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*Biobanking for Precision
Care - Lessons Learned
from Global Crises*

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The timely involvement of Biobank Pilsen (Czech Republic) in the COVID-19 pandemic

Flash Talks

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CZECH REPUBLIC



Disclosure

- The authors are not in conflict of interest

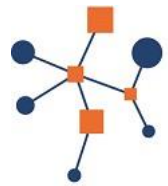
Biobank at the University Hospital in Pilsen



- since 2000 the **Laboratory at the Department of Immunochemistry** at the University Hospital (UH) Pilsen has been systematically collecting and storing samples of biological material for long term storage, and for routine diagnostics and research
- the main diagnoses of interest were: **breast cancer, colorectal cancer and prostate cancer**
- all necessary **legislative, ethical and internal** directives were incorporated into the entire process of collecting, transporting, allocation and storage of patient samples

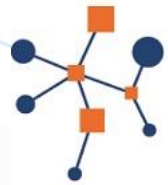
Biobank at the University Hospital in Pilsen

- in **2014** the repository of biological samples at the University Hospital in Pilsen changed **status to “biobank”** and
- became a **member of the national node **BBMRI_CZ**** of the European Infrastructure **BBMRI-ERIC** (Biobanking and BioMolecular resources Research Infrastructure - European Research)



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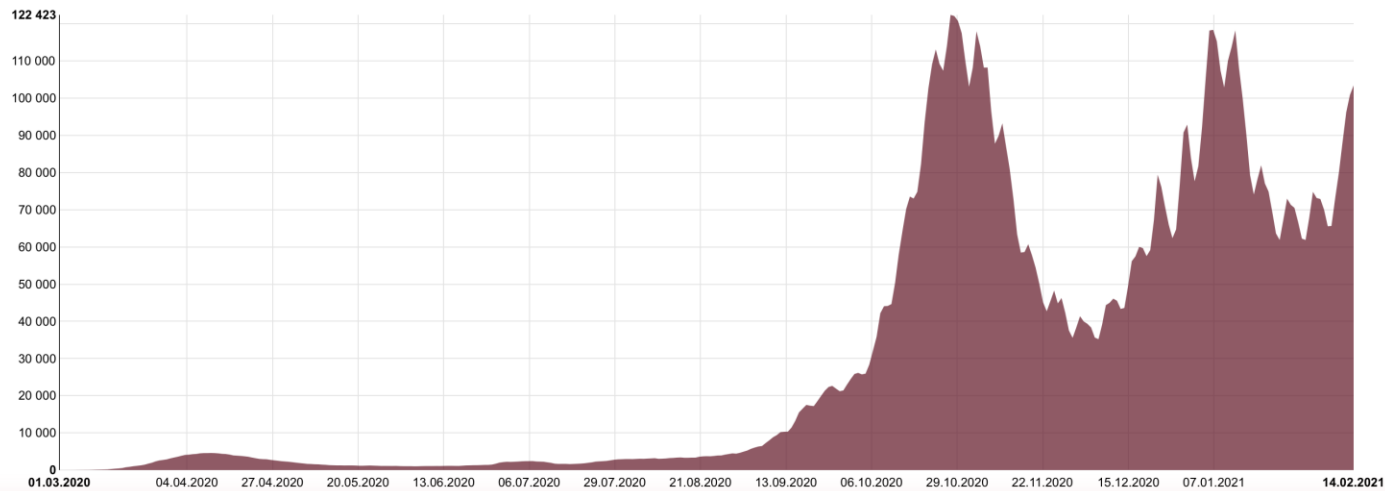
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Czech Republic COVID-19 situation

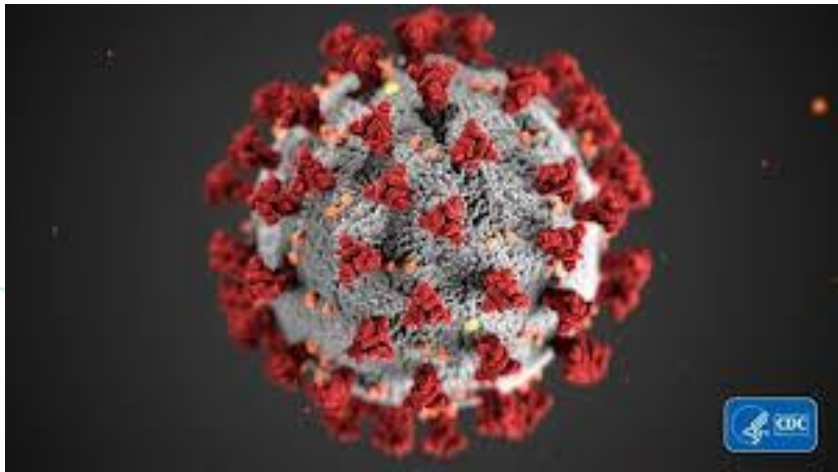
Actual numbers of persons with laboratory confirmed COVID – 19 from the beginning of pandemy till now (Ministry of Health of the Czech Republic)

Trendový profil aktuálního počtu osob s laboratorně prokázaným onemocněním COVID-19



- the pandemic of COVID-19 affected all health care systems worldwide and the **Czech Republic** was one of **successful** European countries during the **first wave** in spring 2020.
- the **epidemiological data of covid-19** deaths in the **first 6 months 2020** were comparing with influenza deaths data lower.
- the **second 6 months 2020** the situation was opposite, and the Czech Republic is currently heavy affected by **COVID-19**

Biobank activities during COVID -19 pandemic



- **samples related to COVID-19** (blood, plasma and serum) as well as **associated data** have been **collected**, according to SOPs, and were used partially for internal research purposes.

4 groups of samples were collected:

1. samples from **COVID-19 patients**
2. University Hospital **employees**
3. **control group** from patients with other than COVID-19 diagnosis
4. **persons vaccinated** against COVID-19

In all groups repeated samples and associated data are available

Biobank activities during COVID -19 pandemic

Research based on COVID– 19 samples



- antibodies Anti-SARS-CoV-2 and 25OH vitamin D were measured in all 4 groups
- correlation of results with clinical state, disease development and possible death were calculated
- positiveness antibodies persistence of patients after COVID – 19 infection was studied
- positiveness antibodies occurrence in medical staff was studied
- influence of 25OH vitamin D on disease development and progress were monitored
- 36% of medical staff showed normal levels of 25OH vitamin D

Biobank activities during COVID -19 pandemic

Research results
antibody IgG
pilot results



- at patients after COVID-19 infection **after a month antibodies were present in 90%**
- **at medical staff** antibody positivity was confirmed in **8%**, after COVID-19 infection or after contact with COVID-19 positive patient
- **positiveness antibodies persistence** lasted at **80%** of persons at least for six months

International collaboration and coordination

- COVID -19 related activities were coordinated at national level and at the international level with **BBMRI-ERIC** (Biobanking and BioMolecular resources Research Infrastructure - European Research Infrastructure Consortium), and **ISBER**.

WE NEED YOUR HELP!

JOIN THE DIRECTORY NOW:

ISBER members are invited to join the BBMRI-ERIC Directory to help researchers around the globe find your COVID-19-related samples and datasets.

#covid19  

www.bbmri-eric.eu/services/isber-biobank-collaboration

Our team

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