Public health emergencies, such as hurricanes and the constant threat of an influenza pandemic, present public health responders with many ethical issues and little time to think them through. We interviewed 13 responders in the Epidemiology Section of the North Carolina Division of Public Health to learn how they have identified and addressed ethical issues in public health emergencies affecting the state and to identify potential means of improving those processes for North Carolina and other states. The Epidemiology Section staff demonstrated an awareness of several ethical issues in public health emergencies and an ability to identify and address issues through group interactions. However, few study participants in the section had received any training in public health ethics. Perhaps for this reason, the range of ethical issues they identified excluded several mentioned in the Public Health Code of Ethics. Moreover, their ethical decision making could be enhanced by a more detailed understanding of the ethical issues they named. We recommend seven practical steps that the Epidemiology Section can take to improve their ability to identify and address ethical issues in a public health emergency. The recommendations are likely relevant to many state, city, and county public health departments throughout the United States.

**KEY WORDS:** emergency health services, ethics, public health

Public health emergencies present ethical challenges in at least three ways: (1) the stakes are high because often many people are affected all at once, (2) there is little time to deliberate, and (3) the emergency may have incapacitated essential resources, such as roads or electrical power. In a hurricane, for example, a loss of electrical power will make it hard to communicate by television or radio with the people at risk. A common outcome with ethical implications is disproportionate damage or harm experienced by a vulnerable population. When this happens, their trust in the government is diminished (or their distrust is reinforced). The population may then be less responsive to public health emergency responders in the next event and to all those who protect the health of the public day to day.

Public health emergency responders must regard their ability to identify and address ethical issues as essential skills. There are at least seven levels of ethical awareness needed to identify and address ethical issues: (1) recognition that an ethical dimension exists, (2) identification of specific ethical issues, (3) identification of guidelines and tools for ethical reasoning, (4) deciding who is responsible for which ethical decisions, (5) preparing responsible parties to engage in ethical decision making, (6) putting the decided plans into action, and (7) evaluating whether the action achieved the intended result.1

To learn whether a state-level health department identifies ethical issues in public health emergencies and to discern their level of preparedness to address any issues identified, we interviewed personnel in the Epidemiology Section of the North Carolina Division of Public Health. They are the group in the Department of Health and Human Services most active in responses to public health emergencies, such as hurricanes.2-4 We
also sought to identify how the Epidemiology Section might become better prepared to identify and address ethical issues in a public health emergency.

● Methods

The study consisted of interviews with Epidemiology Section staff who had been involved in responses to public health emergencies. For advice on the content of our interview guide, we assembled a group of seven individuals with expertise in public health law, public health ethics, responses to public health emergencies, preparation for emergencies, and the administration of public health departments.

The resulting questionnaire was a mix of open- and close-ended questions. We asked the respondents about their experience in public health emergencies; what ethical issues, if any, had arisen in the emergencies; and how the issues had come to light. We asked for an example of an ethical issue that had been resolved well, what enabled it to be addressed well; and an example of an issue that was not addressed well, and what led to that outcome. We did not prescribe what constituted an ethical situation. Rather, we simply recorded what the respondents perceived or described as ethical issues. To see how they all respond to similar situations, we described two hypothetical emergency events and asked what ethical issues they could identify in them.

Each respondent was asked to rate the confidence they had in the Epidemiology Section to identify and address ethical issues in a public health emergency, as well as their confidence in themselves to do the same. They responded to statements (“I am confident that . . .”) with a 4-point scale of agreement (strongly disagree, disagree, agree, and strongly agree). Respondents were then asked what formal training, if any, they had in public health ethics and public health emergencies and what recommendations they had to strengthen their work unit’s ability to identify and address ethical issues in an emergency.

Potential respondents were identified by one of us (Dr MacDonald) on the basis of her collaborations with the state health department in several recent public health emergencies. The Chief of the Section also advised us on individuals with experience in emergency response. Respondents were interviewed by Dr Thomas and a graduate research assistant. Both interviewers were present for three interviews to ensure that the interviewers conducted their interviews similarly. The average interview duration was 45 minutes. Thorough notes were taken on responses to the open-ended questions and then transcribed into a standardized format to facilitate comparison.

We formed an agenda for a focus group discussion based on patterns of responses in the individual interviews and unresolved questions. The majority of the 90-minute focus group discussion was spent exploring the details of one public health emergency. The individuals selected for the focus group were the interview respondents who had the most experience with public health emergencies and whose interviews provided the most detail about ethical issues in the emergencies. One researcher took notes while the other led the discussion. The discussion focused on the details of the sudden acute respiratory syndrome (SARS) outbreak, one of the public health emergencies mentioned by several people in the individual interviews. It was also the emergency with which the greatest number of people in the focus group had been involved. In this discussion, we probed the group about the Epidemiology Section’s policies or skills with respect to the seven levels of awareness described above. The session was audio recorded. The transcribed notes from the discussion and from listening to the recording were used to verify or refine the findings from the individual interviews. We presented the findings and our tentative interpretations to the external advisers. Their questions and observations informed the final framing of our results.

The study design, informed consent, and questionnaire were approved by the University of North Carolina Public Health and Nursing institutional review board.

● Results

We identified 17 potential respondents and obtained interviews from 13: 10 men and 3 women; one African American and the rest non-Hispanic Whites. Those not interviewed were unavailable at the time of the study. No one refused to be interviewed. Public health emergency responses in which they had participated were of three types: those affecting large populations, localized incidents, and infectious disease outbreaks. The events affecting large populations included hurricanes Fran (1996), Floyd (1999), and Isabelle (2003); an ice storm (2002), an influenza vaccine shortage (2003), and receiving evacuees from hurricane Katrina (2005). The local incidents included a factory fire, a smoldering fire in a landfill that filled a region’s air with smoke, and a chemical spill. The outbreak responses pertained to anthrax in the US postal system, SARS, monkeypox in prairie dogs, Escherichia coli O157:H7 at a state fair, and a smallpox scare. Hurricanes were the most common emergency type. Ten of the 13 respondents had been involved in one of the hurricane responses. Five were part of the state’s response to SARS, which was
the emergency involving the next greatest number of respondents.

Among those mentioning ethical issues that had arisen in an emergency, 24 different ethical issues were identified in the context of nine emergencies. The largest number of ethical issues (9) related to hurricanes. The ethical issues most commonly mentioned were communications with the public, vulnerable populations, the sapping of resources by those who already had the most resources (whom we dubbed “the worried wealthy”), and lines of authority and collaboration among all the agencies and other parties involved in the response.

Additional ethical issues that were mentioned by more than one respondent were getting input from the community (only in the context of the hypothetical cases), acting in a timely manner, incorporating a variety of cultural approaches, maintaining confidentiality, and creating trust between agencies in advance of an emergency.

In the two hypothetical situations, the ethical issue identified twice as often as any other was the need to communicate effectively with the public. Also mentioned by more than one respondent were attending to vulnerable populations, allocation of scarce resources, and involving the public in decision making.

Few means of identifying ethical issues were mentioned. In most cases, respondents simply said some situation or action made them uncomfortable. In two situations, issues arose in the context of conversations among groups of emergency responders. A few mentioned ethical issues identified by a state-level task force assembled to establish guidelines for responding ethically to a future influenza pandemic. Apart from those who participated in the task force, none mentioned the Public Health Code of Ethics or any other established ethical principles.

Factors mentioned that enabled some ethical issues to be dealt with well were preexisting policies and institutional relationships (protocols, plans, and practices); good communication between agencies and with the public; using science to determine the most efficacious actions; discussions in the midst of the emergency; and having a health director who demonstrates that ethics are important by acting ethically himself or herself.

Factors mentioned as impeding a good resolution to ethical issues were forces considered to be out of their control (eg, national leadership that was either absent or overbearing, the acts of other organizations, and having to respond to multiple offices in the state government that do not share the same views or objectives); having the wrong people communicate to the public; being distracted by the worried wealthy; not having adequate means (eg, enough people) to enforce the police powers of public health; and having state-associated emergency response personnel situated in two buildings far apart from each other.

One of the respondents did not finish the interview and thus did not answer the questions about ethics confidence, training, or recommendations. The remaining 12 agreed or strongly agreed that their work unit could identify ethical issues, deliberate to identify ethically defensible actions, review ethical decisions, and incorporate lessons learned in future emergencies. All of them also agreed or strongly agreed that they, personally, could identify ethical issues, draw upon central concepts of public health ethics, and contribute knowledgeably to a group charged with resolving ethical issues in a public health emergency. Only one of the respondents had received formal training in public health ethics, but all had received training in responses to public health emergencies (the training for public health emergencies does not include ethics).

The most frequently mentioned recommendation (7 respondents) for improving the ethics capacity of individuals and work units was the provision of training in public health ethics. Other ideas mentioned by only one person each were more ethics-related task forces, face-to-face interactions with vulnerable populations, role playing, and sharing the results of this study with the Section.

Discussion

Our interviews provided information on the types of ethical issues that occur in public health emergencies, the levels of ethical awareness among those who respond to the emergencies, patterns of decision making in the context of public health emergencies, and potential improvements to ensure ethical decision making in emergencies. The depth and breadth of our information may have been improved if we had succeeded in interviewing everyone identified as a public health emergency responder or if we had interviewed people not in public health who have interacted with the public health responders in emergencies. Moreover, the presence of Epidemiology Section and Division of Public Health leaders mixed with staff at other levels may have affected the responses. Despite these limitations, a number of findings are clear from the patterns of responses in the individual interviews and focus group discussion.

Of the seven levels of ethical awareness mentioned above, the Section was strongest on the first two (recognizing an ethical dimension and identifying specific issues). However, they had potential to improve in all seven, including awareness of guidelines and tools for ethical reasoning, assigning ethical responsibilities to particular people, training in ethical decision making,
TABLE 1  ● Assets and potential improvements in ethical awareness and skills of the North Carolina Epidemiology Section

<table>
<thead>
<tr>
<th>Assets</th>
<th>Potential improvements</th>
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<tbody>
<tr>
<td>Awareness of an ethical dimension to public health</td>
<td>Identify a wider range of ethical issues</td>
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<tr>
<td>Ability to identify particular ethical issues</td>
<td>Reach a deeper level of understanding of some ethical issues</td>
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<tr>
<td>Open discussion allowing ethical issues to surface and be addressed</td>
<td>Identify and use resources for identifying ethical issues and for decision making</td>
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<tr>
<td></td>
<td>Assign roles to ensure ethical actions by the Epidemiology Section and provide training for the roles</td>
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<tr>
<td></td>
<td>Reduce the vulnerability of the Section’s ethics environment to leadership turnover</td>
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<tr>
<td></td>
<td>Evaluate actions taken in public health emergencies after they are over</td>
</tr>
</tbody>
</table>

The confidence the respondents expressed in their ability to identify ethical issues draw upon central concepts of public health ethics and contribute knowledgeably to a group charged with resolving ethical issues in a public health emergency was inconsistent with their reported lack of training in ethics. Perhaps because all but one of the respondents had no formal training in ethical thinking, their ethical perspectives were shaped by what they had been trained in, namely public health and science. Some respondents stated that public health activities are ethical when they achieve the traditional goals of public health, such as disease prevention and control. A similar sentiment was that scientific information provides the best basis for decisions. These perspectives are not inconsistent with established schools of thought in public health ethics. Among the values and beliefs underlying the Public Health Code of Ethics are the competence of public health practitioners and the use of scientifically gained knowledge to guide decisions.

There is also the danger, however, of regarding public health as inherently good and ethical because it attends to the good of the community or at least purports to. This view reflects a utilitarian perspective commonly described as the greatest good for the greatest number. One weakness of utilitarianism, however, is what some call “the tyranny of the majority,” which can allow or even cause unnecessary harm to a minority of people in the name of a benefit to the majority. Alternatively stated, few agencies seek to harm people; rather, harms are usually a by-product, whether intended or not, of good intentions. When the health of the public entails restraint of the civil liberties of some, a number of principles itemized at an international meeting in Siracusa, Italy, are brought to bear. The Siracusa Principles include using only measures that are in accordance with the law and that apply the least restrictive measure necessary. All emergency responders should be familiar with these principles.

Similarly, although scientifically based decisions are often an improvement over self-interest or a politically driven agenda, the scientific method is not morally neutral. Our current institutions for research ethics, such as providing the community with information they need to participate in decisions on response policies; and ensuring the professional competence of employees.

In addition, some of the ethical issues they identified could have been described more fully. For example, many of the respondents mentioned the need to communicate with non–English-speaking populations. They did not mention that anything other than language might be a barrier for such populations. They could have mentioned cultural beliefs and practices or avoidance of government authorities, as one might expect with undocumented aliens.

The respondents identified a number of particular ethical issues. Moreover, they named some factors that served as facilitators and barriers to a positive resolution of ethical issues. They were particularly attentive to communication with the public, coordination with other agencies, and vulnerable populations. They were also aware of the importance of input from the communities affected by the Section’s responses to public health emergencies.

Potential improvements

A review of the Public Health Code of Ethics brings to light a number of ethical issues not mentioned by the Section employees: fundamental causes of adverse health outcomes (including social forces that create or perpetuate disparities); individuals’ rights (in the perennial tension between individual rights and the community good, the Section leaned decidedly in the direction of the community good); advocating for or empowering vulnerable populations; seeking information needed to respond well (eg, cross-culturally);
in the Epidemiology Section already receives training in ethics; it should permeate every separate topic. Doing so would also be true to the way that training in ethics could be woven into those modules. Similarly, ethics training could be woven into training on informatics and other topics required of public health practitioners. Ethics training provided this way could enable the trainees to identify ethical issues and apply procedures and resources for addressing them.

One respondent mentioned the possibility of spending time with people of a vulnerable population. To be most effective, such a meeting could take place in a setting known well by the vulnerable group. Examples might include a tienda (Spanish for store) in a Latino community, a public school, or perhaps even a home. The meeting would provide public health emergency responders with a community perspective on public health emergencies, including how the actions of the Section can be perceived. If the Section could manage the time away from the office, such a meeting would likely be more memorable than a didactic training.

Ethics must also be integrated into the processes and policies of the Section. Job descriptions, expectations, and evaluations could include an awareness of public health ethics. Having documented expectations may make the Section less vulnerable to fluctuations in the ethical climate due to staff turnover.

The Section could assign ethics-related responsibilities to particular people. The intent would not be to free others from ethical thinking, but to ensure that some issues are not forgotten and that a few individuals receive additional training so they can serve as resources in the Section. Those individuals may also be given a role in setting policies for anticipated situations. For example, they may confer with vulnerable populations about how best to communicate risks to them in the event of a hurricane. Those procedures could then be documented and ready to use when the need arises.

There will also be unanticipated ethical issues. With training in ethical decision making, a few individuals in the Section could be a resource to those wrestling with the issue. Finally, someone or a group of people could be charged with evaluating the emergency response after the crisis has passed. What are the lessons learned for future emergencies? They will likely have both practical and ethical implications. Canadian, Taiwanese, and Israeli evaluations of the ethical issues in their respective responses to SARS provide examples.9–11

Although our study is of a single state health department, these recommendations are so basic that they would likely apply to the vast majority of state, city, and county health departments. Few have consciously prepared to identify and address ethical issues in public health emergencies or in day-to-day operations. The ability to act ethically is important not only for the event at hand but to maintain the public’s trust in the long term. The ability of a health department to protect a

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**TABLE 2** Recommended steps for strengthening the North Carolina Epidemiology Section’s ability to identify and address ethical issues in a public health emergency

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Integrate ethics into existing training mandates</td>
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<tr>
<td>2.</td>
<td>Visit vulnerable populations to hear their perspectives on public health emergencies</td>
</tr>
<tr>
<td>3.</td>
<td>Integrate ethics expectations into job descriptions and evaluations</td>
</tr>
<tr>
<td>4.</td>
<td>Assign ethics-related responsibilities to particular people</td>
</tr>
<tr>
<td>5.</td>
<td>Provide additional training to those assigned with ethics-related responsibilities</td>
</tr>
<tr>
<td>6.</td>
<td>Write policies for situations that can be anticipated in a public health emergency</td>
</tr>
<tr>
<td>7.</td>
<td>Use those with extra training in ethics to help address unanticipated ethical issues when they arise</td>
</tr>
<tr>
<td>8.</td>
<td>Evaluate emergency responses once they are over to identify lessons for future emergencies</td>
</tr>
</tbody>
</table>

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in institutional review boards, exist because of unethical actions that have been taken in the name of science. Moreover, social and ethical perspectives are often required for equitable and effective distribution of scientifically designed products, such as medications and vaccines.

A few respondents made an important observation that a demonstrated commitment to ethical behavior among the leaders is critical for setting expectations in an organization. Several of the respondents expressed confidence that they have such leaders. However, with usual turnover in positions, there is no guarantee that the next leaders will have the same values. If ethics are not more systematically integrated into the policies of the Section, the ethical expectations for all may be at risk of fluctuating with the quality of leaders.

**Recommendations**

With more time to observe the staff of the Epidemiology Section, our list of their growth opportunities (Table 2) might become shorter. Some topics we did not hear mentioned in these interviews might come up in another setting; nonetheless, patterns of responses in our series of interviews lead us to make some recommendations.

We agree with the respondents who suggested that the Section would benefit from training in ethics. However, public health practitioners can feel inundated with the many areas requiring special training. It would be best if any training in ethics could be integrated into other training already required rather than taught as a separate topic. Doing so would also be true to way that ethics needs to be applied: it should permeate every decision and not be an add-on bureaucratic hurdle. Because the Epidemiology Section already receives training in Incident Command Systems, it would be logical to weave ethics into those modules. Similarly, ethics training provided this way could enable the trainees to identify ethical issues and apply procedures and resources for addressing them.
community in future events depends heavily on that trust.

REFERENCES


