Call for Expression of Interest (EoI)

Disclaimer

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Title

Second call for an Expression of Interest for innovative and rapid health-related approaches to respond to COVID-19 and to deliver quick results for society for a higher level of preparedness of health systems in: (1) Repurposing of manufacturing for vital medical supplies and equipment; (2) Medical technologies, Digital tools and Artificial Intelligence analytics to improve surveillance and care at high Technology Readiness Levels; (3) Socioeconomic impacts of the outbreak responses; (4) Pan-European COVID-19 cohorts.

Scene Setter

This second call for an Expression of Interest implements Action 3 of the ERA ERAvsCorona Action Plan[1], which resulted from dialogues between the Commission services and the national ministries over the period March-April 2020. The title of this action is: 'New funding for innovative and rapid health-related approaches that respond to COVID-19 and deliver quick results relevant to society and a higher level of preparedness of health systems'.

The second call for an expression of interest complements the first expression of interest that the European Commission published in January 2020, which led to the funding of 18 projects[2] in March 2020. The first expression of interest focused on advancing the knowledge on SARS-CoV-2 and its impact on infected persons, with the aim of contributing to an efficient patient management and/or public health preparedness and response.

Scope

Considering the huge impact of the pandemic, the scope of this expression of interest has four focus areas:

1) Repurposing of manufacturing for vital medical supplies and equipment.
2) Medical technologies, Digital tools and Artificial Intelligence analytics to improve surveillance and care at high Technology Readiness Levels
3) Social and economic impacts of the outbreak response
4) Pan-European COVID-19 cohorts united against the pandemic.

[1] ec.europa.eu/info/sites/info/files/research_and_innovation/research_by_area/documents/ec_rtd_era-vs-corona_0.pdf
[2] ec.europa.eu/info/sites/info/files/research_and_innovation/research_by_area/documents/ec_rtd_cv-projects.pdf

The scope of this Call of Expression of Interest falls within the thematic actions of SC1 Health, demographic change and wellbeing of Horizon2020. This Expression of Interest invites proposals for R&I activities that aim for a wide scale, rapid (within 3-24 months) application of health-based solutions to respond quickly to the COVID-19 pandemic, taking into account the wide variety of approaches how care is delivered across Europe.

Proposals should consider the strong involvement of end-users (including civil society organisations) and/or strategic partners during the course of the project. Possible end-users and strategic partners are; local or regional health authorities or other types of care delivery organisations (also in their role as employers), civil society organisations, as well as public and private organisations, such as investors and innovation accelerators.

Proposals should address how to make healthcare systems and societies more resilient to pandemics in terms of; prevention, protection and treatment of the population and COVID-19 patients by improving; support measures for the most vulnerable; protection, well-being and operational capacity of frontline workers; short term production and distribution capacities; and multi-level cooperation between, local, regional Member States and EU-levels. Actions must demonstrate how they bring about a faster, more impactful, cost-effective and larger scale deployment of innovative (technological and non-technological) solutions to respond to the COVID-19 pandemic.

Gender-related issues are an important crosscutting focus of this Expression of Interest. All data should be sex- and gender-disaggregated, and indirect effects of the pandemic on gender equality should also be considered. In addition, attention should be paid to critical social factors intersecting with sex/gender, such as age, social origin, ethnicity/migration, and disability.

Therefore, the focus of this Expression of Interest is **not to develop new diagnostics, therapeutics or vaccine compounds or solutions,** but rather to complete and deploy readily available solutions. There are and have been many other funding and financing initiatives[3] that invest in the development of new diagnostics, therapeutics or vaccine compounds or solutions.

International Cooperation through the participation of legal entities from third countries, and/or regions including those not automatically eligible for funding in accordance with General Annex A, is encouraged in the current call.

Budget Information

All deadlines are at 17.00.00 Brussels local time. Any change in the deadlines will be duly communicated.

The grant amounts are subject to the adoption of the revised financing decision for the year 2020 expected for late May 2020.

Beneficiaries in grants awarded under actions relating to this Public Health Emergency will be allowed to charge the cost of clinical studies on the basis of unit costs established in line with a methodology set up in the Commission Decision C(2016) 7553, which is available on the Funding and tenders Portal.

Please note that expenditures can be covered from the date of submission of the proposal, but at the applicant's own risk.

[3] Such as 1st Expression of interest, EIC Open Call, etc

Topic SC1-PHE-CORONAVIRUS-2020-2A

Scope (narrative text)

Proposals for innovation actions targeted under this topic should address the re-orientation and repurposing of production capacities to meet the urgent needs of our societies. The scope covers:

- the repurposing, adaptation and ramp-up of production lines to quickly adjust to new and urgent production needs, notably medical equipment (e.g. personal protective equipment, ventilators), diagnostic technologies based on advanced materials and/or biotechnologies, as well as service systems and automated systems of disinfection.
- Demonstrate flexibility models for the supply chain for the repurposing of production lines and proper risk management in case of disruption of supply chains (or other necessary means for enabling production, such as energy feedstock),
- automation technologies that are less dependent on work force present in factories,
- certification/calibration/accreditation of production lines that have been repurposed or restarted after a shutdown,
- qualification of operators/technicians for new/repurposed production lines.

This focus area addresses any manufacturer able to deliver demonstrators of a flexible 48-hour industrial response capability at scale to sudden spikes in demand of strategic products cuts (for instance PPE, respirators) for requalification or release of production lines. Open Innovation Testbeds, laboratories, other technology infrastructures and maker communities may in particular be relevant. The modular solutions for a faster or repurposed production need to be integrated into the appropriate value chains. Also, projects can develop collaborative solutions, such as supply back-up squads, cooperatives, joint adaptations, industrial conversion and technology sharing.

Proposals should consider integration of the activities in the framework of relevant projects and initiatives at national, European and global levelhow to integrate relevant results of research and innovation actions, regardless of the origin of funding, in order to accelerate and maximise the impact**.**

Activities should start at least at TRL 6 and achieve TRL 8 at the end of the project.

Expected Impact (narrative text)

- To foster industry's adaptation capacity and resilience
- Demonstrators of a flexible 48-hour industrial response capability for requalification or release of repurposed production lines.
- To support industry and interested parties, in particular SMEs by providing services for the design, assessment, testing and regulatory issues.
- Deliver results within 3-18 months to end-users at scale.
- Solutions should foresee their application to other industrial sectors that might be explored in future calls

Topic SC1-PHE-CORONAVIRUS-2020-2B

Title Medical technologies, Digital tools and Artificial Intelligence (AI) analytics to improve surveillance and care at high Technology Readiness Levels (TRL)

Type of Action IA

Indicative launch date 14 May

Deadline Date 11 June

Scope (narrative text)

Innovation Actions of one of the following two types to:

1) Support solutions that are close-to-market (TRL 7) in one of the COVID-19 areas mentioned below and that have already received, or are about to receive, the CE marking to proceed to large scale testing, piloting and deployment operations in critical healthcare areas (or wherever else is relevant) (type 1);

2) Support market innovation (from lab-to-fab) for further developing and maturing innovative solutions that have already been validated in lab environments (TRL 6-7 or higher) with the aim to help accelerate developments and achieve conformity assessment (CE marking) (type 2).

This topic addresses innovative technology providers and/or organisations that can offer the range of activities required to address the objectives of the topic; the latter could for example be based on Digital Innovation Hubs, digital health accelerators and knowledge hubs, Centres offering Pilot Lines or similar technology, business and/or knowledge transfer organisations. Innovative technology providers may also be selected through open calls organised by the consortium using financial support to third parties. The support offered could include access to product development, accelerator, incubator and technical services and capabilities such as testing and experimentation facilities together with expertise, prototyping, design, engineering or pilot manufacturing services as necessary, as well as providing support for medical certification and clinical validation. Any use of third party grants must result in minimal administrative burden for participants, and allow the fastest possible launch of the projects.

The proposed actions could encompass a combination of tools and technologies, such as: microelectronics, micro/nano/cyber-physical systems; bio-functionalized chips and biosensor arrays; bio-photonics; graphene or related materials (GRM); data, AI and robotics; pathogen detection technologies; e-health, telemedicine and digital solutions.

The proposals should address one or more of the following areas:

a) fast, cost-effective and easily deployable screening, diagnostic and prognostic systems, including new methods for screening of lungs, using for example AI and advanced photonics solutions, to detect the presence of the pathogen related parameters especially in an early stage of infection;

b) environmental surveillance (sewage, air, etc.) systems and data analytics as a sentinel for viral (re)emergence and spread in communities, based for example on optical biosensors or genetic detection;
c) low cost sensors, smart wearable devices and robotics/AI for telemedicine, telepresence and continuous remote monitoring of patient parameters;
d) protection of healthcare practitioners and the general public improving for example the wetting and filtering properties of fabrics used for face masks; sensors, sterilisation, including robotics and AI solutions for disinfection and social distancing;
e) innovative data-driven services and tools combining data assets from various relevant privately held and/or publicly available sources, taking into account the Commission Recommendation C(2020) 2296 of 8 April 2020 on a common Union toolbox for the use of technology and data to combat and exit from the COVID-19 crisis. This could include AI-based solutions exploiting such data and possibly additional sensor-based signals, for diagnostics, prevention, or treatment.

Expected EU contribution per proposal

The Commission considers that proposals requesting a contribution from the EU of between EUR 2 and 5 million would allow these specific challenges to be addressed appropriately. For proposals with financial support to third parties, up to EUR 10 million may be requested. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. The proposers must specify which area of action (1) or (2) above they are addressing; at least one project will be selected of area of action. For grants awarded under this topic, beneficiaries may provide financial support to third parties as described in part K of the General Annexes of the Work Programme, typically in the order of EUR 20.000 to 100.000 per third party. The support to third parties may only be provided in the form of grants. The respective options of Article 15.1 and Article 15.3 of the Model Grant Agreement will be applied. The maximum duration is 2 years.

Applicant consortia planning to launch competitive calls should be ready to do so within a month after the start of the project and proceed to fast-track proposal selection and launch of the selected projects. To this end, they should explicitly provide evidence in the proposal as to how they will reach a very large number of potentially interested organisations and demonstrate convincingly that they can handle actions of this kind and scale (e.g. through a proven track record).

Expected Impact (narrative text)

- To contribute to the public health preparedness and response in the context of the ongoing epidemic of COVID-19 and to ensure the availability of critical technologies and tools.

- To contribute to the acceptability, adoption, appropriateness, feasibility, fidelity, implementation cost, coverage, and sustainability of diagnosis and clinical management of patients and survivors of COVID-19.

- To contribute to proposing recommendations for changes that would allow a fast recovery and a better preparedness, including in the health care systems, for future health emergencies.

- To accelerate the deployment and market uptake of mature health technologies for the prevention and optimized treatment of the COVID-19 disease, by delivering results within 3-24 months to end-users at scale.

Topic SC1-PHE-CORONAVIRUS-2020-2C (Cohort topic)

Title Pan-European COVID-19 cohorts united against the pandemic

Type of Action RIA

Indicative launch date 14 May

Deadline Date 11 June

Specific Challenge

The COVID-19 pandemic created an urgent demand for evidence-based innovative and rapid solutions to deal with health and health-related emergencies, to offer the best possible care to patients, and to protect the general population and the frontline health care staff. This expression of interest is to complement research efforts in the fight against the coronavirus, in particular projects resulting from the first H2020 expression of interest, which is currently addressing epidemiology and modelling, diagnostics, treatment, and vaccine. In parallel, Research and Innovation should without delay start analysing the lessons from the present crisis, in particular its impact on health and socio-economic aspects, and propose recommendations for being better prepared in the future if confronted with similar events.

Proposals submitted under this expression of interest are expected to establish new and/or build on existing large-scale cohorts to rapidly advance the knowledge on the control of the SARS-CoV-2 infection, develop evidence-based recommendations for effective prevention of the spreading, protection of the population in the coming months/years, and optimized treatment of the COVID-19 patients. Cohorts could also inform on longer-term consequences of COVID-19 on health and well-being of individuals.

The COVID-19 cohort should include non-infected and infected individuals. The cohort should be large enough to provide robust evidence and recommendations, and be used for retrospective and prospective studies. The cohort should include all ages, all conditions (healthy, pregnant, physical or mental disabilities, chronic disorders, infectious diseases, etc.), all clinical outcomes (from no symptom to mortality), as well as a large spectrum of different clinical management practices and treatments. The inclusion of individuals who are SARS-CoV-2-negative should enable a prospective follow up and an analysis of vaccination response when vaccines will be available. The following aspects could be considered:

1. The cohort should allow to rapidly identify what risk and protective factors influence the susceptibility to infection, clinical manifestation (asymptomatic, mild, severe, lethal), therapeutic response and clinical outcome in order to deliver evidence-based recommendations on the best strategies to control the spread of the virus and to protect the entire population. Factors to be considered might include the followings: sex, age, genetics, viral variants, virus shedding, host-pathogen interactions, immune system, historical vaccinations, deep phenotyping, microbiome, biomarkers, co-morbidities, co-infections, environment, biodiversity, pollution, urban characteristics, climate, socio-economic

determinants, disinformation, lifestyle, confinement measures, etc. Investigations should lead to identify the best prevention measures.

2. The cohort should allow to identify the most successful clinical management options and treatments since the start of the outbreak, from primary infection up to post-recovery multidisciplinary rehabilitation. The cohort(s) should take stock of the evidence produced by large-scale studies and/or local practices in order to develop recommendations for optimized treatment and management of future patients.
3. The cohort could also assess in the short/medium/long-term the impact of COVID-19 and the varying mitigating national/regional measures on health, well-being and socio-economic factors of individuals. Issues to be considered might include the followings: disruption of medical care, especially for chronic diseases (cancer, diabetes, CVD/Hypertension, etc.), mental health, employment, education, social interactions, etc.

The cohort should cover a wide geographical area in Europe and other parts of the world. Interaction with national and/or European biobanks, such as BBMRI, could be of high relevance. Special attention should be given to harmonisation of data collection and standardisation of protocols, as well as to the adoption of common formats and models. Cloud-based collaborative portal, artificial intelligence and any other available ICT tool should be integrated[4]. Special attention should also be given to links with the newly established European COVID-19 research data sharing platform[5].

International collaboration is strongly encouraged with Members States in the European Union and worldwide. The cohort should liaise with large COVID-19 clinical trials.

Applicants should be aware that proposals funded under this expression of interest will be required to make available their research data, in accordance with the relevant option of Article 29.3 of the H2020 model grant agreement.

Collaboration between successful proposals and with the existing network of H2020 COVID-19 projects will be encouraged.

Expected EU contribution per proposal

The Commission considers that proposals requesting a contribution from the EU of between EUR 10-15 million would allow these specific challenges to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Proposals can be concise and should focus on the essential information to facilitate an appropriate evaluation.

Expected Impacts (proposals should address one or more of the listed expected impacts)**:**

- In the short-term, to provide robust evidence on the best strategies for the control the SARS-CoV-2 spread and the protection of the population, as well as the optimized clinical management and treatment of COVID-19 patients.
- In the medium/long-term, to provide robust evidence on best vaccine options and strategies.

[4] Where relevant, proposals should consider the close collaboration with leading European supercomputing centres to use high-end computing, data and simulation resources in order to accelerate findings. In this respect, the Supercomputing facilities in Barcelona (BSC) and Bologna (Cineca) are open to collaborate with any interested proposer or successful proposal. Other leading European supercomputer centres, such as the organisations hosting the PRACE Tier-0 supercomputers, may also be interested in such collaborations

[5] https://www.covid19dataportal.org/

- In the short/long-term, to assess the impact of COVID-19 on health and its effects on socio-economic features of individuals and propose recommendations for the optimal management of future outbreak.

The Commission considers that proposals requesting a contribution from the EU of between EUR 10-15 million would allow these specific challenges to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Proposals can be concise and should focus on the essential information to facilitate an appropriate evaluation.

Topic SC1-PHE-CORONAVIRUS-2020-2D

Title Social and economic impacts of the outbreak response

Type of Action RIA

Indicative launch date 14 May

Deadline Date 11 June

Scope

Proposals should focus on lessons learnt: they should i) address how to mitigate social and economic impacts of the outbreak response related to health systems; ii) identify non-intended consequences of epidemic-control decisions; and iii) provide answers to social, including gendered, dynamics of the outbreak and the related public health response. Proposals should analyse the effects and efficiency of these responses, democratic governance, multi-level cooperation, the critical gaps and the various exit strategies, their underlying methodologies and regional adaptations. Proposals are expected to develop guidelines and best 'next practices', and implement interventions to mitigate impacts and boost wellbeing.

In particular, in their proposals the applicants are encouraged to integrate multiple medical, social sciences and humanities disciplines, including anthropology, psychology, sociology, epidemiology, implementation science, journalism & communication, economics and political sciences, as well as gender studies and intersectional research.to address the following inter-related dimensions:

1. **Analyse and compare outbreak responses across Europe and impacts on human behaviour and social dynamics** by different regions and countries, taking into account societal and cultural structures, health system preparedness and resilience, population densities, population risk groups, climate, pollution, among other factors. Proposals are encouraged to develop guidance for health behavioural patterns to positively influence adherence to behavioural advice and prevent disinformation about health issues and confinement, isolation and social distancing at societal, community and individual levels. Furthermore, the proposals should study factors contributing to the use of harmful self-medication and hesitance towards vaccines.

2. **Mental health and health inequalities:** The proposals should address the immediate and long-term mental health impact in relation to, for example, confinement and social isolation, time spent indoors, repeated media and technology consumption, and disruption of work/school-life balance. They should also address the potential exacerbation of health inequalities affecting on the one hand frontline healthcare workers (a majority of which are women), factoring in the ethical challenges they face as well as the suboptimal working conditions and traumatic stress they experience and, on the other hand, the most vulnerable groups, including the elderly, people with pre-existing conditions and comorbidities and those with precarious socio-economic conditions (e.g. migrants, the homeless and/or unemployed).

The Commission considers that proposals requesting a contribution from the EU of between EUR 4 and 10 million would allow this specific topic to be addressed appropriately. Of note, a proposal requesting the maximum envisioned contribution must be able to deliver on all the dimensions mentioned above, include partners from a wide range of disciplines and deliver results that are representative of the whole EU27 and associated countries. Moreover, in case there is more than one funded project, data sharing, communication, collaboration and coordination across research groups will be required.

Expected Impact:

- To improve the resilience, wellbeing and mental health of the population, frontline workers and, in particular, of the most vulnerable groups and mitigate health inequalities during and after pandemics.

- To contribute to a better understanding of the impact, effectiveness, the public health preparedness and responses (control) that have been taken at different governance levels in the context of the ongoing epidemic of SARS-CoV-2 in terms of; acceptability, adoption, appropriateness, feasibility, fidelity, implementation cost, coverage, sustainability of diagnosis and clinical management of patients and survivors infected by SARS-CoV-2 as well as front line workers and communities.

- To prepare holistic assessments of the social, economic and political impacts of the outbreak and its responses, and to propose and deploy evidence-based policy measures (transferable best practices, methodologies) and other initiatives to improve industry's and society's adaptation capacity and resilience as well as supporting the availability of critical technologies and tools (during and after a shutdown) that accelerate and enable a fast recovery of the current healthcare emergency

- To contribute to a holistic public health preparedness and response in the context of ongoing and future epidemics

- To provide health authorities with guidance for further public health interventions, and to support implementation of actions to; mitigate or manage consequences of current policies, and to better tailor future pandemic management strategies e.g. on confinement.

- To deliver results within 3-24 months to end-users at scale.

Topic SC1-PHE-CORONAVIRUS-2020- CSA COHORT

Title Collaboration of EU existing cohorts of relevance to COVID-19

Please change

Type of Action CSA

Indicative launch date 14 May

Deadline Date 11 June

Specific Challenge

Several large-scale cohorts are supported in Europe and the world with valuable information on health of individuals and various factors that might be associated to the perturbation of health. Such existing cohorts might provide key information relevant to COVID-19. However, the challenge is to be able to extract a sufficiently high number of cases with corresponding high-quality data that can be used across the different cohorts. Consequently, existing cohorts should join in a common effort to standardize data associated to COVID-19 and extract information that will help ensuring optimal prevention, protection and treatment of citizens.

Scope

Proposals under this coordination and support action should support the international networking of existing, mainly longitudinal, cohorts in order to extract jointly agreed standardized data on SARS-CoV-2 diagnosed/serotyped and matched non-infected individuals. This effort should contribute to help in the identification of key factors influencing the susceptibility to infection and clinical manifestation, to assess the optimized therapeutic and clinical management options, and to derive lessons on the health and socio-economic impacts of the pandemic. Proposals should consider integrating the COVID-19 cohort(s) that will be funded under this Expression of Interest and liaise with the network of clinical trials on COVID-19 treatments.

Expected Impact

Pooling of data from multiple existing cohorts that will inform on key aspects related to COVID-19 and provide evidence-based recommendations for health policies in preventive strategies, protective actions, and disease management. Expected EU contribution per proposal € 1-3 million