EDITORIAL

Communicable Infections in Pakistan: A Battle to Confront

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Faced with the double-disease burden, Pakistan's health system is simultaneously challenged by communicable and non-communicable diseases; about 40 % burden of disease in Pakistan constitutes communicable infections including tuberculosis, measles, pneumonitis, acute respiratory infections, diarrhea, malaria, gastrointestinal infections, viral hepatitis and acquired immune deficiency syndrome (HIV-AIDS). Pakistan is estimated to have fourth highest prevalence of multidrug-resistant tuberculosis (MDR-TB) worldwide whereas 1.5 million cases of malaria reported every year. The terrible situation of public health has been critically portrayed in the annual health report of the Pakistan Medical Association (PMA) for the year of 2011, which states; "Every minute one child dies from EPI (expended program on immunization) diseases, acute respiratory infection (ARI) and diarrhea".

Viral Hepatitis remains a serious threat to public health; because hepatitis is the leading source of acute as well as chronic liver diseases including cirrhosis and liver cancer. According to the Pakistan Medical Research Council's National Survey; prevalence rates of Hepatitis B (2.5%) and Hepatitis C (5%) have been identified in general public of Pakistan. Emerging communicable infectious diseases in our Pakistani population have demonstrated that we remain vulnerable to health threats, thousands of individuals are dying due to these potential threatening infections and this alarming situation needs to be addressed promptly to control the epidemics that hit population during previous years. Being a developing country, accurate identification of risk factors in our community and provision of basic health care service are solely blatant options to minimize social strain and to overcome deteriorating public health at this crucial stage.

Majority of health experts suggest that the concerned authorities should work out a strategy to minimize the burden of both communicable and non-communicable infectious diseases after proper assessment of the trends of health threats in our community. Rapid urbanization, environmental instability, poor socioeconomic conditions, food insufficiency, unhealthy life style, inadequacy to access safe drinking water, unavailibility of proper health care system and high illiteracy rates are the primary factors that reinforce the consequences of increasing number of infections. To eradicate potential health threats and to flourish the socio-economic conditions of the country, these factors should be considered seriously to meet public health challenges in present era.

According to health care professionals, these potential biological threats can be promulgated in following ways: i) i.e., from one person to another by means of direct or indirect contact ii) includes passing infection to next generation i.e., from parents to progeny. We can overcome the burden of disease in our community by avoiding exposure to communicable viral infections.

A person would more likely to develop a communicable infection after exposure to any infectious agent called susceptible host. Paramedical staffs, healthcare professionals, intravenous drug users (IDUs), commercial sex workers, pregnant women and new born babies are at higher risk of acquiring viral infections than the general population and due to lack of knowledge, they put their lives at risk. Factors that influence the susceptibility of a host to acquire a communicable infection are known as risk factors. The reasons for high prevalence of communicable infections are multifactorial risk factors like transfusion of unscreened blood products, use of unsterile/ used syringes, sharing razors during shaving or circumcision by barbers, tattooing or body piercing, sharing personal items of infected person and unhygienic life style. Marrying infected person could be predisposing risk factor for sexually transmitted diseases (STDs),

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plausibly infected mothers can pass the disease to their new-born child predominantly in most of the cases due to vertical transmission. Unprofessional clinical setup and use of contaminated equipment by professional doctors and quacks sitting at different localities are also the reason behind the increasing number of communicable infections including Hepatitis B and C, and AIDS. These infectious diseases can easily be avoided by taking simple preventive measures such as proper vaccination, early diagnosis and treatment strategies.

In Pakistan health care facilities are inadequate to address the need of the population, only 27% of population can avail health care facilities while 73% population are unable to get basic health care services. Significant efforts have been made for strengthening public health during the past decade however, despite many improvements public health surveillance capabilities remain confined and fragmented, due to limited resources and coverage.

Early diagnosis can prevent disease proliferation and help to eradicate potential health threats constantly being faced by our Pakistani population. Clinical laboratory diagnostics appear to be prominent and sustainable tools in investigation of diseases and improvement of public health. In our community, private sector hospitals and laboratories are providing advanced health care services and diagnostic facilities. However, major government setups seem reluctant to provide up-to-the-mark quality control health care services to facilitate the general public. In this modern era of genomics, the molecular diagnostics play an integral role in public health as this particular field deals with biochemical, cellular and molecular pathophysiology of human body and provides crucial information in significant alterations in human body that lead to severe diseases and also provides new insight and multi-dimensional approach to treat diseases. Molecular diagnostics give vast perception to clinical diagnostics by virtue of the techniques used in identifying alterations in human genomic DNA in the form of genetic mutations and over expression or depletion of certain protein and enzymes, moreover infectivity of viruses and bacteria can also be detected by quantifying their DNA or RNA levels in hosts for example Hepatitis B/C viral load and genotype through quantitative or qualitative Polymerase Chain Reaction (PCR), gene sequencing, fluorescence in-situ hybridization (FISH) techniques etc. These advancements provide potential benefits to patients in identifying a specific therapy and assessment of risk of developing a specific disease or other health condition. With the help of molecular techniques, diagnosis of a disease has become quite easy and results are much more reliable. Even before the symptoms appear, diseases can be diagnosed and properly treated.

Passing through the phase of epidemic transition, Pakistan is currently facing public health challenges associated with both communicable as well as non-communicable diseases. The public health circumstances in Pakistan are obnoxious, serious efforts are anticipated from the government and civil society to save thousands of lives who die every year from preventable diseases. Strengthening of public health sector can be achieved by tackling health care system and by creating knowledge about community diseases. Implementation of standardized health care management, establishment of proper laboratory setups including molecular diagnostics and acquisition of social awareness about health issues are needed to intervene on immediate basis to confront public health challenges that are growing in scope and complexity at national level.