

Editorial

Fighting Infections in Developing Countries by Cost-Affordable and Sustainable Means

In developing areas around the globe it is extremely hard for health related institutions and governments to implement prevention and treatment policies, to improve public health, due to poor economical resources and infrastructures; low awareness; inadequate personnel; high prevalence of parasites and pathogens with extreme infection burdens, as well as sociopolitical factors.

Central government programs essential for the improvement of the general public health are limited in developing countries. These include mass vaccination programs, which are cornerstones of primary health-care [1]; programs to reduce waterborne and water-associated vector-borne diseases [2]; routine surveillance activities [3,4]; regulation of pesticide usage (e.g. developing countries use only 20% of the world's agrochemicals, yet they suffer 99% of deaths from pesticide poisoning [5]); programs to reduce malnutrition [6]; programs to educate the public (e.g. use of condoms to reduce sexually transmitted diseases); and funding of medical care.

However, the high disease rate itself possesses a very significant economic burden on developing countries. This burden exacerbates the incapacity of the governments to address the critical need for better health care. For example, malaria alone costs sub-Saharan Africa US\$100 billion in lost annual gross domestic product (GDP) [1]. The combination of high infection rates together with poor public health care has become a vicious cycle that needs to be broken.

While in developed countries prevention and treatment modalities have significantly improved public health, the standard of living and life expectancy [1,7-9], this is not the case in developing countries, where the improvement of health care is multifaceted and extremely complicated. Assistance from world organizations together with the developed and affluent countries is essential. However, it has to be taken into consideration that solutions that have been successful in developed countries may not be appropriate for those that are developing. For example, vaccines that may confer protection against HIV-1 in Europe and USA, may fail to do so in Africa and other developing countries due to the significantly different pre-existing immune background of the population [10-12]. Another problem is the extremely high illiteracy and poverty rate that prevails in many rural areas in these countries. Thus, simple, cost affordable, wide spectrum, immediate and applicable means, which accommodate the particular constraints of developing countries, must be developed and applied in order to specifically and rapidly address key issues of public health in these volatile regions.

The current Hot Topic issue presents several cost-affordable and sustainable means that may help fight the high infections rates in developing countries. Doucoure and Farcy propose novel membrane systems that can be applied in small rural communities and remote areas in developing countries aimed at reducing water-borne diseases and pollutants. Borkow and Gabbay suggest the use of biocidal textiles in hospitals in order to reduce the high rates of nosocomial infections. Togo and his colleagues from a hospital in Bamako - Mali make a robust attempt to identify the causes of nosocomial infections in a developing country and recommend measures aimed at reducing these infections in hospital settings. Ole Skovmand discusses the use of insecticidal bednets for the fight against malaria in developing countries. Finally, Bentwich and colleagues present the hypothesis that the relatively straightforward treatment of helminthic parasites may have very wide ramifications in improving the treatment and prognosis of other diseases, and in enhancing the capacity to achieve effective immunization.

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