# IMPACT SUCCESS STORIES

HNN 3.0
HEALTH-NCP-NET

> LUCIA aims to constitute a toolbox for discovering and understanding new risk factors that contribute to lung cancer development.
>
> The toolbox encompasses the analysis of three complementary aspects that feed into each other: personal risk factors, external risk factors and the cellular processes.

LUCIA


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**1. Describe your project through three key words / key phrases that identify it.**

Lung Cancer; Risk Factor; Early Detection; Screening; Personalized Prevention; Artificial Intelligence (AI); Biomarkers; Sensors; Omics; Public Health.

**2. In terms of impact, what are the most concrete results your project has or will achieve?**

Here are four of the most significant and multifaceted impact LUCIA project is poised to achieve in the fight against lung cancer, ultimately leading to improved patient care, enhanced public health policies, and a better understanding of the disease:

1. **Enhanced Early Detection and Screening Protocols:** The project aims to develop advanced screening methods and risk assessment tools that significantly improve early detection rates of lung cancer, particularly in high-risk populations such as smokers, individuals with a family history of lung cancer, and those exposed to environmental carcinogens. By utilizing innovative technologies like Low-Dose Computed Tomography (LDCT) and wearable sensors, combined with a comprehensive understanding of risk factors, the project will enable healthcare providers to identify lung cancer at its earliest and most treatable stages. This proactive approach is expected to lead to better patient outcomes, reducing the incidence of late-stage diagnoses and the associated high mortality rates of lung cancer.
2. **Identification of Novel Biomarkers and AI Integration:** The project will focus on the discovery and validation of new biomarkers for lung cancer, which are critical for developing non-invasive screening techniques. By employing cutting-edge technologies such as multi-omics analysis and AI-driven models, the project will enhance diagnostic accuracy and facilitate personalized treatment strategies tailored to individual patients' profiles. This integration of AI will allow for more precise risk stratification, enabling healthcare providers to prioritize screening efforts and interventions for those at the highest risk, thereby optimizing resource allocation in healthcare settings.
3. **Informed Public Health Policies and Awareness:** One of the key outcomes of the project will be the creation of evidence-based public health guidelines aimed at promoting lung cancer prevention and early detection strategies. The insights gained from the research will inform policymakers about effective screening protocols and risk factor management, leading to the development of targeted public health campaigns. Additionally, the project will increase awareness of lung cancer risk factors among healthcare providers and the general public, emphasizing the importance of early screening, especially for populations traditionally overlooked, such as never smokers and younger individuals. This heightened awareness is expected to drive community engagement and encourage preventive health behaviors.

4. **Strengthened Collaboration and Data Collection:** The project aims to establish strong partnerships among various stakeholders, including academic institutions, healthcare providers, policymakers, and patient advocacy groups. By fostering collaboration, the project will create a unified approach to lung cancer research and management. Furthermore, the establishment of a comprehensive database will enable the collection and integration of longitudinal data, which is essential for ongoing research into lung cancer risk factors and disease progression. This data will not only support future advancements in lung cancer management but also provide valuable insights that can be applied to refine screening protocols and improve overall public health strategies.

## 3. Please describe your project overall impact at the European level

The project's impact at the European level encompasses improved public health outcomes, standardized practices, integration of innovative technologies, strengthened collaboration, enhanced awareness, and informed policy recommendations. Collectively, these outcomes will contribute to a more effective and equitable approach to lung cancer management across Europe, ultimately saving lives and improving the overall health of the population. More specific impact include:

**Improved Public Health Outcomes:** By enhancing early detection and screening protocols for lung cancer across Europe, the project is poised to significantly reduce mortality rates associated with this disease. Implementing evidence-based public health policies and targeted screening programs will lead to earlier diagnoses, improving survival rates and quality of life for patients. This proactive approach can also alleviate the healthcare burden on national health systems, fostering a healthier population.

**Standardization of Screening Practices:** The project aims to establish standardized screening protocols and risk assessment tools that can be implemented across various European countries. By harmonizing approaches to lung cancer screening and prevention, the project will facilitate collaboration and knowledge-sharing among EU member states, enabling a cohesive response to lung cancer as a public health challenge. This standardization can also help ensure equitable access to screening and treatment across different regions.

**Integration of Innovative Technologies:** The project will drive the adoption of innovative technologies, such as AI-driven models and novel biomarker identification methods, within healthcare systems across Europe. By promoting the integration of advanced diagnostic tools and personalized treatment strategies, the project will enhance the overall efficiency and effectiveness of lung cancer management. This technological advancement can also set a precedent for incorporating cutting-edge innovations in other areas of healthcare.

**Strengthened Research Collaboration:** The establishment of partnerships among various stakeholders—including academic institutions, healthcare providers, policymakers, and patient advocacy groups—will foster a collaborative research environment across Europe. This network will enhance the sharing of data, resources, and best practices, ultimately contributing to a more robust understanding of lung cancer and its risk factors. Collaborative research efforts can also lead to increased funding opportunities and support for future projects.

**Enhanced Awareness and Education:** The project will play a crucial role in raising awareness of lung cancer risk factors and the importance of early screening at the European level. By engaging healthcare providers, policymakers, and the public, the project will promote education about lung cancer prevention strategies. This increased awareness can lead to behavioral changes and greater community involvement in health initiatives, ultimately reducing the incidence of lung cancer.

**Policy Recommendations and Health Equity:** Through its findings, the project will inform policymakers about effective lung cancer prevention and management strategies, contributing to the development of comprehensive health policies across Europe. By addressing disparities in access to screening and treatment, the project aims to promote health equity, ensuring that all individuals, regardless of their socio-economic status or geographical location, have access to effective lung cancer prevention and care.

## 4. As an applicant, what advice would you have wanted in the Horizon project design process? What support did you receive from National Contact point (NCP) and your organisation, and what improvement of support would you benefit from?

During the Horizon project design process, I would have greatly valued access to feedback mechanisms, such as mock evaluations by experienced project coordinators or evaluators. This support could significantly strengthen proposals by identifying gaps early in the process. The assistance I received from the National Contact Point (NCP) included guidance on eligibility criteria, funding opportunities, and access to resources through informative webinars. My organization also facilitated internal workshops to familiarize team members with Horizon Europe requirements and project management principles, providing vital administrative resources for budget preparation and compliance. However, an area for improvement would be enhanced communication channels. Streamlining communication between applicants, NCPs, and organizational support staff could increase efficiency in the design process. Regular updates and open lines of communication would help clarify doubts and provide timely assistance, ultimately leading to stronger project proposals.

## 5. Projects strengths that are considered important and may serve as good practices for other applicants

The strengths of my Horizon project that stand out as good practices for other applicants include a strong emphasis on multidisciplinary collaboration, robust stakeholder engagement, the establishment of clear impact pathways, and the value of clusters that include several consortia with similar themes or missions. Firstly, fostering collaboration among diverse stakeholders, such as academic institutions, healthcare providers, industry partners, and patient advocacy groups, has enriched the project by incorporating various perspectives and expertise. This multidisciplinary approach enhances the quality of research and innovation, leading to more comprehensive solutions. Secondly, actively engaging stakeholders throughout the project lifecycle is essential. Regular consultations ensure that the project's objectives align with real-world needs, which enables the development of relevant and impactful solutions. This engagement not only fosters trust among all parties involved but also encourages buy-in, making the project more effective Additionally, having well-defined impact pathways is a significant strength of the project. By articulating how research outcomes will translate into tangible benefits for public health, the project effectively demonstrates its relevance to policymakers and funding bodies. This clarity increases the likelihood of support and successful implementation. Finally, the formation of clusters that encompass multiple consortia with similar themes or missions amplifies the project's impact. These clusters facilitate knowledge sharing, resource optimization, and collaborative problem-solving, ultimately driving innovation more effectively. By pooling expertise and resources, projects within these clusters can achieve greater results than individual efforts, making this approach a valuable strategy for other applicants to consider.

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