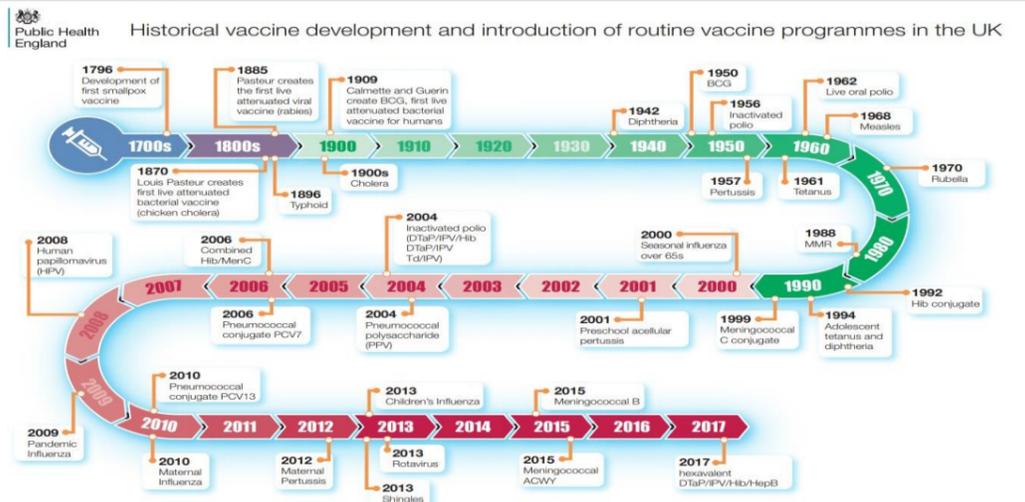


# Vaccinations

By Mahek Kapoor

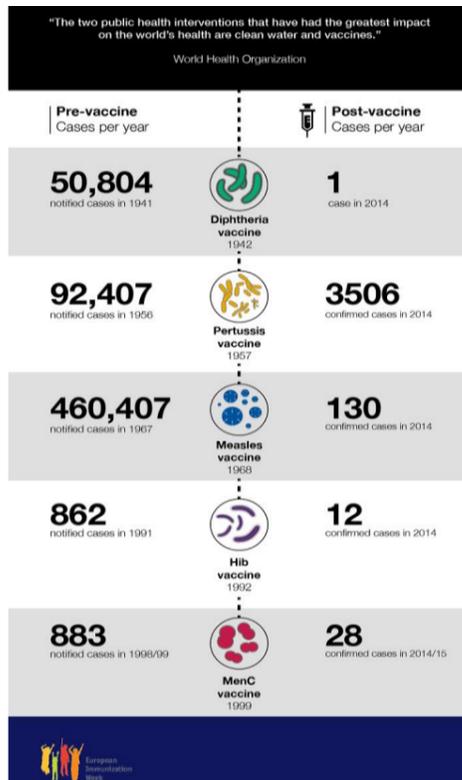


## Background:

Edward Jenner is considered the founder of vaccinology. In 1796 he successfully inoculated a 13 year old boy, James Phipps, with cowpox, which did in fact demonstrate immunity to smallpox. Following this in 1798, the first smallpox vaccine was developed, and in 1980 smallpox was confirmed to be globally eradicated. Despite the evident health benefits there have always been groups of resistance to vaccinations in religious, economical, political, and sanitary factors.

## Benefits:

- Vaccinations **save lives**: Immunisation is considered one of the greatest public health achievement of the 20<sup>th</sup> century, in one year approximately 2-3million deaths are prevented primarily due to vaccines.
- **Herd Immunity**: The vaccinated community helps protect those who are not vaccinated/unable to be vaccinated. E.g. babies that are too young, elderly and pregnant women.
- Vaccines are **cost effective**: It is always cheaper to prevent a disease rather than treat it, the immunisation program in one birth cohort saves \$13.6billion in direct costs.
- The benefits outweigh the risks big time: **choosing not to vaccinate is the riskier choice.**



Disease	Herd Immunity Threshold
Diphtheria	85%
Measles	83-94%
Pertussis	92-94%
Polio	80-86%

### Common Side effects:

- Injection site pain
- High temperature
- Shivering
- Headache
- Fatigue
- Muscle, joint pain

**Rare side effect:** severe allergic reaction, **anaphylactic reaction**, which occurs in **less than 1 in a million** and is completely reversible if treated promptly.

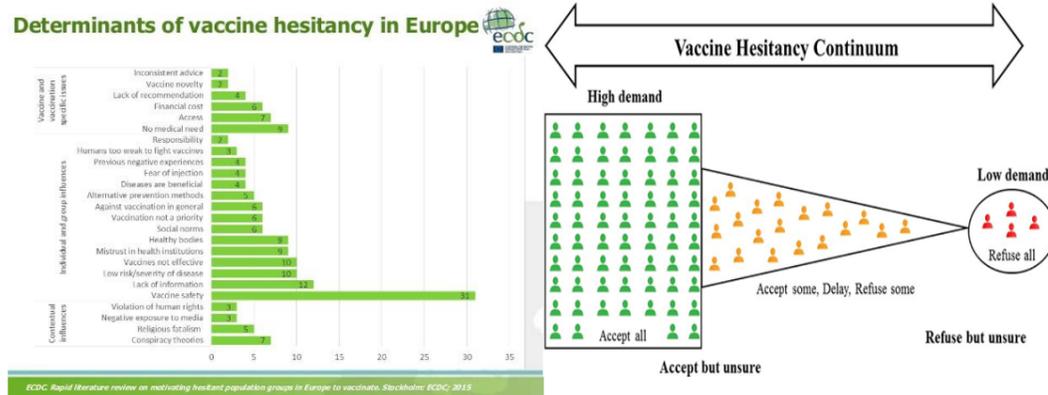


## Rise of the 'Anti Vaxxers' in modern day:

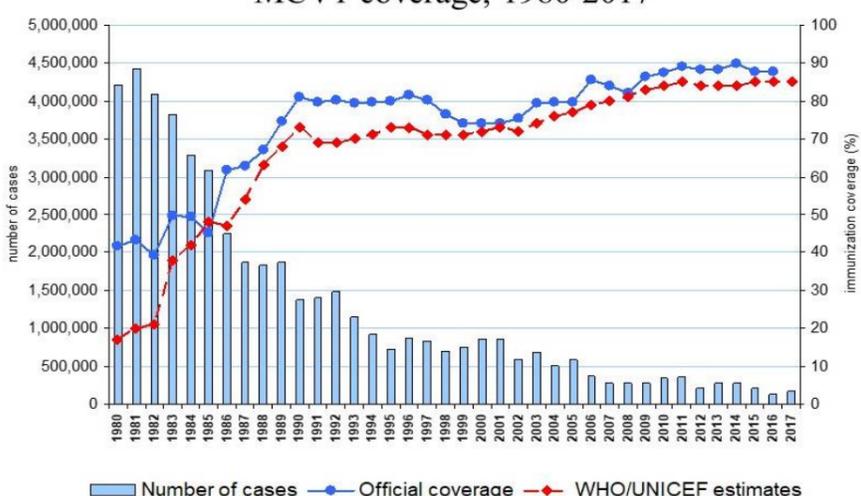
The recent outburst in 'antivaxxers' has stemmed from a discredited article written by British doctor Andrew Wakefield in 1998, spuriously linking the MMR vaccine to autism, he alleged that the vaccine was not properly tested and instantly the media took over the story and fear was instilled in the public over the safety of this vaccine. Wakefield was struck from the medical register after evidence that there is no link between the MMR vaccine and autism but people still hold on to this idea. Moreover, in 2016 his movie 'Vaxxed: From Cover-up to Catastrophe' raked it up again.

## 'Vaccine hesitancy':

Among the top 10 threats to global health outlined by WHO this year is 'vaccine hesitancy', the group that is of the undecided and questioning regarding vaccinations. Just last month, the biggest global study conducted a study into the attitudes about immunisation which identified a crisis of confidence in Europe with the Wellcome Global Monitor survey, in 2018 one in three people in France believed vaccines aren't safe, and in Ukraine half of those surveyed questioned the efficacy.



Measles global annual reported cases and MCV1 coverage, 1980-2017



## Should the MMR vaccine be made compulsory?

As measles cases are on the rise and in Europe have hit their highest level this decade there is a risk of the disease becoming endemic. The latest report on uptake of the MMR vaccine in the UK is [94.9% for the first dose, and 87.4% for the second dose, which does fall short of the 95% needed to produce herd immunity]. In 2017, the global number of measles cases spiked alarmingly due to gaps in vaccinations with over 80000 cases in Europe last year. A new study predicts that current efforts will be [insufficient to keep the disease at bay], and that compulsory vaccination upon entering school would strongly benefit fighting the disease as this strategy would allow reaching stable herd immunity in the next decades.

In a sense they are similar to seat belts, wearing a seat belt is compulsory but in very rare cases the belt can cause injury such as damaging the spine or spleen, however as the benefits greatly outweigh the risks it is enforced. The same goes for vaccines, the benefits greatly outweigh the risks so why is there so much opposition which is not seen for seat belts.