Deep analysis of the COVID-19 pandemic: A complex interaction of scientific, political, economic and psychological facts and fakes

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Abstract: Fear of the coronavirus disease (COVID-19) has spread around the world. National borders are closed, the economy is shut down, and self-quarantining of millions of people have become the "new normal." Early warnings regarding the readiness of large-scale RT-PCR testing in Europe, the existence of contradicting and ambiguous epidemiological data, and the striking similarities to the H1N1-pandemic scandal in 2009 could not prevent this global response to COVID-19. Vague definitions of "fatal COVID-19 cases", unreliable RT-PCR tests as well as political, financial, and scientific special interests and often times biased news coverage by the mass media are also important factors. In this manuscript we demonstrate that COVID-19 is at most only equally as dangerous or even less dangerous than the seasonal flu of 2017/2018 or that of 2019/2020 in the US. Considering the degree of negligence of the World Health Organization (WHO) and many countries during the swine flu pandemic in 2009 as well as during past and ongoing public health programs in Europe and Africa in the management of quality-control procedures in the approval of diagnostic tests, vaccines, and other pharmacological agents, skepticism has taken an unusually distant back seat to panic. We encourage the use of critical thinking and rational evaluation of information in reaching informed decisions with respect to the upcoming vaccines and future pharmacological treatments for COVID-19. We propose the use of "Cystus052" as a potential preventive agent, convalescent plasma infusions (CPI) as the most promising „compassionate use" treatment currently available for severe COVID-19 cases, and the inhibition of the "Papain-Like-Protease" (PLP) as well as CPI's as rational approach for future research projects to the treatment of COVID-19.

Keywords: Mass Media, Case fatality rate, infection fatality rate, flu, Vaccination, WHO, COVID-19 therapy

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1. Introduction:

The coronavirus disease 2019 (COVID-19) is an infectious disease caused by the Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that emerged in Wuhan, China, in December 2019. Since then, the SARS-CoV-2 virus has spread all over the world, and the WHO Director Tedros Abdhanom Ghebreyesus declared a COVID-19 pandemic on March 11, 2020 [1]. As of January 05, 2021, 222 countries, areas or territories had reported at least one laboratory-confirmed case of COVID-19 with 84,233,293 reported cases and 1,842,293 associated deaths (Case fatality rate (CFR) = 2.18%) globally [2].

Since half a century many emerging infectious diseases (EID), such as the swine flu H1N1 (1977/1978), SARS-CoV-1 virus (2003), the avian flu virus H5N1 (2005/2006), the swine flu virus H1N1 (2009/2010), the MERS virus (2012) and the Ebola-virus (2014/2018) have been the reason for a large number of human casualties, causing major global health concerns. Some of those EIDs were extensively covered by the mass media, evoking fear and anxiety among the vast majority of the public worldwide [3-5,120].

Since the discovery of the SARS-CoV-2 virus, most mass media worldwide have applied the same methods and principles of irresponsible news coverage, triggering fear and anxiety all over the world.

The fear and anxiety induced by governments and the mass media are as infectious as the virus itself. Justification for controversial health policies like decreased quality controls for vaccine development, the encouragement by some sources to consume expensive, unnecessary, and sometimes even harmful pharmacological agents, the infringement of personal rights, compulsory wearing of all sorts of face masks and so on, are founded on biased and unreliable epidemiological data. Therefore, many controversial debates about the proportionality and plausibility of virus containment measures have found its way into science and society.

An example for such a controversially debate in Germany is compulsory wearing of all sorts of face masks in public, educational institutions and outdoors by everybody. This is because neither the Robert Koch Institute (RKI, the German equivalent to the CDC in the US), nor the WHO nor the European Centre for Disease Prevention and Control (ECDC) or the Centers for Disease Control and Prevention (CDC) in the US provides any sufficient and credible scientific evidence that compulsory wearing of all sorts of face masks could mitigate the spread of COVID-19 or other respiratory diseases [125].

As of January 29, 2020, the RKI states in the FAQs for the Influenzavirus that no scientific evidence exists that can justify compulsory wearing of all sorts of face masks for everybody respect to mitigating the spread of the flu. This notion is supported by scientific literature that provides data suggesting that not even masks of the FFP2/N95/KN95 type offer protection against the Influenza virus or other respiratory virus infections [7,111,117]. If at all and if properly applied by symptomatic individuals, respiratory masks with higher filtering quality (FFP3) might provide

some protection against contracting an infectious disease [6-7]. On the contrary the usage of masks instead shows an increase in carbon dioxide partial pressure potentially impairing cognitive functions [6-8].

A similar complex process of influencing public opinion by inducing fear and anxiety among the people was taken on already in 2009 during the H1N1 pandemic with the goal to achieve a broad acceptance for the vaccine Pandemrix [3,5,9,116].

To align the attitudes of millions of people and create "solidarity" in the acceptance of protective measures and in the effort to develop a vaccine, some of the mass media has applied a particular kind of rhetoric and elaborate public relations techniques that include "labeling", "framing", "microtargeting", "wording", and so on [3-4,9-13]. As a result, a "prevailing narrative" is created, along with a "frame" for this narrative that is constructed using particular words, concepts, expressions, pictures, and metaphors. Examples include "*the Spanish flu,*" "*a catastrophe of global scale,*" videos of "*trucks transporting coffins to a crematorium,*" and non-representative illustrations of horribly affected individuals and selected pictures of doctors wearing protective garments in intensive care units that make them look like astronauts. These messages are apt to influence people's emotions, create fear, and raise anxiety, all of which influence their behavioral patterns and political opinions. People who are struck by fear are prepared to and likely to accept any political decision, however restrictive [3-5,9-15,122-123].

The WHO is part of this political-economic public relations network. Over the past fifteen years the WHO has repeatedly damaged its credibility because of the mismanagement of epidemics and pandemics and several internationally criticized vaccine programs. The lack of transparency in its decision-making processes, in combination with its predominant funding by lobby groups, private investors, and pharmaceutical companies, have also eroded its credibility [16-19, 116,119].

2. Results:

2.1. RT-PCR tests for the diagnosis of COVID-19 (SARS-CoV-2 virus)

The first diagnostic test kit developed for the SARS-CoV-2 virus was presented on the WHO's web page as a preliminary protocol on January 13, 2020, by researchers from Germany after parts of the first SARS-CoV-2 gene sequences had been made available on January 11, 2020 [20]. This RT-PCR test was based on the genetic structure of another virus that was discovered in 2003, which had a genetic congruency of roughly 79 percent [21-22]. The WHO quickly proposed the RT-PCR test as an eligible diagnostic tool, and the respective protocol was provided online without further independent validation [23-24]. The presented high sensitivity of the RT-PCR test was validated by an in vitro "in house" assay using the SARS-CoV-1 virus and an artificially in vitro transcribed RNA sequence of the SARS-CoV-2 virus that had been derived from the first available online sequences, as a reference. The specificity was validated by testing 297 predominantly pediatric lung tissue specimen, of which merely 198 were selected for publication [21].

Shortly thereafter, the Chinese Center of Disease Control and Prevention (Chinese CDC) also launched a RT-PCR test for the SARS-CoV-2 virus. Validated within two weeks, this diagnostic test showed sensitivity in sputum samples in severe (88.9%) and mild (82.2%) COVID-19 cases, followed by sensitivity in nasal swabs (73.3%, 72.1%) and throat swabs (60.0%, 61.3%) that were collected within the first seven days after the onset of COVID-19 patients' symptoms [25].

Another study validated an RT-PCR test for the diagnosis of COVID-19 that disclosed even lower levels of sensitivity for nasal swabs (5 of 8; 63%) and pharyngeal swabs (126 of 398; 32%) [26]. Subsequently, yet another study reported potentially high false negative rates of RT-PCR tests for the detection of the SARS-CoV-2 virus, with changing test results and potentially higher levels of co-infections than expected at various points of time throughout the process of diagnosing and treating patients with COVID-19 [27].

The reliability of the RT-PCR test from Germany (Charité) was assessed by comparing it with a newly refined test for the detection of the SARS-CoV-2 virus from China. The RT-PCR test from Germany showed a sensitivity of only 64.7 percent for nasopharyngeal probes [28]. Low sensitivity and specificity for the German RT-PCR test (Charité) was confirmed by four other studies that evaluated various diagnostic assays including all of those that were provided on the WHO website [29-31,115].

2.2. Definitions and constellations that influenced the significance of COVID-19 related epidemiological data

As the CDC stated, one of the primary undisputed indicators with which to evaluate the severity of an infectious disease like COVID-19 is the death count and, therefore, also the Case fatality rate (CFR) [32]. The CFR is the ratio between the number of patients who have died from a disease and the number of patients who have been diagnosed with it.

With respect to COVID-19, on May 5, 2020, the CDC determined that it would be sufficient to define a fatal COVID-19 case as one for which there was merely a suspicion of infection by the SARS-CoV-2 virus, regardless of laboratory confirmation [33]:

> *When COVID-19 is reported as a cause of death – or when it is listed as a "probable" or "presumed" cause — the death is coded as U07.1.*
> *This can include cases with or without laboratory confirmation.*

For the Influenza virus by contrast, only a laboratory confirmation is sufficient evidence for the CDC to conduct reliable epidemiological assessments [34]:

> *Cases are identified by reviewing hospital laboratory and admission databases and infection control logs for patients hospitalized during the influenza season with a documented positive influenza test (i.e., viral culture, direct/indirect fluorescent antibody assay (DFA/IFA), rapid influenza diagnostic test (RIDT), or molecular assays including reverse transcription-polymerase chain reaction (RT-PCR).*

The CDC distinguishes between COVID-19 deaths in general and COVID-19 deaths with pneumonia. According to the CDC on January 5, 2021, 289,517 American citizens who had died were also positively tested for the SARS-CoV-2 virus of which 141,834 (49%) had died with the additional diagnosis of pneumonia [33].

On March 20, 2020, the head of the RKI confirmed during a press conference that every deceased individual with a positive SARS-CoV-2 test had been included into the German statistics as being a fatal COVID-19 case, regardless of any additional underlying comorbidities or other circumstances [35].

The same policy was practiced in Italy, where individuals who had died "*because of*" an infection with SARS-CoV-2 were not differentiated from those who had died merely "*with*" an infection of SARS-CoV-2 [36]. This information was disclosed at a press conference in Italy where 800 fatal COVID-19 cases for Italy were reported. The following day, the WHO released its daily COVID-19 report for Europe, showing for Italy an increase of 795 fatal cases who died "*of*" the SARS-CoV-2 virus in Italy [37-38].

Calculating an accurate "infection fatality rate" (IFR) of a disease requires the *actual* number of infected cases and the accurate quantity of individuals that actually died *because of* a particular disease. A study conducted in Santa Clara County, California, by Professor Ioannidis from Stanford University, came to the conclusion that up to 85 times as many people are infected with the SARS-CoV-2 virus than currently thought [39]. A similar study in Germany found a CFR of 0.37 percent. The official CFR provided by the RKI, in contrast, was reported as 4.1 percent. This seeming contradiction can be explained only if one assumes that the prevalence of SARS-CoV-2 infections had been at least ten times higher than reported in Germany as of May 4, 2020 [40-41].

This insight was confirmed by Professor Ioannidis from Stanford University by analyzing 61 seroprevalence studies testing representative cohorts of people for SARS-CoV-2 Antibodies from 29 different countries. The IFR across all countries (*Argentina, Belgium, Canada, Chile, USA, England, France, Italy, Netherlands, Luxembourg, Croatia, Brazil, Scotland, Denmark, Faroe Islands, Germany, Greece, Hungary, Iceland, India, Japan, Kenya, China, Pakistan, Qatar, Republic of Korea, Iran, Spain and Switzerland*) ranged from 0.00 percent to 1.54 percent with a median IFR of 0.23 percent. For COVID-19 patients < 70 years the IFR across countries ranged from 0.00 percent to 0.31 percent with a median IFR of 0.05 percent [102]. Those determined IFRs are much lower than the originally communicated CFRs by the mass media and many governments.

The ambiguity of the definition of "fatal COVID-19 cases" in combination with the unknown true number of actually infected individuals initially and unvalidated diagnostic RT-PCR tests with low sensitivity and specificity provides a large margin for error in the calculation of the IFR for COVID-19.

2.3. Influenza vs. COVID-19

According to the CDC, patients with a flu have symptoms like fever, cough, sore throat, runny or stuffy nose, muscle or body aches, headaches, and fatigue, and some people may also have vomiting or diarrhea [42]. Olfactory dysfunctions and various degrees of anosmia and neurological symptoms are particularly typical symptoms of the flu [43,48,113]. Furthermore, also Myocarditis and inflammatory cardiomyopathy are associated with the Influenza virus [126]

The yearly flu epidemics are typically over around the end of May. Comparing the flu of 2017/2018 and the flu of 2019/2020 with COVID-19 shows that the "Case hospitalization rate" (CHR) and CFR for COVID-19 and the "Basic reproductive number" (R0) are within the same order of magnitude (Table 1). The R0 during a typical flu season usually settles between 0.9 and 2.1 (Table 1). The basic reproductive number during the flu season in 2017/2018 was between 1.8 – 3.06 (Table 1).

Most COVID-19 patients have symptoms of fever, cough, sore throat, muscle aches, headaches, nasal congestion, shortness of breath, fatigue, nausea/vomiting, and sometimes diarrhea [58]. Olfactory dysfunctions that occur relatively often and neurological symptoms in COVID-19 cases attracted particular attention early on [41,114]. In addition, Myocarditis and inflammatory cardiomyopathy seem to be closely associated with the SARS-CoV-2 virus [126]. The R0 for COVID-19 is likely between 2.0 and 3.0 (Table 1).

According to the WHO roughly 800,000,000 individuals will be infected with the Influenza virus of which 290,000-650,000 infected people will die during the flu season of 2019/2020 worldwide. This happens although vaccines exist [59].

As of January 5, 2021, COVID-19 already had led to more than 84,233,293 positive tested individuals and caused 1,842,293 associated deaths (CFR = 2.18%) worldwide [2].

On January 5, 2021, 256,914,140 Americans had been tested for an infection with the SARS-CoV-2 virus with 20,560,549 (8.00%) testing positive, with 699,971 (3.40%) hospitalizations and between 141,834 and 344,808 deaths [141,834 *died with the additional diagnosis of pneumonia (ICD-10 J12-J18.9)]*. Of the fatal cases, 169 were younger than 18 years old (Table 1). The CFR at that time was 0.68 percent – 1.67 percent for COVID-19 in the US (Table 1). The CHR among COVID-19 patients (3.40 %) is much lower than the CHR of Influenza patients during the season of 2017/2018 (13.6 %) and 2019/2020 (6.46 %) seasons [45-57].

During the 2019/2020 flu season, 1,634,930 American citizens were tested for the Influenza virus, among whom 297,468 (18.19%) tested positive, leading to 19,292 (6.46 %) laboratory-confirmed hospitalizations and 9,418 deaths [*6,699 died because of pneumonia (ICD-10 (J09-J11)]*. Of the fatal cases that were due to the Influenza virus in the 2019/2020 season, 238 were younger than 18 years old. The CFR was between 2.25 percent and 3.16 percent (Table 1).

During the 2017/2018 flu season, 1,210,053 American citizens were tested for an Influenza virus infection, of whom 224,113 (18.5%) tested positive, 30,453 (13.58%) were hospitalized, and 15,620 died. Of these fatal cases, 171 were younger than 18 years. The CFR was 7.0 percent (Table 1). The CFR in the largest published COVID-19 cohort from China was 2.3 percent, with 1,023 fatal cases among 44,672 individuals who tested positive for SARS-CoV-2. No deaths occurred among individuals younger than 9 years of age. Another research group determined a CFR of 1.4 percent for COVID-19 [60-61].

2.4 Public awareness of COVID-19

Not only do scientific facts like the number of individuals who test positive and the number of fatal outcomes determine the impact of a disease on society, but also psychological factors like people's expectations, anxieties, hopes, and fears.

Each person develops during his or her lifetime an unconscious mosaic of "Emotion-linked-Facts" (ELF), based on personal experience and education. Each single ELF may be considered a "frame" that is generated by a particular type of conditioning. Thus, each "frame" comprises an emotion that is linked with a particular fact through words, pictures, sounds, and so on. A "framing effect" links ELFs to newly presented pieces of information (Figure 1) such that pre-existing emotions are conditionally linked to new sets of information and consecutively determine our perceptions of that information and our actions and behavior in response to it (Figure 1) [3-5,9-13].

Therefore, whoever can set the "frame" in a broadcast (or even a Facebook, Twitter, or Instagram post) to millions of people can exert broad subliminal influence.

This knowledge is instrumented by the German publicly funded TV network (ARD) to influence the general public. Its use was publicly disclosed by a leaked document, "Framing manual," for the first time in 2019. This "Framing manual" explains the techniques that enable the ARD to shape opinions and even manipulate its audience [11]. A similar interactive influence is observed between the television networks in the US and the American people [3-4,9-10,12,14], where techniques like "labeling," "framing," "microtargeting," and "wording" are widely used as well. Even the personalities and reputations of well-known scientists may be used to influence opinions based on the agendas of leading political and economic elites [3-4,9-14].

After the SARS-CoV-2 virus emerged in Wuhan, China, in December 2019, it took only a couple of months for the virus to spread to Europe and the US. On February 24, 2020, RT-PCR tests became available on a large scale in the US. The large-scale testing that followed went along with the outbreak of the COVID-19 pandemic (Figures 2 and 3), which was accompanied by increasing awareness of the virus and growing anxiety in the general population, sustained by reports and pictures from the mass media. In the US the term "coronavirus" dominates the prevailing narrative, whereas the terms "COVID-19" and "SARS-CoV-2" are virtually absent in public narrative (Figure 2).

Using the number of Google-queries for the terms of EIDs presented in Figure 4 (MERS, Coronavirus, Swine flu, Ebola, Influenza), we estimated American citizens' awareness of the "coronavirus" compared to other epidemics and pandemics of EIDs. Although the "coronavirus" is evidently at most equally and probably less dangerous than the Ebola virus, the MERS virus, the Influenza virus, and the swine flu virus, Google-queries for the term "coronavirus", were disproportionally more often searched as compared to the other terms (Figure 4).

Based on Figure 4 and judging from the available literature, it is not unlikely that the news coverage by the mass media may have been at least partly responsible for the extreme level of awareness and exaggerated focus on the danger of COVID-19, forming a kind of hysteria among the people of several areas in the US (Figures 1-3) [3-5,9-14,62].

This hypothesis is further substantiated by comparing the top 25 queried Google terms during the two months after the first fatal COVID-19, swine flu, and 2017/2018 seasonal flu cases (Table 2). Not a single Influenza-associated Google query was among the top 25 searched items for the 2017/2018 flu season, even though the flu virus that season was the most devastating of the last forty years, with 44,802,629 infections, 808,129 hospitalizations, and 61,099 fatal cases in the US.

The flu epidemic of the 2017/2018 season, like the present COVID-19 pandemic, also led to a large number of severely ill patients' exceeding the hospitals' capacities, even with triaging patients and putting up additional field hospitals (Table 2) [63].

3. Discussion:

The purpose of this review of the scientific literature is to separate facts from fakes in connection with the present COVID-19 pandemic.

All recommendations of experts and decisions of governments are based on parameters like the CFR, the CHR, the R0, or mathematical model calculations that predict future developments.

However, the ambiguity of and the potential for misinterpreting epidemiological data are widely neglected. Various publications show that many RT-PCR tests used since the beginning of this pandemic always had low sensitivity and specificity [25-31,115].

The more frequently a diagnostic test is conducted, the more it will have a regressive positive predictive value, and the lower a diagnostic test's specificity, the faster this regression will occur with increasing numbers of conducted tests. Thus, with tens of millions of SARS-CoV-2 tests conducted, a low positive predictive value for the test is to be expected, and therefore tens to hundreds of thousands of people falsely tested positive for an infection with the SARS-CoV-2 virus. This is also the reason why even if the virus is completely wiped out, thousands of people will continue to test positive for an infection with the SARS-CoV-2 virus if testing of hundreds of thousands of people continues [100-101]. Moreover, the mathematical model calculations used rely

on estimated variables chosen by designated experts and have been shown to have fundamental deficiencies [64-65,112,118].

Those facts demonstrate the unreliability of the underlying epidemiological data and mathematical models on which most of assumptions by a vast majority of governments and their advisors worldwide are based on.

In addition, it has been shown that the quality of those RT-PCR tests decreases over time because of frequent genetic alterations of the virus. Since the beginning of the COVID-19 pandemic, 32,435 replacements, 650 deletions, and 73 insertions have already been shown to have taken place, altering the SARS-CoV-2 virus substantially [66,121].

It is also undisputed that the available epidemiological data are distorted by a massive selection bias because only patients with severe symptoms were registered and included in statistical analysis. Most patients with mild or no symptoms were not tested and so were not included. This selection bias inflated the CFR, exaggerating the putative severity of COVID-19. This interpretation is supported by recent studies that have revealed that the true number of infections is 10-85 times higher than originally assumed [39-41]. When only tested individuals are considered, the CFRs of the 2017/2018 and 2019/2020 seasonal flu are as high as 7.0 percent and 3.16 percent, respectively. Only these true CFRs values for the 2017/2018 and 2019/2020 flu can offer a valid comparison with the CFR of the current COVID-19 pandemic in the US (0.68 - 1.67 %; Table 1). The CFR of the COVID-19 pandemic may even turn out to be lower because of the low sensitivity and specificity of many RT-PCR tests and vague definitions of a "fatal COVID-19 case" [25-31, 35-38,115].

This notion was recently profoundly substantiated by the analysis of 61 seroprevalence studies for SARS-CoV-2 Antibodies in 29 countries resulting in a median IFR of 0.05 percent for people younger than 70 years and an overall IFR of 0.23 percent for COVID-19 [102].

Therefore, closed schools and libraries, millions of unemployed people, thousands of families depending on food stamps, businesses going bankrupt, massive social restrictions, compulsory wearing of face masks, infringement of personal rights, and many other constraints have been justified based on misinterpreted and invalid epidemiological data.

It is surprising that these ambiguous epidemiological data have been preferred in assessing the seriousness of the COVID-19 pandemic over well-established data sets, such as the "Influenza-Like Illness rate" (Ili-rate), which would never have indicated that a respiratory disease of biblical dimensions was spreading throughout the US or Germany at any point during the season 2019/2020 (Figure 5) [67]. As of September 27, 2020, for the US and October 23, 2020 for Germany, the Ili-rates suggest that the Influenza season, as well as the COVID-19 pandemic, have been over for months (Figure 5) [67]. As observable in Figure 5, a third maximum of "Influenza-like illnesses" appears beginning on February 24, 2020.

This third maximum may have been caused by an increase in awareness of this disease among the general population as a result of intensified news coverage. Considering that the Ili-rate increased at the same time that large-scale testing began in the US, the increase in the detection of infections may have been not only correlated with but even caused by the degree of awareness. The fact that the infection rate decreased over time and then remained more or less constant during this pandemic until today, in addition to the discovery that the SARS-COV-2 virus was already spreading around the USA at least 6 weeks earlier — perhaps as early as December 2019 — makes it unlikely that the SARS-CoV-2 virus alone was causing this maximum (Figure 5) [68-70].

We offer an alternative interpretation in stating that the mass media, with its unprecedented corona-dominated news coverage, may have driven the increased fear, anxiety, and higher numbers of medical consultations (Figure 5) [3-5,9-14,61].

The hard facts like CFR, CHR, R0, and comorbidities, as well as comparing the most common symptoms of patients with COVID-19 and Influenza, against horrific media-driven photographs, indicate that the danger of COVID-19 is, at most, in the range of a severe seasonal flu (Tables 1 and 3, Figures 3 and 5) [39-60].

How is it possible then, that the mass media, most politicians, and most scientists who have political functions convey the impression that we are dealing with an unprecedented, severe, and deadly pandemic? Why do some of them continue to raise anxiety and engage in doom-mongering instead of encouraging people to pursue rational measures of protection and prevention, especially since the peak of the pandemic is already behind us?

Our hypothesis is that the combination of questionable scientific conduct without openness to criticism, unvetted or intentionally wrongly communicated scientific information by governments and the mass media driven by political, scientific, and financial special interests formed a self-reinforcing spiral of mutual misleading confirmation of the underlying processes and measurements undertaken in response to the COVID-19 pandemic, resulting in self-deception and fear [3-5, 9-15, 61]. These factors together created a collective loss of rationality among people in power in the Western world, generating political decisions that led to devastating damage to economies, financial suffering, and new health problems such as higher suicide rates in the future due to higher unemployment rates, fewer cancer screening programs, postponed operations for tens of millions of patients and lower vaccination rates [104-108].

The German Federal Ministry of the Interior even intentionally over-amplified the risk associated with the virus and raised fear and anxiety to increase the obedience of children and adults to the measurements imposed by the government [15]:

> *To achieve the desired shock effect, the concrete effects of an epidemic on human society needs to be emphasized:*

1) Many seriously ill patients are brought to the hospital by their relatives, but are rejected and die, agonizing at home, struggling for air. Suffocating and choking to death is a primal fear, as is a situation in which there is nothing you can do to help your relatives. The pictures from Italy are also disturbing.

2) Historical arguments should also be used, presenting the mathematical formula: 2019 = 1919 + 1929.

(Translation by the author)

The US mass media started its coverage of the COVID-19-pandemic simultaneously with the large-scale testing, presenting horrific pictures and terrifying news over and over again, and creating a prevailing narrative that raised fear and anxiety about the COVID-19 pandemic (Figures 1, 2, and 4) [3-5,9-14,61]. However, genetic analysis has shown that the SARS-CoV-2 virus had already been spreading in the US weeks, if not months, before the testing began, preceding the media's extensive news coverage. Evidence shows that the virus might have been spreading in the US as early as December 16, 2019, and in Europe (Germany) as early as December 7, 2019 [69]. The first confirmed clinical case (to our knowledge) was in the US at least on January 15, 2020 [70].

Therefore, the mass media played a central role in eliciting irrational fear and anxiety by exclusively showing emergency situations with patients in agony and despair in photographs and videos that were as infectious as the virus itself. Recent studies have shown that the mass media's news coverage focuses predominantly on sensational emergency situations and worst-case-scenarios, so it is no wonder that that this kind of news coverage causes irrational fear and anxiety, rather than being informative and supportive [3-5,9-14,61].

The widespread misrepresentation of COVID-19 as having unprecedented characteristics, too, does not stand up to scientific scrutiny. The characteristics of seasonal flu and COVID-19 are the same and the characteristics of previous endemic non-SARS-like-CoV outbreaks and COVID-19 have very similar spreading patterns and analogous patterns of the course of disease (Tables 1 and 3) [71].

Clearly, the mass media can modify people's attitudes and opinions about all kind of agendas, especially for public health policies, by repeatedly broadcasting the same opinionated and framed content [3-5,9-14,61]. With respect to the COVID-19 pandemic, the mass media had an unprecedented impact in orienting the public opinion in a certain direction (Figure 4).

From the role that the mass media played during the swine flu (H1N1) pandemic in 2009 and other epidemics [3-5,9], we can deduce that the news coverage of the COVID-19 pandemic will influence the general public in a similar way.

Would the SARS-CoV-2 virus have remained unnoticed if not for the excessive news coverage and massive testing with unreliable RT-PCR tests? The published evidence presented here is in accordance with this notion, but people should evaluate the published data for themselves and

draw their own conclusions. In this regard, early criticism arose and warnings were published in February 2020 by French scientists [72]:

Thus, it is surprising to see that all the attention focused on a virus whose mortality ultimately appears to be of the same order of magnitude as that of common coronaviruses or other respiratory viruses such as influenza or respiratory syncytial virus, while the four common HCoV diagnosed go unnoticed although their incidence is high. In fact, the four common HCoV are often not even identified in routine diagnosis in most laboratories, although they are genetically very different from each other and associated with distinct symptomatology.

Nevertheless, the German RT-PCR tests were distributed to at least thirty European countries without having been properly validated [21,23-24].

Not only national public health institutions but also the WHO itself have been heavily criticized for misleading information policies. This criticism goes back to the dubious role that the WHO played during the swine flu (H1N1) pandemic in 2009, when the WHO had acted predominantly in the interest of big pharmaceutical companies. As a result, the general public today is skeptical about how the WHO is handling the current COVID-19 pandemic. Not only in 2009 but still today conflicts of interest surely play a role; for example, the individual authors of the paper that introduced the first diagnostic RT-PCR test for the SARS-CoV-2 virus profited financially from the use of these tests (Figure 6) [21,73]. The unusually quick approval of the RT-PCR test and its publication on the WHO website before the test had been independently validated also raises the question of a potential conflict of interest [21,23-24,74-75,116,119].

Scientists all over the world are seeking a pharmacological substance for the treatment of COVID-19. Without a vaccine, physicians are currently treating COVID-19 patients symptomatically with a combination of best supportive care therapy options and pharmacological agents in the context of clinical trials [76]. The only promising clinically utilized pharmacological treatment option for patients with severe COVID-19 to our knowledge is the administration of convalescent plasma infusions (CPI's) [77,124]. CPIs have already been used successfully to treat SARS-CoV-1 and the swine flu [78-79]. Therefore, our proposition is to invest more research in CPI's for future clinical trials. Moreover, we propose pharmacological agents based on the inhibition of the papain-like protease as promising prospective research projects in finding an effective treatment for severe COVID-19 cases [80]. Unfortunately, many pharmacological agents in clinical trials have not helped or even, in some cases, had negative or harmful effects on Patients with COVID-19. Thus, the administration of these substances might have even contributed to the deceptive inflation of COVID-19's CFR [81-84,109].

A pharmacological substance that might be helpful as a preventive agent against COVID-19 is Cystus052, which is basically a hard candy that is available in every pharmacy and drug store whose antiviral and protective effects, which have been shown in the Influenza A virus, did not cause toxic side-effects or a development of drug resistance. Given the mechanism of Cystus052's action, this agent may have protective effects against all sorts of germs, including the SARS-CoV-2 virus [85-86]. Since "Cystus052" can be considered to be a hard candy and because its usage would

be merely an add on top of all the already existing measurements in place, we don't see a reason why we would not propose "Cystus052".

As soon as a deadly EIDs with a high CFR is identified, it is vital to act rationally and quickly to save lives. The disastrous consequences of some hasty decisions became clear after the mass vaccination against the swine flu with the vaccine Pandemrix in 2009. According to the Committee for Medicinal Products for Human Use (CHMP) the cost-benefit ratio with respect to the vaccine for H1N1 justified approval.

The Pandemrix vaccine for H1N1 was derived from the Pandemrix vaccine for H5N1, which itself was also already granted a "Marketing Authorization under exceptional circumstances", just a couple of years previously. All studies that provided clinical information about the Pandemrix vaccine for H5N1 were funded by the manufacturer, GlaxoSmithKline Biologicals S.A. [87]. The first clinical data about the Pandemrix vaccine for H1N1 were expected to be available by the middle of October 2009 for a cohort between 18 and 60 years of age [87]. Pandemrix was recommended for use on July 11, 2009, and granted marketing authorization on the September 30, 2009, by the WHO and the European Commission [88].

Criticism of Pandemrix increased over time, peaking in a committee of inquiry by The *Parliamentary Assembly of the Council of Europe (PACE)* in 2009. Among other conclusions, the PACE determined that [89]:

The rapporteur considers that some of the outcomes of the pandemic, as illustrated in this report, have been dramatic: distortion of priorities of public health services all over Europe, waste of huge sums of public money, provocation of unjustified fear amongst Europeans, creation of health risks through vaccines and medications which might not have been sufficiently tested before being authorized in fast-track procedures are all examples of these outcomes.

Finally, the rapporteur is very concerned about the way in which the information on the pandemic was communicated by WHO and national authorities to the public, the role of the media in this and the fears that this generated amongst the public.

Suspicion of undue influence and pressure put on national authorities by the pharmaceutical industry has been reinforced by other factors, such as the character of contractual arrangements concluded between governments and pharmaceutical groups. Reports from several European countries indicate that there was pressure exerted on national governments to speed up the conclusion of major contracts, that dubious practices were followed concerning prices of vaccines, which were not available under normal market conditions, and that there were attempts to transfer liability for vaccines and medication, which might not have been tested sufficiently, to national governments.

Tragically, in addition to the occurrence of damage from vaccination that was seven times higher than the vaccination damages of the unadjuvanted vaccine and the Arepanrix vaccine combined, within two years after tens of millions of Pandemrix vaccines had been administered in Europe, the

incidence of narcolepsy increased five- to fourteen-fold among children and adolescents and two- to seven-fold in adults [90-91].

The Pandemrix catastrophe was not the first occasion on which unrefined vaccines had led to substantial damage to the public health. Vaccine programs have been harmful in the past and are, in some cases, also harmful in the present [92-96]

4. Conclusions:

The data presented here are found in papers that contain information about various medio-scientific, economic, political, and psychological aspects of the COVID-19 pandemic. The reader should take notice of their important conclusions and far-reaching consequences and then draw his or her own conclusions.

The conclusion we offer is that the "cure" government measures have inflicted upon individuals who are not affected by SARS-CoV-2 is, in many instances, scientifically not justifiable and may very well cause more damage than the virus itself. This hypothesis was recently substantiated by a document leaked from the German Federal Ministry of the Interior [97]:

> *The observable effects of COVID-19 do not show sufficient evidence that-in relation to the health effects on society as a whole-it is any more than a false alarm. The new virus probably did not at any time pose a risk to the population that went beyond normal.*
>
> *We are likely to be dealing with a global false alarm that has remained undetected for a long time. This analysis has been checked by the "KM4" for scientific plausibility and does not essentially contradict the data and risk assessments submitted by the RKI.*
>
> *The collateral damage is now higher than the apparent benefit. Comparing deaths that are due to the virus alone with deaths caused by the state-implemented protective measures confirms the finding.*
>
> *That means also that, in the greatest crisis that the Federal Republic of Germany has ever seen, the government might have been the biggest producer of the kind of "fake news" against which the state is purportedly fighting against.*

(Translation by the author)

Furthermore, most of the pharmacological agents that have been used to treat severe COVID-19 patients are ineffective against the disease COVID-19 or cause additional damage to the patients [81-84,109].

We also look with great concern and skepticism toward the upcoming vaccine programs for COVID-19 because of the so called "promising" results in first clinical trials of recently published

studies with proposed vaccines against COVID-19 [98,110] and in light of previous harmful and internationally criticized vaccination programs [92-96]. Furthermore, another study found SARS-CoV-2-reactive CD4+ T-cells in 40-60 percent of blood samples collected from individuals between 2015-2018, suggesting cross-reactive T-cell recognition and immune activity between circulating coronaviruses and the SARS-CoV-2 virus [99]. Other studies also suggest cross immune activity of common circulating coronaviruses and the SARS-CoV-2 virus [103]. Thus, the necessity of a vaccine in the first place should be thoroughly scrutinized.

Therefore, we propose the immediate preventive use of Cystus052 and more research on a pharmacological agent that can inhibit the papain-like protease. The treatment with convalescent plasma infusions should be reserved for severe COVID-19 cases as an "ultima ratio" treatment option.

We present these data and references only as a basis for discussion, and merely give suggestions. The step to final conclusions must be taken by the readers themselves.

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The authors declare no conflict of interest

Materials and Methods:
The keywords "Characteristics of COVID-19," "Hysteria and pandemics," "Mass Media and pandemics," "Case fatality rate of Influenza and COVID-19," "Vaccination programs," Vaccines and the WHO," and "COVID-19 therapy" were used in a literature search of the PubMed database. The cut-off dates were 2000 for pandemics and 2020 for novel drugs with respect to COVID-19.

Disclaimer:
The findings and conclusions in this report are those of the authors and do not necessarily represent the view of their associated Institutions.

References:

1. WHO Director-General's opening remarks at the media briefing on COVID-19 – 11 Marach 2020. Available Online: https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020. (Acessed on 05/12/2020)
2. Coronavirus disease (COVID-19) Pandemic. Available online: https://www.who.int/emergencies/diseases/novel-coronavirus-2019. (Acessed on 01/05/2021)
3. Dudo, A. D.; Dahlstrom, M. F.; Brossard, D. Reporting a Potential Pandemic. A Risk-Related Assessment of Avian Influenza Coverage in U.S. Newspapers. Sci. Com. 2007, 28, 429 - 454
4. Liu, B. F.; Kim, S.; How organizations framed the 2009 H1N1 pandemic via social and traditional media: Implications for U.S. health communicators. Pub. Rel. Rev. 2011, 37, 233-244.
5. Mesch, G. S.; Schwirian, K. P.; Kolobov, T. Attention to the media and worry over becoming infected: the case of the Swine Flu (H1N1) Epidemic of 2009. Soc. Of H&I 2013, 35, 325-331.
6. Bin-Reza, F.; Lopez Chavarrias, V.; Nicoll, A.; Chamberland, M. E. The use of masks and respirators to prevent transmission of influenza: a systematic review of the scientific evidence. Inf. Jour. 2011, 6, 257 – 267.
7. Xiao, J., Shiu, E., Gao, H., Wong, J. Y., Fong, M. W., Ryu, S....Cowling, B. J. (2020). Nonpharmaceutical Measures for Pandemic Influenza in Nonhealthcare Settings—Personal Protective and Environmental Measures. *Emerging Infectious Diseases*, *26*(5), 967-975. https://dx.doi.org/10.3201/eid2605.190994
8. Butz, U. Rückatmung von Kohlendioxid bei Verwendung von Operationsmasken als hygienischer Mundschutz an medizinischem Fachpersonal. Thesis for degree of an MD, University of Munich, Munich, 11/29/2004.
9. Zhang, L.; Kong, Y.; Chang, H. Media Use and Health Behavior in H1N1 Flu Crisis: The Mediating Role of Perceived Knowledge and Fear. Atl. Jour. Of Com. 2015, 23, 67-80.
10. Gallagher, K. M.; Updergraff, J. A. Health Message Framing Effects on Attitudes, Intentions and Behavior: A Meta-analytic Review. The Soc. of Behav. Med 2012, 43, 101-116.
11. Wehling, E. Framing-Manual. Unser gemeinsamer, freier Rundfunk ARD. University of California, Berkley, USA, 2019, Page 1-89.
12. Koon, A. D.; Hawkins, B.; Mayhew, S. H. Framing and the health policy process: a scoping review. Health Pol. And Pl. 2016, 31, 801-816.
13. Kruikemeier, S.; Sezgin, M.; Boerman, S. C. Political Microtargeting: Relationship Between Personalized Advertising on Facebook and Voters' Responses. Cyb., Beh., and Soc. Net. 2016, 19, 367-372.
14. Krosnick, J. A.; MacInnis, B. Frequent Viewers of Fox News Are Less Likely to Accept Scientists' Views of Global Warming. Wo. Inst. for the Env. at Stan. Uni. 2010, 1-12.
15. German Federal Ministry of Interior. Wie wir COVID-19 unter Kontrolle bekommen. German Federal Ministry of the Interior, Berlin, Germany, 2020, 1-17.
16. Kamradt-Scott, A. What Went Wrong? The World Health Organization from Swine Flu to Ebola, 1st ed.; Palgrave Macmillan, Cham: Sydney, Australia, 2018; pp. 193-215, ISBN 978-3-319-68172-6.
17. Cohen, D.; Carter, P. WHO and the pandemic flu conspiracies. BMJ 2010, 340, 1274-1279.
18. Carlsen, B.; Glenton, C. The swine flu vaccine, public attitudes, and researcher interpretations: a systematic review of qualitative research. BMC Health Serv. Res. 2016, 16, Art. Num. 203.
19. Reddy, S. K.; Mazhar, S.; Lencucha, R. The financial sustainability of the World Health Organization and the political economy of global health governance: a review of funding proposals. Glob. And Hea. 2018, 14, Article number 119.

20. Institut Pasteur, Paris. Protocol: Real-time RT-PCR assays for the detection of SARS-CoV-2. Institute Pasteur, Paris 2020, Page 1-3.
21. Corman, V. M.; Landt, O.; Kaiser, M.; Molenkamp, R,; Meijer, A.; Chu, D. KW.; Bleicker, T.; Brünink, S.; Schneider, J.; Schmidt, M. L.; Mulders, D. G. J. C.; Haagmans, B. L.; van der Veer, B.; van den Brink, S.; Wijsman, L.; Goderski, G.; Romette, J. L.; Ellis, J.; Zambon, M.; Peiris, M.; Goossens, H.; Reusken, C.; Koopmans, M. PG.; Drosten, C. Detection of 2019 novel coronavirus (2019-nCoV) by real-time RT-PCR. Euro Surveill. 2020, 25, 1-8.
22. Lu, R.; Zhao, X.; Li, J.; Niu, P.; Yang, B.; Wu, H.; Wang, W.; Song, H.; Huang, B.; Zhu, N.; Bi, Y.; Ma, X.; Zhan, F.; Wang, L.; Hu, T.; Zhou, H.; Hu, Z.; Zhou, W.; Zhao, L.; Chen, J.; Meng, Y.; Wang, J.; Lin, Y.; Yuan, J.; Xie, Z.; Ma, J.; Liu, W. J..; Wang, D.; Xu, W.; Holmes, E. H.; Gao, G. F.; Wu, G.; Chen, W.; Shi, W.; Tan, W. Genomic characterisation and epidemiology of 2019 novel coronavirus: implications for virus origins and receptor binding. Lancet 2020, 395 565–74.
23. Corman, V.; Bleicker, T.; Brünink, S.; Landt, O.; Koopmans, M.; Zambon, M.; Drosten, C. Diagnostic detection of Wuhan coronavirus 2019 by real-time RT-PCR. Charité Berlin 2020
24. World Health Organization. Laboratory testing for 2019 novel coronavirus (2019-nCoV) in suspected human cases, Interim guidance, 17 January 2020. Int. Guid. 2020,1-7.
25. Yang, Y.; Yang, M.; Shen, C.; Wang, F.; Yuan, J.; Li, J.; Zhang, M.; Wang, Z.; Xing, L.; Wei, J.; Peng, L.; Wong, G.; Zheng, H.; Wu, W.; Liao, M.; Feng, K.; Li, J.; Yang, Q.; Zhao, J.; Zhang, Z.; Liu, L.; Liu, Y. Evaluating the accuracy of different respiratory specimens in the laboratory diagnosis and monitoring the viral shedding of 2019-nCoV infections. Googel scholar 2020, Preprint, 1-17.
26. Wang, W.; Xu, Y.; Gao, R.; Lu, R.; Han, K.; Wu, G.; Tan, W. Detection of SARS-CoV-2 in Different Types of Clinical Specimens. Jama 2020, 323, 1843-1844.
27. Li, Y.; Yao, L.; Li, J.; Chen, L.; Song, Y.; Cai, Z.; Yang, C. Stability issues of RT-PCR testing of SARS-CoV-2 for hospitalized patients clinically diagnosed with COVID-19. J. Med. Vir. 2020, 1-6.
28. Chan, JF-W.; Yip, CC-Y.; To, KK-W.; Tang, TH-C.; Wong, SC-Y.; Leung, K-H.; Fung, AY-F.; Ng, AC-K.; Zou, Z.; Tsoi, H-W.; Choi, GK-Y.; Tam, AR.; Cheng, VC-C.; Chan, K-H.; Tsang, OT-Y.; Yuen, K-Y. Improved molecular diagnosis of COVID-19 by the novel, highly sensitive and specific COVID-19 RdRp/Hel real-time reverse transcription-PCR assay validated in vitro and with clinical specimens. Ame. Soc. for Micr. Jour. 2020, 58, 1-10.
29. Vogels, C. B. F..; Brito, A. F.; Wyllie, A. L.; Fauver, J. R.; Ott, I. M.; Kalinich, C. C.; Petrone, M. E.; Casanovas-Massana, A.; Muenker, M. C.; Moore, A. J.; Klein, J.; Lu, P.; Lu-Culligan, A.; Jiang, X.; Kim, D. J.; Kudo, E.; Mao, T.; Moriyama, M.; Oh, J. E.; Park, A.; Silva, J.; Song, E.; Takahashi, T.; Taura, M.; Tokuyama, M.; Venkataraman, A.; Weizman, O. E.; Wong, P.; Yang, Y.; Cheemarla, N. R.; White, E. B.; Lapidus, S.; Earnest, R.; Geng, B.; Vijayakumar, P.; Odio, C.; Fournier, J.; Bermejo, S.; Farhadian, S.; Dela Cruz, CS.; Iwasaki, A.; Ko, A.; Landry, M. L.; Foxman, E. F.; Grubaugh, N. D. Analytical sensitivity and efficiency comparisons of SARS-COV-2 qRT-PCR primer-probe sets. medRxiv 2020, 1-20.
30. Casto, A. M.; Huang, M. L.; Nalla, A.; Perchetti, G.; Sampoleo, R.; Shrestha, L.; Wei, Y.; Zhu, H.; Greninger, AL.; Jerome, KR. Comparative Performance of SARS-CoV-2 Detection Assays using Seven Different Primer/Probe Sets and One Assay Kit. medRxiv 2020, 1-13.
31. Barra, G. B.; Rita, T. H. S.; Mesquita, P. G.; Jácomo, R. H.; Nery, L. F. A. Analytical sensibility and specificity of two RT-qPCR protocols for SARS-CoV-2 detection performed in an automated workflow. medRxiv 2020, 1-5.
32. Severe Outcomes Among Patients with Coronavirus Disease 2019 (COVID-19) – United States, February 12 – March 16, 2020. Available online: https://www.cdc.gov/mmwr/volumes/69/wr/mm6912e2.htm. (Accessed on 05/05/2020)
33. Provisional Death counts for Coronavirus Disease (COVID-19): Daily updates of totals by week and state. Available online: https://www.cdc.gov/nchs/nvss/vsrr/COVID19/index.htm. (Accessed on 08/11/2020).

34. U.S. Influenza Surveillance System: Purpose and Methods. Available online: https://www.cdc.gov/flu/weekly/overview.htm#Hospitalization. (Accessed on 08/11/2020).
35. Live: Corona-Update des Robert-Koch-Instituts, Freitag, 20. März. Available online: https://www.youtube.com/watch?v=tI5SnAirYLw&feature=youtu.be&t=985. (Accessed on 05/05/2020).
36. Tagesschau 20:00 Uhr, 21.03.2020. Available online: https://www.youtube.com/watch?v=NRvzCUUf8Mg. (Accessed on 05/05/2020).
37. World Health Organization. Coronavirus disease 2019 (COVID-19) Situation Report-61. WHO 2020, 61, 1-9.
38. World Health Organization. Coronavirus disease 2019 (COVID-19) Situation Report-62. WHO 2020, 62, 1-9.
39. Bendavid, E.; Mulaney, B.; Sood, N.; Shah, S.; Ling, E.; BromleyDulfano, R.; Lai, C.; Weissberg, Z.; Saavedra, R.; Tedrow, J.; Tversky, D.; Bogan, A.; Kupiec, T.; Eichner, D.; Gupta, R.; Ioannidis, J.; Bhattacharya, J. COVID-19 Antibody Seroprevalence in Santa Clara County, California. medRxiv 2020, 1-17.
40. Robert Koch Institut. Täglicher Lagebericht des RKI zur Coronavirus-Krankheit-2019(COVID-19). 15.06.2020-Aktualisierter Stand Für Deutschland. RKI 2020, 95, 1-12.
41. Streeck, H.; Schulte, B.; Kuemmerer, B.; Richter, E.; Hoeller, T.; Fuhrmann, C.; Bartok, E.; Dolscheid, R.; Berger, M.; Wessendorf, L.; Eschbach-Bludau, M.; Kellings, A.; Schwaiger, A.; Coenen, M.; Hofmann, P.; Stoffel-Wagner, B.; Noethen, M.; Eis-Huebinger, A.-M.; Exner, M.; Schmithausen, R.; Kuemmerer, B. (2020). Infection fatality rate of SARS-CoV-2 infection in a German community with a super-spreading event. Inf. Dis. 2020, Preprint, 1-37.
42. Flu Symptoms and Diagnosis. Available online: https://www.cdc.gov/flu/symptoms/index.html. (Accessed on 05/02/2020).
43. Temmel, A. F. P.; Quint, C.; Schickinger-Fischer, B.; Klimek, L.; Stoller, E.; Hummel, T. Characteristics of Olfactory Disorders in Relation to major Causes of Olfactory Loss. Arch Oto. H. N. Surg. 2002, 128, 635-641.
44. Update: Influenza Activity in the United States During the 2017–18 Season and Composition of the 2018–19 Influenza Vaccine. Available online: https://www.cdc.gov/mmwr/volumes/67/wr/mm6722a4.htm?s_cid=mm6722a4_w. (Accessed on 06/09/2020).
45. Weekly U.S. Influenza Surveillance Report. Available online: https://www.cdc.gov/flu/weekly/#S2. (Accessed on 10/30/2020).
46. The COVID Tracking Project. US Historical Data. Available online: https://covidtracking.com/data/us-daily. (Accessed on 10/30/2020).
47. Summary of the 2017 – 2018 Influenza season. Available online: https://www.cdc.gov/flu/about/season/flu-season-2017-2018.htm. (Accessed on 06/03/2020).
48. Meijer WJ, Linn FH, Wensing AM, Leavis HL, van Riel D, GeurtsvanKessel CH, Wattjes MP, Murk JL. Acute influenza virus-associated encephalitis and encephalopathy in adults: a challenging diagnosis. JMM Case Rep. 2016 Dec 19;3(6):e005076. doi: 10.1099/jmmcr.0.005076. PMID: 28348797; PMCID: PMC5343125.
49. Laboratory-Confirmed Influenza Hospitalizations. Preliminary Data as of May 30, 2020. https://gis.cdc.gov/grasp/fluview/FluHospChars.html. (Accessed on 08/11/2020).
50. Daily Updates of Totals by Week State. Provisional Death Counts for Coronavirus Disease (COVID-19). Available online: https://www.cdc.gov/nchs/nvss/vsrr/covid19/index.htm. (Accessed on 07/14/2020).
51. Pneumonia and Influenza Mortality Surveillance from the National Center for Health Statistics Mortality Surveillance System. Available online: https://gis.cdc.gov/grasp/fluview/mortality.html. (Accessed on 06/09/2020).
52. Chowell, G.; Miller, M. A.; Viboud, C. Seasonal influenza in the United States, France, and Australia: transmission and prospects for control. Epidemiol. Infect. (2008), 136, 852–864.

53. Liu, Y.; Gayle, AA.; Wilder-Smith, A.; Rocklöv, J. The reproductive number of COVID-19 is higher compared to SARS coronavirus. Int. Soc. of Tra. Med. 2020, 1-4.
54. Nikbakht, R.; Baneshi, M. R.; Bahrampour, A. Estimation of the Basic Reproduction Number and Vaccination Coverage of Influenza in the United States (2017-18). J Res Health Sci 2018, 18, 1-6.
55. Weekly U.S. Influenza Surveillance Report. 2019-2020 Influenza Season Week 21 ending May 23, 2020. Available online: https://www.cdc.gov/flu/weekly/#S6. (Accessed online on 06/03/2020).
56. Provisional COVID-19 Deaths: Focus on Ages 0-18 Years. Available online: https://data.cdc.gov/NCHS/Provisional-COVID-19-Deaths-Focus-on-Ages-0-18-Yea/nr4s-juj3 (Accessed on 12/11/2020).
57. United States Population. Available Online: https://www.worldometers.info/world-population/us-population/. (Accessed on 12/11/2020).
58. Hospitalization Rates and Characteristics of Patients Hospitalized with Laboratory-Confirmed Coronavirus Disease 2019 — COVID-NET, 14 States, March 1–30, 2020. Available online: https://www.cdc.gov/mmwr/volumes/69/wr/mm6915e3.htm. (accessed 06/03/2020).
59. World Health Organization. Estimate of Respiratory Deaths due to Seasonal Influenza 290 000 – 650 000 annually. WHO 2017, 1.
60. Wu, Z.; McGoogan, J. M. Characteristics of and Important Lessons from the Coronavirus Disease 2019 (COVID-19) Outbreak in China Summary of a Report of 72 314 Cases From the Chinese Center for Disease Control and Prevention. Jama 2020, 323, 1239-1242.
61. Guan, W. J.; NI, Z. Y.; Hu, Y.; Liang, W.; Ou, C.; He, J.; Liu, L.; Shan, H.; Lei, C.; Hui, D.S.C.; Du, B.; Li, L.; Zeng, G.; Yuen, K.Y.; Chen, R.; Tang, C.; Wang, T.; Chen, P.; Xiang, J.; Li, S.; Wang, J. L.; Liang, Z.; Peng, Y.; Wei, L.; Liu, Y.; Hu, YH.; Peng, P.; Wang, JM.; Liu, J.; Chen, Z.; Li, G.; Zheng, Z.; Qiu, S.; Luo, J.; Ye, C.; Zhu, S.; Zhong, N. Clinical Characteristics of Coronavirus Disease 2019 in China. N Engl J Med. 2020, 30, 1708-1720.
62. Mollema, L.; Harmsen, I. A.; Broekhuizen, E.; Clijnk, R.; De Melker, H.; Paulussen, T.; Kok, G.; Ruiter, R.; Das E. Disease Detection or Public Opinion Reflection? Content Analysis of Tweets, Other Social Media, and Online Newspapers During the Measles Outbreak in the Netherlands in 2013. J. o. Med. Int. Res. 2015, 17, 1-12.
63. Hospitals Overwhelmed by Flu Patients Are Treating Them in Tents. Available online: https://time.com/5107984/hospitals-handling-burden-flu-patients/. (Accessed online on 05/13/2020).
64. Verity, R.; Okell, L. C.; Dorigatti, I.; Winskill, P.; Whittaker, C.; Imai, N.; Cuomo-Dannenburg G.; Thompson H.; Walker P. G. T.; Fu H.; Dighe A.; Griffin J. T.; Baguelin M.; Bhatia S.; Boonyasiri, A.; Cori, A.; Cucunubá, Z.; FitzJohn, R.; Gaythorpe, K.; Green, W.; Hamlet, A.; Hinsley, W.; Laydon, D.; Nedjati-Gilani, G.; Riley, S.; van Elsland, S.; Volz, E.; Wang, H.; Wang, Y.; Xi, X.; Donnelly, C. A.; Ghani, A. C.; Ferguson, N. M. Estimates of the severity of coronavirus disease 2019: a model-based analysis. Lancet Infect Dis 2020, 20, 669-677.
65. Fraser, C.; Donnelly, C. A.; Cauchemez, S.; Hanage, W. P.; Van Kerkhove, M. D.; Hollingsworth, W. D.; Griffin, J.; Baggalex, R. F.; Jenkins, H. E.; Lyons, E. J.; Jombart, T.; Hinsley, W. R.; Grassly, N. C.; Ballouc, F.; Ghani, AC.; Ferguson, N. M.; Rambaut, A.; Pybus, O. G.; Lopez-Gatell, H.; Alpuche-Aranda, C. M.; Chapela, I. B.; Zavala, E. P.; Guevara, D. M. E.; Checchi, F.; Garcia, E.; Hugonnet, S.; Roth, C. Pandemic Potential of a Strain of Influenza A (H1N1): Early Findings**.** Science 2009, 324, 1557-1561.
66. CoV-Glue. Amino acid replacements. Coding region insertions. Coding region deletions. Available online: http://cov-glue.cvr.gla.ac.uk/#/deletion. (Accessed on 01/05/2021).
67. Buda, S.; Dürrwald, R.; Biere, B.; Buchholz, U.; Tolksdorf, K.; Schilling, J.; Streib, V.; Preuß, U.; Prahm, K.; Haas, W.; AGI-Studiengruppe. Influenza-Wochenbericht. RKI 2020, 36, 1-7.
68. Bedford, T.; Greninger, AL.; Roychoudhury, P.; Reinhardt, A.; Xie, H.; Shrestha, L.; Nguyen, T. N.; Adler, A.; Brandstetter, E.; Cho, S.; Giroux, D.; Han, P. D.; Fay, K.; Frazar, C. D.; Ilcisin, M.; Lacombe, K.; Lee, J.; Kiavand, A.; Richardson, M.; Sibley, T. R.; Truong, M.; Wolf, C. R.;

Nickerson, D. A.; Rieder, M. J.; Englund, J. A.; Hadfield, J.; Hodcroft, E. B.; Huddleston, J.; Moncla, L. H.; Müller, N. F.; Neher, R. A.; Deng, X.; Gu, W.; Federman, S.; Chiu, C.; Duchin, J.; Gautom, R.; Melly, G.; Hiatt, B.; Dykema, P.; Lindquist, S.; Queen, K.; Tao, Y.; Uehara, A.; Tong, S.; MacCannell, D.; Armstrong, G. L.; Baird, G. S.; Chu, H. Y.; Shendure, J.; Jerome, K. R. Cryptic transmission of SARS-CoV-2 in Washington State. medRxiv 2020, 1-16.

69. Genomic epidemiology of hCoV-19. Available online: https://www.gisaid.org/epiflu-applications/next-hcov-19-app/. (Accessed on 05/12/2020 and 06/02/2020).
70. Holshue, M. L.; DeBolt, C.; Lindquist, S.; Lofy, K. H.; Wiesman, J.; Bruce, H.; Spitters, C.; Ericson, K.; Wilkerson, S.; Tural, A.; Diaz, G.; Cohn, A.; Fox, L.; Patel, A.; Gerber, S. I.; Kim, L.; Tong, S.; Lu, X.; Lindstrom, S.; Pallansch, M. A.; Weldon, W. C.; Biggs, H. M.; Uyeki, T. M.; Pillai, S. K. First Case of 2019 Novel Coronavirus in the United States. N Engl J Med 2020, 382, 929-936.
71. Roussel, Y.; Giraud-Gatineau, A.; Jimeno, MT.; Tolain, JM.; Zandotti, C.; Colson, P.; Raoult, D. SARS-CoV-2: fear versus data. Int. J. of Anti. Ag. 2020, 55, 1-3.
72. Colson, P.; La Scola, B.; Esteves-Vieira, V.; Ninove, L.; Zandotti, C.; Jimeno, MT.; Gazin, C.; Bedotto, M.; Filosa, V.; Giraud-Gatineau, A.; Chaudet, H.; Brouqui, P.; Lagier, JC.; Raoult, D.; Letter to the editor: Plenty of coronaviruses but no SARS-CoV-2. Euro Surveill. 2020;25, 1-2.
73. Berliner Firma produziert Coronavirus-Test für die ganze Welt. Online available: https://www.tagesspiegel.de/berlin/tib-molbiol-berliner-firma-produziert-coronavirus-tests-fuer-die-ganze-welt/25602142.html. Accessed on 05/18/2020.
74. World Health Organization. Scientific Advisory Group members. WHO 2020, 1-13.
75. World Health Organization. Laboratory testing for 2019 novel coronavirus (2019-nCoV) in suspected human cases Interim guidance 19 March 2020. Int. Guid. 2020,1-7.
76. Lythgoe, M. P.; Middelton, P. Ongoing Clinical Trials for the Management of the COVID-19 Pandemic. Trends Pharmacol Sci 2020, 41, 363-382.
77. Duan, K.; Liu, B.; Li, C.; Zhang, H.; Yu, T.; Qu, L.; Zhou, M.; Chen, L.; Meng, S.; Hu, Y.; Peng, C.; Yuan, M.; Huang, I.; Wang, Z.; Yu, I.; Gan, X.; Wang, D.; Yu, X.; Li, L.; Zhang, I.; Wu, X.; Li, B.; Xu, Y.; Chen, W.; Peng, Y.; Hu, Y.; Lin, L.; Liu, X.; Huang, S.; Zhou, Z.; Zhang, L.; Wang, Y.; Zhang, Z.; Deng, K.; Xia, Z.; Gong, Q.; Zhang, W.; Zheng, X.; Liu, Y.; Yang, H.; Zhou, D.; Yu, D.; Hou, L.; Shi, Z.; Chen, S.; Chen, Z.; Zhang, X.; Yang, X. Effectiveness of Convalescent Plasma Therapy in Severe COVID-19 Patients. Proc Natl Acad Sci U S A 2020, 117, 9490-9496.
78. Cheng, Y.; Wong, R.; Soo, Y. O. Y.; Wong, W. S.; Lee, C. K.; Ng, M. H. L.; · Chan, P.; Wong, K. C.; Leung, C. B.; Cheng, G. Use of convalescent plasma therapy in SARS patients in Hong Kong. Eur J Clin Microbiol Infect Dis 2005, 24, 44–46.
79. Hung, I. FN.; K. To K. KW.; Lee, CK.; Lee, KL.; Chan, K.; Yan, W. W.; Liu, R.; Watt, CL.; Chan, WM.; Lai, KY.; Koo, CK.; Buckley, T.; Chow, FL.; Wong, KK.; Chan, HS.; Ching, CK.; Tang,B. S.; Lau, C. C.; Li, I. W.; Liu, SH.; Chan, KH.; Lin, CK.; Yuen, KY. Convalescent Plasma Treatment Reduced Mortality in Patients With Severe Pandemic Influenza A (H1N1) 2009 Virus Infection. Cli. Inf. Dis. 2011, 52, 447-456.
80. Clemente, V.; D'Arcy, P.; Bazzaro, M. Deubiquitinating Enzymes in Coronaviruses and Possible Therapeutic Opportunities for COVID-19. Int. J. of. Mol. Sci. 2020, 21, 1-17.
81. Wang, Y.; Zhang, D.; Du, G.; Du, R.; Zhao, J.; Jin, Y.; Fu, S.; Gao, L.; Cheng, Z.; Lu, Q.; Hu, Y.; Luo, G.; Wang, K.; Lu, Y.; Li, H.; Wang, S.; Ruan, S.; Yang, C.; Mei, C.; Wang, Y.; Ding, D.; Wu, F.; Tang, X,; Ye, X,; Ye, Y.; Liu, B.; Yang, J.; Yin, W.; Wang, A.; Fan, G.; Zhou, F.; Liu, Z.; Gu, X.; Xu, J.; Shang, L.; Zhang, Y.; Cao, L.; Guo, T.; Wan, Y.; Qin, H.; Jiang, Y.; Jaki, T.; Hayden, F. G.; Horby, P. W.; Cao, B.; Wang, C. Remdesivir in Adults With Severe COVID-19: A Randomised, Double-Blind, Placebo-Controlled, Multicentre Trial. Lancet 2020, 395, 1569-1578.
82. Piller, C. Failure to warn: Hundreds died while taking an arthritis drug, but nobody alerted patients. STAT 2017, 1-20.

83. Sharma, A. Chloroquine Paradox May Cause More Damage Than Help Fight COVID-19. Microbes Infect 2020, 20, 1286-4579.
84. Cao, B.; Wang, Y.; Wen, D.; Liu, W.; Wang, J.; Fan, G.; Ruan, L.; Song, B.; Cai, Y.; Wei, M.; Li, X.; Xia, J.; Chen, N.; Xiang, J.; Yu, T.; Bai, T.; Xie, X.; Zhang, L.; Li, C.; Yuan, Y.; Chen, H.; Li, H.; Huang, H.; Tu, S.; Gong, F.; Liu, Y.; Wei, Y.; Dong, C.; Zhou, F.; Gu, X.; Xu, J.; Liu, Z.; Zhang, Y.; Li, H.; Shang, L.; Wang, K.; Li, K.; Zhou, X.; Dong, X.; Qu, Z.; Lu, S.; Hu, X.; Ruan, S.; Luo, S.; Wu, J.; Peng, L.; Cheng, F.; Pan, L.; Zou, J.; Jia, C.; Wang, J.; Liu, X.; Wang, S.; Wu, X.; Ge, Q.; He, J.; Zhan, H.; Qiu, F.; Guo, L.; Huang, C.; Jaki, T.; Hayden, F.G.; Horby, P.W.; Zhang, D.; Wang, C. A Trial of Lopinavir–Ritonavir in Adults Hospitalized with Severe Covid-19. N Engl J Med 2020, 19, 1787-1799.
85. Ehrhardt, C.; Hrincius, E. R.; Korte, V.; Mazur, I.; Droebner, K.; Poetter, A.; Dreschers, S.; Schmolke, M.; Planz, O.; Ludwig, S. A Polyphenol Rich Plant Extract, CYSTUS052, Exerts Anti Influenza Virus Activity in Cell Culture Without Toxic Side Effects or the Tendency to Induce Viral Resistance. Antiviral Res 2007, 1, 38-47.
86. Kalusa, U.; Grigorova, A.; Kadeckib, O.; Jansenc, JP.; Kiesewettera, H.; Radtke, H. Cistus Incanus (CYSTUS052) for Treating Patients With Infection of the Upper Respiratory Tract. A Prospective, Randomised, Placebo-Controlled Clinical Study. Antiviral Res 2009, 3, 267-271.
87. European Medecines Agency. CHMP ASSESSMENT REPORT FOR Pandemrix. EMA 2009, 1-65.
88. Pandemrix – Adjuvanted H1N1 Influenza Vaccine. Available online: https://www.clinicaltrialsarena.com/projects/pandemrix/. (Accessed on 05/21/2020).
89. Flynn, P. The handling of the H1N1 pandemic: more transparency Needed. PACE 2010, Doc. 12283, 1-27.
90. Doshi, P. Pandemrix vaccine: why was the public not told of early warning signs? BMJ 2018, 362, 1-5.
91. Sarkanen, T. O.; Alakuijala, AA. P. E.; Dauvilliers, Y. A.; Partinen, M. M. Incidence of narcolepsy after H1N1 influenza and vaccinations: Systematic review and meta-analysis. Sle. Med. Rev. 2018, 38, 177-186.
92. Oller, J. W. Jr.; Shaw, C. A.; Tomljenovic, L.; Karanja, S. K.; Ngare, W.; Clement, F. M.; Pillette, J. R. HCG Found in WHO Tetanus Vaccine in Kenya Raises Concern in the Developing World. Sci. Res. 2017, 4, 1-31.
93. Mogensen, S. W.; Andersen, A.; Rodrigues, A.; Benn, C. S.; Aaby, P. The Introduction of Diphtheria-Tetanus-Pertussis and Oral Polio Vaccine Among Young Infants in an Urban African Community: A Natural Experiment. EBioMedicine 2017, 17, 192-198.
94. Doshi, P. WHO's malaria vaccine study represents a "serious breach of international ethical standards". BMJ 2020, 368, 734.
95. World Health Organization. Malaria vaccine: WHO position paper – January 2016, WHO 2016, 91, 33-52.
96. Klein, L. A.; William, F. S.; Moss, J.; Benn, C. S.; Aabye, P. RTS,S Malaria Vaccine and Increased Mortality in Girls. mBio 2016, 7, 14-16.
97. Kohn, S. Km 4 – 5 51000/29#2 KM4 Analyse des Krisenmanagments (Kurzfassung). Kohn S. Germany, Berlin, 1-91.
98. Zhu, F. C.; Li, Y. H.; Guan, X. H.; Hou, L. H.; Wang, W.; Li, J. X.; Wu, S. P.; Wang, B. S.; Wang, Z.; Wang, L.; Jia, S. Y.; Jiang, H. D.; Wang, L.; Jiang, T.; Hu, Y.; Gou, J. B.; Xu, S. B.M.; Xu, J. J.; Wang, X. W.; Wang, W.; Chen, W. Safety, tolerability, and immunogenicity of a recombinant adenovirus type-5 vectored COVID-19 vaccine: a dose-escalation, open-label, non-randomised, first-in-human trial. Lancet 2020 May, 20, 1-10.
99. Grifoni, A.; Weiskopf, D.; Ramirez, S.I.; Mateus, J.; Dan, J.M.; Moderbacher, C.R.; Rawlings, S.A.; Sutherland, A.; Premkumar, L.; Jadi, R.S.; Marrama, D.; de Silva, A.M.; Frazier, A.; Carlin, A.; Greenbaum, J.A.; Peters, B.; Krammer, F.; Smith, D.M.; Crotty, S.; Sette, A. Targets

of T cell responses to SARS-CoV-2 coronavirus in humans with COVID-19 disease and unexposed individuals, Cell. 2020, Page 1-25.

100. Tostmann, A.; Bradley, J.; Bouseman, T.; Yiek, WK.; Holwerda, M.; Bleeker-Rovers, C.; Oever J. T.; Meijer, C.; Rahamat-Langedoien, J.; Hopman, J.; van der Geest-Blankert, N.; Wertheim, H. Strong Associations and Moderate Predictive Value of Early Symptoms for SARS-CoV-2 Test Positivity Among Healthcare Workers, the Netherlands. Euro Surveill 2020, 25.
101. Döhla, M.; Boesecke, C.; Schulte B.; Diegmann, C.; Sib E.; Richter E.; Eschbach-Bludau M.; Aldabbagh S.; Marx B.; Eis-Hubinger, A.-M.; Schmithausen R.M.; Streeck, H. Rapid point-of-care testing for SARS-CoV-2 in a community screening setting shows low sensitivity. Pub. Hea. 2020, 182, 170-172.
102. Ioannidis, J., 2020. The infection fatality rate of COVID-19 inferred from sero prevalence data. medRxiv doi: 10.1101/2020.05.13.20101253.
103. Kern, V. M.; Halwe, S.; Müller, H.; Rohde, C.; Savini, M.; Schmidt, M.; Wilhelm, J.; Becker, S.; Ciesek, S.; Gottschalk, R. Epidemiological study to detect active SARS-CoV-2 infections and seropositive persons in a selected cohort of employees in the Frankfurt am Main metropolitan area. medRxiv 2020, 1-11.
104. COVIDSurg Collaborative. Elective surgery cancellations due to the COVID-19 pandemic: global predictive modelling to inform surgical recovery plans. Wil. Onl. Libr. 2020, 1-10.
105. Kassenärztliche Bundesvereinigung. Vorübergehend kein Mammographie-Screening. Online available: https://www.kbv.de/html/1150_45157.php. Accessed on 06/29/2020
106. Ärzteschaft. Coronapandemie verzögert Diagnose von Krebserkrankungen. 05/13/2020. Online available: https://www.aerzteblatt.de/nachrichten/112835/Coronapandemie-verzoegert-Diagnose-von-Krebserkrankungen. Accessed on 06/29/2020
107. Milner, A.; Page, A.; LaMontagne, A. D. Long-Term Unemployment and Suicide: A Systematic Review and Meta-analysis. PLOS 2013, 8, 1-6.
108. Ärzteschaft. COVID-19-Folgen: Weniger Herzinfarktpatienten und geringere Impfquote. 05/20/2020. Online available: https://www.aerzteblatt.de/nachrichten/113034/COVID-19-Folgen-Weniger-Herzinfarktpatienten-und-geringere-Impfquote. Accessed on 06/29/2020.
109. Brouqui, P. ; Giraud-Gatineau, A. Raoult, D. Remdesivir investigational trials in COVID-19: a critical reappraisal. To appear in: New Mic. and New Inf. 2020.
110. Mulligan, M. J.; Lyke, K.E.; Kitchin, N.; Absalon, J.; Gurtman, A.; Lockhart, S.; Neuzil, K.; Raabe, V.; Bailey, R.; Swanson, K. A.; Li, K.; Koury, K.; Kalina, W.; Cooper, D.; Fontes-Garfias, C.; Shi, P. Y.; Özlem, T.; Tompkins, K. R.; Walsh, E. E.; Frenck, R.; Falsey A. R.; Dormitzer, P. R.; Gruber, W. C.; Şahin, U.; Jansen, K. U. Phase 1/2 Study to Describe the Safety and Immunogenicity of a COVID-19 RNA Vaccine Candidate (BNT162b1) in Adults 18 to 55 Years of Age: Interim Report. medRxiv 2020, 1-16.
111. Robert Koch Institute. Häufig gestellte Fragen und Antworten zur Grippe 01/30/2020. Available online: https://www.rki.de/SharedDocs/FAQ/Influenza/FAQ_Liste.html. Accessed on 07/11/2020.
112. Soltesz, K.; Gustafsson2, F.; Timpka T.; Jaldén5 J.; Jidling, C.; Heimerson, A.; Schön, T. B.; Spreco, A.; Ekberg J.; Dahlström, Ö.; Carlson8, F. B.; Jöud, A.; Bernhardsson, B. On the sensitivity of non pharmaceutical intervention models for SARS-CoV-2 spread estimation. medRxiv 2020, 1-15.
113. Morishima, T.; Togashi, T.; Yokota, S.; oshinobu O.; Miyazaki, C.; Tashiro, M.; Okabe, N. Encephalitis and encephalopathy associated with an influenza epidemic in Japan. Clinical Infectious Diseases, 2002, 35, 512-517.
114. Ahmad, I.; Rathore, F.A. Neurological Manifestations and Complications of COVID-19: A Literature Review. Preprints 2020.
115. Etievant, S.; Bal, A.; Escuret, V.; Brengel-Pesce, K.; Bouscambert, M.; Cheynet, V.; Generenaz L.; Oriol G.; Destras, G.; ve Billaud, G.; Josset, L.; Frobert, E.; Morfin F.; Gaymard A. Performance Assessment of SARS-CoV-2 PCR Assays Developed by WHO Referral Laboratories. J. of cli. Med. 2020, 9, 1871.

116. Keil, U.; Schönhöfer, P.; Spelsberg, A. The invention of the swine-flu pandemic. Eur. J. Epidemiol. 2011, 26, 187-90.
117. Klement, R.J., Sweeney, R.A. Face masks in radiation oncology clinics: based on evidence or source of mistakes? Med. Oncol. 2020, 37, 1-2.
118. Homburg, S.; Kuhbandner, C. Comment on Flaxman et al. (2020, Nature, https://doi.org/10.1038/s41586-020-2405-7): The 1 illusory effects of non-pharmaceutical interventions on COVID-19 in Europe. Advance (Preprint) 2020.
119. Keil, U.; Schoenhoefer, P.S.; Spelsberg, A. Re: Nicoll A, Sprenger M. Learning lessons from the 2009 pandemic: putting infections in their proper place. Eur J Epidemiol 2011. *2011, 26,* 757-760.
120. Rozo, M., & Gronvall, G. K. (2015). The Reemergent 1977 H1N1 Strain and the Gain-of-Function Debate. *mBio*, *6*(4), e01013-15. https://doi.org/10.1128/mBio.01013-15.
121. Artesi, M., Bontems, S., Göbbels, P., Franckh, M., Maes, P., Boreux, R., Meex, C., Melin, P., Hayette, M. P., Bours, V., & Durkin, K. (2020). A recurrent mutation at position 26,340 of SARS-CoV-2 is associated with failure of the E-gene qRT-PCR utilized in a commercial dual-target diagnostic assay. *Journal of clinical microbiology*, JCM.01598-20. Advance online publication. https://doi.org/10.1128/JCM.01598-20.
122. Bauer, M. (2016). The political power of evoking fear: The shining example of Germany's anti-TTIP campaign movement. European View, 15(2), 193–212. https://doi.org/10.1007/s12290-016-0424-4
123. Peters, G. J., Ruiter, R. A., & Kok, G. (2013). Threatening communication: a critical re-analysis and a revised meta-analytic test of fear appeal theory. Health psychology review, 7(Suppl 1), S8–S31. https://doi.org/10.1080/17437199.2012.703527.
124. Piyush R, Rajarshi K, Khan R, Ray S. Convalescent plasma therapy: a promising coronavirus disease 2019 treatment strategy. Open Biol. 2020;10(9):200174. doi:10.1098/rsob.200174.
125. Kappstein, I. Mund-Nasen-Schutz in der Öffentlichkeit: Keine Hinweise für eine Wirksamkeit. Krankenhaushygiene up2date 2020; 15(03): 279 – 295. DOI: 10.1055/a-1174-6591. DOI: 10.1055/a-1174-6591.
126. Tschöpe, C., Ammirati, E., Bozkurt, B. *et al.* Myocarditis and inflammatory cardiomyopathy: current evidence and future directions. *Nat Rev Cardiol* (2020). https://doi.org/10.1038/s41569-020-00435-x.

Figure 1: The „Framing Effect“

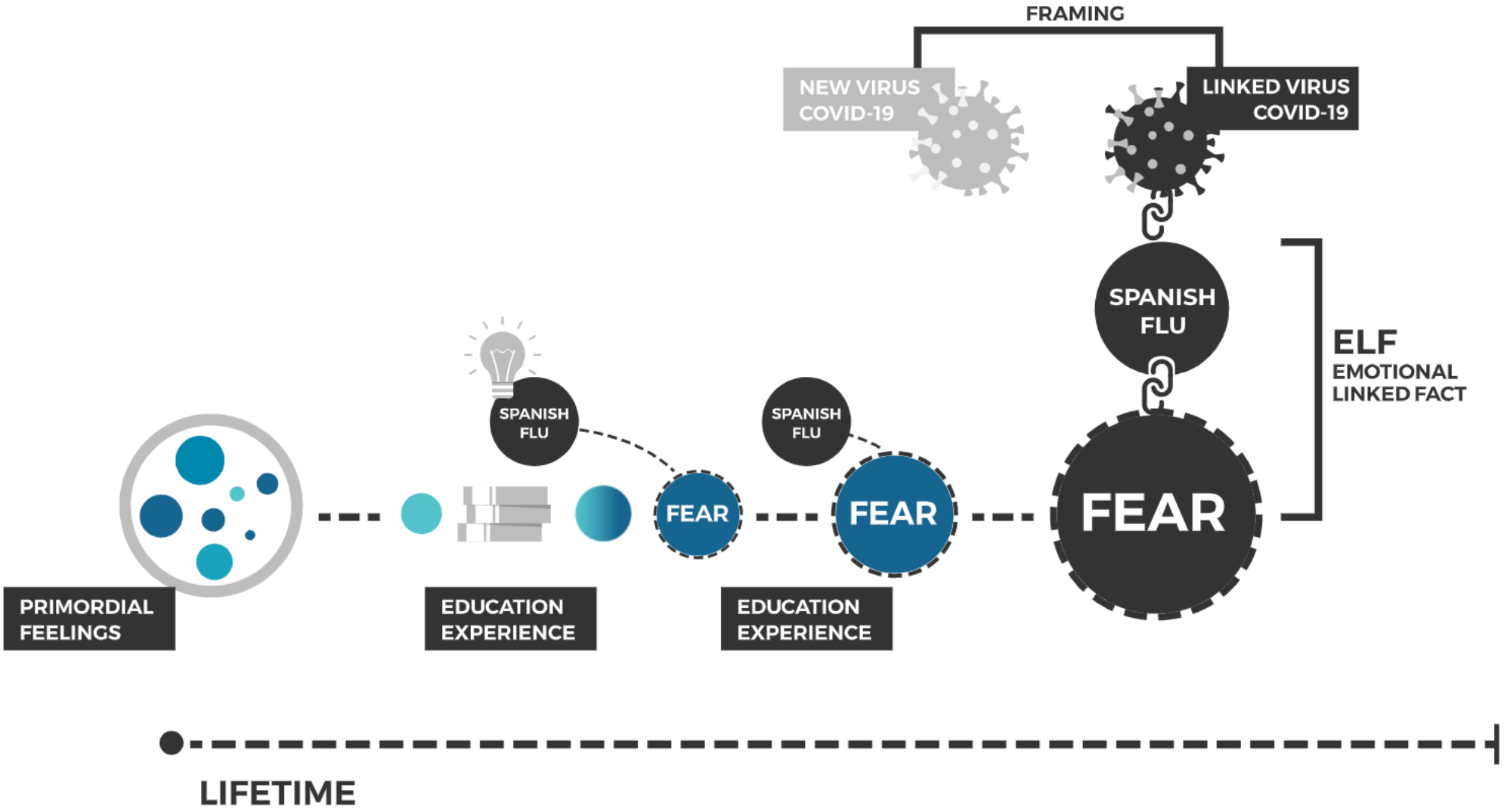

Figure 1: Illustration of the „Framing effect “using COVID-19 as an example. During the lifetime of each individual, congenital „Primordial Emotions “, such as joy, aggression, fear and etc., are linked to particular facts. This linkage develops by conditioning. Specific facts are associated to particular emotions (Spanish flu associated to Danger/Fear). One of these coupled entities may be a single element of a “frame”. Each individual has an unconscious mosaic of ELFs. “Framing” therefore means that the content of a new presented fact can be intentionally linked to a particular emotion through preexisting ELF.

Figure 2: *Correlation for Google queries "Coronavirus"," COVID-19", "SARS-COV-2" and Awareness*

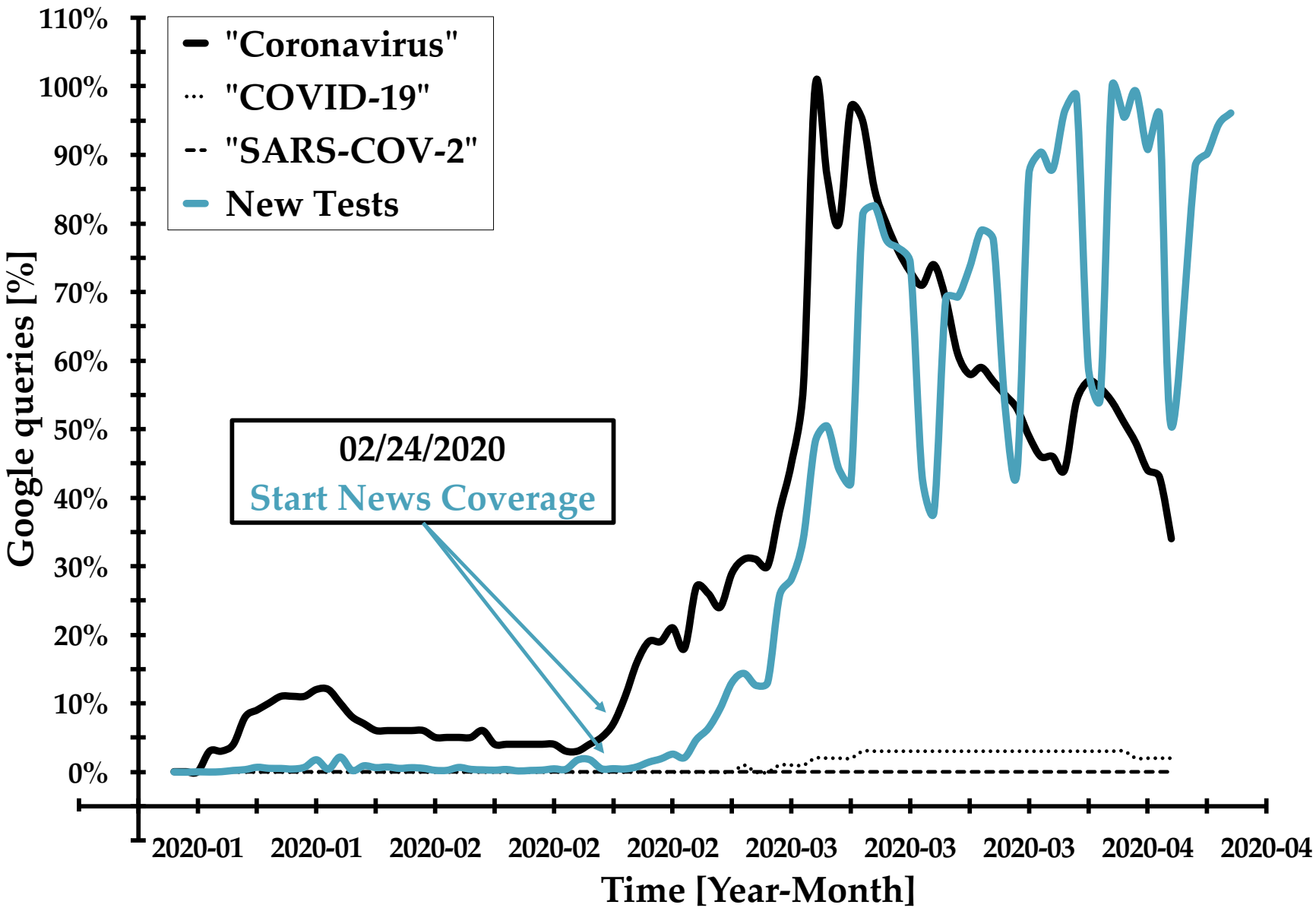

Figure 2: The black graphs (dotted/continuous) demonstrate the relative proportion of the queried words "Coronavirus", "COVID-19", "SARS-COV-2" and their relation to each another. The turquoise graph represents the number of RT-PCR tests conducted. The figure shows the close relationship between the beginning of mass testing in the USA and the increased awareness for the "Coronavirus" in the American population.

Abbildung 3: SARS-CoV-2-Tests und Infektionsrate für COVID-19.

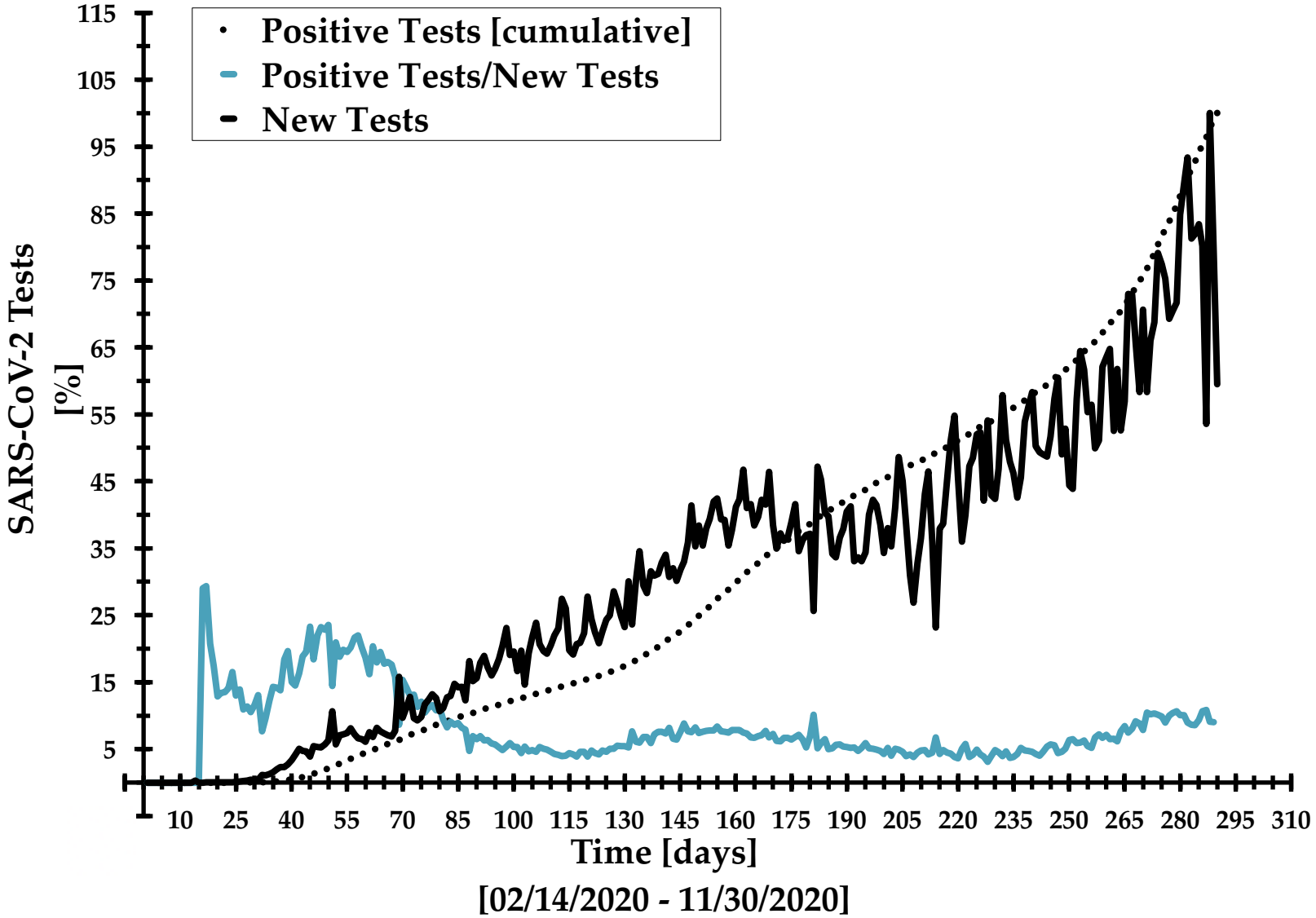

Abbildung 3: Der türkisfarbene Graph zeigt die tägliche Zahl der positiv getesteten Amerikaner im Verhältnis zur Gesamtzahl der auf das SARS-CoV-2-Virus durchgeführten Tests. Der durchgehende schwarze Graph stellt die täglich durchgeführten Tests auf das SARS-CoV-2-Virus in den USA dar, und der schwarzgepunktete Graph zeigt die kumulative Anzahl der positiv getesteten Amerikaner auf das SARS-CoV-2-Virus dar. Man kann sehen, dass die Infektionsrate mit der Zeit abnahm und dann mehr oder weniger konstant blieb. Bemerkenswert ist auch, dass eine Korrelation zwischen der Zunahme der täglich neu durchgeführten RT-PCR-Tests und der kumulativen Zahl der Personen besteht, die positiv auf das SARS-CoV-2-Virus getestet wurden.

Figure 4: *Google queries for "MERS"," Coronavirus", "Swine flu", "Ebola" and "Influenza" since 2008.*

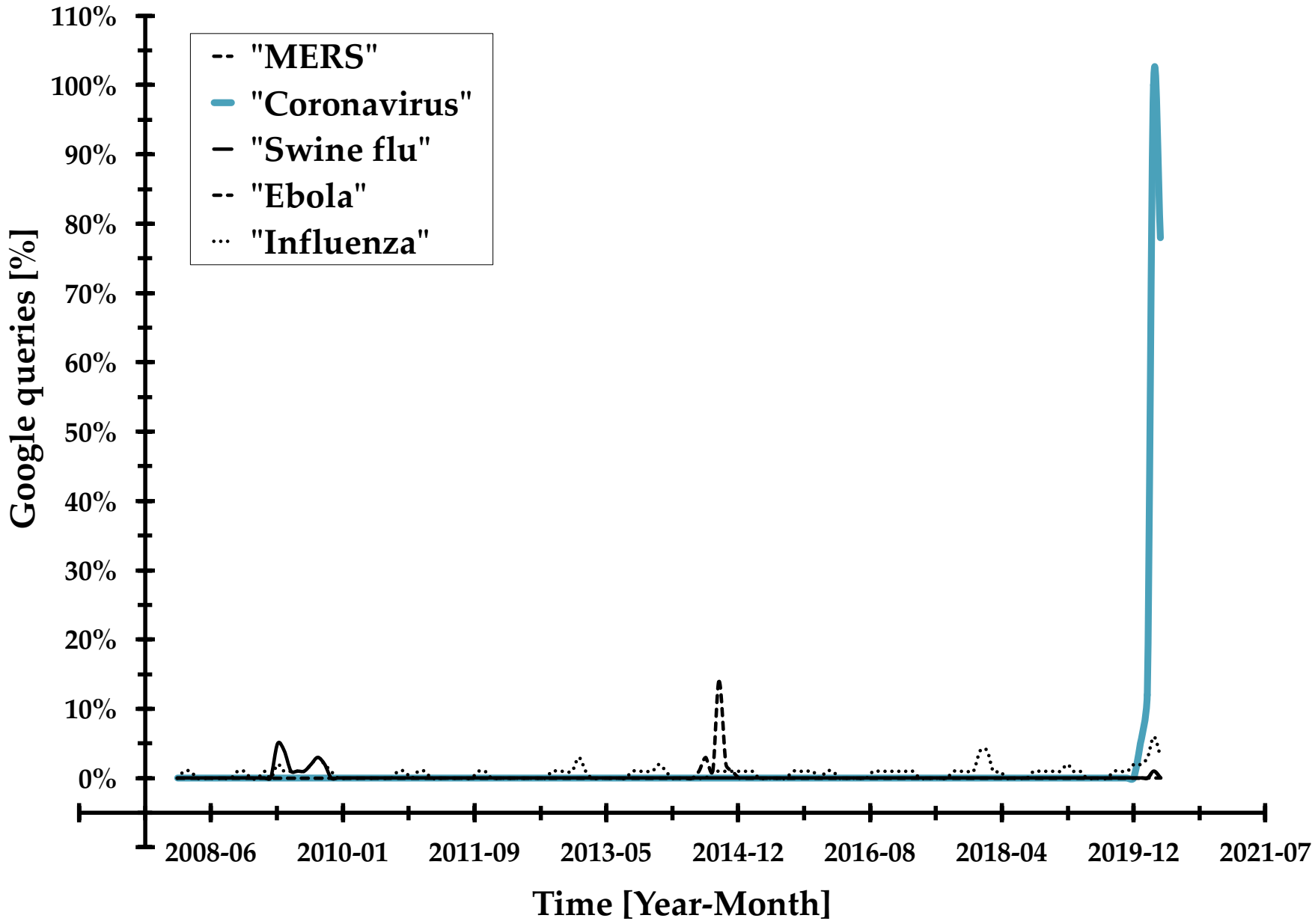

Figure 4: Illustration of the relative number of queried terms in google for "MERS", "Coronavirus", *"Swine flu", "Ebola" and "Influenza"* and their relative relation to each other since January 2008. One can see that the term "Coronavirus" is extremely high and exceeds the other terms by several orders of magnitude.

Figure 5: Influenza-like-Illness-rate in the USA of the last 15 years.

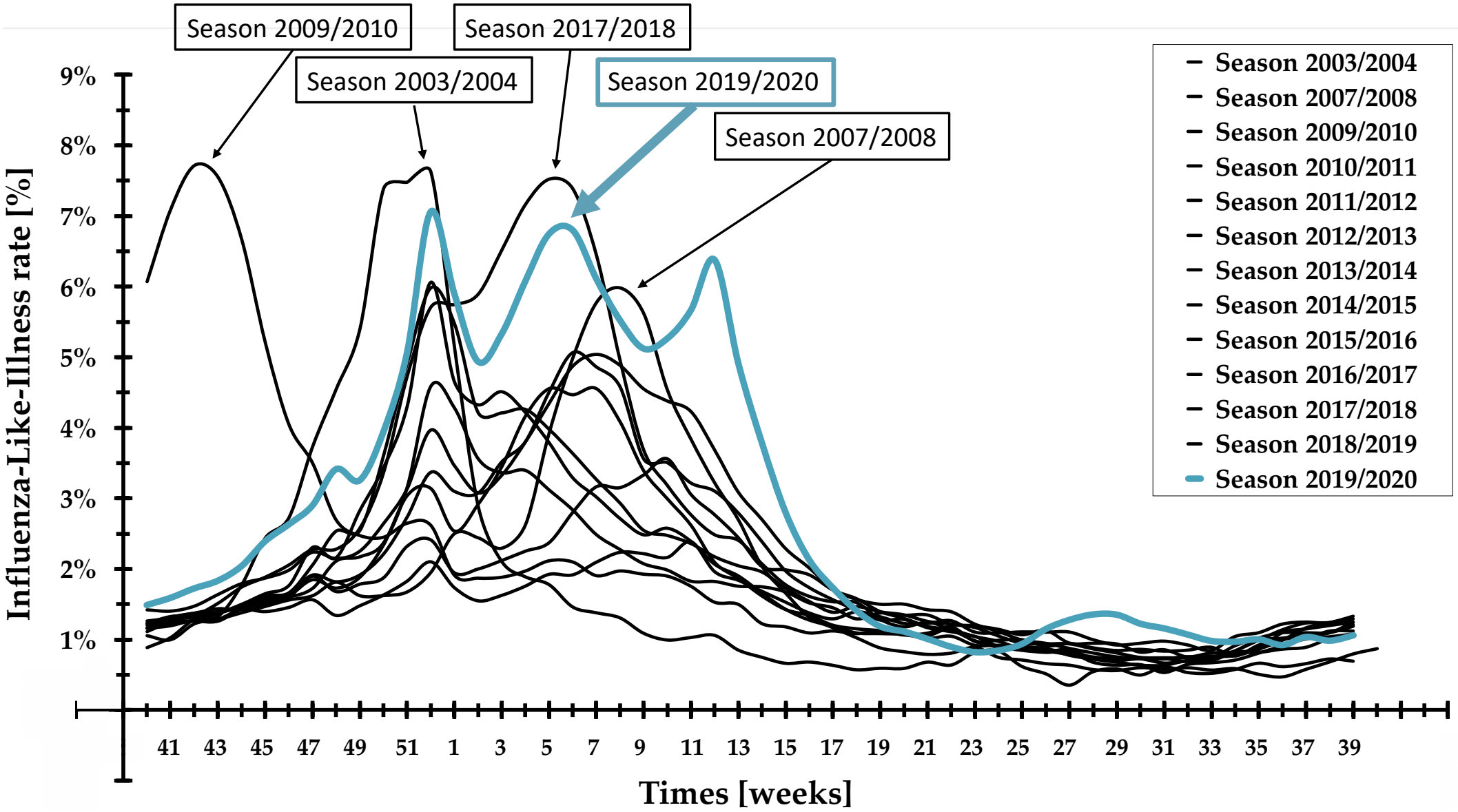

Figure 5: The black Graphs show the rates of "Influenza-like-Illnesses "(Ili-rate) during the flu seasons from 2003/2004 and 2007-2019. The turquoise graph illustrates the Ili-rate of 2019/2020. One can see that the Ili-rate of 2020 is within the range of the Ili-rates during the previous seasons.

Figure 6: Main branches of TIB-Molbiol.

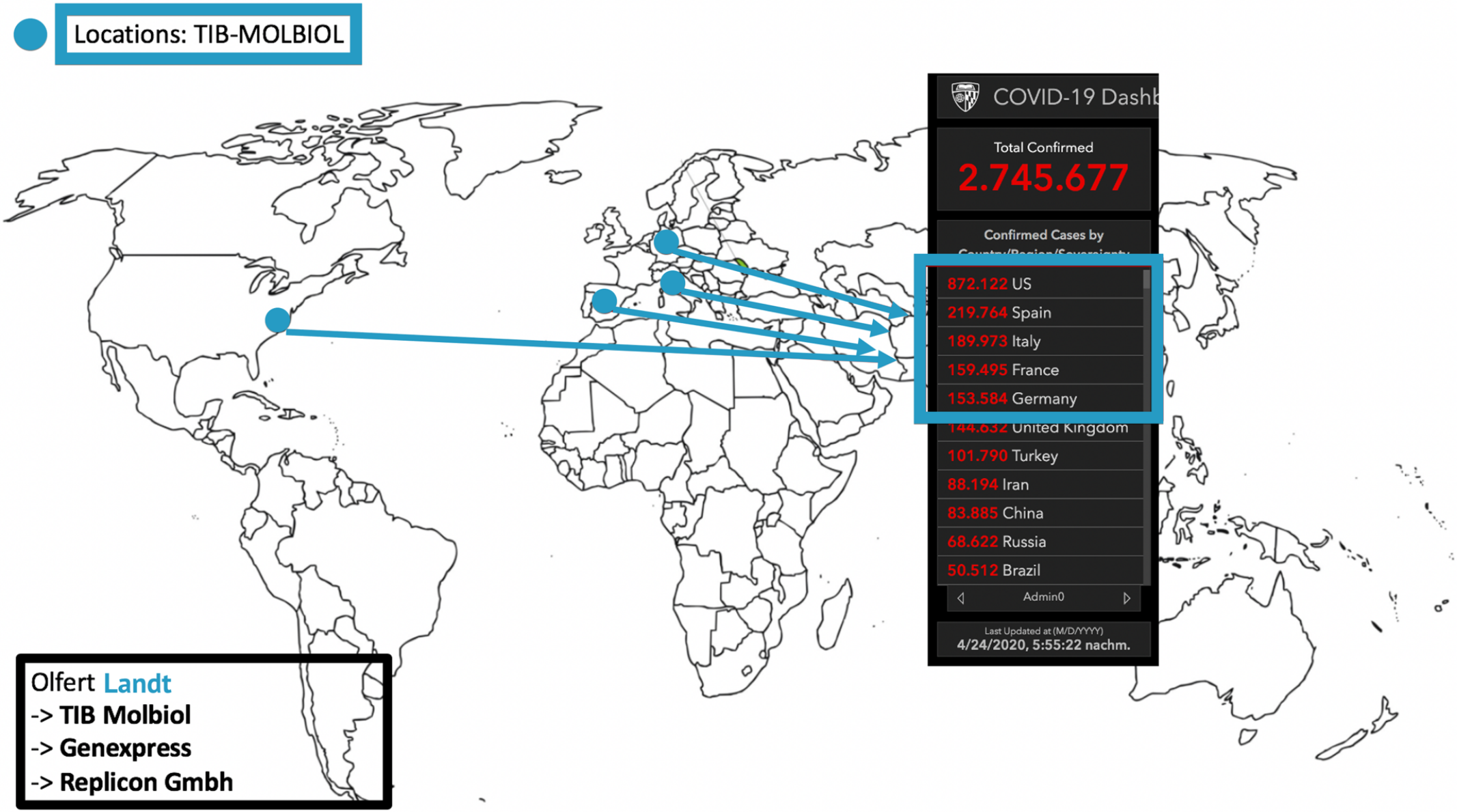

Figure 6: The main branches of TIB-Molbiol are shown to correlate positively with the number of positive tested individuals. This is a representation of the epidemiological data as of 04/26/2020.

Table 1: Epidemiological characteristics of the flu of 2017/2018, 2019/2020 and COVID-19

	Influenza 2017/2018	**Influenza 2019/2020**	**COVID-19**
Total number of tests [44-46]	1,210,053	1,634,930	256,914,140
Number of positive tests [44-46]	224,113 (18.5%)	297,468 (18.19 %)	20,560,549 (8.00%)
Hospitalizations [46-47,49]	30,453	19,292	699,971
Deaths [(Not)Confirmed by CDC, Pneumonia] [47, 50-51]	15,620 [Documentation]	6,699 [Pneumonia] 9,418 [Documentation]	289,517 [Documentation] 141,834 [Pneumonia] 344,808 [Notification only]
Case fatality rate (CFR)	7 % [Documentation]	2.25 % [Pneumonia] 3.16 % [Documentation]	1.40 % [Documentation] 0.68 % [Pneumonia] 1.67 % [Notification only]
Basic reproductive number [52-54]	1.8-3.06	0.9-2.1	2-3
Pediatric fatal cases [45, 55-56]	171(Age < 18)	238 (Age < 18)	169 (Age < 18)
Case hospitalization rate (CHR)	13.6%	6.46 %	3.40 %
US population (year) [57]	327,096,265 (2018)	331 002 651 (2020)	331,002,65 (2020)

Table 1: Comparison of the epidemiological characteristics of the flu of 2017/2018, 2019/2020 and COVID-19. One can see easily that there is not significant difference between those three infectious diseases. Neither the Case-fatality rates nor Case-hospitalization rates or basic reproductive numbers are significantly different. Moreover, the number of dead pediatric cases is also lower for COVID-19 than for the flu 2017/2018 and 2019/2020.

Table 2: Top 25 queried google terms for "Swine flu", "Influenza 2017/2018 and COVID-19.

Place	Swine flu	Influenza 17/18	COVID-19
1.	**Swine flu**	Vegas shooting	**Covid 19**
2.	**Swine flu symptoms**	Black Friday 2017	**Covid-19**
3.	Fathers day	Las vegas shooting	**Coronavirus tips**
4.	Farrah Fawcett	Harvey Weinstein	**Thank you coronavirus helpers**
5.	Michael Jackson	Matt Lauer	**Coronavirus update**
6.	Bing	Stephen Paddock	Tiger King
7.	Transformers 2	Tom petty	**Coronavirus map**
8.	Jon and Kate	NBA scores	**Hand Sanitizer**
9.	Kentucky derby	Cyber Monday 2017	**COVID-19 Map**
10.	Jon and Kate plus 8	David Cassidy	**Quarantine**
11.	Angels and Demons	Kevin Spacey	Roberto gómez Bolanos
12.	Star trek	World series 2017	Sir John Tenniel
13.	Palm pre	Lil peep	**Coronavirus**
14.	Megan Fox	Mlb Playoffs	**Corovirus New York**
15.	CDC	Astros game	Gabriel Fernandez
16.	Wach-movies.net	Daylight savings time 2017	Primary results
17.	New moon	Stranger Things Cast	**Coronavirus news**
18.	Six flags	Astros	Super Tuesday
19.	Facebook.com	Tom petty dead	Super Tuesday results
20.	Youtube.com	Net neutrality	Susan B. Anthony
21.	myspace.com	Justice league	**Pandemic**
22.	MTV	Charls manson	**Coronavirus**
23.	NBA	Dodgers game	Martial law
24.	www.yahoo.com	Charlie rose	Zoom app
25.	www.myspace.com	Al franken	**Symptoms of coronavirus**
Total	2/25	0/25	15/25

Table 2: This Table shows the top 25 queried terms on google during the time period of two months after the first fatal case of the "swine flu", "influenza 2017/2018" and COVID-19" in the US, respectively. During that time, 2 terms for swine flu, no terms at all for the Influenza of 2017/2018 and 15 terms for COVID-19, were among the top 25 most frequently queried google terms in the US

Table 3: Comorbidities of hospitalized patients during the flu season of 2017/2018, 2019/2020 and COVID-19

	Influenza 2017/2018		**Influenza 2019/2020**		**COVID-19**	
	Children	Adults	Children	Adults	Children	Adults
> 1 Underlying condition	92.4 %		92.3%		89.3%	
Asthma	27,1 %	19.4 %	20 %	24.1 %	25 %	12.9 %
Cardiovascular disease	8.4 %	51.3 %	5.8 %	45.3 %	4.2 %	35.2 %
Chronic lung disease	6.5 %	29.5 %	5.6 %	34.2 %	N/A	21.9 %
Immune suppression	8.2 %	17.5 %	5.1 %	17 %	N/A	10.3 %
Metabolic disease	4.7 %	44.8 %	5.6 %	42.8 %	4.2 %	41.8 %
Neurologic disease	17.2 %	20.2 %	17.4 %	19.8 %	8.3 %	22 %
Other disease	N/A	N/A	N/A	N/A	16.7 %	5.3 %
No known condition	42.2 %	6.8 %	49.9 %	7.7 %	36 %	8.3 %
Obesity	10.4 %	36.1 %	12 %	39.3 %	58.3 %	49.6 %
Renal disease	2.2 %	21.6 %	1.8 %	20.4 %	N/A	15.9 %
Gastrointestinal/liver disease	N/A	N/A	N/A	N/A	4.2 %	4.8 %
Hypertension	N/A	N/A	N/A	N/A	4.2 %	58.5 %

Table 3: Listing of the comorbidities of hospitalized patients during the flu season of 2017/2018, 2019/2020 and COVID-19. One can see that the comorbidities among those three types of infections are more or less in the same range.