Science and Social Responsibility in Public Health

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Epidemiologists and environmental health researchers have a joint responsibility to acquire scientific knowledge that matters to public health and to apply the knowledge gained in public health practice. We examine the nature and source of these social responsibilities, discuss a debate in the epidemiological literature on roles and responsibilities, and cite approaches to environmental justice as reflective of them. At one level, responsibility refers to accountability, as in being responsible for actions taken. A deeper meaning of responsibility corresponds to commitment to the pursuit and achievement of a valued end. Epidemiologists are committed to the scientific study of health and disease in human populations and to the application of scientific knowledge to improve the public's health. Responsibility is also closely linked to reliability. Responsible professionals reliably perform the tasks they set for themselves as well as the tasks society expects them to undertake. The defining axiom for our approach is that the health of the public is a social good we commit ourselves to pursue, thus assuming an obligation to contribute to its achievement. Epidemiologists cannot claim to be committed to public health as a social good and not accept the responsibility of ensuring that the knowledge gained in their roles as scientists is used to achieve that good. The social responsibilities of environmental health researchers are conspicuous in the environmental justice movement, for example, in community-based participatory research. Responsibility is an ethical concept particularly well suited to frame many key aspects of the ethics of our profession. *Key words:* **environmental justice, epidemiology, ethics, professional ethics, public health, social responsibility.** *Environ Health Perspect* **111:1804–1808 (2003). doi:10.1289/ehp.6198 available via** *http://dx.doi.org/* **[Online 19 June 2003]**

Public health ethics is on the map. In the past year, bioethicists and public health practitioners have begun to focus their critical attention on this complex and understudied topic. Much remains to be done. Childress et al. (2002), for example, describe their account of public health ethics as a rough conceptual map of a terrain with undefined boundaries. At a time in which global positioning systems can guide the family car and satellite photos can be purchased over the Internet, this metaphorical equivalent of "surveying unexplored territory" says volumes about the complexity of the topic and its promise.

From the many issues that dot the landscape of public health ethics, we have been asked to discuss the social responsibilities of environmental health researchers. Our focus will be on the responsibilities of epidemiologists, a choice made for several compelling reasons. Epidemiology sits at the center of the science and practice of environmental health, and more generally, at the center of public health. Although it is often referred to as a basic science of public health, epidemiology connects the acquisition of scientific knowledge with its application in preventive interventions, programs, and policies. This connection suggests a fundamental question: What are our responsibilities as epidemiologists? Do we, for example, have a joint responsibility to participate in science and to apply the knowledge gained? This is a key concern for us as researchers, health professionals, and as teachers.

Epidemiology is a required subject, and public health ethics is an emerging subject in the curricula of schools of public health (Coughlin et al. 1999). Another reason we are keen to examine the social responsibilities of epidemiologists is that we need to teach students and mentor postdoctoral fellows and junior faculty about what their professional colleagues expect of them, what society expects of them, and from where their responsibilities arise.

Any discussion of social responsibility will require a clear understanding of social roles, a topic of considerable controversy within epidemiology (Savitz et al. 1999; Weed and Mink 2002). One of the characteristics of this debate is its lack of ethical depth; arguments to date reach no deeper than published professional ethics guidelines. Our inquiry will dig down to the foundations of public health ethics, providing a perspective on what lends moral content to the responsibilities of our profession.

Finally, our inquiry is intended to assist all public health researchers who seek to define their social responsibilities. For those who are involved primarily in environmental health research, we can think of at least two connected and current topics—environmental justice and community-based participatory research (CBPR)—that are ideally suited for analysis and reflection in terms of social responsibility.

For all these reasons, we seek answers to the following questions: What are the social responsibilities of epidemiologists, and by extension, environmental health researchers? From where do these responsibilities arise? How do current approaches to environmental justice reflect these responsibilities?

Public Health Ethics and the Nature of Responsibility

Public health ethics is no simple matter, reflecting the many dimensions and diverse interconnections found in public health itself, among health professionals, everyday people and the communities they represent, and eventually those who will call themselves public health ethicists. Public health is about disease prevention and health promotion, lifestyle practices, cultures, the environment, social forces, historical traditions, and science in all its theoretical, methodological, and technological splendor. Public health is about preventive medicine, the media, government programs and policies, economics, and the law.

The ethics of public health infuses these dimensions and interconnections. Some see public health ethics as an analytical tool for program evaluation (Kass 2001). Others describe it in terms of broad ethical theories: communitarianism, liberalism, and utilitarianism (Roberts and Reich 2002). Some see public health ethics as clusters of moral concepts and norms, variously called values, principles, and rules with room for theories, methods, and cases (Childress et al. 2002; McKeown and Weed 2002; Weed and McKeown 2001). Public health ethics can also be classified into various components: professional ethics, applied ethics, advocacy ethics, critical ethics, and codes of ethics (Callahan and Jennings 2002).

The social responsibility of public health professionals is but one of many concerns in

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the broader picture of public health ethics. It is nevertheless a central concern. As Ogletree (1996) reminds us, responsibility is a concept particularly well suited to frame many key aspects of the ethics of professions faced with making decisions and taking actions in complex situations. These decisions often involve advanced technologies, high levels of specialization, and overlapping areas of expertise and concern among decision makers from diverse educational, political, and social backgrounds, precisely the situation in contemporary epidemiology and public health. In sum, responsibility organizes many (although not all) of public health's ethical issues in terms appropriate for professional practitioners.

- At one level, responsibility refers to accountability. As public health professionals, we are accountable for—responsible for—actions taken. We are accountable to society, to communities, to research participants, and to our students for actions taken on their behalf. The precise nature of those actions—what society expects of us as epidemiologists and what we expect of ourselves—has yet to be delineated. For now, it is important to emphasize that professional responsibility maps to professional accountability.
- Responsibility has a deeper meaning as well, corresponding to commitment. To be responsible means to be committed to someone or to some thing. Being responsible in this deeper sense involves a commitment to positive action, to the pursuit and achievement of something of value, such as a social good (Jonas 1984). We will return to the notion of social goods in public health. For now, we want to emphasize that responsibility focuses attention on professional commitments. Responsible professionals are committed to recognizing and carrying out their ethical duties; epidemiologists and other health researchers would say that they are committed to the highest standards of ethics and science, standards often described in professional ethics guidelines (American College of Epidemiology 2000; Soskolne and Light 1996), codes of ethics (Thomas et al. 2002), or standards of practice. But there is much more to responsibility than following guidelines. Ethics guidelines, for example, are built upon a broader, more general set of ethical principles and obligations that all health professionals recognize: respect for persons, beneficence, nonmaleficence, and justice, to name the most obvious. Principles, in turn, are not the only approach to ethical reasoning and justification in public health (Callahan and Jennings 2002; Kass 2001; Roberts and Reich 2002). Responsibility, therefore, implies an understanding of these foundations and an appreciation of their relevance to everyday professional practice.
- Responsibility also involves a commitment to the fundamental ends of a profession itself: public health professionals are committed to the prevention of disease and the promotion of health, prominent social goods. Epidemiologists are committed to the scientific study of the determinants and distribution of disease in human populations and they are committed to the application of scientific knowledge to improve the public's health through disease prevention and health promotion. The extent to which epidemiologists translate these commitments into action, creating for themselves a role as contributing participants in public health interventions is a matter of some controversy, to be examined in detail below.
- Responsibility is also closely linked to reliability. Responsible professionals reliably perform the tasks they set for themselves as well as the tasks society expects them to undertake. Indeed, responsibilities are sometimes too narrowly referred to as tasks. Ideally, responsible professionals perform their tasks within a professional community where virtues, for example, integrity, honesty, prudence, and self-effacement, are fostered and revealed in the everyday lives of practitioners and mentors. A responsible public health professional is one who strives to do professional tasks well; excellence, in our view, is the ultimate goal of reliable professional performance (Weed and McKeown 1998). But which tasks are appropriate for epidemiology? This question bears striking similarity to the one asked earlier: what actions are we, as epidemiologists, responsible for? Are all epidemiologists committed to public health action in the same way they are committed to the practice of public health science? There is clearly a debate within epidemiology regarding how best to answer these questions, inasmuch as they reflect our debate about social roles and hence about social responsibilities. To that debate we now turn.

Roles and Responsibilities of Epidemiologists: Digging Deeper

The social responsibilities of epidemiologists cannot be easily disassociated from the profession's social roles. The dimensions of responsibility—the commitments, the actions taken for which we are accountable, and the tasks we reliably undertake in our commitment to social goods—are intertwined with our social roles. What, then, does society expect of us as epidemiologists? This is not an easily answered question. The standing joke is that the public believes that epidemiologists treat skin diseases. The science media, on the other hand, have unfairly portrayed epidemiology as something of a second-class scientific citizen (Taubes 1995). In this setting, it may be best to examine the question of social roles from within epidemiology itself. Society, in other words, can assign to epidemiology the roles we epidemiologists show it.

One of the places to look for an expression of the role of epidemiology in contemporary society is in its textbooks written for students learning about their discipline and what it expects of them. Consider, for example, a text on social epidemiology edited by Berkman and Kawachi (2000), two leading Harvard academics. We might expect such a text to reveal something about the social context of the profession, including the social role of epidemiologists. The book begins with a narrow definition of social epidemiology as the study of the distribution and social determinants of states of health in populations. In support of this definition, a 30-year-old classic text is provided as a reference (Susser 1973). This earlier text was written by one of the leading philosophically oriented practitioners of the discipline, Mervyn Susser, who begins his account of epidemiology using the same definition as that of Berkman and Kawachi but adds the following comment: "Some prefer to add that these activities are for the purpose of the prevention, surveillance, and control of health disorders in populations." Importantly, the authors of the new textbook on social epidemiology do not include this reference to public health action in their definition.

Clearly, two textbooks published 30 years apart do not give a comprehensive account of the social roles of epidemiologists. But this comparison does document the presence of a rift within the profession regarding the extent to which the social roles of epidemiologists involve both the practice of science and its direct application in public health interventions. A better sense of the profound disagreement on the roles and responsibilities of epidemiology can be found in the report of an international conference on the future of epidemiology sponsored by the International Epidemiological Association (Anonymous 1999). Many practitioners at that conference perceived the situation to be the following:

> Epidemiology is now recognized as a basic medical science by many and epidemiologists, like other scientists, have the right to follow their curiosity in understanding the causes and determinants of diseases. Epidemiological research needs no justification from the outside, and we have no social responsibility beyond that of all scientists, but we do of course have social responsibilities as members of a community.

Others disagreed with this assessment (Anonymous 1999).

> Others emphasize that epidemiologists should start with public health problems and accept the professional and social responsibilities inherent in trying to solve these problems . . . they accept a social responsibility to pursue the consequences of (their) findings until the public health problem is solved.

This disagreement about the roles and responsibilities of epidemiologists is both fundamental and longstanding (Foxman 1989; Gordis 1991; Rothman and Poole 1985; Wynder 1985; Yankauer 1984). Previous attempts to resolve it have relied primarily upon the published ethics guidelines of epidemiologists (Weed 1994; Weed and Mink 2002). There are, of course, other nonethical approaches, including a historical argument that the heroes of epidemiology—Snow, Farr, Guy, Lane-Claypon, Reed, Goldberger, and Mann, to cite a few examples—are those who have taken their professional practice beyond science to its implementation in public health application, embracing the combined roles and responsibilities of public health agents and scientists. Another approach to resolving the debate involves countering arguments that epidemiologists are unprepared for the task of public health advocacy, policymaking, and other examples of direct applications of scientific results and judgments by improving education and training programs (Weed and Mink 2002). Our intent in this paper is to reexamine the problem in terms of the ethical framework that responsibility provides. We will need to explore the nature of responsibility from a deeper perspective.

Roots of Responsibility Reconsidered

We take as a given, an axiom, that the health of the public is a social good, valued as a worthy goal beyond our preference for it or the satisfaction we may get in achieving that good. The same can be said of scientific knowledge. Knowledge is valued as a social good in itself. It is also valued because its attainment is necessary to achieve other ends such as health. These goods, the health of the public and scientific knowledge, imply a set of responsibilities and therefore duties, tasks, and actions. For example, if we assert our intent to conduct research to increase knowledge as a good, then we assume certain responsibilities to research participants and to the research community, the violation of which would negate the end we have committed to pursue. We cannot, for example, be deceitful or falsify data while also claiming to pursue knowledge because deceit and untruthfulness are the antithesis of our stated goal.

The pursuit of scientific knowledge involves a commitment to a kind of quest, some would say, for the truth, whereas others would say for fruitful theories and explanations. But it is nevertheless a quest that carries certain expectations; those who engage in it typically accept a responsibility to the community of scientists and to their specific discipline, as well as to some larger goal involving the truth or explanation or both. Scientific knowing also has a social context (Kuhn 1996). That social context shapes what we know, how we know, and what we ask; it is also a context in which we dwell in a mutual relationship with society and other scientists that is at once nurturing, supporting, and challenging, holding us to account. This is one sense in which we have a social responsibility as epidemiologists, fitting precisely with a social role as scientist.

By pursuing knowledge we commit to its value. As a value to which we are committed, it holds a certain claim on us, so that our pursuit carries both a sense of responsibility to nurture it and an obligation to that end. Similarly, if we hold that health for communities and for society at large is a social good that has value beyond the fact of our desiring it, and if it is a value to which we have committed, then we assume a responsibility for it. We have, in other words, an obligation to take positive action for its actualization.

Our focus upon obligations (and therefore duties) brings into sharp focus our debt to and our differences from Immanuel Kant (1996a, 1996b). We begin with the concept of autonomy, central to bioethics and often traced to Kant, although his concept is rather different from the view of autonomy as complete freedom to choose or not to choose some action. For Kant, autonomy has to do with acting out of duty to the moral law (Kant 1996a). Freedom to determine our actions in conformity to the moral law is a condition of our being subject to moral law (Kant 1996b). The morals rules we autonomously determine are constrained by the necessity of conforming to what Kant termed the "categorical imperative" (Kant 1996a). In a comment on the late John Rawls, a modern Kantian, Beauchamp and Childress write, "Autonomy is moral self-legislation through a structure of reason and will that is common to all rational agents." (Beauchamp and Childress 1994)

However, we have not attempted to lay a theoretical foundation for moral law or a categorical imperative. Rather, we have posited a valued end (the health of the public) as one to which public health researchers freely commit. Following Jonas (1984), our responsibility has to do with the claim attendant to that commitment. We do posit the antecedent value of the end, that is, we do not hold that the social good of public health is good because we value it but that we value and commit ourselves to it because we recognize it as a good worthy of such commitment, and in that acknowledgment an obligation is implied. Kant argued for the a priori rational nature of the moral law, which is the ground of our moral duty, and insisted the moral law is formal, namely, not defined by contingent ends. In our argument, that which claims our duty is not a priori, and though its value is not contingent on our valuing it, its practical authority is contingent on our endorsement of it as a good and our commitment to achieving it. As noted above, we take it as axiomatic for public health researchers that the health of the public is a social good, valued as a worthy goal beyond our preference for it or the satisfaction we may get in achieving that good.

For those familiar with Kant's rejection of a teleological approach or consideration of consequences as the basis for moral judgment, it may seem clear that our position deviates in placing central importance on the goal of the public's health. On the other hand, our emphasis on responsibility is not grounded in a thoroughgoing consequentialism or utilitarianism. Rather, our view bridges elements of the Kantian tradition of individual responsibility with elements of communitarianism. In Kant, the sense of duty comes from within the individual in response to the moral law and finds expression in the autonomous legislation of universal laws and being subject to these laws. Communitarianism is rooted in the Hegelian criticism of Kant's individualism and focuses instead on social roles and responsibilities and the importance of social virtues and values (MacIntyre 1984). Our position also emphasizes the importance of larger societal values and structures in framing and fashioning conditions in which people and communities can be healthy. This is closely related to the communitarian emphasis on shared goals and obligations and the role of shared history and culture in shaping them.

Indeed, considerable philosophical support for our perspective can be enlisted from MacIntyre's writings, especially those focusing upon the nature of a practice in contemporary society (1984). Certainly few would disagree with the idea that epidemiologists practice their profession. But what is a practice? MacIntyre defines a practice as a "coherent and complex form of socially established cooperative human activity through which goods internal to that form of activity are realized." The notion of goods internal to a practice is important. Internal goods are to be contrasted with the external goods of a practice, such as financial gain or fame. The primary goods internal to the practice of epidemiology are the pursuit of objective scientific knowledge from which we develop preventive interventions to improve public health. The origins of these interconnected internal goods are found in the historical narratives and traditions of epidemiology. The history of epidemiology is not solely one of scientific discovery in the name of public health. It is a history of evidence-based preventive intervention revealed in the lives and achievements of its heroes—Snow, Farr, Goldberger, Lane-Claypon, and Reed, among others—who took their scientific findings beyond publication and applied them so that the health of communities could be improved.

When we join the practice of epidemiology, we enter into a relationship not only with other contemporary practitioners but also with those who have preceded us, the heroes of our profession. In so doing, we commit to the goods internal to our profession, the same goods that others before us sought. We see no good reason to change those internal goods or our commitment to achieving them. To practice epidemiology, therefore, means to apply the knowledge carefully acquired in scientific research studies.

Given that epidemiologists are almost universally engaged in the practice of scientific research but are not equally engaged in the practice of prevention in public health, we may wonder if a commitment to science, the best epidemiologic science, is sufficient for actualizing health, the other social good to which we are committed? Or is something more required? It could be argued that by practicing the best epidemiologic science, inasmuch as it is defined as the study of the determinants and distributions of disease (or sometimes, states of health) in populations, we as epidemiologists are achieving an end, scientific knowledge, that will eventually be used to make decisions about prevention and other direct public health applications. The problem with this approach [a problem recognized at least 50 years ago by physicists and other basic scientists who participated in developing the knowledge needed to construct atomic weapons (Bronowski 1956)] is that it leaves open the question: who in society will ensure that decisions to apply science will be made appropriately?

Put another way, if we as epidemiologists are committed to the health of the public (and who among us is not so committed), then what excuses us from taking on the responsibility of participating in the decisions that directly affect the health of the public? How better to ensure that the scientific knowledge so painstakingly attained is put to its intended use? Epidemiologists cannot claim to be committed to public health as a social good and not accept the responsibility of ensuring that the knowledge gained in their role as scientists is used to achieve that good through active participation in decisions on interventions for disease prevention and control.

Others are involved in these decisions. By no means are we suggesting that epidemiologists alone are those who will decide how to best apply the scientific knowledge discovered, reported, and interpreted. Many sit at the table of public health decision making. Many participate in public health action. All are accountable. We believe, nevertheless, that epidemiologists, by virtue of their special training and experience, have a special responsibility to participate in public health action. Disease prevention and health promotion are the primary goals of public health and of epidemiology. To help achieve those goals, those social goods, epidemiologists share the dual societal roles and responsibilities of doing the science and participating in the decisions applying that science to communities.

One final issue requires our attention. There are those who argue that an epidemiologist's responsibility to participate in policymaking and advocacy, any form of public health intervention, is no more than that of any private citizen. We disagree. The social responsibility of a private citizen is not precisely that of the public health professional. Society does not expect from a person who sells coffee and donuts at the supermarket, a bank president, a poet, a fashion model, or the neighborhood handyman precisely what it expects of epidemiologists. Society expects more from public health professionals, who have trained for many years, studied the complexities of the issues, received (in many cases) substantial funding from public agencies, and are committed to the tightly linked social goods of scientific knowledge and better public health. Although all citizens share a responsibility to participate in public health decision making, the public health professionals, including all those who call themselves epidemiologists, have special responsibilities by virtue of their training, experience, and commitment to the goals and ends of public health. A more complete accounting of the responsibilities of epidemiologists follows.

A Summary of the Responsibilities of Epidemiologists

Epidemiologists have a responsibility to perform scientific studies that matter to the health of the public. They have a responsibility to reliably perform the very best science, taking into account the best standards of sound ethical practice and engaging whenever possible with the community being studied. Epidemiologists have a responsibility to report their findings to the scientific community. They have a responsibility to inform the study population and the communities within which the study population resides. Epidemiologists have a responsibility to interpret the results of their studies in terms of the current state of knowledge and to join with others in the formulation of recommendations for disease prevention and control interventions. Epidemiologists have a responsibility to participate in carrying out those interventions through public health policymaking and thoughtful public health advocacy. For all the actions and judgments these responsibilities imply, epidemiologists are accountable.

Environmental Justice and Social Responsibility

Pronouncements of the ethical responsibilities of any public health profession such as epidemiology are important, but like professional ethics guidelines and standards of scientific conduct, are not always appreciated, much less accepted, by those for whom they were intended, especially when presented outside the context of specific examples of their application. To help bridge the gap between such pronouncements and the real world of research and practice, we turn to a specific example within the complex realm of public health: environmental justice.

Our primary interest is to examine in that arena how the social responsibilities of environmental health researchers, and epidemiologists in particular, are presented and fostered in the environmental justice movement, especially within CBPR. We limit our inquiry largely to a recent special issue of this journal on the topic of CBPR, recognizing that the topic is a broad one, rich in historical detail, and subject to different interpretations.

The environmental justice movement has made significant progress in the past decade to better understand and move toward ameliorating the disproportionate burden that environmental degradation and pollution have had on the health and well-being of communities of color and of low socioeconomic status (Lee 2002; Shepard et al. 2002). CBPR is a good example of a sponsored approach within the movement that examines health disparities by engaging active and equal partnerships between community members and academic researchers (Morello-Frosch et. al 2002; O'Fallon and Dearry 2002; Sharp and Foster 2002). Many examples of CBPR were featured in a recent issue of this journal, including studies of lead poisoning in rural children (Malcoe et al. 2002), pesticide safety in farmworkers (Arcury et al. 2002), hazards to subsistence fishing (Corburn 2002), and exposure to pollutants from industrialized hog farming in the rural South (Wilson et al. 2002).

Our interest is primarily that of examining the roles and responsibilities of public health researchers within the context of CBPR. It is clear that the environmental justice movement as a movement embraces the documentation of disparities as well as the dissemination of findings, and the development of interventions designed to effect meaningful change in the environments and health of affected communities. What is less clear are the connections between research and application and especially what responsibilities environmental health researchers accept in the context of CBPR.

Whereas the six principles of CBPR endorsed by the National Institute of Environmental Health Sciences emphasize the importance of intervention research and strategies, it is less clear how well these critical components are accepted as responsibilities by those who perform CBPR. Consider, for example, a recently published paper by Wing,

an epidemiologist and participant in CBPR engaged in research on the impact of industrialized hog production facilities on communities of color in rural North Carolina (Wing 2002). Importantly, he provides a section specifically addressing the social responsibilities of researchers, organized around three major headings: designing studies, responding to government, industry, and media, and respecting individuals and communities. His list of social responsibilities include

- Designing studies that matter to public health without sacrificing scientific rigor
- Maintaining communication with affected communities and with political, academic, and funding agencies
- Publishing findings in scientific journals and making findings public
- Participating in processes involving the media and policymakers (without specifying the nature of that participation), and
- Reporting findings even if one expects negative reactions from government bodies and university administrators.

We have no quarrel with this account except its lack of attention to the central responsibility of public health researchers to actively participate in interventions consistent with their role as professionals committed to the interconnected social goods of scientific knowledge and improved health. A related paper (Coughlin 1996) commits the same error: leaving open the question of whether epidemiologists should advocate on behalf of unempowered communities. Thoughtful public advocacy is also a part of our professional responsibility (Weed 1994).

In sum, we support the goals of CBPR, and more generally, those of the environmental justice movement. Both represent important opportunities for all public health professionals to make good on their promise to society: to prevent disease and promote the health of all communities through targeted research and culturally appropriate effective interventions.

Conclusions

The responsibilities of epidemiologists, stretching as they do from the application of scientific knowledge back to its acquisition, emerge from the fundamental commitments of public health. As such, our responsibilities are not negotiable, nor are they a matter of personal preference (Kelley 2002; Sher 1996), for we have posited ends that are valued and have a claim on us beyond our choice of them. Those ends become authoritative for us, entail obligations for us, when we acknowledge and commit to them as good and thereby accept their claim on us.

Surely some practitioners may be employed in positions in which some of the associated tasks are encouraged and others are simply not part of the mission of the institution. That is sometimes the way things work in contemporary society. But that possibility does not give any practitioner of the profession the right to declare that central tasks, public policymaking, for example, are inappropriate or should be avoided by others in the profession, whether they are employed in academia, government, or in the private sector.

In our account of the nature of social responsibility for public health researchers, accountability and commitment and the reliable performance of professional tasks in the pursuit of social goods are central concerns. This account of responsibility incorporates general ethical principles and obligations as well as professional virtues and professional ethics guidelines and codes of professional conduct.

Social responsibility is a fundamental concern for the ethics of professional public health practice. As further exploration fills in other topographical details on the map of public health ethics, we see our account of social responsibility as the metaphorical equivalent of compass points. Our journey cannot continue without them.

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