool, or child care until they have been evaluated for possible mumps.
- **Susceptible** asymptomatic children or staff should be excluded through the 26th day after the onset of parotitis (swelling of salivary glands in one or both cheeks that starts front of the ear and can spread down to the neck or jaw), in the last person with mumps in your facility. The LHJ should be consulted when determining this date.
 - Susceptible children or staff include:
 - Those who lack documentation of two doses of MMR vaccine for school-aged children, OR one dose of MMR vaccine for children in preschool or child care.
 - Those who lack laboratory evidence of immunity for mumps or laboratory confirmation of mumps disease.
 - Children with an exemption on file for mumps vaccine.
 - Staff who are born before 1957 are presumed to be immune to mumps, so they are NOT required to get MMR vaccine or be tested
- For districts or buildings with ongoing cases – the 26-day countdown until the date that susceptible children or staff may return is pushed forward with each new case that occurs.
- Allow under- or unvaccinated children and staff to return to school, preschool, or child care immediately after receiving a dose of MMR or MMRV vaccine (i.e., persons with no doses can return after receiving a first dose; persons with one prior dose should receive a second dose).
- **Exclusion should not be done on a classroom-by-classroom basis.** Exposure also can occur in lunchrooms, restrooms, playgrounds, and shared learning spaces such as the library.
- Exclusion policy options that can be considered include:
 1. Exclude susceptible children and staff districtwide.
 2. Exclude susceptible children and staff on a building-by-building basis.
 - If exclusion is by building, additional considerations for applying the exclusion policy to a building are:
 - Is it a building with no cases?
 - Is it a building with outbreak cases, but none recent?
 - Is it a building with ongoing cases?
 - Is it a building with evidence of transmission in that building?

Additional Resources:

- [Washington Department of Health Mumps Outbreak](#)
- [Washington Department of Health Mumps Guideline](#)
- [CDC's Manual for the Surveillance of VPDs: Chapter 9 Mumps](#)
- Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013 -- Summary Recommendations of the Advisory Committee on Immunization Practices (ACIP)
Source: MMWR, June 14, 2013; 62(RR04):1-34. <https://www.cdc.gov/mmwr/pdf/rr/rr6204.pdf>