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### **Personalized and Precision Medicine (PPM) as a unique avenue to have the healthcare model renewed to secure the National Biosafety: The role of surgeons in shaping the future of ppm in surgery**

#### **Abstract:**

A new systems approach to diseased states and wellness result in a new branch in the healthcare services, namely, personalized and precision medicine (PPM). The latter is a radically new trend which utilizes each patient's individual genomic landscapes to create a biomarker-based targeted therapy and rehabilitative protocol. To achieve the implementation of PPM concept into the daily clinical and post-operative rehabilitation-related practice, it is necessary to create a fundamentally new strategy making precision surgery (PS) and PS-associated personalized rehabilitation (PR) (PS-PR) as a new approach to health care that customizing patients' medical treatment according to their own genetic information. This new combinatorial and evidence-based approach is the result of increased knowledge of the human genome and phenome and ways this information can be applied by surgeons and physicians in the medical and surgical management of their patients. In this sense, a patient's genotype can yield important information concerning disease systems-related susceptibility and the effectiveness of medications, therefore guiding specific, targeted imaging, treatment and rehabilitative therapies. In this sense, identifying drug-response phenotypes by examining interactions between phenotypes and sepsis therapies is a priority to optimize clinical trials. Adaptive trials (response-adaptive randomization) should be performed if endophenotypes are not available or when multiple endophenotypes (identified by measuring OMICS markers) are present. Use of electronic health records should be explored to identify such endophenotypes, whose replication in multiple datasets require big data with harmonization across multiple sites to determine the robustness of such endophenotypes for sepsis prognosis. The remarkable progress in the field of sepsis and its complications can be attributed to the latest advances in OMIC-technologies and sepsis modeling, together with a better understanding of the immunopathology, biology and epidemiology of sepsis syndrome. Experimental models of sepsis can provide a clear understanding the pathophysiology of sepsis and confirm its evolution to septic shock.

## 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. From 1989 through 1995, Dr Suchkov was being a Head of the Lab of Clinical Immunology, Helmholtz Eye Research Institute in Moscow. From 1995 through 2004 - a Chair of the Dept for Clinical Immunology, Moscow Clinical Research Institute (MONIKI). In 1993-1996, Dr Suchkov was a Secretary-in-Chief of the Editorial Board, Biomedical Science, an international journal published jointly by the USSR Academy of Sciences and the Royal Society of Chemistry, UK.