Editorial

Global Health and Translational Medicine: New Drivers for Medicine and Medical Sciences

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The term "Global Health" appears quite often in the academic publications and health practices recently. Global Health addresses the health issue of populations in a global context and transcends the perspectives and concerns of individual nations. Health problems that transcend national borders or have a global political and economic impact are emphasized. Global Health has been defined as "a combined area of study, research and practice that places a priority on improving health and achieving equity in health for all ethnic groups and each people worldwide" (Brown et al., 2006; Global Health Initiative, 2008; Beaglehole and Bonita, 2010). Global Health therefore, is the discipline regarding worldwide improvement of health, reduction of disparities, and protection against global threats that disregard national borders, and covers a research field of demography, economics, epidemiology, political economy and sociology (Macfarlane et al., 2008; Etches et al., 2006).

With an epidemiological perspective, global health identifies major global health problems, while with a medical perspective global health describes the pathology of major diseases, and promotes prevention, diagnosis, and treatment of these diseases. By an economic approach, global health emphasizes the cost-effectiveness and cost-benefit approaches for both individual and population health allocation. Aggregate analysis from the perspective of governments and non-governmental organizations focuses on analysis for the health sector, whereas individual health analysis focuses on the demand and supply of health. The demand for health care is derived from the general demand for health.

Analysis of global health hinges on how to measure health burden. Several measures exist in global health: 1) life expectancy is a statistical measure of the average life span (average length of survival) of a specified population. It most often refers to the expected age to be reached before death for a given human population (by nation, by current age, or by other demographic variables); 2) disability-adjusted life years (DALY) is a summary measure that combines the impact of illness, disability and mortality on population health; 3) quality-adjusted life years (QALYs) is a way of measuring disease burden, including both the quality and the quantity of life lived, as a means of quantifying in benefit of a medical intervention; 4) morbidity measures include incidence rate, prevalence and cumulative incidence. Incidence rate is the risk of developing some new conditions within a specified period of time (Etches et al., 2006; Laxminaraya et al., 2006; Bryce et al., 2005).

The other term "Translational Medicine" also attracts academic attention recently. Translational Medicine is the process which leads from evidence based medicine to sustainable solutions for public and individual health problems. Translational Medicine aims to improve the health and longevity of the world's populations and depends on building up multiple discipline teams of scientists and clinicians who are able to contribute their expertise to link basic scientific discoveries with the arena of clinical investigation, and translating the results of clinical trials into changes in clinical practice, informed by evidence from the nature, social and political sciences (Lean et al., 2008; Hiss, 2004; Marincola, 2003).

Translational Medicine research has three phases, i.e., phases I, II, III. Phase I is the research process that investigates and translates non-clinical research results into clinical applications and tests. The example is the concept arose from study into pharmacotherapy and formed the initial basis for evidence-based practice and clinical guidelines, now incorporated into Translational Medicine. In some cases Translational Medicine typically refers to the translation of non-human research finding, from the laboratory and from animal studies, into therapies for patients, the so called "bench to bedside, B to B". Phase II examines how findings from clinical science, shown to be efficacious and safe treatments established in phase I, function when they are applied in routine practice, addressing development and

application of new technologies in a patient driven environment, i.e., real patients in real-life situations where demographic factors and competing priorities modify clinical decisions, and treatment responses. Example of these is the cases studies traditionally dominated by randomized controlled trials. Phase III adds the necessary information to convert treatments and prevention strategies, shown to be effective and cost-effective in phase II, into sustainable solutions. Therefore governments can generate evidence-based policies. These require different types of research processes to evaluate the complex interacting environmental and policy measures that affect susceptibility to disease and the sustainability of clinical and public health management and prevention strategies. One of the examples of controlling of non-communicable diseases (NCD) is that the controlling the mounting prevalence of obesity and its secondary diseases will require new multi-component methods for effective treatments, based on randomized clinical trials and continuous improvements of community-based approaches, and also effective and sustainable approaches for prevention (Hiss, 2004; Marincola, 2003; Stacey et al.,2004; Woolf, 2008).

In this year's issues, JMMS would welcome reviews, meta analysis, clinical case reports, randomized clinical trials, clinical epidemiology, cohort study, research on NCDs, infectious disease control and immunization, and the application of the state of art technologies in clinical practices. JMMS looks forward to your contributions in reporting the enormous promise anticipated from the integration of molecular biology, cellular science, physiology, genetics, epigenetics, genomics (proteomics, glycomics, lipidomics) and public health, with genotype, inter-phenotype and phenotype investigations as new drivers for disease control and prevention, health and suboptimal health managements, and the attendant future directions and challenges in this hitherto new dimensions of Global Health and Translation Medicine (Ling et al., 2010; Yan et al., 2009; Yan et al.,2011; Zheng et al., 2010).

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