STAMINA White Paper

Early findings from the STAMINA project in fighting the next pandemic crisis

Preface

STAMINA project was designed to support the preparedness of a diverse set of first responders for a pandemic like SARS-CoV-2, apparently the crisis occurred before the project start. The consortium adapted fast to the new situation considering SARS-CoV-2 in its developments. The new aim for STAMINA is to see how the current experience and the lessons learned can be utilized along with its novel tools to fight the next pandemic crisis in a faster, better and more accurate manner, increasing the level of collaborative preparedness, response and decision making across organisations. This is what we learned from the first year of the project.

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We weren't ready! We need a better preparedness.

According to WHO at least 115.000 healthcare-related personnel has died while servicing people infected by SARS-CoV-2. While decisions across EU countries were contradictory in regards to vaccine use across age categories. In addition, decision makers struggled to balance between socio-economic cost due to lockdowns and public health protection. Furthermore, the collaboration across different agencies and organisations faced serious challenges. From the above it was evident that we weren't ready. STAMINA consortium believes that in order to fight the next pandemic crisis we need to serious advance our collaborative preparedness and collaborative response across agencies, organizations and nations.

Pandemic crisis doesn't understand EU borders

With business and touristic flows through land, air and sea, that are always difficult to "close them early", due the economic cost, we cannot consider that a pandemic like SARS-CoV-2 will not reach to our nations. For the same reason, we should not stop the research for such a global issue in EU borders. Through STAMINA, the Institute Pasteur in Tunisia managed to find a new variant. With not so much evidence on its transmissibility and mortality risk, dangerous consequences may be much closer to what we think. EU needs to mobilize funds, special units and research networks to the EU-Neighborhood area and where else is needed, towards a rapid response on the field, rather than having a pathetic role in the analysis of results from each country with different protocols.

We need more open data to fight

Although the technology and the infrastructure are “there”; that can guarantee secure data transfer and storage of across EU and beyond, the data “aren’t”. Siloed databases, lack of harmonization, disparities across EU and beyond in regards to legal rights accessing the data, hamper the efforts for a Europeanised response. STAMINA consortium despite the strong efforts, faced serious challenges in identifying, gathering and harmonizing data for feeding their tools. With GDPR and similar frameworks and initiatives that are in place; to guarantee data protection and privacy preservation for such sensitive issues, EU needs to break the obstacles promoting openness and harmonization across nations in regards pandemic data. Open Data are the stepping stone for mobilising the scientific community and the private sector into providing solutions fighting the next pandemic crisis.

One of the pandemic-fighting secrets relies in DNA/RNA primers

Primers are small pieces of DNA or RNA that are used in detection of virus/pathogens through the well-known PCR Tests. Primers acts as a biological “signature”. During a pandemic crisis, when new variants evolve, tests need new and updated “signatures”. Without new primers developed fast, tests will not be able to “catch” the new variants showing a negative result while the “truth” is different increasing the transmission from asymptomatic cases. STAMINA through the use of bioinformatic tools designed very fast, primers that tested in the lab. If we want a rapid response of the next pandemic crisis, we need to have a fast and dynamic process for new variants detection through testing tools. The STAMINA Consortium believes that DNA/RNA Primers are the essence of testing process accuracy.

Simulation models have limitations due to absence of qualitative data

For predictive and simulation models, in terms of data it's not just "the more the better". There is a definite need for having also qualitative data. Data in regards to particular diseases/pathogens are limited and very few data types/categories are kept. Common rules and thresholds setting the level of danger are absent, missing thus; a critical step in pandemic response. The optimal use of assets (vaccines, equipment, human resources etc.) was a pain point during this pandemic. We do not know how a virus/pathogen will ignite the future pandemic crisis. However, the lessons learned from the SARS-CoV-2 should be converted into tangible and qualitative data sources that will facilitate evidence-based decision making for policy makers avoiding risks in poor asset management.

We need to bridge the gap among end users and tech providers

STAMINA diversity in terms of partner types, countries, tools and methods is a small representation of the complexity of a pandemic preparedness situation at macroscopic level. Although a vast amount of (virtual) meetings and workshops were made for explaining tools and processes, it is still hard to reach to a common ground of understanding, since different end user organisations have different needs and gaps. The participatory approach and the iterative co-design activities that were followed in the STAMINA is a positive step forward. EU projects and the private sector should not underestimate the time that is needed to train end users into new technologies and tools. The digitalization of the health system differs across EU. Significant effort is needed in planning and designing accurate trial-demonstrations that can create an impact improving the operational capacity of first responders and subsequently the involved tools.