COMPARATIVE STUDY BETWEEN HEALTH DISASTER MANAGEMENT SYSTEMS IN THE CZECH REPUBLIC AND UNITED KINGDOM

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Background:

COVID19 was officially declared a pandemic by the WHO on 11th March 2020. The lack of preparedness for a global health disaster of this magnitude has highlighted the need for drastic improvements in disaster management systems worldwide in order to further prevent unnecessary loss of life.

Aims and Objectives:

The key objective of this study was to compare and contrast management strategies adopted by the Czech Republic (CZ) and United Kingdom (UK), to highlight practices that were key in reducing the rate of transmission of COVID19. The study aims to provide insight to future policymakers in CZ and UK regarding optimisation of national health management systems in response to a pandemic.

Methods:

Existing data* gathered by various national and international health organisations were used in line with data from recent publications and review studies:

- The Association of Schools of Public Health in the European Region (**ASPHER**)
- Institute for Health Metrics and Evaluation (**IHME**)
- European Centre for Disease Prevention and control (**ECDC**)
- Czech Ministry of Health (**MoH**)
- Our world in data (**OWID**)

* Relevant data up to and including 31st March 2021

Results:

Deaths:

Analysis of data showed that 6 months into the pandemic 573.04 more deaths/million were reported in the UK compared to CZ (Fig 1a) ; by 13 months into the pandemic UK had reported approximately 597.06 less deaths/million than CZ (Fig 1b)

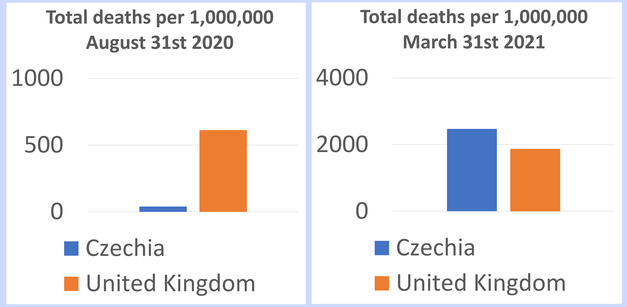

Fig 1a and 1b showing Total deaths per million in the UK and CZ during March 2020 and August 2021.[2]

Work from Home:

According to one study[1] involving over 40 countries and states, closing of workspaces had the greatest individual impact on the R number.

Vaccinations:

CZ - 6.49 million (60.9%) projected to be vaccinated by July 1st (IHME prediction). Current population adjusted vaccination with at least one dose is 11.17%. Date of first vaccine – 15th January 2021

UK - 49.16 million (73.8%) projected to be vaccinated by July 1st (IHME prediction). Current population adjusted vaccination with at least one dose is 45.88%. Date of first vaccine – 8th December 2020

References:

[1] - Phebo D. Wibbens,,Wesley Wu-Yi Koo,Anita M. McGahan (2021) Which COVID policies are most effective? A Bayesian analysis of COVID-19 by jurisdiction. Ncbi.nlm.him.gov. Available at: https://pubmed.ncbi.nlm.nih.gov/33373384/ [Last Accessed 25thApril]
[2] - ECML data 2020-2021. Available at: https://covid-statistics.jrc.ec.europa.eu/RMeasures [Last accessed 24th April]
[3] - IHME data https://covid19.healthdata.org [Last accessed 26th April]

Mask usage:

During the first wave (March 2020 - May 2020), Compliance with mask usage within CZ was very high in comparison to the global average of 57%, reaching approximately 83% (in comparison to the UK which observed levels of compliance with mask usage around 10% (April 26th 2020). Prior to the peak of the second wave, mask usage in CZ reached lows of 8%.
CZ was the first EU country to impose mandatory mask wearing and fines for those who did not comply. In contrast, the UK did not impose any such rule on mask usage.

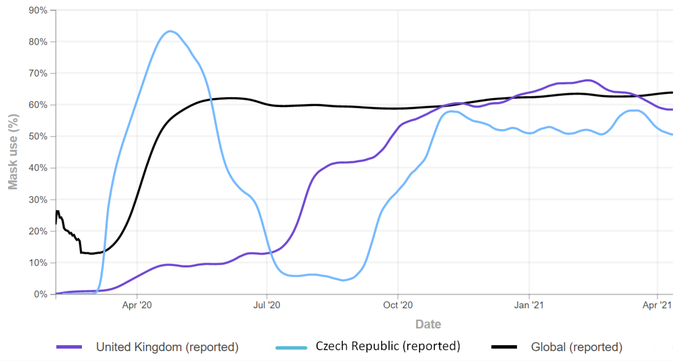

Fig 2: Graph showing IHME data on national mask usage in UK and CZ between Feb 2020 and Mar 2021[3]

	United Kingdom	Czech Republic
First Case	31st January 2020	1st March 2020
First Death	5th March 2020	22nd March 2020
First National Lockdown	26th March 2020	12th March 2020
Border Screening	18th January 2021	27th April 2020
International Travel Restrictions	July 2020	16th March 2020
Quarantine for International Travellers	8th June 2020	13th March 2020

Table 1: Key pandemic dates associated with response measures implemented by UK and CZ [2]

International Travel:

UK - No implementation of international travel restrictions during onset of the pandemic. In contrast, many countries worldwide, including CZ, had implemented moderate to severe travel restrictions during March 2020.

Conclusion:

Our findings indicate that different systems adopted by the UK and CZ to manage COVID19 resulted in **varying degrees of success**. Key to the success of the CZ management of the first wave was the rapid response to the emerging situation through **timely implementation** of restrictions and sufficient compliance to measures by the public. Successful elements of the UK response included **effective vaccination rollout** as well as progress in sequencing and testing for variants of the virus. In addition to UK and CZ, we found that some other countries displayed elements of successful pandemic management. For example:

- **Portugal** - demonstrated an effective balance between stringent mobility measures and improved perceived quality of life, by implementing curfew on weekends from 1pm – 5am but keeping shops and restaurants open outside of curfew hours.
- **Israel** – frontrunners in vaccine rollout and implementation (achieving highest total vaccination rate – 60.62% of the population receiving a single dose by March 31st)

We conclude that an optimal management system should adapt in accordance to the failures and successes of other countries in order to strengthen the preparedness and response of health systems globally to be better prepared for future health threats.

Key Message and Future Work:

Further research is needed into the impact of compliance to epidemiological measures and methods by which this may be improved. In addition to this, we believe that more data needs to be gathered regarding the effectiveness of existing public health measures from the viewpoint of healthcare professionals.