

Press release

## PANCAIM: A European consortium to improve pancreatic cancer treatment with artificial intelligence optimizing, integrating genomics and medical imaging

**Nijmegen, March 5, 2021:** Pancreatic cancer is often quickly fatal, and the incidence is rising. These cancer patients face the lowest survival of all cancers in Europe (median survival time 4.6 months). Europe has the highest incidence of pancreatic cancer, with 150 000 new cases in 2018 and 95 000 deaths/year and worldwide, half a million deaths. The trend is that it will soon become the second leading cause of cancer-related death in Western societies. Potential new treatments are emerging, but the main challenge is to select the right drug for an individual patient. Novel immunotherapeutic drugs specifically target tumors with a particular genomic profile. However, pancreas patients with tumors with a similar genotype still show a wide range of disease patterns, i.e., differ in phenotype. Pathology and radiology are already in use to assess phenotype but lack genotyping. Research in genomics, pathomics, and radiomics is scattered and limited and does not yet impact pancreas cancer healthcare. Novel genomics technologies such as next-generation whole-genome sequencing (WGS) and liquid biopsy (ctDNA) are emerging but not yet routinely used in PDAC diagnosis. Pancreas cancer treatment can be improved by an integrated, evidence-based approach.

PANCAIM will optimize and integrate genomics and imaging phenomics using artificial intelligence (AI). Firstly, to help generate breakthrough knowledge to increase understanding of pancreas cancer biology. Secondly, to develop trusted, impactful AI applications for regular clinical use. The aim is to help clinical decision-makers to give the right treatment to the right patients at the right time. The aimed effect is to improve treatment outcomes of pancreas cancer patients avoiding the current costly trial-and-error use of expensive drugs with strong side-effects. Artificial Intelligence (AI) is currently transforming the field of healthcare. Worldwide interest in AI is high and snowballing, fuelled by the availability of large digital datasets (“big data”). AI is the current most promising technology to integrate and optimize evidence-based decision tools.



PANCAIM enabled PDAC precision oncology



PANCAiM builds on four key concepts of AI in Healthcare: clinical expertise and high amounts of carefully documented data, AI experts, and MedTech companies to collect the data and bring AI to healthcare. Six top-expert clinical partners provide eleven Pan European repositories of almost 6000 patients open to ongoing accrual. These clinical centers treat more than 2,000 PDAC cases each year. SME Collective Minds builds a trusted, GDPR-compliant platform connecting to clinical centers and hosting the research AI. SME TheHyve builds tooling to connect to worldwide genomic repositories (EOSC Health) and help scientifically explore the data. Three partners provide expertise in AI healthcare across all the clinical modalities involved. Finally, Siemens Healthineers provides their AI expertise and clinical tooling to bring PANCAiM solutions into healthcare. These tools will be clinical validation and ready for swift clinical integration in 3000 health care institutes.

*Project consortium:*



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