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) socio-economic impacts of the outbreak responses; (2) Pan-European COVID-19 cohorts; (3) Manufacturing adaptability and resilience; (4) medical technologies and ICT applications, digital tools and Artificial Intelligence (AI) analytics.

Topic Description

Specific Challenge:

Fighting the COVID-19 worldwide pandemic has created an urgent demand for innovative and rapid solutions to contain and mitigate the outbreak and, to better care for patients, survivors, frontline (health) care staff and communities. At the same time, research and innovation could draw lessons of the present crisis to strengthen the resilience of our societies – and especially European health systems - when confronted with possible similar future events. New health-related knowledge and solutions could enable the return to a normal functioning of our societies with sustainable growth.

Practical and evidence-based health-related guidelines, observations of cohorts of COVID-19 survivors and solutions (products and services) are needed to support policy makers, healthcare providers, employers and civil society organisations to deal with problems resulting from current containment and mitigation measures, as well as how to implement measures to relax once the outbreak is under control. In addition, new measures and solutions (IT-or other) could identify new roles of - and targeted investments in primary health care, provision of social work, personal care, protection or social support services to children or adults in need or have needs arising from illness, disability, old age or poverty.

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

Scope:

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

1. Social and economic impacts of fighting the Coronavirus pandemic and its immediate consequences to contain and mitigate the outbreak.
2. Pan-European COVID-19 cohorts united against the pandemic.
3. Manufacturing adaptability and resilience to improve industrial systems response, recovery and preparedness.
4. Medical technologies, Digital tools and Artificial Intelligence (AI) analytics to improve surveillance and care (CNECT topic)

[1] https://ec.europa.eu/info/sites/info/files/research_and_innovation/research_by_area/documents/ec_rtd_era-vs-corona_0.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 3-18 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.

Projects 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.

Actions will demonstrate how their activities will lead to faster, more impactful and cost-effective and larger scale deployment of a range of innovative (technological and non-technological) solutions/approaches to respond to COVID-19 and deliver quick results relevant to society. Proposals should address how to make healthcare systems more resilient to pandemics in terms of; improving support measures for the most vulnerable; well-being and operational capacity of frontline workers; short term production and distribution capacities; multi-level cooperation between, local, regional Member States and EU-levels);and

Gender-related issues are an important crosscutting focus of this Expression of Interest in term of gender equality e.g. preventing and treating domestic violence as well as guaranteeing women's reproductive health and rights in lockdown situations.

This second 'expression of interest' complements the first 'expression of interest' that was published in January [insert reference], which led to funding 18 projects [insert reference]. The first expression of interest focused on advancing the knowledge on 2019-nCoV and its impact on infected persons, with the aim of contributing to an efficient patient management and/or public health preparedness and response.

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 compounds. There are and have been many other funding and financing initiatives [1] 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.

1. Social and economic impacts in health of the outbreak response

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, such as disinformation and social media, influencing the growing problem of harmful self-medication, using unreliable testing and vaccine hesitancy (including how to ensure sufficient immunisation uptake once a COVID-19 vaccine becomes available).

2. **Mental health and health inequalities** e.g. in relation to; confinement and isolation, repeated media and technology consumption; the immediate and long-term mental health impact; and the potential exacerbation of health inequalities affecting frontline healthcare workers (a majority of which are women) and the most vulnerable groups. These groups include; the elderly, people with pre-existing conditions and comorbidities and those with precarious socio-economic conditions (e.g. migrants, the homeless and/or unemployed).

2. Pan-European COVID-19 cohorts united against the pandemic

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.

Proposals submitted 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.

Two types of cohorts could be envisaged; new COVID-19 cohort(s), which might integrate smaller relevant ones, and/or existing, mainly longitudinal, cohorts that might join efforts to extract SARS-CoV-2 diagnosed/serotyped individuals. Both types of cohorts should be large enough to provide robust evidence and recommendations, and be used for retrospective and prospective studies. They 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. They should also contain individuals who are SARS-CoV-2-negative to 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(s) 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(s) should allow to identify the most successful clinical management options 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(s) 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(s) 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[2].

Both types of cohorts are expected to closely collaborate to address the collective challenge of being prepared for future wave(s) and any other emerging outbreak at EU level and beyond. International collaboration is strongly encouraged with Members States in the European Union and worldwide. The cohort(s) should liaise with large COVID-19 clinical trials.

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

3. Manufacturing adaptability and resilience to improve industrial systems response, recovery and preparedness for vital medical supplies and equipment.

Proposals should address the capacity of re-orienting and maintaining production levels in times of shock and urgent needs for our societies. The scope covers:

- the adaptation and ramp-up of production lines to quickly adjust to new and urgent production needs, notably medical equipment, vaccines or therapies, diagnostic service systems and automated systems of disinfection.

[2] 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

- 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, in particular SMEs by providing services for the design, assessment, testing and regulatory issues.
- qualification of operators/technicians for new/repurposed production lines

Open Innovation Testbeds, laboratories, and other technology infrastructures including maker communities may be particularly relevant for SMEs to enable them to quickly test modular solutions for a faster or repurposed production and to integrate and adapt these solutions into different value chains. These could become demonstrators of a flexible 48-hour industrial response capability for requalification or release of production lines during and after a shutdown. Proposals should consider how to integrate relevant results of research and innovation actions, regardless of the origin of funding, in order to accelerate and maximise the impact.

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

The challenge is to support health systems' resilience, preparedness and response strategies to the COVID-19 pandemic and other epidemic outbreaks, and the return to normal afterwards. This will be done by quickly mobilising and fostering the wide deployment of innovative close-to-the market technologies.

The action types are:

1) Support to large-scale deployment solutions that are close-to-market (TRL 7) in one of the above mentioned areas 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);

2) Support to 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 above) with the aim to help accelerate developments and achieve conformity assessment (CE marking).

The instrument of Innovation Actions will address Digital Innovation Hubs, digital health accelerators and knowledge hubs, Centres offering Pilot Lines or similar technology, business and/or knowledge transfer organisations. These should cascade grants to innovative SMEs and provide them 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. Use of cascading grants must result in minimal administrative burden for participating SMEs and allow the fastest possible launch of the projects.

These solutions 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 projects 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 sterilisation or the wetting and filtering properties of fabrics used for face masks; sensors, sterilisation, including robotics solutions for disinfection;

innovative data-driven services and tools combining data assets from various relevant privately held and/or publicly available sources, taking into account the Commission

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

- 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 2019-nCoV in terms of; acceptability, adoption, appropriateness, feasibility, fidelity, implementation cost, coverage, sustainability of diagnosis and clinical management of patients and survivors infected by 2019-nCoV, 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 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
- Preparedness included yes/no? Contribute to a holistic public health preparedness and response in the context of ongoing and future epidemics

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

Call conditions

For point 1 (social-economic):

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.

For point 2 (cohort):

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. Please note that expenditures can be covered from the date of submission of the proposal, but at the applicant's own risk. Proposals can be concise and should focus on the essential information to facilitate an appropriate evaluation.

Only (up to or max?) 2 projects will be funded (1 for each type of cohort)

Point 3 (manufacturing)

The Commission considers that proposals under point 3 requesting a contribution from the EU of between EUR 5 and 6 million would allow these specific challenges to be addressed appropriately. IA or RIA?

For CNECT topic 4: specifications:

For focus area 4, the Commission considers that proposals requesting a contribution from the EU of between EUR 5 and 10 million for type 1 actions and type 2 actions would allow these specific challenges to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. At least one project will be selected of each type. In every project, at least 50% of the budget should be reserved for SMEs, either directly or through FSTP. 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 can 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. When several third parties are involved in the same subproject, total amount can be up to EUR 300.000. Overall duration for this action is 2 years.

Applicant consortia should provide access to testing and experimentation facilities as well as offer the expertise required for validation and the requisite conformity and certification. They would need to be ready to launch the competitive calls for the two types of above activities 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 SMEs and demonstrate convincingly that they can handle actions of this kind and scale (e.g. through a proven track record).

For all points?

Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Please note that expenditures can be covered from the date of submission of the

proposal, but at the applicant's own risk. Proposals can be concise and should focus on the essential information to facilitate an appropriate evaluation.

Access and IPR clauses – RTD E3 and F2 Kirsi

Research and development could aid ensuring equitable access, based on public health needs.

Topic conditions and documents

1. Eligible countries: described in Annex A of the Work Programme.
A number of non-EU/non-Associated Countries that are not automatically eligible for funding have made specific provisions for making funding available for their participants in Horizon 2020 projects. See the information in the Online Manual.

2. Eligibility and admissibility conditions: described in Annex B and Annex C of the Work Programme.

Proposal page limits and layout: please refer to Part B of the proposal template in the submission system below. Max 45 pages

3. Evaluation:

- **Evaluation criteria, scoring and threshold**s are described in Annex H of the Work Programme.
- **Submission and evaluation processes** are described in the Online Manual.

The thresholds for each criterion will be 4 (Excellence), 4 (Impact) and 4 (Implementation). The cumulative threshold will be 12.

4. Indicative time for evaluation and grant agreements:

Information on the outcome of evaluation (Public Health Emergency): maximum 3 months from the deadline for submission.
Signature of grant agreements: maximum 5 months from the deadline for submission.

5. Proposal templates, evaluation forms and model grant agreements (MGA):

Research and Innovation Action:

Specific provisions and funding rates
Standard proposal template
Standard evaluation form
General MGA - Multi-Beneficiary
Annotated Grant Agreement

Innovation Action

These documents are for reference only; for submission of proposals, the documents provided in the submission system should be used.

6. Additional provisions:

Horizon 2020 budget flexibility
Classified information
Technology readiness levels (TRL) – where a topic description refers to TRL, these definitions apply.

Members of consortium are required to conclude a consortium agreement, in principle prior to the signature of the grant agreement.

7. Open access must be granted to all scientific publications resulting from Horizon 2020 actions.

Public Health Emergency - Availability of research data

Beneficiaries in grants awarded under actions relating to Public Health Emergencies must make available their research data, at the latest within 30 days after it has been generated, through open access or, if agreed by the Commission, by giving access rights to those third parties that need the research data to address the public health emergency. Therefore the relevant option of Article 29.3 (option 1c) will be applied.

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. The use of harmonised protocols in collaboration with other actors is recommended for this purpose.

It is expected that quality-controlled data are shared in accordance with the FAIR principles. The use of harmonised protocols in collaboration with other actors is recommended for this purpose.

A **draft data management plan (DMP)** must be submitted preferably with the proposal and at the latest before the signature of the grant agreement. The DMP should address the relevant aspects of making the data FAIR – findable accessible, interoperable and re-usable, including what data the project will generate, whether and how the data will be made accessible for verification and re-use, and how it will be circulated and preserved. A template for such a plan is given in the guidelines on data management in the H2020 Online Manual.

Eligibility of costs: costs related to data management and data sharing are eligible for reimbursement during the project duration.

The legal requirements for projects participating in this pilot are in the article 29.3 (option 1c) of the Model Grant Agreement.

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, treatment.

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, in particular concerning mobile applications and the use of anonymised mobility data, establishes a common approach to the use of digital technologies and data in response to the current crisis and to support the exit strategies.

- datasharing platform https://www.covid19dataportal.org/
- guidelines on testing https://ec.europa.eu/info/files/testing-kits-communication_en

8. Additional documents:

Introduction WP 2018-20
Health, demographic change and well-being WP 2018-20
General annexes to the Work Programme 2018-2020

Legal basis: Horizon 2020 Regulation of Establishment
Legal basis: Horizon 2020 Rules for Participation
Legal basis: Horizon 2020 Specific Programme

Ideas collected from previous discussions:

New ideas from E1? Or from CNECT?

CNECT or E1 text???

This Expression of Interest invites proposals for R&I activities that aim for a wide-scale and rapid (within 3-18 months) application of solutions that will enable exit from the COVID-19 pandemic, take full control of the virus life cycle, allow the return of citizens to their normal occupations, take stock of the lessons learnt from the different strategies put forward to mitigate the pandemic, and propose actions for better preparedness in the future. The focus of this Expression of Interest is not to develop completely new diagnostics or vaccines, as these solutions are already well covered by other public or private initiatives, but rather accelerate the deployment of mature solutions.

Text from CNECT or from RTD E1? 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. Horizon 2020 has reacted quickly to launch 18 research projects to fight the coronavirus pandemic from different perspectives, including epidemiology and modelling, diagnostics, treatment, and vaccine. However, in the most urgent setting, additional research and innovation should contribute to continue the fight against the coronavirus. At the same time, research and innovation should without delay start informing on lessons from the present crisis and propose solutions for strengthening the resilience of our societies – and especially European health systems –and being better prepared in the future if confronted with similar events.

(possibly aided by modelling studies) Mention specifically: age, gender?

1. ~~Building robust scientific knowledge on the virus and the disease to prepare for a possible second and third wave of pandemic/epidemic.~~

Proposals should address the scientific gaps in the knowledge of the virus life cycle, in particular, how its genome evolves and what consequences this genetic drift might have on the preventive and therapeutic approaches being currently developed and on the reinfection of people. Proposals should also take the opportunity of the existence of large cohorts to understand better what factors (sex, age, genetics, co-morbidities, immune system, environment, lifestyle, etc.) influence the outcome of the infection and to what extent individual and community immunity will protect the population from infection or reinfection in the coming years. Addressing these points would allow to understand better the spreading, inform on best strategies to protect the citizen and improve the clinical management of infected patients.

2. ~~Lessons learnt from the different outbreak responses in different countries.~~ (note Henriette: this is a potential impact, not a separate topic)

~~Proposals should analyse the timely responses, implementations and actions adopted by different countries, taking into account the different societal and cultural structures, population densities, climates, pollution, political systems, etc., in order to address the consequences of the pandemic and of the different pandemic control measures. Various issues should be considered. These could be related to health (mental health, management of non-COVID-19 diseases and clinical trials, etc.), healthcare systems, social changes and dynamics including in the most vulnerable citizens (elderly, homeless, migrants, etc.), economic resilience, circular economy, political stability, education, communication, and the role of the European Union. Proposals are also expected to provide recommendations on what changes would be needed to be better prepared in the future. Applicants are encouraged to integrate multiple disciplines, including medicine, psychology, sociology, anthropology, epidemiology, journalism & communication, education and political sciences.~~

3. Implementation research[3] to improve health systems responses, resilience and preparedness.

Proposals should address how to map and reinforce preparedness to health threats, to improve the resilience of healthcare frontline staff and its reinforcement by additional forces (within and outside of hospital settings), to increase the availability and production of critical equipment and treatment solutions or to speed up the adoption of interventions in diagnosis, clinical management (including revalidation in other care settings) and medical surveillance in real-world conditions of COVID-19 patients, as well as asymptomatic persons. Research actors as well as stakeholders such as public health authorities, civil protection mechanisms and civil society would usefully contribute to this implementation research. A wide variety of industry sectors could be involved in developing these types of solutions, such as; 3D printing, robotics, disinfection of environments/materials/textiles and sanitary equipment, handling/disposal of hazardous materials, air transport and key enabling technologies.

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

Note from Henriette: could you define better what is the challenge for the end-users: **this is NOT new technologies!** More concretely, MS suggested that more needs to be done to protect patients, doctors and the general public in times of big pandemics, like COVID-19. So, *how to future use routine and big data for early warning and surveillance as well as digital diagnosis and monitoring? How to to advise the public and limit physical contacts in delivering (health) care systems supported by the use of digital technologies. Finally, how can eHealth/ mHealth solutions help to support build resilience in (health) care systems for future outbreaks.*

The challenge is to quickly mobilise and foster the wide deployment of innovative close-to-the market technologies. The instrument of Innovation Actions will address Digital Innovation Hubs, digital health accelerators and knowledge hubs, Centres offering Pilot Lines or similar technology, business and/or knowledge transfer organisations. These should cascade grants to innovative SMEs and provide them 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. Use of cascading

[3] https://www.bmj.com/content/347/bmj.f6753

grants must result in minimal administrative burden for participating SMEs and allow the fastest possible launch of the projects.

These solutions could encompass a combination of tools and technologies, such as: micro/nano-systems, bio-photonics & bio-electronics, graphene or related materials (GRM), AI and robotics, e-health and digital tools. The projects should address (a) innovative screening and diagnostic systems to detect the presence of the pathogen related parameters especially in an early stage in people and to assess immunity, also in the environment (air, sewage, etc.) and/or (b) new solutions for patient care and monitoring, protection of healthcare practitioners and/or optimising return to normal after the outbreak.

The actions types are: 1) Support to large-scale deployment solutions that are close-to-market (TRL 7) in one of the above mentioned areas 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); 2) Support to 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 above) with the aim to help accelerate developments and achieve conformity assessment (CE marking).

New text by E1 or CNECT (who knows)?

- To rapidly control the spread of the SARS CoV-2 virus and to propose readily deployable solutions for effective prevention and optimized treatment of the Covid-19 disease.
- To assess the social, economic and political impacts of the outbreak and its responses and propose recommendations for changes that would allow a fast recovery and a better preparedness, including in the health care systems, for future health emergencies.
- To contribute to the public health preparedness and response in the context of the ongoing pandemic and to ensure the availability of critical technologies and tools.
- To deliver results within 3-24 months to end-users at scale.

<u>The Commission considers that proposals requesting a contribution from the EU of between EUR 4 and 5 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Please note that expenditures can be covered from the date of submission of the proposal, but at the applicant's own risk. Proposals can be concise and should focus on the essential information to facilitate an appropriate evaluation.</u>

CNECT text

The Commission considers that proposals under point 4 requesting a contribution from the EU of between EUR 5 and 6 million for type 1 actions and between EUR 4 and 5 million for type 2 actions would allow these specific challenges to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. At least one project will be selected of each type. In every project, at least 50% of the budget should be reserved for SMEs, either directly or through FSTP. 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 can 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. When several third parties are involved in the same subproject, total amount can be up to EUR 300.000. Overall duration for this action is 2 years. Applicant consortia should provide access to testing and experimentation facilities as well as offer the expertise required for validation and the requisite conformity and certification. They would need to be ready to launch the competitive calls for the two types of above activities 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 SMEs and demonstrate convincingly that they can handle actions of this kind and scale (e.g. through a proven track record).

Cross-cutting Priorities:

Socio-economic science and humanities
Open Innovation
Gender

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. The use of harmonised protocols in collaboration with other actors is recommended for this purpose.

International cooperation; third countries are eligible for X