AMPLIFY

Amplify Awareness: Recognizing the Comeback of Eradicated Diseases

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Financial Disclosure

- Nothing to disclose

About Me

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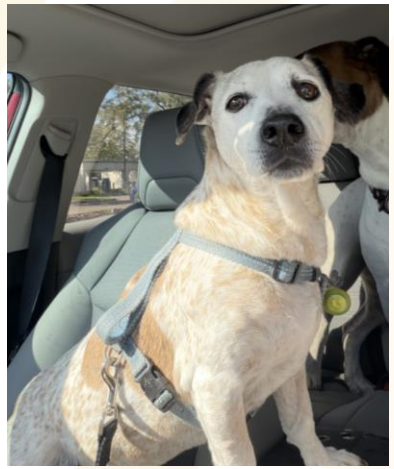


Anti Vax Era

- Fear of vaccines and myths surrounding them are not new
  - Impacting North America and Western Europe
- Who is on the front line of recognition in acute illnesses?

Eradication

- Elimination of the disease EVERYWHERE
  - Preventative measures **ARE NOT** necessary
  - Only 1 human disease has ever been eradicated – any guesses?

Elimination

- It is no longer HERE, but it is still ELSEWHERE
  - Preventative measures **ARE** necessary
  - How a geographic area loses elimination: US - 12 months of consistent transmission

Herd Immunity

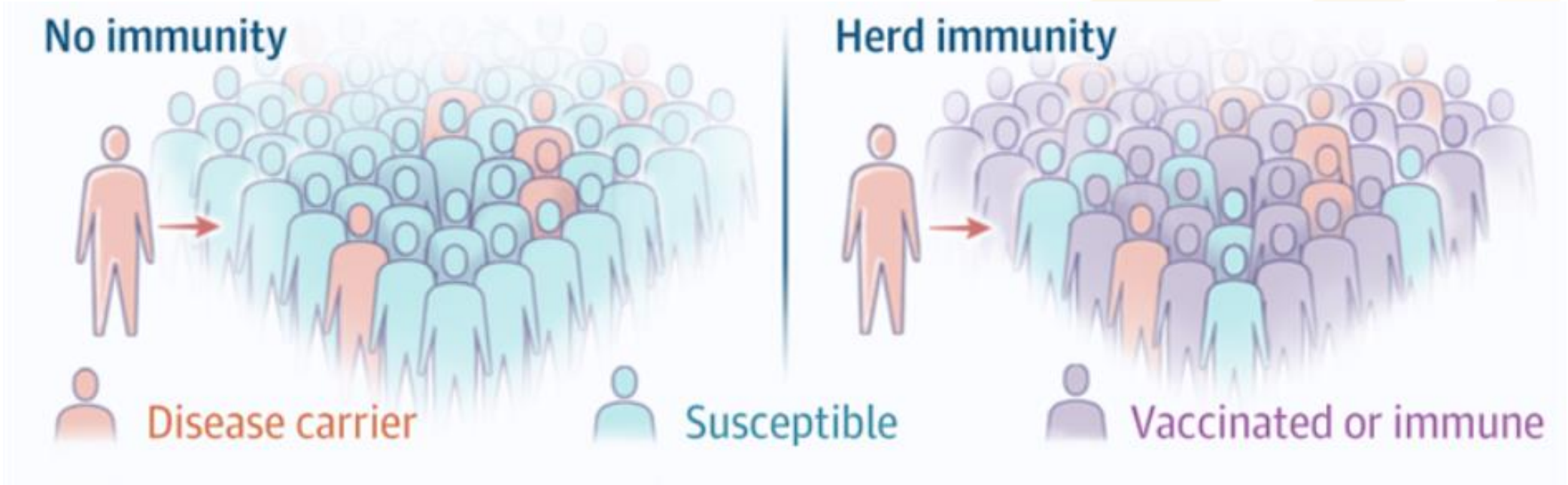


Image Source: JAMA

R_0 (R-Naught)

- Basic Reproduction Number
- Represents the average number of infections that will be produced by a single infected individual
- Closely related to herd immunity

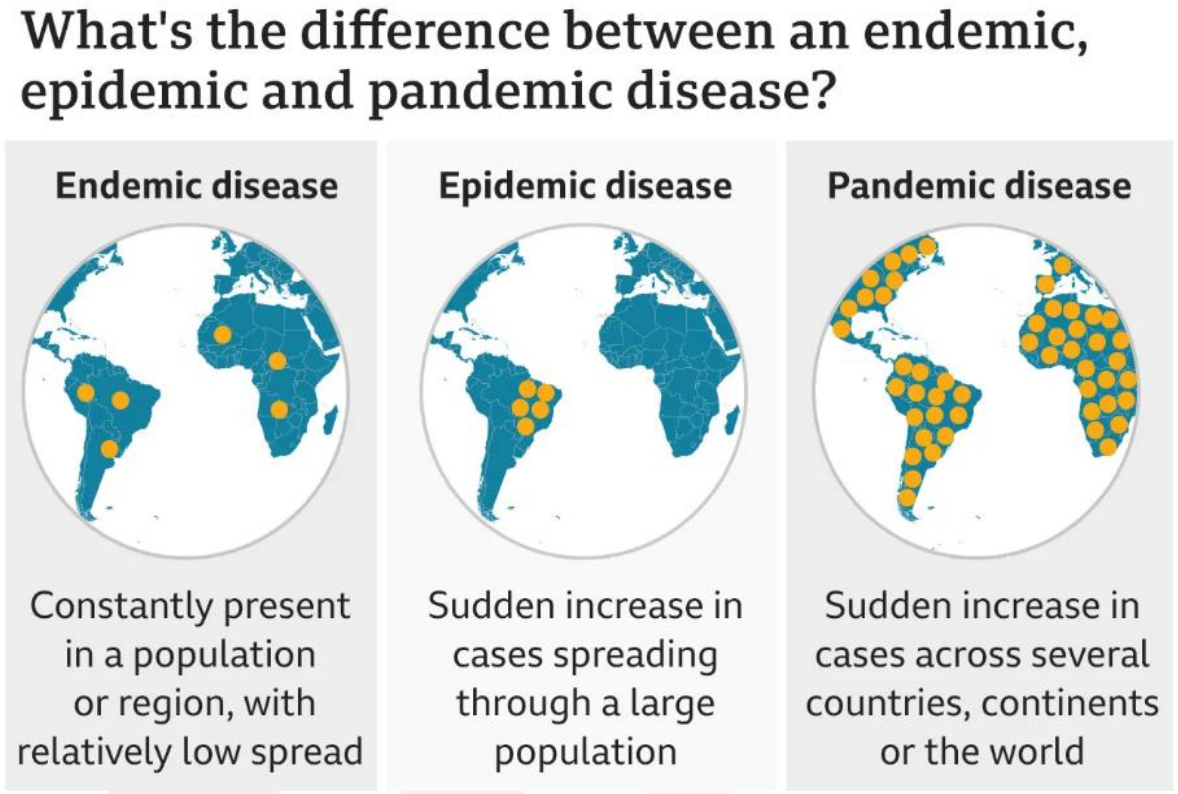


Image Source: BBC

Always ask!

Is this patient vaccinated?

MEASLES

Measles = Rubeola

- Day 0: Exposure
- Day 7-14: Symptoms begin – "3 C's" + high fever
  - 2-3 days after symptoms begin: Koplik Spots
    - Painless
  - 3-5 days after symptoms begin: Rash
    - Starts at scalp
    - Red/reddish brown
    - Fever and rash peak simultaneously

Measles = Rubeola

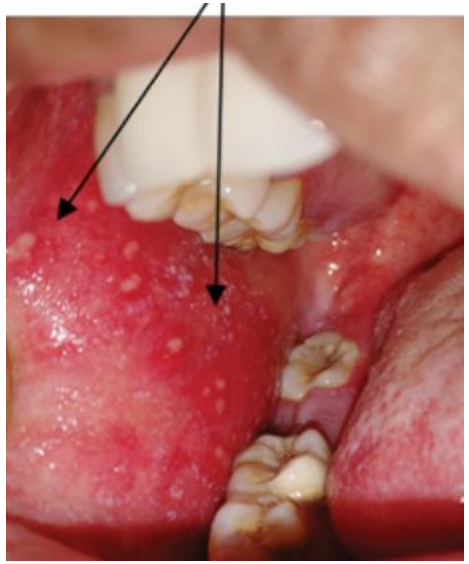


Image Source: JAMA

Image Source: British Journal of Dermatology

Image Source: Getty Images

Image Source: Mayo Clinic

Image Source: Science Photo Library

Measles = Rubeola

- Contagious 4 days prior to the rash appearing and 4 days after = 9 days total
  - Respiratory droplets and airborne transmission
  - Basic reproduction number: 12-18
- Complications:
  - Otitis media
  - Pneumonia
  - Encephalitis
  - Immune amnesia
  - SSPE

Measles = Rubeola

- One dose of the MMR vaccine is ~93% effective against measles
- Two doses is ~97% effective
- CDC recommends children should routinely get 2 doses of MMR vaccine:
  - First dose at age 12 through 15 months
  - Second dose at age 4 through 6 years (before school entry)

RUBELLA

Rubella = German Measles

- Day 0: Exposure
- Day 12-23: Symptom onset
  - Low grade fever
  - Conjunctivitis
  - Cough
  - Runny nose
  - Lymphadenopathy
- Rash begins 1-5 days after
  - Starts on face
  - Pink or light red
  - Fever fades as rash appears

Image Source: BBC

Rubella = German Measles

- Contagious 7 days before and 7 days after rash appears = 15 days total
  - Respiratory droplets
  - Basic reproduction number = 4
- Complications:
  - Arthritis
  - Congenital Rubella Syndrome

Rubella = German Measles

- One does of rubella vaccine is ~97% effective
- CDC recommends children should routinely get 2 doses of MMR vaccine:
  - First dose at age 12 through 15 months
  - Second dose at age 4 through 6 years (before school entry)

POLIOMYELITIS

Poliomyelitis

- Day 0: Exposure
- Most people with polio are asymptomatic
- Day 3-6: nonparalytic symptoms
  - 25% have flu-like symptoms
  - Lasting 2-5 days, then self-resolves
- Day 7-21: onset of paralysis
  - Fewer than 1% of cases per CDC

Image Source: Malevus

Flu-Like Symptoms?

- Fever
- Age < 5 years old
- Unvaccinated/incompletely vaccinated
- Recent travel abroad
- Asymmetric flaccid paralysis
  - Proximal muscle involvement
  - Lower limb involvement more common
  - Progression ≤3-4 days

Poliomyelitis

- Contagious for 7-10 before onset of symptoms
  - Basic reproduction number ~4-6 (in developed countries)
  - Fecal-oral transmission
  - Respiratory droplets
- Can shed virus for 6 weeks
- Complications:
  - Paralytic Polio
  - Aseptic meningitis
  - Respiratory failure

Poliomyelitis

- Two doses of the Inactivated Polio Vaccine are at least 90% effective against paralytic polio per CDC
  - Three doses are ~99% effective
  - Fourth dose is a booster
- 4 doses are recommended:
  - 2 months
  - 4 months
  - 6-18 months
  - 4-6 years old

DIPHTHERIA

Corynebacterium diphtheriae

Diphtheria

- Day 0: Exposure
- Day 2-5: Symptoms appear
  - Fever
  - Fatigue, weakness
  - Sore throat
  - Swollen glands
  - Pseudo membrane in the nose or throat

Image Source: CDC

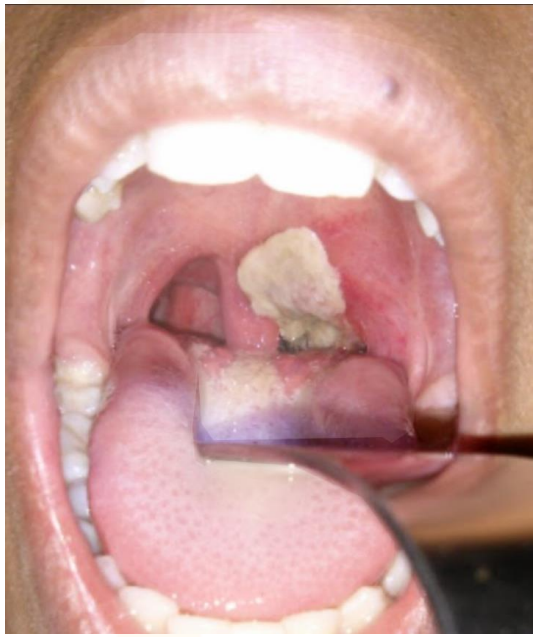


Image Source: Wikipedia

Diphtheria

- Contagious:
  - Respiratory droplets
  - Contact with infected wounds
  - Contaminated objects
  - Basic reproduction number = ~2.5
- Complications:
  - Kidney failure
  - Myocarditis
  - Neuropathy
  - Skin infection

Diphtheria

- 5-dose series is ~89% effective
  - Reaches 98% within 1st year of the 5th vaccine
  - Declines to 71% after 5 years
- DTaP:
  - 2, 4, 6 months
  - 15-18 months
  - 4-6 years
- Tdap:
  - 11-12 years
- Booster every 10 years

Not Eliminated, Still Endemic Honorable Mentions

VARICELLA

Varicella = Chicken Pox

- Day 0: Exposure
- Day 10-21: Symptoms begin
  - Fever, fatigue, headache
- Day 12-23: Rash begins
  - Highly pruritic, vesicular -> scabs
  - Present for 5-10 days
  - Often starts on scalp and face

Varicella = Chicken Pox

Image Source: Mayo Clinic

Image Source: Skin Deep

Varicella = Chicken Pox

- Contagious
  - 1-2 days prior to rash onset
  - Until all lesions are scabbed over
  - Basic reproduction number: 10-12
- Complications
  - Bacterial soft tissue infections
  - Pneumonia
  - Encephalitis, cerebellar ataxia
  - Hemorrhagic complications
  - Sepsis
  - Dehydration

Varicella = Chicken Pox

- Two doses of the vaccine are ~90% effective
- Regimen:
  - 1st dose: 12-15 months
  - 2nd dose: 4-6 years

Image Source: CDC

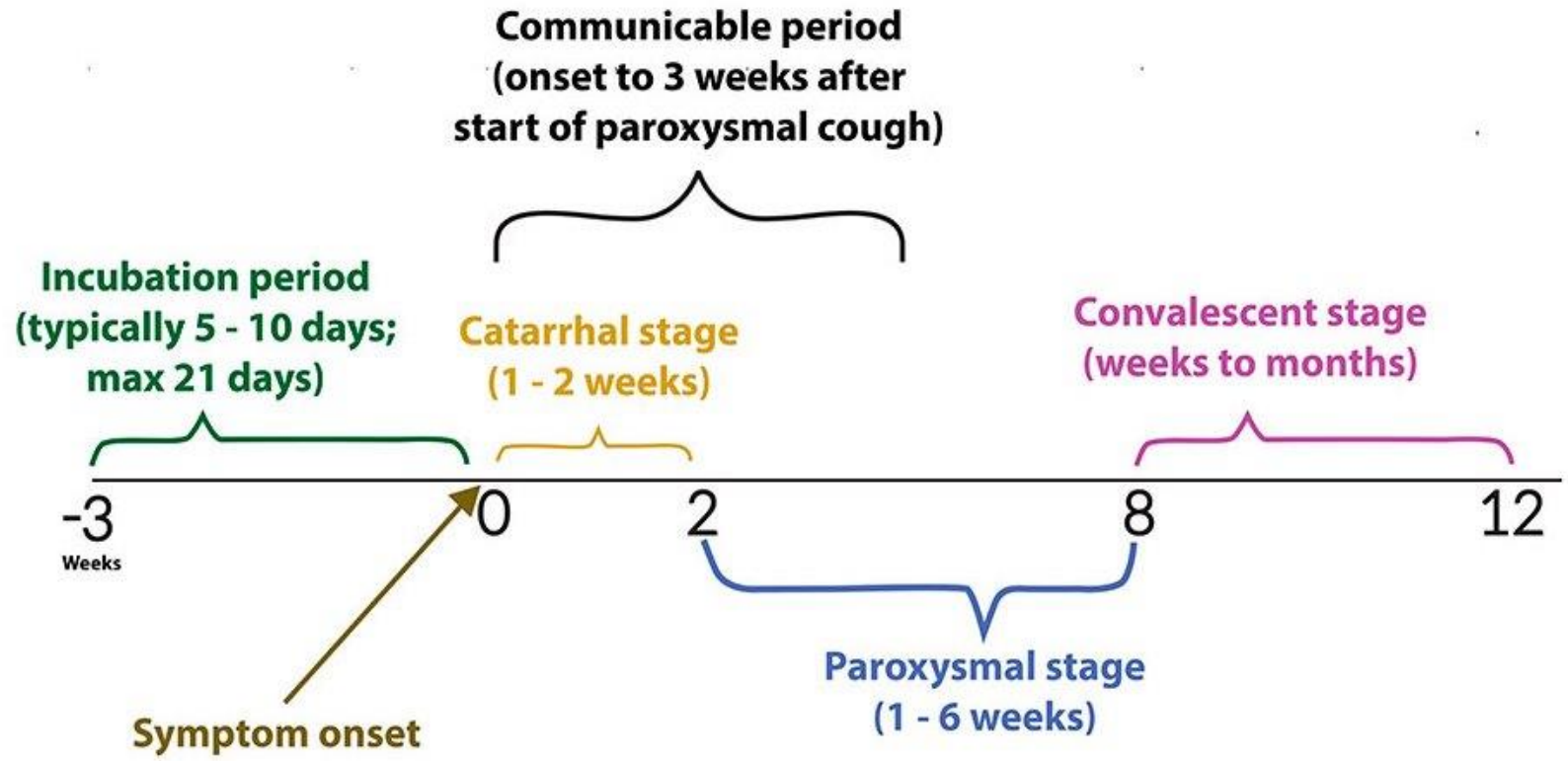
PERTUSSIS

Bordetella pertussis

Pertussis = Whooping Cough

- Day 0: Exposure
- Day 5-10: Symptoms begin
  - Stage 1: Catarrhal
    - 1-2 weeks
  - Stage 2: Paroxysmal
    - 1-6 weeks
  - Stage 3: Convalescent
    - Weeks to months

Pertussis Disease Progression



cdc.gov/pertussis

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

The timeline shows the typical clinical course of pertussis in weeks.

Pertussis = Whooping Cough

- Contagious:
  - Respiratory droplets
  - BSN = ~5.5
  - Public health challenge
- Complications:
  - 1/3 of patients are hospitalized
  - Apnea and pneumonia are most common
  - Many others including otitis media, urinary incontinence, syncope, encephalopathy, pneumothorax, seizures, rib fractures

- When to treat? Assess for 4 clinical characteristics:
  - Paroxysmal cough
  - Post-tussive emesis
  - Inspiratory whoop
  - Absence of fever

Pertussis = Whooping Cough

- DTaP:
  - 2, 4, 6 months
  - 15-18 months
  - 4-6 years
- Tdap:
  - 11-12 years
- Vaccine schedule is the same as Diphtheria
  - However, there are no recommendation for booster doses against Pertussis with exception of pregnant individuals
  - Waning immunity beyond 2-4 years

MUMPS

Mumps

- Day 0: Exposure
- Day 12-25: Symptoms begin
  - Fever
  - Headaches
  - Myalgias
- 1-2 days later: Parotitis begins
  - 75% bilateral involvement
  - Swelling peaks in 1-3 days and subsides over a week

Mumps

Image Source: CDC

Image Source: Merck Manual

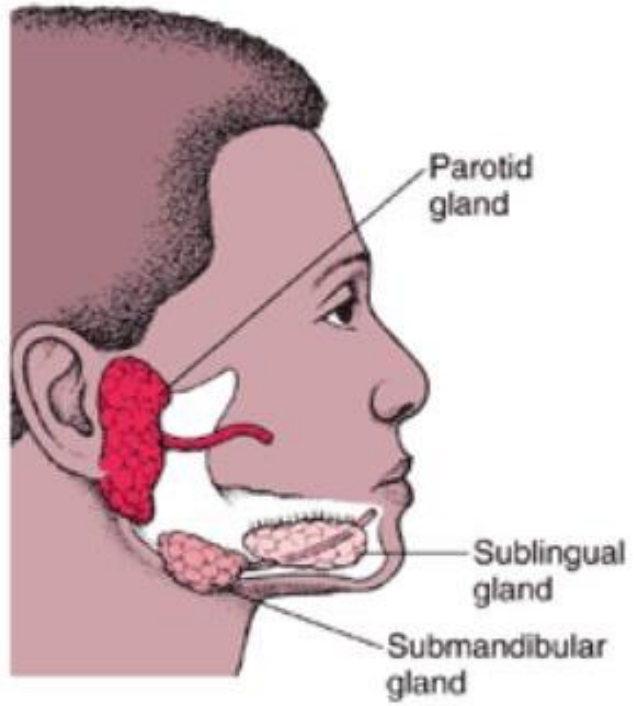


Image Source: CDC

Mumps

- Contagious:
  - 2-3 days before parotitis begins + 5 days after it begins = ~9 days total
  - Respiratory droplets
  - Basic reproduction number = ~4-7
- Complications
  - Orchitis
  - Oophoritis
  - Mastitis
  - Meningitis
  - Encephalitis
  - Pancreatitis
  - Hearing loss

Mumps

- One dose of the MMR vaccine is ~72% effective against mumps
- Two doses is ~86% effective
- CDC recommends children should routinely get 2 doses of MMR vaccine:
  - First dose at age 12 through 15months
  - Second dose at age 4 through 6 years (before school entry)

Not Eliminated, Still Vaccinate

- *Haemophilus influenzae*
- Pneumococcal
- **Meningococcal ACWY/B**
- Human papillomavirus
- Tetanus
- **Hepatitis A/B**
- **Respiratory syncytial virus**
- **Rotavirus**
- **Influenza**
- **COVID**

2026 Updates

Always ask!

Is this patient vaccinated?

Thank You!

I Need Your Feedback – Scan the QR

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AFTER THE CONVENTION

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