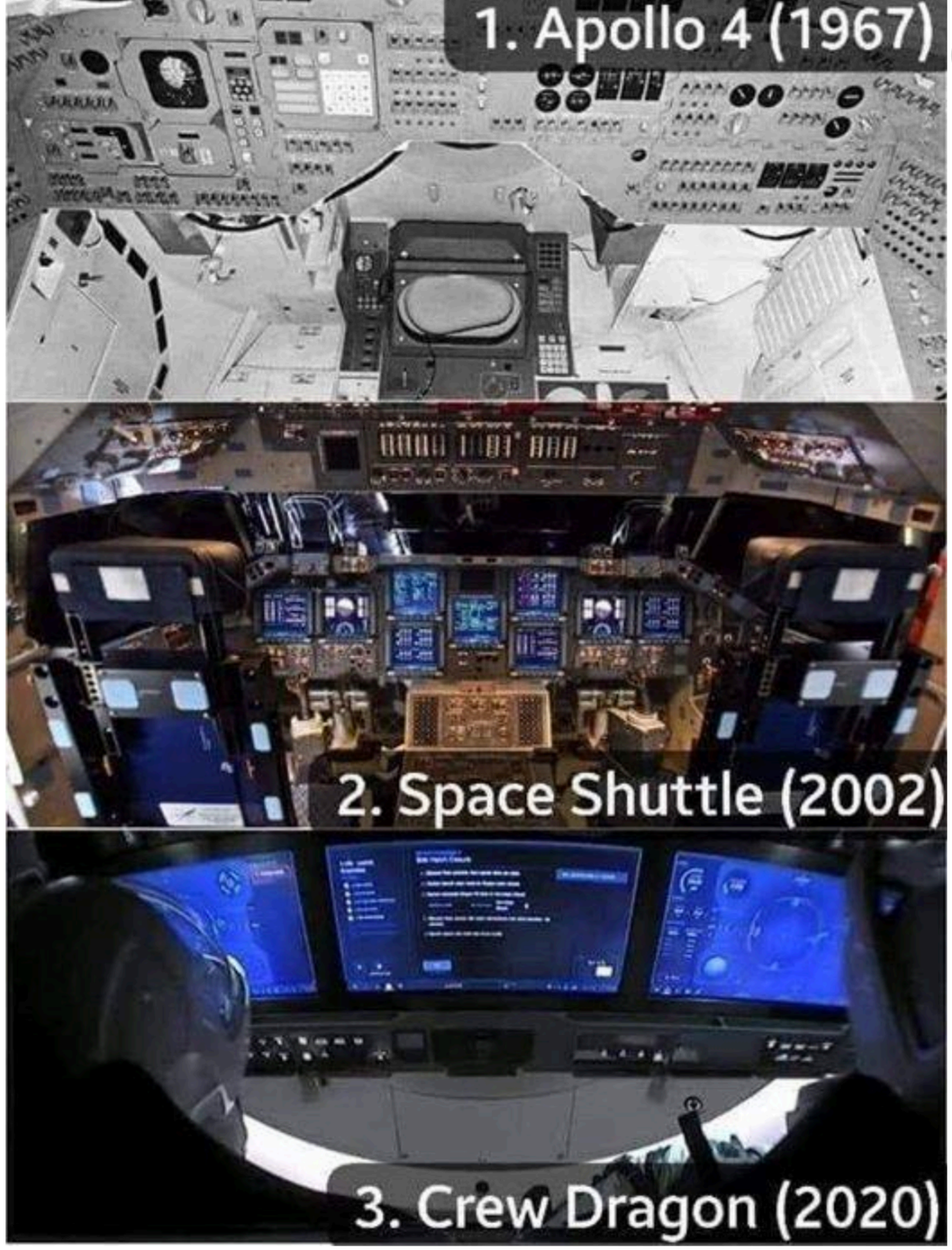
Implementation of Personalised Medicine at Regional level

Marius Geanta, MD

President Centre for Innovation in Medicine

Trevor Mahlmann
TREVOR MAHLMANN



1971 National Cancer Act

2003 Human Genome Project

2020 Personalised / Genomic medicine

2016 - First Personalised Medicine Conference

Personalised Medicine - A medical model using characterization of individuals' phenotypes and genotypes (e.g. molecular profiling, medical imaging, lifestyle data) for tailoring the right therapeutic strategy for the right person at the right time, and/or to *determine the predisposition to disease and/or to deliver timely and targeted prevention.*

CENTRE FOR INNOVATION IN MEDICINE

COMMUNICATION

RaportuldeGarda.ro

EDUCATION

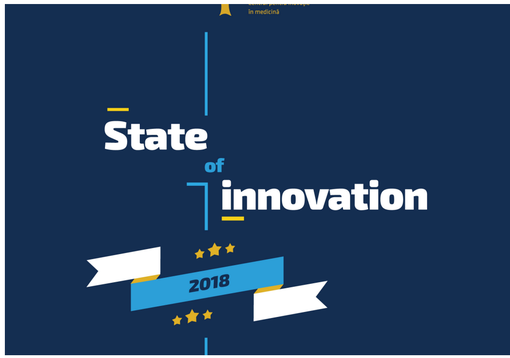
InoMedia Academy
EAPM Summer School
PHC Academy

POLICY

State of Innovation
Science meets Politicians

RESEARCH

Attitudes and perceptions
IT Future of Cancer
PECAN
UNCAN.eu



InoMed
Centrul pentru inovație în medicină

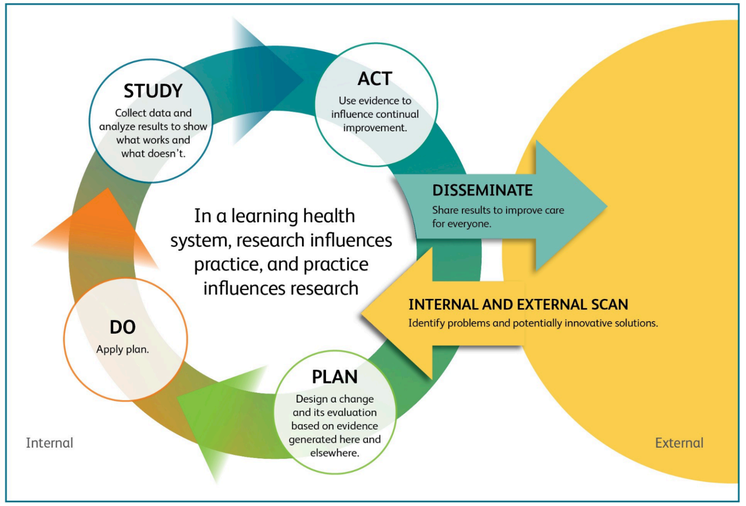
OUR VISION FOR CANCER IN EUROPE

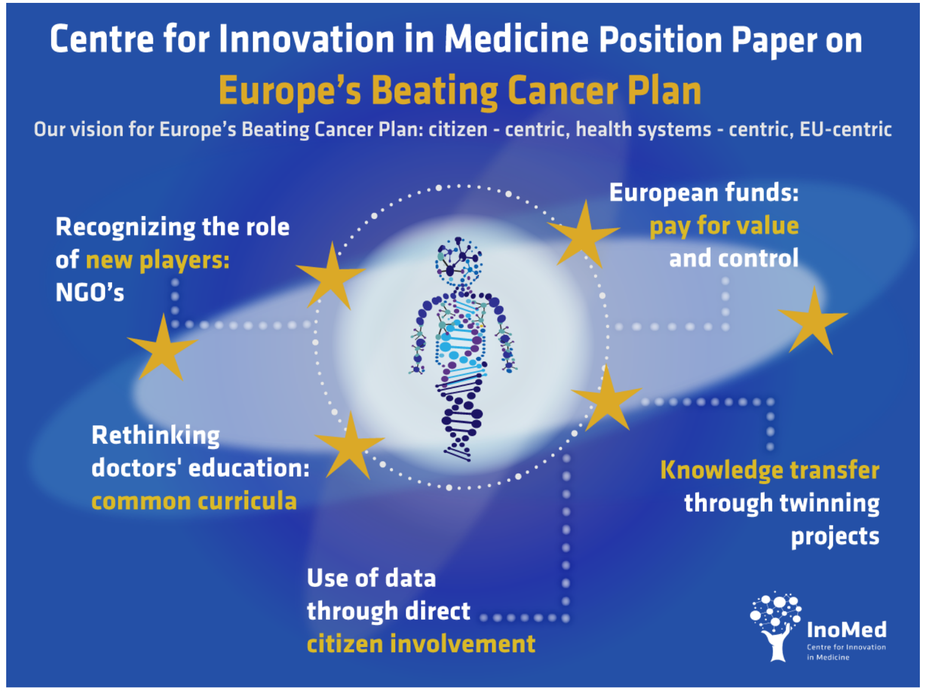
InoMed
Centre for Innovation in Medicine

romania2019.eu

A new vision for cancer in European Union. Data, technology and human touch

Position Paper
Published by Centre for Innovation in Medicine in the context of Romanian Presidency of Council of European Union



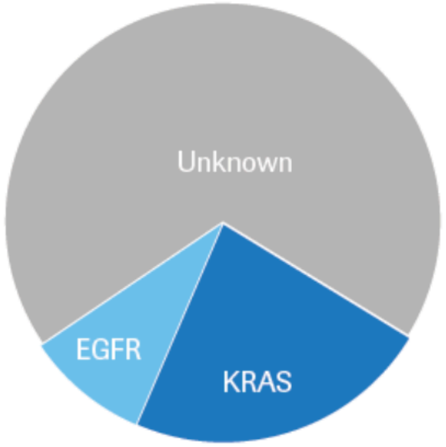


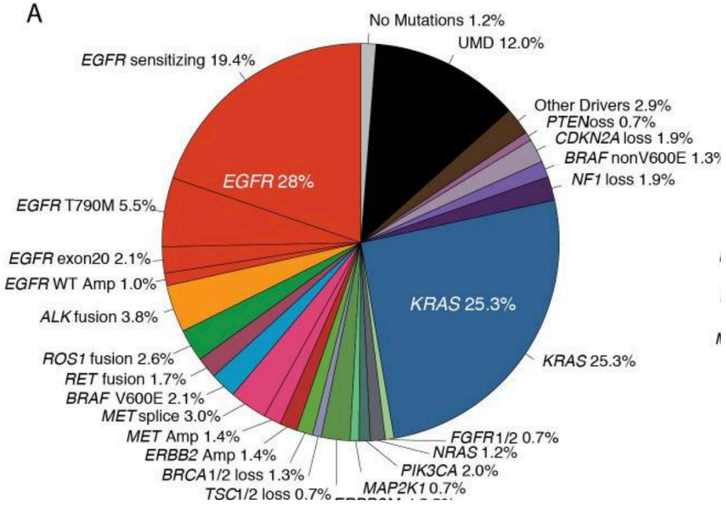
January 2022 - Launch of the Romanian NCCP

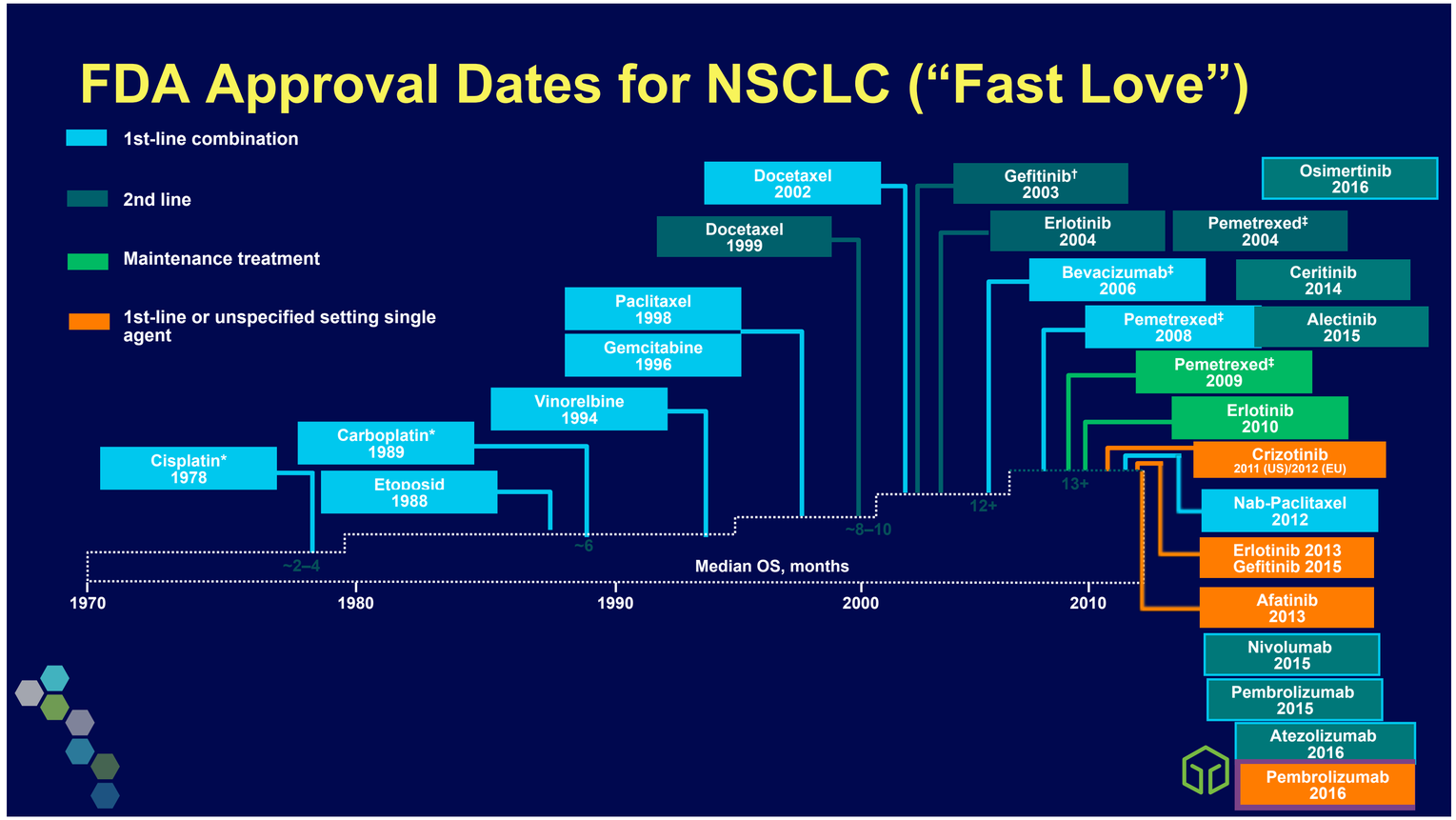
Romanian NCCP

- To be approved in 2022 by Romanian Parliament
- Links with BECA and Cancer Mission
- Personalised Medicine key transversal theme of Romanian NCCP
- Biomarker testing program in place in 2023

The case of NSCLC







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Centrul pentru inovație în medicină

February 2022

Economic Impact of Biomarker Testing for Lung Cancer Patients in Romania

Socio-economic benefit of reflex biomarker testing in NSCLC

Only the diagnostic period for lung cancer patients brings about approximately 71 mil. EUR loss in productivity and forgone fiscal revenues. If the current average 6 months period of delay between f irst symptoms and diagnostic would be reduced to the best practice of 2 months,5 these losses would be reduced by three-fold. At current prices, the annual average annual budgetary cost for biomarker testing in the case of non-small lung cancer patients is about 9 mil. EUR.

EXECUTIVE SUMMARY

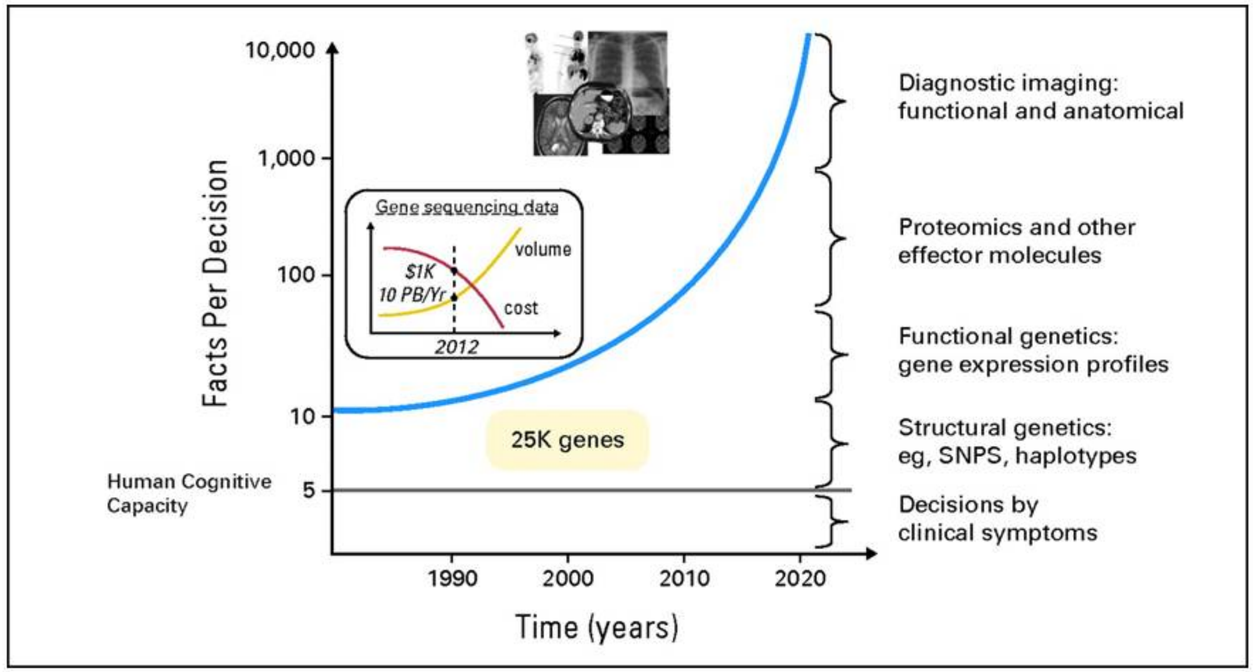
Cancer prevalence is quickly becoming not only a health, but also a major economic vulnerability in Romania. Not only there is a constantly growing prevalence of cancer like everywhere in the world, but also a skewed prevalence in the active age population group—up to three times higher than in the EU for certain cancer pathologies.

Healthcare programs and interventions should be regarded as an investment in the key productivity component in Romania: its labour force. With much larger cancer prevalence in working age population then elsewhere in Europe, it is important to deliver more effective procedures for early diagnostic and better treatment. Even in the case of advanced lung cancer patients, better diagnostic measures such as precision diagnostic treatment (PDT) can have an important positive economic impact, beyond the obvious gains in quality-adjusted life years (QALYs).

As opposed to other cost-effectiveness assessment of spending, our method looks at value lost in the national economy by not spending on certain healthcare interventions or programs. Public expenditures for better diagnostic and treatment could diminish the very large losses we currently register in the national gross value added (GVA) due to cancer prevalence, especially amongst the 6 months delays from first symptoms to diagnostic. This affects severely the treatment chances and quality of life of patients, but also creates an unjust burden of uncertainty and logistical effort for patients and their caretakers during the diagnostic period. Non-small-cell lung cancer (NSCLC) represents 85% of total lung cancer new patients in Romania. In the case of advanced non-small-cell lung cancer (NSCLC) new standards of care with regards to diagnostic include the recommended testing for EGFR, ALK, ROS1, BRAF, NTRK, PDL-1, according to ESMO Guideline,[3] before initiating any treatment (i.e., chemotherapy, targeted therapies, immunotherapies). Reflex testing rather than waiting for a physician order can reduce the time to initiating treatment.[4]

Our estimates show that on average, the total gross-value added lost in the Romanian economy related to lung cancer prevalence in the next decade is estimated at 177 mil. EUR per year. For the entire modelled period of 2020-2038, the negative economic impact in the labour market of lung cancer prevalence is estimated at 2.49 billion EUR (present value). Additionally, over 100 mil. EUR will be lost in the same period due to the productivity loss of caregivers that spend their time with family member or friends in the diagnostic and treatment procedures. While smaller

Increase in data required for medical decision making relative to human cognitive capacity



Abernethy A P et al. JCO 2010;28:4268-4274

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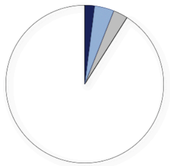
JOURNAL OF CLINICAL ONCOLOGY

Single marker

~1 - 5 Genes

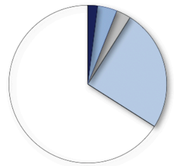
Cancer panel



~10 - 300 Genes

Companion diagnostics
Clinical routine

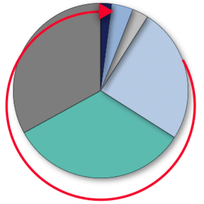
Whole-exome



tumor exome
~21,000 Genes

advanced diagnostics

Comprehensive molecular analysis



tumor exome
~21,000 Genes

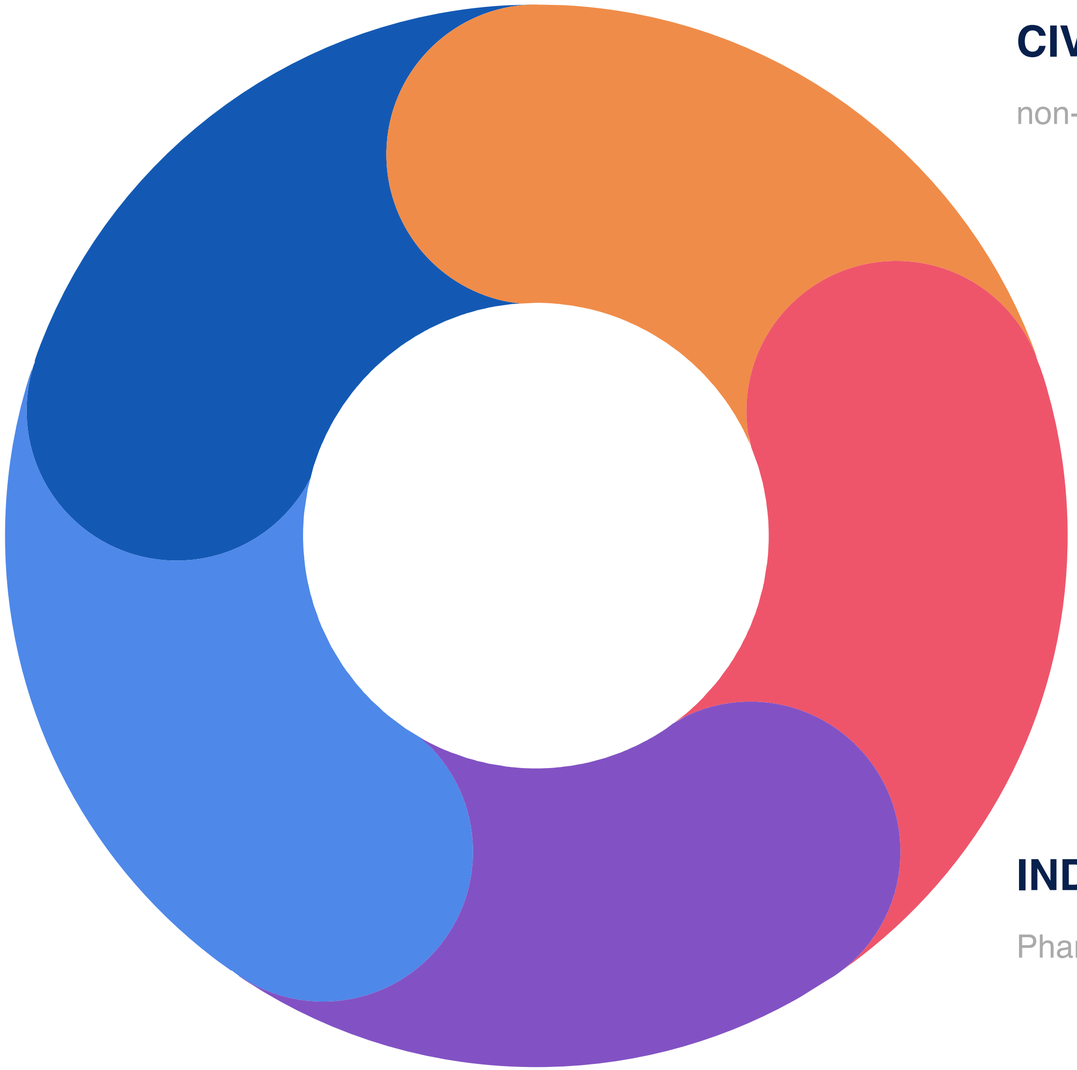
tumor transcriptome
~21,000 Genes

blood exome
~21,000 Genes

whole genome,
Digital karyotype

CANCER MISSION ROMANIA

STAKEHOLDERS MAP



CIVIL SOCIETY

non-governmental organisations

DECISION MAKERS

Presidential Administration, Parliament, MoH, NHIH, MIPE, MCID

MEDICAL PROFESSIONALS

oncology-focused professional societies

ACADEMIA

Universities, Research Institutes

INDUSTRY

Pharma, Diagnostic, Tech

Secretariat: Centre for Innovation in Medicine (pro bono)

ReThink Health

PODCAST OPINIONS INNOVATION NEW NORMAL PUBLICATIONS EUROPE PROJECTS

HEALTH. PANDEMIC. WAR.

How do we build forward better?

with Richard Sullivan

Thank you for you attention

marius.geanta@ino-med.ro