Making Measles History…Just When You Thought It Already Was

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Objectives

1) Discuss the clinical presentation, transmission, diagnosis and management of measles
2) Review sequelae of measles infection
3) Provide an update of community and national prevalence of measles

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Clinical Presentation

- Koplik spots may be present during prodromal period
  - Pathognomonic



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Clinical Presentation

- Acute viral illness with:
  - Fever
  - Cough
  - Coryza
  - Conjunctivitis
  - Maculopapular rash → spreads head to toe and outwards from center
    - Rash may not be present in immunocompromised hosts



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Clinical Presentation

- After fever peaks, it usually resolves rapidly
- Persistent fever is a possible indication of secondary bacterial infection

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Hemorrhagic Measles

Also called black measles	• Most common in infants in developing countries
Characterized by:	• Sudden onset of high fever • Seizures or altered mental status
Other manifestations:	• Pneumonia • Bleeding from the mouth, nose, and gastrointestinal tract • DIC

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Modified Measles

- Attenuated form of infection
- Clinical manifestations are milder than those of typical infection
- Incubation period is prolonged (14–20 days)
- Complications are rare

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Incubation Period

- Average of 11-12 days from exposure to onset of prodromal symptoms
- Average of 14 days from exposure to appearance of rash (7-21 days)

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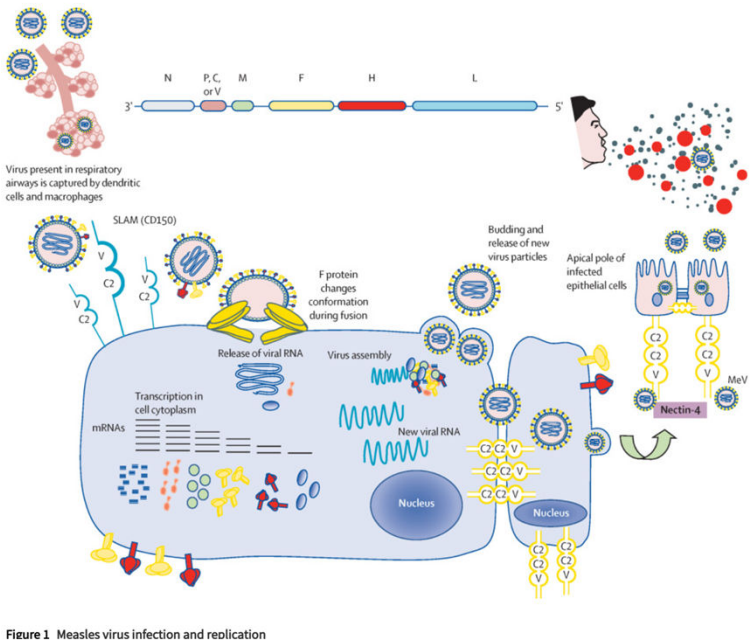


Figure 1 Measles virus infection and replication

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Transmission

Humans are the only natural host

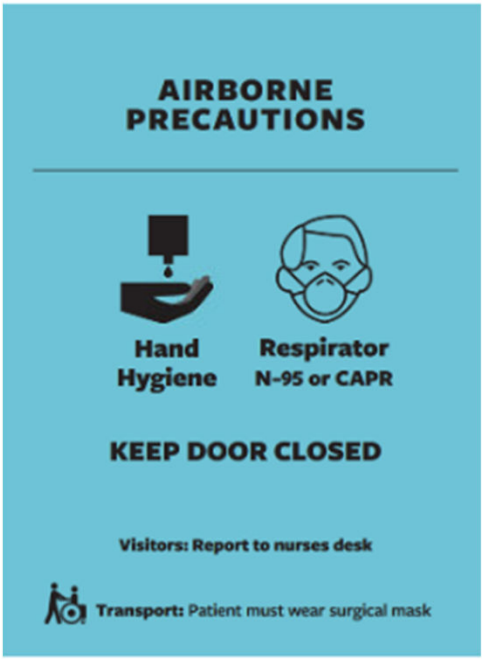
One of the most highly communicable of all infectious diseases

Direct contact with infectious droplets *or* airborne spread

- Contagious 4 days before the rash through 4 days after rash appears

Need at least 95% of population to be immune to stop ongoing transmission

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What to do if you suspect your patient has measles

- Place in airborne precautions
- Call Hospital Epidemiology…they are your friend!
- We (Peds ID) are available if needed ☺

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Testing

Send two different tests:

Serum measles IgM	Measles NAAT or PCR from throat, nasal, posterior nasopharyngeal swabs (detection of measles virus RNA)

All testing handled by SHL/Iowa HHS

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Measles | Health & Human Services

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Testing for Measles

- Measles tests no longer require approval by Iowa HHS state epidemiologists
  - Throat (or nasopharyngeal) swab for measles RNA by RT-PCR (LAB 8831)
  - Urine for measles RNA by RT-PCR (LAB 8831)
- Program of Hospital Epidemiology: (319) 356-1606; pager 3158
- Center for Acute Disease Epidemiology (CADE)
  - Business hours M-F: 800-362-2736
  - After hours 515-323-4360 (The Iowa State Patrol will answer this call – inform them that you need to discuss a case with the HHS epidemiologist on call)

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Supportive Care Measures

VITAMIN A SHOULD BE GIVEN TO ALL CHILDREN WITH MEASLES

SUPPLEMENTAL O2 IF NEEDED

IV FLUIDS IF NEEDED

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Supportive Care Measures

- All children with measles should receive Vitamin A unless already received Vitamin A hypersupplementation
- Vitamin A Dosing:
  - < 6 months old: 15,000 mcg RAE (~50,000 IU per dose) or 5 x 3000 mcg capsules by mouth once daily for 2 days
  - 6-11 months old: 30,000 mcg RAE (~100,000 IU per dose) or 10 x 3000 mcg capsules by mouth once daily for 2 days
  - ≥ 12 months old: 60,000 mcg RAE (~200,000 IU per dose) or 20 x 3000 mcg capsules) by mouth once daily for 2 days
- Antipyretics
- Oral or IV hydration

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Table 3.32. Postexposure Prophylaxis (PEP) for People Exposed to Measles Who Are NOT Pregnant or Immunocompromised

Age Range	Measles Immune Status[a]	PEP Type Depending on Time After Initial Exposure		
		≤3 days (≤72 hours)	4–6 days	>6 days
All ages (≥6 mo)	Immune	• PEP not indicated. Exposed person has documented immunity.		
<6 mo	Nonimmune (because of age[b])	• Administer immune globulin intramuscular (IGIM)[c] • Home quarantine[d]		• PEP not indicated (too late). • Home quarantine[d]
6–11 mo	Nonimmune	• Administer MMR vaccine (MMR vaccine preferred over immune globulin [IG]) • No quarantine needed.[e]	• Administer IGIM[c] • Home quarantine[d]	• PEP not indicated (too late). • Home quarantine[d]
≥12 mo	Nonimmune	• Administer MMR vaccine • No quarantine needed[e]	• IG PEP usually not administered[f] • Home quarantine,[d] then administer MMR vaccine to protect from future exposures	
≥12 mo	1 dose of MMR vaccine	• Administer 2nd MMR vaccine dose if ≥28 days from the first dose • No quarantine needed (person had 1 dose when exposed)		

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Table 3.33. Postexposure Prophylaxis (PEP) for People Exposed to Measles Who ARE Pregnant or Immunocompromised

Category	Measles Immune Status[a]	PEP Type Depending on Time After Initial Exposure		
		≤3 days (≤72 hours)	4–6 days	>6 days
Severely immunocompromised[b]	IG recommended regardless of measles immune status	• Administer immune globulin intravenous (IGIV)[c] • Home quarantine[d]		• PEP not indicated (too late) • Home quarantine[d]
Pregnant	Immune	• PEP not indicated		
	Nonimmune	• Administer IGIV[c] • Home quarantine[d]		• PEP not indicated (too late) • Home quarantine[d]

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Severe complications of measles

Bronchopneumonia

One of most lethal complications

Croup

Acute encephalitis → 1 in 1000 cases

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Severe complications of measles

Measles inclusion body encephalitis (MIBE)

Rare, occurs in immunocompromised hosts

Presents within 1 year after measles infection

Subacute onset → progressive neurologic dysfunction over weeks to months

Subacute sclerosing panencephalitis (SSPE)

Rare degenerative central nervous system disease

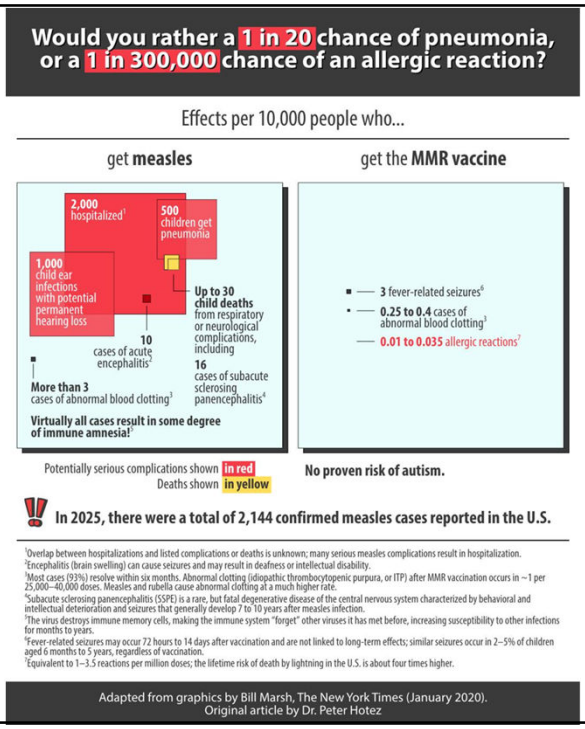
Occurs 7-11 years after measles infection (wild-type)

• Most frequent in children < 2yo

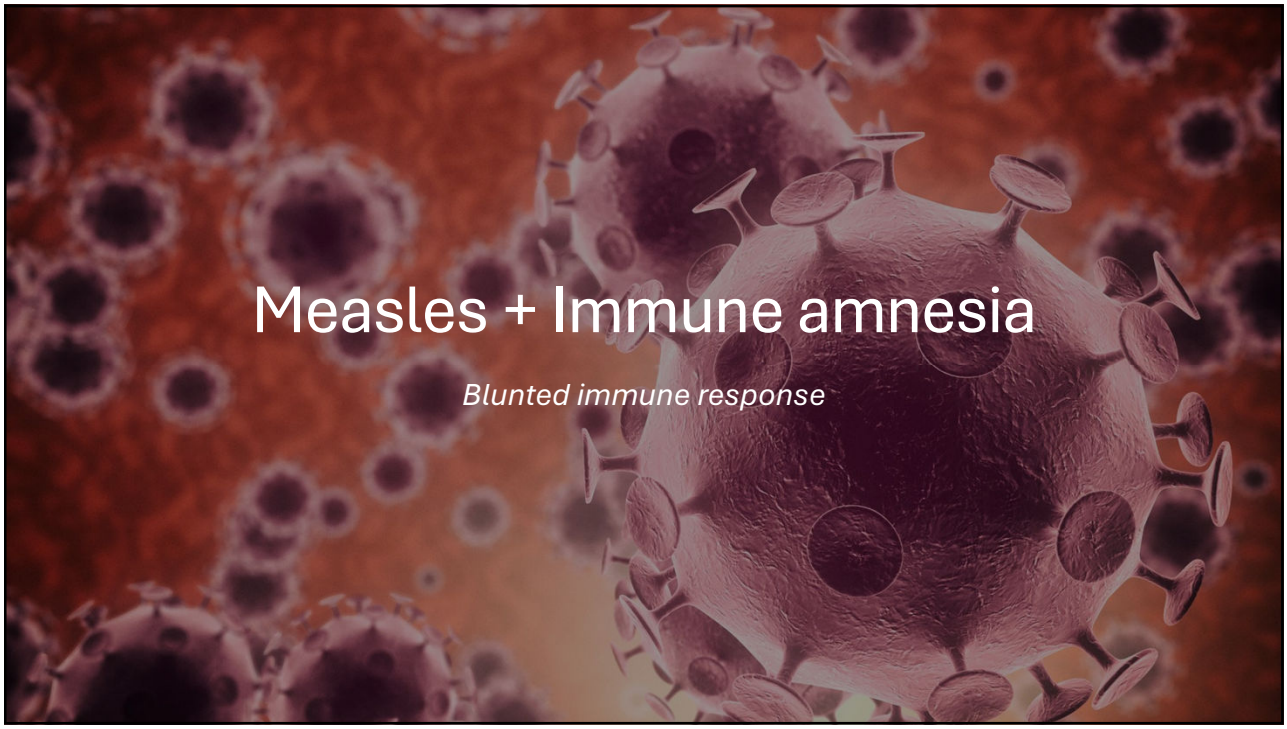
Behavioral and intellectual deterioration, seizures

These are FATAL

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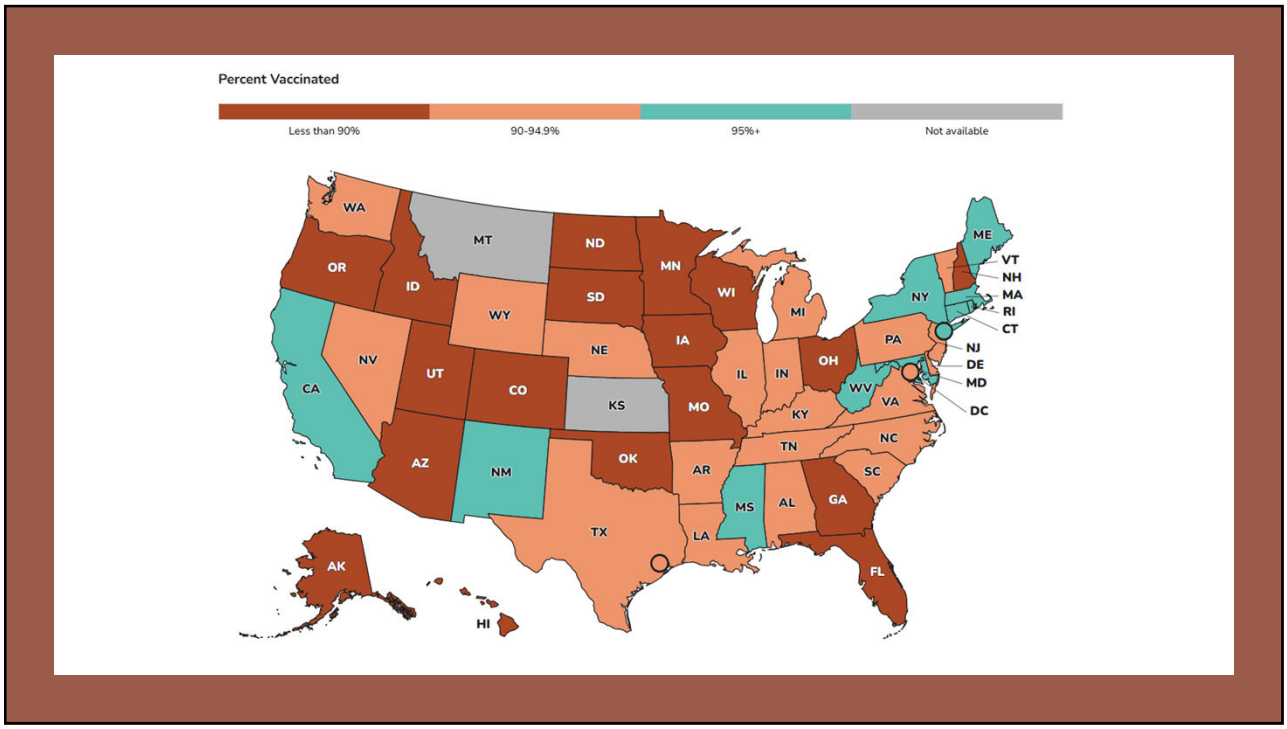
Measles in the US in 2026

- 4080 confirmed cases in 45 different states + Washington DC
- 42 new outbreaks with 96% of confirmed cases being outbreak-associated
- 3 deaths in 2026 so far, (3 in 2025)

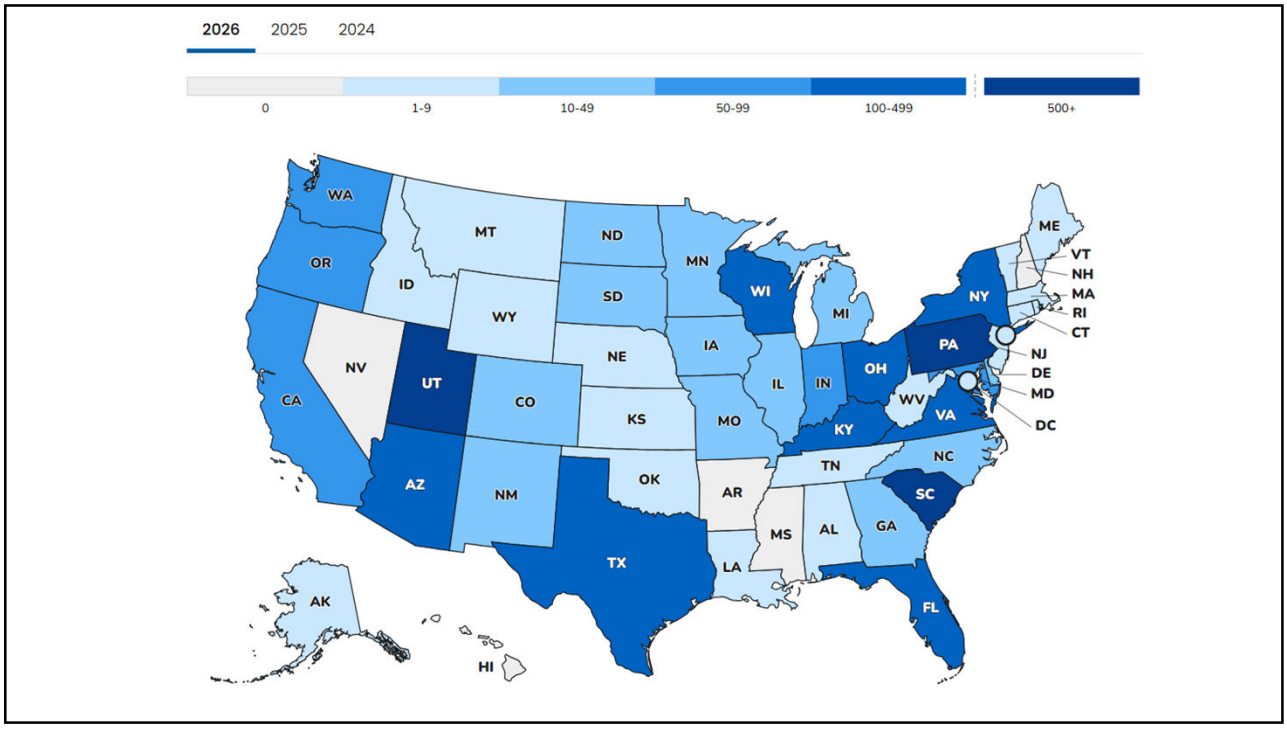
Current as of 10/23/26

	2026 To date	2025 Full year
Total Cases	**4,588**	**2,289**
Age		
Under 5 years	766 (17%)	584 (26%)
5-19 years	1,914 (42%)	1,018 (44%)
20+ years	1,881 (41%)	674 (29%)
Age unknown	27 (1%)	13 (1%)
Vaccination Status		
Unvaccinated or Unknown	96%	93%
One MMR dose	2%	3%
Two MMR doses	2%	4%

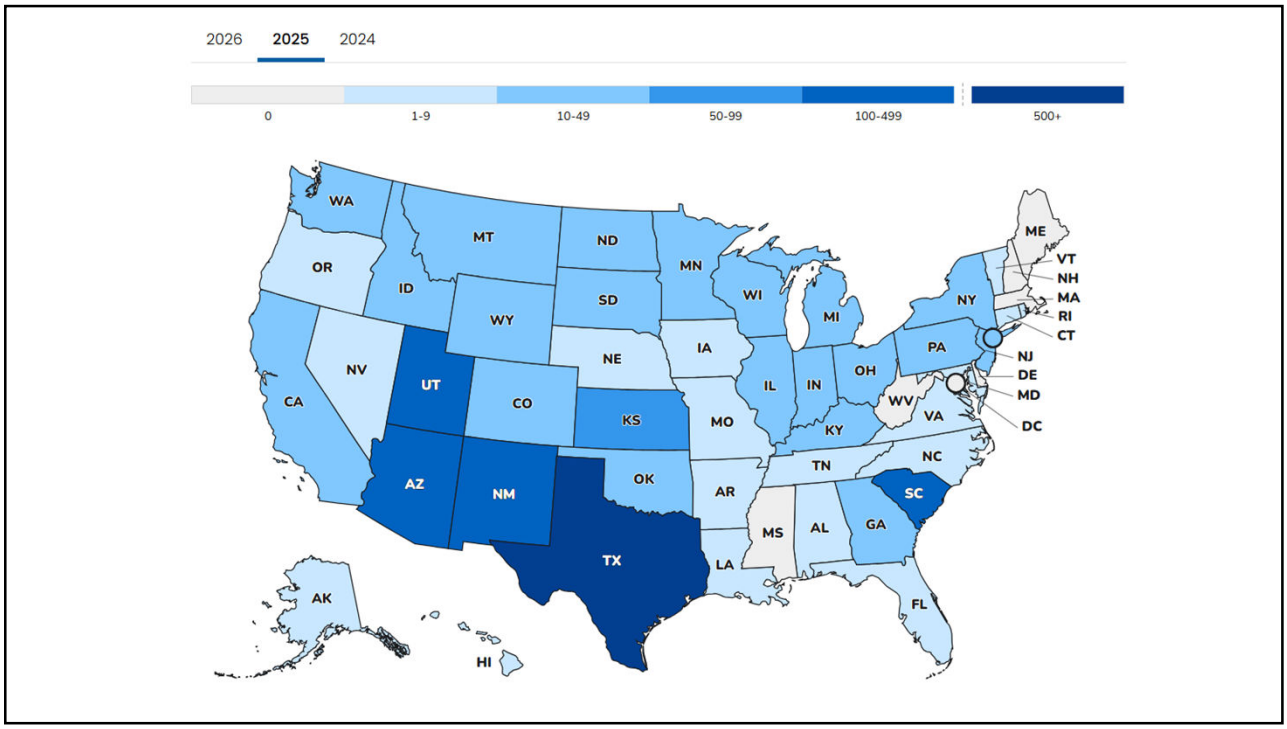
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Percent Vaccinated
Less than 90%
90-94.9%
95%+
Not available
WA
OR
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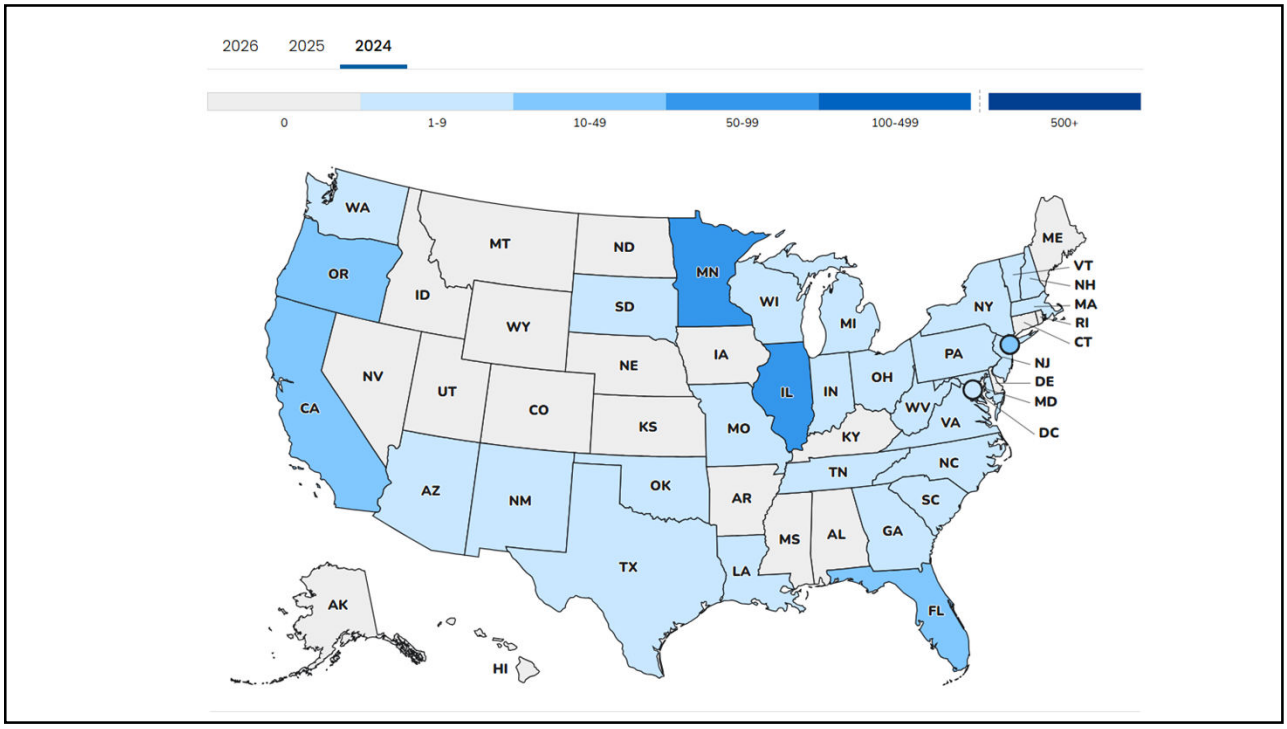
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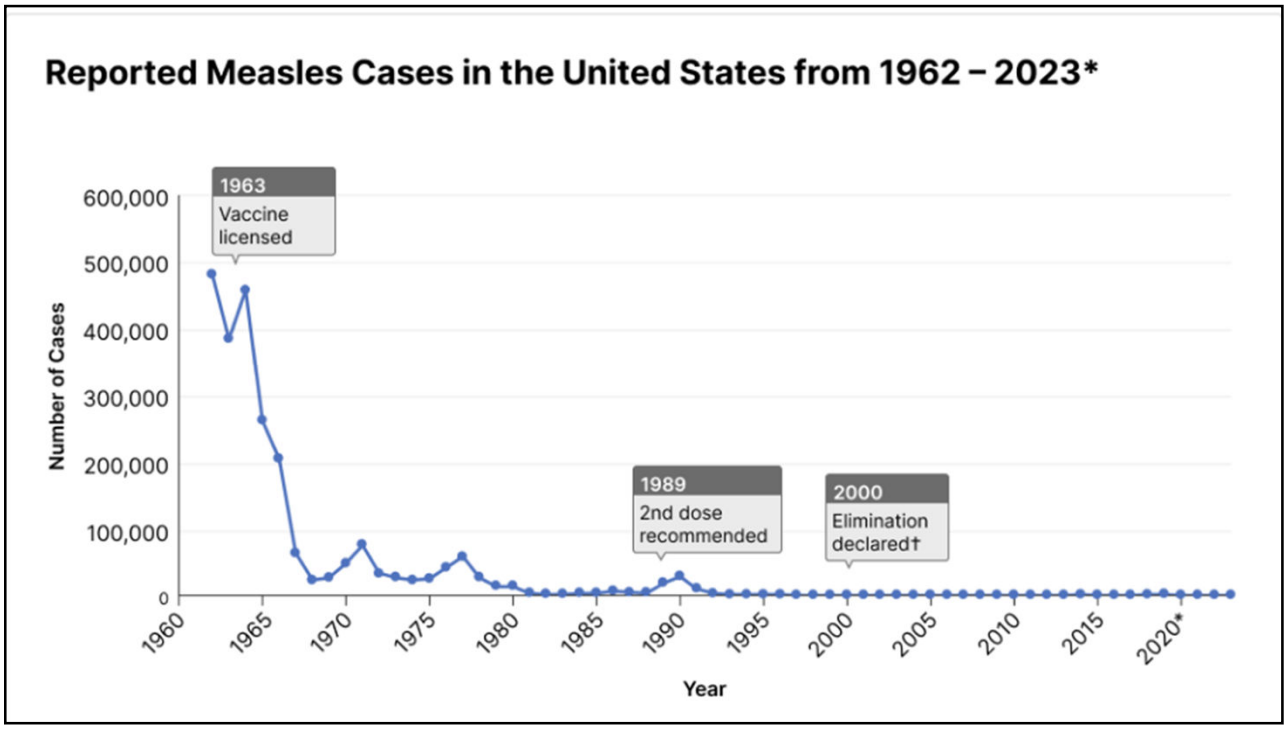
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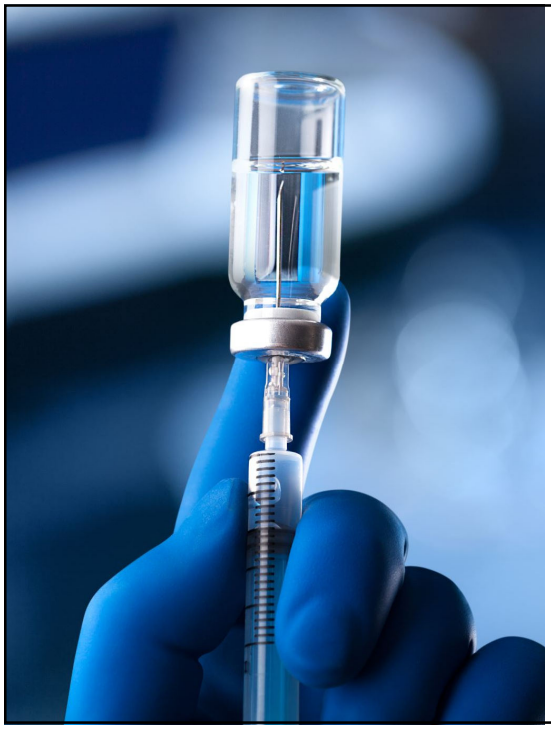
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Vaccine Efforts

- Use a strong vaccine recommendation and the presumptive format for initiating the vaccine discussion
  - Ex: Sarah is due for several vaccines today
  - Ex: Sarah is due for the Tdap, HPV and meningococcal vaccines today

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