

Mandating covid19 vaccines? Nonsense proposals

Juan Gérvas, MD, PhD, retired rural general practitioner. Equipo CESCA, Madrid, Spain

jjgervas@gmail.com

[@JuanGrvas](https://twitter.com/JuanGrvas)

www.equipocesca.org

20th January 2021

Introduction

Mandatory vaccination against covid19 of health care workers is proposed because there are vaccines that might reduce the transmission of the virus, SARS-CoV-2, and might protect both the health workforce and patients

<https://www.cmaj.ca/content/early/2021/01/19/cmaj.202755>

<https://jamanetwork.com/journals/jama/fullarticle/2774712>

The question that arises is scientific and ethical because the fact that we do not yet know whether the vaccine will prevent transmission (and thus produce herd immunity).

Will the vaccine protect only those who get vaccinated?

We don't yet know if the covid19 vaccines protect against infection, or only against illness

There are still no data to know whether covid19 vaccines reduce virus transmission and thus whether they can produce herd immunity. That is, we do not know whether they only prevent the disease or whether they also prevent infection and transmission to others.

To prevent disease, covid19 vaccines must produce systemic immunity in those vaccinated, and to prevent infection and contagion they should also produce immunity in the respiratory mucosa, so the new coronavirus (SARS-CoV-2) can neither being hosted nor reproduce in the mucous membranes.

“We don't yet know if the covid19 vaccines protect against infection, or only against illness. The measles vaccine prevents viruses from causing infection, so vaccinated people don't spread the infection or develop symptoms. But most vaccines, including flu shots, prevent people from becoming sick but not from becoming infected or passing the virus to others”

<https://www.gavi.org/vaccineswork/5-reasons-wear-mask-even-after-youre-vaccinated>

In short:

"The unknowns of how the vaccine covid19 affects transmission makes the possibility of achieving herd immunity through vaccination uncertain"

[https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247\(20\)30226-3/fulltext](https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(20)30226-3/fulltext)

Get vaccinated and maintain hygiene measures

Therefore, the advice is to get vaccinated and maintain hygiene measures as if you had not been vaccinated (hand washing, physical distance, avoid overcrowding and poorly ventilated places and use of a mask in such situations, etc.).

As the World Health Organization advises:

“We do not know whether the vaccine will prevent infection and protect against onward transmission. Immunity persists for several months, but the full duration is not yet known. These important questions are being studied. In the meantime, we must maintain public health measures that work: masking, physical distancing, handwashing, respiratory and cough hygiene, avoiding crowds, and ensuring good ventilation”.

<https://www.who.int/news-room/feature-stories/detail/the-moderna-covid-19-mrna-1273-vaccine-what-you-need-to-know>

It protects you and protect others? Getting vaccinated yourself may also protect people around you?

The vaccine covid19 is often presented as a public good, as a moral obligation because "It protects you, and you protect others" and because “Getting vaccinated yourself may also protect people around you”. This well-intentioned suggestion is untrue, unethical and forces decisions

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/vaccine-benefits.html>

<https://www.actasanitaria.com/vacunas-covid19-es-fantasia-el-me-protejo-te-protejo/>

For example, young people are asked to accept the risks of vaccination and its limited benefits at their ages in order to protect the elderly.

“Telling young people to take covid vaccines **so that they don't infect old people**, then claiming that those vaccines don't prevent transmission, is one of the stupidest public health strategies ever”.

The advice is stupid when we do not know if the vaccine interrupts the transmission of the virus (SARS-CoV-2) and for this reason at the same time we recommend maintaining hygienic measures as if they had not been vaccinated.

<https://twitter.com/TheEliKlein/status/1351378093437579265>

Telling health professionals to take covid vaccines **so that they don't infect patients**, then claiming that those vaccines don't prevent transmission is one of the stupidest public health strategies ever.

There's good reason not to say the covid vaccine will prevent transmission until we actually have data to say so

As the science/health journalist Tara Haelle writes:

“There's good reason not to say the covid vaccine will prevent transmission until we actually have data to say so.

The worst thing we can do is suggest it does, find out it doesn't, and lose public trust.

We learned through mistakes of the past and a wealth of research into vaccine hesitancy that an essential element of communication about vaccines is being fully honest about benefits, risks and limitation, precisely because the public can handle the truth about a vaccine”

<https://threadreaderapp.com/thread/1351305446552965125.html>

Vaccines that do not reduce the transmission of infectious pathogens

Vaccines are drugs that protect against infectious diseases. As a rule, they protect those who get vaccinated by producing personal systemic immunity.

Some vaccines protect the community, producing herd (population) immunity.

There are vaccines that do not produce herd immunity. Vaccines against tetanus, diphtheria, rabies, flu/influenza, meningitis, pertussis, pneumonia, polio (Salk, injectable IPV), rotavirus, tuberculosis (BCG), shingles/herpes zoster and others only produce personal systemic immunity and therefore only benefit those who are vaccinated. These are vaccines that do not reduce the transmission of infectious pathogens.

Pertussis vaccines

About pertussis vaccines (whole-cell and acellular):

“An increased understanding of the mechanisms of immunity, especially the role of respiratory tissue-resident memory cells, will facilitate the development of next generation pertussis vaccines that not only protect against pertussis disease, but prevent nasal colonization and transmission of *B. Pertussis*”.

If mucosal immunity is achieved, *B. pertussis* will be prevented from living in the nasal cavity of vaccinated persons, thus preventing them from transmitting the disease (to non-vaccinated persons, and to vaccinated persons whose vaccinal immunity has been weakened). Humans are the only known reservoir for *B. Pertussis*.

In addition, we know that *B. pertussis* is adapting under acellular vaccine mediated immune selection pressure, towards vaccine escape. A resurgence of pertussis cases has been reported, particularly in countries using acellular vaccines with waning immunity and pathogen adaptation thought to be responsible.

<https://www.mdpi.com/2076-393X/8/4/621>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4626590/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7481377/>

<https://www.frontiersin.org/articles/10.3389/fimmu.2019.01344/full>

<https://www.frontiersin.org/articles/10.3389/fmicb.2020.02108/full>

Polio vaccines

In the case of the Salk vaccine, for example, people vaccinated with the injectable vaccine against polio could transmit polio viruses and might have them in their digestive tract. Because this, the injectable vaccine (inactivated poliomyelitis vaccine, IPV, Salk) for polio protects the individual who is vaccinated, but does not protect others.

Both IPV and live attenuated oral polio vaccine (OPV, Sabin) provide excellent systemic individual immunity.

Oral, OPV, produces herd immunity promoting antibody formation in the gut (mucosal immunity), providing local resistance to subsequent infection with wild poliomyelitis virus. This reduces the frequency of symptomless excretion of wild viruses.

It is worth remembering vaccine-derived poliovirus (VDPV). It is a strain of the weakened poliovirus that was initially included in oral polio vaccine (OPV) and that has changed over time and behaves more like the wild or naturally occurring virus. This means it can be spread more easily to people who are unvaccinated against polio and who come in contact with the stool or respiratory secretions, such as from a sneeze, of an infected person. These viruses may cause illness, including paralysis.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/148141/Green-Book-Chapter-26-Polio-updated-18-January-2013.pdf

<https://www.who.int/news-room/q-a-detail/poliomyelitis-vaccine-derived-polio>

Flu vaccines

About flu vaccine, we know that:

1/ there is no herd effect from influenza vaccination in non-healthcare settings,

<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2016.21.42.30378>

2/ that influenza vaccination for healthcare workers (HCWs) who care for people aged 60 or older living in long-term care institutions has no impact on elderlies's health, and

https://www.cochrane.org/CD005187/ARI_influenza-vaccination-healthcare-workers-who-care-people-aged-60-or-older-living-long-term-care

3/ that current scientific data are inadequate to support the ethical implementation of enforced

health care workers influenza vaccination (“The impression that unvaccinated HCWs place their patients at great influenza peril is exaggerated. Instead, the HCW-attributable risk and vaccine-preventable fraction both remain unknown.”)

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0163586>

<https://theconversation.com/should-flu-shots-be-mandatory-for-health-care-workers-14039>

In the case of influenza, vaccinated people with the disease shed almost seven times more virus when they cough or sneeze than unvaccinated people (“We observed 6.3 times more aerosol shedding among cases with vaccination in the current and previous season compared with having no vaccination in those two seasons”)

<https://www.pnas.org/content/pnas/early/2018/01/17/1716561115.full.pdf>

Measles vaccine

Measles is spread by airborne or droplet transmission. It is one of the most highly communicable infectious diseases.

The measles vaccine is an example of a vaccine that produces herd immunity. It requires about 95% uptake, however, for there to be herd immunity. This vaccine benefits those who are vaccinated, since it produces personal immunity against a very infectious agent, but it also benefits those who cannot be vaccinated, such as immunocompromised patients. This benefit, herd immunity, is achieved by interrupting the transmission of the measles virus.

Protection of healthcare workers is especially important in the context of their ability to transmit measles or rubella infections to vulnerable groups. While they may need MMR (measles, mumps and rubella) vaccination for their own benefit (including protection against mumps), they should also be immune to measles and rubella for the protection of their patients.

<https://www.gov.uk/government/publications/measles-the-green-book-chapter-21>

Covid vaccines, individual adverse effects

As any medication, vaccines might have individual and social adverse effects.

Individual adverse effects can be short-term and long-term.

Regarding covid19 vaccines, we do not yet know the long-term adverse effects.

In the short term they can be intense but not serious, except in the elderly and frail patients, in which they can be associated with death:

“There is a possibility that these common adverse reactions, that are not dangerous in fitter, younger patients and are not unusual with vaccines, may aggravate underlying disease in the elderly”

<https://www.bmj.com/content/372/bmj.n149>

In fact, the World Health Organization advises:

“While vaccination is recommended for older persons due to the high risk of severe covid19 and death, very frail older persons with an anticipated life expectancy of less than 3 months should be individually assessed”

<https://www.who.int/news-room/feature-stories/detail/the-moderna-covid-19-mrna-1273-vaccine-what-you-need-to-know>

Covid19 vaccines, social adverse effects

In the social sense, covid19 vaccines can force the evolution of the virus and lead to the development of more contagious and/or virulent strains. Although less common than the evolution of antimicrobial drug resistance, vaccine resistance can and has evolved and the number and positioning of SARS-CoV-2 mutations raises concerns among vaccine researchers

<https://www.quantamagazine.org/how-vaccines-can-drive-pathogens-to-evolve-20180510/>

<https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3001000>

<https://www.medrxiv.org/content/10.1101/2020.12.01.20241836v1>

<https://jamanetwork.com/journals/jama/fullarticle/2776039>

<https://www.nature.com/articles/d41586-021-00241-6>

Of course drug makers could update their vaccines and offer new shots, similar to the influenza vaccine, requiring us to update our vaccines and vaccinated everyone again. It's the nightmare scenario of a never-ending pandemic/endemic.

We have to remember that there are more vaccines in development, such as Vaxart that also produce mucosal immunity and thus also prevent transmission (and could create herd immunity)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7544966/>

<https://theprint.in/opinion/why-a-mucosal-covid-vaccine-has-a-better-shot-at-ending-the-pandemic/589821/>

Covid vaccines, the precautionary principle

The covid19 vaccine is against a respiratory virus and could have the drawbacks of the influenza vaccine (without effect on transmission or herd immunity and causing greater shedding of the virus).

We could apply the precautionary principle if we accept that the uncertainty will take time to resolve and that it would be prudent to vaccinate now in the hope that the vaccine will decrease transmission in the future. In this sense, the precautionary principle justifies the strategy of vaccinating the population and health care workers. But it does not justify mandatory vaccination.

We cannot apply the precautionary principle to justify compulsory vaccination of either the

population or health workers because the risk of spread could increase if, after vaccination, people mistakenly act as if they are no longer capable of harboring contagion. In the case of healthcare workers this could be serious as it would mean that they would become "contagious agents" (in a sense transforming covid19 into a nosocomial infectious disease).

<https://www.newyorker.com/science/medical-dispatch/how-getting-vaccinated-will-and-wont-change-my-behavior>

In general, according to the Council of Europe:

“Ensure that citizens are informed that the vaccination is NOT mandatory and that no one is politically, socially, or otherwise pressured to get themselves vaccinated, if they do not wish to do so themselves. Ensure that no one is discriminated against for not having been vaccinated, due to possible health risks or not wanting to be vaccinated” [capital word in the original]

<https://pace.coe.int/en/files/29004/html>

In Spain, vaccination is voluntary, but refusal of vaccination is recorded in the patient's medical record, with the reasons given for the refusal. In the case of health professionals they are also required to sign a document to justify their refusal. The Ministry of Health has promoted the creation of a register of all refusals

https://www.mscbs.gob.es/profesionales/saludPublica/prevPromocion/vacunaciones/covid19/docs/COVID-19_Actualizacion1_EstrategiaVacunacion.pdf

https://www.sspa.juntadeandalucia.es/servicioandaluzdesalud/sites/default/files/sincfiles/wsas-media-sas_normativa_mediafile/2021/instruccion_vacunacion_covid_andalucia_v2-210111_1.pdf

Conclusion

It lacks logic, scientific and ethical foundation to demand compulsory covid19 vaccination in general and in specific cases as health care workers in health centers/hospitals, nursing homes and other health/social care centers. The proposals for mandating covid19 vaccines are unethical.