

### **Pandemic Disease, Public Health, and Ethics**

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### **Abstract and Keywords**

Infectious disease pandemics raise significant and novel ethical challenges to the organization and practice of public health. This chapter provides an overview of the salient ethical issues involved in preparing for and responding to pandemic disease, including those arising from deploying restrictive public health measures to contain and curb the spread of disease (e.g., isolation and quarantine), setting priorities for the allocation of scarce resources, health care workers' duty to care in the face of heightened risk of infection, conducting research during pandemics, and the global governance of preventing and responding to pandemic disease. It also outlines ethical guidance from prominent ethical frameworks that have been developed to address these ethical issues and concludes by discussing some pressing challenges that must be addressed if ethical reflection is to make a meaningful difference in pandemic preparedness and response.

Keywords: pandemic, infectious disease, isolation, quarantine, governance, priority setting, resource allocation, duty to care, research ethics, public health ethics

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### **(p. 797) Introduction**

MICROBES capable of infecting and causing disease in humans pose a significant and recurrent threat to public health and are a leading cause of morbidity and mortality in many parts of the world. The threat that infectious organisms pose to humans is amplified when those organisms are capable of spreading beyond a particular ecological niche or geographic region to cause infection in human populations worldwide; that is, when they have *pandemic* potential (see WHO, 2010a).

During pandemics, health needs tend to overwhelm the available human and material resources required to meet those needs. Difficult decisions must therefore be made about how, where, when, and to whom resources should be allocated. State public health authorities have the ethical and legal responsibility to protect the health of communities, and so under legitimate legal authority they may opt to use aggressive measures in an at-

tempt to curb the spread of pandemic disease, which may challenge conventional thinking about the proper scope of the state's powers to protect and promote the public's health. Medical and public health sciences are able to provide valuable information to help inform decision-making in this context; however, science alone is insufficient. Decision-makers will be forced to consider and prioritize potentially competing ethical values.

This chapter provides an overview of the salient ethical issues involved in preparing for and responding to pandemic disease. It draws upon ethical guidance derived from prominent ethical frameworks developed to address these ethical issues, situates the discussion in terms of the global governance of pandemic disease, and concludes by discussing some pressing challenges that must be addressed if ethical reflection is to make a meaningful difference in pandemic preparedness and response.

### (p. 798) **Public Health Measures Used in Response to Pandemics**

Public health officials have many tools, some legally mandated and some based on long-standing involvement with communities, that may be used to contain and curb the spread of pandemic disease. These include isolation (restricting the movement of infected and symptomatic individuals), quarantine (restricting the movement of otherwise healthy individuals exposed to an infectious disease), travel advisories and restrictions, and various other measures, such as the culling or destruction of domestic animal stock to prevent animal to human disease transmission. These may be either recommended on a voluntary basis or required by law. Public health authorities may also have legal warrant to compel medical examinations, vaccination, and other forms of medical intervention on individuals. These can be quite expansive in scope or limited to specific contexts.

Many of the measures deployed to contain and curb the spread of pandemic disease may, in turn, restrict the rights and freedoms of individuals and populations or otherwise burden individuals and communities. The use of such measures therefore highlights an ethical tension between the collective good and individual rights, and requires one to consider the extent to which individual rights and freedoms can justifiably be restricted in order to achieve intended public health goals (Segelid et al., 2009). The use of isolation and quarantine raises particularly salient ethical challenges, particularly in contexts with political and legal traditions that favor individual liberty, where an individual's freedom of movement is temporarily restricted in order to prevent the spread of disease to others. For example, during the severe acute respiratory syndrome (SARS) outbreak in Toronto, Canada, in 2002–2003, several thousand citizens were asked to remain in voluntary home quarantine for ten days. Given the potentially significant burden that these measures may have on individuals and communities, the isolation of symptomatic individuals and quarantine of their contacts should be voluntary to the greatest extent possible. Mandatory measures should only be instituted as a last resort when voluntary measures cannot reasonably be expected to succeed or when the failure to institute mandatory measures is likely to have a substantial impact on public health. In all cases, the least restrictive (i.e.,

least liberty-infringing) alternative should be used to achieve the public health goal (WHO, 2016).

In turn, a strong reciprocal obligation falls upon public health authorities to provide for the best possible infection control measures appropriate to each confinement context (e.g., hospitals, temporary shelters, homes) in order to protect others from infection (Viens, Bensimon, and Upshur, 2009). In addition, it is critically important to ensure safe, habitable, and humane conditions of confinement, including the provision of basic necessities (e.g., food, water, medical care) and, if feasible, psychosocial support for people who are confined (Silva and Smith, 2015). All efforts should be made to address the potential financial and employment consequences of confinement. Indeed, research indicates that the public is willing to accept the imposition of such liberty-infringing interventions provided that a clear necessity is demonstrated and reciprocal support is in place for those affected (Smith et al., 2012). (p. 799)

Demonstrating the effectiveness of public health measures in response to a pandemic may be difficult, because whether such measures will be employed and whether they will be effective cannot be determined in advance of substantial detailed knowledge of the dynamics of the pathogen. Factors such as the pathogen's mode of transmission, incubation period, duration of infectivity of the host, whether there is asymptomatic shedding, and survival on environmental surfaces are critical to determining both the appropriateness and effectiveness of a given public health measure (Smith and Silva, 2015). When considering whether to adopt particular public health strategies, public health officials should rely on the best available scientific evidence (WHO, 2016); however, there may be circumstances where such evidence is unavailable or where there is controversy or uncertainty regarding the evidence. In such cases, balancing the ethical tension posed by the use of restrictive public health measures is complicated by uncertainty regarding their effectiveness in achieving their intended goals. A prominent example of this complexity was manifest during the 2002–2003 SARS outbreak. Because the SARS coronavirus had not previously infected humans, information about the pathogen was unknown early in the outbreak. Until more information about the virus was known, public health authorities employed techniques such as mass quarantine, isolation, travel advisories and restrictions, and thermal screening in airports as means to stop the spread of the virus in the community (Gostin, Bayer, and Fairchild, 2003; Singer et al., 2003). There was limited empirical evidence of the effectiveness of these measures at the time they were implemented, but the use of the measures was arguably justified on the grounds of public health's mandate to protect communities from disease (Bensimon and Upshur, 2007).

It is now generally agreed that all public health measures used in response to a pandemic must accord with international human rights laws and national legal requirements (WHO, 2016). It has also been recognized that pandemics often place disproportionate burdens on populations that are more vulnerable because of biology (very young and very old), preexisting medical problems (immunocompromised, mental health issues, and multimorbidity), or social disadvantage (stigmatized populations, minorities). The implementation of restrictive public health measures should pay special attention to protecting the

interests of these vulnerable populations (Amon et al., 2006; Silva, Smith, and Upshur, 2013; Bernard, Smith, and Wagner, 2016).

### Setting Priorities

Pandemics can place considerable strain on health systems, forcing decision-makers to set priorities for the allocation of available health care and public health resources at the individual level (e.g., triage of a patient to a hospital bed), the organizational level (e.g., service priorities in health care organizations), and the population level (e.g., priority groups for vaccination) (Silva et al., 2012). Many priority-setting principles (p. 800) intended to guide allocation decision-making during pandemics have been proposed (Daniels, 1994; Persad, Wertheimer, and Emanuel, 2009). Decision-makers must consider which principles ought to inform allocation decisions in scenarios where health needs overwhelm available resources. Ideally, priority setting exercises would occur in planning for response to expected infectious disease emergencies. The impetus behind major pandemic planning initiatives is premised on the understanding that health systems should devote resources to determining how priorities will be set in advance of emergencies so that decisions are not made on an ad hoc basis under pressure and significant time constraints.

Many priority setting principles aim to regulate or guide decisions by applying particular decision rules in order to produce favorable outcomes. Allocating resources in a way that aims to save the most lives possible is a principle of this sort, as are principles that aim to use available resources to maximize the total number of life years or quality-adjusted life years (QALYs) saved. Each of these principles, in different ways, aims to maximize benefits accrued from the allocation of available resources (Jennings and Arras, 2008; Persad, Wertheimer, and Emanuel, 2009; CDC, 2011).

These so-called maximizing principles have been criticized for not giving due consideration to the worst off or to the fair distribution of benefits and burdens (Persad, Wertheimer, and Emanuel, 2009). By contrast, some principles require the allocation of resources first to the sickest individuals or those who have had shorter lives than others (i.e., children). However, these principles generally countenance the allocation of resources to the worst off even when only minor health gains are possible, even when they come at high costs. Fairness may require that special attention be given to particular individuals or populations that are vulnerable due to biology, social disadvantage, or another form of disadvantage. Other principles prioritize those who are perceived as being instrumental to a successful pandemic response, such as health care workers and emergency services personnel (Persad, Wertheimer, and Emanuel, 2009). However, principles that take into account so-called “nonmedical” considerations have been criticized by those who argue that medical criteria (e.g., which patients are likely to benefit the most from medical treatment) ought to be the sole criteria for priority setting in this context (Rothstein, 2010). Finally, some priority setting principles aim to give individuals equal chance to benefit from available resources, either through a lottery or through a first-come, first-

served system. However, these principles have been criticized for ignoring information that many believe ought to be relevant when allocating valuable, scarce resources (such as an individual's need).

Experience has shown that people, and even different nations' pandemic plans, often disagree about which of these and many other principles should be used to make fair priority setting decisions (Uscher-Pines et al., 2006). In the face of seemingly intractable disagreements on this matter, decision-makers may have to rely on a fair process to establish the legitimacy of priority setting decisions (Daniels and Sabin, 2002). The most prominent example of a procedural approach to priority setting is Daniels and Sabin's "accountability for reasonableness" priority setting framework, which outlines four procedural requirements for an ethical priority setting evaluation: "transparency about (p. 801) the grounds for decisions; appeals to rationales that all can accept as relevant in meeting healthcare needs fairly; . . . procedures for revising decisions in the light of challenges to them"; and a voluntary or public regulation of the process to ensure that the preceding conditions are met (Daniels, 2000, 1300). In all cases, consensus exists that the process decision-makers use to identify and set priorities for resource allocation ought to be transparent and inclusive, involving broad stakeholder engagement (WHO, 2016).

## Health Care Workers' Obligations during Pandemics

Demand for health care workers' (HCWs) skills and expertise will increase during pandemics due to elevated pressures on health systems. At the same time, HCWs will be at significant risk of contracting illness during the conduct of their professional duties because of their close proximity to individuals infected with pandemic disease. As a result, an important ethical issue in this context regards the scope and limits of HCWs' obligations to provide care during a pandemic (WHO, 2016). Far from being settled, questions of HCWs' obligations to care were prominent during the human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) pandemic and were renewed following the death of HCWs during the 2002–2003 SARS and 2014–2016 Ebola virus disease (EVD) outbreaks (Angoff, 1991; Ruderman et al., 2006; Yakubu et al., 2016).

HCWs are bound by an ethic of care (Ruderman et al., 2006). Therefore, obligations to the patient's well-being are generally considered to be primary. The ethical foundations of the duty to provide care can be grounded in several ethical principles, the most prominent being the principle of beneficence, which recognizes the special moral obligation on the part of HCWs to advance patients' well-being (Ruderman et al., 2006). Few challenge the position that HCWs have some degree of duty in this context (Bensimon et al., 2012). At the same time, however, HCWs have competing obligations to their families and friends, whom they may fear they will infect, in addition to obligations to themselves and to their own health. Thus, the debate surrounding HCWs' duty to care may more aptly be

characterized as a question of “when and to what extent” rather than “whether or not” (Clark, 2005, 68).

Guidance from the World Health Organization (WHO) on this issue recognizes that a wide range of individuals face risk from being in close proximity to those with infectious diseases (WHO, 2016). HCWs are not necessarily unique in their exposure risks, but they do have special preexisting obligations with respect to assuming those risks (in contrast with, for example, clerical staff and sanitation workers). While the guidance does not argue for an unconstrained duty to care or set a threshold for risk, it recommends that frontline HCWs’ rights and obligations be clearly established during the pre-pandemic planning period. This would ensure that all actors are aware of what can reasonably be expected if a pandemic occurs. A strong emphasis is placed on the (p. 802) reciprocal obligation of health systems to provide the best possible infection control modalities at the disposal of HCWs, to provide them preferential access to care should they become ill, and to consider the well-being of the families as critical to supporting HCWs. Appropriate remuneration and protection of HCWs from stigma are also regarded as important norms. In the absence of such reciprocal obligations being met, HCWs cannot legitimately be expected to assume a significant risk of harm to themselves and their families.

## Research during Pandemics

In order to optimize the response to a current pandemic or improve health system performance when preventing or responding to future pandemics, there is an ethical imperative during pandemics to conduct research (WHO, 2016). In addition to improving understanding about the effectiveness of public health measures like isolation and quarantine, research conducted during pandemics is crucial in order to investigate novel medical interventions for infectious diseases that lack any effective vaccine or therapy.

Conducting research during a pandemic poses unique and significant ethical issues (WHO, 2010b). It is critical to carefully balance the need to generate new knowledge that may optimize the response to the current pandemic or improve future pandemic preparedness and response with efforts employed to actually respond to the current pandemic. Research efforts should not compromise, nor divert resources from, the public health response to a pandemic or the provision of appropriate clinical care. As in non-pandemic situations, the usual protections for human participants apply, as do standards of professional conduct. Thus, studies must be scientifically valid, add social value, and risks must be reasonable in relation to anticipated benefits (Rid and Emanuel, 2014).

Nevertheless, given the often urgent nature and acute timeline of pandemics, research ethics review boards may need to modify their standard operating procedures in order to respond to time-sensitive research proposals. Those charged with the oversight of research involving human participants should have plans in place to facilitate expedited reviews and should contemplate advance review of generic protocols for conducting re-

search in pandemic conditions, which can be rapidly adapted and reviewed for particular contexts (Ravinetto et al., 2016).

There may be significant limitations in many countries' capacities to respond to research review, particularly in situations like the Ebola outbreak in West Africa, where there was a high volume of reviews and short time limits. This may entail a responsibility for other organizations to provide assistance to local research ethics committees to overcome these challenges. As much as possible, local researchers should be involved in the design, implementation, analysis, reporting and publication of outbreak-related research. Local researchers can help ensure that studies adequately respond to local realities and needs and that they can be implemented effectively without jeopardizing (p. 803) the pandemic response. Involving local researchers in international research collaborations also contributes to building long-term research capacity in affected countries and promoting the value of international equity in science (Schopper et al., 2015).

In the context of a pandemic, particularly one in which there is a dearth of evidence regarding how to optimally manage and respond, some argue that there is an ethical obligation to share preliminary research results once they are adequately quality controlled for release (Langat et al., 2011). Such information should be shared with all actors in the response, including, but not limited to, public health officials, the study participants and affected population(s), and groups involved in wider international response efforts. Scientific journals should facilitate this process by allowing researchers to publish data with immediate implications for public health without losing the opportunity for subsequent consideration for publication in a journal (Smith, 2015).

## Global Health Governance during Pandemics

Pandemics, by their very nature, transcend national boundaries. Mounting an effective and rapid response to pandemics therefore necessitates not only local and national efforts but also international cooperation (WHO, 2016). It highlights the need for global solidarity and collective responsibility for preventing and tackling pandemic disease threats. Significant ethical questions exist regarding the specific obligations that individual countries have (within and beyond their borders) to prevent, prepare for, and respond to pandemics, and particularly the extent to which resource-rich nations have obligations to assist resource-poor nations in this effort. Importantly, the obligations of countries to participate in these efforts requires sustained attention to addressing the conditions that contribute to pandemics, which include global poverty and inadequate public health and primary health care infrastructures (WHO, 2016).

The International Health Regulations (IHR), a legal instrument that is binding on 196 countries, affirm and elaborate a set of obligations that countries have to one another to "prevent, protect against, control and provide a public health response to the international spread of disease" (WHO, 2005, Article 2). However, the 2014–2016 outbreak of Ebola virus disease made evident the fact that WHO member states have largely failed to implement the core capacities required under the IHR (Gostin and Friedman, 2015), which in-

clude the capacity to detect, assess, notify, and report unusual or unexpected public health events in accordance with the regulations, and provide “support to developing countries and countries with economies in transition if they so request in the building, strengthening and maintenance of the public health capacities required under the International Health Regulations” (WHO, 2005, 4). As such, without proper accountability mechanisms, the IHR may continue to fail to achieve their primary goals.

(p. 804) International law and pandemic plans have created a common structure and set of procedures for global cooperation in response to pandemics. However, massive inequities remain in health investment patterns, and there is little proportionality between disease burden and health spending at the global level. Progress has also been slow in improving public health practices and facilitating access to needed resources (e.g., antivirals and vaccines) in the countries most vulnerable to a pandemic. While some countries are providing public health advice and emergency response support, others are simultaneously imposing protectionist measures to isolate affected countries. As a result, poorer countries may see no alternative but to impose disproportionate measures of their own, which may include applying domestic containment strategies that breach human rights or withholding biological information and viral samples needed to track and combat infectious diseases (Thompson et al., 2015). The international community, and in particular resource-rich countries of the Organisation for Economic Co-operation and Development (OECD), has a shared responsibility to make good on legal obligations to enhance global health collaboration and moral commitments to equal human worth and dignity.

## Ethical Guidance and Frameworks

Numerous ethical frameworks have been developed that aim to guide planning and decision-making for pandemic preparedness and response (see, for example, Kass, 2005; Thompson et al., 2006; CDC, 2007; WHO, 2007, 2016). No consensus ethical framework exists, but agreement largely exists on a constellation of values and considerations that ought to be considered by decision-makers in this context.

In particular, ethical frameworks for pandemic preparedness and response aim to attune decision-makers’ attention to key areas where ethical issues are likely to arise so that they may, in advance, scrutinize and deliberate about the potential value conflicts that may exist in those domains. These areas largely map on to the themes discussed in this chapter up until this point.

Ethical frameworks also identify, articulate, and contextualize key ethical values and principles that ought to be considered when making decisions in these and other domains. Some values proffered in these frameworks are substantive, while others aim to enhance the ethical quality of decision-making processes. Again, many of the values articulated in these frameworks have been discussed throughout this chapter. As an example of the values enumerated in such frameworks, ten substantive values and five procedural values identified in a seminal ethical framework developed following the 2002–2003 SARS out-



break (University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group, 2005) are described in Table 68.1. (p. 805)

Table 68.1 Substantive and Procedural Values to Guide Ethical Decision-Making for a Pandemic Influenza Outbreak

<b>Substantive value</b>	<b>Description</b>
Individual liberty	<p>In a public health crisis, restrictions to individual liberty may be necessary to protect the public from serious harm. Restrictions to individual liberty should:</p> <ul style="list-style-type: none"><li>• be proportional, necessary, and relevant;</li><li>• employ the least restrictive means; and</li><li>• be applied equitably.</li></ul>
Protection of the public from harm	<p>To protect the public from harm, health care organizations and public health authorities may be required to take actions that impinge on individual liberty. Decision makers should:</p> <ul style="list-style-type: none"><li>• weigh the imperative for compliance;</li><li>• provide reasons for public health measures to encourage compliance; and</li><li>• establish mechanisms to review decisions.</li></ul>
Proportionality	<p>Proportionality requires that restrictions to individual liberty and measures taken to protect the public from harm should not exceed what is necessary to address the actual level of risk to or critical needs of the community.</p>
Privacy	<p>Individuals have a right to privacy in health care. In a public health crisis, it may be necessary to override this right to protect the public from serious harm.</p>
Duty to provide care	<p>Inherent to all codes of ethics for health care professionals is the duty to provide care and to respond to suffering. Health care providers will have to weigh demands of their professional roles against other competing obligations to their own health, and to family and friends. Moreover, health care workers will face significant challenges related to resource allocation, scope of practice, professional liability, and workplace conditions.</p>

Reciprocity	Reciprocity requires that society support those who face a disproportionate burden in protecting the public good, and take steps to minimize burdens as much as possible. Measures to protect the public good are likely to impose a disproportionate burden on health care workers, patients, and their families.
Equity	All patients have an equal claim to receive the health care they need under normal conditions. During a pandemic, difficult decisions will need to be made about which health services to maintain and which to defer. Depending on the severity of the health crisis, this could curtail not only elective surgeries, but could also limit the provision of emergency or necessary services.
Trust	Trust is an essential component of the relationships among clinicians and patients, staff and their organizations, the public and health care providers or organizations, and among organizations within a health system. Decision makers will be confronted with the challenge of maintaining stakeholder trust while simultaneously implementing various control measures during an evolving health crisis. Trust is enhanced by upholding such process values as transparency.
Solidarity	As the world learned from SARS, a pandemic influenza outbreak will require a new vision of global solidarity and a vision of solidarity among nations. A pandemic can challenge conventional ideas of national sovereignty, security or territoriality. It also requires solidarity within and among health care institutions. It calls for collaborative approaches that set aside traditional values of self-interest or territoriality among health care professionals, services, or institutions.
Stewardship	Those entrusted with governance roles should be guided by the notion of stewardship. Inherent in stewardship are the notions of trust, ethical behavior, and good decision-making. This implies that decisions regarding resources are intended to achieve the best patient health and public health outcomes given the unique circumstances of the influenza crisis.

<b>Proce- dural values</b>	<b>Description</b>
Reason- able	Decisions should be based on reasons (i.e., evidence, principles, and values) that stakeholders can agree are relevant to meeting health needs in a pandemic influenza crisis. The decisions should be made by people who are credible and accountable.
Open and transpar- ent	The process by which decisions are made must be open to scrutiny, and the basis upon which decisions are made should be publicly accessible.
Inclusive	Decisions should be made explicitly with stakeholder views in mind, and there should be opportunities to engage stakeholders in the decision-making process.
Respon- sive	There should be opportunities to revisit and revise decisions as new information emerges throughout the crisis. There should be mechanisms to address disputes and complaints.
Account- able	There should be mechanisms in place to ensure that decision makers are answerable for their actions and inactions. Defense of actions and inactions should be grounded in the 14 other ethical values proposed above.

*Source:* University of Toronto Joint Centre for Bioethics Pandemic Influenza Working Group, 2005, 6–8.

Ethical frameworks have long recognized that building and retaining public trust in public health authorities is essential for an effective pandemic response. To engender trust, the WHO has recommended that countries develop communication and social (p. 806) mobilization strategies in order to inform communities about expected public health measures (WHO, 2016). Ideally, these efforts will be informed through community engagement, working with trusted leaders, and striving to be linguistically and culturally appropriate. Given that decisions during a pandemic must often be made urgently and in the context of scientific uncertainty, a significant challenge exists to provide comprehensive, timely, and balanced information that will keep communities informed (p. 807) on the threat's nature and evolution and on governmental policy developments, including changes in public health laws.

## **Ongoing Challenges: Lessons Learned**

In 2014 a protracted outbreak of Ebola virus disease began in West Africa. The outbreak was devastating, as it occurred in the context of nations with poorly functioning health systems and recent history of political turmoil. There was limited spread of the disease outside of this region, but the outbreak was significant enough to warrant being declared a public health emergency of international concern under the IHR. As the outbreak was drawing to a conclusion, a commonly expressed sentiment was that it ought to serve as a “wake-up call” to improve pandemic preparedness and that there were important “lessons to be learned” (Smith and Upshur, 2015).

These sentiments reflect an acknowledgment that such outbreaks should never have occurred, and that, despite over a decade of attention to pandemic preparedness and response, the global community remains ill-prepared to prevent and respond to pandemics. Since the turn of the millennium, numerous infectious disease outbreaks and pandemics have prompted similar “wake-up calls” to improve pandemic preparedness and response, including outbreaks of SARS; H5N1, H7N9, and H1N1 influenza viruses; Middle East respiratory syndrome coronavirus (MERS-CoV); and the emergence of pathogens with antimicrobial resistance, including multidrug-resistant tuberculosis (Smith and Upshur, 2015). Taken together, these outbreaks and the recurring sentiment that they ought to serve as wake-up calls illustrate that the global health community has failed to heed the lessons of past outbreaks and pandemics.

This failure to learn affirms a defect in the collective moral attitude toward remediating the conditions that precipitate the emergence of pandemic threats. These conditions include profoundly inadequate public health and primary health care infrastructures in many countries. More fundamentally, there is an inability to recognize and accept the responsibilities that must be shared as a global community to address shared vulnerabilities to infectious diseases with pandemic potential. In practice, this translates to investment in global outbreak surveillance infrastructure as well as the strengthening of health systems in the worst-off countries (Smith and Upshur, 2015).

Ultimately, this inability to learn is an ethical failure, and ought to serve to emphasize the importance of engaging with the ethics of pandemic preparedness and response. Commitments to improving global outbreak surveillance and early outbreak warning systems (i.e., technical improvements) must therefore be matched with commitments to cultivating the ethics lessons that emerge following outbreaks and pandemics. If future actions are guided by the same values that have led to these repeated ethical failures, there should be doubt as to whether any meaningful change to pandemic preparedness and response will occur.

### (p. 808) Conclusion

This chapter reviewed salient ethical issues associated with preparing for and responding to pandemic disease. While each pandemic has its unique characteristics, recent decades have shown that there are predictable issues that arise regarding the use of public health measures, the scope and limits of the duty to care of health care workers, setting priorities for the allocation of resources, global governance, and research ethics. Significant scholarship has evolved around each of these issues, and despite a lack of universal consensus regarding how to properly address them, numerous guidance documents exist that will aid any health system in preparing for and responding to these challenges.

As noted in response to the 2014–2016 EVD outbreak, a failure remains for these guidance documents to be accessed and used in a timely fashion that informs and shapes responses to pandemics. Part of this failure may be explained by the fact that the ethics guidance documents largely exist as stand-alone documents and are not typically integrated into operational pandemic plans. Another part of this failure may be explained by the lack of attention to ethics education in medical and public health training programs. Yet another element may be the unfamiliarity with the type of reasoning required for ethical reflection and deliberation. Indeed, more deliberative approaches may be at odds with the command and control approaches often used in emergency situations. In addition, the need for broad engagement with a range of stakeholders may be perceived as an impediment to timely action.

However, research continues to highlight the need to engage key stakeholders and communities in pandemic planning, conduct widespread and inclusive deliberation on the aforementioned ethical issues, and translate and operationalize public health ethics values and principles for pandemic preparedness and response (Garrett et al., 2011). Future efforts should be devoted to ensuring that as much of this work is done in advance of responding to an urgent situation.

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