Managing Measles: Current Context and County Response

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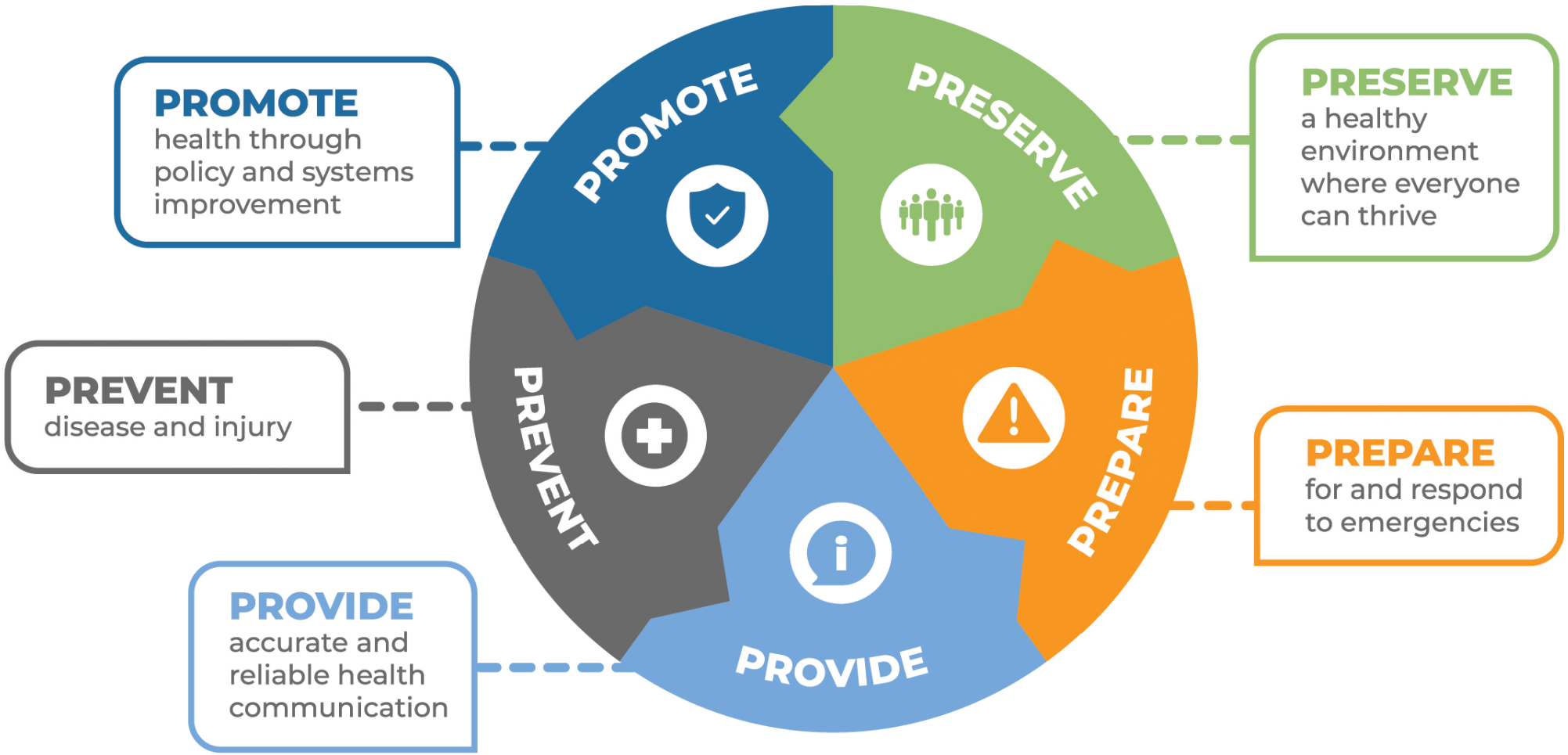
Joint PHAB and Board of Health Meeting

WHATCOM COUNTY HEALTH AND COMMUNITY SERVICES

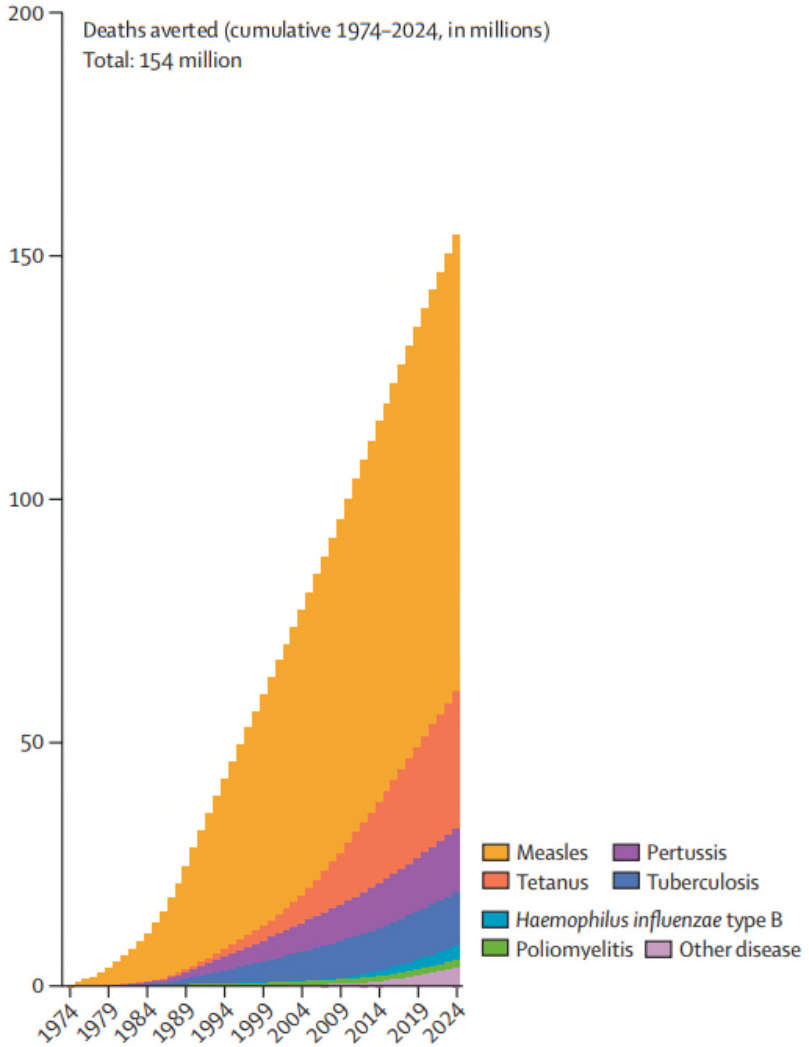
OUR PURPOSE: We serve Whatcom County by ADVANCING EQUITY & PARTNERING WITH OUR COMMUNITY to:



Objectives

- Measles in context of vaccine preventable diseases
- Current status of U.S. outbreak
- Review of recent Whatcom cases and investigation

Vaccines save millions



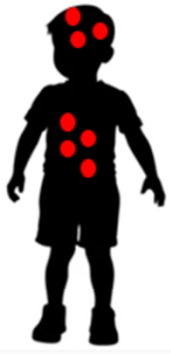
Deaths averted

- In 50 years,154 million lives saved; 146 million children under 5 y/o
- 40% of the global decline in infant and childhood mortality over the past 50 years is attributed to vaccines
- Vaccines continue to save up to 5 million lives every year

Before vaccines, *every year* in the U.S.:

Polio would paralyze 10,000 children

Rubella would cause birth defects and intellectual disability In 10,000 children



Measles infected 4 million children, killing about 500

Diphtheria was one of the most common causes of death in school-aged children

Pertussis (whooping cough) would kill 8,000 children

Source: CHOP Vaccine Education Center, 2025

Measles

- Main symptoms: the 3 C's of cough, coryza (runny nose), conjunctivitis (red eyes), high fever, rash
- Contagious 4 days before and 4 days after rash onset
- Can be complicated: pneumonia, brain infection, ear infections, diarrhea
- Death rate: 3 out of 1000 cases

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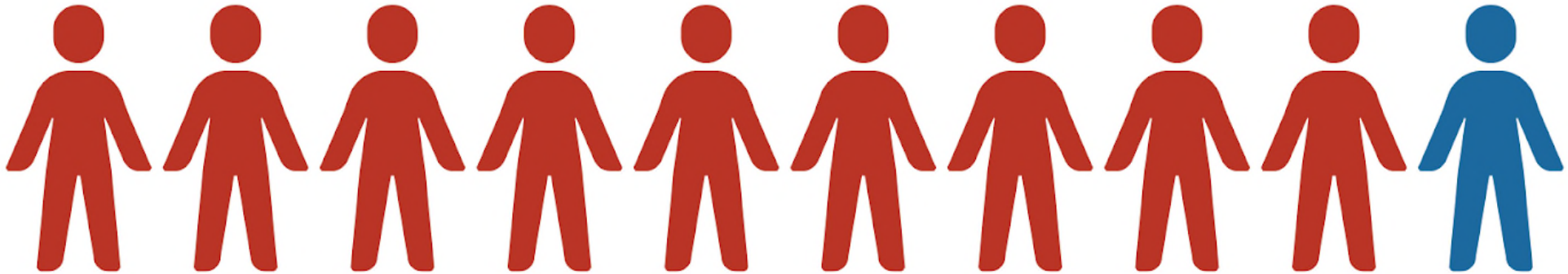
Measles is VERY contagious.



if 10 unprotected people are exposed to measles, 9 of them will get sick.

Measles spreads easily when an infected person coughs or sneezes, releasing virus particles into the air. The virus can stay in the air for up to two hours after an infected person has left the room. That means a person can get measles just by entering a room that an infected person visited up to two hours before.

Importance of measles

High consequence disease for which there is a very effective vaccine

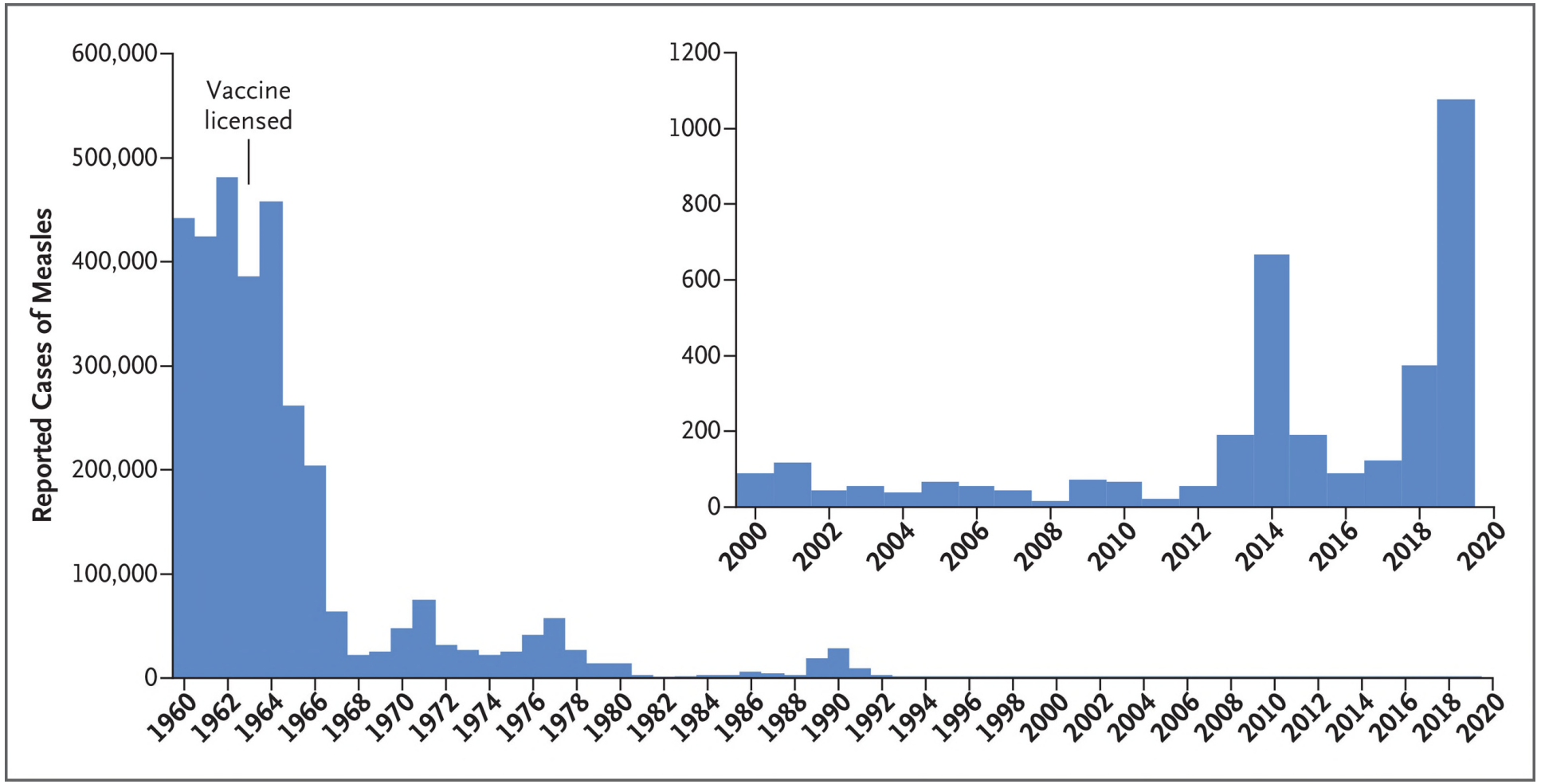
Pre-vaccine, widespread suffering

- Measles infected over 95% of children, 4 million deaths worldwide annually
- In the U.S., 500k reported cases and 500 deaths annually
- Measles also increases child mortality from other causes by causing ‘immune amnesia’

Post-vaccine (1963), improvements in disease burden and child survival

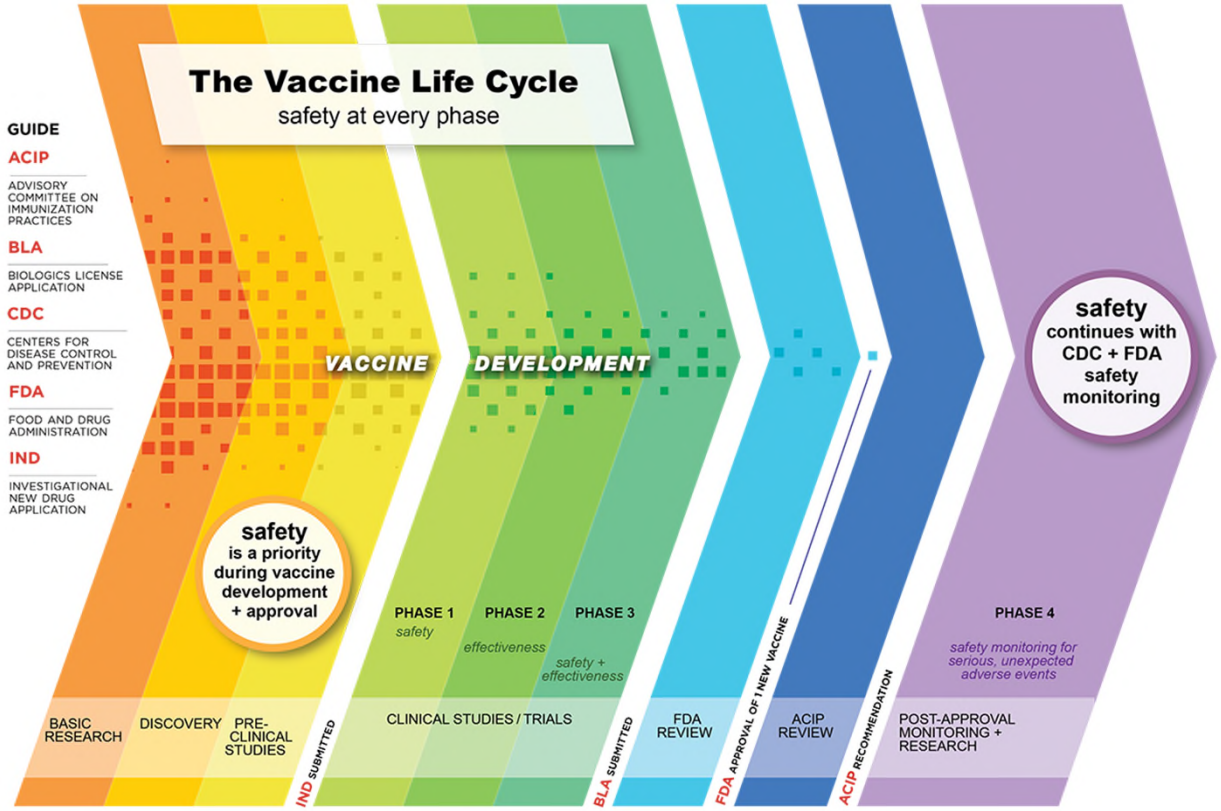
- Cases decreased by 66% worldwide, >99% decrease in the U.S.
- Measles vaccine alone can reduce childhood deaths due to *other causes* by up to 50%
- Global eradication theoretically achievable
  - IF immunization schedules were followed and high vaccination coverage achieved

Dramatic decline after MMR



Accessed April 2025: https://www.nejm.org/doi/full/10.1056/NEJMcp1905181

Vaccine development



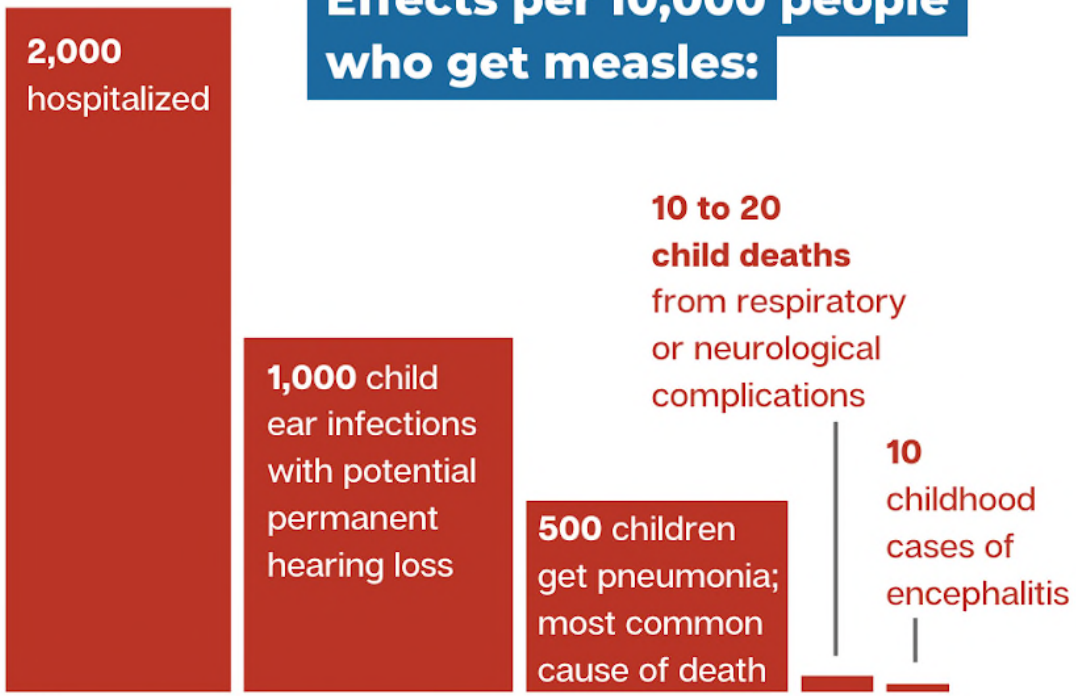
Stages of development:

1. Laboratory research
2. Proof of concept in animals
3. Clinical trials, 3 phases
4. Manufacturing standardization
5. Regulatory Review (FDA)
6. Policy Review and Recommendation (CDC)
7. Post-approval monitoring

Source: CDC, 2025

Measles can be deadly; the MMR vaccine is safe.

Effects per 10,000 people who get measles:



Effects per 10,000 people who get the M.M.R. vaccine:

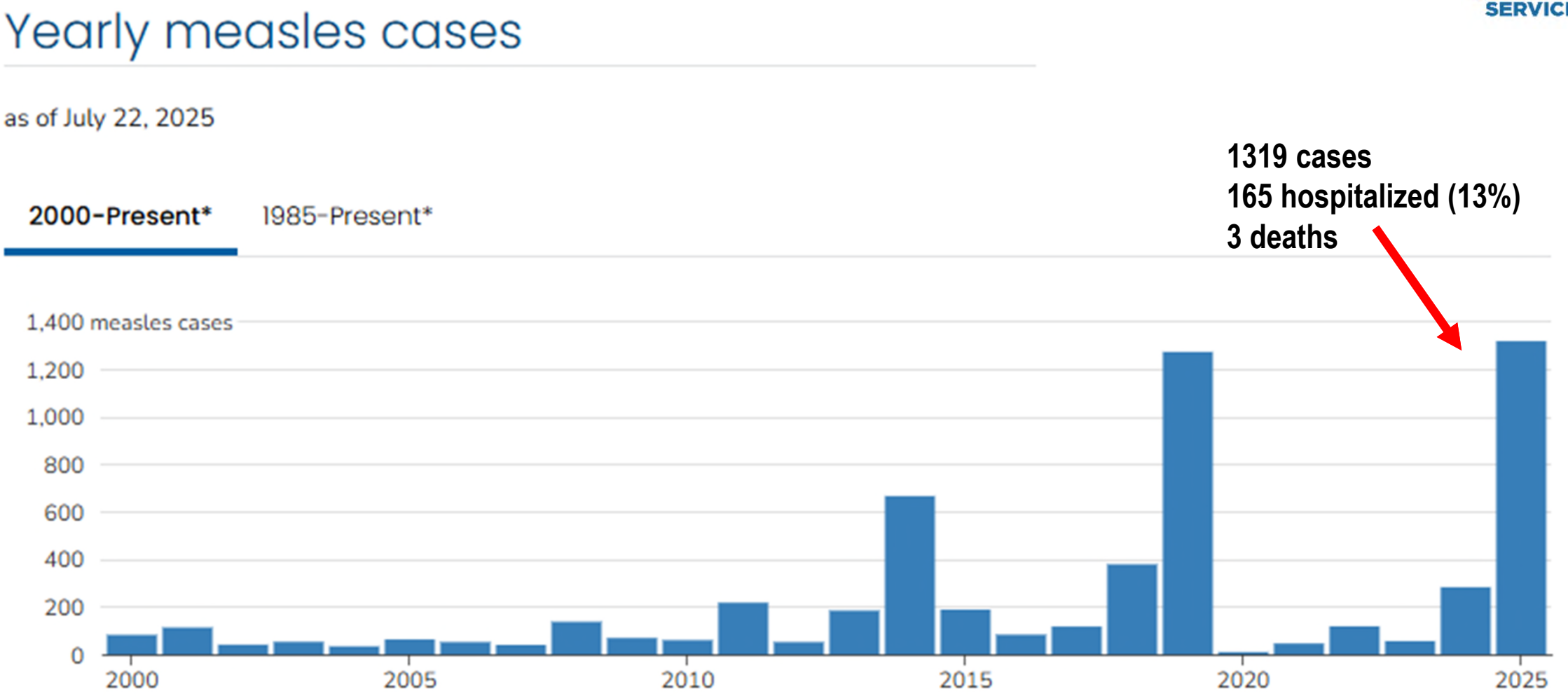
- **3** fever-related seizures
- **0.4** cases of abnormal blood clotting
- **0.035** allergic reactions

NO deaths

Sources:
Hospitalized: https://www.cdc.gov/measles/data-research/index.html#cdc_data_surveillance_section_2-what-to-know-about-measles
All other data: https://www.nejm.org/doi/full/10.1056/NEJMcp1905181

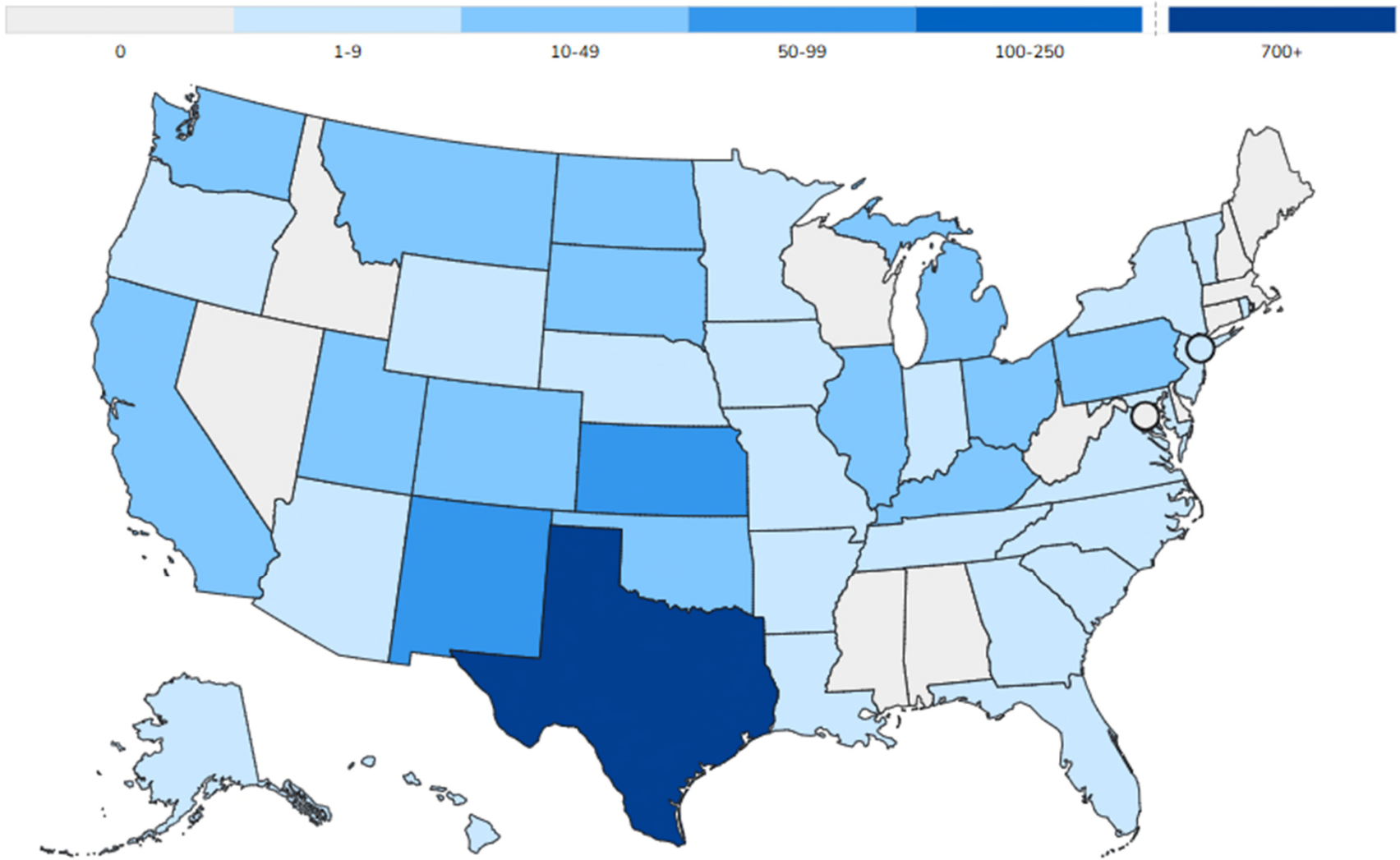
Measles cases and outbreaks (2025) Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/measles/data-research/index.html (Accessed: 04 March 2025).

U.S. cases by year



Source: CDC, 2025

Map of U.S. measles cases 2025



Source: CDC, 2025

2025 WA Cases and Locations

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Current status

Confirmed cases: **10**

Counties affected: **3**

Outbreaks (≥ 3 related): **0**

Case Timeline

Feb 26	King	1 case – travel
Mar 17	Snohomish	1 case – linked to 1st case
Apr 1	Snohomish	1 case – travel
Apr 4	King	1 case – travel
Apr 20	King	1 case – travel
May 20	King	1 case – travel
Jun 20	Whatcom	2 household cases – international visitor
June 25	King	2 household cases – international visitor

Source WA DOH, 2025

Whatcom County Context and Measles Case Investigation

Local Measles Outbreak Risk

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Risk Factors

- Vaccination rates below herd immunity threshold
- Recent cases regionally and globally
- Declining state vaccination rates
- Distrust of *healthcare and government*
- *Clusters o*f people without immunity

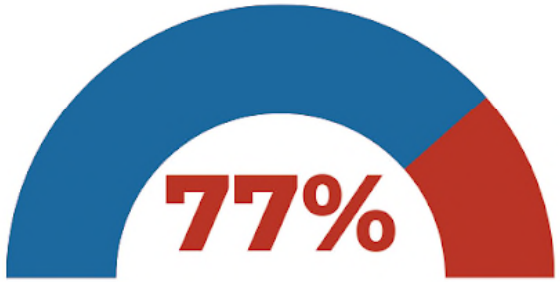
Protective Factors

- Demonstrated ability to mobilize for vaccination
- Measles vaccine accessibility
- Already implementing many successful strategies
- Community partnerships

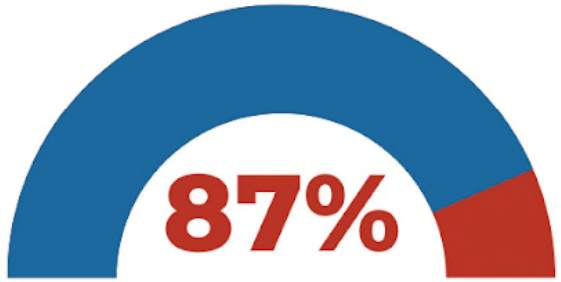
Measles Spreads When Vaccine Rates Are Lower than 95%

Our community is at risk of a measles outbreak.

In Whatcom County:



77 percent of children received their first dose on time.



87 percent of kindergarteners are fully vaccinated with two doses.

Outbreaks can be prevented if 95 percent of a community is vaccinated against measles.

Measles spreads so easily that there aren't enough vaccinated people in Washington State and Whatcom County to prevent an outbreak if the virus is introduced here.

School outbreak risk by vaccination rate

MMR Coverage	# children susceptible	Chance of an outbreak
97%	6	16%
95%	8	29%
93%	10	36%
90%	13	51%
85%	18	61%
80%	22	64%
70%	32	78%

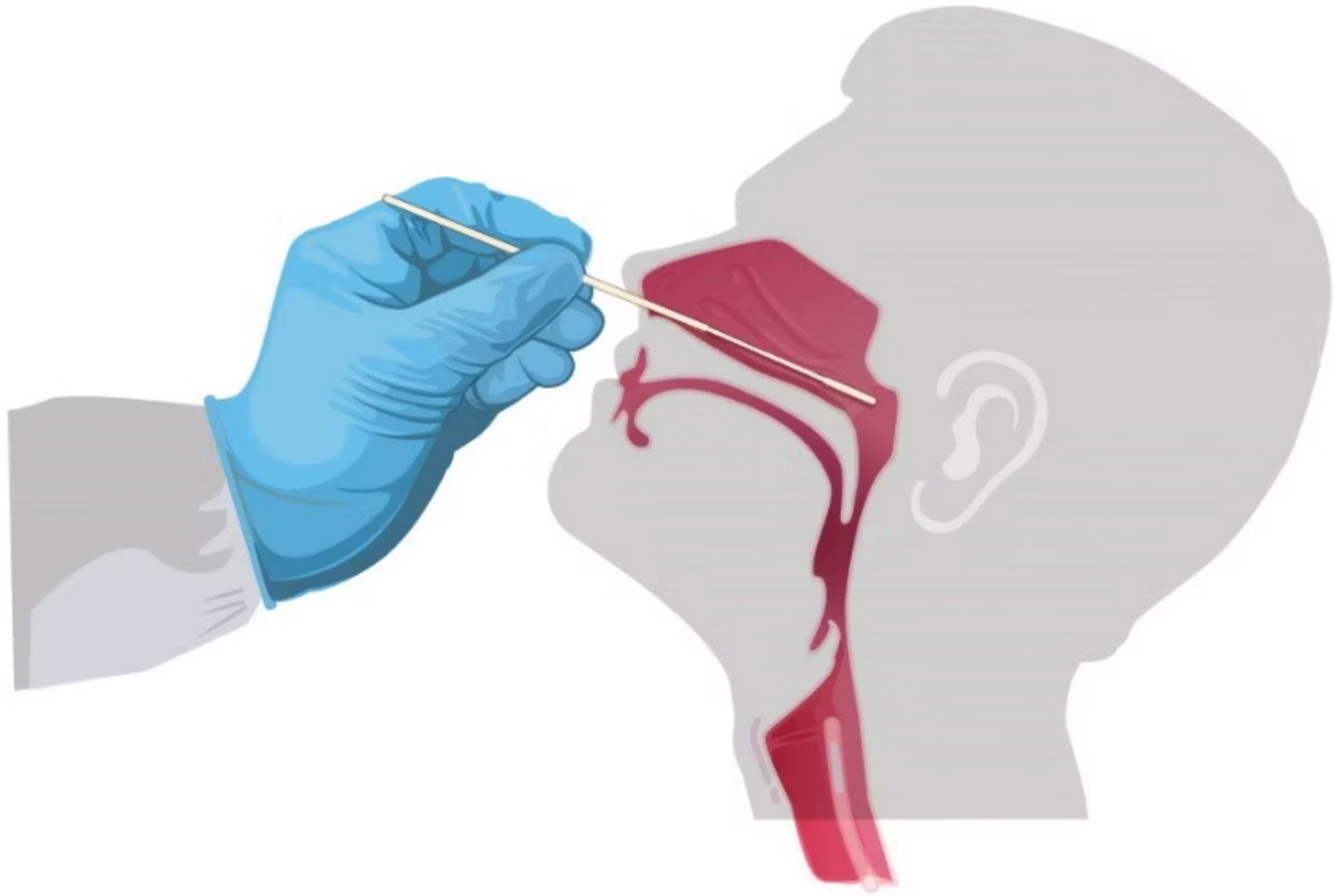
Table 1 below shows an example of a school with 100 children and 1 infectious child, at different levels of MMR coverage

https://www.cdc.gov/ncird/whats-new/measles-outbreak-risk-in-us.html

Day 0

Investigation process

Day 2



Day 3

7. Activity Log:

Date/Time	Notable Activities
6/20 0830	Attended morning huddle for initiation of response coordination
6/20 0900	Coordinated with Harp on specimen pick-up from FCN Lynden Family Med transport to WCHCS
6/20 0910	Arrived at Girard St WCHCS and prepped packaging/shipping supplies-waiting for arrival of specime
6/20 0915	Created specimen reconciliation form for PHL send out
6/20 1000	Called DEL courier services to confirm pick-up/delivery estimated times
6/20 1045	Specimens arrived from FCN (By Harp), packaged and ready for shipment and pick-up in fridge
6/20 1047	Called DEL and initiated pick-up request, stating ready for pick-up
6/20 1115	DEL courier service arrived and picked up specimen for transport to WA PHL, with expected arrival
6/20 1120	Provided line-list with delegated pts to call to notify of exposures, began confirming immunity status
6/20 1130-1330	Began calling delegated pts on line-list, contacted all on my list but one
6/20 1330	Received email from Amanda at DOH stating specimens had been received and processing at PHL
6/20 1345	Continued confirming vaccination history and obtaining records for patients not in WAISS
6/20 1400	Coordinated with FCN Lynden Family Med for pt requesting titer instead on vaccination
6/20 1411	Received email from DOH Amanda requesting school info for case in BC
6/20 1429	Received call from DOH Amanda requesting specimen typing (dacron/nylon/other) as PHL lab thoug
6/20 1430	Attended CD Huddle for continued Measles planning
6/20 1500	Called FCN to confirm specimen swab type-confirmed as Dacron tip
6/20 1515	Emailed Amanda DOH confirming Dacron tip, which was approved and good news
6/20 1530	Coordinated vaccine for pt without documentation to receive vaccine at Rite Aid Lynden this evening
6/20 1634	Received email from Amanda DOH stating specimen result estimate at 1800, provided Dr. Lelonek

7pm: nasopharyngeal swab results return positive for measles virus PCR

Investigation by the Numbers

21	Days of exposure period
2	Confirmed cases
1	Location
33	Contacts
2	Daily monitoring
3	MMR
10	Suspect samples sent
2	Media releases
2	Provider alerts
7	Social media posts

Time estimates for WCHCS

-Public health nurses ~150 hours
-Management ~30 hours
-Health Officers ~40 hours
-Communications team ~75 hours
-DEM: ~24 hours

$24,0000

TOTAL: 319 hours

MMR Vaccine Cost

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CASH PAY price in Bellingham with GoodRx coupon: **$106**

CDC cost per dose MMR: **$26**, vaccine administration cpt code 90460 ~$20
Vaccines for Children provides at **NO COST** for eligible children
Most adults with insurance pay nothing to receive the MMR vaccine

Measles Investigations Are Expensive

	Hours	$/case	Total cost
Colorado 2016	756	$49,766	
Colorado 2017	435	$18,423	
Clark county 2019		$47,479	$2,300,000
Review 2010-2018		$32,805	$152,308
Whatcom 2025	319	$24,000	

Key Takeaways

-Measles investigations are complex and expensive

-Whatcom continues to be at risk of an outbreak

-Vaccines save lives, money, and time

-Success depends on trusted relationships

Thank you!