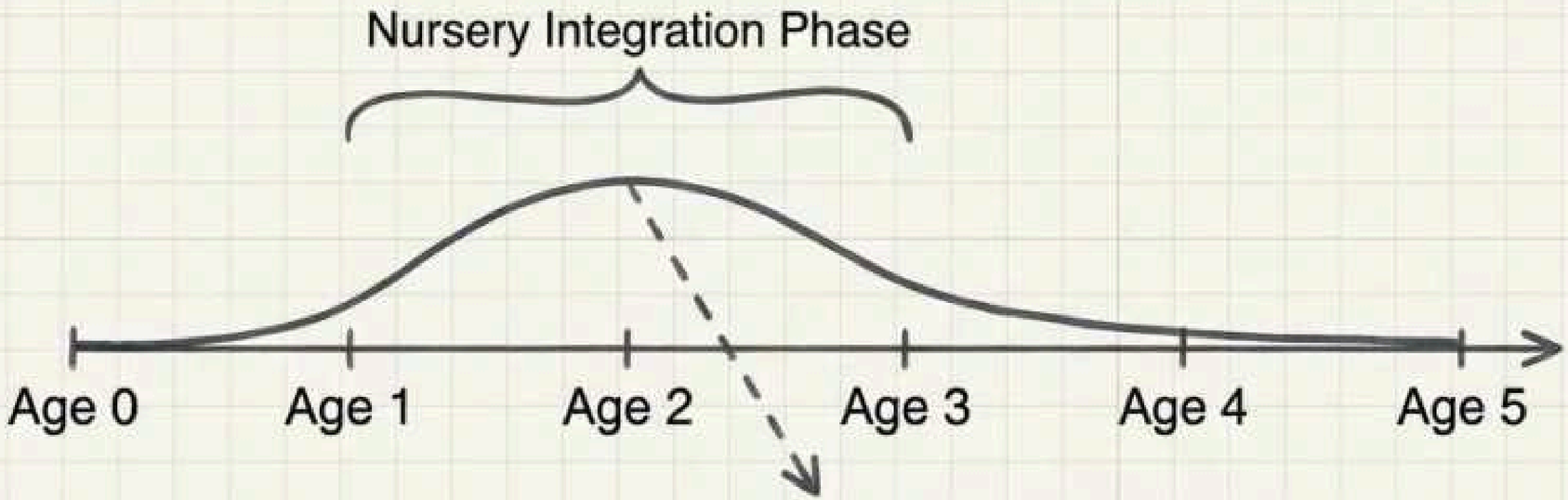
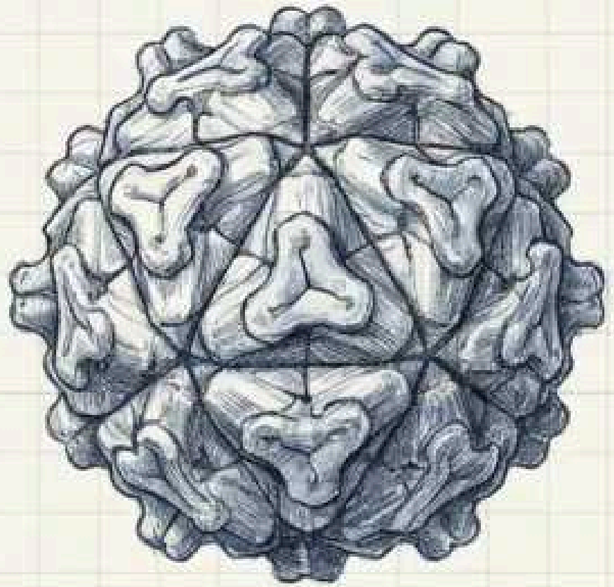
Viral Encounters Build the Developing Immune System

Expected Encounters = 6 to 10 colds/year





These are self-limiting processes as the immune system encounters new germs.



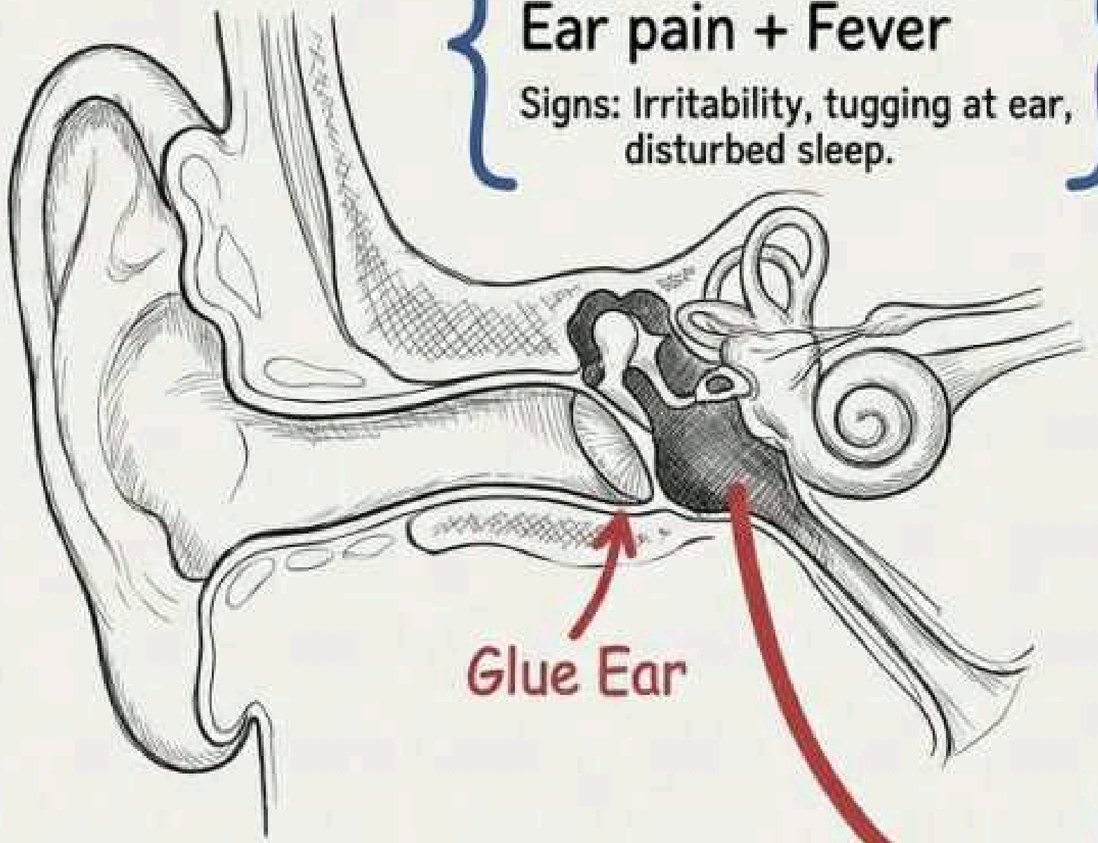
Antibiotics offer zero efficacy for viral infections.

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Clinical Decision Pathways for Otitis Media

Core Presentation:
Ear pain + Fever

Signs: Irritability, tugging at ear, disturbed sleep.



Otitis Media Suspected

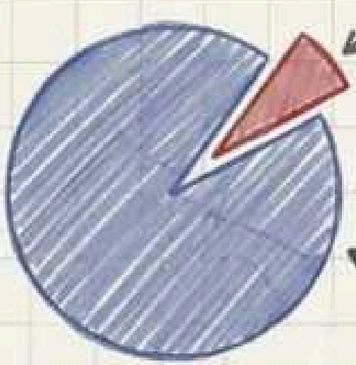
- Older infant -> No discharge -> Improving
  - **Pain Relief + Watchful Waiting** (Most settle within a few days without antibiotics)
  - (Consider ibuprofen/paracetamol; re-evaluate if worsening)
- Younger infant OR ear discharge OR failure to improve
  - **Antibiotic Therapy**
  - (Typical duration: 5-10 days; ensure compliance)

Repeated infections -> Persistent fluid (Glue Ear) -> Risk of hearing and speech impairment.

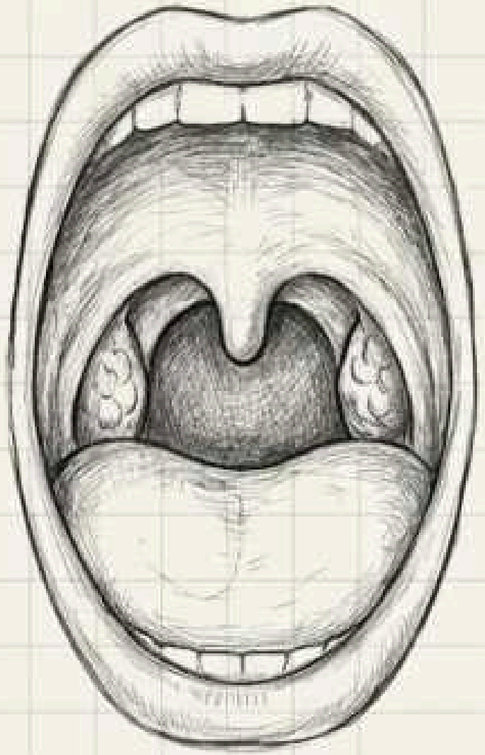
Long-term consequences require follow-up and potential specialist referral (e.g., ENT for grommets).

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Differentiating Viral Sore Throats from Group A Streptococcus



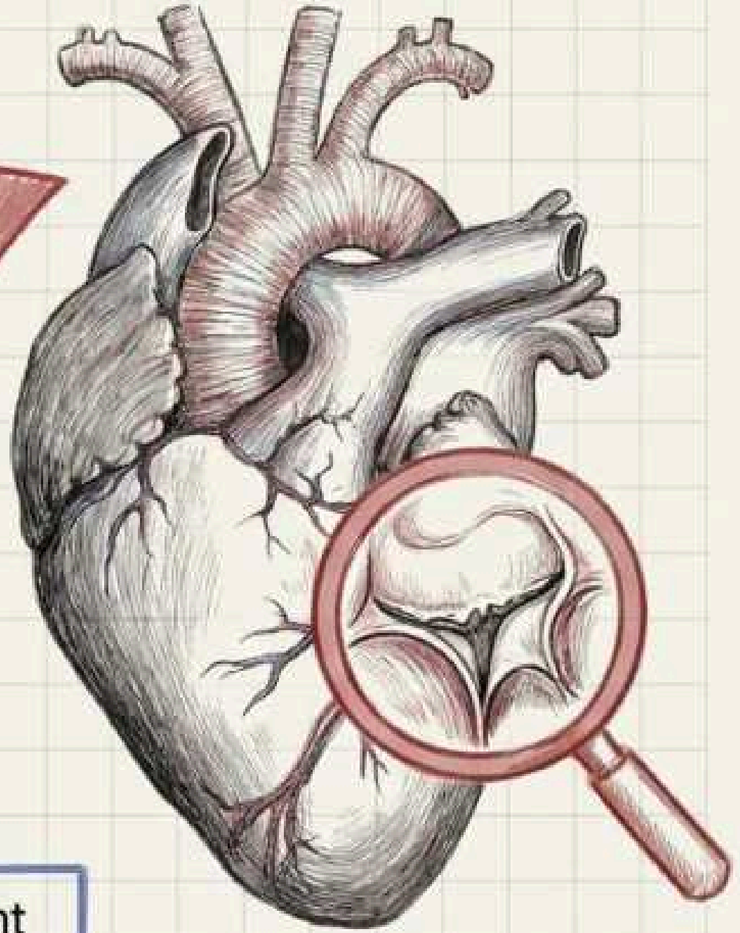
Oropharynx:
Tonsils & Uvula



$$\text{Score} = \sum (\text{Clinical signs})$$

Scoring systems are required to determine who actually benefits from testing or antibiotics.

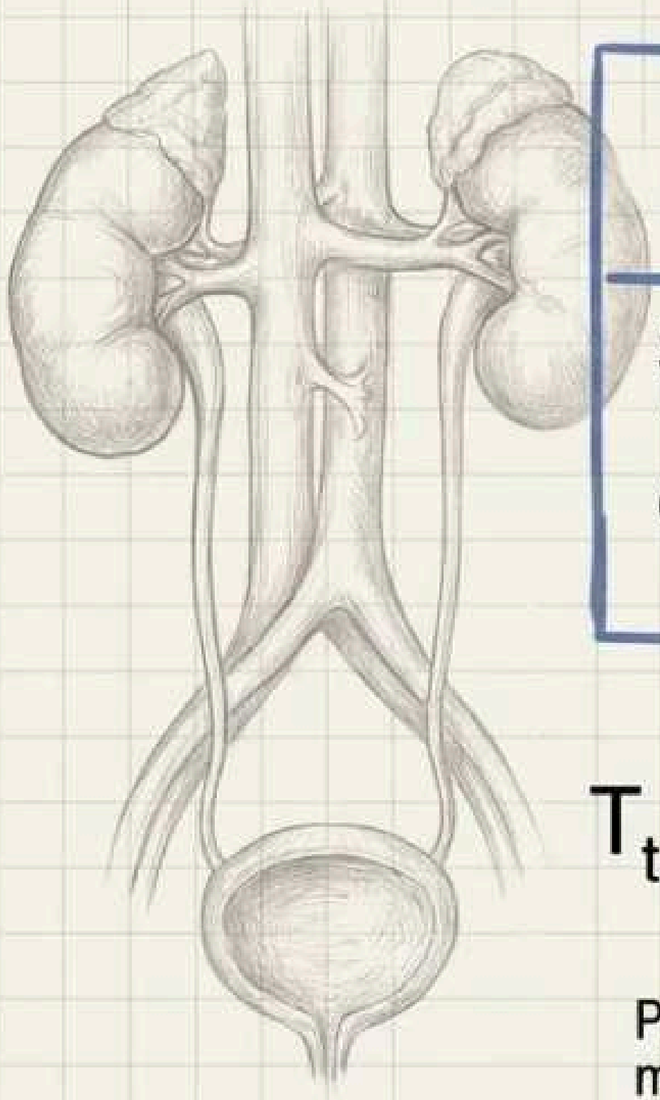
Untreated Strep A -> Rheumatic Fever -> Heart Valve Damage



*This complication cascade remains highly prevalent in low-income countries and Indigenous communities.

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Investigating Unexplained Fever for Hidden UTIs



Atypical Presentation	Mandatory Action
Symptoms: Only fever, vomiting, or poor feeding.	Urine sample is critical for any unexplained fever.

$$T_{treatment} \propto \frac{1}{\text{Risk of complications}}$$

Prompt treatment matters immensely.

Imaging Criteria

Required to hunt for underlying anatomical abnormalities in:

1. Infants
2. Recurrent cases
3. Atypical infections

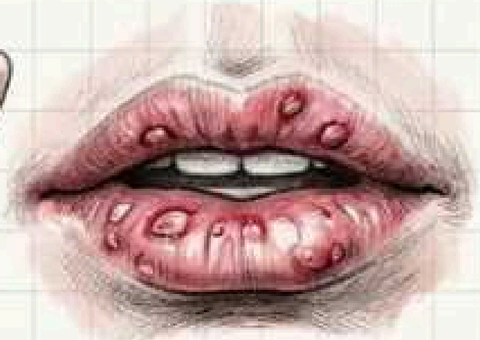
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Visual Diagnostics for Critical Childhood Rashes

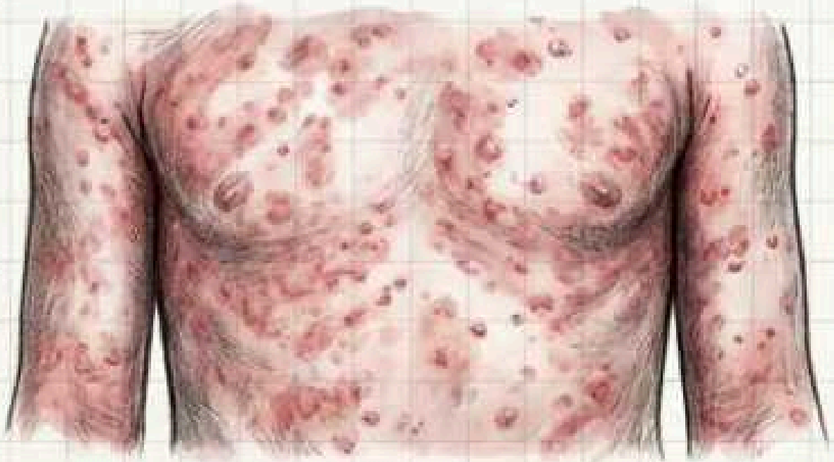


Chickenpox: Itchy blisters appearing in crops.





Hand, Foot & Mouth Disease: Blisters strictly localized to oral mucosa and extremities.



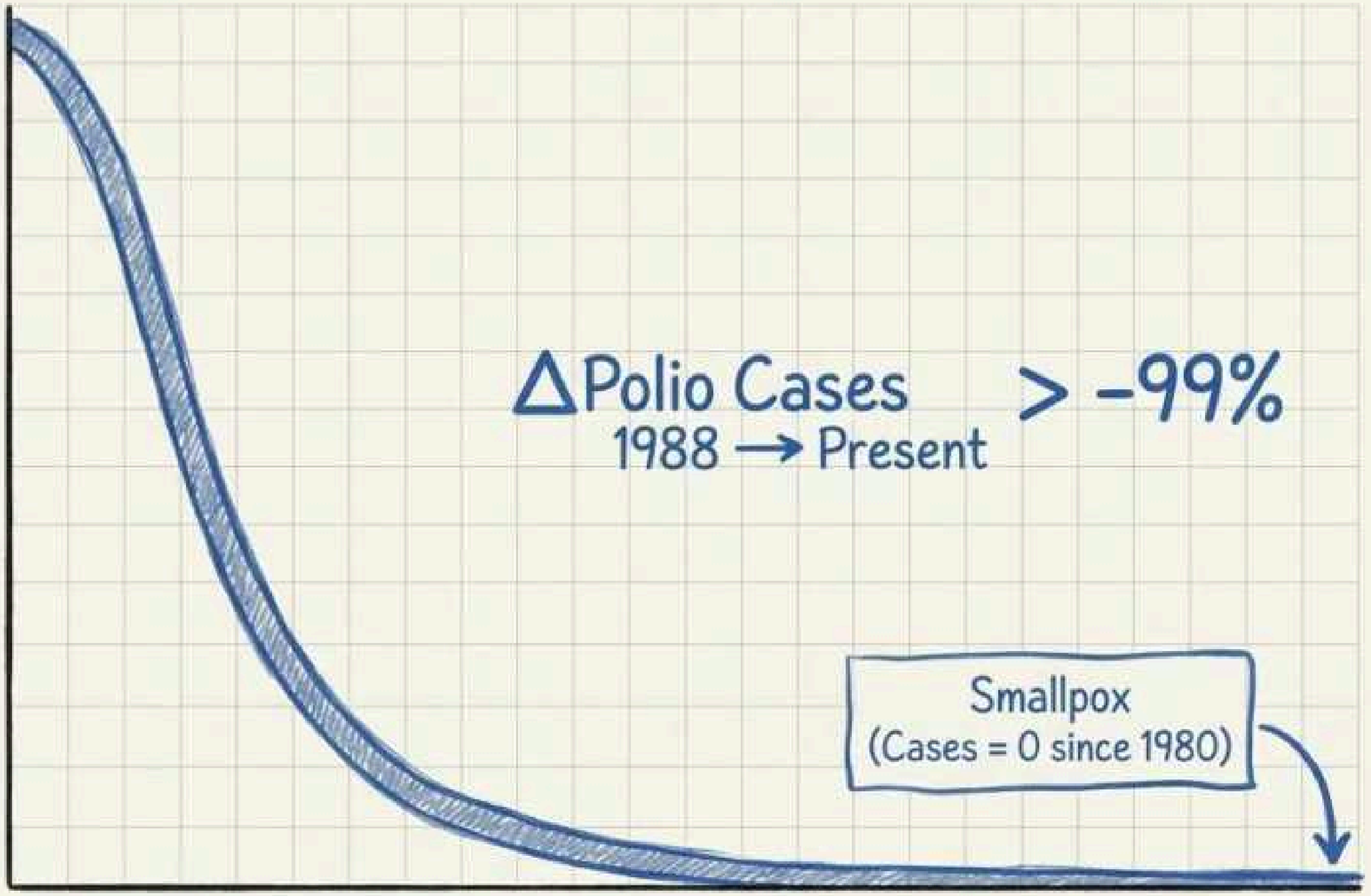
Measles: High fever, red eyes, cough, blotchy rash.
Danger: Pneumonia, brain inflammation, death.



Meningococcal Disease: Non-blanching rash + fever.
(Link to Lecture 3: Immediate medical emergency requiring urgent treatment).

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The Unprecedented Historical Efficacy of Immunisation



Dramatically Reduced Pathogens:
- Measles
- Diphtheria
- Tetanus
- Whooping Cough
- Hib Meningitis
- Pneumococcus

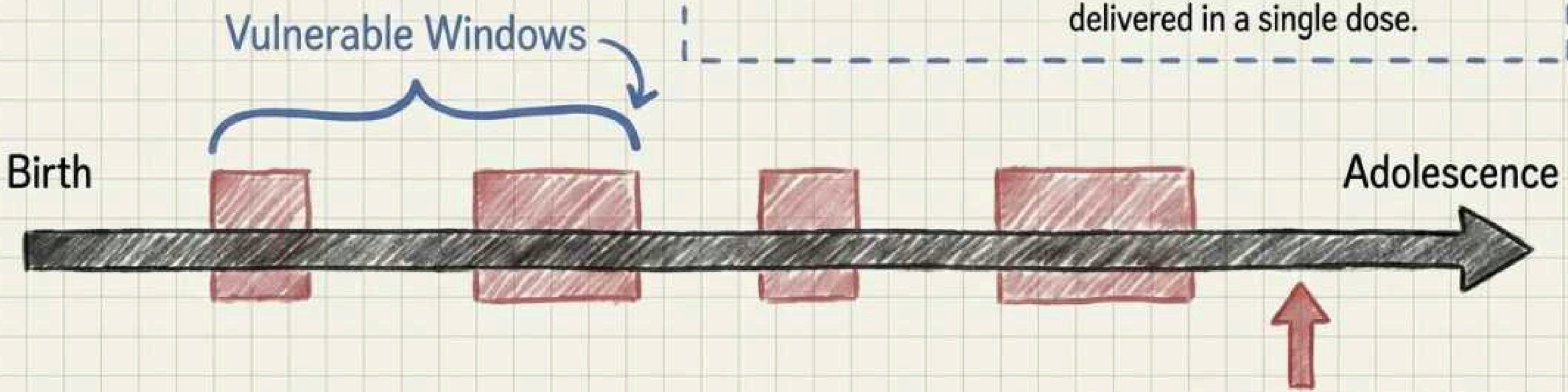
(See MED 504 B & 511 B for precise mechanisms of action)

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Strategic Timing and Synergy in Immunisation Schedules

$$\text{Total Injections} \downarrow = \sum (\text{Antigen}_1 + \text{Antigen}_2 + \cdots \text{Antigen}_n)$$

delivered in a single dose.

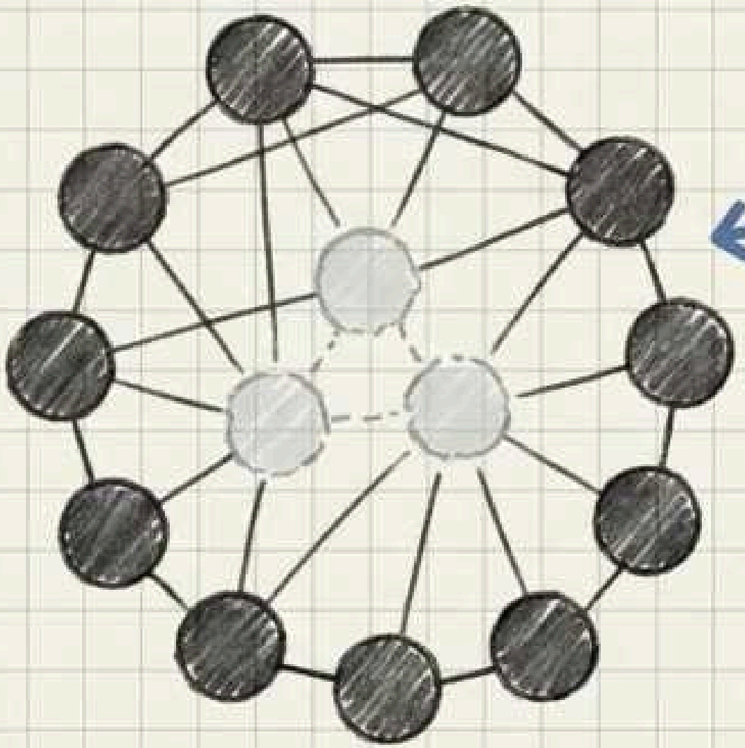


Schedules are explicitly timed to deliver vaccines precisely when children are most vulnerable.

Human Papillomavirus (HPV) vaccine: given in late childhood / early adolescence to prevent cervical and other related cancers.

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The Mathematical Imperative of Herd Immunity



The Vulnerable Core: Young babies and those with weakened immune systems.

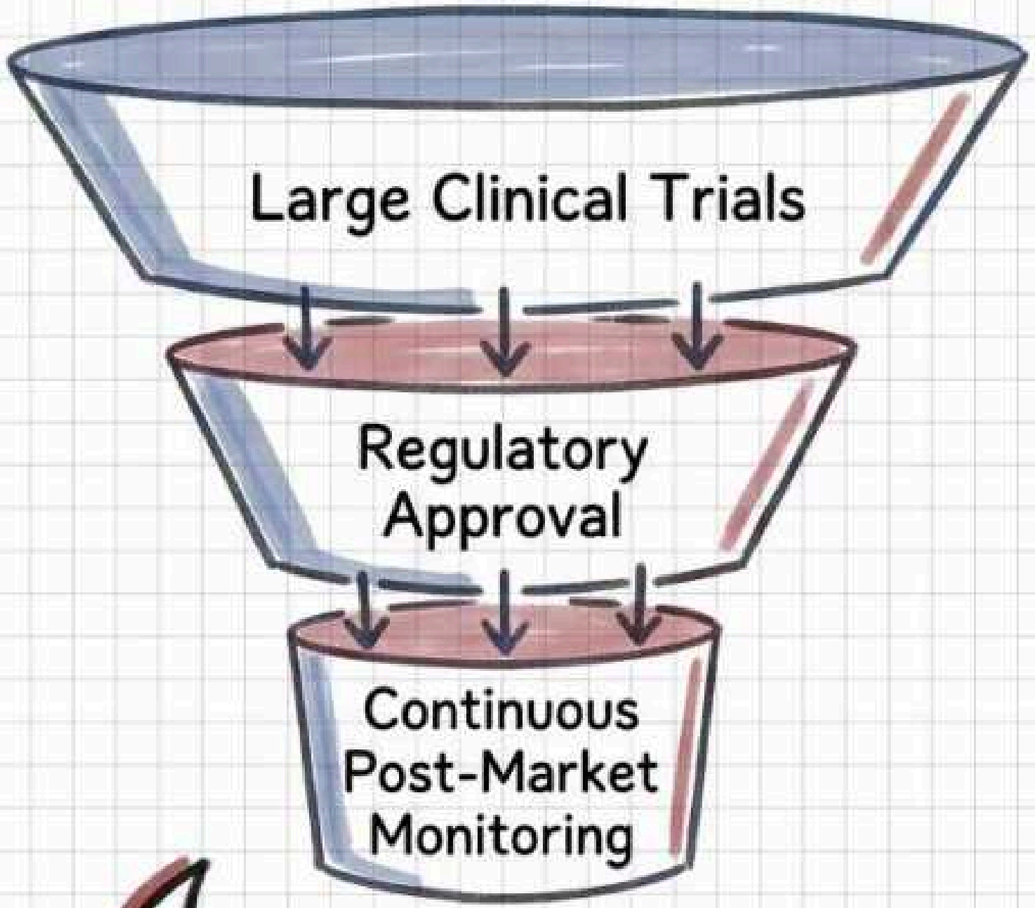
$$HIT = 1 - \frac{1}{R_0}$$

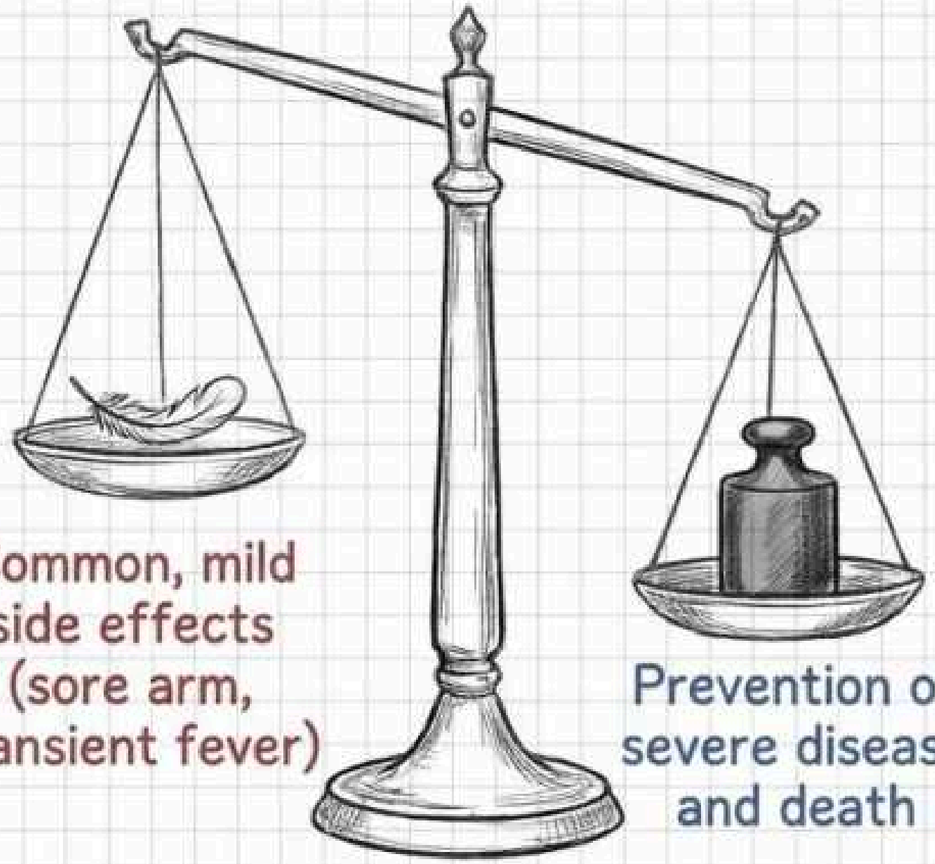
Measles Application:
Highly contagious diseases require ≈ 95% population coverage.

Coverage < 95% → Resurgence of Outbreaks
(As currently observed with measles in many countries).

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Rigorous Pipelines Guarantee Vaccine Safety





The claimed link between the MMR vaccine and autism was entirely fraudulent. Extensive global research confirms ZERO link. (See Lecture 1)

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Clinical Protocols for Overcoming Vaccine Hesitancy

2019 WHO Designation: Vaccine hesitancy (delay/refusal) is a top threat to global health.

Listen: Respectfully hear and validate parental concerns.

Inform: Provide perfectly clear, accessible information.

Recommend: Deliver a confident, unequivocal recommendation for the vaccine.



A strong recommendation from a trusted clinician remains the most powerful influence on parental decision-making.

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Matching Global Child Mortality Causes to Simple Interventions

The Burden

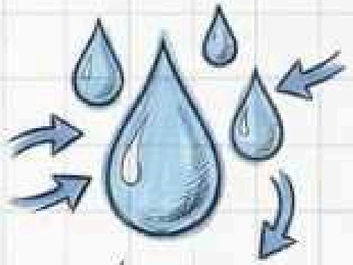
Preventable/treatable conditions causing most global child deaths:

- Preterm complications
- Pneumonia
- Birth trauma
- Diarrhoea
- Malaria

(Undernutrition acts as a universal contributing multiplier)

The Solutions

- Oral rehydration



- Bed nets



- Targeted antibiotics



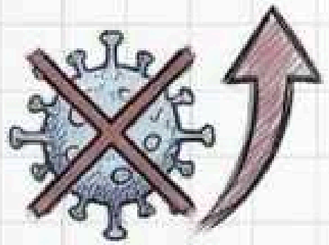
- Systemic Care -> Vaccines, breastfeeding, and skilled care at birth



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Synthesizing the Pillars of Childhood Infection Management

Pillar 1 (Nature): Most childhood infections are viral and strictly self-limiting.



Pillar 2 (Stewardship): Antibiotic use must be wise, judicious, and rule-based.



Pillar 3 (Prevention): Immunisation stands as a historical triumph, preventing millions of deaths.



Pillar 4 (Global Health): Global child survival depends entirely on the widespread application of proven, simple measures.



Next Lecture Phase → Chronic Conditions of Childhood

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