

WILLINGNESS OF THE LOCAL HEALTH DEPARTMENT WORKFORCE TO RESPOND TO INFECTIOUS DISEASE EVENTS: EMPIRICAL, ETHICAL, AND LEGAL CONSIDERATIONS

Holly A. Taylor, Lainie Rutkow, and Daniel J. Barnett

According to the Institute of Medicine, the local health department workforce is at the hub of the public health emergency preparedness system. A growing body of research has pointed to troubling attitudinal gaps among local health department workers, a vital response cohort, regarding willingness to respond to emergent infectious disease threats, ranging from naturally occurring pandemics to bioterrorism events. A summary of relevant literature on the empirical evidence, ethical norms, and legal standards applicable to the willingness of public health professionals to respond to an infectious disease emergency is presented. Recommendations are proposed for future work to be done to bring the relevant empirical, ethical, and legal considerations together to develop practical guidance for the local response to infectious disease emergencies.

ACCORDING TO THE Institute of Medicine, the local health department workforce is the hub of the public health emergency preparedness system.¹ This notion is in keeping with the maxim that “all disasters begin locally.”² A growing body of research has pointed to troubling attitudinal gaps among local health department workers, a vital response cohort, regarding willingness to respond to emergent infectious disease threats, ranging from naturally occurring pandemics to bioterrorism events.³⁻⁶ Willingness in this case refers both to willingness to be present at work as well as to complete duties as assigned. Research has also highlighted the fact that public health workers are more apt to be willing to respond to infectious disease scenarios if they perceive their response as mandatory rather than voluntary and if they feel confident that their agencies are taking extra measures to protect them and their families.⁴⁻⁷

At a time of diminishing public health agency resources, these attitudinal deficits have concerning implications for the public health emergency preparedness system’s capacity to marshal an adequate response to such threats. Between 2008 and 2013, the full-time local health department workforce decreased by an estimated 12%, including losses of approximately 5,000 registered nurses and 2,000 environmental health workers, along with other critical health department workforce segments (eg, behavioral health professionals, administrative/clerical personnel).⁸

The research to date on willingness to respond strongly suggests the need for greater understanding by health department leaders and line staff of the ethical and attendant legal dimensions of infectious disease response in advance of an outbreak.^{9,10} The decision of local health department employees to respond to an infectious disease crisis can become a balance of personal (eg, family wellbeing) and professional (eg,

Holly A. Taylor, PhD, is an Associate Professor, Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, and Core Faculty, Johns Hopkins Berman Institute of Bioethics; Lainie Rutkow, PhD, is an Assistant Professor, Department of Health Policy and Management, and Assistant Director, Johns Hopkins Center for Law and the Public’s Health, Johns Hopkins Bloomberg School of Public Health; Daniel J. Barnett, MD, is an Associate Professor, Department of Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health; all in Baltimore, Maryland.

welfare of the community served by the health department during the event) responsibilities. A tension thus emerges between their rights as individuals and their commitment to the public good. Acknowledging this tension is crucial to the development and dissemination of sound preparedness policy and practice at the local level. In this article, we present a summary of relevant literature on the empirical evidence, ethical norms, and legal standards applicable to the willingness of public health professionals to respond to an infectious disease emergency. We believe this review points to future work to be done to bring the relevant empirical, ethical, and legal considerations together to develop practical guidance for the local response to infectious disease emergencies.

EMPIRICAL EVIDENCE

Effective response to infectious disease emergencies is predicated not only on the ability and readiness of members of the public health workforce to respond, but also on their willingness to respond.¹¹ The literature points to gaps in willingness to respond among a variety of frontline responder cohorts as a significant threat to healthcare surge capacity in a widespread infectious disease scenario.^{3,4,6,7,12-16} Examples in which low willingness to respond had the potential to hinder local public health response to an infectious disease outbreak have been reported in the recent literature.⁴⁻⁶ For instance, in a 2008-09 cross-sectional survey of multiple responder cohorts from Nassau County, New York, more than a quarter (25.9%) of health department workers indicated unwillingness to respond in the event of a serious influenza pandemic.^{4-7,17}

Research on willingness to respond has historically underutilized behavioral models for examining root determinants of healthcare responders' attitudes toward fulfilling professional role expectations in the face of emergent public health crisis scenarios.¹⁸ Recently, however, a growing body of evidence has pointed to Witte's threat- and efficacy-based Extended Parallel Process Model (EPPM) as a useful conceptual framework for understanding public health workers' dispositions toward willingness to respond to infectious disease threats.^{4,6} The EPPM predicts that, in the face of an uncertain risk, people are more apt to engage in proactive behaviors if they perceive: (1) that the threat associated with a hazard is legitimate (thus spurring positively adaptive actions to address the threat), and (2) that they can engage in such desired actions efficaciously.^{19,20} The "threat" component of EPPM has 2 subcomponents: susceptibility (ie, perception of the likelihood of and vulnerability to a given threat) and severity (ie, perception that the threat would have significant consequences to health and well-being, if realized). The efficacy component of EPPM also has 2 subcomponents: self-efficacy (ie, confidence that one can respond to a threat effectively) and response efficacy (ie, perception that one's behavior makes a meaningful difference in addressing that threat).¹⁹

Recent findings have uncovered that willingness to respond to emergent infectious disease is a function of the interplay between EPPM-defined perceptions of threat and efficacy regarding a hazard.^{4,6,7,17} A 2009-10 EPPM-based cross-sectional survey of local health department workers in 9 states revealed response willingness deficits of 9% to 27% to pandemic influenza and 22% to 48% to an inhalational anthrax bioterrorism event.⁶ Local health department workers in that study who fit a "high threat/high efficacy" profile reported over 19 and 18 times greater response willingness to inhalational anthrax bioterrorism and pandemic influenza scenarios, respectively, than the "low threat/low efficacy" (reference group) EPPM profile. Additionally, research on willingness to respond among local public health workers has highlighted that, while threat and efficacy are both relevant in an infectious disease context, the efficacy portion of the EPPM outweighs threat as a determinant of response willingness among this cohort in both urban and rural settings.^{4,6} This in turn highlights the need for efficacy-focused strategies and interventions to boost response willingness among this occupational cohort.²¹

Healthcare providers have a generally accepted duty to treat individuals in need of medical attention. The duty of a healthcare provider to treat an individual in need is based on the provider's expert training and commitment to upholding the professional code of conduct. Several authors have made recommendations intended to facilitate healthcare providers' ability to act on their duty to treat, such as recommending that institutions seeking to use healthcare provider expertise provide goods and services to support their efforts.²²⁻²⁴ While healthcare providers have different role responsibilities as compared with the majority of health department staff, it is likely that the types of goods and services made available to support the response by health department staff would be similar to those provided to healthcare providers asked to respond. Examples of such goods and services include access to personal protective equipment,^{22,24} training in protective equipment and infection control,²² vaccination,²²⁻²⁴ vaccination of immediate family,^{23,24} and antiviral medication in case of exposure.²²⁻²⁴ Garrett et al²⁵ found that giving healthcare providers and their families primary access to personal protection and medications in a pandemic scenario may mitigate absenteeism. Provision of personal protective equipment has also been found to be a favorable modifier of pandemic response willingness among nursing students.²⁶ In summary, providing protection, in a variety of forms, to local health department staff and their families may influence their willingness to respond to infectious disease outbreaks.

ETHICAL PRINCIPLES AND CONSIDERATIONS

A number of authors have proposed sets of ethical principles or considerations of ethical frameworks to guide decision making regarding pandemic preparedness.²⁷⁻³⁵ All

advocate for the inclusion of ethics in deliberations regarding pandemic preparedness to maximize the welfare of the public and to balance public interests with those of individual citizens. Of note, Kinlaw et al³³ posit that attention to preparedness itself is an ethical mandate for public health officials. In general, these documents highlight established ethical principles from public health and clinical ethics most relevant to pandemic preparedness, such as the allocation of scarce resources (eg, vaccines and antiviral medications) and under what circumstances compromise of individuals' rights may be required (eg, isolation or quarantine).^{28,30,33} Others focus on the ethical challenges likely to befall healthcare systems, such as responsible triage, allocation of ICU ventilators, mandatory vaccination policy, altered standards of care, and healthcare practitioners' duty to treat.³⁶⁻⁴¹ The application of ethical arguments about the duty of healthcare providers to treat to the duty of health department staff to respond to an infectious disease emergency will be considered below. Still others provide frameworks to guide decision making that highlight the role of procedural ethics (eg, transparency) in building public trust.^{4,28,30,31,33} All highlight that a lack of public trust and cooperation during a pandemic can cost time and lives. The development and dissemination of practical guidance for local health department staff when they are asked to respond to an outbreak may contribute to public trust in local preparedness.

WILLINGNESS TO WORK

While there is little normative literature discussing whether local public health professionals have a duty to report for work during an infectious disease crisis, there is a rich literature on healthcare professionals' duty to treat. Considerations as to whether healthcare professionals had a duty to treat HIV patients and later whether they had a duty to provide care during the SARS epidemic have resulted in an in-depth examination of this duty in the context of pandemic preparedness.^{9,23,42-45} The core ethical question related to the duty to treat is: Under what circumstances does a healthcare professional have an obligation to treat a patient or group of patients when doing so exposes him or her to personal risk?^{44,46} While an argument against any duty to treat is hard to defend, the duty to treat

may diminish as the level of personal risk increases.⁴⁶ Related, and especially relevant in the context of an infectious disease, is the ethical tension between healthcare professionals' duty to treat and their personal responsibility to family—a commitment to protect family and friends from infection.^{22,23,42,47}

While local public health professionals and healthcare providers differ in many ways, the ethical tensions they may face in the event of an infectious disease outbreak are similar: When does personal risk outweigh professional duty to serve the public, and how does one balance professional duty to serve the public with personal responsibility to family and friends? In addition, assurance that the local public health workforce will respond in the event of a pandemic is key to public trust and therefore essential in the promotion of the public good.

As noted above, work has been done to consider and clarify why healthcare practitioners have an ethical duty to treat in medical emergencies. There are 5 common normative arguments in favor of healthcare professionals' duty to treat posited in the literature: special training, implied consent, existence of a professional code, reciprocity/social contract, and reciprocity/duty to colleagues.^{9,22-24,42,45-50} A sixth, less common argument in favor of healthcare professionals' duty to treat, but perhaps relevant to local public health professionals' duty to respond, is a duty to society. The duty to society argument is related to public expectation and trust. The public expects healthcare professionals to provide them with treatment.⁵¹ If they fail to treat, the trust of the public is compromised and harm can come to the society as a result.⁴⁵ As with the social contract argument, the duty to society calls on the *profession* rather than an individual healthcare professional to fulfill the duty to treat.^{43,46} We have adapted 3 of these normative arguments that favor healthcare professionals' duty to treat to public health professionals' duty to respond (Table 1).

In summary, we argue that there is a set of ethical justifications to support the duty of local health department staff to respond to an infectious disease outbreak. Based on the empirical literature presented above, the provision of goods and services to support health department staff and their families may increase the likelihood that local health department staff will be willing to respond. Next, we will consider how relevant legal considerations support local health department response to an outbreak.

Table 1. Possible Ethical Arguments in Favor of Public Health Professionals' Duty to Respond

Reciprocity/Social Contract	In exchange for applying their special skills and providing care to those in need, many public health professionals are eligible for licensure and compensated with income and elevated social status. ^{9,22,43,45,47,48}
Reciprocity/Duty to Colleagues	Removing oneself from the response to the event leads to an inequitable allocation of risk among public health colleagues who are willing to respond. ^{22-24,45,47, 50}
Duty to Society	Removing oneself from the scene leads to suboptimal local response and may lead to social harm. ⁴⁵

LEGAL CONSIDERATIONS

Law plays an integral role in protecting the public's health and is inextricably linked to ethical considerations when considering emergency response willingness among local health department workers.⁵²⁻⁵⁷ At the federal level, the US government's ability to respond to public health emergencies derives from several pieces of legislation, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act⁵⁸ and the Public Health Services Act.⁵⁹ The Stafford Act grants the president the ability to declare an emergency or major disaster, generally as a response to a request from the governor of a state experiencing an emergency. Following the declaration, the federal government can begin to coordinate a response, primarily through the Federal Emergency Management Agency (FEMA). The Secretary of the US Department of Health and Human Services (HHS) can issue a separate declaration of public health emergency (eg, for a major infectious disease outbreak) under the Public Health Services Act. This declaration allows HHS to take several actions as part of a response, including the provision of financial support for investigations into the cause of the outbreak as well as temporary suspension of reimbursement requirements for the Medicare and Medicaid programs.

These 2 types of declarations (ie, emergency and public health emergency) have the potential to positively influence response willingness, as they may lead to the influx of personnel, financial, and other resources that augment health departments' response capacity. Of particular relevance during a declared public health emergency due to an infectious disease outbreak, the Public Readiness and Emergency Preparedness (PREP) Act grants the HHS secretary the ability to provide liability protections to individuals involved in the administration of countermeasures.⁶⁰ These liability protections provide assurance that individuals, including health department workers, will not be held personally responsible for adverse outcomes related to countermeasures that they dispense or administer as part of the response. Local health department workers have previously expressed concerns about liability and related protections during a response;⁶¹ thus, the presence of specific liability protections may increase their comfort with response participation.

As an initial step toward helping states revise and update their laws to promote emergency preparedness, the Centers for Disease Control and Prevention (CDC) tasked the Centers for Law and the Public's Health with drafting a model law that contained provisions related to response to bioterrorism events. The Model State Emergency Health Powers Act (MSEHPA) was created in late 2001 and provided sample legal language that local and state governments could adopt for emergency tasks such as the destruction of contaminated material, testing and screening

individuals exposed to an infectious agent, and coordination with healthcare providers from neighboring states.⁶² In addition, MSEHPA contained language that would allow states to declare their own public health emergencies, separate from declarations made by the federal government. Such a declaration can change a state's legal landscape and temporarily grant the state additional powers to facilitate a response to the emergency. To date, 39 states have updated their emergency preparedness laws by codifying portions of MSEHPA.⁶³ While states vary in their approaches to emergency preparedness relative to infectious disease outbreaks, they also share some commonalities. For example, every state has joined the Emergency Management Assistance Compact (EMAC), a mutual aid system intended to encourage resource sharing among state governments during declared emergencies.⁶⁴ State-level provisions derived from MSEHPA or related laws and EMAC are often accompanied by planning requirements for varied disaster scenarios that state and local governments may face. These laws also offer additional clarification about authority during a response, particularly when responses involve multiple jurisdictions. The presence of such laws provides opportunities for training and other advance preparations for a response among local health departments, improving workers' response-related skills and making them more comfortable with the parameters of their response roles and responsibilities.^{21,65}

Many elements contribute to legal conceptions of a duty to respond, or report to work, during an infectious disease emergency. As noted above, for members of the public health workforce, a key concern is whether liability protections, beyond those included in the PREP Act relative to countermeasures, will apply to their response efforts. The presence of these protections depends on several factors, including whether an individual participates in the response as part of his or her work responsibilities or as a volunteer. If local public health workers respond to an infectious disease outbreak as part of their job responsibilities, then they may receive liability protections through laws such as EMAC.⁶⁶ If they participate as volunteers, then the presence of liability protections will depend on whether they have pre-registered with their state and whether they participate under the auspices of an organization or on their own.⁶⁷⁻⁷⁰ Similarly, should an individual become injured during a response, the application of workers' compensation protections will depend on whether the injury occurred as part of an individual's work-related responsibilities.⁷¹ Employment contracts may also influence individuals' perceptions of whether they have a duty to respond during an infectious disease outbreak. While these contracts are unique to each local health department, they may contain language indicating that an individual is expected or required to participate in an actual emergency response and related training exercises. The contract may stipulate the outcome if an individual fails to participate in a response (eg, termination). Finally, for local public health workers who are union

members (eg, nurses), an additional overlay of considerations may arise relative to response duties. For example, recently nursing unions have opposed the implementation of mandatory healthcare worker flu vaccination campaigns, particularly if failure to participate could result in employment termination.^{72,73}

Little empirical work has been done to evaluate emergency preparedness laws or individuals' perceptions of these laws in the context of willingness to respond to an infectious disease outbreak. Among the few studies in this area, in 2012 Jacobson and colleagues¹⁰ published the results of a qualitative study involving 144 interviews with public health workers and emergency management personnel to assess their perception of the legal environment relative to emergency preparedness. They discovered "a clear disconnect between the objective legal conditions (federal and state specific) and what the respondents perceived them to be, especially at the local level."^{10(p305)} In addition, they noted that respondents were often more concerned about ethical issues than legal ones, because of the need to make rapid decisions during actual emergencies when legal requirements may be unclear. The following ethical issues, of particular relevance to response willingness during infectious disease outbreaks, were among those mentioned repeatedly by their respondents: "mass quarantine/isolation in relation to the infringement of individual freedoms and privacy" and "individual willingness/duty to respond altruistically to the societal/community needs versus duty to family and loved ones."^{10(p320)} Although this study did not evaluate how laws influence individuals' willingness to respond during infectious disease emergencies, these findings suggest that response willingness may be tied to individuals' understanding of relevant legal standards and ethical norms.

CONCLUSION

Based on the above narrative, there are a variety of actions that health department leaders can take to ensure their agencies are ready to respond to an infectious disease outbreak. The strong influence of self-efficacy on local health department workers' willingness to respond, for example, highlights the timely need for health department leaders to review current contracts and job descriptions, to determine whether they include language specific to expectations regarding staff roles and responsibilities in the event of an all-hands-on-deck emergency response. In addition, leaders need to consider whether job contracts and expectations are different for unionized and nonunionized staff. If differences exist, they should be addressed in advance of an emergency. Further, health department leaders need to ensure that all of their workers have received training about their potential specific roles and responsibilities prior to such an agency-wide response.

Health department leaders could address health department workers' concerns about personal and family safety in

disasters by (1) strongly encouraging, or even requiring, all health department employees to assemble personal/family preparedness kits; and (2) clarifying to all health department employees what steps their leaders are taking to keep them optimally safe at work in the course of a disaster response. Against this backdrop, health department leaders can and should acknowledge that staff may encounter tensions between their professional obligation to their jobs and concerns about personal and family well-being in the event of an infectious disease outbreak.

While there is a growing body of empirical evidence on the willingness of local health department staff to respond to an infectious disease emergency, critical gaps remain in our knowledge. For example, suggestions have been made about what types of goods and services ought to be available to healthcare professionals to facilitate their willingness to respond; however, studies have yet to examine whether the needs of health department staff are similar to or different from these. Second, a number of normative arguments have been made to justify the healthcare professional's duty to treat, but little has been done to consider whether any of these arguments are transferable to health department staff, or which arguments resonate most with health department staff. Third, there is evidence that local health department staff are unfamiliar with or lack specific knowledge about laws relevant to emergency response. In addition to gathering new knowledge, a comprehensive approach to explore these gaps could lead to the development of formalized, practical guidance—something that does not currently exist in this realm.

These conclusions point to a series of next steps to address these gaps in knowledge. The need to ensure ethically sound policy and practice among local public health agencies highlights the timely importance of a way forward involving (1) the use of empirical methods to explore and confirm the knowledge, attitudes, and opinions of stakeholders in the public health response community to an infectious disease emergency; and (2) translation of these empirical results, along with interpretation through the lenses of ethical norms and legal standards, to inform practical policy guidance for health department officials on how to best manage the ethical tensions between individual rights of front line staff and their crucial role in safeguarding the public's health during an infectious disease emergency. Vetting of this policy guidance with key stakeholders, including public health practice and research experts, will be a requisite precursor for ultimate dissemination and evaluation at the local level to ensure ethically and legally informed local public health response to future infectious disease emergencies.

ACKNOWLEDGMENTS

This work was funded by grant R01GM105956. None of the authors have conflicts of interest to report.

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*Manuscript received January 30, 2014;
accepted for publication May 7, 2014.*

Address correspondence to:
*Holly A. Taylor, PhD
Berman Institute of Bioethics
1809 Ashland Ave., DH205
Baltimore, MD 21205
Email: htaylor@jhu.edu*