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Opt-out vaccination in school and daycare: Reconciling parental authority and obligations

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Abstract

An increasing vaccine hesitancy among parents, which has resulted in insufficient rates of immunization, provides reason to reconsider childhood vaccination practices. Studies suggest that parents' decision-making process concerning whether to vaccinate their child is highly influenced by cognitive biases. These biases can be utilized to increase vaccination uptake via changes in the choice context. This article considers childhood vaccination programmes, which involve children being vaccinated in school or daycare unless their parents actively 'opt out'. We suggest that such programmes reconcile parents' decisional authority and vaccination duties. First, opt-out childhood vaccination based in schools or daycare centres are not disrespectful of parental authority. Second, the programme aligns the default setting with a moral obligation to vaccinate one's child that most parents have.

KEYWORDS
childhood vaccination, easy rescue, nudging, opt-out, parental authority, school-based vaccination

1 | INTRODUCTION

Lack of early childhood immunization is a serious public health problem, and WHO has ranked vaccine hesitancy as one of the top 10 threats to global health.[1] Of particular concern is the increase in global cases of measles, which in part seems to be due to vaccine hesitancy. Even countries that have almost eliminated the disease have seen a resurgence of cases.[2] A WHO vaccine advisory group suggests that '[w]hat might seem to be reluctance, resistance or even opposition, might actually be a response to the burdens or inconvenience of getting vaccinated'.[3] Based on this, the group considers initiatives that make vaccination easy and convenient, for example, by letting all children be vaccinated in school unless their parents actively opt out.[4] According to the group, 'if the default in schools is to vaccinate all students, with the provision of allowing those who object to opt out, then vaccination rates will likely be higher than if the default is to provide vaccination only to those who opt in'.[5] The advisory group was tasked with providing considerations and recommendations with a focus on 'achieving high and equitable uptake of vaccines through evidence-based and behaviourally informed strategies'.[6] However, their report does not address potential ethical concerns associated with opt-out school-based vaccination.

[1]WHO. (2019). *Top threats to global health in 2019*. https://www.who.int/news-room/spotlight/ten-threats-to-global-health-in-2019
[2]Ibid.
[3]WHO. (2020). *Vaccine acceptance is the next hurdle*. https://www.who.int/news-room/feature-stories/detail/vaccine-acceptance-is-the-next-hurdle
[4]See also Guibilini, A., Caviola, L., Maslen, H., Douglas, T., Nussberger, A., Faber, N., Vanderslott, S., Loving, S., Harrison, M., & Savulescu, J. (2019). Nudging immunity: The case for vaccinating children in school and day care by default. *HEC Forum*, *31*, 325–344.
[5]WHO, op. cit. note 3.
[6]WHO. (2020). Behavioural considerations for acceptance and uptake of COVID-19 vaccines: WHO Technical Advisory Group on Behavioural Insights and Sciences for Health,

Opt-out vaccination in school or daycare is an example of nudging. A nudge 'is any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives'.[7] Changing the default and location of childhood vaccination might increase vaccine uptake.[8] However, since such nudges arguably involve circumventing people's deliberative processes, they have been criticized for not showing appropriate respect for people's autonomy.[9] Therefore, it seems relevant to examine whether opt-out vaccination in school or daycare is disrespectful of autonomy.

However, since (at least small) children 'do not have autonomy that can be violated',[10] respect for autonomy may not be considered relevant in the case of childhood vaccination where parents act on behalf of their child.[11] At the same time, it is widely acknowledged that in most cases, being a child's parent (or guardian) entails moral authority in raising and making decisions on behalf of the child.[12] Parents (or guardians) are typically considered to be best at understanding the child's needs and at making decisions in the child's best interest, resulting in a predisposition to respect parental authority.[13] According to Blumenthal-Barby and Opel,[14] this decisional authority does not derive from a concern for autonomy; autonomy concerns self-governance and parents are acting on behalf of their nonautonomous child. Accordingly, there is little or no disrespect of autonomy involved in nudging parents' surrogate decision-making.

Even so, given that it *is* within parents' legitimate sphere of control whether they let their child vaccinate, attempts to increase vaccination uptake by manipulating the choice context may still be considered disrespectful of parental authority. For example, according to Shiffrin,[15] one is disrespecting another person when attempting to take over or control what rightfully lies within the person's decisional authority. In her view, this *also* applies 'if A interferes with B's legitimate power to decide matters concerning another party, C' even if A is 'solely and directly concerned with the third party's welfare'.[16] This means that even if nudging of parents' surrogate decision-making is not disrespectful of autonomy, it is still relevant to examine whether opt-out childhood vaccination in schools and daycare shows due respect for parents' decisional authority.

While opt-out programmes can be designed in different ways, we will consider a childhood vaccination programme in which children are vaccinated in daycare and school by default unless their parents actively opt out. Our argument applies to childhood vaccinations that have been proven effective, safe and are distributed without any extra financial costs. We suggest that such programmes need not be disrespectful of parental authority (Section 2). Additionally, we show that even if there is a social gradient in how much parents are affected by the default, opt-out vaccination in school and daycare need not involve unequal respect for parental authority (Section 3). Moreover, we defend the view that *most* parents have a moral—but not necessarily legally enforceable—obligation to vaccinate their child for the sake of protecting other people, including children (Section 4). The programme under consideration aligns the choice context with this moral obligation. We conclude that opt-out childhood vaccination in school and daycare help parents to fulfil their moral obligations in a way that shows appropriate respect for their authority.

2 | DISRESPECTFUL OF PARENTAL AUTHORITY?

According to MacKay and Robinson,[17] the duty to respect another person's autonomy involves certain restrictions on how one (including the state) should interact with the person. Specifically, they argue that respect for autonomy 'involves engaging people's rational capacities through rational persuasion, not (1) restricting their options or (2) corrupting the deliberative processes by which they make decisions'.[18] Actions and policies that do not satisfy these requirements are, in this view, *pro tanto* wrong. In other words, MacKay and Robinson do not rule out that the relevant actions and policies may

meeting report, 15 October 2020. World Health Organization; Studies of the experience with school-based approaches to HPV vaccination identify the school-based strategy 'as a factor that positively influenced vaccine uptake rates' (Wigle, J., Fontenot, H. B. & Zimet, G. D. (2016). Global delivery of human papillomavirus vaccines. *Pediatric Clinics of North America*, *63*(1), 81–95).

[7]Thaler, R. H. & Sunstein, C. R. (2009). *Nudge: Improving decisions about health, wealth and happiness*. Revised and Expanded Edition. Penguin Books (p. 3). The term 'choice architecture' refers to 'the context in which people make choices' (ibid, 3), for example, the design or arrangement of buildings supermarkets, canteens and so on.

[8]In many countries, clinicians follow a 'presumptive format' for vaccinating children, which involves that the clinicians do not present vaccination as a choice, but proceed with vaccinating unless parents refuse (e.g., O'leary, S. T., Opel, D. J., Cataldi, J. R. & Hackell, J. M., (2024). Strategies for improving vaccine communication and uptake. *Pediatrics*, *153*(3), e2023065483). Therefore, one might question that the school-based vaccination programme under consideration *changes* the default. However, since parents must actively book an appointment and attend a consultation to have their child vaccinated, we describe the common practice as 'opt-in' despite the presumptive format followed by clinicians.

[9]For example, Grüne-Yanoff, T. (2012). Old wine in new casks: Libertarian paternalism still violates liberal principles. *Social Choice and Welfare*, *38*(4), 635–645; MacKay, D. & Robinson, A. (2016). The ethics of organ donor registration policies: Nudges and respect for autonomy. *The American Journal of Bioethics*, *16*(11), 3–12; Waldron, J. (2014). It's all for your own good. *The New York Review of Books* (October 9, 2014).

[10]Blumenthal-Barby, J., & Opel, D.J. (2018). Nudge or grudge? Choice architecture and parental decision-making. *Hasting Center Report*, *48*(2), 33–39, p. 34.

[11]Ibid, 35. As children grow older, their autonomy capacities naturally develop. In countries where the legal age of consent for medical interventions corresponds to the age of majority, the parents' decisional authority seems to both concern the interests and autonomy of the older child. Some countries allow adolescents to consent in specific areas (such as contraceptives, HIV testing, or HPV vaccination) (WHO. (2014). Considerations regarding consent in vaccinating children and adolescents between 6 and 17 years old. https://iris.who.int/bitstream/handle/10665/259418/WHO-IVB-14.04-eng.pdf?sequence=1, p. 2). We focus on cases where parents are granted the decisional authority to decide on behalf of their child.

[12]Diekema, D. (2004). Parental refusals of medical treatment: The harm principle as threshold for state intervention. *Theoretical Medicine*, 25, 243–264.

[13]Ibid: p. 244. Parents' authority to make decisions concerning their child's life is not unconditional. For example, states restrict parental authority through child abuse laws, school attendance requirements and child labour law. Such limits on parents' decisional authority are often related to concerns of the child's best interest and preventing harm (see ibid: 244; Navin, M. C. (2017). The ethics of vaccination nudges in pediatric practice. *HEC Forum*, *29*, 43–57).

[14]Blumenthal-Barby & Opel, op. cit. note 10, p. 35.

[15]Shiffrin, S. V. (2000). Paternalism, unconscionability doctrine, and accommodation. *Philosophy & Public Affairs*, *29*(3), 205–250.

[16]Ibid: 216.

[17]MacKay and Robinson, op. cit. note 9.

[18]Ibid: 6.

be justified when other moral factors are included in the evaluation, but that comes at a moral cost.[19]

MacKay and Robinson are not engaged with parental decision-making and refer to a duty to respect autonomy (not authority). However, as suggested in the introduction, one may have a similar view of respecting a person's authority, which involves not taking over or controlling what lies within an agent's legitimate domain. Based on this, respecting parents' decisional authority involves not restricting or corrupting their decision-making process.

Both opt-in and opt-out policies rely on a default. Opt-in entails that children are *not* vaccinated unless their parents choose differently. Opt-out entails that they *are* vaccinated unless their parents choose differently. In the context of organ donor registration, MacKay and Robinson argue that because both opt-in and opt-out policies rely on defaults, such policies can reasonably be considered examples of 'reason-bypassing nonargumentative influence', that is, 'influence that bypasses people's rational capacities, often without their awareness'.[20] Default policies bypass the rational capacities of individuals because of status quo bias. Such status quo bias is explained by inertia, perceptions of endorsement from the choice architect of the choice associated with the default, and loss aversion.[21] If both opt-in and opt-out policies pertaining to organ donor registration involve such reason-bypassing nonargumentative influence, it seems that so do *both* opt-in and opt-out policies pertaining to childhood vaccination.

However, it might be argued that, compared to opt-out policies, opt-in to a lesser degree entails *intentional* shaping of choices. After all, it seems that the reason for changing the default is to get more people to vaccinate their children—and although opt-in also influences people's choices (because it relies on a default), this influence is not intended. The difference between intentional and nonintentional influences is discussed in several studies. Some authors argue that intentional nudging involves objectionable substitution of judgement. For example, Hausman and Welch[22] argue that '[t]here remains an important difference between choices that are intentionally shaped and choices that are not. Even when unshaped choices would have been just as strongly influenced by deliberative flaws, calculated shaping of choices still imposes the will of one agent on another'.

In response to this objection to intentional nudging, Pedersen[23] argues that because choice architects (including the state) inevitably influence the decisions that people make through the design of the choice architecture, they have some discretion over the decisions that this choice architecture promotes:

> For example, if the canteen manager becomes aware that her arrangement of food in the cafeteria encourages people to choose junk food rather than salad, it does not involve objectionable substitution of judgement if she adjusts the arrangement in order to make sure that it is not her choice architecture (and, thus, her contribution) that makes people choose junk food.

In the context of childhood vaccination, this argument implies that even if parents have the authority to decide whether to vaccinate their child (and thus should be allowed not to do so), they do not necessarily have a right to have their preferred option promoted by the choice context. Refusing to promote nonvaccination through the design of the choice context is within the choice architect's (the state's) legitimate discretion. In other words, intentional nudges that are introduced to avoid contributing to parents choosing not to vaccinate their children do not as such involve objectionable substitution of judgement.

A second response to the objection that intentional nudges involve objectionable judgement substitution is that the state can change the default and location for the sake of those parents who prefer opt-out vaccination in school and daycare. Assume that most parents would like to avoid the hassle of booking and taking time off to attend a vaccination appointment—or are afraid of forgetting to do so. The state may introduce the opt-out policy for the sake of these parents, and it is far from clear that the group of parents who are annoyed by this setting can claim that their preference must guide the choice context.[24]

A third response to the objection to intentional nudges is that the more knowledge the choice architect has about the influence of the choice architecture, the less plausible it is to claim that the influence on people's decisions is not intentional. In other words, *not* changing the choice context can also be considered intentional if the choice architect knows that the current context affects people's decisions.[25]

It might, however, be argued that the opt-out policy under consideration is more reason-bypassing, and thus disrespectful of parental authority, than existing opt-in policies. For example, the parents' choice whether to have their child vaccinated seemingly becomes more apparent to others when such vaccination is carried out in daycare centres or schools. Even if you have freedom of choice, having your decision monitored by others plausibly affects what you ultimately choose. One reason for this is our human desire to avoid shame. Take, for example, the case of directly observed therapy where a healthcare professional observes when patients take their medicine. According to Eyal,[26] the effectiveness of this practice might plausibly be explained by nonadherence being 'highly

[19]Ibid: 7.
[20]Ibid: 4; see also Blumenthal-Barby, J. (2012). Between reason and coercion: Ethically permissible influence in health care and health policy contexts. *Kennedy Institute of Ethics Journal*, *22*(4), 345–366, p. 349.
[21]Ibid: 4–5.
[22]Hausman, D. M., & Welch, B. (2010). Debate: To nudge or not to nudge. *Journal of Political Philosophy*, *18*(1), 123–136, p. 133.
[23]Pedersen, V. (2022). In defense of intentionally shaping people's choices. *Political Research Quarterly*, *75*(4), 1335–1344, p. 1336.
[24]Hanna, J. (2015). Libertarian paternalism, manipulation, and the shaping of preferences. *Social Theory & Practice*, *41*(4), 618–643, p. 623.
[25]Grill, K. (2014). Expanding the nudge: Designing choice contexts and choice contents. *RMM*, *5*, 139–162, p. 143.
[26]Eyal, N. (2014). Nudging by shaming, shaming by nudging. *International Journal of Health Policy and Management*, *3*(2), 53–56.

embarrassing' when another person is watching. As he puts it, 'it would usually be too embarrassing for patients—too socially awkward—to send her away with no results. Patients have the freedom to do so, but a vast majority chooses not to disappoint the observer and takes their pills'.[27] If part of the intention behind directly observed therapy is to increase the likelihood that patients take their medicine, then the practice of observing patients taking their medicine involves nudging.

It is possible that a similar pattern will appear if children were vaccinated in school and daycare.[28] At least, it is not unlikely that parents will feel a pressure to vaccinate their children that they would not feel if the practice was less public, for example, if they instead had to consult the doctor individually with their child. For these reasons, it might be argued that opt-out vaccination in school and daycare is more disrespectful of parental authority than existing opt-in policies, because the former to a greater extent influences people's decisions in a nonargumentative way (i.e., through shaming mechanisms). This worry concerns where the vaccination takes place rather than the difference between opt-in and opt-out. For example, the pressure associated with publicness also seems present if *opt-in* vaccination is carried out in schools and daycare centres.

There could be ways to implement vaccination in school and daycare that are less public and thus less vulnerable to concerns regarding social pressure. For example, it seems unnecessary to involve other parents or even the staff from these institutions. The vaccination would most likely be facilitated by healthcare personnel visiting the institution. Therefore, it seems possible to implement the scheme in a way where not vaccinating could be done discreetly.

Moreover, one may question whether the pressure that parents potentially experience if the vaccination takes place in school or daycare is, in fact, a nonargumentative kind of influence. As Hanna[29] suggests, certain nudges convey that 'decision-makers should depart from the default only if they can identify good reasons to do so'. Given that parents consider whether to vaccinate more carefully if the vaccination takes place in their child's school or daycare centre (and if the default is opt-out), it is not clear that these influences necessarily bypass the parents' deliberative processes.[30] Some parents may experience that opt-out vaccination in school and daycare challenges their views pertaining to childhood vaccination, but it is far from clear that this is problematic. If the experience of social pressure is about having one's beliefs challenged by other people, a certain degree of social pressure seems warranted.

The upshot is that even if parents have the decisional authority to decide for themselves whether their children should be vaccinated, this does not speak against changing the location and default for childhood vaccination. First, to the extent that the opt-out policy is transparent, it is easy to opt out, and sufficient effort is made to ensure that parents are informed about what will happen if they remain passive, it is unclear that the opt-out policy shows any disrespect for parental authority. Second, while vaccination in schools and daycare centres potentially challenges parents' vaccination decisions due to social pressure, such challenges need not be disrespectful.

3 | EQUAL RESPECT FOR PARENTAL AUTHORITY?

Inequality in vaccine uptake (thereby also in health) could become a serious problem not only for the nonvaccinated child but also for the greater community, because such vaccination gaps can lead to geographical clusters whereby outbreaks and epidemics become more likely.[31] However, whether there is in fact a social gradient in childhood vaccination uptake is not clearly established. While some studies indicate that vaccine uptake may be lower amongst people from low socioeconomic backgrounds, other studies suggest that there is no difference—or even point in the opposite direction.[32] One study of the relation between HPV vaccination and social inequality found that 'HPV vaccination uptake was significantly lower in more deprived areas'.[33] However, parents that actively refused to vaccinate their child (by returning a negative consent form) were more likely to come from less deprived areas.[34] This suggests that changing the default to opt-out might have an especially positive effect on vaccination uptake in more deprived areas. But we need more evidence to establish whether there is in fact a social gradient in the default effect.

Even if there is no social gradient in vaccine uptake, it is worth considering whether opt-out vaccination in school or daycare shows equal respect for parental authority. Default policies have been criticized for failing to recognize that people have different capacities to detect or resist default effects.[35] If certain social groups are more affected by the

[27]Ibid: 54.

[28]For example, according to the WHO advisory group, 'encouragement and social pressure from people that an individual respects and trusts have been found to increase vaccine uptake' (op. cit. note 6 citing Bish, A., Yardley, L., Nicoll, A., & Michie, S. (2011). Factors associated with uptake of vaccination against pandemic influenza: A systemativ review. *Vaccine*, 29, 6472–6484, p. 6481).

[29]Hanna, op. cit. note 24, p. 628.

[30]Cf. MacKay and Robinson, op. cit. note 9, p. 6.

[31]Guibilini, A., et al., op. cit. note 4, p. 328; Navin, op. cit. note 13, p. 52; Opel, D. J. & Omer, S. B. (2015). Measles, mandates, and making vaccination the default option. *JAMA Pediatrics*, *169*(4), 303–204, p. 2; Arat, A., Burström, B., Östberg, V. & Hjern, A. (2019). Social inequities in vaccination coverage among infants and pre-school children in Europe and Australia—A systematic review. *BMC Public Health*, p. 1.

[32]Omer, S. B., Enger, K. S., Moulton, L. H., Halsey, N. A., Stokley, S. & Salmon, D. A. (2008). Geographic clustering of nonmedical exemptions to school immunization requirements and associations with geographic clustering of pertussis. *American Journal of Epidemiology*, 168(12), 1389–1396; Bocquier, A., Ward, J., Raude, J., Peretti-Watel, P., & Verger, P. (2017). Socioeconomic differences in childhood vaccination in developed countries: A systematic review of quantitative studies. *Expert Review of Vaccines*, *16*(11), 1107–1118; Cata-Preta, B. O., Wehrmeister, F. C., Beng, T. M. S., Barros, A. J. D. & Victora, C. G. (2021). Patterns in wealth-related Inequalities in 86 low- and middle-income countries: Global evidence on the emergence of vaccine hesitancy. *American Journal of Preventive Medicine*, *60*(1), 24–33; Guibilini, A., et al., op. cit. note 4; Arat, A., et al., op. cit. note 31).

[33]Roberts, S. A., Brabin. L., Stretch, R., Baxter, D., Elton, P., Kitchener, H., & McCann, R. (2011). Human papillomavirus vaccination and social inequality: Results from a prospective cohort study. *Epidemiology & Infection*, *139*, 400–405, p. 403.

[34]Ibid.

[35]Goodwin, T. (2012), Why we should reject 'Nudge'. *Politics*, *32*(2), 85–92, pp. 87–91; Schmidt, N. C., Goldstein, D. G., & Johnson, E. J. (2013). Choice without awareness: Ethical and policy implications of defaults. *Journal of Public Policy & Marketing*, *32*(2), 159–172, p. 165; Schubert, C. (2017). Green nudges: Do they work? Are they ethical? *Ecological Economics*, *132*, 329–342, p. 338.

default than others, these groups may be less likely to enjoy the freedom of choice that opt-out programmes are supposed to grant.[36]

Authors suggest that default policies work most effectively when decisions are complex and outside people's area of expertise and where preferences are not 'given'.[37] For many parents, childhood vaccination will most likely constitute such a complex and information-heavy decision.[38] Even though most parents are not experts of immunization or even of side effects to vaccination, all parents do not have the same mental capacity to reflect upon the decision to vaccinate and potentially resist the default by opting out.[39] As Schubert[40] suggests, the relatively poor are struggling with making ends meet, they experience a higher cognitive load than others, which may make them less likely to resist the default effect and opt out. Accordingly, opt-out vaccination might not show *equal* respect for parental authority.

Now, assume for the sake of argument that people from lower socioeconomic groups tend to stick to the default to a greater extent than people from higher socioeconomic groups. As suggested above, if people from low-income groups who want to deviate from the default experience relatively greater barriers than people from high-income groups, opt-out seems to give rise to concerns of unequal respect for people's decisional authority. However, the parallel default effect of opt-in policies arguably raises similar concerns. Here, the decision to stick with the default (i.e., not to vaccinate one's child) may similarly not be the result of an independent and unaffected decision-making process. When lack of childhood vaccination is not a matter of vaccine scepticism but can be ascribed to 'the burdens or inconvenience of getting vaccinated',[41] opt-out vaccination in school or daycare would relieve parents from some of the mental load, as well as some of the practical burdens associated with vaccinating one's child (e.g., booking an appointment and taking time off from work).[42] In such situations, the opt-out policy seems to foster rather than limit deliberative decision-making among individuals who prefer vaccination but experience challenges when it comes to acting in ways that fulfil their own ends.[43]

4 | MORAL OBLIGATIONS TO HAVE YOUR CHILD VACCINATED

Childhood vaccination against communicable diseases does not (only) protect one's own child but also other members of society.[44] The child may infect other people that cannot be vaccinated due to medical reasons, who are too young to be vaccinated, or for whom the vaccine has not provided complete protection. Several authors have already suggested that such concerns ground a moral obligation to vaccinate that justifies coercive measures, such as mandatory vaccination, quarantine, or isolation.[45] In this section, we will focus on (1) a duty of easy rescue and (2) a duty to avoid harming others. We suggest that these duties are often not strong enough to justify coercive measures, such as mandatory vaccination. Still, they clearly support childhood vaccination programmes of the kind that we are interested in.[46]

According to 'easy rescue' arguments, it is morally obligatory for most people to 'save seriously endangered lives when we can do so without risking anything of significant value to us'.[47] Consider the following easy rescue argument that applies in vaccination cases:[48]

> P1: Sickness, suffering, and death resulting from childhood diseases is bad.
>
> P2: If one has the chance to prevent something bad happening (or if one can limit the risk of something bad happening) without risking anything of significant value to oneself, one ought to do so.
>
> P3: One has the chance to prevent sickness, suffering, or death resulting from childhood diseases (or one can limit the risk of these 'bads' happening) through childhood vaccination and, for most people, vaccinating one's child does not involve sacrificing a significant good.
>
> Conclusion: Most parents have a moral obligation to vaccinate their child.

We will assume that the two first premises of the argument are true. However, the strength of the duty involved in premise 2 depends on the badness that one can prevent. For example, the duty

[36]Schubert, op. cit. note 35, 338–339; Schmidt, N. C., et al., op. cit. note 35, 165.
[37]Schubert, op. cit. note 35, 330; Navin, op. cit. note 13, 44; Opel & Omer, op. cit. note 31, 3.
[38]Opel & Omer, op. cit. note 31, 3; Blumenthal-Barby & Opel, op. cit. note 10, 38.
[39]Cf. Schubert, op. cit. note 35, 338; Schmidt, N. C., et al., op. cit. note 35, 165.
[40]Schubert, op. cit. note 35, 338.
[41]WHO, op. cit. note 3.
[42]See Davies, C., Stoney, T., Hutton, H., Parrella, A., Kang, M., Macartney, K., Leask, J., McCaffery, K., Zimet, G., Brotherton, J. M. L., Marshall, H. S., & Skinner, S. R. (2021). School-based HPV vaccination positively impacts parents' attitudes toward adolescent vaccination, *Vaccine* 39: 4190-4198, p. 4192.
[43]Moreover, it seems reasonable to assume that parents with strong views on vaccination will overcome the challenges associated with opting out (Giubilini, A., et al., op. cit. note 4, 335–336).
[44]Feikin, D. R., Lezotte, D. C., Hamman, R. F., Salmon, D. A., Chen, R., & Hoffman, R. E. (2000). Individual and community risks of measles and pertussis associated with personal exemption to immunization. *JAMA*, *284*(24), 3145–3150; Thomsen, F. K. (2017). Childhood immunization, vaccine hesitancy, and provaccination policy in high-income countries. *Psychology, Public Policy, and Law*, *23*(3), 324–335; Navin, op. cit. note 13, 48; Flanigan J. (2014). A defense of compulsory vaccination. *HEC Forum*, *26*(1), 5–25. https://doi.org/10.1007/s10730-013-9221-5.
[45]See Flanigan, op. cit. note 44; Giubilini, A., Douglas, T., Maslen, H., & Savulescu, J. (2018a). Quarantine, isolation and the duty of easy rescue in public health. *Developing World Bioethics*, *2018*(18), 182–189. https://doi.org/10.1111/dewb.12165; Giubilini, A., Douglas, T., & Savulescu, J. (2018b). The moral obligation to be vaccinated: Utilitarianism, contractualism, and collective easy rescue. *Medicine, Health Care and Philosophy*, *21*(4), 547–560. doi: 10.1007/s11019-018-9829-y; Guibilini, A. (2020). An argument for compulsory vaccination: The taxation analogy. *Journal of Applied Philosophy*, *37*(3), 446-466; Pierik, R. (2018). Mandatory vaccination: An unqualified defence. *Journal of Applied Philosophy*, *35*, 381–398; Rus, M., & Groselj, U. (2021). Ethics of vaccination in childhood—A framework based on the four principles of biomedical ethics. *Vaccines*, *9*(2), 113.
[46]In fact, nudging policies may be defended even if parents do not have a moral duty to vaccinate their child (because of the significant benefits for children and no violation of parental authority). However, the arguments for a moral duty strengthen the case for the vaccination policy under consideration (see also Giubilini, A., et al. (2018a), op. cit. note 45, 549).
[47]Hester, D. M. (2006). Why we must leave our organs to others. *The American Journal of Bioethics*, *6*(4), W23–W28, p. 24. See also Singer, P. (1972). *Famine, affluence, and morality* (pp. 1–32). Oxford University Press.
[48]See also Guibilini, A., et al. (2018a), op. cit. note 45, 183.

to prevent nonchronic diseases with nonchronic side effects is weaker than the duty to prevent death. Similarly, the strength of the duty depends on the extent to which one limits the risk of the bad happening; that is, the duty is stronger, the greater one's chance to prevent the bad from happening is.

It seems that most of the argumentative burden is on establishing the third condition. The first part of this premise says that the individual has the chance of preventing sickness, suffering, or death resulting from childhood diseases through childhood vaccination. This is supported by the evidence. In addition to protecting the person receiving the vaccine, vaccination schemes will protect those who cannot be vaccinated themselves for medical reasons or because they are too young. But even those who are vaccinated might be at risk, because not all vaccines provide complete protection. By being vaccinated, you decrease the risk of infecting others, and you help decrease the likelihood of the illness spreading. However, as described above, the risks associated with vaccine refusal depend on the vaccination rates in the geographical area in which the individual lives (i.e., if many have already been vaccinated, the individual's vaccination will do less good than if few have been vaccinated).[49] Accordingly, the strength of the duty to vaccinate one's child depends on how many other people have been vaccinated.

The second part of premise 3 says that, for most people, vaccinating one's child does not involve sacrificing a significant good. In support of this claim, we stress that most vaccines have proven to be safe and with few side effects.[50] Certainly, some people will claim that getting their children vaccinated *does* involve significant sacrifices. For example, some people think that vaccines are unsafe or ineffective. These views are often based on false assumptions or misinformation—something that has largely shaped the debate about vaccines.[51] If vaccinating one's child involves costs simply because of ignorance and false beliefs about vaccines, then this does not exempt one from the moral duty of preventing suffering and death resulting from childhood diseases.[52]

Some refuse vaccination based on their deeply held convictions, for example, religious or philosophical convictions. However, only few religious groups have reservations against vaccinations (some exceptions are Dutch Reformed Congregations, Faith Tabernacle, Church of the First Born, Faith Assembly and End Time Ministries).[53] Moreover, we doubt that many of these convictions will stand up to critical scrutiny in view of the profound moral concerns for preventing people's (including children's) sickness, suffering, and death resulting from childhood diseases.[54] However, given that some people's convictions against vaccination are *in fact* deeply held, we are not able to rule out that some of these people will incur considerable and relevant costs when their children are vaccinated. Neither do we need to rule out this possibility to defend the third premise, which says that, for *most* people, vaccinating one's child does not involve sacrificing a significant good.

The above 'easy rescue' argument provides a more solid defence of opt-out vaccination in school or daycare than it provides defence of mandatory vaccination. First, the duty to vaccinate will be relatively weak, and not legally enforceable, when vaccination rates are high. Moreover, even where vaccination rates are low, the least restrictive alternative principle supports opt-out policies if these are effective.[55] Second, by merely defending opt-out vaccination in school or daycare, we need not rule out that there may in fact be parents for whom vaccinating their child is *not* an easy rescue.[56] Such programmes allow for exemptions but align the default with the moral obligation to vaccinate their children that most parents seem to have.

It is debatable whether not letting your child vaccinate involves *allowing* others to be harmed, rather than *doing* harm. And, according to some authors, 'doing harm' is harder to justify than 'allowing harm'.[57] Therefore, it is relevant to consider whether a harm-to-others argument would justify coercive vaccination programmes. For example, Flanigan[58] argues that 'non-vaccinators harm and impose risks on others'. This is because nonvaccinators have a higher risk of infecting others, especially infants and immunosuppressed people, and their choice not to vaccinate counteracts herd immunity. Flanigan argues that nonvaccinators are not entitled to impose such risks and harm on others. In her view, this applies 'despite the fact that the risk of harm is of low probability'.[59] She concludes that '[c]ompulsory vaccination is therefore justified because nonvaccination can rightly be prohibited, just as other kinds of harmful and risky conduct are rightly prohibited'.[60]

[49]Navin, op. cit. note 13, 52.

[50]Department of Health. (2015). *The Australian immunisation handbook* (10th ed.) Australian Government Department of Health. The argument does not apply to parents of children who have medically relevant reasons for refusing vaccination. For examples, see Calandrillo, S. P. (2004). Vanishing vaccinations: Why are so many americans opting out of vaccinating their children? *University of Michigan Journal of Law Reform*, *37*, 353. https://repository.law.umich.edu/mjlr/vol37/iss2/3, p. 413.

[51]Calancrillo, op. cit. note 50; Downs, J. S., de Bruin, W. B., & Fischhoff, B. (2008). Parents' vaccination comprehension and decisions. *Vaccine*, *26*(12), 1595–607. https://doi.org/10.1016/j.vaccine.2008.01.011; Dubé, È., Ward, J. K., Verger, P., & MacDonald, N. E. (2021). Vaccine hesitancy, acceptance, and anti-vaccination: Trends and future prospects for public health. *Annual Review of Public Healh*, *42*(1), 175–191. https://www.annualreviews.org/doi/abs/10.1146/annurev-publhealth-090419-102240; Jacobson, R. M., Paul, V., Targonski, P. V., & Poland, G. A. (2007). A taxonomy of reasoning flaws in the anti-vaccine movement. *Vaccine*, *25*(16), 3146–3152.

[52]This is based on the view that an agent's moral obligations depend on the epistemically available *evidence* rather than actual (potentially false) beliefs. It is, however, debatable whether our moral duties depend on facts, available evidence, or beliefs (see, e.g., Kiesewetter, B. (2017). *The normativity of rationality*. Oxford University Press: 196, fn2,3; Parfit, D. (2011). *On what matters* (p. 7). vol. 1. Oxford University Press.). Since the argument under consideration allows that some are exempt from the moral duty to vaccinate, it applies even if some experience intense psychological costs due to false beliefs and such costs are considered relevant.

[53]Grabenstein, J. D. (2013). What the world's religions teach, applied to vaccines and immune globulins. *Vaccine*, *31*(16), 2011–2023. https://doi.org/10.1016/j.vaccine.2013.02.026. Interestingly, some studies show that the immunization coverage is higher among children from religious groups compared to children from the rest of the population (Budu, E., Darteh, E. K. M., Ahinkorah, B. O., Seidu, A-A., & Dickson, K. S. (2020). Trend and determinants of complete vaccination coverage among children aged 12–23 months in Ghana: Analysis of data from the 1998 to (2014). Ghana Demographic and Health Surveys. *PLOS ONE*, *15*, e0239754. https://doi.org/10.1371/journal.pone.0239754; Jillian O. & Kizito O. (2020). Socio-cultural factors associated with incomplete routine immunization of children _ Amach Sub-County, Uganda. *Cogent Medicine*, *7*, 1848755. https://doi.org/10.1080/2331205X.2020.1848755; Kriss, J. L., Goodson, J., Machekanyanga, Z., Shibeshi, M. E., Daniel, F., Masresha, B., & Kaiser, R. (2016). Vaccine receipt and vaccine card availability among children of the apostolic faith: Analysis from the 2010–2011 Zimbabwe demographic and health survey. *The Pan African Medical Journal* 24(47), 1-10).

[54]See also Hester, op. cit. note 47, 25–26.

[55]Guibilini, op. cit. note 45, 332–333; Midtgaard, S. F. & Albertsen, A. (2021). Opt-out to the rescue: Organ donation and samaritan duties. *Public Health Ethics*, *14*(2), 191–201, p. 195.

[56]Midtgaard & Albertsen, op. cit. note 55, 193, 195.

[57]For example, McCarthy, D. (2000). Harming and allowing harm. *Ethics*, *110*, 749–779.

[58]Flanigan, op. cit. note 44, 8.

[59]Ibid.

[60]Ibid: 6.

Others challenge that harm-to-others arguments justify compulsory vaccination when many people have already been vaccinated and the risk of harm is of low probability. For example, according to Giubilini,[61] 'the magnitude of the risk determines the strength of the 'harm to others' argument for compulsory vaccination and [...] in certain circumstances such arguments can become quite weak. At some point, considerations about individual and parental liberty would outweigh considerations about risks of harm'.[62] Thus, even though people have a duty to vaccinate their child, which is grounded in considerations of not harming others, in many countries this duty is relatively weak and not legally enforceable.[63]

In such cases (where the risk of infecting others is small), it still seems justified to align the choice context pertaining to childhood vaccination with the duty not to impose risks of harm on others. As we have argued above, changing the location and default of childhood vaccination does not entail any significant bypassing of parental authority. Accordingly, even when the duty to vaccinate is weak, considerations about respecting parental authority do not seem to outweigh considerations about preventing risks of harm when we focus on opt-out vaccination in school or daycare.

Under conditions where only few people are vaccinated and the risk of harming others is high, the case for mandatory vaccination is much stronger.[64] Yet, a low vaccine uptake does not necessarily mean that compulsory vaccination is preferable. If the less restrictive opt-out vaccination in school or daycare leads to enough people vaccinating their children, then this policy would be preferable.

5 | CONCLUSION

Whether opt-out childhood vaccination programmes should be introduced plausibly depends on balancing moral considerations of parents' decisional authority and obligations to others. Moreover, it depends on how parents are likely to react to the policy. For example, one may be concerned that people perceive opt-out childhood vaccination programmes as either paternalistic or as invading freedom of choice when compared to opt-in. Such perceptions may possibly lead to a decline in support for childhood vaccination programmes or distrust in the school and daycare system. However, a survey of the attitudes of British citizens shows that parents support a school-based opt-out MMR vaccination programme.[65] Moreover, a qualitive study from Australia shows that '[s]chool-based HPV vaccination positively impacts parents' attitudes toward adolescent vaccination'.[66] Nevertheless, the risks of distrust or backlash effects must be considered carefully before implementing opt-out childhood vaccination in school and daycare.

We have focused on parents' decisional authority and their obligations to others. First, we have argued that opt-out vaccination in school or daycare do not entail disrespecting parental authority in vaccination decisions. Second, we have argued that even if some parents may be more affected by the default than others, this does not speak against changing the choice context. Since opt-out vaccination in school and daycare seems to remove obstacles for parents, it likely decreases social inequality in health. Lastly, we have defended the view that most parents have a moral obligation to vaccinate their child for the sake of others. While these duties do not clearly justify mandatory vaccination policies, they give reason to rethink the setting and default for childhood vaccination.

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[61]Guibilini, op. cit. note 45, 448.
[62]See also Dawson, A. (2007). Herd protection as a public good: Vaccination and our obligations to others. In A. Dawson and M. Verweij (eds.), *Ethics, prevention, and public health*, Oxford: Clarendon Press, pp. 160–187, pp. 171–172.
[63]Guibilini, op. cit. note 45, 448.
[64]Ibid.
[65]Guibilini, A., et al., op. cit. note 4.
[66]Davies, C., et al., op. cit. note 42, 4190. In Australia, a student cannot be vaccinated at school without written parental consent (ibid: 4191).