

7 A Framework for a Proportionate Childhood Vaccination Policy

In chapters 4 and 5, we argued that the state has a compelling interest in protecting the basic interests of children by preventing (major) outbreaks of serious vaccine-preventable infectious diseases. The most effective way in which such outbreaks can be precluded is through the maintenance of robust group immunity, and the only way this can be achieved is through mass vaccination. We offered a principled argument for our thesis that a democratic government is justified in imposing liberty-limiting vaccination policies when this is necessary to prevent harm to others. However, this interference in individual freedom should not be disproportionate and more intrusive than necessary. Herd immunity does not require everyone to be immunized. Outbreaks of measles, one of the most contagious infectious diseases, can be contained at a 95 percent immunization coverage and other diseases at an even lower rate. This implies that there is theoretical room to tolerate non-vaccination. If herd immunity is robustly guaranteed, unvaccinated children are protected indirectly.

Given state agencies' responsibility for protecting the basic interests of children, how much leeway can they give to the practice of nonvaccination? One way of providing this leeway is by granting exemptions for parents with religious or "philosophical" objections. However, as we argued in the previous chapter, nonmedical exemptions cannot be justified in a democratic context. A liberal-democratic government must be neutral toward different religions and philosophies of life. Yet this neutrality makes it impossible to set fair and feasible criteria to distinguish between vaccination objections that are embedded in a deeper religious or secular worldview, and therefore should be granted exemption, and objections that do not warrant such exemptions.

In this chapter, we explore a different route toward a reasonable and proportionate application of the harm principle in this context. Sections 7.1 and 7.2 explore the principle of proportionality in more depth. We explain how some of the elements of this principle, notably the idea of the “least intrusive means,” are much less straightforward than often assumed. Next, we present the main factors in a vaccination program that can be adapted to shape a proportionate policy. We argue that these decisions often require a pragmatic approach, that also takes historical, epidemiological, and cultural contexts into account. At the end of the chapter, we present our view on the contours of a proportionate mandatory policy.

7.1 Taking Context Seriously: The Expediencies of the Case

Even though the harm principle offers a strong and principled ground for the introduction of liberty-limiting measures, it depends on specific circumstances whether, when, and which form of coercion is actually justified. This is consistent with John Stuart Mill’s own understanding of the harm principle. He argued that, even if liberty-limiting measures will prevent harm to others, there may still be good reasons not to implement them:

But these reasons must arise from the special expediencies of the case: either because it is a kind of case in which [a person] is on the whole likely to act better, when left to his own discretion, than when controlled in any way in which society have it in their power to control him; or because the attempt to exercise control would produce other evils, greater than those which it would prevent. (Mill, 1991, p. 16)

Mill mentions this in the context of policies that require us to behave in a particular way—to *do* certain acts and not just (negatively) refrain from engaging in certain harmful behavior—as is the case with contributing to a public good like herd protection.

So, what could be the sort of reasons arising “from the special expediencies of the case” that would support forgoing compulsion or force? The second reason that Mill offers is very much in line with his broader utilitarian point of view: whether force is justified depends on how the consequences of using force are to be evaluated and compared with the consequences of allowing the harm to occur. Exercising control by forcing parents to have their children immunized might well lead to all sorts of evils. It could invoke public resistance to vaccination and distrust in government and public

health agencies, which in theory could be counterproductive and lead to even lower overall vaccination rates. If children must be vaccinated before they go to school, more and more parents could decide to homeschool their children, which would be disadvantageous for many children because they might receive a substandard education. And if one specific health program, immunization, is mandatory, people may assume that other child health programs that are still voluntary are not very important and can be ignored. Judging whether these risks are real and weighing up the risks of a low vaccination coverage will be important in policy making that concerns mandatory or compulsory immunization.

The first reason that Mill offers for not using force may also be read as a consequentialist concern: if individuals are free to follow their own judgment, this may in effect lead to behavior that is better for all of us. After all, most parents, because they care about the health of their offspring, vaccinate voluntarily and with no hesitation whatsoever. But this also suggests a different and more obvious interpretation of Mill's argument: the introduction of nonvoluntary policies can only be justified if it really is *necessary* to prevent harm. The use of force is *illegitimate* if it is unnecessary to prevent outbreaks, for example, when there are alternative (nonmandatory) policy options that sufficiently protect robust herd protection. The basic gist of this example is as follows. Even if the harm principle applies, implying that there is a principled basis for compulsory or mandatory immunization policies, deciding *which* liberty-limiting policies are justified and thus *how* immunization should be regulated ultimately requires weighing the values of liberty versus the values served by public health and possibly other values relevant in this specific context. Restricting parental prerogative is justified but only if it is in proportion to the value of the health that is to be protected. And this is not a general verdict; it depends, as Mill says, on "the expediencies of the case at hand."

In the next sections, we revisit the legal principle of proportionality as introduced in section 3.9 and develop a framework for the proportionate use of coercion in vaccination policies. Our elaboration of the various elements of proportionality and their application to the case of childhood immunization programs will show how, as Mill says, judgments about what measures are proportionate depend on contextual factors. This implies, among other things, that we need to take a largely pragmatic and contextual approach

to answering the following question: what forms of coercion are justified in response to a declining or otherwise suboptimal vaccination rate?

7.2 The Principle of Proportionality Revisited: Legality and Effectiveness

In section 3.9, we introduced the legal principle of proportionality in the form of a four-pronged test. Fundamental rights can only be legitimately infringed if (1) the policy goal is legitimate, (2) the measure is suitable for achieving that goal, (3) there are no less intrusive policies available that are as effective as this right-infringing measure, and (4) the measure is reasonable, that is, it takes the interests of all involved into account.¹

We have already discussed the first requirement of legitimacy extensively. In chapter 2, we argued that the protection of society at large and, more specifically, the health of the population is a central task of government and explained how this offers a justification for collective immunization programs. In chapter 4, we presented our principled argument that maintaining group immunity is a legitimate task for the state: it fits well in the scope of the harm principle and hence is a legitimate basis for interfering with individual liberty. In chapter 5, we discussed the state's responsibility to protect children whose parents refuse to have them vaccinated. Although it is the parents who determine what is best for their children, it is ultimately the government's responsibility to secure a child's basic interests. In exceptional cases, this justifies enforcing immunization against the will of parents—to protect a child from an infectious disease. But outside the context of disease outbreaks, the most appropriate way to protect this basic interest is by maintaining group immunity.

However, policies that embrace more coercive measures to maintain robust group immunity should also be effective in achieving this goal, which is the second condition of proportionality. Ideally, there would be evidence that such a policy will be effective and not backfire during the attempt to achieve the goal. Recent studies on vaccination policies in Europe show that countries that introduced mandatory programs in the past have significantly higher immunization rates and a lower incidence of diseases like measles (Vaz et al., 2020). Yet what we need is not evidence about correlations between types of policies and vaccination rates, as the latter can be determined by all kinds of cultural, political, and historical factors, but evidence about the

positive effects of policy change (Attwell et al., 2018; Colgrove & Lowin, 2016). Do more coercive measures result in higher vaccine coverage? Such evidence is inevitably limited, and often the best proof available is knowledge about how specific novel policies have worked out in other countries. But again, there can be large differences in factors that are relevant to policy effectiveness: differences in disease epidemiology and in cultural background affecting people's willingness to comply with laws, the nature and magnitude of sanctions, the number of parents who have refused to participate in the immunization program so far, and the level of trust citizens have in public health authorities. That said, in all recent cases where governments decided to implement more strict policies, this resulted in significantly higher coverage. For example, in Italy, within twenty-four months of extended mandatory vaccination, the coverage rates for the mandated vaccines increased between 3 percent and 7 percent. With regard to measles, the required coverage rate of 95 percent was almost reached within two years (D'Ancona et al., 2019). Similar positive effects were seen in France (Lévy-Bruhl et al., 2019), California and other states in the US (Richwine & Avi Dor, 2019), and Australia. Predicting the impact of policy change will always be difficult, but at least recent experiences in countries that enacted more strict vaccination mandates do not offer grounds for concern that implementing more coercive policies will be counterproductive or not have the desired effect.

For now, we can conclude that the first two conditions for proportionate coercive immunization, legitimacy and effectiveness, can be met. Which types of measures exactly will be effective and how effective these will be differs between countries and depends on many contextual factors. Cultural, historical, and epidemiological context will be even more relevant if we turn to the other two conditions: subsidiarity and fair balance.

7.3 The Principle of Proportionality Revisited: Least Intrusive Means and Fair Balance

At first sight, the third condition of least intrusiveness seems to be much more straightforward than the fourth condition of a fair balance of interests. Determining which measure is least intrusive only requires ranking the different interventions in terms of the extent to which these interfere with fundamental rights, and that assessment seems relatively uncontroversial. Fair balance, on the other hand, requires finding a correct equilibrium "between

the demands of the general interest of the community and the requirements of the protection of the individual's fundamental rights."² A normative judgment must be made about how the degree of intrusiveness—hence the value of liberty—weighs against the importance of societal protection against specific infectious diseases. Is the level of intrusiveness of a measure reasonable and proportionate given the magnitude of the desired effects it is meant to have, taking the interests of all those affected into account? In this subsection, we elaborate on the conditions of least intrusiveness (or subsidiarity in law) and fair balance, arguing that the former is not as simple and uncontroversial as it seems and that both criteria are closely connected and require a contextual and pragmatic judgment.

The principle of the least intrusive means is well established in law and ethics, especially in public health ethics. The core idea is that more restrictive measures cannot be justified if there are less restrictive alternatives that have not been tried or considered. The Nuffield Council on Bioethics elaborated this principle by presenting what it calls “the intervention ladder,” which ranks a variety of health policies, starting with completely voluntary measures (e.g., offering health information), proceeding to more coercive approaches, and culminating in the extreme case of enforcing specific behavior (Nuffield Council on Bioethics, 2007). Our own table of policy options, as presented in box 2.1, repeated here as box 7.1, can be considered an intervention ladder applied to vaccination policies. We have not included the specific option of allowing nonmedical exemptions in this table, as we have argued in chapter 6 that such policies cannot be justified in a liberal democracy.

In theory, applying the principle of the least intrusive measure simply requires such a ranking of alternative policy options in terms of how far they impose limits on freedom. The next step is to assess which options suffice to attain the aims of the policy—in our case, to achieve robust herd protection—and then to choose the option within that subset that is least intrusive. There are, however, some complications and even flaws in this line of reasoning, and these can only be solved by taking a broader approach to weighing the competing values at stake.

A first practical problem is that ranking policy options in terms of intrusiveness can be rather difficult (Dawson, 2016). Is requiring vaccination as a necessary condition for (financial) child benefits less intrusive than requiring it for school entry if parents can also be exempted in the latter case? Arguably, such measures will impact different parents differently, depending

Box 7.1

Degrees of Coercion in Vaccination Policies (Repeated)

Voluntary policies: encouraging

- information campaigns
- offer vaccinations free of charge, easy to access, adequate reminders
- persuasive communication; positive nudges
- offer opportunities for persons not vaccinated in their youth to catch up
- allow child day care centers or schools to publish vaccination rates

Voluntary policies: norm expressing

- strong nudges, such as making vaccination a default choice option
- require child day care centers or schools to publish vaccination rates
- opt-out policy: parents must take action if they choose to avoid vaccination
- allow child day care centers and schools to refuse unvaccinated children
- expand possibilities for lawsuits in case someone is infected by an unvaccinated person

Mandatory policies

- set vaccination as a condition for child benefits
- require that all children attending child day care centers are vaccinated
- require that all children attending schools are vaccinated

Compulsory policies

- require that all children in schools are vaccinated, without exemptions, and back this up with financial penalties
- make vaccine refusal a criminal offense with punitive sanctions

Enforced vaccination

- impose vaccination with force (i.e., against the will of a person or their parent)

on their socioeconomic position. What is experienced as very intrusive by some parents may have hardly any impact on others. This triggers a more fundamental problem. The intervention ladder looks at the extent to which policies respect liberty. But as presented, the tool merely looks at negative liberty and not at positive freedom. It may well be that policies that are more restrictive can at the same time strengthen people's capabilities, putting

them in a position that enables them to make choices that are more in line with what they value most. For example, some Dutch orthodox reformed denominations fiercely oppose childhood vaccination but also accept the power of the state as the worldly envoy of God.³ Devout parents who are inclined to follow religious prescriptions but are very nervous about the possible negative health impact might be relieved when the state legally enforces vaccination, absolving them from the responsibility of making the decision themselves. Parents leaning toward vaccination but hesitant because their religious leaders object to it may in fact be liberated if the state legally compels them to participate in the program. The same applies to parents who cannot make sense of the conflicting information they are confronted with about the possible benefits and alleged risks of immunization. If liberty is a central value, both positive and negative liberty need to be taken into account, yielding a more complete picture that cannot be captured in a one-dimensional ladder (Byskov, 2019). Mark Navin and Katie Attwell argue that this discussion, primarily revolving around parental autonomy versus the value of community protection against disease, disregards the plurality of the moral values at stake (Navin & Attwell, 2019).

A second problem is that more intrusive measures, rather than only the “least intrusive alternative,” often need to be considered as well, as a matter of precaution. Policy choices are made in the face of uncertainty about how herd immunity will develop over time and about possible future outbreaks. Policies also need to be decided for a longer period—they cannot be adjusted on a day-to-day or even year-to-year basis. To create robust protection against infectious diseases in the long run, policies might well need to be more “intrusive” than strictly necessary for the foreseeable future.

This makes it clear that which measure is “least intrusive” cannot be decided solely by comparing the intrusiveness of alternatives. It also involves weighing short-term and long-term perspectives; competing interests and values, including positive and negative liberties; and the protection of individual and public health and societal welfare. Judgments about what is least intrusive and which policy strikes a fair balance between competing interests and values cannot and should not be separated. Such a balancing exercise can also not be done in an abstract way: the proportionality of measures needed to promote immunization will depend on a variety of contextual factors that may well differ in different countries, times, and circumstances and with respect to different features of specific infectious diseases. The requirement

to have children vaccinated as a condition of being allowed admission to child day care centers is a much more intrusive measure in countries where childcare is necessary for parents to be able to go to work than in countries or cultures where it is common practice and feasible for grandparents or other family members to take care of virtually all young children. Mandatory measures are easier to justify in countries where local outbreaks are more common. And it is more justifiable to introduce mandatory measures to protect citizens against most severe diseases such as measles and polio rather than against somewhat less dangerous conditions like chickenpox.

This brings us to the fourth step in the proportionality test: the measure must be reasonable, considering the competing interests of the people in the relevant society. In this final step, an *all-things-considered* analysis is required that involves weighing the competing claims and values at stake. Even though the narrow proportionality assessment primarily involves weighing the value of (public) health against the importance of protecting liberty rights, it is not a straightforward two-dimensional problem. For one thing, acknowledging the right to freedom of religion of parents can, in certain cases, imply that the right to education of children is constrained. Moreover, it could be that an effective and proportional measure is still unacceptable because it generates unintended negative external effects, for example, through the ways the measure is implemented. For instance, what if a more coercive measure raises the vaccination rate in the short term but at the same time lowers the long-term confidence in vaccination programs or generates much polarization in society between supporters and opponents? Or what if mandatory vaccination to access childcare blocks parents (usually mothers) from entering or remaining in the workforce or implies that the state is no longer able to monitor or supervise unvaccinated children, simply because they move out of sight (Navin & Attwell, 2019, p. 1045)? The possibility and potential impact of such unintended external effects should be included in the proportionality considerations.

In conclusion: determining whether an immunization policy is justified cannot be done in a theoretical vacuum. It requires the assessment and weighing of many different contextual factors: the context and the severity of diseases, epidemiology, the efficacy of the vaccine, the effectiveness of a particular policy, the strength of societal institutions, and the social and cultural background. Most important—and this brings us back to the idea behind the principle of the least restrictive alternative—it will depend on

the extent to which it is possible to maintain a high level of group protection based on voluntary participation only.

7.4 A Regulative Framework for Immunization Policies

Judgments about the proportionality of policies aiming to ensure high participation should be context dependent, and this renders it impossible to propose one single set of measures that can be justified universally. It is, however, possible to offer a general framework for assessing the proportionality of more coercive vaccination measures. In this subsection, we present and discuss several aspects of a well-considered immunization policy that involves important choices and explanations. The dimensions of a proportionate policy can be structured along the lines of several questions. Why are liberty-limiting measures taken? How can we limit freedom? When should we do so? What vaccines should be mandatory? And how long should mandates remain in place?⁴ The general answers to the first question will not be different for different democratic contexts, but the answers to all the other questions could offer various ways in which policy can strike a balance between the competing values at stake, taking the specific cultural, societal, and epidemiological contexts into account. In this way, the framework offers room for different immunization policies in different societal and political contexts and cultures but only, of course, within the limits of the liberal-democratic principles on which our framework is based.

7.4.1 Why? The Justification of Coercive Measures

Vaccination policies can only be proportionate if they are based on and fit within relevant legal and moral principles that shape constitutional liberal democracies. In chapters 2–5, we outlined these principles and argued that the protection of fundamental rights is one of these foundational values. We also established that liberal-democratic states have a general responsibility to protect society against (the disruptive effects of) dangerous infectious diseases. This sometimes involves setting limits on fundamental freedoms of individuals in order to curb the spread of the disease. Herd immunity not only makes it almost impossible for people to infect one another but is also the most appropriate route for the state to meet another responsibility: protecting the basic interests of young children when parents decide not

to immunize them. These principled grounds do not determine the precise character of a liberty-limiting immunization policy; they leave open a variety of possibilities for interventions that may or may not be proportionate, depending on contextual factors. It will be intuitively clear that a policy that compels parents to vaccinate their child against a relatively innocent disease like chickenpox by threatening them with an imprisonment is disproportionate. At the same time, some forms of legal coercion can be justified as protection against more serious diseases. Next, we review in more detail the main dimensions of how programs can be more or less coercive.

7.4.2 How? The Character of Measures

Voluntary policies Arguably, when considering the justification of coercive measures to promote vaccine uptake, little needs to be said about *voluntary policies* that aim to encourage vaccination. It is, however, important to be aware of the various noncoercive options for two reasons. First, it is obviously desirable to enable voluntary choice—not only because of the costs of coercion but also because this acknowledges the moral value of the motive people will have: to protect their own child or to altruistically contribute to the protection of others (Kraaijeveld, 2020).

Second, the introduction of mandatory policies is only proportionate when it is necessitated by (the threat of) an undermined herd immunity. This implies that the state has the obligation to perform to the best of its ability to preclude the necessity of mandatory measures. It should do this by employing all reasonable measures it has available to encourage and accommodate voluntary vaccination.⁵ The bare minimum is, obviously, that governmental agencies develop communication strategies to promote vaccination and to actively find ways to reach out to all relevant groups. It should try to understand the reluctance some groups might have toward vaccination and its own (past) role in this vaccine hesitance (Attwell et al., 2022, p. 575). In addition, governmental agencies should enable access to vaccines and their administration and guarantee the availability of a sufficient supply of safe vaccines free of charge to parents or their health insurance company. They should ensure that vaccine services will reach all, including disadvantaged populations, culturally and linguistically diverse groups, and those living in remote regions. We agree with Attwell et al. (2022) when they argue that “it is not enough to just build a resource, such as vaccine information or

instructions on how to get vaccinated, in the right language. Resources must also be developed and disseminated in ways that are culturally sensitive and appropriate” (p. 577).

Moreover, governmental agencies should make it as easy as possible for parents to have their children vaccinated by offering vaccinations at convenient locations or during extended opening hours that are adapted to the possibilities of parents of young children. Offering adequate information about how vaccination protects health and countervailing misinformation are also tasks that states should perform.

Additional voluntary policies include measures to protect unvaccinated persons against infections. Public health agencies can actively provide travel advisories to parents about areas in the world where group protection against the relevant diseases is lacking to ensure that unvaccinated children do not encounter such diseases unconsciously. They should maintain up-to-date records of individual vaccination uptake—and the lack thereof—to ensure that everyone has access to their vaccination status later in life. Another possibility is actively approaching young adults aged around fourteen and older to warn them about the risks of not being vaccinated to enable them to catch up on missed vaccinations easily and free of charge. In many jurisdictions, medical treatment can only legally be given to teens with parental consent, so this approach may not help children whose parents have refused immunizations.

If policies are voluntary, it is important that they create a positive incentive. Ideally, participating in a childhood vaccination program is less burdensome than opting out. This is often not the case—not even in mandatory vaccination programs: in some states in the US, getting an exemption used to be less burdensome than having one’s children vaccinated. Voluntariness does not imply that the state is bound to employ a hands-off approach or be neutral about the choice parents are making. The Dutch program consists of a comprehensive statewide net of child health centers that entices parents to vaccinate by employing an effective system of vaccination reminders. Parents can ignore the schedule, but the program suggests that vaccination is the norm and calls on parents to comply with the schedule. This brings us to the next category.

Norm-expressing policies Our next category of policies might still be considered voluntary, but the extent to which they are actually noncoercive

depends on societal and cultural factors. The aim of norm-expressing policies is to make it clear that vaccination is the norm, even if it is not enforced. If this norm is not expressed explicitly, the government is communicating that parents have a lot of leeway regarding this issue. People might be less hesitant about getting vaccinated when the government makes clear that everyone has a responsibility to contribute to building protection against diseases like measles to protect their own children and others.

Another example of norm expression is that a state does not impose a legal obligation to vaccinate but explicitly allows nonstate actors to take actions that affect nonvaccinating parents. Day care centers could be allowed—or even required—to publish vaccination rates or be allowed to refuse access to children who do not participate in the national vaccination program. This could generate serious pressure on hesitant or refusing parents and even stigmatize them. Such stigmatization may or may not be morally justified (Bayer, 2008), but the important thing for now is to acknowledge that societal pressure can be present even without formal coercive laws. A drawback of some of these policy options is that they shift responsibility from public to private institutions, leaving it to them to determine and maintain rules about vaccination. An example of such a norm-expressing policy is a recent bill of law in the Netherlands (see box 7.2).⁶

A less stigmatizing form of norm expression would be an opt-out system that assumes that all children without a medical exemption will have the vaccination unless parents take explicit steps to opt out, for example, through formal notification. Again, this measure quite explicitly communicates that vaccination is the norm. Although parents must explicitly formulate and communicate their choice not to vaccinate, stigmatization is avoided because their choice does not have to be public. Such strong nudges may raise ethical questions, but in this specific context, there are good reasons to assume they are justified (Navin & Largent, 2017). On the other hand, there is no obvious way of creating a choice situation that makes immunization the default choice and in which it is up to refusers to take specific steps to avoid vaccination. One possibility is for health professionals to visit homes to vaccinate children and discuss other preventive child health options, with parents having the possibility, on the spot, to opt out and justify their choice. Such an outreach approach might have many additional benefits, but it would involve vast investment.

Box 7.2

Norm Expression: Dutch Bill Allowing Childcare Centers to Refuse Nonvaccinated Children

In 2019, the Dutch parliament adopted a bill of law that would allow child day care centers to require participation in the national immunization program as an entry requirement. According to the initiator, liberal member of parliament Rens Raemakers, the bill primarily aims to create informed choice for parents, enabling them to choose a center that is well protected against outbreaks of measles. Yet, even though this law promotes freedom of choice, such a law is far from neutral. By allowing day care centers to refuse unvaccinated children, it expresses and reinforces (but does not enforce) a social norm that parents should accept immunization.

The bill was criticized by many, including the Council of State, the Dutch advisory body on legislation, and us (Evers et al., 2019; Pierik & Verweij, 2018, 2019a, 2019b). Apart from being criticized for specific legal problems (freedom of choice was not considered a legitimate ground for the unequal treatment of nonvaccinating parents), it was criticized for not directly aiming at the heart of the problem—namely, the need to promote higher immunization rates. Notwithstanding the critique, the bill was accepted in the Tweede Kamer (Second Chamber of Parliament), although some parties that voted in favor of it only did so because they perceived it as a first step toward a more stringent policy. In 2023 however, the Senate (First Chamber of Parliament) rejected the bill, so in the end it was not enacted.

Mandatory childhood vaccination programs Policies that involve *mandatory vaccination* are quite common in many countries. We defined mandatory programs as state policies that involve withholding valuable social goods or services from persons who choose to forgo vaccination for themselves or their children for nonmedical reasons. The most important examples are policies that make participation in vaccination programs a legal prerequisite for day care or school attendance. Although there is no federal regulation, all US states legally require the vaccination of children prior to school or day care entry. In most states, parents can receive a waiver if they have religious or philosophical objections. Similar policies have been introduced in France: from 2018 onward, unvaccinated children have been refused admission to day care centers, schools, and summer camps. These policies give parents a choice, but a decision to forgo immunization has serious implications for

parents. Not having access to childcare arrangements or having to arrange home schooling might hamper work–life balance, especially for single parents and two-income households. The freedom to refuse vaccination is severely limited if immunization is necessary for school entry: primary education itself is compulsory in basically all liberal democracies. Hence, freedom to refrain from vaccinating one’s children then depends on the possibilities for homeschooling and the extent to which parents can satisfy educational quality requirements that are imposed on homeschooling. If the standards for homeschooling are very high, the freedom to refuse vaccination is minimal.

A disadvantage of policies that make vaccination *only* mandatory for primary school entry, around the age of four, is that this obligation will come rather late for children whose parents decide to postpone vaccination for as long as possible. Since most vaccines are administered in the first eighteen months of a child’s life, such an approach could imply that many infants and toddlers remain unprotected for several years. So, although this policy option involves a high level of coercion, at the same time, it allows parents a few years to hold off vaccination, creating room for measles, pertussis, or meningococcal infections. More important, since access to education itself is also a basic interest of children, this policy can also backfire. To the extent that the rationale for mandatory childhood vaccination programs is the protection of the basic interests of the child, linking it to school entry implies sacrificing access to one basic interest in order to incentivize another. Mandatory vaccination to promote herd immunity only contributes to a child’s basic interests indirectly, whereas having no access to a basic education undermines a child’s basic interests directly. This makes it clear that the relevant considerations and principles in this discussion are not limited to the fundamental right of parents to freedom of thought, conscience, and religion and the societal interest of preventing infectious diseases. The right of children to an education can sometimes play a decisive role in these discussions.

A more promising alternative is to make participation in the national immunization program a legal requirement for child day care entry.⁷ Access to day care as the target of this policy has two advantages over access to school entry. First, children attend such day care facilities in the period when most vaccinations are administered, so parents will be directly confronted with the negative impact of their choice not to have their infants immunized. Second, unlike school attendance, that at child day care is not compulsory, and having no access to it does not adversely affect the basic interests of

children.⁸ This option therefore leaves much more freedom to parents with genuine objections to vaccination. Unlike compulsory policies, which will be discussed below, this closes the door to childcare options for them. Moreover, the main target of these policies is not primarily the small percentage of parents who have already made up their mind, because it is unlikely that this policy will persuade them. Instead, the main target is the much larger group of parents still on the fence. Such parents may have unarticulated doubts based on half-hearted objections, and since they are never forced to genuinely elaborate their doubts, they might continue to postpone making a decision. And as the proverb goes, one of these days is none of these days. If such parents are not compelled by some external trigger to make a decision, they might never decide, and the child remains unvaccinated. If their lack of decision-making cuts off access to childcare, many parents with less articulated objections might reconsider their initial reluctance.

In this way, policies that link vaccination to day care access can effectively harvest this low-hanging fruit and might be sufficient to achieve or maintain herd immunity. This policy option will be especially effective in promoting vaccine coverage in societies in which most parents take their young children to day care, and in such a context, it may well be the middle ground between almost compulsory policies—linked to school access—and genuinely voluntary policies.

Another mandatory approach involves governments making access to child-related advantages, including child allowances, dependent on vaccinations. An example of this is the *no jab no play* plan and the *no jab no pay* plan, as described in chapter 2 (section 2.4.3). The policy allows parents to forgo vaccination for their children, but parents who do not fully immunize their children (up to nineteen years of age) will cease to be eligible for various forms of financial assistance. The strength of this financial incentive depends on the level of child benefits that a family is entitled to. The Netherlands does not have a *no jab no play* policy or a *no jab no pay* policy, but if the country adopted Australia's policy, then the cumulative sum of child benefits that refusing parents of an eighteen-year-old child would have lost would be around €20,000. Of course, financial penalties in criminal law constitute a similar type of incentive, but strictly speaking, *no jab no pay* is not a legal *penalty* but does mean missing out on financial assistance. If parents opt out of vaccination, they cannot enter the child benefit system. It is

rather disturbing that (affluent) parents would have the option to “pay a fee” to avoid vaccinations as an alternative to contributing to the common good to protect children. This is even more questionable given that their choice poses a threat to other children as well as their own. The alternative mandatory options appear more logical and appropriate: if vaccination is linked to childcare entry, the negative implication of vaccine refusal is more clearly connected to the aim of the policy, which is promoting vaccination and preventing outbreaks. Linking vaccination to reduced access to child-related advantages goes against the principle of purpose binding in lawmaking. This is because the purpose for which the benefits are intended, supporting parents in their endeavor to raise their children, is quite different from the purpose for which they are reduced or withheld—increasing the vaccination rate. Introducing such a measure could go against a central principle of the rule of law, *détournement de pouvoir*, the misuse of power by the state.

Most parents will understand that outbreaks of infectious diseases should especially be prevented in day care centers and schools. Mandatory policies that focus on day care entry are therefore more explicitly on target. Such policies can also reduce parents’ concerns that their child might be exposed to diseases like measles at their kindergarten. For these reasons, policies related to day care entry—possibly extended to school entry if necessary—are preferable to a *no jab no pay* approach.

Compulsory childhood vaccination programs If mandatory policies are still insufficient to attain or restore robust herd immunity, a further step could be compulsory policies: a legal duty to vaccinate, the refusal of which would imply breaking criminal or administrative law and running the risk of punitive action imposed by the government. A punitive action consisting of a fine is not to be considered a fee in exchange for the freedom to make one’s own choice about immunization, as in the *no jab no pay* approach. Refusing vaccination means that parents can be prosecuted, convicted, and punished, possibly ending up with a criminal record. Belgium sets an example: parents who do not let their child be vaccinated against poliomyelitis can be punished with a fine or even imprisonment. In recent years, several such couples have been convicted and were required to pay fines of €500 to €1,000. Interestingly, these amounts are much lower than fines imposed by a mandatory *no jab no play* policy and a *no jab no pay* policy. So although legal compulsion is in principle a more coercive instrument, from a financial

perspective, it may be experienced by parents as less coercive. On the other hand, the social costs of having a criminal record can be very high. Vaccine refusers cannot “be members in good standing of the political community” but are convicted persons, “since they fail to perform an unescapable legal obligation” (Navin & Attwell, 2019, p. 1047). In some countries, just having a criminal record (irrespective of its contents) may be sufficient to be excluded from certain jobs or official functions. A criminal record can thus be a lifelong stigma.

A possible advantage of the unequivocal message of a legal obligation is that it could make hesitant parents less susceptible to endorsing information provided by denialists: such information gets tainted since it incites parents to illegal behavior.⁹

Enforced childhood vaccination The most extreme form of coercion is vaccination being enforced: a child is simply vaccinated against the wish of the parents. This bypasses parental discretion completely: deviant parental choices are not just burdened or punished; they are eliminated. An example of this is the 1990 measles outbreak in the US city of Philadelphia that centered on two fundamentalist churches, Faith Tabernacle and First-Century Gospel, whose members do not believe in vaccination—or in modern medicine in general. Nine children died of measles during the outbreak. Ultimately, a court ordered that all the church members’ children had to be vaccinated, setting parental objections aside. The judges came to this decision because the children were in direct danger of falling ill and becoming vectors in the further spread of the disease—a risk that can be reduced with vaccination, even after exposure (Rubenstein Reiss & Weithorn, 2015, pp. 967–968).

Forced vaccination seems to be justified only to avert an immediate threat of a dangerous infection. In chapter 5, we outlined the normative basis for such an intervention: the state must protect the basic interests of each individual child, and if these interests are threatened by her parents, intervention is necessary. It is unlikely that vaccination against the explicit decisions of parents could be justified as a means to achieve or maintain herd protection. After all, other less intrusive policies could be chosen for that, including application of criminal law. Criminal law or mandatory policies do not suffice, however, if a particular child faces an immediate risk. In such a case, the child must be protected against their parents, and this involves temporarily preventing parents from having custody, which enables a health

professional to administer the vaccination (cf. the discussion of forced blood transfusion in section 5.4).

7.4.3 What? The Content of a National Immunization Program

National immunization programs such as the Dutch Rijksvaccinatieprogramma offer protection against some twelve diseases. Some of them are more infectious and dangerous than others. In this book, we have used measles as the predominant example of a contagious, potentially dangerous infection. The harmful impact of other vaccine-preventable diseases is also beyond dispute—think about diphtheria, polio, and pertussis. Other diseases are less dangerous but can still be serious enough to warrant inclusion of the relevant vaccine in the program. A third set of vaccines is at the time of writing still being discussed for inclusion, for example, the vaccine against varicella, commonly known as chickenpox.

The question of which vaccines are included in a national immunization program is an important one. The more vaccines are included, encompassing vaccines against less severe diseases too, the less the government can simply expect that most parents will just conform and comply with the full schedule. The recent wave of vaccine hesitancy might be an indication that more parents have the feeling that too many shots are given. Including new vaccines in a national program may therefore affect the support for the program as a whole. Even if the assumption of some parents that children receive too many vaccinations cannot be supported by medical evidence, the fact that parents do have such concerns should be taken seriously by public health professionals and governments.

For our purposes, the relevant question is whether, if childhood immunization is mandatory, the coercive measures should apply to all vaccines in the program. The content of such a program is, apart from its liberty-limiting character, another feature that should be taken into account when shaping a vaccination policy in order to make it proportionate. After all, proportionality involves (among others) weighing the value of (public) health and thus the harm to be averted against the importance of protecting freedom. All vaccines in such programs address potentially fatal diseases, but not all are as infectious and dangerous as measles. Does that imply that not all of them may warrant a mandatory or compulsory approach?

Box 7.3**Why Varicella Was Not Introduced into the Dutch Childhood Immunization Program**

In 2020, the Dutch government decided to not include immunization against varicella in the program. The most important consideration in the advice of the Health Council was “that vaccination against chickenpox does not currently serve an urgent public health interest in the Netherlands” (Gezondheidsraad, 2020). This lack of urgency can be explained as follows. The epidemiology in the Netherlands is such that the disease is so prevalent that over 95 percent of children have contracted the disease before the age of five. For almost all children, the infection occurs without complications. This has the positive side effect that infection later in life, which is often more severe, becomes very rare. Most children encounter the disease at an age at which it is relatively harmless.

The introduction of the varicella vaccination into the program could ultimately lead to a decrease in both chickenpox and shingles. But successful varicella vaccination would require a sustained very high vaccination rate to prevent the remaining unvaccinated population being infected at a later stage in life, which would cause a higher burden of disease. Achieving such a high vaccination rate was deemed unlikely, and neither public health professionals nor parents considered the health problem of chickenpox to be very important or pressing (van Lier et al., 2016; van Lier et al., 2019, p. 47). Including the varicella vaccination in the program would therefore protect the vaccinated children against the mild form of the disease, but it would probably cause an increased risk for children of nonvaccinating parents (Pierik, 2020a); for the context of the debate, see the work of Malm and Navin (2020a, 2020b).

The health benefits of preventing a serious infectious disease are determined by what the disease means for patients: how severe is the illness, and what is the likelihood of getting infected and falling ill? Arguably, states should only impose prevention with force if this can help avert infectious diseases that may threaten life or may lead to permanent disability or suffering. These risks are also determined by the availability of adequate and timely therapeutic responses to infection or the lack thereof. Moreover, coercion is more easily justified in cases where the chance of being exposed to infection is high and disease can spread rapidly, so it can easily lead to an outbreak that seriously disrupts social life.

A special case is the tetanus vaccine. Spores of tetanus bacteria are everywhere in the environment, including in soil, and these spores develop into

Box 7.4

HPV Vaccination of Girls and Boys

Another interesting case is the vaccine against the sexually transmittable human papillomavirus (HPV). Immunization against HPV offers protection against cervical cancer. Should this vaccine be part of the mandatory childhood immunization program?

There are strong grounds to offer HPV immunization to all girls (cf. section 2.3), but mandating this vaccine is questionable. First, HPV does not lead to sudden outbreaks that disrupt society, because the related cancers do not manifest themselves in waves but in individual, unconnected instances (see below). Second, the link with childcare or primary school entry is not relevant due to the age of the children but also because these are not the places where the infection will spread. Second, unless boys are vaccinated as well, it will be difficult to attain and maintain herd immunity, so parental refusal does not clearly undermine the public good. Refusal is of course disadvantageous for the individual girl, but she will be able to make her own choice—though probably a few years later—against her parents' will and be protected in time. Several countries, including the Netherlands, have decided to offer HPV vaccination to boys too so that herd protection is achievable. Would it make sense, then, to mandate it after all? Of course, our first counterargument (the missing link with childcare and school entry) still applies.

Moreover, the special nature of sexual intimacy might be an extra ground for hoping that boys would want to be vaccinated for altruistic reasons. For a more extensive discussion of HPV vaccination for boys, see Kraaijeveld (2020).

bacteria when they enter the body. Tetanus does not spread from one person to another. Consequently, there is no such thing as herd protection against tetanus. One can reasonably argue that every individual child should receive protection against tetanus as a matter of equitable access to health and health care, as we argued in section 2.3. The vaccine against tetanus is normally administered as part of a vaccine that protects against multiple diseases, including polio and diphtheria. In the 2021 *Vavříčka* case, the European Court concluded that since every child needs individual protection against tetanus and herd immunity is not achievable, “domestic authorities may reasonably introduce a [mandatory] vaccination policy in order to achieve an appropriate level of protection against serious diseases” (“*Vavříčka*,” 2021, p. 65, ¶288). This does not imply that member states are required to offer it through a mandatory scheme, but they are also not prohibited from doing so.

Indeed, more and more vaccinations involve cocktails that protect against multiple diseases, and this has been a major contribution to the success and health impact of immunization programs. In our view, all common combination vaccinations offer protection against at least one disease that is serious enough to warrant a mandatory or compulsory approach: MMR covers measles, and DPPT includes polio, diphtheria, and whooping cough. Distinguishing between mandatory and nonmandatory vaccines would only make sense regarding vaccines that are administered separately, such as vaccinations against HPV, rotavirus, varicella, or meningococcal disease (although even these vaccines often protect against multiple strains of the same pathogen).

In countries with adequate and accessible health care systems, rotavirus¹⁰ is an interesting case because almost all children are infected and experience temporary and mild disease; a small group of patients, however, have complications, require hospitalization, and may sometimes die because of these “mild” diseases. It is not obvious that these diseases are severe enough on a population level to warrant mandatory immunization. At the same time, the disease comes in waves, which can temporarily overwhelm hospitals’ pediatric wards. Judging whether they should be part of the mandatory scheme requires a careful assessment of epidemiology, the course of severe illness, and the peak load it can generate for the health system. But it ultimately involves a value judgment about whether or not to accept risks that are very small on a population level but potentially grave for specific individuals. Given that these are contextual decisions, it is not surprising that different countries will judge these risks differently and that some will consider, for example, mandatory rotavirus vaccination to be proportionate while others will not.

7.4.4 When? The Timing of More Coercive Measures

Populations do not need complete vaccine coverage to be protected, even in the case of the most infectious diseases. And herd immunity is also not an all-or-nothing concept. A 95 percent vaccination rate is sufficient to protect against measles, but a vaccination rate of 85 percent also offers a much better collective protection than a vaccination rate of 70 percent. If it is possible to attain and maintain sufficiently high participation in a voluntary vaccination program, this is to be preferred as a matter of proportionality. This observation raises the question of at what point a voluntary program should transition into a more coercive one. A country like the Netherlands, with a voluntary scheme, has seen the MMR (given at two years of age) participation rate

fluctuate between 96.2 percent (2006 cohort) and 92.9 percent (2016 cohort) (van Lier et al., 2021). It should be noted, however, that these are national figures; in some villages or parts of cities, coverage is currently way below 70 percent. The World Health Organization recommends that countries aim for 95 percent as this is seen as the percentage needed to eliminate measles. Is any participation rate below the WHO recommended figure a sufficient circumstance for coercion? Here we must distinguish two rather different policy goals: the role of states when they ratify an international treaty that seeks to eliminate diseases like measles altogether and the role of states to protect their (underaged) citizens.

If this latter question is about the proportionality of policy measures, then a threshold level for justified coercion should depend on the nature of the measures envisioned, with a higher level of coercion only applied when the vaccination rate decreases further. One could imagine successive steps of increasing coercion, with, for example, a mandatory approach being justified if participation drops below 95 percent and compulsory vaccination, making refusal a misdemeanor or crime, being justified if coverage is below 90 percent. Determining such thresholds is, ultimately, a matter of political judgment about what sorts of risks are considered acceptable within one's society.

A policy change that involves exchanging a fully voluntary approach for coercive measures will be a controversial decision requiring political courage. It is often suggested that such a change will provoke a lot of resistance and that it may even be counterproductive as it could spur distrust of public health authorities. Recent examples of policy change (Australia, California, France, Germany) have not led to widespread resistance or uproar, but it is still a concern that should be taken seriously. Introducing mandatory measures might be successful regarding avoiding an imminent outbreak but could simultaneously undermine the diffuse background support for vaccination in general. In our view, it therefore makes sense to make political decisions about the threshold for coercive measures at a time when that threshold has not been met. We believe that implementing coercive measures will be much more feasible and sustainable in the long term if they are not hastily imposed in response to an acute emergency. On the other hand, such discussions will not receive much political support if they are conducted in the context of an unthreatened robustly high vaccination coverage, because the issue will have insufficient urgency on an always crowded political agenda. Instead, such

discussions should start at the moment the trend of declining vaccination coverage is clearly visible in the statistics or in surrounding countries. This means that such policies are debated in the context of a concrete trigger and, at the same time, have been prepared and announced well in advance of an acute outbreak. This requires politicians to start discussing the issue before it becomes an acute problem—and civil society to put the issue on the agenda.

Interestingly, societal and subsequent political discussions about the choice of parents to forgo vaccination for their children and about the risks this creates for society at large may themselves lead to a higher immunization uptake. This seems to have been one of the factors contributing to a slightly increased vaccination rate in the Netherlands since 2018 after years of decline, even before new policies were established. Ongoing political and societal debate about nonvoluntary measures may generate some pressure on parents or lead hesitant parents to rethink their opposition and change their minds, thus making the implementation of such measures less necessary—at least for the time being.

7.4.5 Until When? The Reversal of Measures

So far, we have been focusing on the proportionality of coercive measures in response to decreasing vaccine uptake. But what if such measures have been successful for years or decades, resulting in a stable uptake of 95 percent or more; would the principle of proportionately then require that coercive measures should be relieved or lifted?

We tend to think they should not happen. Our stance involves a broader perspective on the principle of proportionality: we not only look at weighing the intrusiveness of the interventions against the graveness of the harm to be prevented but also consider the broader burdens and benefits of policy change.

The first argument against lifting coercive measures that have been successful is the risk that uptake would decrease again. A government that considers abandoning coercive measures to protect herd protection must be sufficiently confident that this policy change will not negatively affect participation rates. From a policy perspective, it would be undesirable if such a policy had to be reversed *again*, alternating between implementing and revoking compulsory measures.

A second argument for maintaining mandatory vaccination is one of feasibility. The societal impact of *implementing* a coercive measure is presumably much larger than *revoking* such a policy. Public resistance against imposing measures will be concentrated around the time of the decision-making and implementation, whereas calls to revoke the measures will be spread over a much longer period and arguably will continue during the time that the policies are in place, which may be years. It might also be relevant that many people—even those who had previously opted out of vaccination—will get used to the idea if every child is vaccinated as a matter of law. There is an analogy with seatbelts here (Giubilini & Savulescu, 2019). Arguably, many people have internalized the need to use a seatbelt since they became mandatory in many countries, and one could argue that mandatory seatbelt laws therefore interfere much less with their freedoms than at the time of their initiation. Of course, even if everyone endorses seatbelts, a law that requires us to do so is still an infringement of negative freedom. But few people will experience it as such.

A third argument for maintaining mandatory vaccination is that law-making also has a symbolic impact, affecting social norms over time. The introduction of mandatory seatbelt wearing and smoking bans were contested when they were implemented but became more generally (albeit never universally) accepted and, consequently, the implicit “new normal” over time. So, even though we need such legal measures to stop a small minority from smoking, smoking bans are now totally undisputed among the large majority of the population, including most smokers themselves. Indeed, it is rather striking to realize nowadays that in many countries that now have smoking bans, it was considered perfectly normal in the 1970s to smoke on trains and planes and in restaurants and lecture halls. It is possible that mandatory vaccination measures, once implemented, will have a similar effect over time: that even resistance that is very vocal at the start will become a marginal phenomenon over time. But the symbolic function of law has an effect: if the coercive measures are lifted, it sends a message that it is no longer a problem if parents refuse vaccination for their child. It is as if the government is saying, “We are happy with current vaccine coverage and from now on it is OK for a small group to opt out.” Voluntary programs should not, however, support vaccine refusal at all—and should not even suggest such support.

We conclude that governments have good reasons to stick to mandatory vaccination policies, even if they have led to a stable and sufficiently high vaccine uptake.

7.5 The Contours of Proportionate Coercive Childhood Vaccination Programs

In chapter 4, we offered a principled justification for imposing coercive measures to protect and maintain a level of vaccine coverage that generates robust herd immunity. To achieve that goal, for example, for measles, the vaccination rate does not have to be 100 percent, so there is some space for leeway and tolerating a limited proportion of vaccination refusals. In chapter 6, we concluded that this space for refusal should not, however, be allocated through nonmedical exemptions, because such an approach cannot satisfy some central requirements that a liberal democracy should set for such policies. In this chapter, we formulated a more compelling method for establishing coercive measures in a proportionate way. Liberty-limiting policies are defensible if and only if they fulfill a legitimate purpose, if they are effective and not more intrusive than necessary, and if the interests of all persons concerned have been taken into account and weighed.

In this chapter, we have argued that vaccination policies aiming at maintaining herd immunity do indeed serve a legitimate goal and also that, especially in the context of childhood vaccination, the rights of parents can be infringed legitimately when this is necessary to protect and maintain herd protection. And even though there is a myriad of options for voluntary measures to promote vaccination, such policies may not secure a sufficiently high vaccination rate in all circumstances. The drop in the vaccination coverage after the publication of Wakefield's article that falsely linked vaccination to autism is a case in point here. With this in mind, it is reasonable for governments to consider how vaccination policies can be coercive, yet in a proportionate way. We have outlined the factors that should be considered if a government, confronted with inadequate vaccine uptake, is considering making childhood immunization less voluntary. Proportionality can be achieved and shaped in a variety of ways: by adjusting the nature of measures that nudge or even force parents to participate, by deciding on a smaller or a larger package of vaccinations that are mandatory, and by setting thresholds for vaccine uptake that determine when specific coercive measures are to

be implemented. Decision-making about which policies are appropriate in a country will have to consider the epidemiological, societal, and cultural contexts, as well as the strength and accessibility of the (clinical) health care facilities of that country. Thus, what might fit well in one country could be inappropriate in another.

At the same time, we have suggested how some measures are less defensible than others. Some norm-expressing policies, notably those that merely *allow* child day care and schools to refuse unvaccinated children, are problematic as they neglect the fact that protection against infectious diseases is first and foremost a responsibility of government and not of private organizations. The government responsibility is much more central in mandatory approaches, and these have been shown to be effective in maintaining herd protection in many jurisdictions. The most common measure is to make vaccination an entry requirement for primary schools and sometimes also child day care centers; an alternative approach is to link it to child benefits. If low vaccination rates necessitate mandatory policies, we have argued in favor of a policy that makes vaccination required for access to child day care. If this does not yet result in a sufficiently high vaccination rate, a next step is to consider vaccination as a requirement for school attendance as well, although it should be done in a way that it does not damage children's basic interest to education. Linking the requirement of vaccination to child benefits is in our view less defensible as it involves the wrong sort of coercion: it makes refusal a legitimate option that parents can decide to "buy." If there is a preference for financial sanctions, it is better to make them a matter of criminal punishment, hence a compulsory measure. This is because criminal law also includes an extremely powerful expressive element: being convicted and forced to pay a fine conveys the notion that vaccination remains a legal obligation, and paying the fine does not take away the wrongness of refusal.

What should be in the mandatory package? We consider several diseases, like polio, measles, diphtheria, pertussis, and meningococcal disease, as obvious targets for mandatory immunization, because these diseases can spread rapidly and lead to permanent disability or death, and the treatment for them is not straightforward. More discussion is possible concerning, for example, rubella, mumps, tetanus, HPV, hepatitis B, and rotavirus, either because the risks of infection and disease may vary in different regions in the world or because other (cultural, social, economic, health care) factors can result in different judgments about the severity of infection and disease. The case of

chickenpox (see box 7.3) shows that deciding on the contents of a mandatory vaccination package involves complex scientific and societal judgments in which many different aspects need to be taken into account. Pragmatic considerations will also play a role. Public policies need to be clear and persuasive, and this constrains the extent to which complexity, generated by philosophical subtlety, can be taken into account. For example, it would not be implausible for public health authorities to prefer *one* mandatory package that is offered to all children, instead of distinguishing between some vaccinations that are mandatory and others that are optional. After all, the optional vaccines will also offer important protection for each child, and the contrast with mandatory vaccines may send the wrong message.

A similar pragmatic stance can be taken toward decisions about a threshold for implementing mandatory measures. Epidemiological evidence and modeling can offer limited guidance for deciding what is an absolute minimum level of vaccine uptake. The objective is, of course, robust herd protection. But what level is necessary is not a simple calculation. It will differ for each infectious disease. Moreover, even a 95 percent vaccination rate in a country may not be enough if there are many small local pockets where less than 70 percent of all children participate. Decisions will therefore be based not only on scientific evidence and modeling but also on pragmatic considerations. Public health programs should preferably be clear and simple, as well as easy to explain and justify to the public. If there are ways to avoid resistance and debates in which antivaccination lobbies take a prominent role, public health authorities have good reason to choose those options. Seeking and maintaining public support for vaccination policies may be considered a rather pragmatic aim, but that does not make it less important: it is essential for any program that ultimately depends on the willingness of most parents to participate.

A policy choice that is a little too pragmatic would be to discontinue mandatory vaccination when, after a long period of declining uptake, figures are on the rise again. In our view, this does not fit well with the principle of precaution for two reasons. One is that few countries with voluntary schemes have been able to attain a vaccine uptake that is higher than 95 percent. A second is that coverage is likely to go down again after a period with fewer outbreaks, and then the risks of disease will become high again, leading to new calls for coercive measures. Vaccination policies—and discussions about changing them—should be coherent and well grounded, not ad hoc. The

idea of deciding on a threshold for implementing coercive measures can help in this respect.

If the state is to take both the importance of vaccination *and* the intrusiveness of mandatory programs seriously, it makes sense to use the good times of (almost) sufficient or increasing vaccine coverage to maintain or even strengthen public health policies that will be needed for worse times. For example, in the Netherlands, vaccine coverage slightly increased in 2019 and 2020 but was still below the WHO recommended 95 percent. One possible approach would be to set the threshold for mandatory policies somewhat below the current vaccination rate (e.g., at 93 percent) and to gradually push the threshold up if coverage increased further in the coming years, until the WHO recommendation is achieved. In this way, the immunization policy can become more stringent without an immediate implementation of coercive measures. Such an approach would strike an optimum balance between the competing fundamental rights and interests at stake.

7.6 Childhood Vaccination: A Conclusion

In chapter 4, we developed a generic principled justification for coercive immunization policies. This chapter completes a series of discussions in which we apply the Millian argument to childhood immunization (chapter 5) and present a proposal for a proportionate form of mandatory vaccination. The proposal rejects exemption policies (chapter 6) and instead sets a minimum level of vaccine coverage below which it is considered justified to require all children attending day care centers to participate in the national immunization scheme. By discussing the relevant dimensions of a proportionate policy, we offered a range of possibilities to tailor the proposal to different contexts, which may also guide the democratic policy-making process (which is necessary for coercive measures). In the next chapter, we explore how our principled justification may also offer a basis for coercive yet proportionate vaccination programs for adults.

This is a section of [doi:10.7551/mitpress/15307.001.0001](https://doi.org/10.7551/mitpress/15307.001.0001)

Inducing Immunity?

Justifying Immunization Policies in Times of Vaccine Hesitancy

By: Roland Pierik, Marcel Verweij

Citation:

Inducing Immunity?: Justifying Immunization Policies in Times of Vaccine Hesitancy

By: Roland Pierik, Marcel Verweij

DOI: 10.7551/mitpress/15307.001.0001

ISBN (electronic): 9780262378376

Publisher: The MIT Press

Published: 2024

The open access edition of this book was made possible by generous funding and support from MIT Press Direct to Open



The MIT Press

© 2024 Massachusetts Institute of Technology

This work is subject to a Creative Commons CC-BY-NC-ND license.

This license applies only to the work in full and not to any components included with permission. Subject to such license, all rights are reserved. No part of this book may be used to train artificial intelligence systems without permission in writing from the MIT Press.



The MIT Press would like to thank the anonymous peer reviewers who provided comments on drafts of this book. The generous work of academic experts is essential for establishing the authority and quality of our publications. We acknowledge with gratitude the contributions of these otherwise uncredited readers.

This book was set in Stone Serif and Stone Sans by Westchester Publishing Services.

Library of Congress Cataloging-in-Publication Data

Names: Pierik, Roland H. M., author. | Verweij, M. F., author.

Title: Inducing immunity? : justifying immunization policies in times of vaccine hesitancy / Roland Pierik and Marcel Verweij.

Other titles: Basic bioethics

Description: Cambridge, Massachusetts : The MIT Press, [2024] | Series: Basic bioethics | Includes bibliographical references and index.

Identifiers: LCCN 2023013919 (print) | LCCN 2023013920 (ebook) | ISBN 9780262547796 (paperback) | ISBN 9780262378369 (epub) | ISBN 9780262378376 (PDF)

Subjects: MESH: Vaccination—ethics | Mandatory Programs—ethics | Vaccination Hesitancy | Health Policy | Communicable Disease Control

Classification: LCC RA638 (print) | LCC RA638 (ebook) | NLM WA 115 | DDC 614.4/7—dc23/eng/20230727

LC record available at <https://lcn.loc.gov/2023013919>

LC ebook record available at <https://lcn.loc.gov/2023013920>