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“ The aim of OACTIVE (Advanced personalised, multi-scale computer models preventing OsteoArthritis) is to develop personalised interventions for delaying the onset and slowing down the progression of osteoarthritis.

This can be done by adopting a holistic approach that combines patient-specific data with information from biomarkers, behaviour modelling, and environmental factors.



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

Osteoarthritis, AI,, Personalized medicine.

The OACTIVE project embodies a confluence of pioneering research areas that are pivotal to addressing complex medical conditions like osteoarthritis. By integrating artificial intelligence with personalized medicine, we aim to tailor interventions specifically to each patient's unique biological and lifestyle factors, thus enhancing treatment efficacy. Our approach leverages advanced computational models to simulate disease progression and treatment outcomes, offering insights that were previously unattainable. This innovative fusion of technologies not only demonstrates the transformative potential of AI in healthcare but also sets a new standard for patient-centered care.

2. As an applicant, what advice would you have wanted in the project design process?

One of the significant hurdles during project design and proposal drafting is ensuring that the proposed scientific knowledge is effectively translated into measurable impact and potential for exploitation. Both of these factors are crucial in crafting a competitive proposal. However, they often pose a challenge for researchers to encapsulate accurately. Therefore, a support process in this area could greatly enhance the quality of the proposal.

Reflecting on the design phase, having access to a dedicated support network or mentors with experience

in translating research into real-world applications would have been invaluable. Understanding the intricacies of grant application processes, including anticipating the needs and priorities of funding bodies, is often overlooked during the initial stages. Additionally, engaging with potential end-users and stakeholders during the proposal phase can provide critical insights to refine project goals and ensure alignment with market needs. Such collaborative efforts will not only fortify the proposal's impact statement but also pave the way for smoother implementation and exploitation of results.

3. In terms of impact, what was the most concrete result your project has achieved?

OACTIVE pioneered a unique approach by incorporating an unprecedented number of parameters from individual patients. This innovation facilitated the development of computerized models that, for the first time, enabled personalized therapy for patient rehabilitation through an engaging and user-friendly gaming approach. OACTIVE laid the groundwork for a marketable tool that health professionals can widely utilize to improve osteoarthritis outcomes and enhance patient experiences.

Beyond technological advancement, one of the most significant impacts has been the enhancement of patient engagement and adherence to rehabilitation protocols. By transforming standard rehabilitation exercises into interactive and stimulating gaming experiences, patients are more likely to participate actively, leading to better outcomes. This project has also spurred collaboration between clinicians and

technology developers, fostering an interdisciplinary environment where medical insights and technological innovation feed into each other. The resultant tool not only has the potential for widespread adoption in clinical settings but also serves as a blueprint for tackling other chronic conditions using a similar personalized approach.

4. What improvements are needed to do better in R&I in Europe/Horizon Europe?

A support system designed to guide researchers through the progression from fundamental scientific concepts to innovative ideas, and ultimately towards a marketable product, could prove beneficial. Scientists in the biomedical field often lack these specific skills and knowledge. Gaining a better understanding of these concepts could lead to the development of more robust and competitive proposals at the European level.

Additionally, increasing access to interdisciplinary training programs would empower researchers with diverse skills needed for modern challenges. Building strategic partnerships with industry players early on can aid in identifying commercialization opportunities and understanding market dynamics more acutely. Strengthening feedback loops between institutions, National Contact Points (NCPs), and researchers can further enhance proposal success rates by ensuring that applicants receive timely and comprehensive guidance. Lastly, simplifying bureaucratic processes and ensuring more transparent communication regarding criteria and expectations will help utilize Horizon Europe's potential fully.



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