The Impact of Vaccine Hesitancy: Anti-vaccine phenomenon
Improvements in social and economic conditions led to declining death rates for many common diseases.

Deaths due to Vaccine preventable diseases (VPD) were declining long before vaccines were introduced.
United States Diphtheria Mortality & Disease Rates

Diphtheria Antitoxin
Started Use 1894

Diphtheria Vaccine
Introduced 1920


www.healthsentinel.com

Dr. H.T. Wickramasinghe
The decline in diphtheria, whooping cough and typhoid fever began fully fifty years prior to the inception of artificial immunization. In the case of scarlet fever, mumps, measles and rheumatic fever there has been no specific innovation in control measures, yet these also have followed the same general pattern in incidence decline. Claims about the historical life-saving impact of immunization programs appear to be assumptive and not factual.

In the 14th century the Bubonic Plague killed 25 million Europeans in just 5 years. Now people no longer die of it, and there was no vaccine to credit its decline.

The tropical disease yaws, which mainly affects the skin and bones, has virtually disappeared. Was it due to a vaccine?

All diseases have become milder throughout history, and mortality rates have reduced and it's nothing to do with vaccination.
Reemergence of invasive haemophilus influenzae type b disease in a well-vaccinated population on remote Alaska

The rate of varicella occurrence among vaccinees was much higher than rates reported previously by other authors. "Varicella vaccine seems to be effective in modifying the symptoms of varicella, but not potent enough in protecting from VZV infection."


Does vaccine really works?
The 1989 measles outbreak in the province of Quebec has been largely attributed to an incomplete vaccination coverage. In the Quebec City area (pop. 600,000) 1,363 confirmed cases of measles did occur. A case-control study conducted to evaluate risk factors for measles allowed us to estimate vaccination coverage. This population included 8,931 students aged 5 to 19 years old. The vaccination coverage among cases was at least 84.5%. Vaccination coverage for the total population was 99.0%. Incomplete vaccination coverage is not a valid explanation for the Quebec City measles outbreak.

"Vaccination against whooping-cough, Efficacy versus risks.

Calculations based on the mortality of whooping-cough before 1957 predict accurately the subsequent decline and the present low mortality... Incidence [is] unaffected either by small-scale vaccination beginning about 1948 or by nationwide vaccination beginning in 1957... No protection is demonstrable in infants."

Are vaccines safe?
'Chickenpox is a mild, but highly infectious disease that most children catch at some point.

Chickenpox is most common in children who are between 2-8 years of age, although you can develop chickenpox at any age. You, or your child, should stay at home until all of the blisters have fully crusted over, and this usually happens 5-7 days after the first blister appears. After the last blister has burst and crusted over, you are no longer infectious.

NHS web site
Common side effects include:
Pain, tenderness, soreness, erythema, swelling and pruritus at the injection site, varicella-like rash, upper respiratory infection, irritability, rash and fever. Rarely, serious side effects have been reported and include thrombocytopenia, pneumonia, pulmonary congestion, encephalitis, anaphylaxis, cerebrovascular accident, Convulsions, Guillain-Barré syndrome, transverse myelitis, ataxia, Stevens-Johnson syndrome, erythema multiforme and Henoch-Schönlein purpura.

The vaccine virus may rarely be transmitted to contacts of vaccinees who develop a varicella-like rash.

Which one do you think sounds more serious?
The Leukemia and Lymphoma journal wrote in 2003:

'Millions of people worldwide were inadvertently exposed to live simian virus 40 (SV40) between 1955 and 1963 through SV40-contaminated polio vaccines. Although the prevalence of SV40 infections in humans is not known, numerous studies suggest that SV40 is a pathogen resident in the human population today. SV40 is a potent DNA tumor virus that is known to induce primary brain cancers, bone cancers, mesotheliomas, and lymphomas

Sept. 13, 2004 -- The hepatitis B vaccine series has been administered to more than 20 million people in the U.S. and more than 500 million people in the world. It is more than 95% effective in preventing an infection that kills millions annually. However anecdotal evidence has linked the vaccine to an increased risk for multiple sclerosis.

Now a new study in the Sept. 14 issue of the journal Neurology offers the strongest evidence supporting the link. In the study, researchers report that vaccination with the recombinant hepatitis B vaccine is associated with a threefold increased risk of multiple sclerosis.
1. Hepatitis B is a sexually transmitted disease, caught by people who have casual sex, drug abusers and prostitutes.

2. A baby cannot get Hepatitis B unless his mother is a carrier, which most women aren't.

3. The best way to protect yourself from liver cancer brought about by Hepatitis B is not have sex with multiple partners. Fall in love and have a committed relationship!

4. If you want to have casual sex, USE A CONDOM. Don't take drugs and don't engage in prostitution, and then you won't get hep B related liver cancer.

Why do you want the Vaccine?
Even though Dr. Andrew Wakefield was found guilty for his great observation that MMR has a linked to causation of Autism in Children, Every mother would know that her child got Autism after MMR vaccine. Truth cannot be hide..

Global Vaccine Institute Web site
Do vaccines contain formaldehyde, aluminum, mercury, or other toxic chemicals?

Pertussis, inactivated polio vaccines. Both tetanus and diphtheria toxins are inactivated with formaldehyde.

Several vaccines such as diphtheria and tetanus toxoids, and hepatitis B vaccine contain a complex salt of aluminum called alum.

Diphtheria, tetanus, pertussis and hepatitis B vaccines, are made with a mercury-containing preservative called thimerosal.
Wouldn’t you think twice before you vaccinate your own child?
What have I done to convince you?

Freely available medical literature

Skewing of scientific research – cherry picking studies, endorsing bad science that supports antivaccine agenda

1. Outdated observations reported in the medical literature
2. Isolated case reports
3. Findings disproved by larger cohort studies
Improvements in social and economic conditions led to declining death rates for many common diseases. Deaths due to Vaccine preventable diseases (VPD) were declining long before vaccines were introduced. No one denies that proper sanitation, personal hygiene, safe water and alleviation of poverty reduce mortality and morbidity of both communicable and non-communicable diseases. Declining death rates for many common diseases.
Drop in Vaccination in developed countries

Diptheria epidemic in Soviet Russia 1980-1996
Effect of Vaccination on countries with poor sanitation and hygiene

Incidence of Hib meningitis in children under 5 yrs of age, cases per 100000 per year

Invasive *H. influenzae* type b disease in children aged <5 years in Kilifi Epi-DSS

Kenya

![Graph showing the incidence of Hib meningitis in Kenya](image-url)
The decline in diphtheria, whooping cough and typhoid fever began fully fifty years prior to the inception of artificial immunization and followed an almost even grade before and after the adoption of these control measures. In the case of scarlet fever, mumps, measles and smallpox, there has been no specific innovation in control measures and also have followed the same general pattern in incidence decline. Claims about the historical life-saving impact of immunization programs appear assumptive and not factual.


the rate of varicella [chicken pox] occurrence among vaccinees was found to be much higher than rates reported previously by other authors. "Varicella vaccine seems to be effective in modifying symptoms of varicella, but not potent enough in protecting against VZV infection."


Isolated incidences, disproved by large cohort studies

single dose may not be effective,
The 1989 measles outbreak in the province of Quebec has been largely attributed to an incomplete vaccination coverage. In the Quebec City area (pop. 600,000) 1,363 confirmed cases of measles did occur. A case-control study conducted to evaluate risk factors for measles allowed us to estimate vaccination coverage. This population included 8,931 students aged 5 to 19 years old. The vaccination coverage among cases was at least 84.5%. Vaccination coverage for the total population was 99.0%. Incomplete vaccination coverage is not a valid explanation for the Quebec City measles outbreak.


Statistical Hoax...

Total population Vaccinated is 99% of 600,000 That is 594,000. Unvaccinated population is 6000 only. Assuming that there is 5% vaccine failure then there will be 594,000 X 5% that is 29700 children are susceptible though Immunized.

Total number of susceptible people will be 29,700+6000= 35700
Total number of measles cases were 1363. 84.5% vaccinated that is 1151 pts had vaccination out of 29,700 vaccine failures. As a % 3.875%.

Unvaccinated group is 1363-1151= 202 as a %
202/6000x100=3.36%
Common side effects include:

- Pain, tenderness, soreness, erythema, swelling at the injection site, varicella-like rash, upper respiratory infection, irritability, rash and fever.
- Rarely, serious side effects have been reported and include:
  - Thrombocytopenia, pneumonia, pulmonary congestion, encephalitis, anaphylaxis, cerebrovascular accident, convulsions, Guillain-Barré syndrome, transverse myelitis, ataxia, Stevens-Johnson syndrome, erythema multiforme and Henoch-Schönlein purpura.

The vaccine virus may rarely be transmitted to contacts of vaccinees who develop a varicella-like rash.

Which one do you think sounds more serious?
We examined the impact of measles vaccination upon these conditions. Prevalence of Crohn’s disease, ulcerative colitis, coeliac disease, and peptic ulceration were determined in 3545 people who had received live measles vaccine in 1964 as part of a measles vaccine trial. A longitudinal birth cohort of 11,407 subjects was on unvaccinated comparison cohort and 2541 partners of those vaccinated was another. Compared with the birth cohort, the relative risk of developing Crohn’s disease in the vaccinated group was 3.01 (95% CI 1.45-6.23) and of developing ulcerative colitis was 2.53 (1.15-5.58). Increased prevalence of inflammatory bowel disease, but not coeliac disease or peptic ulcerations, was found in the vaccinated cohort compared with their partners.

These findings suggest that measles vaccination may play a part in the development not only of Crohn’s diseases but also of ulcerative colitis.

Polio Vaccine and malignancies

The Leukemia and Lymphoma journal wrote in 2003: 'Millions of people worldwide were inadvertently exposed to live simian virus 40 (SV40) between 1955 and 1963 through immunization with SV40-contaminated polio vaccines. Although the prevalence of SV40 infections in humans is not known, numerous studies suggest that SV40 is a pathogen resident in the human population today. SV40 is a potent DNA tumor virus that is known to induce primary brain cancers, bone cancers, mesotheliomas, and lymphomas.

The most recent evidence does not support the notion that SV40 contributed to the development of human cancers. Polio Vaccine and Human Cancer: A Review of Recent Data. Shah KV. Int J Cancer 2007 Jan 15;120(2):215-23.

Do vaccines contain formaldehyde, aluminum, mercury, or other toxic chemicals?

Pertussis, inactivated polio vaccines, both tetanus and diphtheria toxins are inactivated with formaldehyde.

Several vaccines such as diphtheria and tetanus toxoids, and hepatitis B contain a complex salt of aluminum called alum.

Since 1999, most vaccines removed thimerosal. More recent NIAID-supported studies at the University of Rochester and National Naval Medical Center in Bethesda, MD examined levels of mercury in blood and other samples from infants who had received routine immunizations with thimerosal-containing vaccines. [Pichichero ME, et al. Lancet 360:1737-1741 (2002)]
We examined the impact of measles vaccination upon these conditions. Prevalence of Crohn’s disease, ulcerative colitis, coeliac disease, and peptic ulceration were determined in 3545 people who had received live measles vaccine in 1964 as part of a measles vaccine trial. A longitudinal birth cohort of 11,407 subjects was on unvaccinated comparison cohort and 2541 partners of the vaccinated another. Compared with the birth cohort, the relative risk of developing Crohn’s disease in the vaccinated group was 3.01 (95% CI 1.45-6.23) and of developing ulcerative colitis was 2.53 (1.15-5.58). Increased prevalence of inflammatory bowel disease, but not coeliac disease or peptic ulcerations, was found in the vaccinated cohort compared with their partners. These findings suggest that measles vaccination may play a part in the development not only of Crohn’s diseases but also of ulcerative colitis.

The vaccine-autism connection is "the most damaging medical hoax of the last 100 years"

Science is not just observation.
Their Web based propaganda

Think twice, Global vaccine institute, National Vaccine information center, Australian Vaccine network, Vaccine truth, Vaccine free, Antivaccine body count, Voice for vaccines, Vaccination liberation.
Viewing anti-vaccine material for only **five to ten minutes** increased the perception of risk of vaccination, and decreased the perception of risk of omitting vaccines, compared to viewing neutral websites. It also lowered vaccination intentions.

Vaccine hesitancy refers to delay in acceptance or refusal of vaccines despite availability of vaccine services.

Vaccine hesitancy is complex and context specific, varying across time, place and vaccines.

It is influenced by factors such as complacency, convenience and confidence.
Vaccine Hesitancy Model

*Trust* in vaccines, in delivery system, in the policy-makers who decide which vaccines are needed and when.

**Perceived risks** VPD low; vaccination not deemed a necessary preventive action. Other life/health responsibilities higher priority at time.

**Complacency**

**Confidence**

**Convenience**

Physical access—availability, affordability, willingness to pay; geographical access, ability to understand (language, health literacy) appeal of immunization services.

Dr. H.T. Wickramasinghe
The cowpox. Wonderful effects of the new inoculation
Determinants of vaccine hesitancy

- **Contextual influences**, including socio-cultural and health systems factors

- **Individual and group influences**, including those arising from personal perceptions of a vaccine

- **Vaccine or vaccination-specific issues**, including individual assessments of risks and benefits and the effects of the mode of administration

Parents want to do what is best for their child but face a conundrum: What to believe?
WHO ARE THE FAMILIES THAT DELAY AND REFUSE VACCINATIONS?

PARENTS WHO DELAY AND REFUSE VACCINES vs. PARENTS WHO DON’T DELAY OR REFUSE VACCINES

- Vaccines are necessary to protect the health of children: 70% vs. 96%
- Fear their children could have serious side effects: 63% vs. 31%
- Medical professionals in charge of vaccinations have their children’s best interest at heart: 77% vs. 95%
- Have concerns about autism: 57%
- Believe children get too many shots: 78%

FAMILIES OF UNVACCINATED CHILDREN ARE MORE LIKELY TO BE:
- Wealthier on average, with annual incomes more than four times the poverty level
- Non-Hispanic white
- Married couples in English-speaking households
- Educated, with college degrees
- Covered by private health insurance

SOURCE: Public Health Reports
Parents’ Vaccine Concerns

- Too many in One
- Too many in general
- Cause fever
- Cause Autism
- Ingredients unsafe
- Not tested enough
- Vaccine cause disease
- Low risk of Disease
- Disease not serious

Adapted from D Opel; 2011; Kennedy et al. Health Affairs 2011
Opinion of the health personnel

What reasons are given by families who continue to refuse vaccines or request alternate schedules for vaccines?

- Worried about vaccine complications: 64%
- Fear of connection to autism spectrum disorder: 61%
- Concerns about added ingredients: 54%
- Fear of overwhelming child's immune system: 45%
- Child will get illness from vaccine: 31%
- Pain/distress from multiple injections: 31%
- Prefer naturally acquired immunity: 27%
- Doubt vaccine efficacy: 24%
- Will not accept government mandate: 17%
- Other/don't know: 8%
Influence of Science, Media and internet

Science, Media, and the Internet

• Distortion of scientific process
  • Science: hypothesis → test → accept or reject → refine
  • Media: hypothesis “validated” by repetition

• Differing criteria for causality
  • Medical, legal, public opinion

• Challenge of risk communication
  • Science vs. freelance and feature writers; talk radio

• Access to media, Internet
  • Credibility of source, media concept of balance, utility to media of controversy

Adapted from Kane MA. Vaccine 1998;S73-S78
Anti-vaccinists: 3 prong attack

- Efficacy of vaccination
- Risk of Vaccination
- Alternative vaccines
What is the impact of anti-vaccine lobby?

Figure 2: Incidence of pertussis in countries affected by active anti-vaccine movements
Note that scales vary.
In England and Wales, measles cases increased 36% in 2008.

Measles cases more than doubled from the year before during the first half of 2008 in the U S States. From December 2014 till June 2015 there were 110 cases of measles in California alone, most of them were not vaccinated.
The Recent UNICEF report, which used data provided by the countries themselves, said only 84 per cent of Canadian children had the appropriate number of doses of vaccine for measles, polio and DPT3 for children between the ages of 12 and 23 months.

Canada’s Public Health Agency estimates that only 62% of 2-year-olds are up to date with their vaccines.
Eastern Europe

**Polio Threat**
Some European countries are more at risk of a polio outbreak sparked by an imported case, because of poor surveillance and suboptimal vaccination rates.

- **Risk of outbreak**
  - High
  - Intermediate
  - Low

- Romania
- Ukraine
- Georgia
- Bosnia and Herzegovina
- Syria
- Israel
Australia

Children at risk
Parts of Sydney have dangerously low immunisation rates.

Percentages of children aged 5 years fully immunised, by Medicare Local catchment, 2011–12

Highest group
- 95 to 100%
- 93 up to 95%
- 90 up to 93%
- 85 up to 90%
- 80 up to 85%

Dr. H.T. Wickramasinghe
School Immunizations Exemptions

1999

2009

Washington State School Entry Immunizations Exemptions

- <2.0%
- 2.0-2.9%
- 3.0-3.9%
- 4.0-4.9%
- 5.0-9.9%
- >10.0%
Rate of Nonmedical Vaccine Exemptions By State
Percentage of kindergartners with nonmedical exemptions, 2012-13 school year

Dr. H.T. Wickramasinghe
Why Parents Change Their Minds

% of Parents

- Information or assurances from child's doctor: 37%
- Just thought more about it: 22%
- Info from some other source: 14%
- Doctor refused to treat/daycare wouldn't admit: 10%
- Discussion with spouse/relative: 10%
- Other: 14%
- Don't know: 22%

Adapted from D Opel, 2011; Gust et al, Pediatrics, 2008
Strategies to tackle anti-vaccine parents

- Remain current about all vaccine issues.
- Review anti-vaccine media for information that is being shared with public.
- Proactively discuss the vaccine issues with parents.
- Be sure that parents understand the value of vaccines and convince that there is no link with Autism or neurodevelopmental problems etc.
- Be mindful not to exaggerate but accurately describe personalized experience or case reports.
- State your strong support and consider sharing your own choice of vaccinating your own children.
Countering Anti- vaccine Propaganda

Use the same battlefield - web and their forums, TV and mass media, independent forums and active web sites like womenthinking.org., immunise4life.my.

Make provaccine web sites to appear in antivaccine searches

Vaccine advocacy

Provaccine parent groups, especially parents with Autistic children

Ant-vaccine group surveillance and monitoring system and countering their propaganda

Celebrities to promote vaccines

Role of paediatric societies and professional bodies to pressurize the governments to have policy decision on vaccination with legal enforcement.
Thank you!
Australian Medical association openly attacking antivaccinists

![Warning sign]

**WARNING**

This woman promotes misinformation about vaccination health. Ignore her. Vaccinate your children.

Meryl Dorey
Vaccinate your children or declare why not, parents in Australia told ~ SMH

by Melissa Davey

Sydney Morning Herald

‘Parents will be forced to either vaccinate their children or register for an exemption in order to enroll them in childcare, after changes to the Public Health Act passed through cabinet Monday night.

After the persistent pressure from the Australian Medical Association, cabinet made the decision
hug me
i’m vaccinated