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Personalized medicine - Is this the future of clinical medicine?

Vincent S. Gallicchio
Clemson University, USA

Abstract

Personalized medicine or **PM** is a medical model that proposes the customization of healthcare - with medical decisions, practices, and/or products being tailored to the individual patient. The use of genetic information has played a major role in certain aspects of personalized medicine, and the term was first coined in the context of genetics (though it has since broadened to encompass all sorts of personalization measures). To distinguish from the sense in which medicine has always been inherently "personal" to each patient, **PM** commonly denotes the use of some kind of technology or discovery enabling a level of personalization not previously feasible or practical. Advances in medical and human genetics have enabled a more detailed understanding of the impact of genetics in disease. Large collaborative research projects (for example, the Human genome project) have laid the groundwork for understanding the role of genes in normal human development and physiology, revealing single nucleotide polymorphisms (SNPs) account for some of the genetic variability between individuals). This information made possible the use of genome-wide association studies (GWAS) to examine genetic variation and thus understand the risk for many common diseases. A number of areas have emerged that have targeted personalized medicine. Such areas are: pharmacogenomics, proteomics and metabolomics. Cancer management identification for the presence of genes associated with the induction of a number of human cancers has grown in significance amplified recently with the actions taken in personal health by the actress Angelina Jolie. Personalized medicine has identified a number of notable concerns and opportunities. One such concern is the individual cost of personalized medicine to those individuals who do not have health care insurance. Legislation in the form of the Genomics and Personalized Medicine Act has been introduced in the Congress of the United States to address issues involving scientific barriers, adverse market pressures and regulatory obstacles. Finally, in order to educate future physicians the advent of personalized medicine is influencing medical education through the development of sub-specialties in personalized medicine at a growing number of medical schools in the United States.

Biography

Vincent S. Gallicchio has 42 years experience in academic medicine and research covering experimental hematology, immunology, and developmental therapeutics for human diseases such as AIDS and cancer. He has earned national and international respect and recognition for his efforts. In a first time study reporting on academic scholarly productivity in the Journal of Clinical Laboratory Science, Gallicchio was rated the number one academic biomedical laboratory science researcher in the United States. In addition to his passion for research, Gallicchio is equally passionate to teach, mentor and advise students. He has mentored many doctoral and post-doctoral students, dozens of master's level students and hundreds of undergraduate students both foreign and domestic, many of whom are now esteemed researchers themselves at institutions such as: Oxford University, Eastern Kentucky University, University of Cincinnati, University of Florida, University of Kentucky, University of Limpopo (South Africa), Jewish and Mercy Hospitals in Cincinnati and major pharmaceutical companies such as Procter & Gamble and Johnson & Johnson. As a board certified medical laboratory scientist by the American Society of Clinical Pathology (ASCP), Gallicchio also serves as the Clinical Laboratory Director of the Lab Tree Clinical Biochemical Research Laboratory in Greenville, SC. He also serves as a consultant to Minerals Resources International, Inc on matters related to the health benefits of trace elements; and is a consulting Vice-President of Technology Development for Conversion Laboratories, LLC, and West Columbia, SC. He has served on the faculty and academic staff at the Yale University School of Medicine, the University of Kentucky Medical Center, the University of Central Lancashire (England) and the University of Wolver hampton (England). He has served as President of Alpha Eta Honor Society, the International Society for Lithium Research, International Federation of Biomedical Laboratory Science and currently serves as Vice President of the Educational and Research Centers in Trace Elements program operated under the auspice of UNESCO.

vsgall@clemson.edu