



Public Health Genetics – Challenging “Public Health at the Crossroads”

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Dear public health professionals,

Honestly, isn't it time to ask whether or not we are doing “the right things” in public health? Are our present public health strategies evidence-based? The public health agenda demands a vision that reaches beyond research to the application of public health and the determination of its impact. In this scenario what is the role of genomics?

In the past twenty years, advances in genome research have revolutionised what is known about the role of inheritance in health and disease.[1] Nowadays, we know that our DNA determines not only the cause of single-gene disorders, but also determines our predisposition to common diseases. Whereas medicine is currently undergoing extraordinary developments from its morphological and phenotype orientation to a molecular and genotype orientation, promoting the importance of prognosis and prediction, public health practice has to date concerned itself with environmental determinants of health and disease and has paid scant attention to genetic variations within the population. The advances brought about by genomics is changing these perceptions.[2,3] Many predict, that this knowledge will enable health promotion messages and disease prevention programmes to be specifically directed at susceptible individuals or at subgroups of the population, based on their genetic profile.[4,5] The new technologies will allow researchers to examine genetic mutations at the functional genomic unit level, and to better understand the significance of environmental factors such as noxious agents, nutrition and personal behaviour in relation to the causation of diseases such as cardiovascular diseases, psychiatric disorders and infectious diseases.

Obviously, the integration of genomics into public health research, policy and practice will be one of the most important future challenges that our health care systems will face. [6] Clarifying the general conditions under which genomic knowledge can be put to best practise in the field of public health,[7] paying particular consideration to the ethical, legal and social implications, is currently the most pressing task in the emerging field of public health genetics (PHG), which is defined as the application of genetic and molecular science to the promotion of health and disease prevention through the organised efforts of society.[8]

Policy-makers now have the opportunity to protect consumers, to monitor the implications of genomics for health, social, and environmental policy goals and to ensure that genomic advances will not only be used to treat medical conditions, but also to prevent disease and improve health.[9] Policy must find an acceptable balance between providing strong protection for individual interests, while at the same time, enabling society to benefit from the genomics.

The next decade will provide a window of opportunity to establish infrastructures, that will enable these scientific advances to be effectively and efficiently translated into socially acceptable evidence-based policies and interventions that improve population health.

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