

The imperative of vaccination

Vaccination is one of the most effective public health interventions and it has been instrumental in saving lives and greatly changing the burden of many infectious diseases over the past 100 years. However, the very effectiveness of vaccines has made some diseases rare, and most of us are less likely to witness first hand the devastating consequences of vaccine-preventable diseases. This fact, combined with misinformation, suspicion about vaccines, and mistrust of governments and health authorities, have prompted many parents to override concerns about the diseases themselves and oppose the vaccination of their children.

Although vaccination is usually recommended by local health authorities, in many countries immunisation rates for diseases such as measles have dropped well below the 95% threshold set by WHO. This threshold is deemed necessary to maintain the herd immunity that guarantees protection for babies too young to be vaccinated, elderly people, immunosuppressed individuals, and those who cannot be vaccinated for other medical reasons. In the past year, low immunisation rates have caused a surge in the number of cases of measles and related deaths in several countries, such as Romania, Italy, and France. Similarly, the drop in vaccination is the cause of two cases of tetanus reported in Italy in recent months, after the disease had not been seen in the country for more than 30 years. The rise in cases of vaccine-preventable diseases secondary to lower immunisation rates is becoming a serious public health problem and as François Chast, head of pharmacology at Paris hospitals (Paris, France), said, "It is urgent to fight the speeches of anti-science and anti-vaccination lobbies that play on fear, they show nothing and rely on a few, very rare side effects to discredit vaccines that save millions of lives."

To tackle this worrying and unjustified drop in vaccination rates, some countries are considering, or have already implemented, the introduction of mandatory vaccination for children. Following the example of the state of California, USA, and Australia, the Italian Government passed in June, without prior public consultation, a law that made vaccination for ten diseases (polio, diphtheria, tetanus, hepatitis B, pertussis, *Haemophilus influenzae* type B, measles, varicella, mumps, and rubella) mandatory for children

aged between 1 and 16 years. In 2020, after collection of new data on vaccination rates, the government will re-evaluate whether or not vaccination for measles, rubella, varicella, and mumps should still be mandatory. Unvaccinated children are not allowed to attend kindergartens and must be vaccinated before starting primary school, or their parents will incur heavy financial penalties. France will adopt a similar policy by making vaccination mandatory for 11 diseases (including also meningitis C) from 2018 onwards. Australia has gone even further with its so-called no jab-no play (banning the enrolment of unvaccinated children in preschool and childcare centres) and so-called no jab-no pay (under which parents of unvaccinated children lose government benefits and welfare rebates) policies.

The introduction of mandatory vaccination has sparked controversy among parents who feel deprived of their freedom to make decisions about the health of their children. A concern raised by such vaccine-hesitant parents is the chance of adverse events, such as neurodevelopmental problems, potentially linked to vaccination. In reality, although vaccines, like any medical intervention, can have adverse events, these outcomes are so rare that they are, by far, outweighed by the benefits of vaccination. As Michael Gannon, the president of the Australian Medical Association (Barton, Australia), said, "You are 10 000 times more likely to be brain damaged by measles than you are by its vaccination." Unfortunately, the anti-vaccine movement seems to prefer to ignore the bulk of scientific evidence in support of the safety of vaccines.

Public health problems such as the surge in cases of vaccine-preventable diseases need to be addressed with strong interventions that maximise societal benefits; making vaccination mandatory, albeit temporarily, should not be seen as an infringement of personal rights. Nobody would rationally advocate for vaccination if there were alternatives or if scientific evidence showed that the risk of adverse events outweighed the protection against infectious diseases. But the reality is that vaccines are still one of the safest options to prevent infectious diseases and judgement should be based on facts, not unfounded fears.

■ *The Lancet Infectious Diseases*



For more on **Mandatory vaccination in Australia** see [Newsdesk Lancet Infect Dis](https://www.efvv.eu/italy/) 2017; 17: 903

For more on **Mandatory vaccination in Italy** see <https://www.efvv.eu/italy/>

For more on **Mandatory vaccination in France** see <https://www.thelocal.fr/20170705/these-are-the-eleven-vaccines-that-will-be-compulsory-in-france-from-2018>

For more on **Dangers of vaccine refusal near herd immunity threshold** see [Articles Lancet Infect Dis](https://www.thelocal.fr/20170705/these-are-the-eleven-vaccines-that-will-be-compulsory-in-france-from-2018) 2015; 15: 922–926

For more on **Heterogeneity in vaccine uptake and outbreaks of measles** see [Articles Lancet Infect Dis](https://www.thelocal.fr/20170705/these-are-the-eleven-vaccines-that-will-be-compulsory-in-france-from-2018) 2016; 16: 599–605