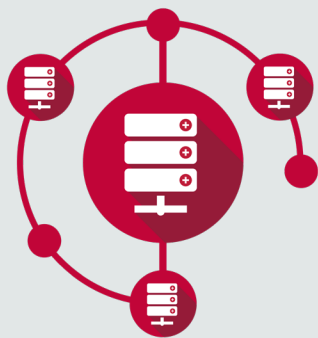


# **NFU Position Paper**

on the 9th EU Framework Programme  
for Research and Innovation (FP9)



# Index

<b>1. Introduction</b>	<b>3</b>
<hr/>	
<b>2. Sharing ideas to make FP9 even more effective</b>	<b>4</b>
<hr/>	
• Strive for excellence	4
<hr/>	
• Collaborate to address global challenges	6
<hr/>	
• Missions	8
<hr/>	
• Promoting Open Science, Open Innovation and Open to the World	9
<hr/>	
• Focus on patients' well-being and citizens optimizing their own health	10
<hr/>	
<b>3. High ambitions, strong partnerships</b>	<b>10</b>
<hr/>	



## Introduction

The sustainability of the health care system is under pressure worldwide. The Netherlands Federation of University Medical Centres (NFU) therefore believes that the role of science as a driving force behind sustainable and innovative value-based health care is more important than ever. **The transition to sustainable healthcare requires all stakeholders in healthcare to join forces. Scientific collaboration and innovation are key to utilising the available resources as efficiently and effectively as possible.** In NFU's view, this is the only way to help more patients survive and to improve quality of life by realising accessible and affordable health prevention, care and cure, available for everyone. As a matter of fact, these activities and their anticipated results are patient-centred. These goals, abbreviated as 'sustainable health', cover all stages of the life span. Europe's excellent science base must be strengthened to meet society's high expectations of what the health domain has to offer. By taking the lead in health sciences, Europe contributes to securing the European health domain's competitiveness, both socially and economically. NFU is convinced the 9th EU Framework Programme for Research and Innovation (FP9) is able to boost major opportunities for European public and private health research and innovation. FP9 must enable Europe and the global community to jointly address the current and future

### About the Netherlands Federation of University Medical Centres (NFU)

The NFU is the umbrella organization representing all Dutch UMCs. It stimulates and coordinates strong collaboration between its members.

The Netherlands has a global reputation in (bio) medical scientific research. Nationally, the University Medical Centres (UMCs) produce about one-third of the total number of scientific publications. In comparison with other countries, they publish the highest number of publications per million euros of research budget.

The UMCs aim to generate high-quality, accessible and affordable health for everybody. They acknowledge the guiding role of the United Nations Sustainable Development Goals (SDGs). The UMCs provide excellent research and an excellent infrastructure for innovative health-related research due to the combination of an academic hospital and the associated medical faculty. With the unique combination of education, research, patient care and valorisation embedded in their structure, UMCs are very well suited to transfer science into innovation and to address the health-related challenges Europe is facing.

UMCs focus their capacity and approach on preventive, care and cure research and innovation activities within four themes: prevention, regenerative medicine, personalised medicine and health, and big data and large-scale research infrastructure. This NFU research policy is entitled 'sustainable health'.



challenges. The concerted Dutch efforts on sustainable health can help to support FP9 with meeting its challenges. **It is NFU's view that individual European research, innovation and education programmes can do a better job when they join forces. The leading principles for FP9 should be excellence, open innovation, open science, open to the world, cooperation and the United Nations Sustainable Development Goals (SDGs). This is necessary to secure Europe's scientific base, to strengthen Europe's global competitiveness, and to address the global challenges. Large ambitions justify a large budget.** NFU endorses the wide support, both politically and in the science community, to allocate at least €120 billion to FP9. In NFU's view, the great ambitions of EU education programmes to transfer scientific knowledge justify a generous budget, too.

In this position paper, NFU would like to share ideas on how to make the new framework programme even more effective for the sustainable health and well-being of all European citizens.

NFU aims to contribute to the development of FP9 by sharing the following ideas:

- Strive for excellence
- Collaborate to address global challenges
- Promote Open Science, Open Innovation and Open to the World
- Focus on patients' well-being and citizens optimising their own health.

## Sharing ideas to make FP9 even more effective

### **Strive for excellence**

Europe's excellent science base requires the permanent attention of European, national and regional authorities. Moreover, they have to combine their efforts.

- Thus, the EU must develop a coherent EU policy of research, innovation and transfer of knowledge to integrate its own efforts and to stimulate national and regional policies to do the same. A coherent EU policy strengthens Europe's excellent knowledge base and contributes to



bringing breakthrough research up the value chain. The selection systems for funding should continue to be based on open competition and evaluation by high-quality review panels. NFU reaffirms that Excellence science programmes, European Research Council (ERC) programmes in particular, are strongholds for excellence and scientific breakthroughs in the health domain. Consequently, the sole selection criterion for funding must remain excellence. In medical research, breakthroughs often originate from strong collaborations. Therefore, NFU endorses the inclusion of the ERC Synergy grant. This instrument will further strengthen excellence in science and bridge individual and programmatic excellence.

Other important issues for the NFU are:

- Industrial leadership and societal challenges programmes should **use the breakthrough research results of the Excellence science programmes, ERC in particular, more often to fuel their research and innovation activities.**
- Excellence also requires state-of-the-art research infrastructures and education infrastructure. This refers to UMCs in particular, which combine research, health care and cure, and education. **FP9 must enable the construction of new research infrastructures and the wider use and management of existing research infrastructures. This includes maximising the impact of big data, including cohorts and biobanks,** for prevention and personalised medicine and health research. Both research infrastructures and education infrastructures will make a significant contribution to boosting Europe's research and innovation potential and human capital. FP9 has to promote the clustering of existing research infrastructures and should open them to more and different users throughout Europe. Particularly in the field of health data science, solid and open infrastructure is a powerful tool.
- In medical research, excellent research results originate from original ideas from preclinical research which are subsequently followed up all the way to application in clinical practice. To initiate breakthroughs and to build entire knowledge and innovation value chains, early stage research collaboration is essential. FP9 must further early stage research



throughout its programmes. **A good balance between clinical and preclinical research in the industrial leadership and global challenges programmes** is therefore crucial for a real impact. The specific features of clinical studies require the consistent application of existing rules. However, the current clinical trial cost model hampers the introduction of clinical trials as needed. This model has to be improved.

- FP9 must have the flexibility to secure the European science base by reacting to outbreaks of diseases and anticipating upcoming research and innovation areas, for instance data sciences.
- **FP9 and cohesion funds should team up to explore untapped human capital in all EU regions**, but in moderately and modestly innovative regions in particular. Synergy in funding schemes, legal rules, regulations and procedures will help to explore Europe's opportunities optimally. It is the responsibility of national and regional authorities to stimulate capacity building. Among other programmes, MSCA and the Spreading Excellence and Widening Participation offer schemes to introduce and integrate newcomers in networks of experienced users of framework programmes. FP9 must help to develop education for new jobs and international research career opportunities. FP9 and Erasmus+ should team up to transfer and use new knowledge effectively.

### **Collaborate to address global challenges**

NFU believes the health domain can accomplish sustainable health in Europe by 2030. By taking the lead in addressing global challenges and SDGs in particular, Europe helps to meet the European health challenges. This refers in particular to the health SDG 3 (Ensure healthy lives and promote well-being for all at all ages). The health domain can contribute to many other SDGs indirectly as well, like SDG 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture), SDG 4 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all), SDG 5 (Achieve gender equality and empower all women and girls), SDG 6 (Ensure availability and sustainable management of water and sanitation for all) and SDG 17 (Strengthen the means of implementation and revitalize the global partnership for sustainable development). Accomplishing sustainable health in Europe by 2030 and Europe taking the lead in addressing global challenges will require



cooperation between many and various stakeholders. All Dutch UMCs are willing to share their experience in multi-stakeholder cooperation and regional health prevention, care and cure systems in order to provide solutions for local and global challenges.

A coherent EU policy for research, innovation and transfer of knowledge is needed to build and secure a knowledge-based society that will address the global challenges and SDGs effectively. A knowledge-based society, focused on cooperation, also enables companies to innovate and to face the fierce global competition.

Collaboration is crucial in order to address global challenges:

- FP9 has to operate funding schemes and instruments facilitating the features of the various research and innovation topics, stakeholders and partnerships. This refers to the health domain in particular.
- The European Institute for Innovation and Technology (EIT) Knowledge Innovation Communities (KIC) operate a unique combination of research, education and business activities. This so-called 'knowledge triangle approach' proves to generate challenging research questions and disruptive innovations. UMCs are very well positioned to further the knowledge triangle for translational research and innovation and to strengthen the research-education-patient cure and care and prevention triangle. FP9 and EIT should be seeking to develop linkages with potential complementary initiatives.
- Industrial Leadership programmes should support the cooperation between small and large companies and with academia, citizens and governments. In the health domain, stakeholders' cooperation is key to innovate, scale up and exploit knowledge. The European Innovation Council (EIC) has the potential to become an additional and effective tool to do so. This cooperation approach will contribute to closing the entire knowledge and innovation value chain, or in the context of the health domain to furthering public-private partnerships operational from bench-to-bedside, or to downstreaming the process by which the results of research done in the laboratory are directly used to develop new ways to treat patients.



- NFU has identified a keen Europe-wide interest to focus FP9 health activities on a preventive, care and cure approach within four themes: prevention, regenerative medicine, personalised medicine and health, and big data and large-scale research infrastructures.
- The FP9 industrial leadership and societal challenges programmes should generate societal and economic impact for the health domain up to a personalized level. Embedding social sciences and humanities helps to create this high added value impact.
- FP9 focuses on funding selected research and innovation activities, but FP9 has the potential to be a platform for discussing how to secure the current and future European science base in an effective way, too. For the health domain, it refers to many challenges, including developments in academic-pharma. What role does academic-pharma have to play in developing drugs which are of no commercial interest for the pharmaceutical industry? How should we address all rare diseases?
- New drugs should be developed faster and supplied more cheaply. FP9 must support dedicated public-private partnerships involving patients and regulatory policymakers to initiate the development and processing of drugs needed for rare diseases and of those without side-effects in particular.

### *Missions*

The health domain challenges, features and mission call for a funding scheme which suits long-term and complex knowledge and innovation value chains. Moreover, this domain has many different stakeholders. The current funding schemes lack a large-scale, collaborative, mission-driven tool.

- NFU supports the idea of mission-driven funding, addressing the long-term and complex challenges of sustainable health and the SDGs. This funding scheme, or so-called Missions, would also provide an opportunity to make the added value of European research and innovation efforts more visible to the general public. It would also stimulate the researcher community to link their contributions to solutions to global societal challenges in a more strategic way.





- Linking these missions with the SDGs strengthens the European global profile and stimulates international cooperation within the framework programme (Open to the world).
- Societal challenges are not to be aligned with single scientific disciplines. This means that a Missions' instrument will boost a transdisciplinary approach (also within the Medical Sciences), where researchers from different fields work together and connect to other societal partners (i.e. private sector, healthcare institutions and civil society). Links between research and society should therefore be sought in tackling the challenges.
- NFU will work on formulating Missions' topics tailor-made for the health domain.

### **Promoting Open Science, Open Innovation and Open to the World**

Open Science is a priority for the Netherlands in general, and for NFU in particular. The guiding principle for FP9 should be 'as open as possible, as closed as necessary'.

- All Dutch UMCs work together to ensure that data is FAIR (Findable, Accessible, Interoperable and Reusable). They participate in the Health Research Infrastructure (Health-RI) initiative, which aims to stimulate and facilitate collaboration through sharing of data and biomaterials among researchers, medical practitioners, patients and healthy citizens at a national level. Health-RI also aims to connect with the European Open Science Cloud and could serve as a template for bottom-up data-sharing activities in other European countries or areas. NFU is willing to share its expertise throughout Europe and with the European Commission.
- In order to scale up available data and knowledge, stakeholders must cooperate in an open innovation approach.
- Open science and innovation should not be limited to Europe. In order to address global challenges, FP9 must be open to the world. Moreover, FP9 should fund non-European partnerships when certain expertise is not available in Europe. The health domain has ample experience with teaming up internationally, supported by framework programmes like the current H2020.



- Europe should strive for bilateral research and innovation agreements worldwide, unlocking talents and resources.

### **Focus on patients' well-being and citizens optimizing their own health**

It is the health domain's mission to keep healthy people healthy and to deliver cures and care for patients. Research and innovation efforts have to be patient-centred. Long and complex knowledge and innovation chains are needed to generate the translational research for personalised medicine, cure and care. In order to do so, research and innovation have to be patient-centred and citizen-centred.

## High ambitions, strong partnerships

NFU is confident FP9 can meet its high ambitions. For the health domain, FP9 has to initiate an agenda aimed at accelerating value-based healthcare and advancing precision medicine for universal health coverage. In order to meet these goals, FP9 has to stimulate cooperation, linking fundamental research with translational and clinical capacity, policy makers, small and big industry, and investors. This partnership will secure a science base, translating research into products and services to benefit patients and society and entrepreneurship. FP9 should expand the partnerships with the many participants using European programmes for research and innovation already. This refers to new players like young researchers, small companies, participants from moderately and modestly innovative regions in particular.

NFU advocates aiming for high ambitions and strong partnerships, for the benefit of health worldwide. In addition, NFU would welcome FP9 performing as follows:

- To target at a success rate of 40-50% of excellent applications;
- To improve user-friendly conditions, including the simplification and rationalisation of funding schemes and instruments, rules and regulations (including their number) and the Participants Portal's digital services;



- To stimulate early-stage research collaboration throughout the various framework programmes;
- To enable a good balance between clinical and pre-clinical research throughout the framework programmes;
- To develop tailor-made impact evaluation, rather than the ‘one size fits all’ Technology Readiness Levels (TRL) method of estimating technology maturity;
- To promote capacity building throughout the framework programme for new career and job opportunities for young researchers in general and for researchers from moderately and modestly innovative regions in particular;
- To encourage greater added health value by combining research-education-impact triangles.

Sharing passion means being there. NFU takes responsibility by offering to share its framework programmes’ experiences with the European Commission and all public and private organisations. An exchange of ideas will help to design a FP9 doing an even better job than H2020. The science base of Europe, the competitiveness of European industry, the SDGs and Europe’s citizens will benefit from this.

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