SAMPLE RESEARCH PAPER-5

TOPIC- PUBLIC HEALTH

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Introduction

Understanding the current state of public health ethics requires an introduction to the history of the discipline. Subsequently, the basic definition and distinctions of this discipline from related fields will be offered. Ethical theories can provide grounding and organize our thinking about ethical aspects of public health, and some theories will be briefly listed. The reader will be then introduced to frameworks for ethical decision making which provide a bridge between theories and practice. The main body of this entry will summarize ethical issues in several main programs and concerns of public health. These topics were selected either because ethical reflections have significantly shaped them or because these events or programs shaped public health ethics. Singled out for attention were infectious diseases, health equity, health promotion, screening and testing, and research with human subjects. Some cardinal points will be gathered in the concluding paragraph.

History And Development of Public Health Ethics

When the contemporary bioethics emerged in the 1970s from the work of philosophers, theologians, physicians, and legal scholars, the agenda for the new discipline was driven by burning contemporary issues, prominent among them being experimentation on human subjects, use of new medical technology, and medical paternalism. Because these issues were present in clinical research and in acute care, the early bioethics was almost entirely focused on these sectors. Given those circumstances, it is not surprising that books, reports, and articles produced by founding fathers of bioethics in the 1970s and 1980s did not address public health as an academic discipline or practical activity. Scholars working in public health however became aware of the discipline of bioethics, and, for example, already in 1978, John Last in his book Public Health and Human Ecology provided discussion of ethical issues grounded in bioethical principles. In the 1990s, the importance of public health became once more apparent because of the spread of HIV/AIDS, concerns about novel emerging infections, and the threat of bioterrorism. It became clear that distinct ethical concerns and questions arising from the existence of infectious diseases and our attempt to control them need to be recognized and addressed (Selgelid et al. 2005, p. 3). Early in the new century, articles and books emerged that endeavored to offer ethics frameworks or processes for ethical assessments that would designed to facilitate effective public health interventions able to reduce current mortality and morbidity while at the same time maintain individual freedoms and advance social justice. The critical period for the growth of public health ethics was the years 2002–2003 when a first new infectious disease in the twenty-first century emerged, severe acute respiratory syndrome (SARS), and this led to many ethical studies and reflections.

After SARS was brought under control, most states of the world started to prepare for the next influenza pandemic. Pandemic plans frequently referred to ethical concerns or had a section on ethics. This is for the first time when public health ethics provided significant input to major public health programs before the programs were launched. When the influenza pandemic did arrive in 2009, it was less severe than plans anticipated, and this also created certain ethical challenges.

At the present time, it is the Ebola fever epidemic and the response to it which represent the most visible face of global public health. Increasingly, a driving force of public health ethics has been concerns about health of underprivileged and vulnerable populations and disparities in terms of social determinants of health resulting in differences in health status.

Conceptual Clarifications And Definitions

Public health is a branch of health care using methods of prevention, promotion, protection, and control, concerned with physical and mental health of a population on the international, national, state, or municipal level. Public health ethics then is the sub discipline of bioethics (or health-care ethics) that endeavors to clarify, prioritize, and justify possible public health interventions based on moral values, ethical principles and interests of stakeholders, scientific evidence, and other relevant information. Public health ethics could also be understood as a particular "lense" that allows a closer examination of public health issues and activities and assists quality improvement in this field.

Public health is distinct from personal health care, because the former is mostly using group or community oriented strategies and is typically delivered by dedicated organizations under governmental control. Due to this and other distinctions between personal health care and public health, each sector of health care requires some specific ethical considerations. However, boundaries between these sectors are often indistinct. For example, regular home visits to frail elderly could be considered a clinical health-care activity or a public health initiative. Public health workers and those in clinical care have to collaborate in improving people's health. As a result, public health ethics is closely related to and partially overlaps with clinical ethics.

Public health ethics is closely related to health policy ethics because public health interventions are dependent on allocation of public resources and policies created by governments. Public health ethics is distinct from health law, yet many public health actions are governed by or restricted by laws of the land. The general legal principle formulated in ancient Rome, salus populi est suprema lex (the welfare of the people is the supreme law), still has a persuasive power. Epidemiology and biostatistics provide important methodologies for public health, and each has its own range of ethical issues.

Ethical Dimensions of Public Health

Theoretical Considerations

At the present time, there is no single ethical theory of public health ethics that would be universally accepted, and consequently there is no universal standard that could be used to measure the moral "goodness" or "badness" of actions in public health. However, there are a number of ethical theories that could guide, illuminate, or justify public health activities.

The utilitarian theories which stress consequences of actions are of importance because the practice of public health is often driven by the principle of utility, which suggests that we ought to produce the maximal balance of positive value, such as health, over negative value, such as disease. In contrast to utilitarianism, the Kantian ethical theories have little regard for consequences of actions and instead propose that one's actions should be guided by rationally determined duty and by regards for autonomy. This approach to morality has had a strong influence on the codes of ethics of health-care professionals, including those in public health.

Many other suggestions were made for the most suitable theoretical basis of the discipline of public health, such as multidimensional social justice, civic republicanism, liberal paternalism, and relational autonomy. The personalist approach is based on our shared human nature and our common requirements for human flourishing. On this account, the primary principle is respect for persons, which includes respect for autonomy and confidentiality but also values of equity and solidarity (Petrini and Gainotti 2008, Bulletin of WHO). Virtue ethics, with its doctrine of means, can also guide us in moral assessment of public health actions.

Childress et al. (2002) proposed that all public health decisions have to take into account the following general moral considerations: producing benefits; avoiding, preventing, and removing harms; distributing benefits and burdens fairly; and respecting autonomy. To this list, the authors added four other considerations: protecting privacy and confidentiality, keeping promises and commitments, disclosing information honestly, and building and maintaining trust. In addition, these authors proposed five "justificatory conditions": effectiveness, proportionality, necessity, least infringement of general moral considerations, and public justification. Asian scholars pointed out a strong moral tradition from Buddhism to Confucianism associated with the term compassion. European scholars suggested such alternative values as solidarity, subsidiarity, and precautionary principle.

Practical Considerations And Frameworks

Different ethical theories provide sometimes complementary and sometimes contrasting interpretations or directions but are helpful for in-depth moral assessment of public health actions, preferably applying several theories to the issue at hand and comparing the guidance provided by them. Public health practitioners, however, are in need of simpler tools for practical ethical decision making on a day-to-day basis. These tools, known as "frameworks," typically incorporate principles, values, and ideas emerging from ethical theories, combine them with process-oriented approaches, and guide the user through a variety of deliberations that at the end ought to provide an indication of ethical desirability of a public health intervention under consideration. A number of frameworks have been published, and some were adopted by organizations, such as the European Union, the Nuffield Council on Bioethics in the UK, and the American Public Health Association. Ten Have et al. (2010) reviewed and compared six of such frameworks and found that none of them took into account all ethical issues that emerge in one particular program which they evaluated, a program for obesity prevention. Nevertheless, these frameworks can be very useful, if users are provided with basic education in bioethics and training in framework utilization, so that they do not expect that frameworks do automatically provide ethically correct answers with minimal effort.

Infectious Diseases

Measures To Control Infections: Vaccination, Quarantine, And Isolation

Vaccination is considered one of the most effective public health interventions and has led to eradication of smallpox, near eradication of poliomyelitis, and great reduction of morbidity and mortality from diseases such as measles, rubella, and pertussis. Ethical issues in the vaccination in developed and in developing world are different, especially as they concern immunization of children. In wealthier countries, such vaccination is widely available against about 6–12 diseases, usually paid from public funds, and is sometimes mandatory. Serious illnesses or death from those preventable diseases became rare, and this created a perception that vaccination is no longer important. In the same time, real and imagined complications from vaccination were getting more attention, public confidence waned, and vaccination rates diminished. When most people (80–95 %) accept a particular vaccination, even those who were not vaccinated are protected because the transmission of the infectious agent was successfully interrupted. This situation is called herd immunity (Dawson 2007). It is an advantage for those who cannot be vaccinated for medical reason or have grave religious objections, for example, if the vaccine would be derived from human embryos. However, if someone decides not to get vaccinated in order to avoid a discomfort of the procedure or the small risks which are shared with all others, this person can be called a freeloader – he or she wants to enjoy the benefits without paying the price. Such behaviour is morally problematic because it offends the principle of fairness. Low vaccination rate can be due to a low priority people assign to vaccination in their lives. There is also a forceful opposition to vaccination in some circles, which in part arises from inadequate communication of public health authorities, but there is also a legitimate concern about conflicts of interests because some promoters of public health interventions have financial ties to drug companies that profit from vaccinations recommended by those experts. Public health ethics can understand, respect, and offer to the society critical moral assessment of both perspectives while stressing the importance of solidarity and duty of fair play (Holland 2007, pp. 135–159).

The ethical concerns about vaccination of children in developing countries are different, because there are millions of children still dying from preventable diseases. At least one out of four children does not receive vaccination because of cost, shortage of staff, and lack of infrastructure, refrigeration, and transportation or due to war conflicts. In addition, even if vaccinated, children in poorer countries may not receive the same benefit because of their malnutrition, parasites, or other health factors. Finally, because vaccine research is driven by needs of richer countries, some vaccines that would be useful in developing countries do not get developed. Considerable effort to correct this inequity had been made by governmental and private agencies, but to assure full and sustained access to vaccination everywhere remains a major challenge.

Quarantine refers to enforced separation and restriction of movements of individuals suspected to be exposed to an infection for the duration of an estimated incubation period in order to prevent them to spread the infectious agent to others. It is one of the traditional public health measures documented as far back as the fourteenth century when during the Black Death epidemic in Europe, ships were required to sit in harbours for 40 days, before passengers and crew could disembark. While most countries still have quarantine laws, in modern times it has been extensively used for the first time in 2003 to control SARS (severe acute respiratory syndrome). The decision to use the measure, in retrospect judged to be correct, was justified because the new disease was caused by an unknown agent, with an unknown mode of transmission, with no effective treatment and significant mortality. Placing a person in quarantine is a serious step, because it is done not for the benefit of that person but for the benefit of others. At stake are important human rights such as freedom and opportunity to earn a living and to discharge family responsibilities. In each case the critical question to be asked is this: Is the measure going to diminish deaths, suffering, and societal and economical disruption to such a degree that the burden of the measure is justifiable? If quarantine is justified in the opinion of the population, it may not have to be always legally enforced. During the SARS outbreak in Toronto, Canada, about 30,000 people were quarantined and most accepted it voluntarily; in only 22 cases the mandatory detainment was necessary. Authorities in Hong Kong and Japan provided those sent to quarantine with electronic bracelets, to be able to monitor people's whereabouts. It was determined that the ethical obligation of public health service, acting on the reciprocity principle, will be to assure that those in quarantine are not abandoned but have adequate food and shelter, medications, and social support and receive a compensation for the lost income.

The quarantine should not be confused with isolation, which means a separation of ill persons with an infectious disease from other people. This measure is commonly used in hospital practice and is ethically less problematic, because these patients will also benefit by receiving care.

Other public health measures that aim for distancing of people to minimize transmissions are travel restrictions, school closures and cancelation of public gatherings, national border control measures, and travel advisories. Each of those measures also should be ethically justified and carried out in a responsible fashion to minimize the adverse impact on affected population.

HIV/AIDS Pandemic

This greatest epidemic in modern history represents an important ongoing public health issue, being the fourth leading cause of death in the world. At the end of 2013, 35 million people were living with AIDS, and 1.3 million people died that year from the disease. Discrimination against infected individuals in school, employment, immigration, and housing continues to be a concern, but current ethical issues are related mainly to testing, prevention, and treatment.

Testing

Since AIDS emerged, most screening and testing has been voluntary, opportunistic, and often anonymous. There are exceptions, such as mandatory premarital testing in Democratic Republic of the Congo, Nigeria, and Botswana. After it was determined that early treatment of infected persons with retroviral drugs can lead to a better clinical outcome as well as effectively prevent transmission of infection, a routine screening and testing of the general population in health-care setting has been proposed. This generated some ethical controversy (Celeda et al. 2011), but a number of authorities endorsed the concept of universal testing and treatment. Whether this means that "test-and-treat" approach will be adopted everywhere as a standard of practice remains to be seen, but modeling suggests that this is the way how prevalence can be reduced from the current 35 million to 1 million in 2050. Ethical challenges are to build global solidarity and advocate for flow of funds, to overcome social and cultural barriers, and to assure that all participants are treated with dignity and respect.

Prevention

The insidious onset of this pandemic mitigated against the use of traditional infection control methods such as contact tracing, obligatory testing, and isolation. Also, many people affected were already socially stigmatized, and there was a concern about further compromising their dignity and human rights. An approach to the infection later called AIDS "exceptionalism" was taken in most countries of the world. Prevention focused on education and lifestyle changes, such as the encouragement to use condoms, avoidance of risky sexual practices, and use of unclean needles. These measures were not sufficient to stop the epidemic. The number of new cases per year is now falling, but still in 2011, additional 2.5 million people acquired HIV.

Some religious organizations promoted fidelity in marriage and avoidance of sex outside of marriage, but this call had a limited appeal. Nevertheless, it was reported that the focus of prevention on promotion of condoms in Botswana had proved to be counterproductive, while the focus on behavioral change in Uganda which promoted abstinence and mutual faithfulness to a partner of known status reduced the relative burden of AIDS. A radically different approach to prevention was taken by Cuba, which in 1987 implemented a strict quarantine for all HIV-infected individuals and established mandatory testing program. Prevalence of HIV infection as reported by the government is very low in comparison with the other Caribbean countries, but this was not verified by independent studies. Syringe exchange programs for drug users were found to be an effective risk reduction measure in 1995 and are used in some jurisdictions but continue to be controversial, because they seem to condone drug addiction and undermine the illegal drug control strategy. Given that no effective vaccine protecting against HIV was yet developed, the most effective preventive measure currently is treatment of all HIV-infected people with antiviral drugs, as noted above.

Treatment

In 1984, a retrovirus, labeled human immunodeficiency virus (HIV), was discovered as a cause of AIDS, but it was only by 2005, when retroviral drug treatment started to decrease the death rate and AIDS was transformed from a death sentence to a manageable chronic disease. The dominant ethical issue has been the access to therapy. Given that sub-Saharan Africa experienced the greatest burden of disease, with up to 20 % of people infected in some states, and that the economy of these countries could not afford the expensive HIV treatment for millions, international assistance was crucial. It could be said that it was slow coming, but, eventually, it became a lifesaver of the continent, with many states, nongovernmental organizations, and private foundations contributing. The Joint United

Nations Programme on HIV/AIDS in 2000 established eight strategic objectives to halt and reverse HIV/AIDS. Results so far have been mixed, with some areas achieving a major reduction in infection rates, while other regions experienced escalation. The political and fiscal will to provide antiretroviral therapy is an issue, and currently only about half of the infected people around the world, including children, are receiving the treatment. In addition, there is a strong ethical element in decision making on how much resources should be devoted to treatment of people suffering from AIDS, of those infected with HIV but asymptomatic, and to pre and postexposure prophylaxis.

SARS

In 2002, an outbreak of severe atypical pneumonia emerged in China and Hong Kong that was named severe acute respiratory syndrome (SARS). This infection eventually spread to 37 countries with over 8,000 reported cases and led to the death of about 800 people. The cause of SARS was at first unknown, the fatality rate was high, and all therapy was only supportive or experimental. Under these circumstances, public health authorities in all affected countries, with coordination by WHO, rapidly adopted traditional public health measures – surveillance and screening for febrile illnesses, isolation of patients with SARS, contact tracing and quarantine of contacts, closure of schools and affected hospitals, and restrictions on traveling. The combined effect of these measures was that the transmission of infection, which was later determined to be due to a coronavirus which jumped species from animals to man, was stopped and at least temporarily driven out of the human population.

The attention SARS received may have been out of proportion to its impact. It was noted that SARS outbreak in Toronto, Ontario, led to half of deaths that were caused without much public attention in Montreal, Quebec, at about the same time by an outbreak caused by Clostridium difficile.

Nevertheless, the international impact of this near pandemic demonstrated the need for intensive regional and global surveillance and cooperation. It was a call to put aside the notion that states are entirely sovereign in the governance of public health matters within their borders. The SARS outbreak also led to the understanding that quarantine, isolation, and various social distancing measures are not outmoded. While representing restrictions on personal freedom, these measures may be ethically justified by scientific data or where these are absent also by the precautionary principle. These measures should be applied in the least restrictive or intrusive manner, for example, using voluntary rather than coercive measures where possible, and carried out in a way that will minimize the negative impact on individuals and communities. Actions of public health authorities should be transparent and administered with substantive and procedural justice. This outbreak also brought to light a number of other ethical issues, such as the duty of health-care workers to provide care in an environment that is dangerous for them and creates a risk for their families (Hsin and Macer 2004), economic impact on communities and individuals by distancing measures, and collateral damage to patients with other illnesses because their care is compromised.

Influenza

Influenza virus produces illnesses around the world, with outbreaks resulting in deaths of up to 0.5 million people annually. The leading ethical issue in responding to this ongoing threat is the use of annual vaccination. There is some evidence that vaccinating health-care staff reduces the risk of them being vectors of transmission and improves outcome for their patients. Yet, voluntary uptake of such vaccination in most jurisdictions has been as low as 25 % of eligible staff. In response, some health organizations or jurisdictions created contractual or legal obligations to accept annual vaccination. At times, this measure has been resisted by health-care workers, and the ethics of balancing human rights of workers against their professional obligations to patient safety continues to be debated.

Influenza virus is also known to produce global disease outbreaks, called pandemics, three or four times every century when the radical change in the genetic makeup of the virus makes everyone susceptible. The most devastating pandemic in the twentieth century emerged in 1918 when the highly virulent virus killed over 50 million people worldwide and public health services were overwhelmed. In 1967, the US public health service overreacted to an emergence of a new strain by starting mass vaccination which turned up to be entirely unnecessary – the so-called swine flu fiasco. In early years of this century, it becomes obvious that the world needs to prepare for the next influenza pandemic, given that the usual cycle of the disease was already overdue. Pandemic planning which in some countries started in the 1970s was intensified and was informed by the recent experience with SARS and carried out by public health agencies which often were stronger and had more resources than ever before. Pandemic preparedness in Africa and some other developing countries was a profound challenge, given often rudimentary health-care systems and the need to deal with other infections.

These national pandemic plans were diverse but commonly identified roles of various levels of governments, nongovernmental organizations, and business sector, often representing the most extensive and far-reaching public health programs ever developed in history of those countries. Some national plans had a section referring to ethical concerns. By 2006, the World Health Organization (WHO) has published guidelines on pandemic influenza preparedness and response planning and released documents outlining also relevant ethical considerations. The WHO reports put a stress on transparency, communication, education, public engagement, and social mobilization including the recommendation to obtain an agreement of the public and civil society on the use of the therapeutic and prophylactic measures and their distributions.

A number of documents in ethical issues in pandemic emerged, for example, from the Joint Centre for Bioethics at the University of Toronto (Thompson et al. 2006) and the Nuffield Council on Bioethics in the UK. The former recommended the following core values to guide a response to the pandemic: individual liberty, protection of public from harm, proportionality, privacy, equity, duty to provide care, reciprocity, trust, solidarity, and stewardship. The report also highlighted that decision-making process in planning and response should be transparent, reasonable, inclusive, responsive, and accountable. The most often debated ethical issue during planning was an anticipated shortage of vaccine and antiviral drugs and the need for their rationing. Many authorities created tentative priority lists, often listing first health-care workers, followed by people at high risk of complications and death, followed by people operating essential civic services. Other frequently debated concerns were the duty of health professionals to serve and to accept vaccination (Kotalik 2006), and the responsibility of society to provide for their effective protection.

When in 2009 the expected pandemic did materialize, events did not go according to plans. The novel virus was less lethal and less contagious than pandemic plans, based on near worst-case scenario, expected. In most places around the world, the situation was not worse than during usual annual flu outbreaks. Stockpiles of antiviral drugs were not fully used. When the vaccine for the novel virus was manufactured, there was an initial wave of interest, but soon people sensed that the flu is not a special risk, and concerns emerged about the safety and efficacy of vaccine. These concerns were not effectively addressed by authorities, and the uptake diminished in spite of official promotion. For example, vaccination coverage achieved in Australia was estimated to be 19 %, which was considered insufficient to interrupt community transmission. Reports from Canada, where over 40 % of population received pandemic vaccination, indicate that the measure prevented infections, hospitalizations, and deaths. Many elements of pandemic plans, e.g., rigorous triage of patients and opening of temporary care facilities, were not activated.

Retrospective discussions of political, operational, and ethical aspect of the pandemic response continue. Commentators decreed the lack of regular, realistic, and credible reports of authorities on pandemic situation to public and professionals. According to an updated Cochrane Collaboration evidence review of 2014, there is no good evidence that oseltamivir, considered in planning to be the most useful antiviral drug, actually reduces admissions to hospital or complications of influenza, yet it produces significant side effects. This bring to question one chief element of pandemic response strategy and the expense of billions of dollars ($750 million just in the UK) to acquire the drug stockpiles. The problem seems to be that public health authorities made their decisions on incomplete evidence. Only 66 % of information from clinical trials supported by a major manufacturer were published, with the tendency to withhold negative findings. On the other hand, the review of side effects of the vaccine used in 2009 confirmed it to be as safe as authorities claimed. Based on monitoring of 23 million people vaccinated in the USA, only 1.6 excess cases of Guillain-Barre syndrome were reported per million of people vaccinated. Clearly, ethical elements of future plans will need considerable refinement and flexibility to be useful under conditions of uncertainty of timing, severity, and challenges of future pandemic.

Ebola Fever

Ebola fever was first time identified in Western Africa in 1997, and since that time, there have been 24 outbreaks of this viral disease, with mortality rates of about 60 %. It appears that because the outbreaks were short and limited to Africa, the rest of the world was not very concerned. Even WHO was accused of being slow to react, and journalists noted that the assistance to affected countries only materialized when a US citizen was infected. However, the outbreak of 2013 continued unabated, and by January 2015 there have been 22,000 cases and almost 9,000 deaths, more than 500 among healthcare workers. By the mid-2015, the rate of new cases appears to be finally diminishing, likely due to commitment of more national and international resources. It has been suggested that the high mortality is not just due to virus virulence but also due to lack of trained personnel and adequate equipment in the countries hardest hit, because none of a handful of Ebola patients who were diagnosed in early stage in the USA and Western Europe have died. This points toward unacceptability of severe disparities in access to good-quality care which threatens not only developing countries but the world community. The people who are most at risks of death are health-care workers in Ebola units. In Sierra Leone, these workers have 100 times higher incidence of infection than the general population of the state. Yet, even in Africa, effective response is possible. Nigeria which experienced 20 cases in early 2014 was able to contain the spread by the multidimensional approach which included extensive contact tracing identified through 18,000 face-to-face visits and has been declared Ebola free 6 months later. Ethical concerns also addressed the acceptability of departing from accepted standards in testing new drugs and vaccines, given the urgency of the situation. Currently, there are two vaccines in clinical trials that appear to be promising.

This outbreak is testing the commitment to International Health Regulations and the global cooperation in infection control. Contrary to those regulations, some 30 countries, including Canada and Australia, imposed travel restrictions on affected countries in the absence of WHO recommendation. Other countries missed target dates for enhancements of their public health infrastructures. However, the recently launched new initiative Global Health Security Agenda promises to increase the societal commitment on a global scale. Direct assistance to Ebola-affected countries by states that have resources and technologies is essential to stop the outbreak, but there is also a moral obligation for assisting countries to leave behind stronger systems to identify, stop, and prevent future threats (Frieden et al. 2014).

Health Equity

National And Community Dimension

Health equity is concerned with providing equal opportunities for good health for all people and reducing avoidable and unfair differences in health among population groups. Historically, public health practitioners have always been aware of the significance of fairness and justice, but now this moral concern has moved to the forefront (Sen 2004). Science provides an unequivocal evidence that human health is influenced to a major degree by so-called social determinants of health, such as poverty, wealth, quality of air, water, food, and housing. Some but not all of those determinants are in the public health domain. When examining a publicly funded program, it is necessary to consider, if the program will diminish or enhance the existing disparities in health or if it will be neutral in this respect. For example, improving drinking water quality will offer some benefits to everyone. A clinic providing vaccination for foreign countries will benefit to those who can afford to travel and may increase health disparity. A program focusing on the needs of homeless populations will possibly diminish health disparity. Many public health workers will maintain that their programs should at any opportunity strive to diminish health disparities, that is, to focus on underprivileged, and vulnerable, or at least not to exacerbate the existing inequalities of health status and health opportunities. Such view may not be shared by an elected board representing citizens, who may strive for efficacy and a general appeal of programs.

International Dimension

Disparities in health status within states are even more magnified between states. On the moral level, there is a question of obligation to pursue a vision of global health equity. There have been many initiatives in this direction, such as the creation of the Global Fund to Fight AIDS, Tuberculosis and Malaria in 2001 and US President's Emergency Plan for AIDS Relief in 2004 which provided billions of dollars. But national interests rather than "health for all" still dominate political and economic agendas. On the pragmatic level, globalization with its increasing integration of markets and technological advances made possible and necessary to share demographic, epidemiological, and environmental data between states and regions and take joint actions to address health threats. But some critics contend that trade agreements by enforcing deregulation are negatively affecting the reach of public health services, control of hazardous substance, oversight of worker safety, quality of drinking water, and adequacy of sanitation. Nevertheless, the first decade of the twenty-first century has been termed the "golden age of global health" because of its rapid development policies and practices (Basilico et al. 2013).

Promotion And Lifestyle Interventions

Promotion of healthy living, as understood at a particular time in a particular society, has been always part of the public health mandate. The promotion may be carried out with a variety of instruments and techniques; some of those, like providing objective, impartial information, and education based on the current knowledge, are not ethically problematic; others may raise concerns. Important criteria of ethical appropriateness will be the truthfulness of the message, the force with which it is disseminated and perceived, and actual reduction of personal freedoms. If a campaign will exaggerate the actual risk of an activity or a lifestyle and engender to create fear, it merits a disapproval even if it is driven by genuine interest in health of the public. Various means used to gradually reduce smoking of tobacco, which were instituted by now in most countries of the world, provide a good example on how education combined with regulations can be employed to change the behavior, with broad support of citizens. It is to be noted, however, that the chief argument in this prevention strategy was to protect people from the effect of secondhand smoke, rather than protect smokers from self-inflicted harm. The prevention of harm to others is a strong ethical justification for an action. On the other hand, prevention of harm to the person, who knowingly and intentionally accepted the risk of a certain activity, is ethically questionable. However, with addictive activities, like smoking and excessive alcohol use, an argument can be made that addicts no longer have a freedom to decide for themselves and therefore society is justified to interfere. But public health decisions in this area are difficult and have to be done with sensitivity to various situations. Even when tobacco smoking policies gained a wide support, there are problematic areas, for example, whether or not to permit or to facilitate smoking of patients in health-care institutions, especially smokers with limited life expectancy for whom smoking may be one of the last life's pleasures. The role of bioethics evaluation often will be to draw attention to the segment of the population that is underprivileged, voiceless, and marginalized and assure that their interests be considered. In addition, ethical analysis may lead to identification of ways on how an extraordinary burden placed by an intervention on some individuals could be diminished, without diminishing the efficacy of the public health measure.

Obesity has been recently framed as a public health concern with ethical dimensions (ten Have et al. 2011). Restricting access to a certain kind of food to reduce obesity may be ethically problematic for a number of reasons, one being that it may unfairly penalize people living on limited income who shop for the least expensive source of calories. There will be other measures that may gain support from an ethical perspective, such as restriction on marketing of certain food products.

Screening And Testing

When physicians screen their patients to determine if they might be at a higher risk of a disease or test patients to confirm a suspected condition, then these procedures are within the realm of personal health care. However, in the last 50 years, screening and testing of not just individuals but populations and communities became an important tool for secondary disease prevention and now represents an important component of public health programs. Prenatal, neonatal, child, and adult screening all have their specific ethical issues. Genetic screening, which looks for abnormalities in one or more genes or entire chromosomes, often has an additional implication that those subjected to screening may not be at risk themselves but the risk may become manifest in their progeny. Selective abortions of unborn children with undesirable characteristics and selective implantation of embryos during assisted reproduction invite comparison with universally deplored eugenic programs of the twentieth century which aimed to improve human stock or a particular race. While eugenic programs of the past were implemented, often forcefully, by state governments, this time the similar outcome may be resulting from successful marketing of certain medical technology. All screening programs, even those that do not appear ethically problematic, while designed to provide benefits, also introduce some risks. Therefore, the ethical evaluation needs to start with critical assessment of specificity and sensitivity of tests and consider appropriate privacy of information, psychological distress, insurance discrimination, stigmatization, and disturbance of personal bonds within families or communities. Several professional bodies offered lists of conditions that need to be present to consider a screening program ethically acceptable. For example, the UK National Screening Committee in its 2003 report offered 22 such criteria. Among the conditions often cited is the acceptability by the public, and this raises questions when and how to obtain a community consent for a screening program.

Ethics of Public Health Research

As in health research in general, the chief ethical concern in public health research will be the safety and well-being of human subjects of the research intervention. The concern will be both about harms and risks to individuals and to communities. For example, research on indigenous populations in remote settings or a cultural minority group in the city may expose them to exploitation by commercial interest, to a ridicule of the public, or to unfavourable treatment by the political system. Even observational research raises the issues of data retention and of future access to the information, privacy, and confidentiality, both for individuals and communities.

When ethics, laws, and regulations were being developed for the protection of human subjects in research, most concerns were about protection of patients in the clinical setting. Only much later considerations were given to ethics evaluation and regulation of public health research. At this time only in some jurisdictions are public health research protocols assessed by research ethics committees. One problem is that the line between public health practice and public health research is difficult to draw. It could be argued that public health interventions, if an evaluation is done of their outcome, are almost always "research" in the sense that they contribute to the increase of knowledge. For example, if a major vaccination program is started and it is desirable to determine the effectiveness of the program in terms of antibody response and frequency of the illness in vaccinated people, in comparison with unvaccinated, the project could be framed to appear either as a quality control or as a research. There are at least two approaches how to deal with these difficulties. Some will argue that careful examination of proposed public health activities allows imperfect but practically useful decisions if the project should be subject to standard ethics review or not. Others will argue that maintaining a sharp research intervention distinction may lead to overprotection of rights and interests of subjects in some cases and under protection in others. Therefore, they will recommend that all types of public health projects whether they appear to be a quality control, economic analysis, or research be evaluated in the same way for ethical appropriateness and provided with an oversight proportional to risks and burdens that the project entails.

As in clinical research, public health research also has to deal with conflict of interest by researchers or funders which can both distort research finding and put research participants at risk. Public health research often seeks engagement with communities or stakeholders to legitimize projects and recruit participants, but this does not always assure impartial science and high regard for the interest of subjects. Community and advocacy groups may be linked with prominent experts, who strive to maintain their research agenda and have ties to industry, and advocacy groups often accept funding from commercial or political entities interested in a particular outcome of research.

Conclusion

Public health is an academic discipline and social practice with the object to protect and promote the health of a population. Practitioners in this field have always been aware that their activities have ethical or moral dimensions, but this was not often articulated. From the end of the twentieth century to the present time, the interest in this domain much increased, and the young discipline of bioethics has broadened its agenda, striving to develop a subdiscipline of public health ethics. These developments were driven by contemporary social concerns such as universal human rights, social justice, and protection of research participants but also by challenges to public health such as new and re-emerging infections and by scientific advances, for example, in screening and testing for a variety of diseases. Public health ethics is trying to understand these developments and provide guidance by applying various theoretical considerations, theories, principles, and values. It is recognized that public health needs to advance and protect the public good, but how should public good be defined, who ought to do that, and how should the population be involved, with the least possible degree of infringement on freedoms of individuals, families, and communities, are questions which need to be asked and answered again and again as physical and social environments change. Best scientific evidence should inform all public health decisions, yet these decisions also need to take into account human needs, relationships, and aspirations. The case in point is vaccination, which managed to control a number of infectious diseases, yet there is a gap between the claims made by public health and the perceptions of populations about the effectivity and risk of many vaccines, and this in turn leads to suboptimal, from scientific perspective, utilization of vaccination. Public health ethics is helpful when it is critically probing justifications for actions (or nonactions) and impartially examining successes and failures of public health practice. What is the ethically appropriate approach to public health often has to be decided in each community, engaging not just experts or authorities but people who are or will be affected. At the same time, public health ethics is striving for global collaboration and coordination and recognition of interdependence of communities and the value of solidarity.

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