

# Establishment of the Hellenic Precision Medicine Network on cancer: an alliance of scientific organizations against cancer



**TYPE STATUS** A fully implemented initiative of 13 organizations and 4 units of precision medicine **LAST UPDATE** September 2021 **GREECE • NATIONAL** Diagnostic and treatment • Precision medicine

## PROBLEM & OBJECTIVE

**PROBLEM** The recent development of large-scale biologic databases (such as the human genome sequence), powerful methods for characterizing human diseases and computational tools for analyzing large sets of data has enabled precision medicine – prevention and treatment strategies to take individual variability into account in the field of cancer control. Precision medicine refers to a medical approach that uses individual genotypes and phenotypes for tailoring the right therapeutic strategy to the right person at the right time, thus providing a therapy adjusted to the genetic profile of each patient and relieving the health system from unnecessary costs.

**OBJECTIVE** HNPMs (Hellenic Network of Precision Medicine on Cancer) mission is to connect the Network with the National Health System, to provide high-quality healthcare to Greek citizens at no cost, to enrich diagnosis knowledge and prediction outcome and to improve the targeted therapeutic treatment of cancer patients.

## CONTACT

Hellenic Network of Precision Medicine on Cancer

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## KEY COMPONENTS / STEPS

- HNPM is administered by a Scientific and a Technical Committee, with members distinguished scientists and health professionals from renowned academic and scientific organizations and institutions (Centre for Research and Technology-Hellas (CERTH), National Centre of Scientific Research "Demokritos", Biomedical Research Foundation of the Academy of Athens (BRFAA), Foundation for Research and Technology-Hellas (FORTH), National Hellenic Research Foundation (NHRF), Biomedical Sciences Research Center "Alexander Fleming", Medical School of the University of Crete, "ATHENA" Research Center, Hellenic Pasteur Institute (HPI), First Department of Pathology- Medical School of the National and Kapodistrian University of Athens, School of Medicine- Aristotle University of Thessaloniki, Hematology Department and HCT Unit- G. Papanikolaou General Hospital of Thessaloniki, Hematologic Research Lab of the First Internal Medicine and Special Nephrology Training Department-Medical School of the National and Kapodistrian University of Athens).
- HNPM relies on an informatics and a biobanks infrastructure. E-Infrastructure offers services for the management, synchronization, formatting and enrichment of the bioinformatics data that will be produced by the four Precision Medicine Units (PMUs) and will support two basic types of Precision Medicine (PM) workflows: diagnostic workflows and knowledge-discovery workflows. The participating entities responsible for informatics infrastructure are "ATHENA" Research Center, National Centre of Scientific Research "Demokritos", Foundation for Research and Technology, Hellenic Pasteur Institute and Institute of Applied Biosciences-Centre for Research and Technology Hellas. The infrastructure uses knowledge-discovery workflows for the analysis of bioinformatics data and Big Data Healthcare Analytics platform that will support fundamental changes to the way bioinformatics data is collected and analyzed, leading to changes in the way bioinformatics research is performed.
- The biobanks infrastructure enable the recording of the existing biobanks, which consist of a number of patient groups with fully defined clinical characteristics, as well as the homogenization of their operational procedures. Its operation is coordinated by the First Department of Pathology-School of Medicine, National and Kapodistrian University of Athens and the Biomedical Research Foundation of Athens Academy, all of which together form the BBMRI-GR network – an official member of the BBMRI-ERIC Pan-European Biobanks Infrastructure.
- Oncologists, hematologists and pathologists may request examinations at HNPMs units. The treating doctor is responsible for the examination referral based on the clinical indications assessment and for sending the sample(s) to the respective HNPM unit.
- The diagnostics provided by the HPMN account for all necessary biomarkers for the three major categories of cancers covered by the network (hematologic malignancies, solid tumors and hereditary cancers).
- Besides providing health services to cancer patients, HNPM promotes cancer research in the fields of genetic, basic and translational research facilitated by the large amount of data collected from HNPMs units.
- HPMN conforms to ISO15189 and ISO27001 standards.

## KEY CONTEXTUAL FACTORS

- HNPM stemmed from the need to provide patients and citizens access to high-quality, high-end technology diagnostics and treatment for cancer through an alliance of scientific organizations around Greece. This synergy of researchers from different organizations and fields, apart from the benefit for citizens by the application of scientific knowledge and results into daily life, has also benefited the technological/research evolution as well. From May 2018 till October 2020, HNPM has benefited 2,860 cancer patients and has cooperated with 320 doctors around Greece.

## MAIN IMPACTS / ADDED VALUE

- HNPM stemmed from the need to provide patients and citizens access to high-quality, high-end technology diagnostics and treatment for cancer through an alliance of scientific organizations around Greece. This synergy of researchers from different organizations and fields, apart from the benefit for citizens by the application of scientific knowledge and results into daily life, has also benefited the technological/research evolution as well. From May 2018 till October 2020, HNPM has benefited 2,860 cancer patients and has cooperated with 320 doctors around Greece.

## LESSONS LEARNED

- The adoption of a national cancer strategy and the provision of high-quality diagnostics and treatment rely on synergies and networks.
- HNPM has networked academic institutions with national healthcare facilities in order to improve the quality of healthcare services for cancer patients by using individual genotypes and phenotypes for tailoring the right therapeutic strategy to the right person at the right time.

## REFERENCES & DOCUMENTATION

- HNPM
- Biomarkers available for subscription (greek)

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