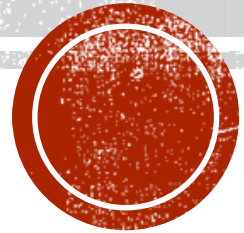
MEASLES OVERVIEW



Michelle M. Rothoff, M.D.

Alaska Department of Public Health

Section of Epidemiology

KEY POINTS

- Risk factors for infection
- How to recognize measles
- How to test for measles
- How to prevent infection and transmission
- Vaccination guidelines
- Post-exposure prophylaxis

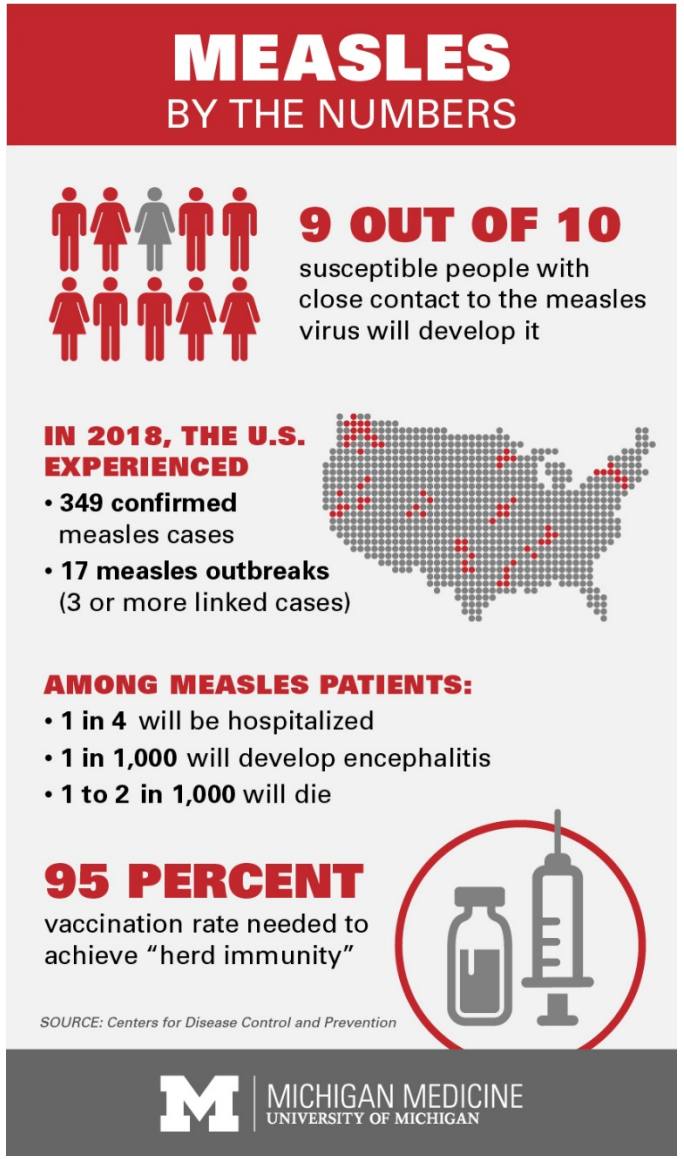
EPIDEMIOLOGY

- Measles declared eliminated from U.S. in 2000
- Measles cases and outbreaks still occur in the U.S. every year
  - Annual number of cases has ranged from 37-667 since 2000
  - In 2019 so far, U.S. has already had 940 cases, the highest number in 25 years
  - 81 cases in recent WA state outbreaks; no AK cases…yet
  - Majority of cases occur in unvaccinated people (90% unvaccinated or unknown status)
  - U.S. cases occur as a result of importation of measles

NEWS HEALTH

U.S. measles outbreaks show no signs of slowing down

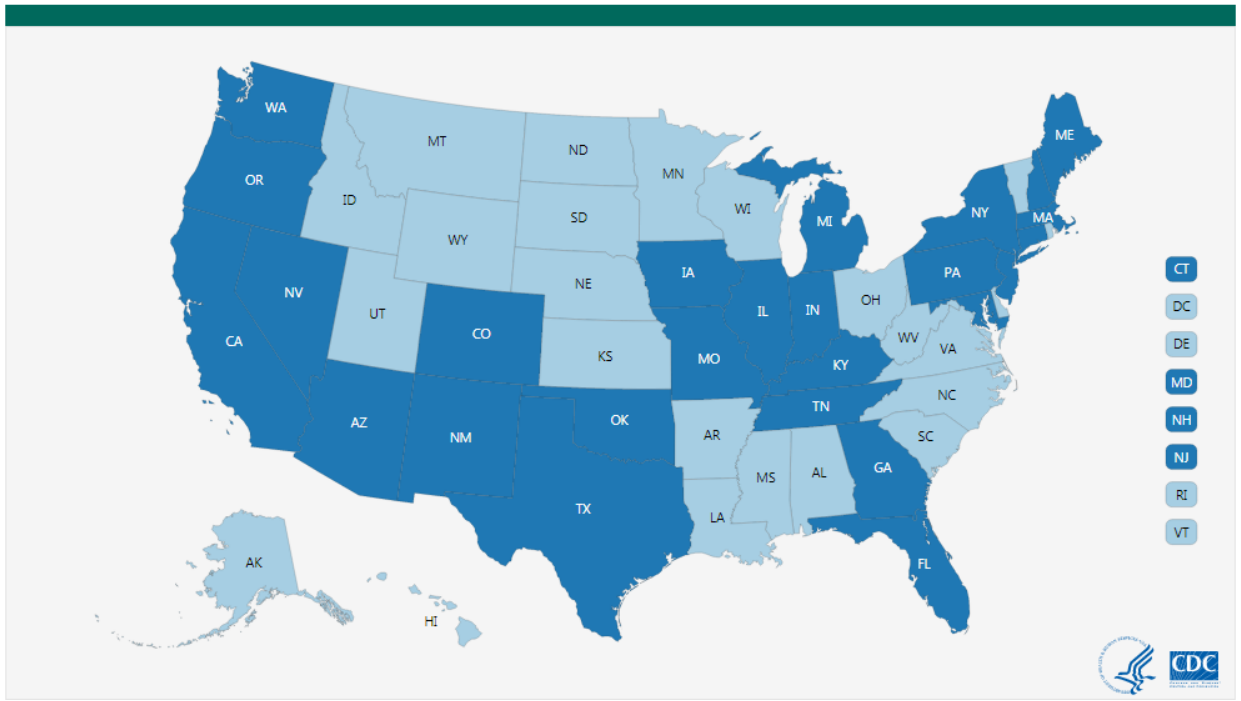
International travel and hot spots where too few people are vaccinated is fueling the spread



EPIDEMIOLOGY

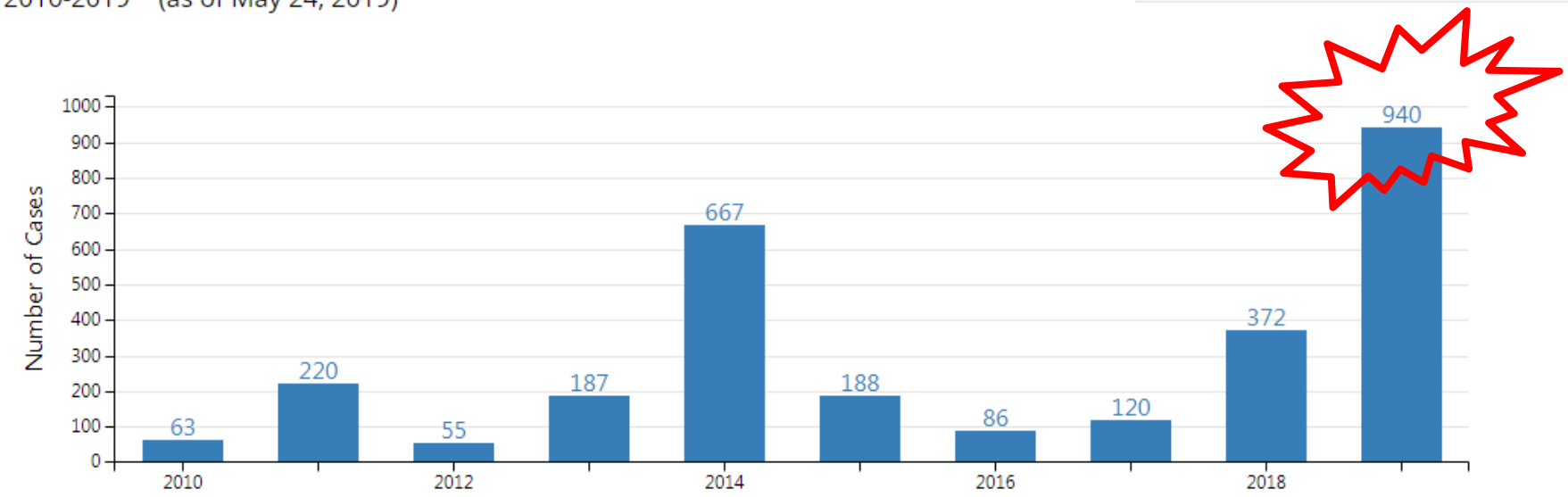
States with Reported Measles Cases

2019 ** (as of May 24, 2019)



Number of Measles Cases Reported by Year

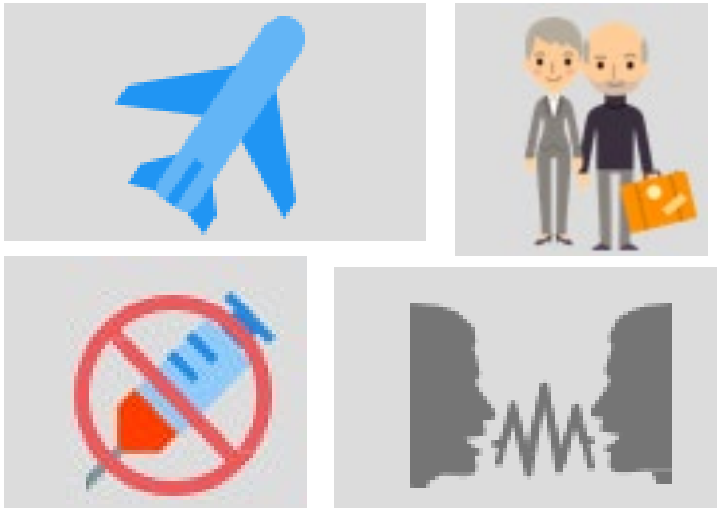
2010-2019**(as of May 24, 2019)



RISK FACTORS

ASK:

- Recent travel abroad (prior 3 weeks)
  - Or contact with foreign visitors, international airports
- Live in (or travel to) a community where an outbreak is occurring
- Unvaccinated status



MEASLES 101

Measles are characterized by any of the following:

Generalized rash

Fever

Cough

Runny nose

Conjunctivitis (red eyes)

A highly contagious viral infection, they can be transmitted through air or direct contact. Hazardous for very young and undernourished children.

Complications of Measles

When ignored, it can cause:

Diarrhea

Dehydration

Pneumonia

Encephalitis

Blindness

Deafness

Measles vaccines are free in all health centers nationwide

DepED
DEPARTMENT OF EDUCATION

The Calgary Sun ■ TUESDAY, MARCH 18, 2014

SUN LIFE

MIND & BODY

Did you know...

Since 2000, more than 1 Billion children in high risk countries were vaccinated against measles through mass vaccination campaigns — about 145 Million of them in 2012.

Spotting measles

Measles is a highly contagious, serious disease caused by a virus. Worldwide, it is one of the leading causes of death among young children — even though a safe and cost-effective vaccine is available. In 1980, before widespread vaccination, measles caused an estimated 2.6 million deaths each year.

In Canada, measles had virtually been eradicated, but has lately been rearing its ugly head across the country.

In Canada

Canada has a vaccination rate of approximately 95%, although some regions fall well below that at 50%. Many of the recent cases in Canada have been imported from the Netherlands, and from the Philippines, where a widespread outbreak reportedly killed more than two dozen children last year.

Recent cases found in:

- Burnaby B.C.
- Fraser Valley B.C.
- P.E.I.
- Calgary, Alta.
- Interlake, Man.
- Ottawa, Ont.
- London, Ont.
- Hamilton, Ont.
- Regina area, Alta.

Signs/symptoms

HIGH FEVER begins about 10 to 12 days after exposure to the virus; lasts four to seven days.

RED, WATERY EYES

SMALL WHITE SPOTS inside the cheeks can develop in the initial stage

RUNNY NOSE

COUGH

RASH Appears within 7-18 days of exposure to the virus (usually about 14 days). Starts on face and upper neck. Over about three days, the rash spreads, eventually reaching the hands and feet. The rash lasts for 5 to 6 days, and then fades.

In 2012, there were 122,000 measles deaths globally – about 330 deaths every day or 14 deaths every hour.

Measles is one of the leading causes of death among young children

even though a safe and cost-effective vaccine is available.

Complications

Most measles-related deaths are caused by complications associated with the disease.

Complications of measles disease occur in about 10% of measles cases and death is estimated to occur in 1 to 2 of every 1,000 cases.

- Blindness
- Encephalitis (an infection that causes brain swelling)
- Severe diarrhea and related dehydration
- Ear infections
- Severe respiratory infections ie. pneumonia
- Miscarriage or preterm delivery for pregnant women

Transmission

Highly contagious

Spread by coughing and sneezing, close personal contact or direct contact with infected nasal or throat secretions.

The virus remains active and contagious in the air or on infected surfaces for up to two hours.

Can be transmitted by an infected person from four days prior to the onset of the rash to four days after the rash erupts.

No specific antiviral treatment exists

Prevention

The measles vaccine has been in use for 50 years.

In Canada, two doses are given to children; the first dose at 12-15 months of age; second dose at 18 months of age or any time thereafter, but should be given no later than around school entry.

People who recover from measles are immune for the rest of their lives.

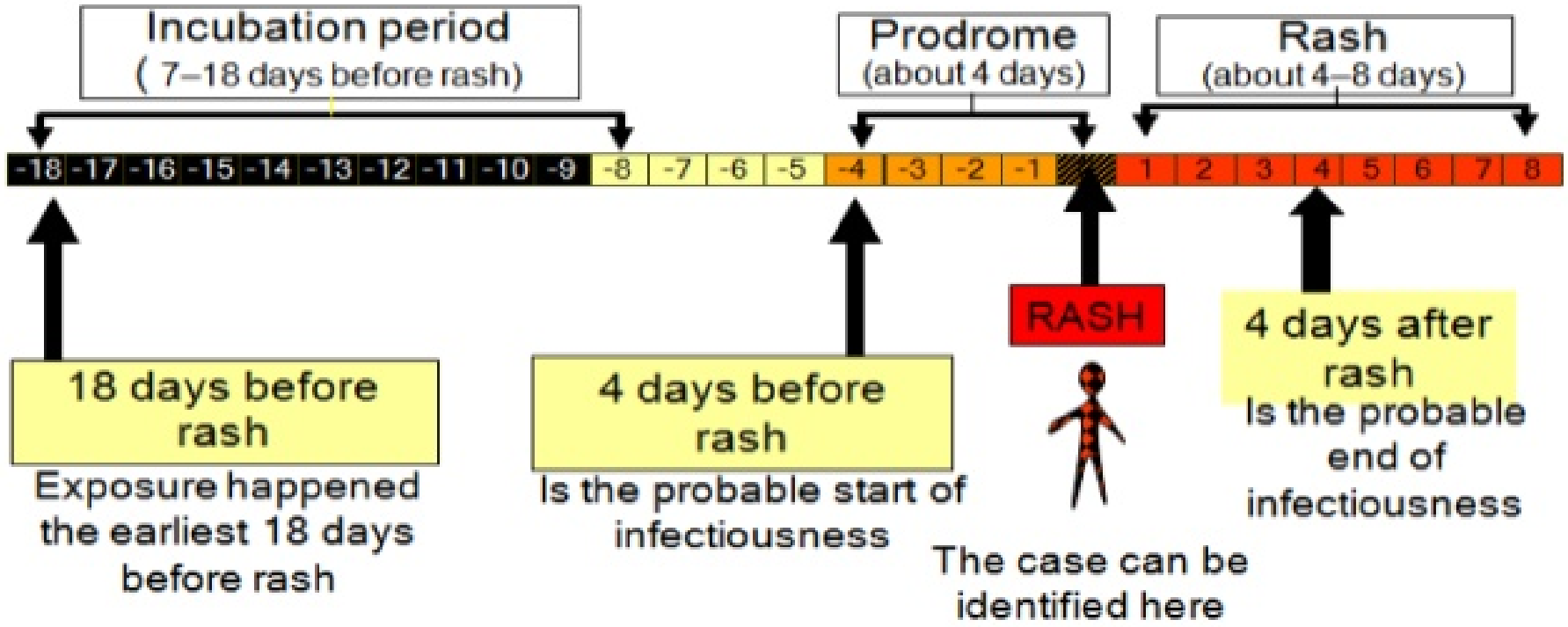
Measles vaccination resulted in a 78% drop in measles deaths between 2000 and 2012 worldwide

SUSAN BATSFORD, GRAPHICS EDITOR, [illegible] INFOGRAPHIC BY TARA CORMAN/QMI AGENCY

CLINICAL FEATURES

- Acute viral respiratory illness
- Prodrome: high fever, malaise, cough, coryza, conjunctivitis (3 C's)
- Koplik spots and maculopapular rash (14 days after exposure, 4 days after prodrome starts)
  - Rash spreads from head to trunk to lower extremities
    - Hairline to face, downward to feet
    - Rash fades in same order
  - May not develop typical rash if immunocompromised

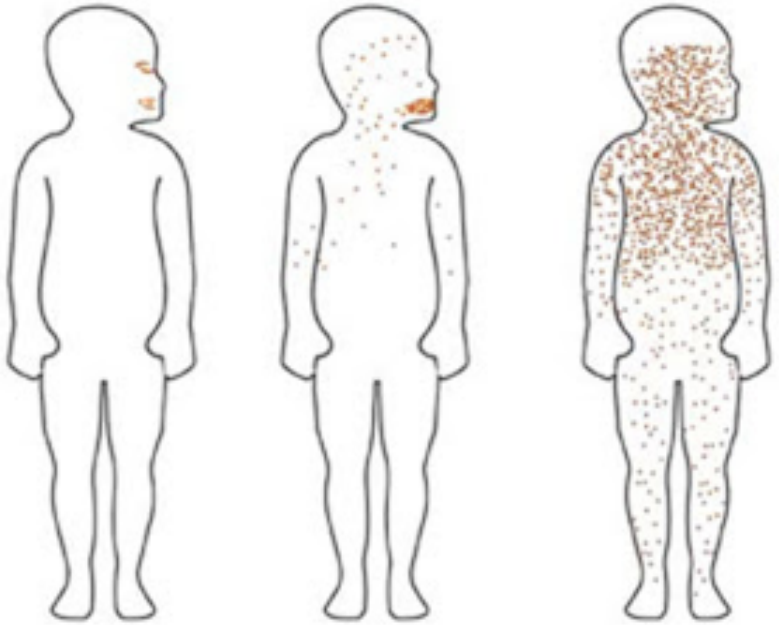
Clinical Presentation

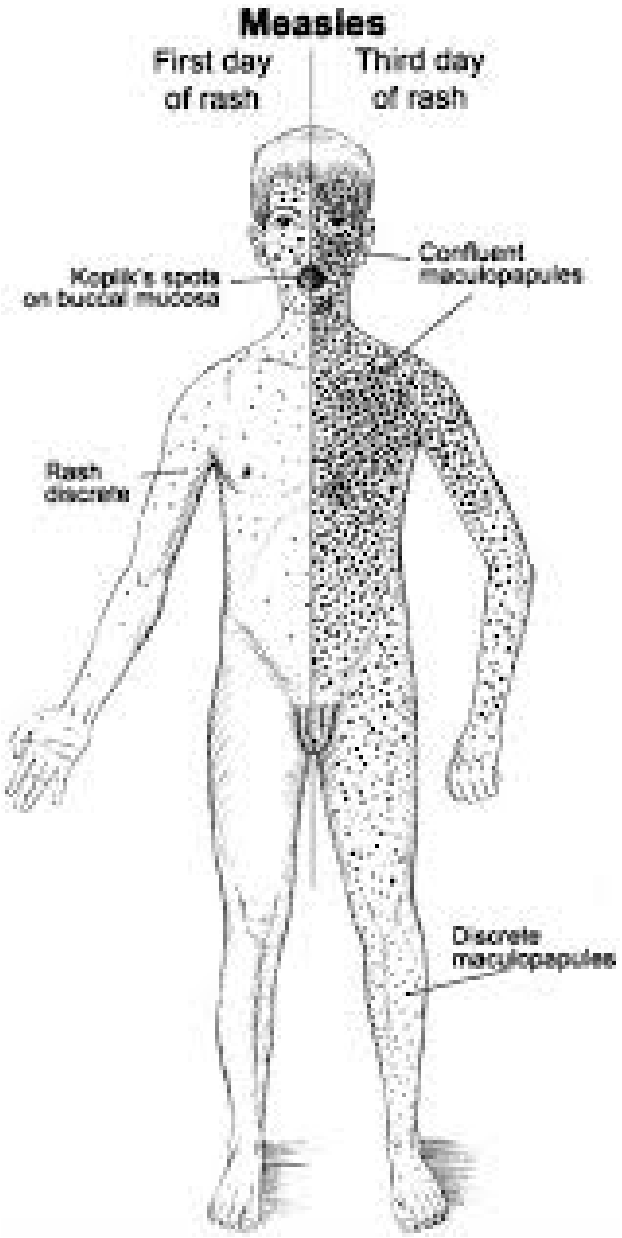


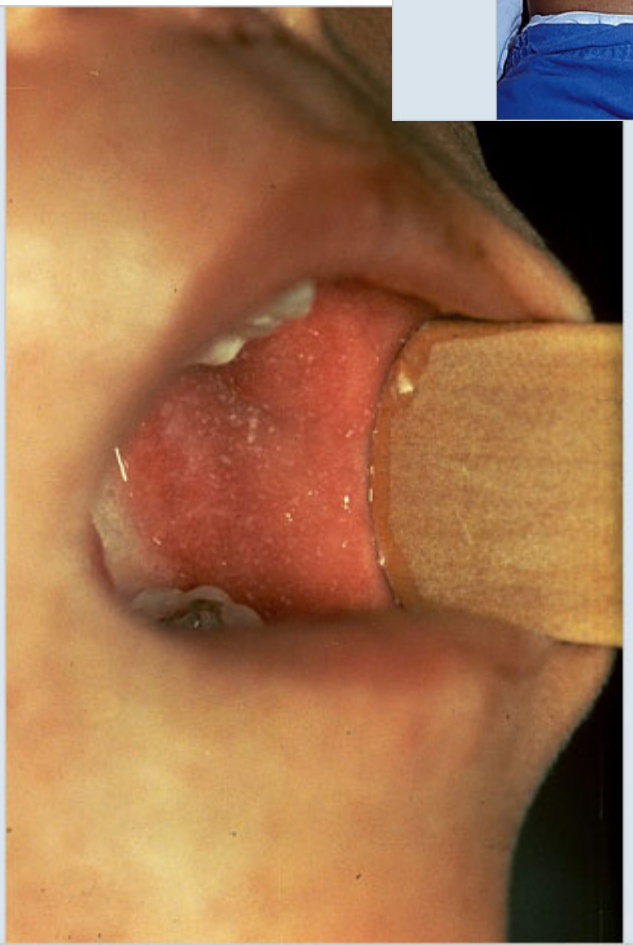
- PRODROMAL STAGE
- ERUPTIVE STAGE
- POST MEASLES STAGE
- COMPLICATIONS

MEASLES RASH

- Measles: progression (head down), confluence esp. on face/upper trunk, red and blanches initially, then turns brown; other sx (fever, 3 C's)



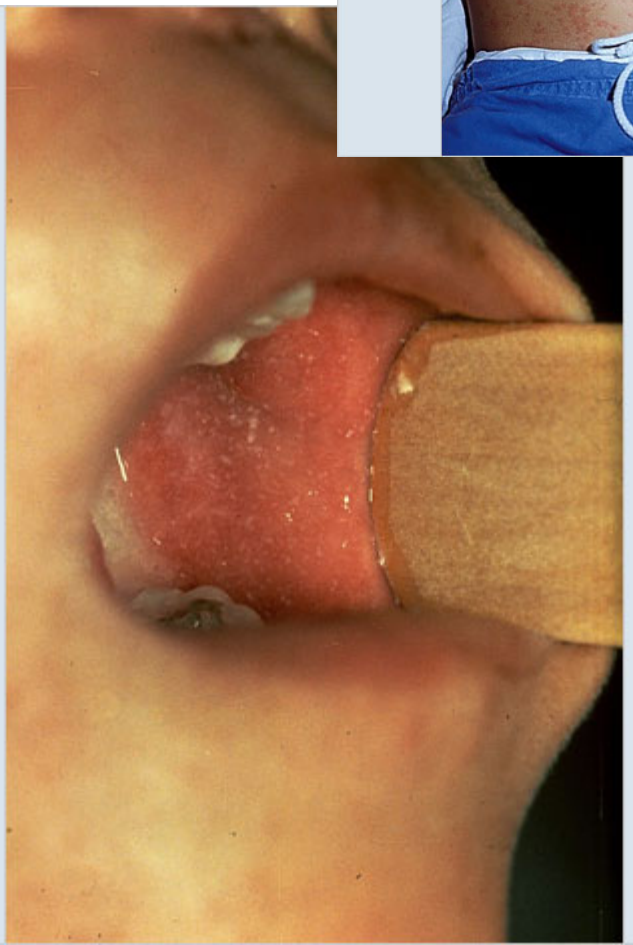




RASH DIFFERENTIAL—NAME THAT RASH!

RASH DIFFERENTIAL

- Other viral exanthems
  - rubella (rash similar but usually less red, symptoms usually milder)
  - Parvo B19/5th disease (slapped cheeks, lacy rash)
  - Roseola (faint pink rash, spreads from trunk to face and extremities)
  - Mononucleosis (rash usually occurs after ampicillin administration)
  - Coxsackie (hand-foot-mouth; oral ulcers, rash on hands/feet/buttocks)
- Other infectious rashes
  - GAS (sandpaper rash that blanches, strawberry tongue)
  - Meningococcus (petechiae/purpura)
  - RMSF (usually starts wrists and ankles and spreads from there)
- Non-infectious (contact or atopic dermatitis)
- Drug eruption
  - Most common form predominantly involves trunk and proximal extremities
  - Ask about medications, current or recent antibiotic use!



CASE

- 12 month old female with cough X 2 weeks. No fever, coryza, or conjunctivitis reported.
- No travel history or known exposures
- Started on 10-day course of amoxicillin
- Developed full-body rash 1 week later. Concern for possible measles.
- Measles swab done, PCR POSITIVE

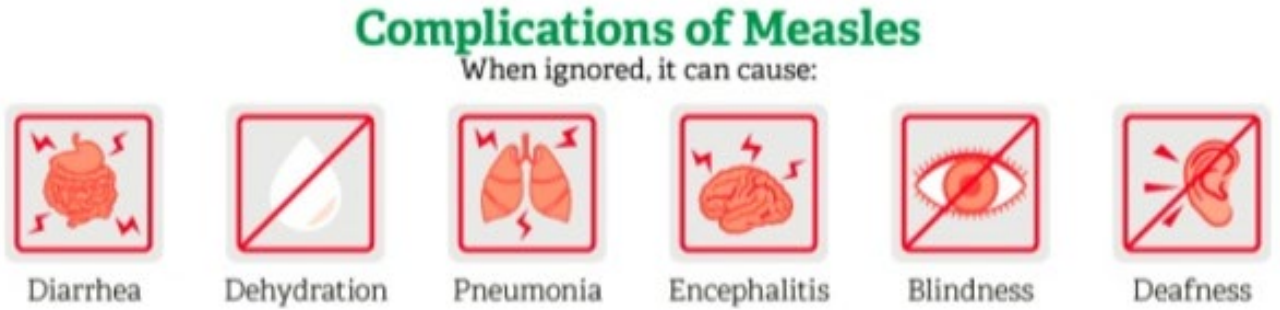
Thoughts…??

- Additional history: pt received MMR vaccine 9 days prior to measles testing

RASH DIFFERENTIAL

- Post-MMR rash
  - Fever and rash occur in approx 5% of MMR vaccine recipients, usually 6-12 days after vaccination; can be clinically identical to measles infection and cause positive measles test, not infectious
    - If a recently vaccinated patient has fever and rash but no risk factors for measles, testing is usually unnecessary
- Drug eruption
  - Delayed (nonimmediate) reactions usually appear after more than one dose of drug and typically after days of treatment. For example, delayed cutaneous maculopapular eruptions to amoxicillin classically start on day 7 to 10 of treatment and may even begin 1 to 3 days after cessation of treatment

COMPLICATIONS

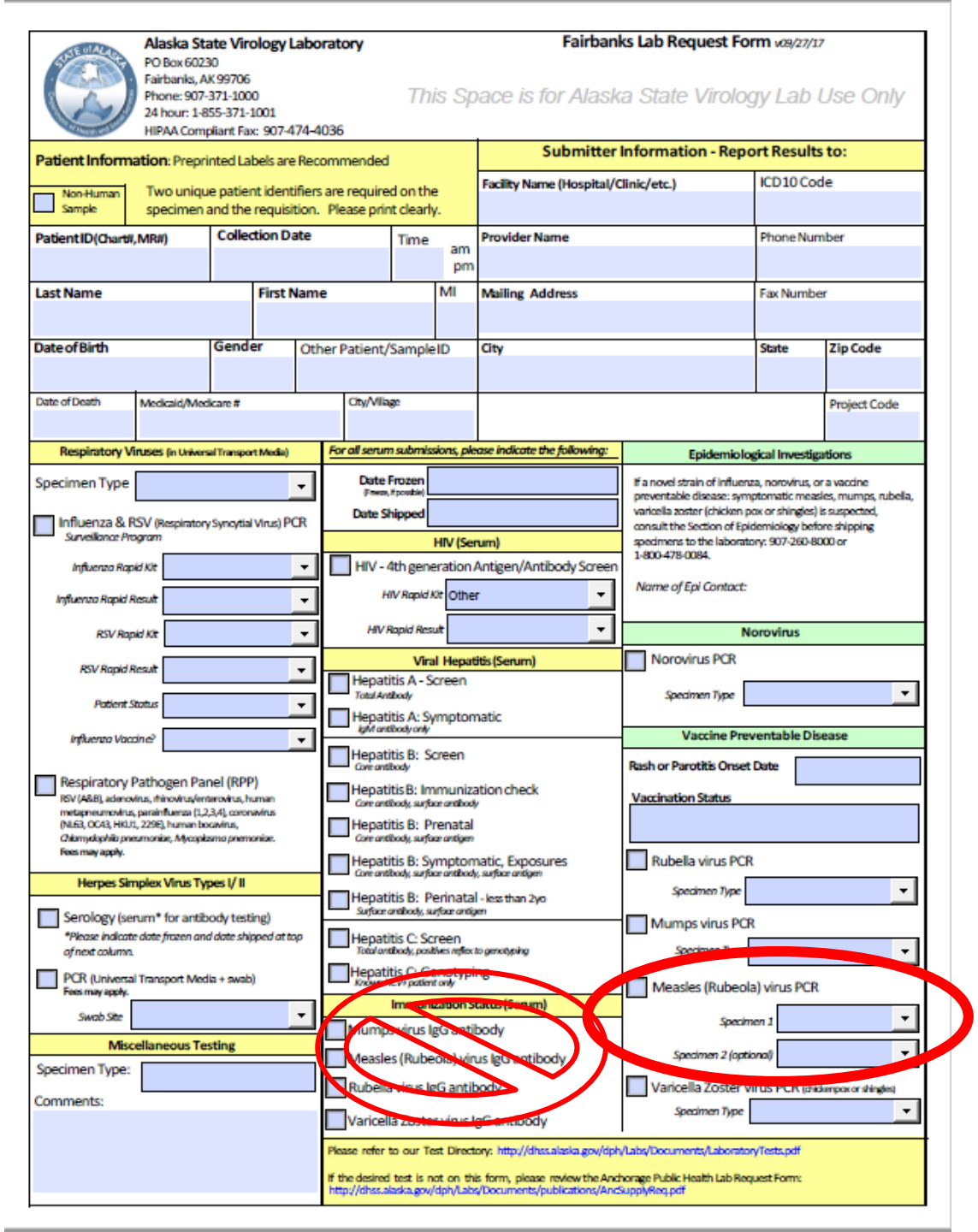


- Common: diarrhea, otitis media, pneumonia, tracheobronchitis
- Serious: 1/1000 encephalitis (often results in permanent brain damage), 1-2/1000 die; subacute sclerosing panencephalitis (rare but fatal CNS deterioration 7-10 years after infection)
- Increased risk: kids < 5, adults >20, pregnant women, immunocompromised

DIAGNOSIS

- REPORT suspected cases to SOE ASAP! (don't wait for labs) 269-8000
- 1. PCR is the preferred test—get the swab!
  - Dacron swab for viral PCR
  - Vigorously swab tonsillar/posterior nasopharyngeal area
  - Send directly to ASVL (SOE can help)
  - most sensitive within 72 hours of rash onset, but can be positive through 10 days after

- 2. Serology for measles IgM (NOT IgG)
- 3. Minimum 50 mL urine in clean/sterile leak-proof container for PCR
  - Collect from first part of urine stream, first morning void is ideal



Alaska State Virology Laboratory
PO Box 60230
Fairbanks, AK 99706
Phone: 907-371-1000
24 hour: 1-855-371-1001
HIPAA Compliant Fax: 907-474-4036

Fairbanks Lab Request Form v09/27/17

This Space is for Alaska State Virology Lab Use Only

Patient Information: Preprinted Labels are Recommended

Non-Human Sample

Two unique patient identifiers are required on the specimen and the requisition. Please print clearly.

Patient ID (Chart#, MRI#) | Collection Date | Time am pm

Last Name | First Name | MI

Date of Birth | Gender | Other Patient/Sample ID

Date of Death | Medicaid/Medicare # | City/Village

Submitter Information - Report Results to:

Facility Name (Hospital/Clinic/etc.) | ICD10 Code

Provider Name | Phone Number

Mailing Address | Fax Number

City | State | Zip Code

Project Code

Respiratory Viruses (in Universal Transport Media)

Specimen Type

Influenza & RSV (Respiratory Syncytial Virus) PCR
Surveillance Program

Influenza Rapid Kit
Influenza Rapid Result
RSV Rapid Kit
RSV Rapid Result
Patient Status
Influenza Vaccine?

Respiratory Pathogen Panel (RPP)
RSV (A&B), adenovirus, rhinovirus/enterovirus, human metapneumovirus, parainfluenza (1,2,3,4), coronavirus (NL63, OC43, HKU1, 229E), human bocavirus, *Chlamydophila pneumoniae*, *Mycoplasma pneumoniae*.
Fees may apply.

Herpes Simplex Virus Types I/ II

Serology (serum* for antibody testing)
*Please indicate date frozen and date shipped at top of next column.

PCR (Universal Transport Media + swab)
Fees may apply.
Swab Site

Miscellaneous Testing

Specimen Type:

Comments:

For all serum submissions, please indicate the following:

Date Frozen (Freeze, if possible)
Date Shipped

HIV (Serum)

HIV - 4th generation Antigen/Antibody Screen
HIV Rapid Kit Other
HIV Rapid Result

Viral Hepatitis (Serum)

Hepatitis A - Screen
Total Antibody

Hepatitis A: Symptomatic
IgM antibody only

Hepatitis B: Screen
Core antibody

Hepatitis B: Immunization check
Core antibody, surface antibody

Hepatitis B: Prenatal
Core antibody, surface antigen

Hepatitis B: Symptomatic, Exposures
Core antibody, surface antibody, surface antigen

Hepatitis B: Perinatal - less than 2yo
Surface antibody, surface antigen

Hepatitis C: Screen
Total antibody, positives reflex to genotyping

Hepatitis C: Genotyping
Known HCV+ patient only

Immunization Status (Serum)

Mumps virus IgG antibody

Measles (Rubeola) virus IgG antibody

Rubella virus IgG antibody

Varicella Zoster virus IgG antibody

Epidemiological Investigations

If a novel strain of influenza, norovirus, or a vaccine preventable disease: symptomatic measles, mumps, rubella, varicella zoster (chicken pox or shingles) is suspected, consult the Section of Epidemiology before shipping specimens to the laboratory: 907-260-8000 or 1-800-478-0084.

Name of Epi Contact:

Norovirus

Norovirus PCR
Specimen Type

Vaccine Preventable Disease

Rash or Parotitis Onset Date

Vaccination Status

Rubella virus PCR
Specimen Type

Mumps virus PCR
Specimen Type

Measles (Rubeola) virus PCR
Specimen 1
Specimen 2 (optional)

Varicella Zoster virus PCR (chickenpox or shingles)
Specimen Type

Please refer to our Test Directory: http://dhss.alaska.gov/dph/Labs/Documents/LaboratoryTests.pdf

If the desired test is not on this form, please review the Anchorage Public Health Lab Request Form:
http://dhss.alaska.gov/dph/Labs/Documents/publications/AncSupplyReq.pdf

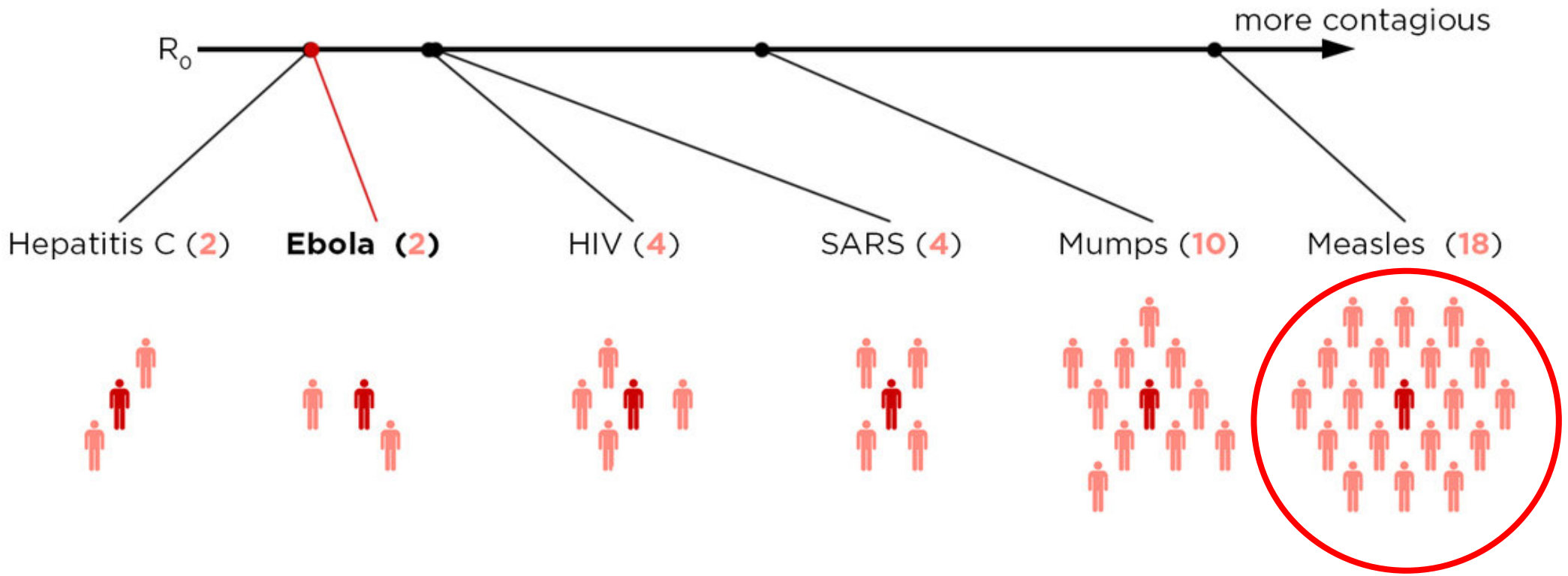
Available on the AK DHSS Measles webpage

TRANSMISSION

- Measles is one of the most highly contagious infectious diseases
  - 9/10 susceptible persons with close contact will get infected
- Period of contagion: 4 days before rash onset to 4 days after rash appears
- Route: airborne (breath, cough, sneeze), direct contact with infectious droplets
  - Virus can remain in the air for up to 2 hours after infected person leaves the area

TRANSMISSION

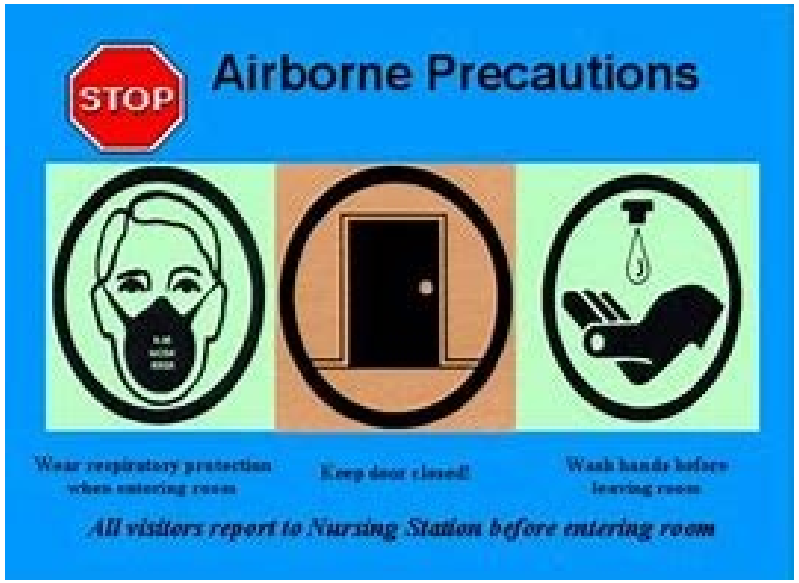
The number of **people** that **one sick person** will infect (on average) is called R_0.
Here are the maximum R_0 values for a few viruses.



INFECTION PREVENTION

- Isolation at home: for 4 days after rash onset
  - Let family know that PH nurse will be calling them
- Consider post-exposure prophylaxis for contacts

INFECTION PREVENTION



- Healthcare settings
  - Prepare triage stations to rapidly identify pts with measles
  - Plan ahead; if suspicion of measles, provide pt with instructions for arrival (end of day, entrance, precautions, staff)
  - Isolate pt and family immediately upon arrival; meet them outside, place mask, AIIR room, avoid contact with other patients/staff
    - If AIIR room not available: mask pt, private room with door closed, transfer as soon as possible to facility with AIIR
      - Do not send pt to a lab for testing; if you do not have supplies available; call SOE
      - If transferring to another facility, call ahead to notify them to prepare
    - Assess family members for vaccination status and any sx
  - All HCP (regardless of immunity) should use N95 mask
  - Non-immune HCP should avoid entering the room
  - Room should not be used for 2 hours after pt leaves; standard cleaning and disinfection procedures
  - Airborne precautions (or home isolation) for 4 days after rash onset (or duration of illness in immunocompromised)

EVIDENCE OF IMMUNITY

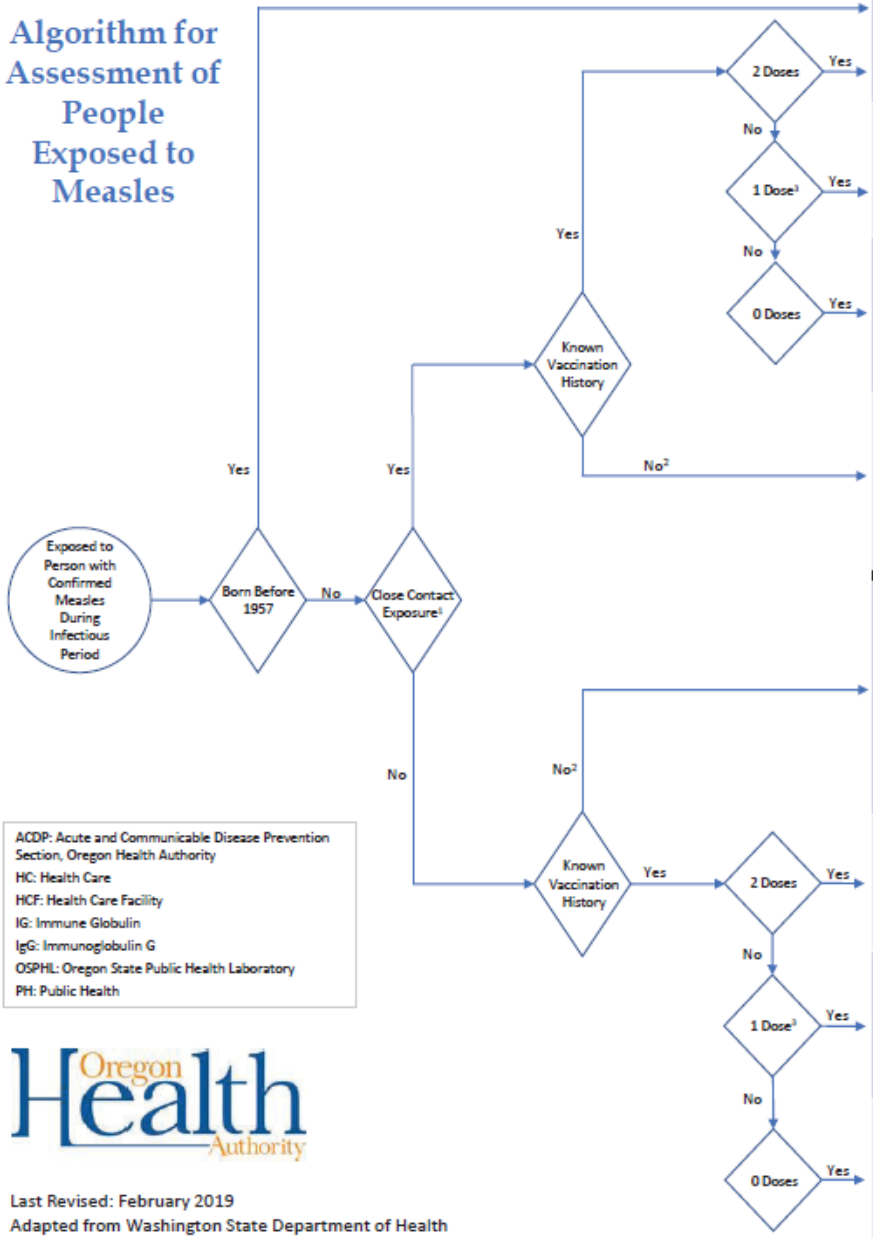
- At least one of the following:
  - Written documentation of adequate vaccination
    - ≥ 1 dose on or after 1st birthday for preschool-age kids and adults not at high risk
    - 2 doses for school-age kids and adults at high risk (college students, international travelers, HCP)
  - Laboratory evidence of immunity
  - Laboratory confirmation of measles infection
  - Birth before 1957

POST-EXPOSURE PROPHYLAXIS

- Should be offered to people exposed to measles who cannot readily show evidence of immunity
  - Administer MMR vaccine within 72 hours of initial exposure OR
    - (MMR can be used in infants as young as 6 mos of age in this situation)
  - IG within 6 days of exposure
    - Should be offered to those at risk for severe illness and complications from measles
      - Infants under 12 mos
        - (6-11 mos can be given MMR instead if within 72-hour window)
      - Pregnant women
      - Severe immunocompromise

https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/DISEASESAZ/Measles1/2019-measles-algorithm-people-exposed.pdf

Algorithm for Assessment of People Exposed to Measles



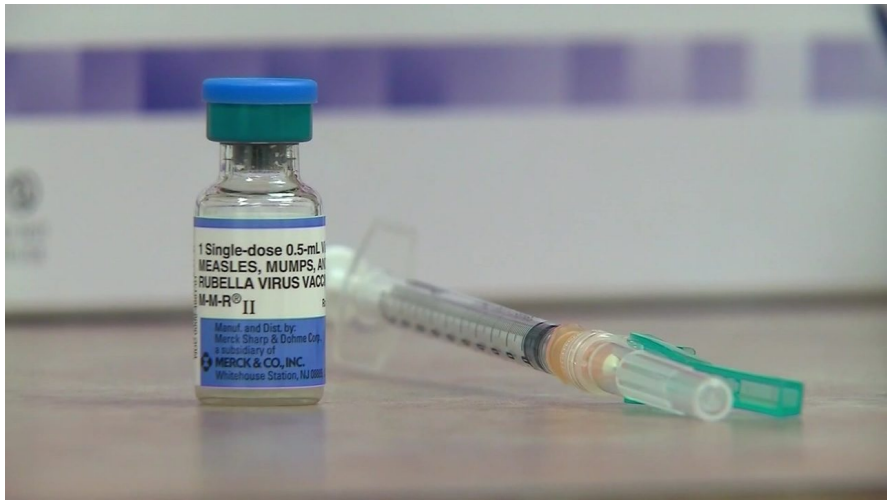
ACDP: Acute and Communicable Disease Prevention Section, Oregon Health Authority
HC: Health Care
HCF: Health Care Facility
IG: Immune Globulin
IgG: Immunoglobulin G
OSPHL: Oregon State Public Health Laboratory
PH: Public Health

Oregon Health Authority

Last Revised: February 2019
Adapted from Washington State Department of Health

Risk Assessment	Prophylaxis	Recommendations	Symptom Watch	Work/School Exclusion	Quarantine at Home	Testing at OSPHL
Presumed immune	None	No recommendations or restrictions	Yes: Discuss date of exposure and symptom watch times.	None unless symptoms develop	No	If rash develops
93% effective	MMR within 72 hours of exposure	Second MMR recommended if needed per ACIP recommendations even if >72 hours after exposure (but MMR within 72 hours preferred)	Yes: Discuss date of exposure and symptom watch times. Explain what to do if symptoms arise: i.e., stay home, call PH/HC provider before going to HCF. Counsel on adverse events[4]	None unless symptoms develop or in a high-risk setting/ occupation[3]	No	If rash develops
Susceptible!	MMR within 72 hours of exposure or consider IG (if indicated[5]) within 6 days of exposure[6] (not both)	MMR recommended even if MMR not given within 72 hours of exposure[7]	Yes: Discuss date of exposure and symptom watch times. Consider active monitoring if possible, with check-in every 1-2 days. Explain what to do if symptoms arise: i.e., stay home, call PH/HC provider before going to HCF. Counsel on adverse events[4]	Yes[8] until 21 days after exposure, whether or not given MMR or IG[9].	Yes[8] and no non-immune visitors	If symptoms develop, discuss with ACDP Epi
Presume susceptible	MMR within 72 hours of exposure or consider IG (if indicated[5]) within 6 days of exposure[6] (not both)	If asymptomatic, encourage IgG titer and then give a dose of MMR through HC provider (in special situations PH can support testing)	Yes: Discuss date of exposure and symptom watch times. Consider active monitoring if possible, with check-in every 1-2 days. Explain what to do if symptoms arise: i.e., stay home, call PH/HC provider before going to HCF. Counsel on adverse events[4]	If titer negative or not done: Yes[8] for 21 days after exposure.[9] If titer positive: no further restrictions; no MMR needed.	Yes, stay home from day 7 after exposure until titer results available. If titer negative or not done: Isolate for 21 days after exposure.[9]	If symptoms develop, discuss with ACDP Epi
Presume susceptible	MMR within 72 hours of exposure or consider IG (if indicated[5]) within 6 days of exposure[6] (not both)	If asymptomatic, encourage IgG titer or dose of MMR through HC provider	Yes: Discuss date of exposure and symptom watch times. Explain what to do if symptoms arise: i.e., stay home, call PH/HC provider before going to HCF. Counsel on adverse events[4]	None unless symptoms develop or in a high-risk setting/occupation[3]	No, unless symptoms develop. If symptomatic during the 21 days after exposure, isolate[8] and test for measles if rash develops. If titer positive: no further restrictions. If titer negative or not done: Isolate for 21 days after exposure.[9]	If rash develops
Presumed immune	None	No recommendations or restrictions	Yes: Discuss date of exposure and symptom watch times.	None unless symptoms develop.	No	Clinical measles[10]
93% effective	MMR within 72 hours of exposure	Second MMR recommended even if >72 hours after exposure (but MMR within 72 hours preferred)	Yes: Discuss date of exposure and symptom watch times. Explain what to do if symptoms arise: i.e., stay home, call PH/HC provider before going to HCF. Counsel on adverse events[4]	None unless symptoms develop or in a high-risk setting/occupation[3]	No	Clinical measles[10]
Susceptible!	MMR within 72 hours of exposure or consider IG (if indicated[5]) within 6 days of exposure[6] (not both)	If asymptomatic, encourage HC provider give a dose of MMR	Yes: Discuss date of exposure and symptom watch times. Explain what to do if symptoms arise: i.e., stay home, call PH/HC provider before going to HCF. Counsel on adverse events[4]	None unless symptoms develop or in a high-risk setting/occupation[3]	No, unless symptoms develop. If symptomatic during the 21 days after exposure, isolate[8] and test for measles if rash develops.	If rash develops

VACCINATION



- Routine pediatric: 2 doses
  - Dose #1: 12-15 mos
  - Dose #2: 4-6 years or at least 28 days after 1st dose
- Adults born 1957 or later with no evidence of immunity: 1 dose
- Students at post-high school educational institutions
  - 2 doses 28 days apart if no evidence of immunity
- International travelers:
  - 6-11 mos: 1 dose
  - 12 mos or older: 2 doses
  - Teens/adults born 1957 or later: 2 doses
- HCP: need 2 doses or other evidence of immunity
- 1 dose provides 93% immunity; 2 doses 97% immunity; considered to be lifelong
- 95% vaccination rate needed for herd immunity

VACCINATION: DURING OUTBREAK

- Consult with local health department on latest recs
- Consider 2nd dose for kids 1-4 and adults in outbreak areas
- Recommend (vs. consider) 2 doses for HCP if no documented immunity even if born before 1957
- Consider early dose for infants 6-11 mos residing in or visiting outbreak area

MEASLES MYTHBUSTERS

- Myth: Measles is a harmless disease
- **Truth: Measles is a serious disease with possible short- and long-term complications. Vaccination is the only effective way to protect against it.**
- Myth: It is better to get immunity by getting the disease than by receiving the vaccine.
- **Truth: Vaccines provide protection against measles without the development of severe sx, complications, or sequelae. Severe adverse events following MMR vaccination are very rare. Vaccination is the best and safest way to get immunity against measles.**
- Myth: Homeopathy can be used as an alternative to vaccinations to protect children against measles.
- **Truth: Homeopathy has been shown to be ineffective. Vaccination is the only effective way to protect against measles.**

Adapted from European Centre for Disease Prevention and Control (https://ecdc.europa.eu/en/measles/prevention-and-control/addressing-misconceptions-measles)

MEASLES MYTHBUSTERS

- Myth: Giving a child the MMR combination vaccine increases the risk of harmful side effects and can overload the immune system.
- **Truth: The myth that combination vaccines overload the immune system underestimates the power of the human immune system and overestimates the number of foreign substances in combination vaccines. The combination formula has an excellent safety record over many years.**
- Myth: MMR vaccination may cause autism.
- **Truth: A scientifically flawed journal article wrongly caused fears that the MMR vaccine may lead to autism but numerous scientific studies refute this claim and show that no such relationship exists.**
- Myth: Measles has been largely eliminated in the U.S. and there is no reason to be vaccinated.
- **Truth: Measles is still a threat in the U.S. Only with 95% vaccine coverage can measles be successfully controlled.**

Adapted from European Centre for Disease Prevention and Control
(https://ecdc.europa.eu/en/measles/prevention-and-control/addressing-misconceptions-measles)

RESOURCES

- www.cdc.gov/measles
- Alaska state measles webpage "Alaska DHSS measles"
- Alaska Section of Epidemiology—call for questions and/or to report

907-269-8000 or 800-478-0084 (after hrs)

State of Alaska | myAlaska | My Government | Resident | Business in Alaska | Visiting Alaska | State Employees

Alaska Department of Health and Social Services

Home | Divisions and Agencies | Services | News | Contact Us

Health and Social Services > Public Health > Epidemiology > Infectious Disease > Measles

Measles (Rubeola)

Measles is a highly contagious viral respiratory illness. Symptoms include fever, cough, runny nose, and red watery eyes followed by a rash over most of the body.

Measles can be serious.

- About 1 in 4 people in the U.S. who get measles will be hospitalized
- 1 out of every 1,000 people with measles will develop brain swelling, which could lead to brain damage
- 1 or 2 out of 1,000 people with measles will die, even with the best care

Measles is very contagious.

Measles spreads through the air when an infected person coughs or sneezes. It is so contagious that if one person has it, 9 out of 10 people around him or her will also become infected if they are not protected. Your child can get measles just by being in a room where a person with measles has been, even up to two hours after that person has left. An infected person can spread measles to others even before knowing he/she has the disease—from four days before developing the measles rash through four days afterward.

Some people think of measles as just a little rash and fever that clears up in a few days, but measles can cause serious health complications, especially in children younger than 5 years of age. There is no way to tell in advance the severity of the symptoms your child will experience.

A highly effective vaccine has resulted in a dramatic reduction in measles cases and deaths worldwide. However, outbreaks and deaths continue to occur, primarily related to overseas travel and unvaccinated individuals.

Alaska Surveillance Data

After an absence of almost 15 years, a confirmed case of measles was diagnosed in Fairbanks on June 9, 2015. The case-patient had recent travel history to central Asia. Providers are reminded to always ask about travel history in patients with acute rash illness and be aware of measles as a possibility. Multiple states are currently experiencing measles outbreaks including New York State, New York City, and Washington.

Providers must report suspected measles cases immediately to the Alaska Section of Epidemiology at (907) 269-8000.

- View the latest U.S. surveillance data from the CDC.

Resources for the General Public

- **'About the Disease'** - CDC's comprehensive measles website, with information on risk factors, causes, signs and symptoms, diagnosis, treatment, prevention, and photographs of disease
- Frequently Asked Questions about Measles in the U.S. from the CDC
- Measles Fact Sheet from the Alaska Division of Public Health

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Epi Procedure Manual

Resources for the General Public

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- Frequently Asked Questions about Measles in the U.S. from the CDC
- Measles Fact Sheet from the Alaska Division of Public Health
- Measles School Flyer
- Measles Travel Flyer
- Measles Vaccination: Who Needs It?
- Measles Vaccine Information
  - Vaccines do not cause autism...get the facts.

Resources for Health Care Providers

- Measles Information for Clinicians from the CDC
- Alaska Measles Testing Guidance *(April 29, 2019)*
- Measles Suspect Algorithm *(May 21, 2019)*
- Measles Infographic *(May 16, 2019)*
- Measles Investigation Quicksheet *(California Department of Public Health document)*
- Alaska Section of Laboratories Test Directory (Measles test info on page 56)
- ASPHL-Fairbanks Lab Test Request Form
- Health Care Facility Infection Control Recommendations for Suspected Measles Patients
- Epidemiology Bulletins associated with Measles from the State of Alaska
- State of Alaska Immunization Program

Measles is a public health reportable condition in Alaska. Report suspect cases immediately to the Alaska Section of Epidemiology at 907-269-8000.

- Measles Multimedia Resources from the CDC
- Surgeon General Jerome Adams: Protect Against the Measles

MEASLES:
Important considerations

suspect report confirm prevent

- As of May 2019, outbreaks of measles are occurring in multiple states across the United States.
- To date in 2019, 839 cases have been reported from 23 states.
- In 2018, Europe experienced a large measles outbreak with over 69,000 cases of reported.
- The last case of measles reported in Alaska was in 2000.

WHO'S AT RISK → INCUBATION → SYMPTOMS

- Babies who are too young for vaccine (<12 months)
- Immunocompromised
- Pregnant women
- Unvaccinated

Average: **14 days**
(range 7-21 days)

- High fever (up to 104 F)
- Runny nose
- Cough
- Red, watery eyes
- Rash (spreads from head to toe)
- Koplik spots (sometimes)

Measles complications can include: pneumonia, encephalitis, and/or death

How infectious is measles? **One person can infect 12-18 susceptible people**

RISK FACTORS

Travel to a place where measles is endemic

Contact with someone who has measles

Not receiving a measles vaccine (MMR)

Visitors from areas where measles is occurring

SUSPECT

Evaluate signs and symptoms and risk factors to determine if measles is high on the suspicion list.

REPORT

Measles is **immediately reportable** in Alaska to the Division of Public Health-Section of Epidemiology. Reporting should not wait until lab results are available. If you suspect measles, report it ASAP.

CONFIRM

A diagnosis of measles is confirmed by prompt laboratory testing. Collect both a throat swab (or NP swab) and a urine sample for PCR testing as soon as possible after rash onset. Submit samples to the Alaska State Virology Laboratory.

PREVENT

- Airborne infection isolation precautions in healthcare settings.
- Isolate patient at home and out of the public through 4 days after onset of rash.
- Measles vaccine (MMR) is extremely effective against preventing the disease in those who are >12 months of age. **Two doses of MMR are 97% effective.**

To report a suspected case of measles contact the Alaska Section of Epidemiology at (907)269-8000 or 800-478-0084 (after hours)

Adapted from infographic by Montana Communicable Disease Epidemiology, 2019.

SUMMARY

- SUSPECT
  - Get the history: travel, potential exposure, vaccination status
  - Spot it: Fever, malaise, 3 C's, descending rash
- REPORT: Call SOE immediately at 269-8000
- CONFIRM: Get the swab (viral PCR)
- PREVENT transmission: be prepared!
- Vaccinate!
- Educate: bust those myths!