

Vaccine-preventable diseases — impact summary

Many diseases that had a devastating impact during the 20th century have been virtually eradicated due to the astonishing effectiveness of vaccines. However, there's a real risk of some of them coming back due to parental apathy and active campaigns of misinformation. Here's a quick reminder of the impacts of these diseases:

Disease	Vector	Initial symptoms	Longer term outcomes	Herd immunity	Treatment
Polio poliomyelitis, infantile paralysis	Faecal / oral route toilet hygiene / virus enters via mouth; majority of carriers asymptomatic	Fever, headache, vomiting, diarrhoea, stiff neck, pains in arms and legs	Paralysis of legs, arms, head, throat and/or lungs. Fatality rate is 2% to 5% in children and 15% to 30% in adults; sometimes symptoms ease or disappear only to return about 30 years later ('post-polio syndrome')	86%	No cure; iron lung for breathing, surgery for deformities, leg braces
Measles morbilli, rubeola, red measles	Respiratory route airborne through coughs and sneezes; also via saliva & nasal secretions; extremely contagious	Rash, fever, cough, head cold, conjunctivitis, small white spots inside mouth, diarrhoea, bronchitis, pneumonia	Deafness, blindness, inflammation of the brain. Fatality rate varies; between 1987 and 2000 in the US, it was 3 deaths per 1,000 cases	95%	No specific treatment; symptom management
German Measles Rubella, three-day measles	Respiratory route airborne through coughs and sneezes; also via saliva & nasal secretions; extremely contagious	Rash, fever, swollen lymph nodes, sore throat, fatigue, joint pain	Congenital rubella syndrome in infants (cardiac, cerebral, ophthalmic and auditory defects) Devastating impact on foetus (still birth, severe heart disorders, blindness, deafness, life-threatening organ disorders)	86%	No specific treatment; symptom management
Mumps epidemic parotitis	Respiratory route airborne through coughs and sneezes; also via saliva & nasal secretions; extremely contagious	Fever, muscle pain, headache, fatigue, painful swelling of one or both parotid glands (more severe in adults)	Testicular inflammation, ovarian inflammation, infertility, meningitis, brain inflammation, pancreatic inflammation, profound hearing loss Low fatality rates (1% of those with brain inflammation)	86%	No specific treatment; symptom management
Whooping cough Pertussis, 100 day cough	Respiratory route airborne through coughs and sneezes; extremely contagious Bacterial	About 100 days of severe coughing fits that can cause vomiting, broken ribs, extreme fatigue, fainting and (in infants) periods where they do not breathe	Fatality rate in children less than a year of age is about 2%	94%	Antibiotics useful if started early, otherwise have little effect
Diphtheria	Various Direct contact, through the air or via contaminated objects Bacterial	Sore throat, fever, blocked airway, barking cough, swollen neck, enlarged lymph nodes.	Fatality rate is between 5% and 10%, however in children under five and adults over 40, the fatality rate is as high as 20%	86%	Antibiotics useful if started early; intubation or tracheotomy may be required for swollen lymph nodes