

Appendix 4 — Disease and vaccine effects^①

Disease	Impact of vaccine introduction in Canada		Disease effects and other issues
	Incidence before	Incidence after	
Established vaccines			
Diphtheria	<ul style="list-style-type: none"> highest recorded number of cases in one year: 9,000 (in 1924) 	<ul style="list-style-type: none"> recently, 2 to 5 cases each year 	<ul style="list-style-type: none"> 5 to 10% CFR toxin may cause myocardial and neurological complications
Hib	<ul style="list-style-type: none"> 2,000 cases each year leading cause of bacterial meningitis in infancy 	<ul style="list-style-type: none"> anecdotal case reports only <60 cases each year 	<ul style="list-style-type: none"> 5% CFR with meningitis permanent neurological sequelae in 10 to 15% deafness in 15 to 20%
Measles	<ul style="list-style-type: none"> 300,000 to 400,000 cases (estimated) each year incidence increases cyclically, every 2 to 3 years 	<ul style="list-style-type: none"> <400 cases each year plus occasional outbreaks, once 2-dose series implemented 2,300 cases during outbreak in 1995 	<ul style="list-style-type: none"> encephalitis in 1 per 1,000 infected patients (versus 1/1 Million vaccinees), associated with 10% CFR and permanent sequelae in 25%) 1 per 25,000 develops SSPE (subacute sclerosing panencephalitis)
Mumps	<ul style="list-style-type: none"> 136 per 100,000 population per year (average) 	<ul style="list-style-type: none"> 2.35 per 100,000 population per year (equal to about 500 cases each year) 	<ul style="list-style-type: none"> 1 per 200 infected children develops encephalitis orchitis in post-pubertal males (20 to 30%) and oophoritis in females (5%) occasional infertility and deafness
Pertussis	<ul style="list-style-type: none"> 153 per 100,000 population per year 	<ul style="list-style-type: none"> 10 per 100,000 population per year 	<ul style="list-style-type: none"> 1% CFR, due to pneumonia or encephalopathy (usually hypoxic), for infants <6 months several deaths each year, particularly in <u>unimmunized</u> infants
Polio	<ul style="list-style-type: none"> 2.5 to 28.3 per 100,000 population per year up to 20,000 cases of <u>paralytic</u> disease each year in epidemic years 	<ul style="list-style-type: none"> indigenous disease eradicated from North America still endemic in other areas 	<ul style="list-style-type: none"> 1% of infections have clinical symptoms 5% of hospitalized patients die 50% of survivors remain paralysed
Rubella	<ul style="list-style-type: none"> 149 per 100,000 population per year 	<ul style="list-style-type: none"> average of 8.5 per 100,000 population per year (equal to about 2000 cases each year) 	<ul style="list-style-type: none"> encephalopathy in 1 per 6,000 85% risk of congenital rubella syndrome if infected in first 10 weeks of pregnancy
New vaccines			
MC	<ul style="list-style-type: none"> age-dependent >30% due to group C ≤2 per 100,000 population per year (all types) 	<ul style="list-style-type: none"> to be determined 	<ul style="list-style-type: none"> 10 to 20% CFR bacteremia and septicemia often fatal serious long-term consequences in 15% penicillin resistance increasing
PC	<ul style="list-style-type: none"> 83 to 161 per 100,000 per year, including 700 bacteria cases, 65 meningitis cases, and 15 deaths 	<ul style="list-style-type: none"> to be determined 	<ul style="list-style-type: none"> penicillin resistance increasing
VZV	<ul style="list-style-type: none"> >350,000 cases (estimated) 	<ul style="list-style-type: none"> to be determined 	

^① See Canadian Immunization Guide, 6th edition.

^② Case fatality rate