

Title: Personalized and precision medicine as a Unique avenue to have the healthcare model Renewed to secure the national biosafety: To get Cancer treated or cured?**Sergey Suchkov^{1,2}, Hiroyuki Abe^{3,4}, Shawn Murphy^{5,6}, Noel Rose^{13,14}, William Thilly⁷, Joost Oppenheim⁸, Abner Notkins⁸**¹Sechenov University, Russia²A.I.Evdokimov Moscow State University of Medicine & Dentistry, Russia³Abe Cancer Clinic, Japan⁴ISPM, Japan⁵Partners Healthcare, USA⁶Harvard Medical School, USA, 7MIT, USA, 8National Institutes of Health, USA

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A new systems approach to diseased states and wellness result in a new branch in the healthcare services, namely, personalized and precision medicine (PPM). Personalized & Precision Oncology (PPO) is an innovative approach to cancer management that ensures your treatment is specifically designed and targeted to your unique form of cancer. The latter are both the science of using each patient's individual genomic landscapes – the genes that are mutated, causing the cancer to grow – to create a biomarker-based targeted therapy protocol.

To achieve the implementation of PPM and PPO concept, it is necessary to create a fundamentally new strategy based upon the recognition of biomarkers long before the disease clinically manifests itself. And personalized tumor molecular profiles (uniting genomic and phenotypic ones), tumor disease site and other patient characteristics are then potentially used for determining optimum individualized (preventive, prophylactic, canonical and rehabilitative) therapy options to be tailored and applied for.

Each decision-maker values the impact of their decision to use PPM/PPO on their own budget and well-being, which may not necessarily be optimal for society as a whole. It would be extremely useful to compile and integrate available scientific knowledge on cancer-associated abnormal genes and gene products and their implications for cancer therapy, and thus data harvesting from different databanks for applications such as prediction and personalization of further treatment to thus provide more tailored measures for the patients resulting in improved patient outcomes, reduced adverse events, and more cost effective use of the latest health care resources including diagnostic (companion ones), preventive and therapeutic (targeted molecular and cellular) etc. The latter requires the incorporation of information from multiple data sources, linking the functional effects of altered genes to potential therapy options into a central repository that can be easily accessed, interpreted, and utilized by physicians and patients. This complex and unique process provides a thorough and fairly exhaustive resource for physicians and patients to use as a PPM-

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based cancer therapy option that is designed to be highly clinically applicable.

PPM/PPO are most likely to play a great role in cancer management and treatment. And we are entering an era of rapidly evolving transformation in cancer research as it relates to medical practice, and a shifting paradigm of standardized health care in which detailed genetic and molecular information regarding a patient's cancer is being used for PPM/PPM-based treatments. Meanwhile, a lack of the medical guidelines has been identified by the majority of responders as the predominant barrier for adoption, indicating a need for the development of best practices and guidelines to support the implementation of PPM/PPO! So, coordination of all health care stakeholders has become more important than ever to unite oncologists, pathologists, and payers to work with Big Pharma and Biotech to develop products, services, and coverage policies that would improve patient outcomes and lower overall health care costs for institutions that put personalized regimens in place. This is the reason for developing global scientific, clinical, social, and educational projects in the area of PPM/PPO to elicit the content of the new branch and to stress the impact and benefits of the latter.

Biography

Sergey Suchkov was born in the City of Astrakhan, Russia, in a family of dynasty medical doctors. In 1980, graduated from Astrakhan State Medical University and was awarded with MD. In 1985, Suchkov maintained his PhD as a PhD student of the I.M. Sechenov Moscow Medical Academy and Institute of Medical Enzymology. In 2001, Suchkov maintained his Doctor Degree at the National Institute of Immunology, Russia.