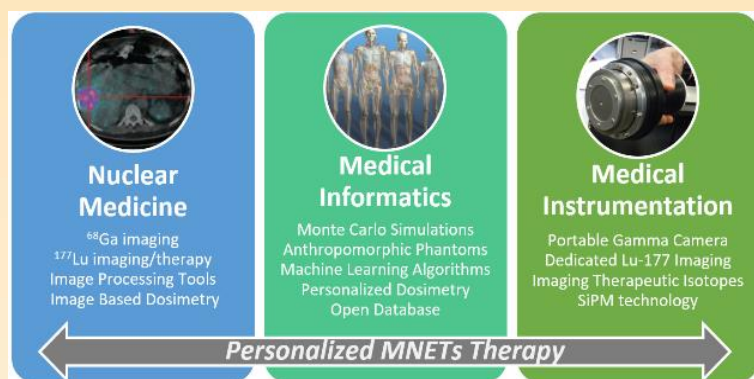


Personalized Optimization of Prognostic and therapeutic protocols with Lu-177 for MNETs, through the development of advanced computational tools and a portable detection sYstEm

POPEYE project uses advanced computational tools for the optimization of midgut neuroendocrine tumors (MNETs) treatment, towards the personalization of ^{177}Lu therapeutic protocols. MNETs constitute the largest group of gastrointestinal NETs and they are the second most-common small bowel malignancy. Establishing prognosis and guiding patients about the most appropriate course of therapy are both challenging. An interdisciplinary approach exploits established tools and novel developments to increase the early, effective diagnosis and the efficacy of ^{177}Lu radionuclide therapy.



METHODOLOGY & WORKFLOW

POPEYE aims to address state-of-the-art challenges by:

1. using pre-treatment datasets for improving patients' selectivity based on radiomics extraction
2. developing image processing algorithms using Machine Learning (ML) techniques for improving accuracy in diagnostic data
3. optimizing the treatment plans of each individual patient, exploiting Monte Carlo (MC) simulations for accurate dosimetry assessment
4. developing a novel portable gamma camera, allowing bedside whole-body patient imaging
5. evaluating the developed open-software tools in clinical environment
6. applying socio-economic research to optimize the impact of the project results in European health care system.

