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e-health and international collaboration in pandemic COVID-19

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- Disclosure:

- The author is not in conflict of interest

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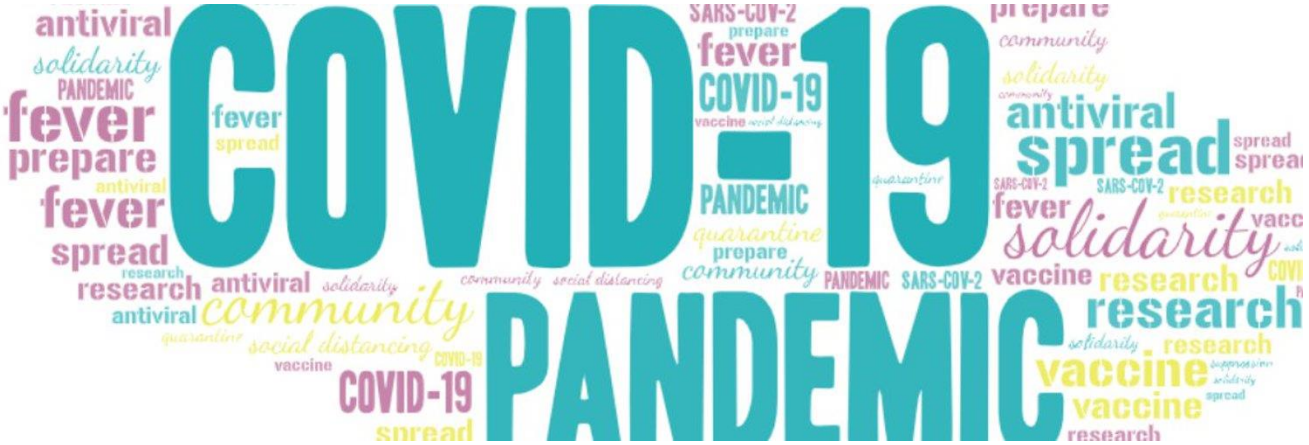
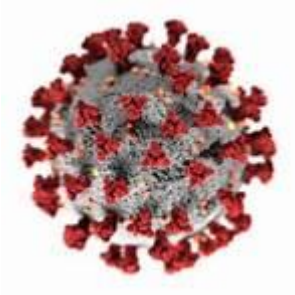


Europe and the whole world have been facing covid-19 pandemic, new situation, nobody was prepared and ready to face

The COVID-19 pandemic is the public health challenge of our time.



A full vaccination reduces risk of SARS-CoV-2 infection by roughly 90%, and a single dose is 80% effective, according to a study of US nurses, firefighters and other front-line workers.

A study of more than 9,500 people in Wuhan, China — once the epicentre of COVID-19 — found that only 7% of the population had been infected with SARS-CoV-2, of whom more than 80% had had no symptoms.

COVID – 19 pandemic

- most **vulnerable population** is elderly **isolated** or at their homes or homes for elderly, without direct contact to the rest of the population and their relatives

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COVID – 19 pandemic

- **electronic devices, smart phones, sensors, robotic devices**, and **other IT solutions** connecting them with outer world and made their **life easier** and **safer**

COVID – 19 pandemic

- wide use and development of **new, more innovative**, and practical **devices** was accelerated

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COVID – 19 pandemic

- pandemic situation forced **new collaborations at national level, bilateral levels, and at European level,** supported by various forms of financing

5G Corridor Munich-Prague from 2020

future cooperation in the frame of a **5G Corridor Munich - Prague** to jointly push **digital transformation** across borders forward

special attention to **e-health applications and elderly**

5G project has the ambition to become a showcase project for **cross-border technological cooperation** within the EU.

Home (munich-prague.org)

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5G e-health

5G Corridor Munich–Prague

- digital technologies such as 5G mobile communication offer new opportunities to **transform** the way we **receive and provide health and care services**
- with 5G, better-connected, integrated, and coordinated healthcare can be designed, enabling innovative approaches to **independent living and health and social care**

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5G for e-health

- this includes the **remote monitoring of patients**, utilizing robots to help surgeons and **improve medical outcomes**, managing hospitals more effectively, and providing personalized medicine and smarter medication for more effective treatments

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5G for e-health

5G Corridor Munich–Prague

- 5G for e-health is based on **ongoing projects** with the possibility to join new partners from both sides
- **new projects ideas** are created

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5G e-health

5G Corridor Munich–Prague

- **examples:**
- **healthcare** management - telemedicine and **homecare** - management and provision of health care services to chronically ill patients
- **health data management** - Transregional Image exchange for the health care system
- IT technologies: system stability monitoring and cyber security detection and prediction methods, SW and HW accelerated algorithms (incl. machine learning) - cross-thematic

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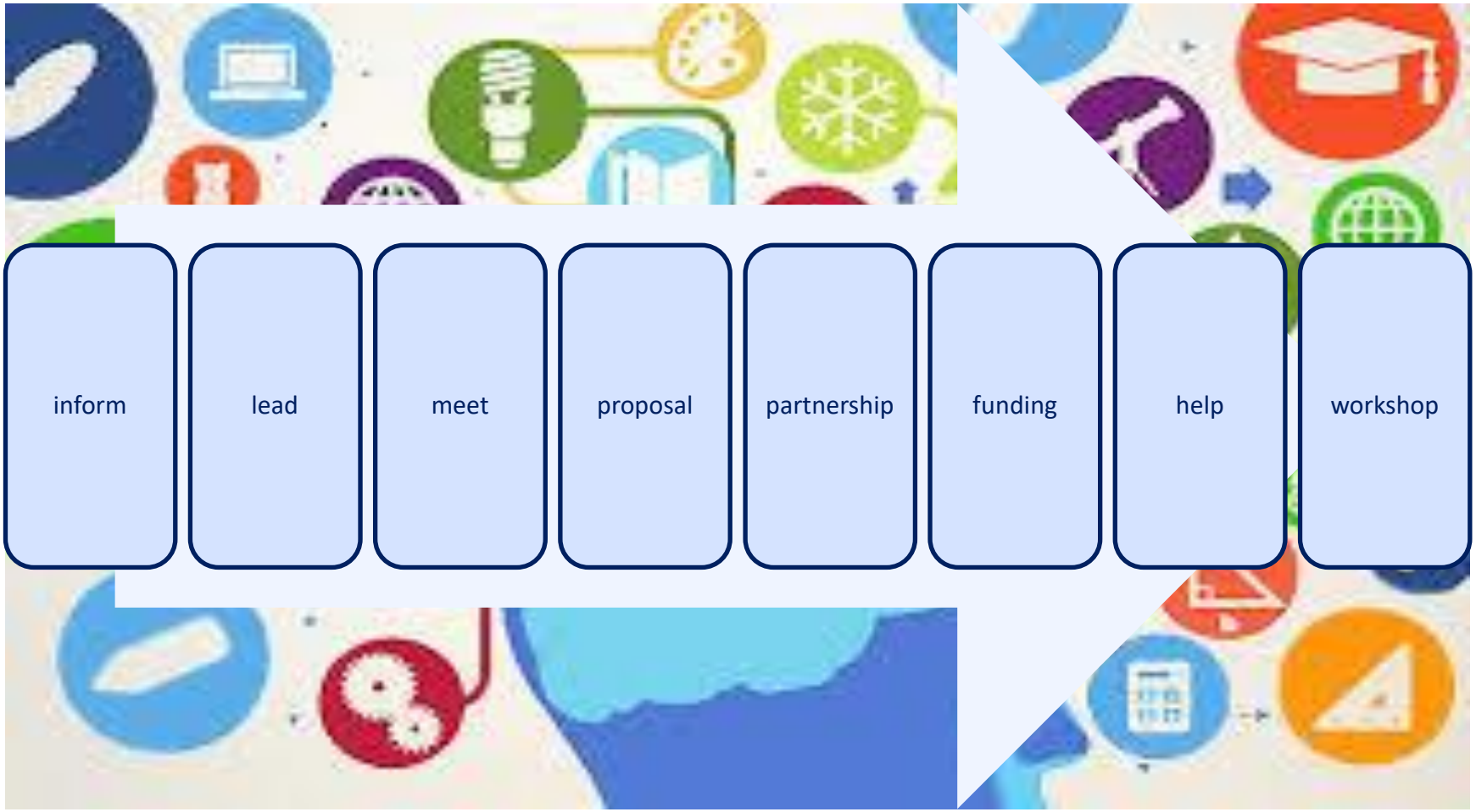
from idea to project proposal



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benefits for the patient and society

- earlier detection
- more effective treatment
- prevention
- prediction

- new imputs for personalised medicine

- better quality of life
- healthy life style
- active involvement in Health care systems

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e-health challenges

- **BIG DATA (3V, volume, velocity, variety)**
- personal data
- clinical data
- imaging data
- health care records
- proteomics, metabolomics, lipidomics, and all –omics
- old data, real time data
- data from wearable devices

- artificial intelligence
- machine learning
- modelling
- biostatistics

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Thank you for your attention

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