**POST GRADUATE DIPLOMA: PUBLIC HEALTH**

**MODULE 1 ASSIGNMENT**

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**SUBMITTED ON: 30TH DECEMBER 2018**

**Question 1**

Definition of Public Health and its key elements

Public Health is the science and art of preventing disease, prolonging life and promoting human health through organised efforts and informed choices of society, organisation, public and private communities and individuals (Winslow: 1920). The Oxford Textbook of Public Health defines Public Health as the process of mobilizing and engaging local, state, national and international resources to assure the conditions in which people can be healthy. Public Health aims to improve the quality of life through prevention and treatment of disease including mental health and this is done through the surveillance of case and health indicators and through the promotion of healthy behaviours. Public health practice requires multidisciplinary teams of public health workers and professionals.

Key elements of public health

1. **Monitor health status to identify community health problems**

It is essential for public health organizations to monitor and evaluate health status of populations in order to identify trends and to target health resources. Components of this service include: utilization of appropriate tools to interpret and disseminate data audiences of interest; collaboration in integrating and managing public health; and accurate and periodic assessment of the community’s health status.

Specifically, public health organizations can monitor and evaluate the health status of their populations by creating a disease reporting system; community health profiles ad health surveys. For example in 2014, Lesotho conducted its third demographic and health survey. The 2014 Lesotho Demographic and Health Survey (LDHS) were designed to provide up-to-date information on key indicators needed to track progress in Lesotho’s population and health programmes. These indicators included fertility and child mortality levels, maternal mortality, fertility preferences and contraceptive use, utilisation of maternal and child health services, women’s and children’s nutrition status and knowledge, and attitudes and behaviours relating to HIV/AIDS and other sexually transmitted diseases. This information used in planning for National Strategic and Development Plan for the country and evaluating changes in health over time in Lesotho.

1. **Diagnose and investigate health problems and health hazards in the community**

In order to appropriately allocate health resources, it is essential to diagnose and investigate health problems and hazards in the community. Components in this service include: population based screening of diseases; access to public health laboratories capable of completing rapid screening and high volume testing; and epidemiologic investigations of disease outbreaks and patterns of disease. Emergency preparedness is also an essential component of public health organizations. Teams must be available and prepared to combat natural disasters, severe weather, outbreaks, bioterrorism, mass casualties and chemical emergencies.

1. **Inform, educate and empower people about health issues**

Once the public health priorities have been established through monitoring and investigation of health problems in the community, educational activities that promote improved health should be disseminated. Components in this service include: both the availability of health information and educational resources and the presence of health education and health promotion programs. This can be achieved through media advocacy and social marketing. An example to this is the campaign to end malnutrition in Africa where King Letsie III of the Kingdom of Lesotho has been nominated as the African Union (AU) Nutrition Champion as well s Food and Agricultural Organisation Nutrition Ambassador. As a result, His Majesty King Letsie III made a commitment to mobilise and engage with African Heads of State and Finance Ministers to rally behind African Leaders for Nutrition initiative in the upcoming African Union Summit in January 2019 (www.afdb.org).

1. **Mobilise community partnerships to identify and solve health problems**

Public health organisations on the local, state and national level can mobilise community partnerships to identify and solve health problems. Components of this service include: building coalitions to utilize the full range of available resources; convening and facilitating partnerships that will undertake defined health improvement projects; and provide assistance to partners and communities to solve health problems. Of particular importance is the identification of potential stakeholders who will contribute to or benefit from public health activities. It is important to note that many of these stakeholders may not be considered to health-related at first glance. For example, community councils involved in urban and rural planning maybe influential in improving the health of residents.

1. **Develop policies and plans that support individual and community health efforts**

Policies can be effective in modifying human behaviour and reducing negative health outcomes. Components in this service include: development of policy to guide health; alignment of resources and strategies for community health efforts; and systematic health planning strategies to guide community health improvement. In addition to policies that can support health efforts, laws can reduce negative health outcomes. For example, Lesotho National Youth Policy drives for more recreational parks for young people across the country and not just in urban cities. It also pushes for establishment of bars or restaurants at least 100 metres away from main roads and churches and monitored operating hours for such facilities.

1. **Enforce laws and regulations that protect and ensure public health and ensure safety**

It is important that individuals and organisations comply with existing laws and regulations in order to ensure the overall health and safety of the general public. Components of this service include: reviewing, evaluating and revising laws and regulations put in place to protect the health and safety of the public; educating persons and organisations about these laws and regulations to improve compliance and encourage enforcement of them; and enforcing actions that protect the health of the public.

1. **Link people to needed personal health services and assure the provision of health care when otherwise unavailable**

Having access to care when it is needed is important in helping prevent and avoid unfavourable health outcomes and medical costs. At the local level, components of this service include: identifying populations that face barriers to accessing health services and addressing their personal health needs, assuring the linkage of these populations to appropriate health services by coordinating provider services, and developing and implementing interventions that address the barriers they face in attempting to access care. At the state and government levels, components of this service include: assessing access to and availability of stat health services; partnering with public, private, and non-profit sectors to provide a coordinated system of health care; assuring access to this coordinated health care system by using outreach efforts that link individuals to the health services as they need; developing and implementing a continuous improvement process to assure the equitable distribution of resources for those in greatest need of these services. Lesotho National HIV/AIDS strategy employs this service idea as one of the action steps for achieving increased access to care and improved health outcomes for people living with HIV.

1. **Assure a competent workforce for public health and personal health care**

Competent workforce is more likely to provide care and other services more effectively and efficiently compared to those who are not. Components of this service include: making sure that the workforce meets the health needs of the population, maintaining public health workforce standards by developing and implementing efficient licensure and credentialing processes and incorporating core public competencies into personal systems, and adopting continuous quality improvement methods and long term learning opportunities for public health workforce members.

1. **Evaluate effectiveness, accessibility and quality of personal and population based services**

Given scarce resources, it is important to keep track of whether or not programs or policies end up producing intended outcomes. Components of this service include: assessing the accessibility, quality and effectiveness of services and programs delivered; providing policymakers with the information they need in order to make well-informed decisions regarding the allocation of scarce resources; tracking efficiency, effectiveness and quality of services analysing data on health status and service utilization; and striving to improve the public health system’s capacity to well serve the population. Cost effectiveness analysis has been proposed as one possible strategy for informing policymakers on how best to allocate health care resources.

1. **Research for new insights and innovative solutions to health problems**

Through research, the health care problems that individuals face can be better understood, and therefore be better and more appropriately addressed given the evidence provided by such research efforts. Components of this service include: fostering the development of a continuum of innovative solutions for health programming in terms of both practical field-based efforts as well as academic efforts, establishing a consortium of research institutions and other institutions of higher learning to encourage more collaborative and cross cutting efforts, and ensuring the public health system’s capacity to perform timely epidemiological and health policy analyses.

**Question 2:**

3 population indicators that aid in decision making for public health practitioners

1. Demographic transition

As societies undergo the shift from rural agricultural economies to urban industrialized ones, population processes follow a predictable course of change referred to as demographic transition. The pre-transition period is characterized by high rates of fertility and mortality, particularly infant and child mortality, producing moderate rates of population growth. During the period of transition, death rates first begin to decrease in response to improvements in living conditions and health care but there is a lag time in during which fertility remains high. This is because the factors favouring large family sizes, such as expectations for high mortality among children, are slow to change. This results in elevated population growth rates, characteristic of many developing countries today and the reason that population growth is sometimes used to define underdevelopment. Over time, fertility decreases in response to falling mortality, producing the low growth rates characteristic of industrialized nations.

1. The epidemiologic transition

Corresponding changes occur in the pattern of diseases which dominate the health profile of a society. The pre-transition is characterized by high rates of infectious disease including diarrheal diseases, respiratory infections and parasitic diseases, which coupled with poor nutritional status leads to excess deaths in the younger age groups. As infectious diseases decline, more children survive to adulthood, life expectancy increases, and chronic diseases affecting the older population become the major health problems of a society, as currently seen in industrialized countries.

1. Health transition

The concept of health transition refers to areas of study which seeks to understand the cultural, social and behavioural determinants of health which underlie the epidemiologic transition.

**Question 3:**

5 functions of a Public Health Personnel in emergency situations

1. Protection

The first and foremost mission of public health is to protect the population against exposure to illness that are contagious person-to-person or transmissible from environmental sources. This basic function, which protects the public against enemies of the people, brings the formal power of the state of bear against biological and or environmental threats.

1. Prevention

Public health practitioners also work to identify and arrest threats to health before they strike. The strategies deployed (vaccinations, screening etc) create an ambiguous partnership between public health and the medical community in defining populations at risk and identifying and applying procedures and treatments

1. Promotion

In its quest to keep people well, public health increasingly adopts mean that transcend the conventional preventive agenda. Strategies conducive to healthy living-which may extend from encouragement to eat more fresh fruits and vegetables and fewer fatty, salty foods and to get more exercise, all the way out to engagement with myriad social determinants of health-thrust public health into unfamiliar preserves that tend to feature complex and sometimes indecipherable interactions between the public and private sectors.

1. Prognosis

Surveillance and monitoring of health conditions in communities are traditional tools in public health professionals’ strategic kit. That these tools ought to be broadened and put in service of genuine panning that would replace institutional fragmentation with the comprehensive, coherent, coordinated aficionados. By envisioning and estimating in advance as many potential threats to health as is feasible, such prognostic exercises are essentially prospective syntheses of the familiar protective, preventive promotional functions of public health.

1. Provision

In many developed countries across the world, public institutions deliver medical services to the disadvantaged citizens and non-citizens, including illegal aliens. This public safety net cares for a distinct subset of the community and in doing so, negotiates incessantly with relevant stakeholders. Provision enmeshes public health in painful disputes about the role of the field in health affairs at home.

**Question 4:**

Public Health in Emergencies

The word disaster implies a sudden overwhelming and unforeseen event. At the household level, disaster could result in a major illness, death, substantial economic or social misfortune. At the community level, it could be a flood, a fire, a collapse of buildings in an earthquake, the destruction of livelihoods, an epidemic or displacement through conflict. International Health Regulation (2005) adds that a public health emergency may create an urgent need for vaccination, treatments and emergency response sites.

People affected by emergencies may suffer malnourishment, stress, fatigue and other ailments including injuries. Diseases that affect people in emergency area dilapidated sanitation facilities include diarrhoea which caused by contaminated drinking water or food or poor sanitation and once diarrhoea exists, Public Health personnel should also expect cholera outbreak.. Crowding and poor hygiene will eventually cause measles in children, while breeding of anopheles mosquitoes in stagnant water bodies will cause malaria.

Disasters may threaten public order and public health due to violence and crime. Reproductive health needs are often especially great in aftermath of disaster. Displaced women are often victims of rape and sexual violence and may have an urgent need for emergency contraception and treatment for sexually transmitted infections.

In order to get the situation under control, the Head of Public Health should start by discouraging people defecting near any water source used by people and animals, or in the fields where crops for consumption are grown. As soon as possible defecation should be confined to specific area: open defecation fields or trench defecation fields. For long term purpose, Dezuane (1995) contends that the Head of Public Health consider the following:

1. **Drinking water control**

Wastewater control—the review of the design of wastewater treatment facilitates; the monitoring of a safe and effective operation, the evaluation of pollutional load on bodies receiving waters; and the control of industrial waste water discharges

Air pollution control---includes the examination of air pollutants, measurements, sampling, emission control (design, operation and maintenance of equipment) ambient air quality evaluation, standard setting and compliance and noise control

Solid waste control----includes an overview of planning designing and operation of treatment and disposal of solid waste; sanitary landfills; transfer stations; incineration stations; resource recovery; composting; pyrolysis; high temperature incineration; wet oxidation; high density compaction inventory; storage, treatment and disposal of hazardous waste and recycling

Radiation control---evaluation of biological effects of radiation; monitoring and regulating the proper use of X-ray equipment; radiation potential in industrial and commercial establishments; implementation of guidelines to reduce radiation exposure and collection, treatment, storage and disposal of radioactive material

Recreation area sanitation---the examination of plans, construction, operation and maintenance of swimming pools and bathing establishments; sampling, monitoring and classification of beach areas including surveys to determine pollutional sources; evaluation of sanitary aspects of temporary residence; i.e. camps, migrant labour camps, mass gatherings, and marinas and boat pollution.

Housing sanitation---includes evaluation of citizens complaints or reported cases of nuisance, unsanitary conditions, rat control program, animal control in or near housing; ragweed and noxious weed control; safety and accident prevention in housing; substandard housing and ventilation hazards

Environmental planning---the preliminary approval of the community developments of compliance with public health standards listed in the above mentioned activities of public health engineering with particular emphasis given to individual well water and private sewerage disposal systems; standard setting; scheduling of priorities; evaluation of program performance; record keep and data processing; in service training; education ( media releases, meeting with communities, teaching of short course or seminars); preparation of data for legal enforcement of health standards.

According to Kerr (1995: 210), Head of Public Health should also ensure that the training of non-technical workers for rural water and sanitation takes place and such non-technical workers should be trained on the following Water Sanitation and Hygiene (WASH) essentials:

* maintenance and repair of hand pumps- the training will be on fundamental steps for maintaining the hand pump model being used in the area, including the ability to train local caretakers in the same skills. Recognition of breakdowns, simple repairs, and knowledge of where to refer problems to more technically qualified personnel will also form part of the training.
* Development of water sources: spring, shallow wells and cisterns for rain catchment (concrete making skills, steps in spring capping
* Protection of wells—parapet construction, well lining, apron and drain construction
* Construction of latrines, both simple and improved.

Kerr goes further to highlight that women can particularly be chosen because they are outspoken on issues of public concern and can take good care of their families and houses.

**Question 5:**

Negative impacts of open defecation and how they can be curbed

According to Wikipedia, open defecation is the human practice of defecting outside-in the open. In lieu of toilets, people use fields, bushes, forests, open bodies of water or other open space. The practice is common where sanitation infrastructure is not available.

The reasons that have been given for people who do not use toilets have been either poverty that makes it a challenge to build latrines or lack of government support in providing such facilities. Sometimes, cultural issues related with sharing toilets among family members become the issue for open defecation. An example is a case in Lesotho where UNICEF built toilets for families and men refused sharing them with their daughters-in-law. Other families turned the toilets into mini store rooms and preferred going to the forests.

As a result, the negative impacts of open defecation are:

Water borne disease

Diarrhoea and other problems associated with the ingesting and exposure to human waste affect children under the age of 5 years the most since they are very susceptible to diseases. The exposure is because most of open defecation happens near to water ways and rivers. In urban areas, this can include the drainage systems that are usually meant to traffic rain water away from urban areas into natural water ways. Therefore, the result of open defecation near water ways is that it is carried into the water system minus treatment. As a consequence, the contaminated ends up in the main water source. When people in these regions use water as it is for drinking and cooking, it results in water borne diseases such as cholera, typhoid and trachoma.

Vector borne diseases

When the human waste collects into heaps, it attracts flies and other insects. The flies then travel around the surrounding areas, carrying defecate matter and disease causing microbe, where they then land on food and drink that people go ahead and ingest unknowingly. In such cases, the flies act as direct transmitters of diseases such as cholera.

Compounding the problem of disease exposure

The most common diseases caused by this unsanitary act are increased cases of diarrhoea, regular stomach upsets and poor overall health. With diarrhoea, for instance, it means that people cannot make their way to distant places due to the urgency of their calls for nature, so they pass waste close to where they have their bowel attacks.

Contamination via microbes

The environment also suffers as a result of open defecation because it introduces toxins and bacteria into the ecosystem in amounts that it cannot handle or break down at a time. This leads to build up of filth.

Visual and olfactory pollution

Heaps of human or just the sight of it cause eyesore and nauseate anyone who is close. The stink emanating from the refuse is also highly unappealing and pollutes the surrounding air. Such places attract large swarms that make the area completely unattractive for eye.

To solve this issue Public Health Officer has to engage individuals, health partners and even government to address the cultural, economic and social challenges by:

Provision of toilets

There is a need to ensure that there are enough toilets. Since these regions are usually very poor, it will take the efforts of the government as well as good will of local organisations such as CBOs and NGOs to help fix the problem. Construction of pit latrines and other toilet options such as compost toilets is necessary to help deal with the problem of lacking sewer systems. Public Health Office should urge local authorities to establish incentives for people to build their own toilets by providing subsidies and putting up public toilets in strategic locations.

Corrective civil education

Another platform that needs to be addressed is the negative cultural association that people have with toilets. The people should be informed and given civic education to enable them to break away from their cultural beliefs on issues such as the fact that toilets are not supposed to be shared. Cultural norms and beliefs must be changed over time through education and awareness creation. With time, people can become informed and drop the beliefs or adjust and make concessions about the ones that are most destructive.

Incentive public hygiene participation

The Public Health Officer must engage government to create programs that encourage sanitation and personal hygiene; individuals must be involved and forced to take up the responsibility of enhancing their hygiene as well as overall health. It is though such programs that people can learn the importance of their environments and work towards ensuring that they do not harm themselves by partaking in open defecation. It eventually, reduces healthcare burdens on the government and lessons the number of those who practice open defecation as it will be seen as a terrible activity.

**Question 6:**

Role of international NGOs in Public Health Projects

1. **Recruitment**

Of all the inputs into the implementation of public health projects, human resources are the most important. The objective of human resource is to ensure that there is a right number of personnel with appropriate skills available in the right place at the right time (Green: 1994:291). Public health projects rely heavily on personnel. They are labour intensive, with 60-75% of the budget being spent on this particular resource. As such, if human resources are poorly planned and placed, the implications for public health projects themselves can be extremely serious. The failure of public health projects in some developing countries is attributed to too few trained and available personnel. Most countries have shortages of certain groups of health professionals, particularly on those fields which require extensive education, such as Doctors, Pharmacists, Laboratory Technicians and Nursing Specialists.

In contrast, in some developing countries, there has been an overproduction of certain groups of health professionals, leading to either being inefficiently employed in inappropriate situations, or them remaining unemployed. It should, of course be noted that it is not uncommon to have both too many of one cadre, and too few of another, within the same country.

Green argues that distributional difficulties also play a part in causing failure of the public health projects in developing countries. For example, within a country there may be an appropriate overall number of health professionals, but their inappropriate concentration in urban settings may lead to shortages somewhere, hence the failure of public health projects in the affected areas. He goes further to indicate that even inappropriate use of personnel is also a problem whereby highly trained staff carry out basic duties which could be performed by less trained staff. Elsewhere, such inefficiency maybe the result of an oversupply of a cadre. For example, overproduction of Doctors in some countries has led to their routine employment in management positions requiring no medical skills.

Unproductive or demoralized staff also poses a great threat to the implementation of public projects in developing countries. A less measurable and tangible problem which can have serious implications for the delivery of public health projects is that of demoralized staff whose output is consequently lower than it should be. Low morale may arise from a variety of factors, including low pay or poor conditions of service relative to the same cadre in neighbouring organisation or community. It may also be due to low job-satisfaction, perhaps arising from a lack of adequate complementary resources, from poor equipment or from poor management style.

1. **Training**

Training is an important strategy in transferring technical knowledge into action on the ground. Adequate training probably contributes more than any other factor to the successful performance of public health projects. The training must be carefully planned and should be provided not only for public health personnel but for all stakeholders in the area who play a role in the implementation of the project. For example, during Ebola outbreak in 2014, World Health Organisation (WHO) trained more than 8,000 personnel who provided clinical care for Ebola patients; and many tens of thousands were trained in contact tracing, safe and dignified burial, social mobilization and risk communication. This was the first time that training became an important operational response activity.

All the said above suggests that lack of training in public health personnel and all other relevant stakeholders will hinder the successful implementation public health projects in the developing countries.

1. **Funding**

The basis for planning is the dilemma of scarce resources coupled with the vast health-care needs. While planning public health projects, the planner has the responsibility to look for means of increasing the resource base. For many developing countries the system of financing of health care is heavily dependent on tax revenues and in particular, on those accruing from trade through export and import duties. The following sets out a range of different pressures which may affect different public health projects.

Demographic changes

According to Green (1994: 103) demographic changes have 3 major effects on public health projects. Firstly, demographic changes may lead to variations in the size of the population covered. in most developing countries the population growth-rates are such that sharp increases in population are still occurring and often expressed through indicators such as population doubling time, which may be as short as 24 years in countries with a growth rate of 3 percent per annum. Such growth rates can cause tremendous strains on the provision of social services including health care

The other 2 factors relate to the composition of the population. The high growth rates have another important factor of that of converting the age structure to one with a high percentage of children. There are higher health service unit costs associated with the young and the old. The antenatal, obstetric, and under-five age groups are all relatively heavy users of health care, as are the elderly, with their higher incidence rates of chronic illness.

The third demographic factor relates to the relationship between economic producers and dependants in a country. if the ratio between dependants and producers rises, an increasing burden is placed on the producers to provide the means of funding public health projects. High dependant-producer ratios are found in developing countries with high rate growth rates, where commonly up to 45 percent of the population maybe less than 15 years old. It should of course be noted that in many societies children and the elderly have an important productive role. The situation is complicated further by the fact that for many developing countries there maybe extensive unemployment and under-employment, leading to even greater strain on the producers.

Recession

According to U.S National Bureau of Economic Research the recession began in December 2007 and ended in June 2009. The International Money Fund concluded that the overall impact was the severe collapse of the United States real-estate market. As a result, the income shocks experienced by poor households may have permanent consequences for the accumulation of human capital (education and health). Faced with severe, albeit temporary income shocks, and lacking adequate insurance or mechanism to compensate for loss of income, poor people pull their children out of school and send them to work. They rarely take their children to doctors. Temporary shocks can have devastating consequences on educational attainment and the health of the young in developing countries. given the magnitude of the current world crisis, one can venture to argue that the world is now seeing a massive increase in child labour in the developing world as well as resurgence in diseases that have hitherto been held in check.

Rising expectations

Green continues to maintain that a third broad pressure on health-care provision derives from arising expectations about potential of health care. In particular, pressure from middle classes to provide high technology medical care, similar to that of available in the industrialized world, is likely to grow as such groups are exposed to the levels of provision in other areas.

Disease-pattern changes

As income levels rise and basic health problems associated with absolute poverty become less significant, they are replaced by different disease patterns. Diseases of poverty are eventually overtaken by disease of affluence. The current major health problems of preventable diseases in developing countries are relatively cheap to deal with in comparison, for example, with the chronic health-care problems, such as cancer and age-related conditions, currently faced by the affluent and longer-living countries. Thus, as standards of living rise and morbidity patterns change, these changes are likely to have an effect on health care costs and public health projects are affected.

In conclusion regarding funding for public health projects, concerns about equity and cost escalation also play a major role in the implementation public health projects.

1. **Monitoring**

One of the functions of a planner during the implementation period is the overall monitoring of the activities. Monitoring is the process of observing whether an activity or a service is occurring as planned. It has become the practice for some large international NGOs to insist on the development of specific project units to monitor the implementation of specific projects. This vertical approach to project-monitoring has a number of serious drawbacks. Firstly, the dislocation of such implementation units from broader planning process can be very distorting. This is because planning and implementation should be seen as part of the process. Green (1994:287) maintains that planning that does not result into implementation is widely recognised to have failed, hence the failure of public health projects in developing world. Secondly, the development of project implementation units may serve the need of donor agencies well. They help to ensure that the needs completion of activities and the disbursement of funds occur as intended. However, when they are project specific, they are unlikely to develop a more sustained institutional basis for implementation within developing countries.

Green concludes by strongly suggesting that donor agencies need to take a longer-term and broader perspective on the need to develop institutional capacity to implement within developing countries and to design their project implementation accordingly.

Another important method of monitoring is through financial management systems. Financial monitoring can be used not only as a means of ensuring that budgets are adhered to, but also as an indicator of general public health project activity. However, in order to achieve the desired goal, international donors should be more concerned with outcome and not the expenditure. This is because due to developing countries’ political, economical etc climates may cause a delay even where activities have been well planned.

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2014 Lesotho Demographic and Health Survey

[www.wpro.who.int](http://www.wpro.who.int)

[www.afdb.org](http://www.afdb.org)

preventing disease, prolonging life and promoting health through organized efforts and informed choices of society and individuals