
Measles

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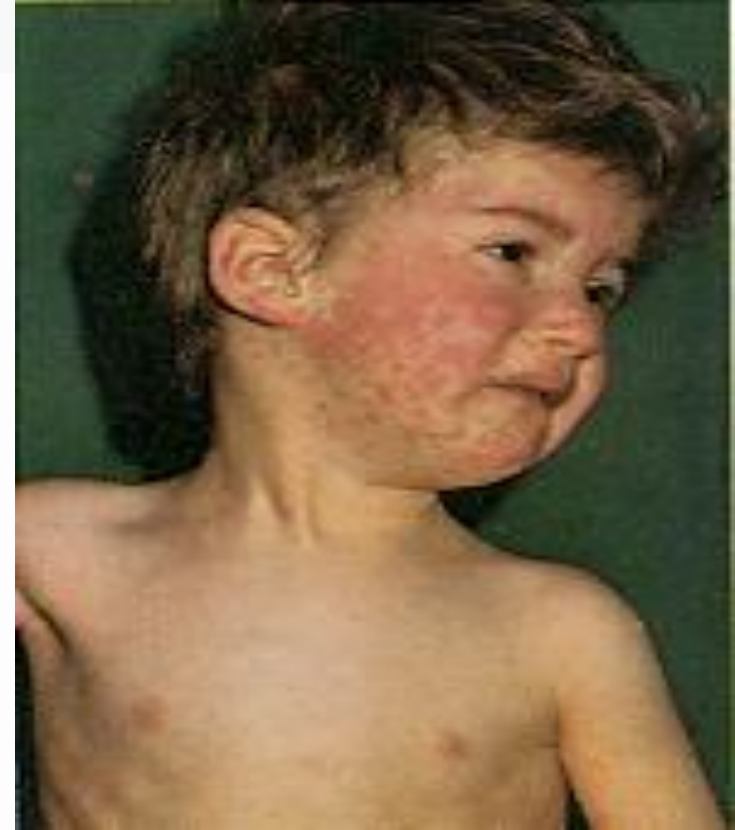
February 7, 2019

The logo for the Oregon Health Authority. It features the word "Oregon" in a smaller, orange, serif font positioned above the "H" of the word "Health". The word "Health" is in a large, blue, serif font. Below "Health", the word "Authority" is written in a smaller, orange, serif font. A thin blue horizontal line is positioned below the "Health" text, extending from the left side of the "H" to the right side of the "y".

**Oregon
Health
Authority**

Measles Symptoms

- “Incubation” period: ~14 days
- Prodrome: fever, cough, coryza, conjunctivitis
- Rash starts on face or at hairline, spreads to trunk, arms, legs
- “Contagious” period: 4 days before to 4 days after rash onset



Virtually everyone got measles before a vaccine was developed.

- Nearly universal disease of childhood: 3–4 million cases
- ~500,000 reports to CDC
- 48,000 hospitalizations
- 4,000 cases encephalitis
- 450–500 deaths

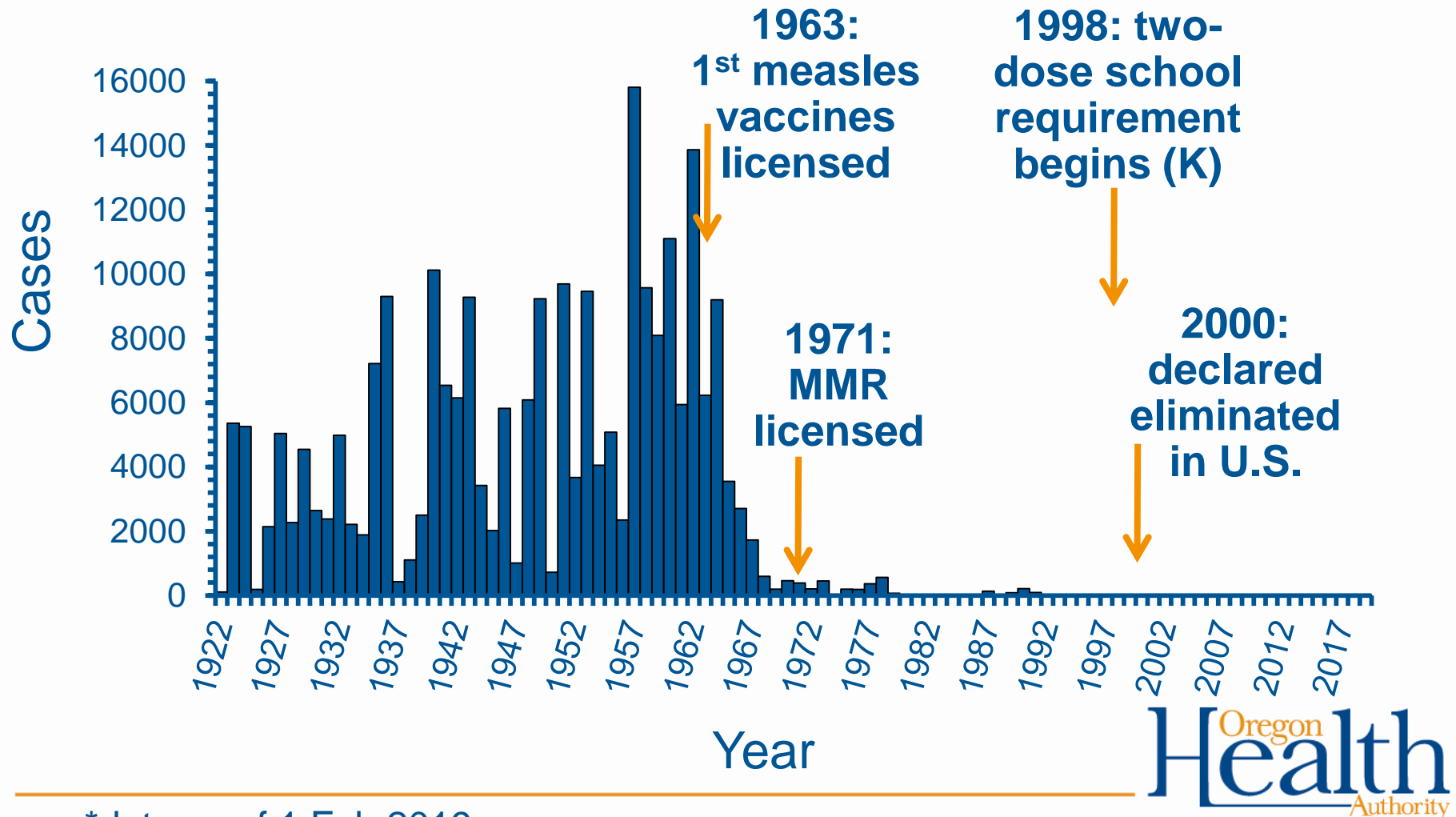
Not all cases of measles are benign.*



Hospitalization	1 out of 4
Ear infection	1 out of 10
Pneumonia	1 out of 20
Encephalitis	1 per 1,000
Death	1–2 per 1,000

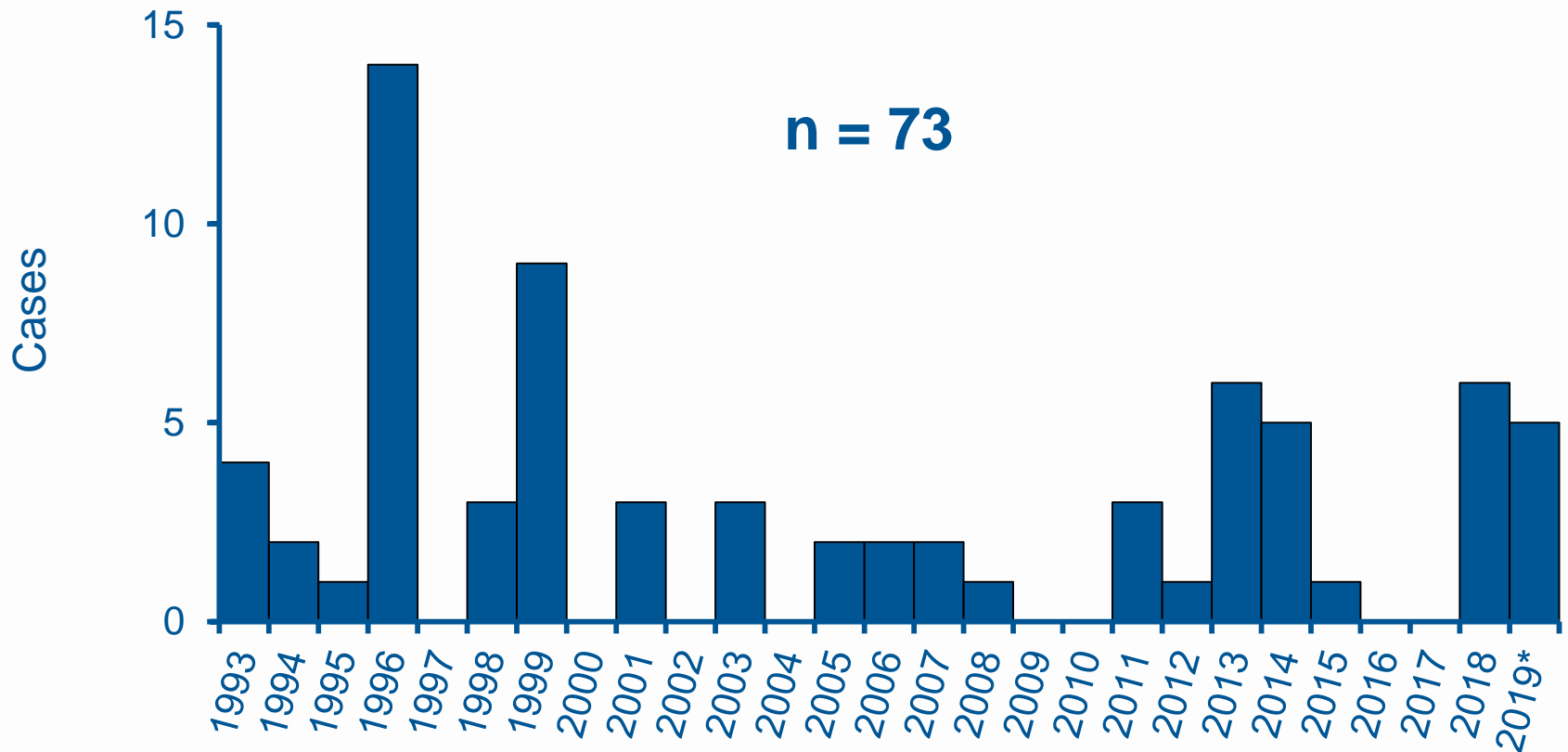
*Complications more common in children <5 and adults >20 years old.

Control of measles has been a public health victory.



*data as of 1 Feb 2019

Oregon has had an average of <3 measles cases per year since 1993.



Vaccination is the key to controlling measles.

1. Maintain high population vaccination rates
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4. Identify, test, isolate cases
5. Investigate to identify exposed, susceptible contacts
 - a. Immunize
 - b. Exclude school children, healthcare workers

Measles: 2019 Time line

- 4 Jan: Clark County announces confirmed case
- 15 Jan: Clark County announces 2 more confirmed, 11 suspect cases
- 18 Jan: Clark County declares local public health emergency
- 25 Jan: Governor Inslee declares state of emergency; OHA announces 1 confirmed case
- 30 Jan: OSPHL confirms Multnomah County case; OHA activates incident management team

55 cases in the current outbreak.

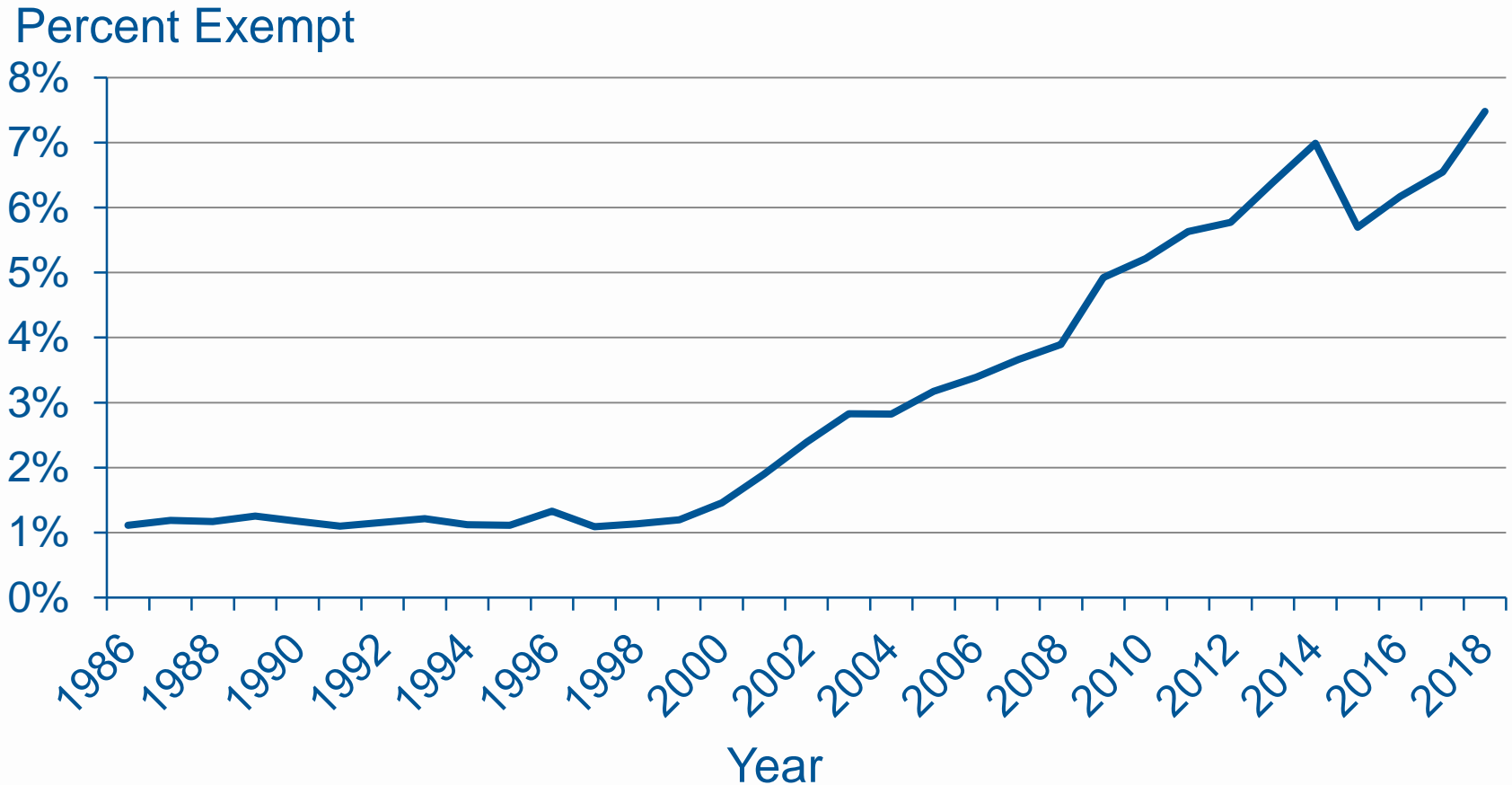
County	Cases
Clark	50
King	1
Multnomah	4

All but 1 case unvaccinated
or no documentation
of vaccination

“Herd immunity” depends upon how contagious the disease is.

Infection	R_0	Crude Herd Immunity Threshold
Diphtheria	6–7	83%–85%
Influenza	1.4–4	30%–75%
Measles	12–18	92%–94%
Mumps	4–7	75%–86%
Pertussis	5–17	80%–94%
Polio	2–20	50%–95%
Rubella	6–7	83%–85%
Smallpox	5–7	80%–85%
Varicella	8–10?	?

Exemptions to vaccination requirements hit 7.5% among kindergartners in 2018.



Overall, 96% of K – 12 students are vaccinated against measles.

- First dose coverage >95% for children attending preschool or certified daycare
- 2nd dose coverage >95% for kindergarteners
- 2nd dose coverage >97% for 7th graders





Questions ?

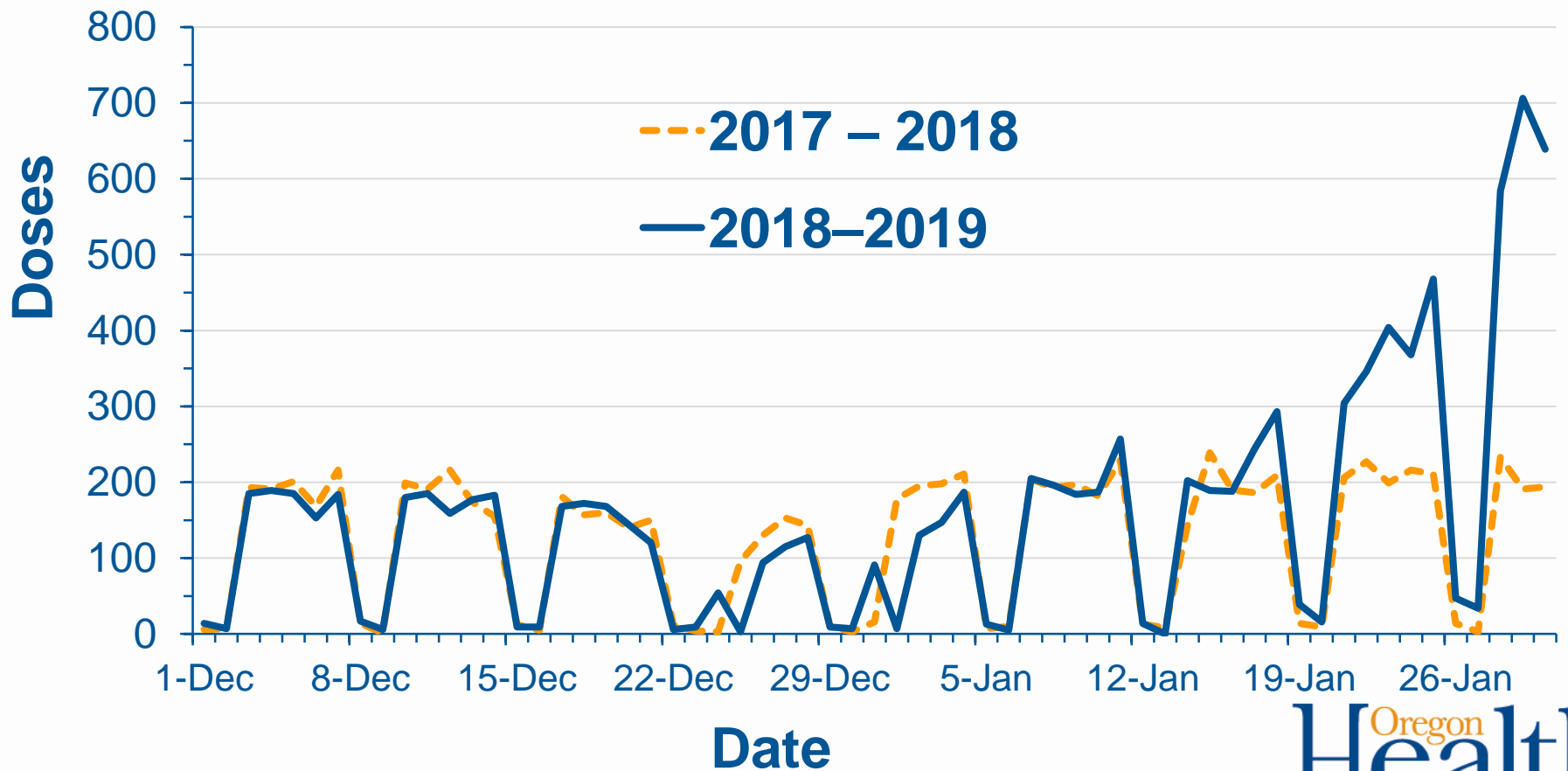
Oregon public health response to measles

- Activated Incident Management Team
- Coordinate with out-of-state colleagues and Oregon local public health authorities
- Guidance re: case investigation, contact follow-up, testing, isolation.
- Recommendations to providers
- Communication materials for public, including translations
- Testing at Oregon State Public Health Lab

Measles Immunizations

Oregon, December – January

2017 – 2018 vs. 2018 – 2019



Exclusion Summary, 2018

Children covered by law: **692,004**

Exclusion orders: **24,725 (3.6%)**

Children excluded: **4,349 (0.6%)**

(Reportable) Vaccine-preventable diseases Oregon, 2012–2018*

	2013	2014	2015	2016	2017	2018
Diphtheria	0	0	0	0	0	0
Hepatitis A	28	14	26	15	20	23
Hep B, acute	34	34	28	21	24	20
Hep B, chronic	455	537	515	481	489	388
Measles	6	5	1	0	0	6
Mumps	3	1	3	27	67	17
Pertussis	486	406	593	192	248	495
Rubella	0	0	0	0	0	0
Tetanus	1	0	1	0	2	1