

# Issues in the Development of an Eradication Investment Case

From "Disease Eradication in the 21st Century: Implications for Global Health,"  
edited by Stephen L. Cochi and Walter R. Dowdle. Strüngmann Forum Reports, vol. 7,  
Julia R. Lupp, series editor. Cambridge, MA: MIT Press. ISBN 9780262016735.

# The Moral Case for Eradication

Claudia I. Emerson

...it's clear that though eradication rests firmly on both chemistry and entomology, it depends even more heavily on human beings.  
—C. A. Needham and R. Canning (2003:22)

## Abstract

This chapter considers the question of whether there is a moral imperative to pursue disease eradication once we have the means to achieve it. It examines three arguments that support the case for eradication from an ethical perspective: (a) the duty to rescue, (b) the duty to future generations, and (c) the notion of disease eradication as a global public good. It concludes that where disease eradication is possible, ethical motivation offers compelling reasons to act that cannot be dismissed without incurring moral liability. Ethical considerations should thus be weighed in the balance of reasons that inform decisions about whether or not to pursue disease eradication.

## Introduction

The eradication of smallpox, hailed as one of the greatest achievements in the history of medicine, continues to inspire efforts to eradicate other diseases that cause immense human suffering and death. It is a testament to the evocative power of eradication that campaigns to eradicate diseases (e.g., polio) persevere despite the many challenges that must be overcome. The challenges are complex: scientific, technical, economic, political and sociocultural. Within the sociocultural strand, we can locate the ethical considerations that relate to disease eradication efforts.

Some of these considerations reflect ethical issues that arise in the context of mass immunization programs, such as risk and benefit, adequacy of informed consent, the tension between individual and collective interests, transparency, and questions of resource allocation (Verweiji and Dawson 2004; Dawson 2009; Ulmer and Liu 2002; Paul 2005; Paul and Dawson 2005). Analyses of these issues have been presented by others and those arguments will not be repeated here. Instead, this chapter will reflect on the broader question of

whether there is an ethical imperative to pursue disease eradication once we have the means to achieve it.

If there is an obligation to pursue disease eradication, on what grounds can it be justified? The aim of this chapter is to present ethical arguments that support the case for eradication.<sup>1</sup> It is not claimed that ethical arguments alone make a case for eradication—ethical grounds are necessary, but insufficient. The goal is to examine ethical considerations that are compelling enough to warrant inclusion in the decision-making process. Elsewhere the ethical case for completing polio eradication has been considered (Emerson and Singer 2010), which alongside sustained analyses of the economic and scientific feasibility (Thompson and Duintjer Tebbens 2007; Barrett 2004) make the case for eradicating polio. Those arguments shall be considered in greater depth and extended to the investment case for disease eradication more generally. In many ways, polio is a paradigm case from which insights can be drawn: it is an eradicable disease that has proved elusive to eradication. It is against the backdrop of prospective eradication with its inherent technical, economic, and sociopolitical challenges that the analysis is situated.<sup>2</sup> Obligations to rescue and to future generations, as well as the notion of disease eradication as a global public good are examined from an ethical perspective. The conclusion is that where disease eradication is possible, ethical motivation offers compelling reasons to act that cannot be dismissed without incurring moral liability. The implication is that ethical considerations should be weighed in the balance of reasons that inform decisions about whether or not to pursue disease eradication.

### **Why Are Ethical Arguments Needed?**

Disease has been called the true serial killer of human history, having affected more human lives than war, famine, and natural disaster (Dobson 2007). Few would readily contest that eradicating disease to save countless lives from disability and death is the right thing to do if achievable, and if doing so would not have detrimental effects on other goods on balance. Why, then, would ethical arguments in support of disease eradication be required? Articulating the ethical arguments that support eradication serves several purposes.

<sup>1</sup> Disease eradication is not referred to here as a general strategy, but rather those instances where eradication is an appropriate strategy for a specific disease, where all of the criteria for the disease to be deemed eradicable have been met. Moreover, the question is concerned with choosing eradication over control efforts, not with choosing between different potential targets of eradication. This latter question is complex and merits its own analysis and justification within an eradication investment case.

<sup>2</sup> Although the analysis is limited to eradication, some of the arguments could well apply to the case of elimination.

## **Moral Investment**

First, an ethical analysis presents a dimension of the investment case for eradication—what might aptly be called the “moral investment”—that is seldom discussed in the literature. This is an important dimension to emphasize since it has long been recognized that social and political commitment is essential for the successful eradication of disease (Dowdle 1998; Aylward et al. 2000a). Social and political commitment involves moral motivation, or the ethical reasons to act. It is thus important to understand those reasons and how they are relevant in decisions involving large-scale public health interventions.

Second, as moral beings, members of the global community have a fundamental interest in identifying what ethical obligations they have to one another. In the context of disease eradication, such obligations can impact the lives of millions of people and reflect choices about the kind of world in which we want to live: one where all are free from the burden of disease or one where inequity exists and only some have that luxury.

## **Balanced Perspective**

Third, illuminating the ethical arguments that support eradication is useful for judging against competing moral claims, including those that argue against eradication on ethical grounds. Decisions about which public health interventions to pursue necessarily involve evaluative trade-offs—every choice, then, is in a sense a moral choice. Articulating the ethical arguments that impact on those choices can be useful for adjudicating between two courses of action: whether it is, for example, more compelling to eradicate a childhood infectious disease or to invest in an intervention that would reduce the prevalence of a chronic condition affecting primarily adults.

Ethical arguments against eradication on grounds of futility (Caplan 2009) or those that favor an extreme eco-holism, which might ascribe moral status to pathogens (Windsor 1998), can skew the perspective on the issue if no counter considerations are offered. Moreover, when nonmoral considerations<sup>3</sup> about the merits and pitfalls of eradication have been exhausted, moral considerations introduce a normative component that can balance the arguments and provide a more nuanced understanding.

## **Do We Have Ethical Obligations to Eradicate Disease?**

It is customary to define ethical obligations by specifying the correlative rights. The claim that one has an obligation to undertake some action that promotes the eradication of disease suggests that people have a right to be free from

---

<sup>3</sup> I use the term “nonmoral” loosely, acknowledging that technical and economic considerations also have important moral dimensions.

disease. In more precise terms, it implies that people have a right to health. The right to health is indeed recognized as a fundamental human right in the World Health Organization's Constitution (WHO 1946), and in many human rights treaties and advocacy work to advance such a right (UN 1948, 1966). However, human rights represent a contentious lot of desirable goods that are often disputed and not always respected. Critics of health as a human right declare it a misconceived notion since it is impossible to secure health for all, and thus no obligation can be imposed (O'Neill 2002, 2005). Moreover, a key limitation of rights is that they under-determine action. As Merritt (2007) notes, they are "incapable of delivering specific policy guidance beyond a minimal starting point of simply acknowledging the right in question." The appeal to rights, therefore, may not be a useful starting point for identifying the ethical obligations that provide support for eradication.

Some obligations, however, do not have corresponding rights; thus, we need not specify the latter to make the former explicit. Obligations which we ordinarily refer to as imperfect duties<sup>4</sup> (e.g., beneficence, charity, gratitude) lack correlative rights. Imperfect duties are generally not enforced as strongly as perfect duties (e.g., duties to refrain from stealing or harming others which must be honored unconditionally); nevertheless, they are morally binding (Kant 1785/1993). In thinking about eradication, it is worthwhile to identify the obligations that bind us in the form of relevant perfect and imperfect duties.

Many of our duties arise from the special circumstances of others and our relations to them (Kant 1785/1993). In the context of globalization, these preconditions for ethical action are especially significant. The eradication of infectious disease is concerned with ending the suffering and death of millions of people worldwide, many of whom also face conditions of poverty, oppression, and violence that enable disease, and vice versa. Members of the global community cannot ignore the gravity and urgency of these circumstances, nor the specific duties that arise as a result, without acknowledging that failure to discharge relevant duties incurs moral liability. There is a duty to avert harm (a perfect duty) and a duty to be charitable (an imperfect duty) that gives force to the duty to rescue.

### **Duty to Rescue**

How is there a duty to rescue in the context of disease eradication? We can begin to answer this question by considering the counterfactual: What happens if eradication is not pursued when there is evidence that it is likely to succeed? Failure to pursue eradication can result in harm, and there is a moral duty to

---

<sup>4</sup> In this chapter, obligations and duties are treated synonymously, as they sometimes are in philosophical discourse, and will be used interchangeably. It is recognized that subtle distinctions between the two exist. For a classic philosophical distinction, see Moore (1903). For a contemporary analysis of relevance to legal/political contexts, see Hart (1994).

avert harm.<sup>5</sup> Harm is defined as the “thwarting, setting back, or defeating of an interest” (Feinberg 1984), and in this context the interest is health, or minimally the avoidance of disease, so that harm is quantified as the presence of disease or the occurrence of death. Further, it is ethically significant if harm is preventable, since failure to act in its prevention represents an omission that is subject to moral reproach. Consider the example of polio, where it is projected that failure to complete eradication will result in 4 million children contracting paralytic polio over the next twenty years (Chan 2008). Failure to eradicate in this case is synonymous with a failure to rescue, given that we have the means to save those 4 million children from the harm of polio.

The duty to rescue is derivable from the duty to avert preventable harm and the duty to be charitable, though the former, as a perfect duty, is the primary driver and exerts moral force. The duty to be charitable provides further reason to perform the rescue. In averting harm, there are both positive and negative obligations. Negative obligations entail refraining from actions that cause harm, whereas positive obligations require pursuing actions that prevent harm. The case of disease eradication, where clearly action is required to prevent harm, implies a positive obligation. Having specified the nature of the duty to rescue and the source of its normativity, we may now consider the conditions for when it is binding.

The duty to rescue obliges one to rescue someone in distress provided one has the ability to do so, and doing so does not require excessive sacrifice (Singer 1997; Hawkins and Emanuel 2008). Three conditions must be satisfied to discharge a duty to rescue:

1. There must be opportunity.
2. There must be capability.
3. The burden must not be so taxing as to make the circumstance before rescue preferable to the circumstance post-rescue.

The duty to rescue should not be confused with the duty to aid. The former is characterized by obligatory moral force, immediacy, and determinacy (i.e., relative ease to judge what specific action is required to fulfill it), whereas the latter is discretionary in terms of when and how the duty is to be met. The classic illustration of the difference can be found in the contrast between two apparently similar cases: providing aid to a drowning child and aid to alleviate famine. Both cases present circumstances of severe need, yet these are not analogous situations. Consider:

---

<sup>5</sup> The pursuit of eradication may also result in harm (e.g., from adverse effects of vaccination or drug toxicity). However, discharging a duty to rescue requires that the circumstances resulting from the rescue are preferable to the circumstances prior to the rescue. Thus, if the harm prevented through eradication on balance outweighs the harm caused from the adverse effects of an eradication campaign, the rescue is preferable and ought to be pursued.

[O]ur obligation in the situation in which we are confronted by the drowning child is different. The situation is different because aiding the drowning child is not merely one of the ways, among equivalent others, we can choose to fulfill our more general imperfect duty to aid the needy....in this situation our duty to aid should be understood as a perfect duty to rescue....the two duties differ in structure but not in importance. One binds me to do a particular thing (i.e., rescue the drowning child) and the other commits me to aiding the needy yet gives me latitude to fulfill this in a number of different ways (Igneski 2006:440).

The morally relevant difference lies in determinacy. The duty to rescue compels one to adopt a particular act: it is clear what the agent must do to discharge her duty. In contrast, a duty to aid compels the agent to adopt a particular end—in this case, help the hungry—but there are myriad ways in which this duty can be fulfilled (e.g., by donating money, donating food, etc.) (Igneski 2006). When the three conditions to invoke a duty to rescue are met, failing to act represents an omission for which the agent can be morally blamed. Failing to discharge a duty to aid, however, will not incur blame (i.e., unless the agent *never* discharges this duty); it will merely fail to attract praise.

How is a child at risk of contracting an eradicable disease similar to the drowning child? In both circumstances there are means and opportunity to rescue and the outcome results in a preferable state of affairs, which makes the burden of the rescue worthwhile. Consider polio once again, a major cause of paralysis and occasionally death in young children in the developing world. We have the means (through effective vaccines) and the opportunity (through the commitment of the Global Polio Eradication Initiative, GPEI) to eradicate polio and rescue children at risk. In this instance, the particular action that must be adopted to undertake the rescue is clear, namely, pursue eradication. Adopting alternative action that results in anything less than eradication (e.g. implementing an effective control strategy) would not satisfy the duty to rescue since approximately 4 million children would not be saved.

### Counter Considerations

One might ask what makes rescue from an eradicable disease worthy of special attention. If there is a duty to rescue those in distress when there are means and opportunity, why not rescue children at risk from diabetes or domestic violence? Why focus efforts on a costly vertical program, such as eradication, when those resources could be applied to other health needs? This is a fair question, one that speaks directly to the issue of just resource allocation. We can respond with the following argument:

It is ethically significant that diseases are not all the same: some result in more harm than others, some can be controlled, and a few are eradicable. For those that are eradicable, the return on investment is substantial. From an economic standpoint, once a disease is eradicated, resources that would otherwise be spent on control measures can be applied elsewhere. Moreover, “eradication



activities can be and are used by many developing countries as a springboard to address other health priorities” (Sutter and Cochi 1997). The cost-effectiveness of eradication is exemplified in the case of smallpox, with the United States recouping its total investment of USD 32 million every 26 days, and economic modeling showing that in the long-term eradication as a strategy offers lower cumulative costs (Thompson and Duintjer Tebbens 2007). While it is now believed that eradication does not imply the cessation of all preventive measures, an economic analysis of the GPEI clearly demonstrates that the net benefits of eradication far outweigh the rising costs to achieve it (Duintjer Tebbens et al. 2011). In addition, even with the costs of indefinitely maintaining some preventive measures, countries benefit from the substantial savings of no longer having to mount responses to outbreaks and importations. From an ethical perspective, the eradication of disease represents a tremendous investment in reducing the “human cost” of disease, which has both an economic and moral tally. This is the immeasurable cost of suffering and social disruption, of lives altered, and lives lost. It is difficult to place an economic value on what Thompson and Duintjer Tebbens (2007) refer to as “the large, intangible benefits associated with avoided fear and suffering” that result from the absence of disease. While it is important to rescue children from other forms of distress, disease prevention, detection, and treatment should not be selected at the expense of eradication. It is both prudent and ethically justified to employ all of these strategies to achieve better health for all.

One may further distinguish between “hard rescues” and “easy rescues” (Hawkins 2006) and argue that disease eradication amounts to a hard rescue that imposes excessive burden. Are we not morally obliged to pursue easier rescues? This objection largely depends on two assumptions shown to be false. First, it assumes that burden is disproportionately shouldered by any one agent, when disease eradication is generally a global effort. In fact, burden can be distributed so that it is not excessively taxing for any particular agent, and results on balance to the benefits of completing the rescue outweighing the collective burden. Second, this objection also assumes that objective criteria can define easy rescues. The extent to which a rescue may be considered “easy” or “hard” depends on context and mitigating factors that are dynamic and subject to change with evolving circumstances. Thus, what might be considered a hard rescue may shift and become an easy rescue, and vice versa. In 2003, the boycott of polio vaccination in northern Nigeria owing to sociopolitical reasons resulted in a surge of polio cases that led to exportation of the virus and a global outbreak. For a while, it would seem that it was simply too hard to contain polio under such challenging circumstances, and all hope of eradication was evaporating with the report of each new case (Kaufmann and Feldbaum 2009). However, as a result of a major infusion of resources and a great deal of diplomacy and determination, the boycott came to an end and the polio outbreak was brought under control. Nigeria might have appeared to be a hard rescue

at the time, but it has since continued to report record-low levels of poliovirus transmission among the countries where polio remains endemic.<sup>6</sup>

### **Duty to Future Generations**

A duty to spare future generations the harms associated with disease provides additional ethical motivation to pursue eradication. As previously argued, “obligations to future generations are difficult to define and may be limited, but if preventing harm is a moral duty, there may be a chain of obligation that persists through generations and applies to circumstances where present generations could have meaningful impact” (Emerson and Singer 2010). Underpinning Hans Jonas influential ethic of responsibility is the belief that actions have no geospatial boundaries, so that present activities have impact in the future and in the entire world space (Jonas 1984). As such, it is essential to reflect on what responsibilities one has in relation to future people. This line of argument is often employed to inspire efforts to protect the environment against degradation, so that future generations can inherit a healthy planet. In the context of health, globalization may exacerbate inequities (Chen and Berlinguer 2001); thus it is important to think about which public health intervention will promote health for all. In this respect, disease eradication serves this goal by ensuring that future generations are free from disease, even while members of the present generation must bear its burden to some degree.

### **Counter Considerations**

A common criticism against claims of duties to future generations is that such duties cannot be justified at the expense of duties owed to the present generation. However, disease eradication presents a unique opportunity and example of how duties to present and future generations are not in conflict. The successful eradication of disease, in effect, rescues present and future individuals alike.

An objection may also be raised that allowing a supposed duty to future generations to influence public health policy is imprudent since the legitimacy of this duty is disputed. The critique centers on whether it is logically coherent to speak of duties to future, nonexistent individuals for whom we would have to ascribe rights. This objection, however, is not compelling; as noted above, there may be duties to others in the absence of correlative rights. Moreover, there is no logical inconsistency, as Surber (1977) argues, “with including future as well as present individuals under the notion of a person as a moral agent who can make legitimate moral demands upon us.”

<sup>6</sup> In 2010, Nigeria recorded a total of 21 cases, representing a 95% decrease in cases from 2009 (388 cases).

A persuasive account of why we ought to be moved by duties to future generations is given by philosopher Martin Golding (1972), who introduces the idea of a “moral community” and grounds duties in the idea of a common conception of the good, viz. a good for others which is likewise good for me (Surber 1977). Golding calls this shared conception of the good a “social ideal,” and to the extent that it is relevant to future individuals, it implies their membership in our moral community to whom we have obligations. If we apply this understanding to the context of disease eradication, we find that freedom from disease is a social ideal of relevance across generations. And insofar as being in a moral community involves interest in the welfare of others, I am moved by my duties to future individuals because their interests coincide with my own.

### **Global Public Goods**

Where it is feasible, disease eradication (for diseases of global scope) can therefore be seen as a GPG...  
—D. Woodward and R. D. Smith (2003:25)

Conceptualizing health as a global public good is nowadays generally uncontroversial. In the scholarly literature we find many comprehensive analyses on the subject (see Woodward and Smith 2003; Barrett 2007), and several advance disease eradication as an example of a global public good. Public goods are defined as goods that are both nonexcludable and nonrivalrous, viz. consumption by one does not preclude consumption by others, and no one is excluded from consumption of the good. Global public goods feature these characteristics, and additionally transcend national borders (i.e., they are global in scope). Woodward and Smith (2003) further qualify that the cross-national characteristic must involve more than two nations, with at least one outside of the traditional regional grouping. Public goods involving two or three close neighbors are considered localized or regional public goods. While there are many interesting normative dimensions to the idea of global public goods and their provision, here we shall briefly consider the ethical implications of defining eradication as a global public good in this way. Specifically, we want to examine whether the eradication of a disease that does not meet the “global scope” criterion, may in other respects be considered a global public good.

Every year there are approximately 250 million cases of malaria resulting in nearly one million deaths—affecting mostly children. Lymphatic filariasis (LF) is also a mosquito-borne disease, but it is not a “killer” like malaria. Rather, it is known for causing permanent and long-term disability in its victims, and recognizable by the characteristic swollen limbs. Other features that these two diseases have in common include the following: they cause tremendous human suffering; they have an impact on economic development by disabling

their victims; are both deemed potentially eradicable;<sup>7</sup> and may not be global in scope at a given time. This latter feature is relevant, since it disqualifies the eradication of malaria or LF from being considered a global public good, placing it as a regional public good. Why is this disqualification ethically significant? Because global public goods are supposed to be universally desired (Barrett 2007), and we can assume, therefore, that they are globally pursued. However, we cannot assume the same about regional public goods; it follows that these goods are locally desired and pursued. Scott Barrett (2007) asks, “Why should we care if global public goods are provided?” The question is telling; global public goods are underprovided and need incentive for provision. If this is true, what are the odds of providing for regional public goods, which presumably are not universally desired? We surmise that provision of such goods presents a serious challenge, since those outside of the affected regions have little incentive to pursue goods that appear to be of slight relevance to them. In short, this characterization of goods potentially undermines global motivation to pursue the eradication of diseases that affect only those in a few parts of the world.

In the context of eradication, distinguishing goods on the basis of geography may be ethically problematic. If it is only the eradication of disease deemed global in scope that is considered a global public good, there may not be sufficient motivation from the global community to pursue the eradication of regionally confined diseases. This would result in further neglect of diseases that almost exclusively affect the poor in low-to-middle income countries. Limiting global public goods by geography also fails to appreciate that eradication of diseases such as malaria and LF would have global impact, even if they are not global in scope; the economic implications alone would extend far beyond regional borders. Finally, there are morally relevant aspects of eradication such as the promotion of solidarity and social justice that are of significance to the entire global community. The “local” eradication of disease contributes to global health equity.<sup>8</sup> Therefore, it is sensible to extend the notion of disease eradication as a global public good to the eradication of all diseases, whether they are national, regional, or global.

## Conclusion

The importance of considering ethical arguments in global public health decision making should not be underestimated. Ethical arguments can balance both moral and nonmoral judgments about a course of action and illuminate the ethical motivation that underlies our reasoning. The duty to rescue, duty

<sup>7</sup> Note, however, that consensus is lacking on whether malaria is currently an eradicable disease.

<sup>8</sup> Note that the revised definitions of eradication and elimination in this volume are consistent with an understanding of “regional” eradication (see Cochi and Dowdle, this volume).

to future generations, and the idea of disease eradication as a global public good offer compelling ethical arguments in support of disease eradication. The implication is that these arguments ought to be considered in the balance of reasons that inform decisions about whether or not to pursue eradication.

### **Acknowledgments**

The author is grateful to Jocalyn Clark and an anonymous reviewer for helpful comments on an earlier draft of the manuscript, and to Peter Singer and participants of the Ernst Strüngmann Forum for constructive feedback on the background paper.

From "Disease Eradication in the 21st Century: Implications for Global Health,"  
edited by Stephen L. Cochi and Walter R. Dowdle. Strüngmann Forum Reports, vol. 7,  
Julia R. Lupp, series editor. Cambridge, MA: MIT Press. ISBN 9780262016735.