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Legal Obligations in Mandatory Vaccination in Schools: A Public Health Law and Ethics Perspective

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Abstract: This study analyzes the legal and ethical legitimacy of mandatory vaccination policies in schools from a public health law perspective. It focuses on the relationship between the state's responsibility to protect public health, children's right to health, and the boundaries of parental autonomy in making medical decisions for children. The study applies public health theory and legal certainty theory to examine the normative and ethical foundations underlying mandatory vaccination. A mixed-methods approach with a sequential explanatory design is employed, combining normative legal analysis with an empirical review of secondary data. The legal analysis examines national regulations concerning health, immunization, and child protection, while the empirical component reviews scholarly literature addressing public acceptance, implementation challenges, and ethical concerns surrounding school-based vaccination programs. The findings indicate that mandatory vaccination policies have strong legal justification as preventive measures aimed at controlling infectious diseases and protecting children's health. From an ethical perspective, such policies may be justified when implemented proportionally, transparently, and on the basis of scientific evidence, while providing appropriate parental consent procedures and medically justified exemptions. The study further demonstrates that policy effectiveness depends not only on legal authority but also on regulatory clarity, effective risk communication, institutional accountability, and public trust. One important limitation is the restricted availability of primary empirical data concerning the experiences of parents, teachers, healthcare workers, and policymakers involved in school-level implementation. Therefore, future policy development should strengthen legal regulations, improve public health education, and establish transparent communication mechanisms. This study contributes to health law literature by integrating legal and ethical perspectives to develop a balanced framework for protecting collective health, children's rights, parental autonomy, and legal certainty.

Keywords: child health rights; legal certainty; mandatory vaccination policy; public health ethics; school immunization.

Introduction

In the long history of modern public health, vaccination has held a virtually irreplaceable position as one of the most effective instruments in preventing the spread of infectious diseases. It is not simply an individual medical measure, but rather a collective practice that connects the human body to broader social responsibilities. Within the framework of public health, childhood immunization is seen as a long-term investment in societal sustainability, as it protects young people from preventable diseases while reducing the burden on health systems in the future. The World Health Organization confirms that childhood immunization programs significantly

contribute to reducing morbidity, disability, and mortality from infectious diseases, and play a crucial role in maintaining social stability by protecting the health of the broader population (Gül et al., 2023). Thus, vaccination is not only a medical practice, but also a social mechanism that ensures the continuity of life together in a healthy society.

In the context of education, schools hold a strategic position as institutional spaces that enable the systematic, widespread, and sustainable implementation of vaccination. The school environment brings together children from diverse social backgrounds in a space of intense interaction, so the potential for infectious disease transmission is relatively high if not balanced with adequate preventative measures. Therefore, many countries have made schools the central point for implementing childhood immunization programs. Integrating health policies with the formal education system aims not only to increase vaccination coverage but also to create a safe and healthy learning environment for all students. From a public policy perspective, this approach is seen as a form of synergy between the health and education sectors in protecting the young generation as a strategic national asset (Owolabi et al., 2023).

Indonesia has adopted a similar approach by establishing schoolchildren's vaccination as part of its preventive national health policy. Through various regulatory instruments, the state affirms its responsibility to protect public health while ensuring the fulfillment of children's basic rights to optimal health. The schoolchildren's immunization program, which includes vaccines for diphtheria, tetanus, human papillomavirus, and measles, is part of a national strategy to control infectious diseases that have the potential to have a broad impact on public health. Implementation of this program involves cross-sector collaboration between the government, health care facilities, and educational institutions. In this regard, schools serve not only as academic learning spaces but also as arenas for implementing preventive health policies designed to effectively reach the child population (Kementerian Kesehatan Republik Indonesia, 2023).

However, behind this seemingly systematic policy framework, the reality of implementing mandatory vaccination in schools often faces complex social dynamics. In recent years, the phenomenon of vaccination refusal by some parents has emerged as a major challenge in implementing childhood immunization programs. This refusal cannot be understood solely as a lack of information or low levels of health education. Various studies have shown that vaccine skepticism is often influenced by a combination of psychological, social, and cultural factors, including perceived risks of vaccine side effects, levels of trust in health institutions, and the influence of narratives developing in the digital space (de Figueiredo, 2022). Social media plays an ambivalent role in this regard, expanding access to health information while also serving as a medium for the spread of disinformation that can exacerbate public skepticism about vaccination programs (Steffens et al., 2019).

In Indonesia, the phenomenon of childhood vaccination refusal presents its own complexities, intersecting with diverse social, cultural, and religious dimensions. Research shows that some parents refuse vaccination not only due to medical concerns, but also due to value considerations, personal experiences with the health system, and levels of trust in government authorities. In some cases, this refusal even arises as a form of resistance to policies perceived as overly intrusive into the family's private space (Fahmi, 2023). This situation places schools in a challenging position, as on the one hand, they have an obligation to implement government policies, while on the other, they must directly confront objections from parents who feel they have the right to make health decisions for their children.

This issue becomes even more complex when linked to the principle of parental consent in medical procedures for children. In modern health law, children are generally viewed as not yet fully capable of making independent medical decisions, so any medical procedure performed on a child requires the consent of a parent or guardian. This principle, known as parental consent, is seen as a mechanism for protecting children's rights while respecting the family's authority in decision-making regarding the child's health (März, 2022). However, the application of this principle in the context of mandatory vaccination raises fundamental questions about the limits of parental authority when their decisions have the potential to impact broader public health.

From a public health ethics perspective, parents' right to make health choices for their children cannot be understood as absolute. The state has a responsibility to act when individual decisions potentially pose a risk to the safety of children or society as a whole. Health ethics

literature emphasizes that mandatory vaccination policies are justifiable if they aim to protect the population from dangerous infectious diseases and are implemented proportionally and fairly (S. B. Omer et al., 2023). Within this framework, vaccination is seen not merely as an individual medical measure but as a form of moral responsibility towards the wider community.

From a children's rights perspective, vaccination is an integral part of fulfilling the right to health and protection from preventable diseases. The principle of the best interests of the child, recognized in various international legal instruments, emphasizes that all policies related to children must be directed at improving their well-being and safety. In this context, refusing vaccination without a legitimate medical reason can be viewed as potentially violating the child's best interests, particularly in school settings where the risk of infectious disease transmission is high (Giubilini & Savulescu, 2022a).

Beyond the issue of children's and parents' rights, mandatory vaccination policies in schools are also closely linked to the theory of social welfare. Within this framework, the state has the legitimacy to intervene in individual behavior if the intervention aims to protect public health. Vaccination programs are viewed as a form of social investment that provides collective benefits through the creation of herd immunity, which can suppress the spread of infectious diseases. However, state intervention in the health sector must also adhere to the principles of proportionality and justice to avoid creating social resistance that could hinder the policy's success (Luyten & Beutels, 2021).

On the other hand, the implementation of mandatory vaccination in schools also requires clear legal certainty. Legal certainty relates not only to the existence of regulations governing vaccination but also includes clarity regarding institutional authority, policy implementation mechanisms, and procedures for handling parental refusal of vaccination (Mulla & Barafi, 2024). Unclear norms in vaccination policies can lead to various practical consequences, including administrative confusion at the school level, potential conflict with parents, and the risk of violating children's rights to education if the policy is implemented discriminatorily. In practice, schools are often the actors at the forefront of implementing vaccination policies, even though they do not have full authority to determine these policies (Bardosh, 2022).

This situation demonstrates that the issue of mandatory vaccination in schools is not only a medical issue, but also involves intertwined legal, ethical, and public policy dimensions (Sela et al., 2023). On the one hand, the state has an obligation to protect public health through preventive vaccination policies. On the other hand, parents have the right to be involved in decision-making regarding their children's health. Meanwhile, schools are at the intersection of these interests as institutions responsible for implementing health policies while ensuring the continuity of the educational process (Błaszczyk et al., 2025).

Although the issue of mandatory vaccination has received attention in various international studies, studies specifically examining the relationship between the legal obligation to vaccinate, parental rights, and the role of schools in the Indonesian context are still relatively limited (Odone et al., 2021). Most previous research tends to focus on public health aspects or normative analysis of vaccination regulations, without comprehensively examining the interrelationships between the legal, ethical, and policy implementation dimensions at the educational institution level. In other words, there is a significant research gap in understanding how mandatory vaccination policies in schools are implemented in practice and how they interact with parental rights and the best interests of children (Reiss & Karako-Eyal, 2019).

This research gap is increasingly important to examine, given the strategic role schools play in implementing public health policies. Without a clear legal and ethical framework, schools potentially face a dilemma in balancing their obligation to implement government policies with their responsibility to respect parental objections. This situation not only impacts the effectiveness of vaccination programs but also the protection of children's rights and the stability of the relationship between educational institutions and the community (Rahman et al., 2023).

Based on this background, this study aims to analyze the legal obligation of mandatory vaccination in schools from the perspective of public health law and ethics. Specifically, this study seeks to examine how the school vaccination policy in Indonesia is understood within the framework of public welfare and legal certainty, and how the role of schools as policy implementers can be positioned proportionally within the relationship between the state, parents,

and children. Through this analysis, this study is expected to provide a conceptual contribution to enriching the discourse on health law in Indonesia while offering a more comprehensive understanding of the implementation of mandatory vaccination in educational settings (Pahruroji & Virgianita, 2024).

Method

This study employed a mixed methods approach with a sequential explanatory design, a research strategy that combines normative qualitative analysis with sequential empirical studies to gain a comprehensive understanding of the legal obligations of mandatory vaccination in schools from a legal and ethical perspective in public health. This approach was chosen because the issue of mandatory vaccination is not only related to the validity of legal norms, but also to social acceptance, ethical considerations, and the dynamics of policy implementation in educational settings and society (Creswell & Clark, 2018). The first stage of the research was conducted through a normative qualitative approach or doctrinal legal research, which analyzed laws and regulations, legal doctrine, and ethical principles related to mandatory vaccination, children's rights to health, parental consent, and school responsibilities. The target of this study was not individual respondents, but rather legal norms, public policies, and secondary empirical findings relevant to the implementation of mandatory vaccination in schools.

The research data consists of normative data and secondary empirical data obtained through a limited systematic literature review. Normative data includes laws and regulations related to health, child protection, and immunization policies, as well as literature on health law and ethics. Meanwhile, secondary empirical data is sourced from scientific articles, policy reports, and previous research findings that discuss public acceptance and challenges of vaccination implementation in schools. Literature searches were conducted in various scientific databases, such as nationally accredited journals, Google Scholar, PubMed, and ScienceDirect, taking into account the relevance and currency of the sources. The analysis was conducted in stages, consisting of a normative review, followed by a qualitative analysis of secondary empirical data, and then integrated through comparative analysis and interpretive synthesis to identify congruences and gaps between legal norms and the reality of policy implementation. Data validity was maintained through source triangulation, comparing various legal documents, academic literature, and empirical studies to ensure the validity of the resulting analysis (Emanuel, 2022).

Results and Discussion

The results of the normative analysis indicate that the Indonesian legal system essentially provides a solid foundation for the state to establish a mandatory vaccination policy, including one implemented through educational institutions. This legal framework is based on the principle that public health is a constitutional responsibility of the state that must be implemented through systematic, preventive, and sustainable policies. In this context, Law Number 36 of 2009 concerning Health emphasizes the government's obligation to implement comprehensive health development as part of efforts to improve public health. This regulation positions the state as the primary actor in implementing various public health interventions, including efforts to prevent and control infectious diseases through immunization programs (Ghedamu & Meier, 2019). Within the framework of modern health law, immunization is viewed as a preventive instrument that not only protects individuals but also creates collective protection through the establishment of herd immunity, which is crucial for public health stability (Vigezzi et al., 2024). Therefore, from a public health law perspective, a mandatory vaccination policy is not simply a policy choice but part of the state's responsibility to protect the public from epidemiological risks that could threaten public safety.

This legal basis is further strengthened by Law Number 6 of 2018 concerning Health Quarantine, which provides legal legitimacy for the state to take extraordinary measures in response to public health threats (Grogan, 2022). This regulation authorizes the government to implement various health risk control policies, including restrictions on individual rights when necessary to protect the public interest. In public health law theory, restrictions on individual rights in health emergencies are not considered human rights violations as long as they are based

on the principles of legality, proportionality, and the objective of protecting the public interest (Gostin & Wiley, 2021). This principle demonstrates that modern health law not only places individual freedom as a primary value but also recognizes that the collective interests of society can serve as a basis for legitimizing state intervention. Therefore, vaccination policies must be legally justified as long as they are designed to protect public health and implemented through transparent and accountable mechanisms.

In child protection, the legitimacy of mandatory vaccination must be aligned with Indonesia's child protection framework. Law No. 35 of 2014 affirms children's right to healthcare and protection from diseases that may threaten their growth and development. Thus, safeguarding children's health represents not only a parental responsibility but also a state obligation implemented through effective public policies. School-based vaccination can therefore be viewed as both a public health intervention and a means of fulfilling children's legally protected right to health. Recent health law scholarship also emphasizes the state's positive duty to provide preventive measures, including accessible immunization programs for school-age children. Nevertheless, mandatory vaccination requires clear legal standards governing vaccination requirements, school responsibilities, coordination with health authorities, and parental consent. Ambiguous regulations may generate conflicts between institutional duties and parental rights, ultimately creating legal uncertainty in policy implementation (Wahyudi, 2022). Therefore, clear and consistent regulatory design is crucial to ensuring that mandatory vaccination policies can be implemented effectively without creating legal conflicts at the implementation level.

From a legal and health ethics perspective, the issue of parental consent is one of the most complex aspects of childhood vaccination policy. Legally, parents have the authority to consent to medical procedures performed on their children as part of the family's right to autonomy. This principle is rooted in the idea that the family is the primary environment responsible for the child's well-being. However, within the framework of public health law, this authority is not absolute. The state may intervene limitedly if parental decisions potentially jeopardize the child's best interests or pose a risk to broader public health. Modern bioethics literature indicates that state intervention in family decisions is justified when such action is necessary to prevent serious harm to the child or the surrounding community (Alfahmi, 2022). Thus, mandatory vaccination policy is essentially an effort to balance respect for family autonomy with the state's obligation to protect public health.

Resistance to childhood vaccination is influenced by safety concerns, misinformation, and limited trust in government institutions. Research shows that public acceptance depends strongly on effective risk communication. Policies implemented without transparent and participatory communication may increase resistance, social polarization, and vaccine-related misinformation (Bardosh, 2022). Within the framework of public health ethics, the justification for mandatory vaccination policies is often based on the principles of the best interests of the child and the protection of vulnerable groups (Jalilian et al., 2023). Children are viewed as a group not yet fully capable of making independent health decisions, so the state has a moral responsibility to ensure that they receive optimal health protection. The principle of beneficence in bioethics emphasizes the obligation to maximize health benefits for individuals and society, while the principle of non-maleficence demands that health policies be designed to minimize potential risks. In this context, mandatory vaccination can be ethically justified if the resulting health benefits significantly outweigh the potential risks (Giubilini & Savulescu, 2022a). This perspective emphasizes that immunization policies are not simply medical interventions but also moral actions aimed at protecting the life and well-being of society at large.

However, mandatory vaccination policies must be designed sensitively to the principles of fairness and non-discrimination. Not all children are eligible for vaccination due to certain medical conditions, such as immune system disorders or allergies to vaccine components. Therefore, mandatory vaccination policies must provide clear medical exemption mechanisms and legal protection for children who cannot be vaccinated. Without such mechanisms, vaccination policies have the potential to lead to discrimination or stigma against certain groups. Health ethics literature emphasizes that public health policies must be designed with the principle of fairness in mind, namely ensuring that the benefits and burdens of the policy are distributed

proportionally within society (Savulescu, 2021). Therefore, the existence of medical exemption mechanisms is not only an administrative necessity but also a crucial part of the ethical legitimacy of mandatory vaccination policies.

In policy implementation, schools serve as strategic institutions connecting the state, families, and children. Their role in vaccination programs should remain administrative and facilitative rather than coercive. Schools can provide accurate health information, coordinate with healthcare authorities and parents, and protect children's educational rights. Using schools as punitive institutions may increase parental resistance and weaken trust. A more effective strategy is to transform schools into spaces for dialogue through health education, evidence-based information, and meaningful parental participation. Transparent communication and community involvement can strengthen public trust and improve vaccine acceptance. Therefore, schools should function primarily as communication bridges that support the legitimacy and effectiveness of vaccination policies rather than as instruments of coercion (Hester et al., 2022).

The integration of normative and empirical findings in this study indicates that the mandatory vaccination policy for children in schools essentially has strong legal and ethical legitimacy if designed proportionally, transparently, and based on scientific evidence. The Indonesian legal framework provides sufficient basis for the state to implement this policy as part of its constitutional responsibility to protect public health (Harris & Simanjuntak, 2022). However, this legal legitimacy must be balanced with a policy design that respects the rights of children and parents, and implemented through effective public communication mechanisms. The principles of beneficence and justice in bioethics support efforts to protect public health through vaccination, while the principles of autonomy and non-maleficence remind that such policies must be implemented carefully to avoid violations of rights or disproportionate risks to individuals (Emanuel, 2022). With a balanced approach between public health protection and respect for individual rights, a mandatory vaccination policy in schools can be a policy instrument that is not only epidemiologically effective but also legally and ethically sound from a modern public health perspective.

Legal Basis for Mandatory Vaccination in Schools

Normative analysis shows that the Indonesian legal system consistently provides strong legitimacy for the state to establish mandatory vaccination policies as part of public health protection. In the modern health law paradigm, the state plays a role not merely as a passive regulator but as a primary actor with a moral and legal responsibility to protect the population from the risk of infectious diseases. This perspective positions public health as a collective interest that requires structured and sustainable policy interventions. Therefore, vaccination policy cannot be viewed simply as a medical program, but rather as a public policy instrument that functions to maintain the stability of public health at large (Gostin & Wiley, 2021).

The primary legal basis for this policy can be found in Law Number 36 of 2009 concerning Health, which affirms the government's responsibility to implement comprehensive and sustainable health development (Thahir & Tongat, 2024). This regulation places infectious disease prevention and control efforts as a top priority within the national health system. In public health literature, preventive strategies such as immunization are viewed as the most effective approach to reducing the burden of infectious diseases while improving the overall health quality of the population. Global research shows that immunization programs have been one of the most successful health interventions in public health history, preventing millions of deaths annually (Alanazi et al., 2024).

Within the framework of public health theory, vaccination plays a strategic role in building herd immunity. This concept refers to a condition where a significant portion of a population has acquired immunological protection against a disease, significantly disrupting the chain of transmission. When vaccination rates are high, individuals who cannot receive the vaccine due to medical conditions still receive indirect protection from their environment. Therefore, the success of herd immunity depends heavily on the level of community participation in immunization programs. Various studies have shown that high vaccination coverage can drastically reduce the risk of infectious disease outbreaks in the community (Giubilini & Savulescu, 2022a).

Schools are a social space that plays a strategic role in the implementation of childhood vaccination policies. School environments bring together large numbers of children in intense social interactions, potentially becoming hotspots for the spread of infectious diseases if adequate health protection mechanisms are not in place. From an epidemiological perspective, schools are often the initial point of infection transmission, which then spreads to families and the wider community. Therefore, school-based vaccination policies aim not only to protect individual children but also to be part of a systemic public health risk management strategy (S. B. et al. Omer, 2023).

Law No. 6 of 2018 on Health Quarantine strengthens the legal basis for mandatory vaccination by granting the state authority to adopt proportionate measures against public health threats. Such intervention is legitimate when grounded in clear legal provisions, pursuing legitimate public health objectives, and implemented transparently and accountably. From an ethical perspective, vaccination can be justified through beneficence and justice because it protects individuals and communities from preventable diseases. For children, Law No. 35 of 2014 on Child Protection further establishes the state's responsibility to safeguard their health and development. Accordingly, school-based vaccination represents an important preventive measure for fulfilling children's right to health. International perspectives also recognize children as particularly vulnerable to infectious diseases, reinforcing the state's responsibility to provide effective and equitable immunization programs (Abbasi et al., 2018). In this context, vaccination serves not only as a medical intervention but also as an instrument for protecting children's rights, as recognized in both national and international law (Beccia et al., 2022).

The consistency between public health norms and child protection principles demonstrates that the Indonesian legal system provides a sufficiently robust normative framework for a mandatory vaccination policy. However, the effectiveness of this policy depends heavily on the quality of the implementing regulations governing its implementation. Clear regulations regarding vaccination procedures, the role of schools, and coordination with health authorities are crucial to ensuring the policy's effective implementation without creating legal conflicts. Therefore, the legal basis for mandatory vaccination rests not only on legal norms but also on the state's ability to translate these norms into operational policies that are responsive to community needs (Bardosh, 2022).

Parental Consent and the Limits of Autonomy in Child Vaccination

Research shows that parental consent is a central issue in the legal and ethical debate over mandatory childhood vaccination. Parents generally possess the authority to approve medical procedures for their children, reflecting family autonomy and their responsibility as legal guardians. Nevertheless, parental autonomy is not unlimited within public health law. State intervention may be justified when individual decisions create significant risks to others. This principle, commonly known as the harm principle, permits restrictions on personal freedom when necessary to prevent harm to the wider community. In infectious disease contexts, refusing vaccination may affect not only the child but also vulnerable individuals who cannot be vaccinated or have reduced immunity. Therefore, vaccination policies must balance parental rights with collective health protection (Giubilini & Savulescu, 2022a).

Public health theory emphasizes that infectious disease control requires a high level of collective compliance. The success of an immunization program depends not only on individual decisions but also on broad population participation. If a large proportion of the population refuses vaccination, herd immunity cannot be achieved, and the risk of disease outbreaks increases significantly. Therefore, vaccination policies are often designed to encourage high participation rates through various policy strategies, including mandatory vaccination in certain contexts (Charrier et al., 2022).

In the context of the school environment, parents' decisions to refuse vaccinations can have broader implications. Schools are social spaces with high levels of interaction, making the risk of infectious disease transmission greater than in other environments. If vaccination rates in schools are low, the likelihood of transmission clusters increases, potentially impacting the wider community. Therefore, many countries have implemented school-based vaccination policies as part of child and public health protection strategies (S. B. et al. Omer, 2023)v.

From a legal perspective, restrictions on parental autonomy must be implemented carefully and based on a clear legal framework. The principle of legal certainty requires that any restrictions on individual rights have a clear legal basis, a legitimate purpose, and transparent procedures. Without clear legal norms, mandatory vaccination policies have the potential to create conflicts between parental rights and the state's obligation to protect public health. Therefore, implementing regulations must detail medical consent procedures, communication mechanisms with parents, and the protection of children's rights (Emanuel, 2022).

International bioethics literature indicates that states have moral justification for limited intervention in parental decisions if those decisions have the potential to cause serious harm to the child or society. Such intervention is not intended to eliminate the family's role in health decision-making, but rather to ensure that the child's best interests are protected. In many cases, a more effective approach is not legal coercion alone, but rather dialogue based on health education and transparent risk communication (de Figueiredo, 2022).

Research on vaccine trust shows that vaccine refusal is often linked to a lack of accurate information and low trust in public institutions. When vaccination policies are implemented without effective communication, the public tends to develop resistance, which actually undermines the effectiveness of health policies. Therefore, policy approaches that emphasize public participation and health education have proven more effective in increasing vaccine acceptance than coercive approaches (Bardosh, 2022).

Thus, the relationship between parental consent and mandatory vaccination policies must be understood as an effort to strike a balance between respect for family autonomy and the state's obligation to protect public health. Parental autonomy remains recognized as a crucial principle in children's health decision-making. However, when such decisions pose a potential serious risk to the child or society, the state has the legal and moral legitimacy to intervene proportionately. A balanced approach between protecting public health and respecting family rights is key to designing effective and equitable vaccination policies (Gostin & Wiley, 2021).

Children's Right to Health and the Principle of the Best Interests of the Child

Research findings indicate that children's right to health is the strongest normative and ethical foundation for justifying mandatory vaccination policies in schools. Within the framework of modern health law, children are viewed as a vulnerable group requiring special protection due to their limited capacity to make independent health decisions. Therefore, the state has a moral and legal responsibility to ensure that children receive optimal health protection through evidence-based preventive policies (Mathews, 2022). This perspective aligns with developments in global health law, which prioritizes children's health in public health policy (McDougall, 2016).

In child protection theory, the principle of the best interests of the child is the primary normative standard that must serve as the basis for every public policy that impacts children. This principle emphasizes that children's safety, well-being, and development must be placed above short-term administrative and political interests (März, 2022). Therefore, every health policy related to children must be designed with consideration for the long-term health benefits that children can gain as individuals and as members of the social community. International literature shows that implementing this principle is key to designing equitable and sustainable health policies for young people (Watson et al., 2023).

Vaccination as a preventive intervention has a strong scientific basis for reducing morbidity, mortality, and the burden of infectious diseases in children. Numerous studies have shown that global immunization programs have successfully prevented millions of child deaths each year and significantly reduced the prevalence of various infectious diseases such as measles, diphtheria, and polio. In this context, vaccination is not merely an individual medical measure, but a public health strategy with broad collective impact. Therefore, policies that encourage high vaccination coverage are seen as a crucial instrument in protecting the health of the younger generation (Kalantari et al., 2022).

From a bioethical perspective, vaccination policies are grounded in the principle of beneficence, which requires maximizing health benefits for individuals and society, particularly vulnerable children. Mandatory vaccination may therefore be ethically justified when its public health benefits substantially outweigh potential risks. Nevertheless, protecting

children's health requires more than simply ensuring vaccination. Governments must guarantee vaccine safety, scientific evaluation, transparency, and accountability. Clear information regarding benefits and potential risks is essential for maintaining public confidence. The principle of justice also requires protection against discrimination, particularly for children who cannot safely receive vaccines because of medical conditions. Appropriate exemption procedures are therefore necessary. Furthermore, high vaccination coverage supports herd immunity, reducing disease transmission and indirectly protecting vulnerable children. Vaccination consequently represents both individual protection and a form of collective social responsibility (Giubilini & Savulescu, 2022a).

Thus, children's right to health and the principle of the child's best interests provide a strong normative basis for mandatory vaccination policies in schools. These policies not only aim to increase immunization coverage but also demonstrate the state's responsibility to protect young people from the risks of preventable diseases (Rus & Groselj, 2021). When designed equitably and based on scientific evidence, vaccination policies can be a crucial instrument for achieving sustainable child health protection.

Roles and Responsibilities of Schools

Research shows that schools play a highly strategic role in implementing childhood vaccination policies. From a public health perspective, schools are viewed as one of the most effective social settings for implementing health promotion and prevention programs. The intense social interactions between students make the school environment a highly relevant space for implementing preventive health interventions. Therefore, many countries have made schools the coordinating center for immunization programs for school-aged children (Feldstein et al., 2020). However, the role of schools in vaccination policy is not coercive, but rather administrative and facilitative. Schools serve as a liaison between health authorities, families, and the community in implementing immunization programs. The primary role of schools is to convey accurate health information, facilitate vaccination activities carried out by health workers, and ensure that children's rights to education are protected. This approach aligns with the public health paradigm, which emphasizes the importance of collaboration between educational institutions and the health sector (Ma et al., 2023).

From a legal certainty perspective, schools lack the independent authority to impose sanctions on students or parents who refuse vaccination without a clear legal basis. Such authority can only be granted through explicit regulations and mechanisms to protect children's rights. Without such clarity, school actions have the potential to create conflict with parents and violate the principle of non-discrimination in access to education. Therefore, clear regulations regarding the role of schools are a crucial prerequisite for implementing school-based vaccination policies (Yan et al., 2023). International empirical findings show that a coercive approach to vaccination policies often has counterproductive effects (Guan, 2025). When schools are positioned as institutions of coercion, public trust in educational institutions can significantly decline. Global research shows that declining public trust in social institutions can directly impact low community participation in health programs. Therefore, approaches that prioritize dialogue and education are considered more effective in increasing vaccine acceptance (Bardosh, 2022).

A communication-based approach also allows for a more constructive relationship between schools and parents. Through health education activities, community discussions, and the dissemination of evidence-based information, schools can become spaces for dialogue that strengthen the legitimacy of public health policies. Transparent communication strategies have been shown to increase public trust in immunization programs while reducing the spread of inaccurate information about vaccines. Thus, the role of schools in vaccination policy should be understood as a facilitator supporting the implementation of public health policies. Schools are not instruments of coercion, but rather spaces of communication that enable constructive interactions between the state and society (Fu et al., 2026). This approach not only aligns with public health principles but also respects children's rights to education and protection from discrimination.

Ethical Integration between Normative and Empirical Findings

The integration of normative and empirical findings in this study demonstrates that mandatory school vaccination policies have strong legitimacy if designed proportionally and based on scientific evidence. From a public health theory perspective, broad-scale preventive interventions are necessary to protect populations from the threat of infectious diseases. Mass immunization programs are one of the most effective strategies in achieving this goal, significantly reducing morbidity and mortality (Okesanya et al., 2024).

On the other hand, the theory of legal certainty requires that any policy restricting individual freedoms have a clear legal basis and fair procedures. Mandatory vaccination policies must be formulated through transparent and predictable regulations to avoid creating legal uncertainty for the public. Legal certainty is a crucial element in maintaining the legitimacy of public policies because it ensures that individual rights are respected during the policy implementation process (Gostin & Wiley, 2021).

Empirical findings indicate that the success of vaccination policies depends not only on the strength of legal norms but also on the level of public trust in public institutions. If the public perceives the policy to be designed fairly and transparently, participation in immunization programs tends to increase. Conversely, policies perceived as opaque or disrespectful of individual rights can trigger social resistance, which actually undermines the effectiveness of health programs (de Figueiredo, 2022).

Within the framework of health ethics, the balance between protecting public health and respecting individual rights is a key principle in designing vaccination policies. The principle of beneficence supports protecting public health through vaccination, while the principle of autonomy emphasizes that such policies should respect individual rights to the greatest extent possible. The integration of these two principles allows for the creation of policies that are not only epidemiologically effective but also morally legitimate (Emanuel, 2022).

The findings of this study provide an important contribution to enriching the public health law discourse regarding the legitimacy of mandatory vaccination for children in school settings. Conceptually, this study demonstrates that mandatory vaccination policies cannot be understood solely as an administrative instrument of the state, but rather as a normative construct that exists at the intersection of collective health protection, children's rights to health, and the limits of family autonomy. The integration of normative legal analysis and empirical studies conducted in this study confirms that the success of public health policies is determined not only by the strength of legal norms but also by the level of social acceptance and public trust in state institutions (Zhang & Wang, 2022). Thus, this study broadens the understanding that the legitimacy of public health policies is multidimensional, simultaneously involving legal, ethical, social, and institutional dimensions.

From a public health theory perspective, this study's findings reaffirm vaccination's position as one of the most effective preventive interventions in controlling infectious diseases in the pediatric population. Global health literature consistently demonstrates that high immunization coverage plays a significant role in reducing morbidity, mortality, and the economic burden of vaccine-preventable infectious diseases (Ota et al., 2022). In this context, schools are a strategic arena for implementing immunization policies because they are social spaces where children gather in large numbers and interact intensively. This makes schools a crucial point in disease prevention strategies and a space for policy interventions that enable countries to systematically and sustainably reach the child population (Clemente-Suárez et al., 2022).

The primary contribution of this research lies in integrating public health theory with legal certainty theory to explain the legitimacy of mandatory school-based vaccination. To date, most health law studies have framed vaccination policy within the framework of the conflict between individual rights and collective interests. However, this research demonstrates that these two dimensions are not always antagonistic. Instead, when designed proportionally, transparently, and based on scientific evidence, mandatory vaccination policies can serve as instruments for protecting human rights, particularly children's right to health. This approach aligns with developments in contemporary health ethics, which position health as an integral part of human rights that must be guaranteed by the state (Gostin & Wiley, 2021).

In the context of international law, the findings of this study have strong relevance to the principles embodied in various global human rights instruments (Ekardt et al., 2023). The Convention on the Rights of the Child affirms that every child has the right to the highest attainable standard of health, including through effective and sustainable immunization programs. The principle of the best interests of the child, which underpins the convention, requires states to take policy measures that protect children from the risks of preventable diseases (Frasca & Carlier, 2023). Therefore, mandatory school-based vaccination policies can be seen as a concrete manifestation of the state's responsibility to fulfill its international obligations to protect children's rights.

This research also provides an empirical contribution in explaining the complex relationships between state authorities, educational institutions, and families in implementing vaccination policies. The analysis shows that the success of vaccination policies depends not solely on regulatory strength, but also on the state's ability to build effective risk communication and broad social participation. In many international cases, resistance to vaccination is often rooted not in a rejection of science, but rather in a crisis of trust in public institutions or unclear information received by the public (C. B. Larson, 2022). Therefore, an approach that prioritizes dialogue, health education, and information transparency is crucial in increasing the social legitimacy of vaccination policies.

From an international comparative perspective, this study's findings align with the experiences of various countries that have implemented school-based vaccination policies with varying degrees of success. Several countries, such as Italy, France, and Australia, have strengthened childhood immunization policies through regulations linking vaccination status to access to education or certain social services. These policies have been shown to significantly increase vaccination coverage, although they have also sparked debate about the limits of state intervention in individual freedoms (Giubilini & Savulescu, 2022b). This experience demonstrates that the success of vaccination policies is determined not only by the strength of regulations but also by policy design that takes into account the social, cultural, and political context of society.

Within this framework, this study provides a new perspective on the development of vaccination policies in Indonesia by emphasizing the importance of balancing legal and social legitimacy. Mandatory vaccination policies designed without considering social dynamics have the potential to generate resistance, which could undermine the effectiveness of immunization programs. Conversely, policies developed through a participatory approach and based on transparent public communication tend to be more easily accepted by the public. These findings reinforce the argument that the success of public health policies is determined not only by state authority but also by the quality of the relationship between the state and citizens in the policy decision-making process (Steiner et al., 2023).

The international relevance of this research is also evident in the context of increasing global challenges to immunization programs, particularly following the COVID-19 pandemic. In recent years, several countries have faced a decline in childhood vaccination coverage due to disruptions in health services, the spread of misinformation, and growing vaccine hesitancy. Global health organizations have noted that declining routine immunization coverage has the potential to trigger a resurgence of previously controlled disease outbreaks (A. Larson et al., 2022). In this context, strengthening the legal framework and vaccination policies is a crucial strategy to ensure the sustainability of national immunization programs.

Furthermore, this study provides a methodological contribution through the use of a mixed methods approach with a sequential explanatory design in the study of health law. This approach allows for a more comprehensive analysis by combining the strengths of normative analysis of the legal framework and empirical analysis of the dynamics of policy implementation in society. This approach is still relatively rare in legal research in Indonesia, which is generally dominated by a purely doctrinal approach (Wardhani et al., 2022). Thus, this study opens up space for the development of a more integrative legal research methodology that is responsive to the complexity of public policy issues.

From a health ethics perspective, this research finding also enriches the debate regarding the legitimate limits of state intervention in individual freedoms within the context of public

health. Modern health ethics emphasizes that restrictions on individual freedoms can only be justified if they meet the principles of proportionality, urgent need, and strong scientific evidence of the policy's benefits to the wider community (Emanuel, 2022). In the context of school-based child vaccinations, this research demonstrates that limited restrictions on parental autonomy can be ethically justified if they aim to protect children from the risk of serious disease and prevent transmission to other vulnerable groups.

In an increasingly complex global context, the findings of this study provide a conceptual contribution to the development of immunization policies that are more inclusive, evidence-based, and sensitive to societal dynamics. By placing children's right to health as the primary foundation of vaccination policy, this study emphasizes that protecting children's health is not only the responsibility of families but also a collective obligation of states and communities (Stålberg et al., 2024). This perspective is increasingly relevant amidst global health challenges that demand cross-sectoral and cross-national collaboration to ensure that every child receives optimal health protection.

Conclusion

This study concludes that mandatory vaccination policies in schools have substantial legal and ethical justification as instruments for protecting public health and fulfilling children's right to health. From Indonesia's legal perspective, the state has constitutional authority to implement preventive health measures, including school-based immunization, to control infectious diseases. Such authority reflects the government's responsibility to protect society, particularly vulnerable groups such as children. However, mandatory vaccination must comply with legal certainty, proportionality, and the principle of prioritizing children's best interests. The findings also demonstrate that the legitimacy of mandatory vaccination depends on balancing collective health interests with parental autonomy. Although parental consent is essential in children's medical treatment, it cannot always be considered absolute when individual decisions may create significant risks to public health. Limited state intervention can therefore be justified when necessary to protect children and the broader community. Within this framework, schools function primarily as coordinating and facilitating institutions connecting families, healthcare providers, and government authorities rather than as independent coercive bodies. Theoretically, this research contributes to health law by integrating public health principles with legal certainty in assessing vaccination mandates. Practically, successful implementation requires clear regulations, transparent consent procedures, appropriate medical exemptions, and effective public communication. Nevertheless, the study relies primarily on secondary sources and does not fully capture the experiences of parents, teachers, healthcare workers, and policymakers. Future research should therefore incorporate empirical fieldwork, interviews, and comparative analysis across countries. Particular attention should be given to public trust, risk communication, sociocultural influences, and community acceptance to develop vaccination policies that are legally sound, ethically responsible, socially acceptable, and effective in protecting children's health.

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