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Public Health Principlism

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Abstract

Public health ethics has grown out of the medical ethics movement and has remained in individualistic biomedical models. However, as public health is a different enterprise than medicine dealing with communities rather than individuals. The author develops public health principlism based on the idea of common citizenship in the community. When the four principles of public health ethics—solidarity, efficacy, integrity, and dignity—are in balance, a state of justice exists. The goal is to have programs that are the least destructive to communities and the least restrictive to people. These principles provide guidance in ethical reasoning when analyzing programs and interventions such as mandatory helmet laws, water fluoridation, and smallpox vaccination to improve the aggregate health of a community.

Keywords: Ethics, Public Health, Principlism

Biographical Note:

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Public Health Principlism

As a result of terrorism, the social and moral climate of the U.S. has changed with greater emphasis being placed on common goods such as defense, safety, and disease surveillance.

Jonathan Moreno believes that as a result of September 11, an individual-centered bioethics finds itself operating in a society that is more concerned about common social goods such as security: “The emphasis on autonomy and individual rights may come to be tempered by greater concern over the collective good...Increased emphasis on solidarity over autonomy. . . .” (Moreno 2002, p. 60). Many of the tools bioethicists created to ethically examine programs and interventions are based on a biomedical model instead of one that assumes precedence of the community. With few exceptions, bioethics has not engaged an ethics of public health (Turner 1997, p. 42). The emphasis in bioethics on individual ethics has overshadowed common needs (Benatar 2003, p. 199).

The author presents the framework for public health principlism, an ethical framework that focuses on the primacy of the community and the common good. For this paper, a community is a collection of people who live or work in a similar geographic region and share a governing authority. By drawing on the obligations and duties that all people owe to the commons, this proposal draws on the values of partnership, citizenship, and community (Beauchamp and Steinbock 1999). Public Health Principlism borrows from the communitarian tradition to create a critical ethics in public health by proposing guidelines for moral deliberation of public health programs and interventions (Gostin 2001). After discussing ethics and public health, the author introduces the hierarchical principles of *solidarity*, *efficacy*, *integrity*, *dignity*, and *justice* that need to be considered in enacting public health programs that are the least destructive to cultural communities and the least restrictive to individuals. The goal is to preserve and improve the

aggregate health of the community by reducing overall morbidity and mortality. These public health principles are not moral laws, but are tools for ethical deliberation. They provide guidance for what issues should be considered, but do not tell one what choices to make.

MEDICINE AND PUBLIC HEALTH

Several authors have written on the differences between medicine and public health (Gostin 2003, 2001, 2000; Benatar 2003; Jennings 2003; Childress et al. 2002; Kessel 2003). Of prime importance is that medicine and public health are working on two different levels. Medicine and medical ethics are based on the model of a discrete, atomistic individual (patient) who is autonomous, rational, and unencumbered by outside influences (Jonsen 1998). Therefore, biomedical ethics has been concerned with decision-making for individual patients and their physicians {O'Neill, 2002 #891@35}. Medicine focuses on caring and curing individual persons through “diagnosis, treatment, relief of suffering, and rehabilitation.” (Mann 1999). In general, a person goes to a medical practitioner for treatment. Medicine is typically practiced in the U.S. by professionally educated and licensed MDs, DOs, or RNs.

Peter Lachmann suggests that the main difference between medicine and public health is how they balance the interests of the individual against the interests of the community (Lachmann 1998, p. 301; Rendtorff and Kemp 2000, p. 56). For example, the Institute of Medicine says public health is about communal action to create healthy environments in which people can flourish: “Public health is what we, as a society, do collectively to assure the conditions for people to be healthy.” (Medicine 1988, p. 19) Thus, public health is interested in goods common to communities and populations rather than a collection of individual interests (Mann 1999). This venture seeks to increase the aggregate health of the community. Public health fulfills its

function through assessment, policy development, and assurance that health measures are followed (IOM 1988; Mann 1999). Public health comes to people and may not be recognized as being effective since one only sees public health when it fails (e.g. an outbreak of salmonella in chicken). Under this model, a person is viewed not as a discrete individual, but rather as the locus of a network of nurturing and caring relationships (Gilligan 1993).

Drawing an analogy with medicine and biomedical principlism, a public health ethics then should be founded on the idea of community rather than an individual. Whereas in biomedical ethics, individual liberty, rights, and autonomy are seen as the highest goods, in public health the common good, “long-term self interest,” duties, and unity are the highest goods (Benatar 2003, pp. 201-204).

ETHICS OF PUBLIC HEALTH

One of the first attempts at bringing public health into the fold of bioethics was a collection edited by Dan Beauchamp and Bonnie Steinbock in 1999. This volume seems to define public health ethics as a medical ethics that takes a population perspective, considers the community, and focuses more on prevention. In taking this approach, the authors of that book, seem to take a medical ethics perspective and adopt those ideas and values for use in public health by emphasizing notions of justice over autonomy. In other words, the authors take medical ethics and apply it to public health matters. Although such a notion goes far in developing a community perspective, their method still has its base in a medical ethics tradition of individuality and thus does not truly address the need for an ethics of public health.

Jonathan Mann and Lawrence Gostin have worked to develop a public health ethics that is based on a notion of basic human rights (Mann 1999; Gostin 2000, 2001, 2003). Gostin offers

several steps for evaluating interventions: “demonstrate risk, demonstrate the intervention’s effectiveness, assess the economic cost, assess the burdens on human rights, assess the fairness of the intervention.” (Gostin 2003, pp. 185-186). The idea of using human rights as the bases of a public health ethics is problematic since human rights declarations are addressed to the individual rather than the community.¹ Sometimes public health interventions may require curtailing individual liberty and a human rights perspective makes such a move difficult. As Solomon Benatar suggests, rights language neglects the idea of duties since someone must ensure those rights exist and are fulfilled (Benatar 2003). I do not imply that human rights should be ignored but rather they may not be the most important consideration. The right of a person to refuse treatment or inoculation may need to be overridden in order to protect the health of the general population.

One of the most well-developed suggestions for public health ethics comes from Nancy Kass who presents a “framework of public health ethics.” (Kass 2001). Kass offers a set of six questions that one can use when deciding whether a public health intervention is ethical:

1. What are the public health goals of the proposed program;
2. How effective is the program in achieving its stated goals;
3. What are the known or potential burdens of the program;
4. Can burdens be minimized? Are there alternative approaches;
5. Is the program implemented fairly; 6. How can the benefits and burdens of a program be fairly balanced? (Kass 2001, pp. 1777-1781)

Kass’s focus on burdens (as she defines it under each question) indicates an emphasis on individuals’ liberty. She looks at how the community perspective impacts the individual. Such a outlook is common in attempts to create a public health ethics. For example, Childress, et. al. offer a tool for conflict resolution in public health based on effectiveness, proportionality, necessity, least infringement, and public justification (Childress et al. 2002). These guidelines

start from an assumption of primacy of the individual and limitations to freedom for the common good must be justified.

In 2002, the Public Health Leadership Policy published the 12 “Principles of the Ethical Practice of Public Health” (PHLS 2002). These principles create a vision or mission for public health programs and practitioners. Instead of an ethics *in* public health, they offer an ethics *for* public health practitioners. This tool is of limited utility in ethical evaluation of programs.

PUBLIC HEALTH PRINCIPLISM

As Kessel states, attempts at creating a public health ethics have adopted medical ethics principles and frameworks sans theoretical foundations (Kessel 2003, p. 1443). The basis for public health principlism is in the notion that people share a common citizenship at some level. “As members of a society in which we all share a common bond, we also have an obligation to protect and defend the community against threats to health, safety and security” (Gostin 2003, p. 179). This citizenship recognizes that the members of a community hold a set of shared loyalties and obligations to the community including health (Beauchamp 1999, p. 58).

Many health projects are best done on a communal rather than an individual level, such as clean air, clean water, safe food (Garrett 2000, p. 437; Beauchamp 1999; Gostin 2003). It is not possible or reasonable for each person to be responsible for making sure his or her air is clean, water is clean, or food is safe since these are communal resources. By protecting the community’s health, one protects individuals’ health. Therefore, the claims of the community, since they affect many people, take precedence over the claims of the individual, which affects mainly one person.

With public health's community focus and its interest in the underlying conditions upon which health is predicated, it seems evident that a framework of values which links directly with societal structure and function may be better adapted to the work of public health than a more individually oriented ethical framework (Mann 1999, p. 87). By looking at all of the frameworks and guidelines proposed by others, this author finds that they offer many common ideas. Among these ideas are *solidarity*, *efficacy*, *integrity*, and *dignity*. Thus, the author suggests public health principlism based on these four guiding principles. The principles are tools for moral deliberation and should be viewed as hierarchical and thus recognizing the primacy of the community over the individual. The goal of these principles is to provide for the aggregate health and well being of the community, to ensure that public health interventions can effectively fulfill their purpose, and to acknowledge community and individual interests.

Solidarity

The notion of solidarity holds that as a result of common needs and interests, a community comes together to improve its aggregate health by reducing morbidity and mortality. This principle asks if the program meets public health goals and furthers the health of the population at large (Kass 2001, p. 1777). Solidarity derives from Bentham's Principle of Utility which holds that in making ethical choices, the action taken should provide the greatest utility, in this case health, to the greatest number of people. The principle depends on equity, community autonomy, and paternalism.

One of the foundations of solidarity is achieving *equity*, or the idea of fairness in distribution of goods and services. In other words, burdens and benefits should be shared at all levels of society and balanced to benefit the largest proportion of the population (Kass 2001, p. 1781). The

value of equity in public health is to improve all the public's health and to eliminate health disparities among groups.

The idea of *community autonomy*, according to Megan Black and Gavin Mooney is that the community's elected or appointed representative authority has the power to make choices. The community can draw upon its own values and goals in making decisions (Black and Mooney 2002, p. 199). In other words the community, or its designated authority, determines the common needs and interests, what levels of morbidity and mortality are acceptable, and how to go about making public health changes.

Solidarity takes a paternalistic stance toward members of the population in matters of communal health. This framework assumes that people do not always know what is best for themselves or for others. Gerald Dworkin defined *paternalism* as "interference with a person's liberty for his own good" (Dworkin 1999, p. 118). Many people in the United States and within bioethics tend to have a knee jerk reaction against paternalism. Such a response though, often goes against common sense (Feinberg 1973, pp. 45-52). Public health professionals have knowledge, skills, resources, and legal powers to preserve health and welfare that individuals lack. In some cases paternalism is not only acceptable but it is necessary even if it requires restrictions on individual liberty.

Efficacy

Efficacy is the idea that a program should be scientifically sound and have a significant chance of being successful in achieving its goals of improving a community's health and wellness. An efficacious program is one that is feasible in regard to social, political, and cultural climates. This principle is based on the philosophical notion that *ought* implies *can*. Under that rubric

anything you should do can in effect be done. Having passed the solidarity test, efficacy asks if the program or proposal can be successfully completed.

In other words, efficacy asks Kass' question of "How effective is the program in achieving its stated goals?" (Kass 2001, p. 1778)

Integrity

This principle holds that cultural communities have value and are deserving of respect. Integrity creates an obligation to preserve the nature and character of a cultural community, to include the community in program development, and to provide interventions that match community values and are explained in terms of local knowledge. The idea of integrity is based in Black and Mooney's concept of community autonomy and tolerance discussed earlier.

As an autonomous entity, the community invests in a representative authority that forms the common health vision. Autonomous communities have a say in how a program should be implemented for them. Programs ought to be explained using ideas and terms that local populations understand. For example, a research project on women's health in Russia experienced difficulty because of subject frustration. Western informed consent standards did not translate into Russian cultural traditions. In the United States, informed consent standards require that subjects be reminded that they can withdraw participation at anytime. In Russia, subjects could not understand why their stated commitment to partake in the project was questioned (Klugman et al. 2002). Understanding local lifeways, beliefs, and histories can lead to more effective programs and policies that cultural communities will accept, understand, and feel they own. A public health program can only succeed if the community has a part in planning and implementation.

Second, under tolerance and respect, programs should attempt to not fundamentally change a local way of life if at all possible. Local rules, traditions, and beliefs native to a population should be preserved. In certain circumstances, a population's way of life may be threatening their health or the health of people around them. In that case, a change must be made to preserve lives. However, the policy should choose the *least destructive alternative* to minimize the change to the culture. For example, in the New Guinea region known as South Fore, anthropologists determined that the neurodegenerative disease kuru was being spreading through a funerary custom where women and children would consume the body of the deceased (Matthews, Glasse, and Lindenbaum 1968). In this situation, changing a cultural custom was necessary for saving the population. Defining the least destructive alternative differs by situation and requires collaboration with local authorities. The goal is to preserve as much of the local lifeway as possible.

Dignity

Dignity is the recognition that human life is vulnerable and needs to be protected. All people are equally worthy of moral respect and consideration. Therefore, dignity says that one should respect people as members of the interconnected community and choose the least restrictive alternative in programming. The idea of dignity is based on Mann's notion of ethics through universal human rights (Mann 1999). Although the author rejected human rights as a foundation for the totality of public health ethics, he suggests that when used in a limited fashion, it has value. Dignity defines individuals in terms of their relationships and protects human rights and vulnerabilities. This lower value serves as a check on higher values but does not override them.

The Universal Declaration of Human Rights sets out that “all human beings are born free and equal in dignity and rights” (UN 1948). Such rights are necessary because human life is vulnerable. People can easily be harmed, maimed, killed, or exploited (Rendtorff and Kemp 2000, p. 47). Dignity holds that the authority needs to respect and protect the liberty and interests of an individual insofar as it does not conflict with the other principles. Individual interests such as autonomy, privacy, confidentiality, self determination, and liberty are considered but do not take precedence over community health interests (Gostin 2000, 2001; Kass 2001, p. 1779).

With the hierarchical nature of this framework, placing dignity last means that in some circumstances personal preferences and individual interests will be overridden. An individual may personally experience some morbidity, or in rare cases mortality, to increase the aggregate health of the community. As in integrity, though, any proposal should respect human beings by seeking the least restrictive alternative. Also like integrity, human rights are unlikely to override the higher principles, but could alter the manner in which the proposal is implemented to respect dignity, even if that alteration reduces efficiency.

APPLYING THE PRINCIPLES

In this next section, the principles will be applied to two public health scenarios: mandatory motorcycle helmet laws and fluoridation of drinking water. The author will demonstrate how public health principlism can be used to assist in moral reasoning regarding implementation of public health programs such mandatory helmet laws and water Fluoridation.

Motorcycle Helmet Laws

The mandatory use of motorcycle helmets has become a contentious issue between cyclists who relish the freedom of having the wind in their hair and public health officials who recognize

that helmets help save lives. As of November 2003, 19 states have laws that require all riders to wear helmets (IIHS 2003; 2003, p. 6). An additional 28 states have laws that require helmets for some riders, often those under a certain age or with less experience in riding a motorcycle (IIHS 2003; 2003, p. 6). Although helmet laws have been shown to be effective in reducing injuries and fatalities in motorcycle crashes (NHTSA 2003), groups such as the Helmet Law Defense League and the United State Freedom Fighters believe that such laws are violations of individual freedom (HLDL 2003). The proposal under consideration here is mandatory helmet use for all riders.

Solidarity

Under solidarity, a program must match the goals and visions of the community to reduce morbidity and mortality. Motorcycle helmet laws reduce the prevalence of fatalities in motorcycle crashes as well as decrease the rate of serious injuries (USGAO 1991). If the 13 states with no helmet laws were to pass mandatory helmet regulations, the National Highway Transportation Safety Administration (NHTSA) estimates that 3,303 lives would have been saved over 13 years. Therefore, such laws do aid in pursuing the goal of reducing cumulative morbidity and mortality. Since such programs require all cyclists to wear helmets, the program does achieve equity, fairly sharing the benefits and burdens. Thus solidarity is met.

Efficacy

This principle asks if the program is proven, has a chance of succeeding, and is viable. Riders who wear helmets have a 73 percent lower fatality rate and 85 percent lower morbidity incidence than those who do not wear helmets (NHTSA 1996; USGAO 1991). Helmets also reduce the chances of suffering brain injury in a crash (NHTSA 1996). Cyclists who did not wear a helmet at the time of their crash have higher hospital bills (NHTSA 1996; IIHS 2003; Bray et al. 1985).

Without laws, only 50 percent of riders wear helmets whereas with mandatory laws, nearly 100 percent of riders wear them (IIHS 2003). The high rates of compliance when laws are in effect demonstrate that even those against the laws are likely to comply. Programs that apply only to young and inexperienced riders do not seem effective in reducing morbidity and mortality (IIHS 2003). Thus, helmet laws must apply to all riders. This program meets the efficacy requirement.

Integrity

Integrity asks whether the community has been involved with the program and whether cultural beliefs are honored. A segment of the cycling community is against helmet laws considering it a violation of their freedoms and an unnecessary intrusion of the government (HLDL 2003). This position does not reflect the beliefs of all riders. However, like the South Fore islanders, the practices of this subgroup are literally causing their preventable death and injury. No less culturally destructive alternative exists either—helmet laws that cover some, but not all riders, are not effective. A mandatory helmet law will not appreciably change the culture of riders but it will save their lives. Thus in this situation, integrity must take a backseat to Solidarity and Efficacy.

Dignity

Under this principle one should ask if the program preserves human rights and if it is the least restrictive alternative. One could argue that mandatory helmet laws abridge an individual's autonomy so that he or she can no longer make the choice to accept the risks of riding without a helmet. Some riders consider this a violation of freedom (HLDL 2003). They also claim that helmets can hurt (HLDL 2003) though such a claim suggests that riders are not wearing their helmets properly. Forcing a person to wear a helmet does not violate any person's human rights nor is it onerous; in fact the more restrictive alternative would be to ban motorcycles. Mandatory

helmet laws are equivalent to mandatory seat belt laws, and those are not considered an affront to personal freedom. Therefore, these laws do not violate dignity.

Under this analysis, mandatory motorcycle helmet laws contribute to solidarity, are efficacious, generally honor integrity, and do not cause any dignity violations. Properly balanced, these laws achieve a state of justice and should be applied.

Fluoridating Drinking Water

In 2002, the city of Reno, Nevada held a public referendum on whether the city should add sodium fluoride to its water supply. Fluoride is an element that occurs naturally in water, usually at low-levels, and aids in preventing dental caries. In 1945, the city of Grand Rapids Michigan began adding fluoride to its drinking water. As of 2000, 65.8 percent of the U.S. population drank fluoridated water (CDC 2000). The cost per person of this intervention is 51 cents per year (CDC 2000). Former U.S. Surgeon General David Satcher called water fluoridation “one of the 10 great public health achievements of the twentieth century.”(USDHHS 2000) This intervention, depending on the study, has decreased dental caries in permanent teeth by 17 to 50 percent (Palmer 2002; CDC 2000). However, opponents of fluoridation cite poor research methodology and that the intervention leads to systemic medical problems.

Solidarity

Healthy People 2010 calls for 75 percent of the U.S. population being exposed to fluoridated drinking water (CDC 2000). Dental caries disproportionately affect individuals from lower socioeconomic classes and children (Kaste et al. 1996; Adams and Marano 1995). Children alone miss 52 million school hours a year for dental problems (Gift, Relsine, and Larach 1992) and the cost for treating a child with tooth decay is more than \$6,000 (Duperon 1995). With

studies showing that dental caries can be reduced by up to 50 percent in a population, this inexpensive intervention can achieve its goals. The program is equitable because it will affect the people who suffer from dental caries the most, but all people will benefit.

Efficacy

As discussed above, both historically and scientifically, water fluoridation programs have been successful. Some arguments have been made that the research methods used to prove efficacy have been flawed. No studies have used control groups or multiple examiners (people counting the dental caries) suggesting the issue of inter-examiner reliability. Some studies have shown a relationship between fluoride and an increased incidence of bone fractures, especially in the hips (Hedlund and Gallagher 1989; Bayley 1990; Kurttio 1999; Gutteridge 2002). Other associations show that fluoride collects in the pineal gland (Luke 2001); and may cause osteosarcoma (Takahashi 2001), mutagenicity (Takahashi 1998; Christie 1980), thyroid function (Galleti and Joyet 1958; Anonymous 1944); reduced kidney function (Anasuya 1982), impaired reproduction (Susheela 1993); and increased gastrointestinal ailments (Gupta 1992). Fluoridation is clearly efficacious in reducing dental caries, but its alleged negative effects need to be considered. Additional research must be done to determine the extent of these effects in the general population. Some studies show that the general caries rate has declined in non-fluoridated communities at the same rate as in fluoridated ones (Diesendorf 1986; Colquhoun 1997). Some of this decrease may be due to fluoride in toothpaste, mouthwash, and fluoride applications in dental offices. Thus, receiving fluoride can be done in other ways than through water. The potential dangers suggest that fluoridating water may not be the best way to increase fluoride delivery to teeth.

Integrity

In 2002, the citizens of Reno, Nevada voted against the fluoridated water proposal after a contentious debate (Morales 2002). Since fluoride is available through other means, fluoridating water may not be the least destructive alternative. However, public health is about paternalism, not majority rules. Thus, if fluoride was proven efficacious with few concerns, the public health department might be justified in overriding the community wishes—after all, adding a substance to water would not change the nature of the community. However, given the scientific concerns, the community's integrity needs to have a larger consideration.

Dignity

Most homes, at least in the city of Reno, are connected to the municipal water supply. Therefore, any substance added to the water would automatically flow into the homes of most people. Unless one never turns on the tap and only uses bottled water, a person can not opt out of this controversial health intervention. Human rights and dignity would not be protected under a water fluoridation proposal.

Given that the risk and benefit ratio of fluoridation is uncertain, efficacy may not be met. Certainly integrity and dignity would suggest that Reno not add fluoride to its water system, but those these two principles are of lesser consideration. One must remember, however, that fluoridated water effects the socioeconomically disadvantaged the most: Wealthier people can get fluoride through toothpaste, dentist-applied treatment, and mouthwashes. Alternative delivery methods should be investigated. At the moment, this ethical analysis recommends that Reno should not fluoridate its water until the risks are further studied.

Smallpox Vaccination

As early as 1980, the U.S.S.R. had been working to transform smallpox into a bioweapon (Tegnell, Wahren, and Elgh 2002). In late 2002, scientists and government officials discussed smallpox's use as a bioterrorist weapon (CDC 2002; Garrett 2000). The CDC recommended that hospitals and medical centers assemble and inoculate a Smallpox Health Care Team composed of 15 staff members including Emergency Medical Technicians (EMT), emergency room staff, intensive care staff, medical house staff, infection and disease specialists, security, housekeeping, and those who are likely to inoculate others (CDC 2002). Only 8.5% of the targeted first-responder population was vaccinated (CDC 2003).

Solidarity

The goal of the program was to vaccinate first-responders to the smallpox vaccine. In the event of a smallpox attack, these people could inoculate others and provide care to the sick without risk of becoming sick. The "ring vaccination" concept holds that if those who have contact with the patient are inoculated, then they act as a barrier and the disease will not spread to the general population (CDC 2002). The risk of vaccination is undertaken by those who will benefit the most.

Efficacy

The smallpox vaccine is believed to be 95 percent effective in preventing infection (CDC 2002). This vaccine was created to protect against a naturally occurring virus. If the virus is used as a weapon, then very likely it was altered and the vaccine may be ineffective. Since the vaccine is a live virus, it can be spread to other people or even other parts of the inoculated individual's body for nineteen days after application.(CDC 2002; Neff et al. 2002) Pregnant woman, people with skin conditions, immunocompromised individuals (i.e., AIDS, chemotherapy, and

transplant patients) are at greatest risk of complications from the vaccine and should not receive it (CDC 2002). Overall side effects from the smallpox inoculation are higher than in most other vaccines.(Neff et al. 2002) The CDC reports that one thousand people per million vaccinated will experience serious side effects (CDC 2002) and for those receiving the vaccine for the first time, life-threatening complications are believed to arise in between fifteen and fifty-two out of one million inoculated people (CDC 2002; Lane et al. 1969)

Integrity

The CDC created the program, but implementation was left up to the states and hospitals. Thus, local authority had input into the program. Since vaccination is a normal part of medical culture and informed consent was obtained, this program respects local values. The alternative program would have vaccinated everyone. By placing a limited population at risk, the least destructive alternative was selected.

Dignity

Although consent was necessary in this civilian plan, the military has a history of giving this vaccination to soldiers without their consent (Sankar, Schairer, and Coffin 2003). The vaccine also unnecessarily placed individual lives at risk since the side effects and risk of death were significant. Also, the vaccine protected against an empty threat—no attacks have occurred anywhere (Sankar, Schairer, and Coffin 2003).

Vaccinated individuals were placed at risk for a situation that seems to not exist. Inoculated people posed a threat to the community during the incubation period and their lives were unnecessarily placed endangered. Also, the vaccine is unlikely to be efficacious in the event of a smallpox attack. Therefore, this vaccination plan fails the ethical test. Some changes, such as quarantining the inoculated during their infectious period, could help the plan.

CONCLUSION

Medicine focuses on the health of individuals. Public health focuses on the health of communities. Biomedical ethics provides guidelines for an autonomous individual making choices for him or herself. By analogy, public health ethics should focus on communities making choices to protect the aggregate health and welfare of their populations. Under a social contract rubric, people are part of a common citizenry, and they have agreed to abide by the just policies of the designated authority. The public health ethics that the author proposes—principlism based on the ideas of solidarity, efficacy, integrity, and dignity provides a strong tool for guiding ethical reasoning and action on a population level. Communal interests such as helmet laws and water fluoridation stretch the abilities of a more traditional biomedical ethics and point to the need for a uniquely public health perspective to ethical reasoning.

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¹ {NOTE: See the United Nations' Universal Declaration of Human Rights for an example. Notice that the document is written in terms of individual human beings. <http://www.unhchr.ch/udhr/lang/eng.htm>}

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