



INNOVATION FUNDING TRENDS FOR PERSONALIZED MEDICINE



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The diagnosis and treatment of a disease greatly benefits from being tailored to the patient. This in itself is not a new concept. Choosing appropriate drugs after a diagnosis, and adjusting a dose to suit the patient has been standard practice in medicine since treatments have first been recorded. Personalized medicine is not new, and yet it is changing healthcare as we speak.

The changes we currently witness are a result of the great progress that has been made in our molecular understanding of biology and disease. We understand how to recognize early signs of illness through reading molecular markers. Genetic analysis has improved our understanding of disease heterogeneity. Improved drug delivery methods allow for targeted treatment in the affected tissue. These developments are allowing medicine to be truly tailored to each individual patient.

Personalized medicine does not only hold great promise in patient treatment. While diagnostic and treatment efficacy are the main drivers behind developments in personalized medicine, there is also a great push for efficiency in healthcare. Personalized treatment will allow for tailor-made solutions, reducing the overall cost of healthcare: only those patients that benefit are treated. Targeted drug delivery can reduce adverse side effects, and thus associated costs.

It is therefore not surprising that personalized medicine has been a central innovation pillar in the European Horizon2020 program. For this ePaper, PNO has analysed how Dutch partners have performed in the European funding schemes in 2016 on the topic of personalized medicine. Furthermore, we will discuss the coming trends for the soon to be published calls for the 2018-2020 Horizon Program.

Definitions personalized medicine

Personalized medicine is a very broad concept, and different terms and definitions are often used interchangeably. The following concepts are slowly becoming more defined in the field:

Personalized medicine

A medical procedure that separates patients into different groups with medical decisions, practices, interventions, and/or products being tailored to each patient based on their predicted response or risk of disease. This term has an umbrella function for all developments in this field.

Stratified medicine

Selecting treatment based on the likelihood that a patient responds to the treatment. This is also referred to as patient stratification.

Precision medicine

Targeted delivery of a drug to the diseased tissue or site of action. This is to enhance efficacy of the drug, even at low concentrations, while reducing adverse side-effects. Alternatively, the drug of choice is tailored to the individual patient based on his or her unique genetic profile, microbiome, life style etc.

Health innovation and the Horizon Program

Through the grant program Horizon2020, the European Commission invests over €80 billion in innovative, best-among-their-peer projects, in the period 2014-2020. The focus topic 'Health, demographic change and well-being' is to receive an impressive 10% of this budget. This means that €8 billion of the total budget is available for projects in the healthcare sector, and a sizeable part of this will still be invested in innovative projects in the 2018-2020 window. Innovation in personalized medicine has been actively supported through grant support, and looks to remain so for the coming period. A recent focus on improving both efficacy and efficiency in European healthcare through the Horizon program has placed personalized medicine in the driver's seat to obtain more funds to support innovative projects. This means that there are excellent chances to boost your innovation in personalized medicine through support from European grants.

Looking back: EU for personalized medicine

Before we look at new opportunities, it is important to understand that personalized medicine has been a very successful gateway to European funding. In the period of 2014-2016, the European Commission invested more than €2.4 billion in projects that supported innovation in personalized medicine. There is however a note of caution, the budget awarded has slightly decreased from €941 million in 2014 to €709 million in 2016. While the budget awarded to individual projects has dropped slightly, a more significant trend is the decrease in the number of projects that receive funding.



FIGURE 1 Overview of the European funding for personalized medicine over 2014-2016 (in millions).

Personalized medicine projects that received European support through an innovation grant obtained funds ranging from €10k to tens of millions of euros. This wide spread of available funds is best explained by the different funding instruments that are available to you. The European Commission aims to align ambitions that it sets for itself, with the ambitions of companies, research institutes, and medical centres in the EU. Some projects are small, and can receive a great boost with a small but appropriately sized grant. Other projects are more challenging and require large international consortia to tackle them, and the grants are made to size. The important message is that there are different types of grants available to you, which can support your goals and ambitions.

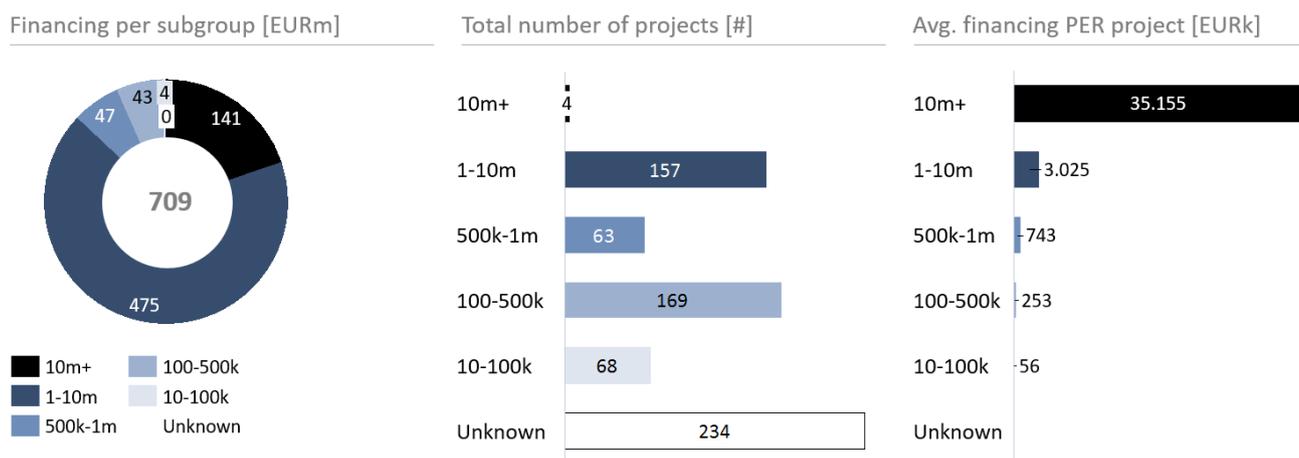


FIGURE 2 Overview of personalized medicine European project financing in 2016 (in millions).

Even though we observed that the total number of grants awarded to European projects on personalized medicine has decreased slightly over the last two years, the Netherlands has been very successful in obtaining funding. Projects that were spearheaded by a Dutch coordinator obtained €55 million worth of grant support in 2016. This places the Netherlands on a third place in Europe, trailing only Switzerland and the UK. This should be a great motivation for all Dutch health innovators to also make use of the opportunities that are available to you.

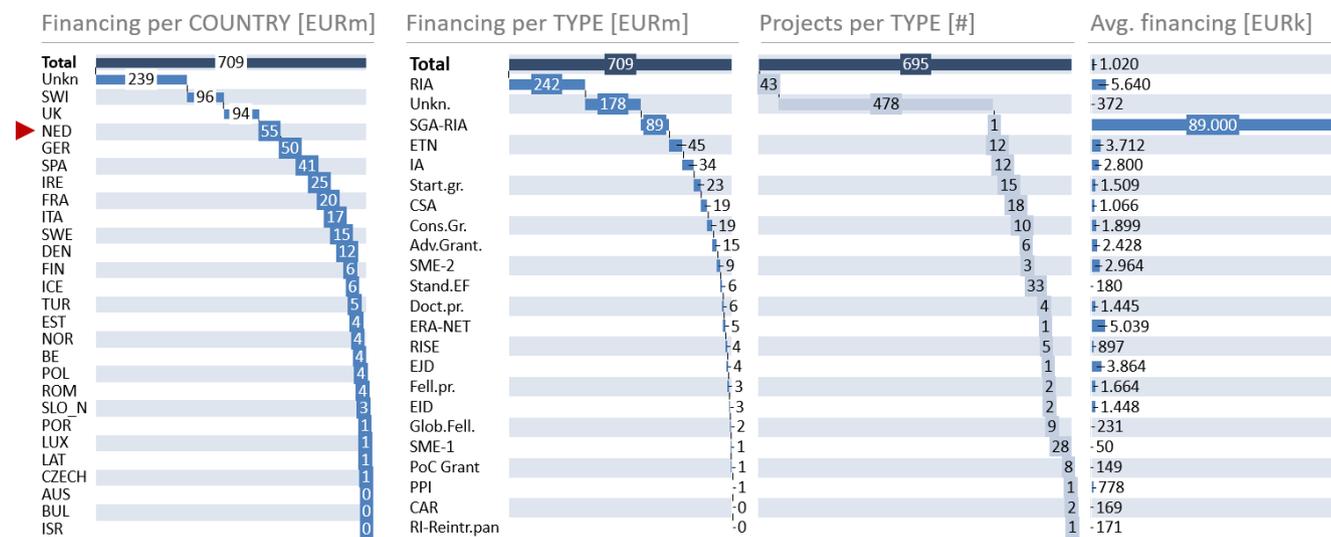


FIGURE 3 Overview of financing per country, grant type, and project type in 2016 (in millions).

When we look a little closer at how the personalized medicine grant cake is divided in the Netherlands, we observe that applications to the Research Innovation Actions have been most successful both in number, and in budget that was obtained. Five projects obtained €38.9million of grant funding. The other projects that were awarded with support are divided more evenly over the different funding instruments that are available. It is striking to note that no Dutch SME obtained a SME Instrument phase 2 grant on a personalized medicine project in 2016. This is a grant scheme which heavily funds innovation projects from small to medium sized businesses that are at an advanced development stage. Even though this is a very competitive scheme, it provides excellent funding opportunities to bridge the gap from lab to market.

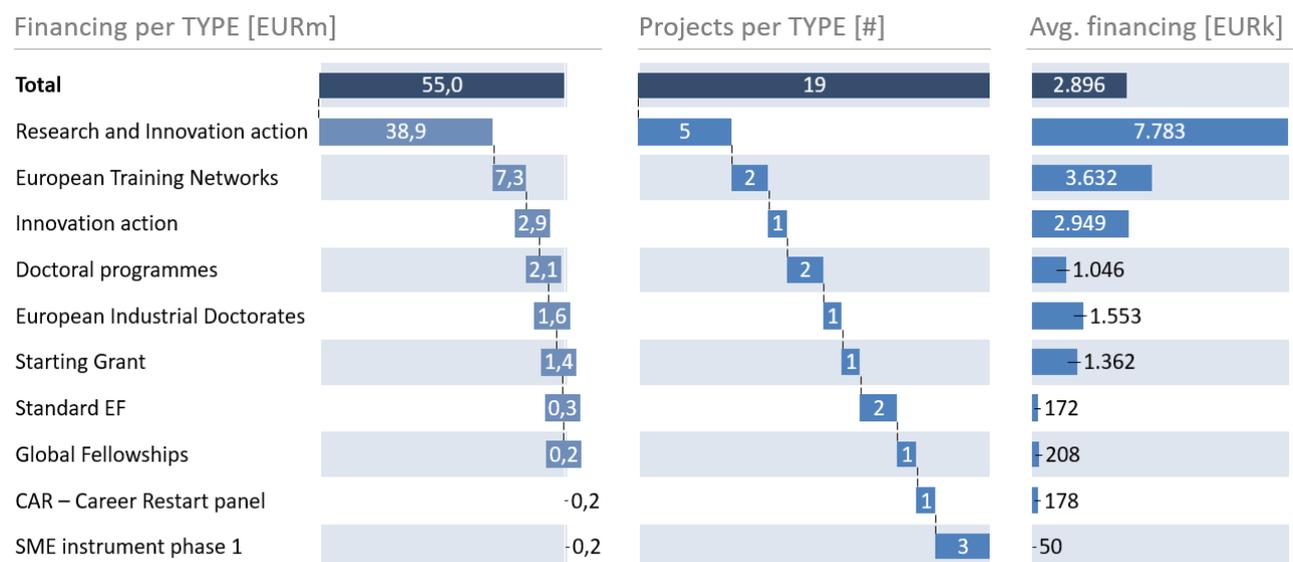


FIGURE 4 Financing awarded to Dutch projects per grant type in 2016 (in millions).

Looking forward to new opportunities for personalized medicine innovation

Even though the number of grants awarded to personalized medicine projects has decreased slightly over the last two years, the Netherlands remains one of the most successful applicants on this topic. With personalized medicine still high on the European Commission’s agenda, we expect several dedicated calls to be formulated on this topic for the new work program (2018-2020). In addition, the EU continues its focus on supporting innovation by businesses, ranging from single SMEs to large multinationals or international collaborations. A solid business plan is becoming an ever more important aspect of your grant application. The EU wants to step up the transition from research to product development, and valorisation is a key priority. A good business case for investors is also a good business case for the EU. Expect higher scrutiny on whether private parties are willing to invest in your innovation.

Innovation and funding strategy with PNO

The first step in obtaining EU funding is to align your ambitions with those of the European Commission. The EU has clear documentation on what it tries to achieve with its grant instruments. In this, it recognizes that it takes a wide range of initiatives, both from companies, as well as from universities and health centers, to achieve these goals. Accordingly, there are grant schemes that match different applicants’ needs and expertise, and support

specific stages of development a project may be in. This can vary from early research to clinical validation, or overcoming hurdles to market introduction. In order to be successful in obtaining a European grant, it is important that you develop a grant strategy that maximizes your chance of success, and that you choose the right grant instrument that best supports your goals. PNO is the leading innovation consulting company in Europe, and market leader in the Netherlands. It has extensive experience devising grant strategies to align with innovation projects. PNO has successfully composed and filed hundreds of successful European grant applications.

PNO has a dedicated Life Science and Health specialist team that has guided and advised many companies and research institutes on personalized medicine innovation, and the opportunities that are available for European funding.

Funding opportunities

Here we list a number of European grant schemes that are of particular interest to support projects in personalized medicine:

SME Instrument

The SME instrument offers small to medium sized companies the opportunity to perform a market study (phase 1) or to bring their innovation through late development stages to enable market introduction (phase 2). The phase 2 instrument in particular offers excellent funding, and is highly competitive for this very reason. We already know that a number of rules and requirements are changing for 2018, resulting in excellent opportunities for life science companies.

Fast track to innovation

After a successful pilot experiment in 2015-2016, the Fast track to innovation instrument will return in 2018. With the first call already closing in February 2018, this instrument provides excellent funding to international collaborations that are pushing a product towards the market within three years.

Horizon Health Program

The European Commission is currently finishing drafting the new calls that will constitute the Health Program for 2018-2020. We have been informed that personalized medicine will play a big role in the ambitions that the Commission wants to achieve this period. We will share the new calls and funding opportunities as soon as they become officially available.

ZonMw

For Dutch Health Innovators in the public sector, ZonMw opened a call for innovation in Personalized Medicine. The focus is on predictive diagnostics to enable both better care for the patient, and more adequate use of often expensive medication. This call closes in September, so it is prudent to act fast on this opportunity.

Contact us

If you would like to learn more about European funding opportunities for personalized medicine innovation, or you would like to discuss your innovation strategy within this field, do take a look at our website: www.pnoconsultants.com, or reach out to one of our Life Sciences & Health specialists: [Boudewijn Breens](#).