

Non-Maleficence, Social Benefit and the Vaccination of Children

STEPHEN JOHN, PhD

ABSTRACT

Public health policy often involves a trade-off between promoting population health and protecting the interests of identifiable individuals. This paper analyses this trade-off as it arises in the context of decisions about the vaccination of children against Covid-19, where vaccination may be in the interests of society as a whole, as a means to stopping transmission, but not in the interests of individual children. The paper argues that the UK's Joint Committee on Vaccination and Immunisation resolved this tension by appeal to a version of a non-maleficence principle. It argues that, while this principle can be a useful guide to some public health policy decision-making, it is inappropriate in the case of vaccination.

KEYWORDS: public health ethics, vaccination ethics, Covid-19, public health policy

INTRODUCTION

The core aim of public health policy is to improve population health. However, we are sometimes faced with trade-offs, where we know that policies which will (almost certainly) improve population health will also (almost certainly) harm some people. Unfortunately, it may be impossible in advance to know who these people will be.¹ For example, we might know that a breast cancer screening programme will, overall, have a positive impact on population health, but, *via* overtreatment or overdiagnosis, will also have negative side effects for a very small, unidentifiable, number of people.² One key question in public health ethics concerns how to balance these trade-offs between harm to individuals and benefit to populations.³

In this paper, I explore the relationship between this challenge and a very general question: whether it is morally problematic to vaccinate children against Covid-19, even when this might not be in their own medical interests, as a way of preventing the transmission of disease. Some bioethicists have argued for such policies, on the grounds that stopping the spread of disease is of high importance.⁴ Others, however, have argued that these policies risk treating children as “means to an end”.⁵

For the sake of exposition, I focus on one high-profile

example of this general problem, the United Kingdom's Joint Committee on Vaccination and Immunisation (JCVI) recommendation against Covid-19 vaccination of 12–15 year-olds. It is worth noting that this issue has now been resolved in the U.K. Ultimately, the U.K. decided to offer vaccinations to this age group on the basis of advice from the Chief Medical Officers. Moreover, at the time of writing, the Centers for Disease Control and Prevention in the U.S. recommends everyone ages 5 years and older to receive a Covid-19 vaccine. However, the JCVI example is still telling for two reasons. First, it is related to understanding ongoing debates about vaccinating even younger children, as exemplified in recent debates in the U.S. over whether to authorize Covid-19 vaccinations for children younger than 5. Second, as I explore, the JCVI's decisions can help us understand how ethical principles which might be proper in some contexts, such as cancer screening programmes, can be problematic in other contexts, such as pandemic control. By exploring the now-settled debate of whether to vaccinate adolescents against Covid-19, we can gain a broader understanding of the general question of when and why it might be permissible to burden some for the sake of population health.

Section 1 of this paper sets out the ethical problems around vaccinating teenagers as resolved by the JCVI. Section 2 argues that the JCVI's response was guided by a “non-maleficence” (or “first, do no harm”) principle. Section 3 argues that this principle is inappropriate in the vaccination context.

1. THE JCVI CASE STUDY

From January 2021, in response to the global pandemic, the U.K. government adopted a plan to vaccinate the adult population against Covid-19.⁶ Key decisions about this policy were guided by the JCVI, an arms-length expert body, whose recommendations on vaccination safety and schedules the U.K. Secretary of State of Health is statutorily obliged to consider.⁷ In August 2021, the JCVI was asked for its opinion on proposals to extend the existing vaccination programme to offer vaccines to 12–15 year-olds, publishing a response in September 2021.⁸ It is worth noting that, by this point, the U.S. Food and Drug Administration had already approved vaccination in this age-group, and soon after extended emergency use authorisation to everyone ages 5 years and older.

Despite this precedent, however, the JCVI seemed to adopt a more cautious approach.

To understand this approach, it is important to remember three key facts: first, that there are worries about the side effects of Covid-19 vaccination, and concerns that the chance of side effects is greater in younger age groups;⁹ second, that the epidemiology of Covid-19 is such that the risk of severe illness sharply increases with age;¹⁰ third, that, even if they are asymptomatic, children can transmit the virus to other, more vulnerable members of society.¹¹

The JCVI's September 2021 response was slightly equivocal, but, nonetheless, against the policy:

The health benefits from vaccination are marginally greater than the potential known harms. However, the margin of benefit is considered too small to support universal vaccination of healthy 12 to 15 year-olds at this time....Given the very low risk of serious COVID-19 disease in otherwise healthy 12 to 15 year-olds, considerations on the potential harms and benefits of vaccination are very finely balanced and a precautionary approach was agreed.¹²

Although the phrasing is complicated, we can understand the JCVI as making two claims. First, a claim about the balance-of-consequences: that, given the evidence, we have good (“precautionary”) reasons to assume that the benefits to 12–15 year-olds of getting vaccinated – i.e., reduction in the rate of severe or symptomatic disease – will be lower than the costs – i.e., in terms of side effects of vaccination. Second, a normative claim: that we should not vaccinate members of some group unless the (expected) benefits to members of that group outweigh the costs.

The next section gives a fuller account of the JCVI's reasoning. Before doing so, we can distinguish grounds for objecting to the JCVI's recommendation. First, we might reply that the benefits of vaccination for this age group *does* outweigh the costs, either because the JCVI has mis-estimated the epidemiological facts, or because vaccination reduces the risks of other, non-medical harms – for example, missing education through self-isolation.¹³ Such responses dispute the balance-of-consequences claim but are consistent with the normative claim. Second, alongside prominent scientists such as Neil Ferguson, a key figure in building the epidemiological models which drove the U.K.'s pandemic response, we might respond that the JCVI erred by not considering the broader “social” benefits of vaccination, namely, reducing the likely transmission of Covid-19.¹⁴ This response concedes the balance-of-consequences claim but disputes the normative claim. The second response was, apparently, what drove government policy, shifting U.K. vaccination policy away from a “high-risk” to a “transmission-reduction” strategy.

2. DO NO HARM AND VACCINATION PROGRAMMES

Precisely because the JCVI's conclusion was so equivocal, a decision was ultimately made in the U.K. to extend Covid-19 vaccination to the 12–15 age group. This decision was based on an assessment that, overall, the balance-of-consequences claim was false, i.e. that, overall, children are better served by receiving the vaccine than not. Still, this does not mean that the underlying normative issue is resolved. Particularly when we consider vaccination of younger and younger age groups – as in recent U.S. debates over vaccinating children under 5 – it becomes more and more plausible that the balance-of-consequences *for those cohorts* will be net negative. Nonetheless, we might still think that vaccinating these age groups would be an important tool for stopping Covid-19 community transmission. To understand these debates, then, we need to ask whether the normative claim noted above is justifiable. In this section, I argue that we can interpret that principle as reflecting a traditional, core concern of medical ethics: the principle of “non-maleficence”.

Prima facie, even if we grant the “net negative” balance-of-consequences claim for the sake of argument, it might seem that the JCVI's response was misguided. It might seem that the JCVI was adopting a broadly “consequentialist” approach, arguing that we should adopt public health policies only when their expected net consequences are positive, and denying that the net consequences of vaccinating 12–15 year-olds are positive. Clearly, however, it is possible that the net consequences of some policy for a sub-population are negative, but the overall consequences for the entire population are positive. So, if we interpret the JCVI's opposition to vaccinating adolescents as based entirely on concerns about population health outcomes, they seem to have made a mistake in failing to consider broader effects of reducing transmission.

However, there is an alternative way of understanding the JCVI's decision. A core concern in traditional medical ethics is that physicians should be governed by a “non-maleficence” principle: “first, do no harm”.¹⁵ In the clinical context, we can interpret this principle as requiring that physicians do not harm some patients, even if the net consequences of their actions for other patients would be positive. For example, a physician should not deliberately harm her own patient, even if this would be an effective way of helping other patients.¹⁶

Despite the appeal of the non-maleficence principle, its status is disputed. First, it is not clear how we should use the principle in cases involving *risks* as opposed to *certainties* of harm: clearly, if “Do No Harm” (DNH) ruled out every intervention which ever posed even the slightest risk of harm, nearly every medical intervention would be ethically dubious. Second, and pertinent to this discussion, the principle seems inappropriate at the population health level, given that pretty much *any* public health intervention will have

“losers” as well as “winners”. In the case of vaccination, for example, DNH seems to threaten to rule out any vaccination programme which leads to side effects, regardless of the size of potential benefit.

In recent work, however, John and Wu have argued for a revised “non-maleficence” principle which takes account of risk and can play a useful role in public health policy.¹⁷ Their key move is to reformulate DNH in terms of individuals’ *prospects*, i.e., individuals’ *chances* of harming and benefitting, rather than in terms of a focus on *outcomes*. This concept can most easily be illustrated by means of two examples. First, consider an operation for a significant ailment which is successful 99.9% of the time, but leads to a very severe side effect 0.1% of the time. Plausibly, having this operation improves a patient’s *prospects* – i.e., it increases her expected future well-being. Second, consider an operation for a significant ailment which leads to very severe side effects 99.9% of the time, but cures the ailment 0.1% of the time. Plausibly, having this operation worsens that patient’s *prospects*. John and Wu interpret DNH as ruling out the second kind of operation, but allowing the first. A surgeon performing the first operation has not violated DNH, even if the patient *actually* suffers harm from the very rare side effect. By contrast, a surgeon performing the second operation has violated DNH even if, through some odd fluke, the patient recovers.

In formal terminology, the DNH principle reformulated in terms of prospects is termed the “*ex-ante* DNH” principle. John and Wu suggest that interpreting non-maleficence in terms of prospects can help us understand some puzzles in public health policy: for example, how we might justify instituting breast cancer screening programmes even when we know that some women will be harmed as a result of screening *via* overdiagnosis and overtreatment. On their analysis, such subsequent harm is permissible, as long as screening improves the *prospects* of each individual woman offered screening.¹⁷ That some *actual* harm occurs does not show that non-maleficence is violated as long as each woman was expected to benefit more than she lost.

In many cases, whether or not some proposed public health policy violates *ex-ante* DNH can be assessed by looking at the overall expected balance of benefits and costs, as when health economists assess interventions in terms of whether they lead to a net gain in Quality-Adjusted-Life-Years (QALYs).¹⁸ As long as the expected total benefits outweigh the total expected costs, then the intervention improves the *prospects* of the *average* person, and, as such, respects *ex-ante* DNH. That is, the two approaches coincide when we can assume that the *prospects* for the average person are a good guide to the *prospects* of each actual person.

With this background, we can better understand the JCVI’s reticence toward vaccinating 12–15 year-olds in the U.K. When we focus solely on the costs and benefits of vaccination to members of the 12–15 year-olds population, it seems

that vaccination has a net “cost”. As such, getting vaccinated does *not* improve the *prospects* of the average 12–15 year-old and authorizing such a vaccination programme violates a plausible interpretation of non-maleficence, *ex-ante* DNH. Viewed in this light, the *ex-ante* DNH principle explains how the JCVI could rule against vaccination for the 12–15 years-old group, while favouring vaccination for adults. In both cases, vaccination will sometimes have harmful side effects, such as myocarditis. Therefore, if we thought that DNH was all about *outcomes*, all Covid-19 vaccination programmes would be impermissible because they impose harm on some individuals as a means to help others. However, this *outcomes-focused* interpretation of nonmaleficence would be implausible. By contrast, if we hold *ex-ante* DNH and focus on individual *prospects*, we can say that vaccinating adults would be permissible even if doing so will lead to harm, because getting vaccinated improves each affected individual’s *prospects* by reducing the larger risk of severe Covid-19 illness. In the case of JCVI’s reticence toward vaccinating children 12–15 years-old, non-maleficence rules actions as impermissible *even when they will benefit others*. As such, the fact that vaccinating children might well help adults, and boost overall population health was ethically irrelevant.

3. ASSESSING THE JCVI ARGUMENT

Should we follow the JCVI? If so, as noted above, this might have important implications not only for vaccinating 12–15 year-olds against Covid-19, but for vaccinating younger age cohorts. Even if the JCVI’s calculations about the costs and benefits of Covid-19 vaccination are incorrect, the general principle has implications for other vaccination programmes; for example, consider debates over the policy of not vaccinating the young against chickenpox as a way of reducing the incidence of shingles in older populations.¹⁹

There are two routes to responding to the *ex-ante* DNH justification for the JCVI’s proposals. One is to deny that non-maleficence concerns have any place in public health contexts; the second is to deny that they are relevant to the vaccination context specifically. The first option is a dead end. If considerations about “non-maleficence” have no role to play in public health, then, there would, in principle, be no problem with imposing massive costs on some for improving net population health.

Therefore, we should instead recognise that the vaccination context is importantly different from contexts such as screening. When someone goes to a screening test, they do something good *for them*; when they don’t go, they do something bad *for them*. No one else is directly affected by their decisions. By contrast, when someone is vaccinated or not, this is not only good (or bad) *for them*, but has (direct) consequences *for others*. We have *ethical reasons* to get vaccinated. One way of understanding these ethical reasons is as grounded in a version of a “Do No Harm” principle:

in choosing not to get vaccinated, we are imposing risks of harm on non-consenting third parties.²⁰

We pursue both screening and vaccination because we think such programmes will improve population health. However, in vaccination programmes, we are not merely trying to help people do something good *for them*, but we are also helping them fulfill their ethical obligations. We can have ethical obligations to perform actions even when those actions do not improve our prospects; for example, we have an obligation not to harm others, even if harming others would improve our chance of winning some money. Therefore, the normal injunction on the medical professional to “do no harm”, which applies in the case of screening, is inapplicable in the case of vaccination.

CONCLUSION

This paper has interpreted the JCVI's decision in terms of *ex-ante* Do No Harm, and argued that their application of that principle is inappropriate here. This has important implications for thinking about the ethics of vaccination, as it implies that programmes of vaccinating younger children might be permissible. However, it has also argued that *ex-ante* DNH may still be an important consideration in other contexts, where we do not have similar ethical concerns, such as screening. These are steps towards one of the biggest problems in Public Health Ethics: what can we do to the individual for the sake of the community?

References

- Cohen I, Daniels N, Eyal N (editors). *Identified versus statistical lives: An interdisciplinary perspective*. Oxford University Press, USA; 2015.
- Plutynski A. Ethical issues in cancer screening and prevention. *J Med Philos*. 2012;37(3):310-23.
- John SD. Risk, Contractualism, and Rose's "Prevention Paradox". *Soc Theory and Pract*. 2014;1:28-50.
- Brusa M, Barilan YM. Voluntary COVID-19 vaccination of children: a social responsibility *Journal of Medical Ethics* 2021;47:543-546.
- Giubilini A, Gupta S, Heneghan C. "A focused protection vaccination strategy: why we should not target children with COVID-19 vaccination policies" *J Med Ethics*. 2021;47:565-566.
- Her Majesty's Stationery Office. *Greenbook: Chapter 14a* London, UK 2022. Online at: COVID-19 greenbook chapter 14a (publishing.service.gov.uk)
- Joint Committee on Vaccination and Immunisation. Online at: Joint Committee on Vaccination and Immunisation – GOV.UK (www.gov.uk)
- Public Health England. JCVI issues updated advice on COVID-19 vaccination of children aged 12 to 15. Sep 5th 2021. Online at: JCVI issues updated advice on COVID-19 vaccination of children aged 12 to 15 – GOV.UK (www.gov.uk)
- Flynn H. Covid-19 vaccines for children: what are the side effects. *Medical News Today*, Nov.11th, 2021. Online at: COVID-19 vaccines for children: Are they safe? (medicalnewstoday.com)
- Pijls B, Jolani S, Atherley A, Derckx R, Dijkstra J, Franssen G, Hendriks S, Richters A, Venemans-Jellema A, Zalpuri S, Zeegers M. Demographic risk factors for COVID-19 infection, severity, ICU admission and death: a meta-analysis of 59 studies. *BMJ*. 2021;11(1):e044640.
- Coffin S, Rubin D. Yes, children can transmit COVID, but we need not fear. *JAMA Pediatr*. 2021;175(1):1110-1112.
- Public Health England. JCVI issues updated advice on COVID-19 vaccination of children aged 12 to 15. Sep 5th 2021. Online at: JCVI issues updated advice on COVID-19 vaccination of children aged 12 to 15 - GOV.UK (www.gov.uk)
- Brusa M, Barilan Y. Voluntary COVID-19 vaccination of children: a social responsibility. *J Med Ethics*. 2021;47:543-546.
- Davis, N. UK vaccine advisers 'acted like medical regulators' over Covid jabs for children. *The Guardian* 5th Sep, 2021. Online at: UK vaccine advisers 'acted like medical regulators' over Covid jabs for children | Coronavirus | The Guardian
- Beauchamp T, Childress J. *Principles of biomedical ethics*. Oxford University Press, USA; 2001.
- Andrade G. Medical ethics and the trolley problem. *J Med Ethics Hist*. 2019;12:3
- John SD, Wu JH. "First, Do No Harm"? Non-Maleficence, Population health and the Ethics of Risk. *Soc Theory and Pract*. Published online Feb 23, 2022. Available at: https://www.pdnet.org/soctheorpract/content/soctheorpract_2022_0999_2_18_152.
- Bognar G, Hirose I. *The ethics of health care rationing: an introduction*. Routledge, London; 2014.
- Malm H, Navin MC. (2020). Pox Parties for Grannies? Chickenpox, Exogenous Boosting, and Harmful Injustices. *Am J Bioeth*. 2020;20(9): 45-57.
- Flanigan J. A defense of compulsory vaccination. *HEC forum*. 2014;26(1)5-25.

Author

Stephen John, PhD, Hatton Lecturer in the Philosophy of Public Health, Department of History and Philosophy of Science, University of Cambridge.

Disclosures/Funding

The author declares no conflicts of interest or funding in relation to this work.

Correspondence

Stephen John, PhD
Department of History and Philosophy of Science
University of Cambridge
Free School Ln, Cambridge CB2 3RH, United Kingdom
Sdj22@cam.ac.uk