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CHOATE PUBLIC HEALTH

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LETTER FROM THE EDITORS

Dear readers,

During this unprecedented time, we, Claire and Elaine, would like to extend our best wishes to you and your loved ones. As the novel coronavirus sweeps the globe, we have all been forced to face a new reality that has upended our lives. As the new Editors-in-Chief of Choate Public Health, we have stepped into our roles in a world where being conscious of our health has become more important than ever.

While the media tries to keep the public informed about each new development, the news has turned into a source of anxiety and distrust for many. It is with this in mind that we decided to center our spring issue around the topic of the COVID-19 pandemic. We hope that the Choate Public Health Magazine may serve to present factual information in a less overwhelming manner so that we may all stay educated about the pandemic while also taking care of our mental health. We recognize, of course, that our magazine cannot feasibly cover the full extent of this global health crisis in one issue, but we do hope that the information within this issue will broaden your understanding of the situation.

Although the transition to online learning for the remainder of this academic year has scattered our community across the globe, now is the time for the Choate community to be there for one another. In these uncertain times, we must support one another and fight to stay connected.

We hope to see you all in person soon. But until then, there is much you can do to help the cause. Express your thanks to the healthcare workers, grocery store employees, mail carriers, and many more frontline fighters who are risking their lives for our safety and wellbeing. Take care of and support those around you. And most importantly, stay safe and stay home. Practice social distancing. It can be easy to feel helpless in the face of this quiet new world, but, together, we will learn to adjust, and we will emerge from this crisis a stronger community.

Be healthy,
Claire Yuan '21 & Elaine Zhang '21

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COVID-19: A BA

By Henrik

In December of 2019, a novel coronavirus began spreading through a seafood and poultry market in Wuhan, China. The disease it caused, soon named COVID-19, became a global pandemic, infecting more than 2,550,006 worldwide as of April 21.[1]

COVID-19 comes from a large family of coronaviruses that also include previous viral epidemics such as SARS and MERS.[1] Researchers are not entirely sure how COVID-19 first infected Wuhan citizens, but it is believed that this virus originated in bats and traveled through intermediate hosts readily available at a wet market before transmitting to humans.[3]

The World Health Organization (WHO) reports that the virus spreads through particles in respiratory droplets transmitted through coughs, sneezes, or speech. These COVID-19 particles are known as virions and can live for several hours or days on surfaces before finding a host.[4]

As soon as a COVID-19 particle enters the lower respiratory tract, the spike-like proteins on its outer membrane allow it to enter healthy cells and manipulate these cells to produce more virions.[5] Once infected, a person may remain asymptomatic and contagious for up to fourteen days, allowing the virus to spread rapidly and complicating containment efforts. Symptoms of COVID-19 may include fever, dry cough, and body aches, which can later progress to pneumonia or respiratory failure. Less common symptoms may include sore throat, headaches, chills, vomiting, diarrhea, and nasal congestion. Luckily, it is estimated that around 80% of all COVID-19 cases are "mild," meaning that symptoms range from a fever and cough to pneumonia. Those who have preexisting medical conditions or are immunocompromised are most at risk.[3]

To prevent the virus from spreading domestically and internationally, Chinese authorities ordered house-to-house searches to quarantine the sick and implemented a complete lockdown of Wuhan, a city of 11 million. Vice Premier Sun Chunlan said after visiting Wuhan: "[the city faces] wartime conditions." Ms. Sun mobilized many medical workers, and makeshift hospitals have been built out of sports stadiums, exhibition centers, and building complexes.[6]

Despite these measures, COVID-19 has spread beyond Wuhan and has been detected in 210 countries, with cases in all continents. Countries around the world including the United States have restricted all international travel, and several airlines have halted their services. The U.S. Department of State issued a Level-4 "Do Not Travel Advisory" for China — a warning that was issued with great hesitation — but still failed to prevent the spread of the virus.[7] To protect public health, the United States has begun implementing "stay at home" advisories, deploying medical personnel, working on efficient testing, and spreading awareness of the virus's transmission and prevention.

The Centers for Disease Control and Prevention (CDC) has advised against all non-essential international travel.[8] United States officials have also taken

Graphics by Sesame Gaetsaloe '21

SIC OVERVIEW

Torres '22

steps to curtail the outbreak, but all 50 states continue to have cases growing exponentially. As of late April, all states have issued state-wide shelter-in-place orders. Following the CDC's recommendation to limit congregations greater than ten people, Choate — alongside many peer schools — has decided to shift to remote learning for the remainder of the academic year.[9]

The main objective of prevention is to keep the number of infected people below the threshold capacity of hospitals. Many hospitals and laboratories are already struggling to keep up with the demand for diagnostic tests.[10]

If you or a loved one develop COVID-19 symptoms, call your healthcare provider and self-isolate at home. Make sure to keep not only yourself healthy but also reach out to those who are most susceptible to the virus. In a difficult time, global unity will overcome this pandemic.

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#FLATTENTHECURVE — BUT WHY?

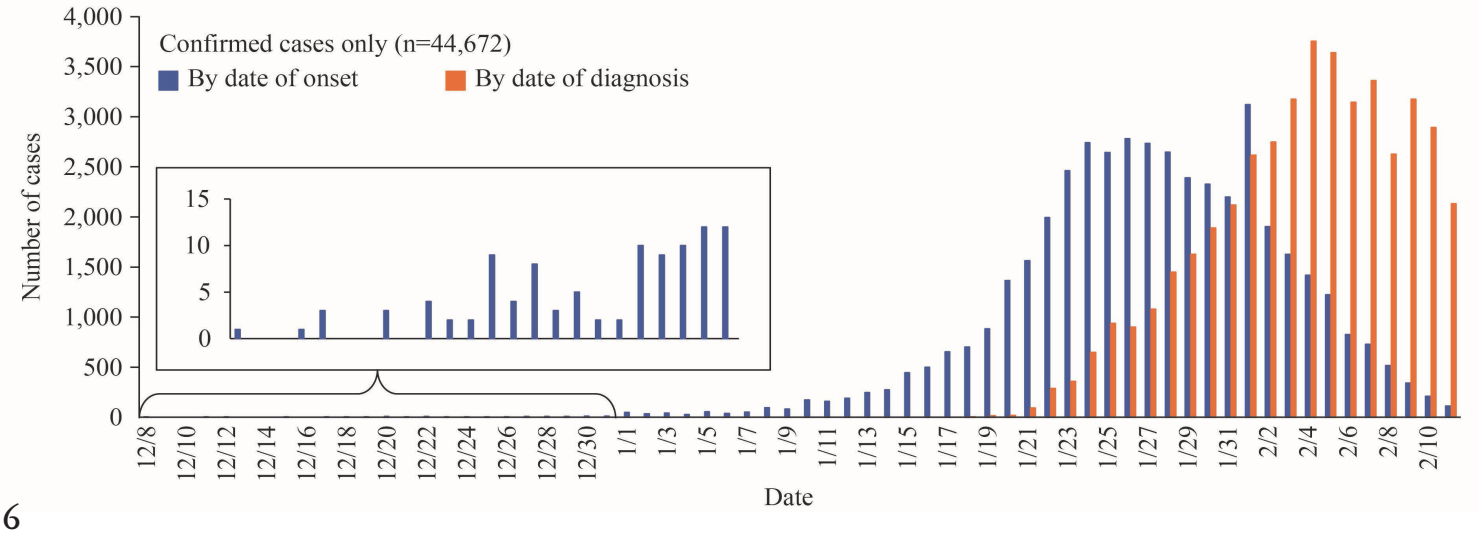
By Andrew Lee '21

We have all heard the hashtag #FlattenTheCurve circulating around social media, promoting social distancing and protective hygiene measures to the general public. But why? By reducing potential exposure to other people, the number of active COVID-19 cases will be spread out over a longer period of time, preventing the overload of hospitals and subsequent spikes in mortality rate. However, very few among us have a quantitative understanding of the significance of flattening the curve.

As of April 21, the number of confirmed COVID-19 cases in the world has surpassed 2,000,000.[1] However, the *actual* number of cases is likely to be much higher, especially in countries such as the U.S. where COVID-19 testing has been severely limited from the very beginning.[2] This distinction is important because the actual number of cases is what matters, and estimates of it can greatly help health officials make well-informed decisions.

When diagnosing patients, health providers in Hubei, the Chinese province containing Wuhan, asked patients when their symptoms started in order to understand when they were actually infected. This data is shown in the chart below. The orange bars show confirmed new cases by date of diagnosis, and the blue bars show the actual new cases by date of symptom onset. So, the orange bars represent what was believed to be happening, and the blue bars represent what was actually happening. According to an analysis from Lauer et. al., the incubation period, or the time between infection and symptom onset, is 5.1 days.[3] Another analysis from Jung et al. reports that the average time from symptom onset to reporting was 5.1 days.[4] This puts us at an average lag time between infection and diagnosis of 10.2 days. This ten-day lag time between infection and diagnosis is why it is necessary to be proactive, rather than reactive, in our reactions to this coronavirus, especially when cases seem to double every few days.

Adding up the orange bars up to January 22 gives around 450 confirmed cases, but adding up the blue bars up to January 22 gives us around 12,000 actual cases.[5] When health officials in Hubei saw 450 confirmed cases, the actual number



was almost 27 times higher than what they saw.

Given that the US has just begun to ramp up its testing capabilities, the official number of confirmed cases is likely to be significantly lesser than the actual number. Thus, it is important to use models to estimate how many actual cases there are at any given time. One quick and simple model we can use to estimate actual cases is based on several parameters and the number of deaths. Deaths are much easier to count accurately than active cases, so the underlying data is more reliable.

This method to estimate cases based on deaths works well to estimate actual cases and relies on estimates of the doubling time of new cases, mortality rate, and the time from infection to death in critical cases. These parameters can be estimated from the publicly available data from the Johns Hopkins Center for Systems Science and Engineering (JHU CSSE) database, and the analyses of Jung et. al, Lauer et. al, and my own.[3,4,6,7] In the US, we can estimate an average doubling time of new cases of 4.3 days, a mortality rate of 2%, and an average time from infection to death of 20 days.

On March 19, the US reported 63 deaths.[6] Assuming all of them were infected 20 days prior, and assuming a 2% mortality rate, it follows that the actual number of new cases on February 29 is around 3,150. Using the estimated 4.3-day doubling time over the 20 days, we have approximately 4.7 doublings, for a multiplicative factor of 25. Thus, from this simple model, we predict 79,000 actual new cases on March 19. In reality, the US reported around 6,000 new cases, 13 times less than what the model predicts. Extending this with the same parameters to the past two weeks in the US, we get the following graph. Clearly, the outlook is not very hopeful.

So, #FlattenTheCurve. Whenever we see graphics of this hypothetical curve being flattened, there is one caveat that is often overlooked: the vertical axis is counting actual cases, not confirmed cases. However, the number of cases being reported in the media is not the number of new cases today. It is the number of new cases from ten days ago, and the actual numbers are likely to be at least an order of magnitude higher. This is precisely why we need to act proactively and take all necessary social distancing and isolation precautions.

Seeing what occurred ten days ago, the end of the epidemic in the US is still nowhere in sight. It is necessary to take strong, aggressive precautionary measures now, and in ten days time, we will see how we did.

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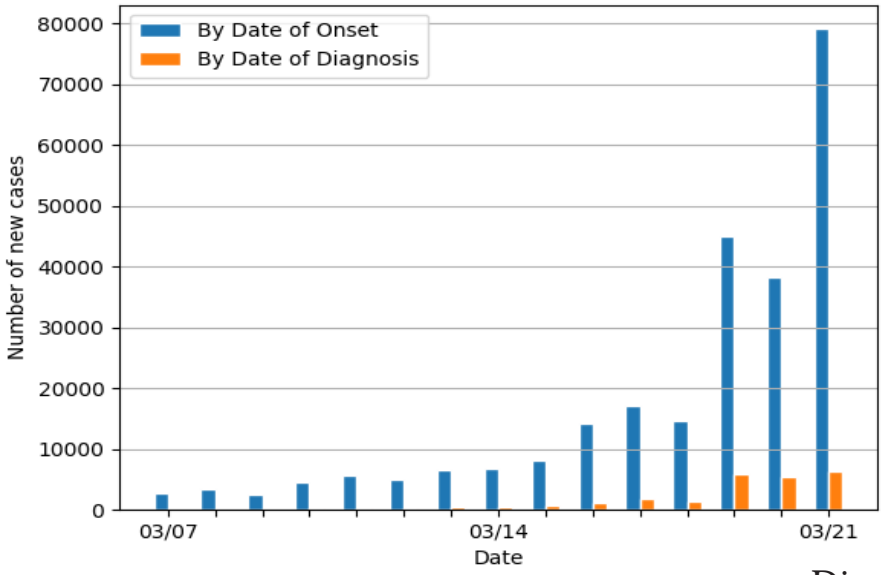

CORONAVIRUSES THROUGH THE YEARS

By Joy Bang '22

Many perceive coronaviruses, the family of viruses that COVID-19 belongs to, as a novel virus, but they have been around for years. Some strains—Severe Acute Respiratory Syndrome (SARS-CoV) and Middle East Respiratory Syndrome (MERS-CoV)—have previously caused global outbreaks.

The coronavirus refers to an enveloped, single-stranded RNA virus surrounded by sugary-protein projections.[1] This structure gives the characteristic haloed appearance that the virus is named for. Although the majority of strains only cause mild symptoms, some are lethal.[2]

SARS-CoV was the first global coronavirus epidemic. It is suspected to have originated from bats and in 2002, infected humans of Guangdong, China from civic cats.[2] The virus quickly spread throughout Asia, North America, Europe, and South Africa.[3] Patients showed severe symptoms of pneumonia and lower respiratory infection, such as coughing and difficulty breathing. Before the last reported case in September 2003, the virus infected almost 8,000 people and killed 774 worldwide, with a fatality rate of about 9.5 percent.[3]

About nine years later, another coronavirus strain made its debut: MERS-CoV, a coronavirus that passed to humans from camels. The virus began spreading in Jordan in April 2012 and soon reached other countries.[4] Most patients suffered from serious respiratory distress. Although less infectious than SARS, MERS had a fatality rate of 35 percent.[5] According to the World Health Organization (WHO), MERS-CoV infected around 2,500 people and killed 860 patients in 27 countries.[6]

The most recent coronavirus pandemic, COVID-19, is certainly not the coronavirus's first, or last, appearance.

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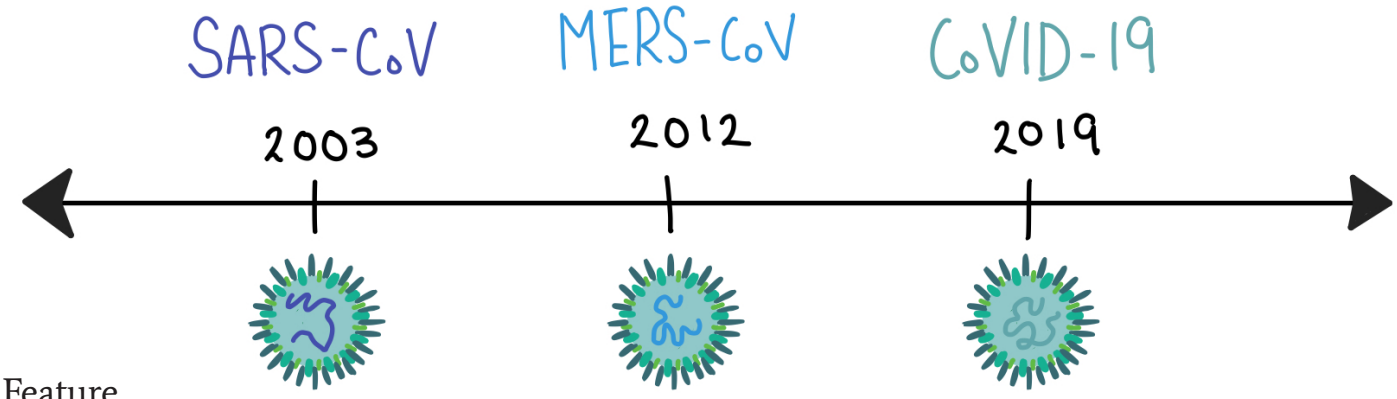

Graphic by Senching Hsia '21

"DO THE FIVE": COVID-19 PREVENTION

By Lara Selçuker '21

As the spread of COVID-19 has become an urgent international health crisis, we must take steps to avoid infection and contain the spread of COVID-19 for both individual and community wellbeing. The World Health Organization (WHO) uses the slogan "Do the Five" to promote prevention methods that should be followed by all individuals. "Do the Five" is a list that includes the following steps emphasizing social distancing and hygiene:

1 HANDS - Wash them often.
2 ELBOW - Cough into it
3 FACE - Don't touch it.
4 FEET - Stay more than 3 feet apart.
5 FEEL sick? Stay home.[1]

As it is transmitted through respiratory droplets, COVID-19 can spread very rapidly. Because the virus also has an incubation period for those who have contracted it, the number of confirmed cases is not an indication of all individuals who have been infected by the virus. According to the *New York Times*, as many as 200,000 to 1.7 million people could die.[2] Hence, the WHO's recommendation above is a quick guideline to prevent not only being infected but also potentially infecting others. Individuals should not wait until they are symptomatic to follow these guidelines.

President Trump recently signed a coronavirus relief package that includes provisions for paid sick leave and free testing for COVID-19, and with such initiatives, individuals showing symptoms should opt to get tested in order to contain the spread of the virus.[4] And if everyone practices social distancing and the other steps mentioned previously, the rate of infection will become slower, and the scope of the pandemic will become easier to handle.

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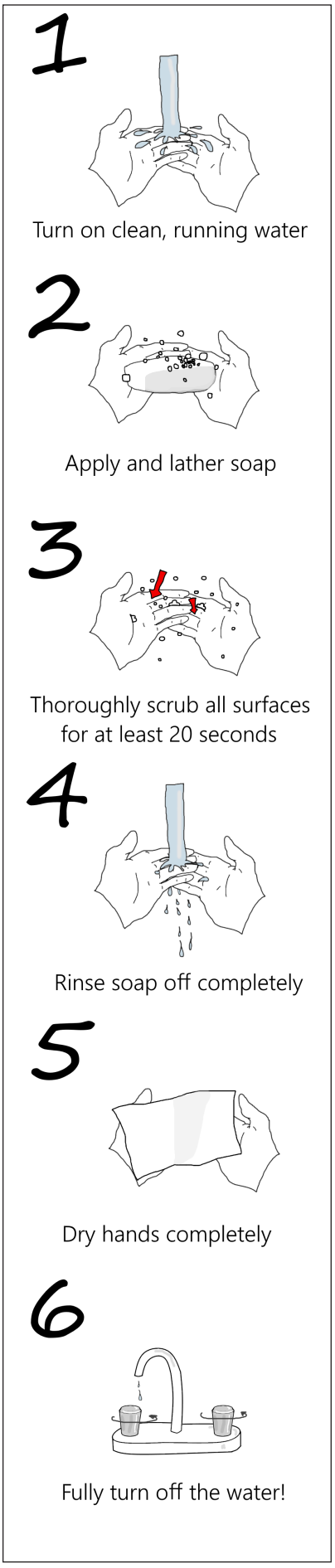

Graphic by Elton Zheng '22

COVID-19 IN CHINA:
THE RECOVERY OF A FORMER EPICENTER

By Renee Jiang '22

As nations around the globe take desperate measures to limit the spread of COVID-19 and mitigate the pandemic, China — the original epicenter of the pandemic — has recently reported no new local cases. In just a few weeks, China successfully managed to contain over 60 million people in the Hubei lockdown, build an entire hospital within only ten days, and enforce strict travel restrictions throughout the nation. Chinese hospitals, once overflowing with thousands of patients, have now recovered and are replenished with supplies. The once-empty streets have started to fill up again with people and cars bustling about. In the wake of these positive developments, it becomes important to ask what tactics China employed to contain the spread of the COVID-19 outbreak, and how they were successful.

During these past months, China's strategy of implementing drastic and often controversial measures through blunt force, unrelenting commitment, and aggressive execution have proved to be extremely effective against the virus. In the early days of the outbreak, China failed to acknowledge the severity of the situation and provide sufficient supplies for hospitals and people in need. Yet, as the scope of the virus broadened, China's ruling party began to enforce heavy-handed measures that stripped many privileges from its citizens. The nearly unchecked power of Chinese officials under the authoritarian political system were condemned by both the people and other nations at first, but it successfully set the foundation for mitigating the upcoming escalation in COVID-19 cases.

Workers at the new Wuhan Huoshenshan Hospital. (Getty Images)

In Wuhan, the source of the outbreak, severe restrictions on individual movement and large gatherings included barring residents from leaving homes, sealing off cities and public transportation, and tracking every citizen's movements through popular mobile apps to prevent them from

traveling. By cutting off all public life, these strategies ensured that the infection could only spread within a household, preventing the virus from latching onto other households — ending the chain of transmission. Gabriel Leung, Dean of the Li Ka Shing Faculty of Medicine at the University of Hong Kong, says that the epidemic came under control through "good old social distancing and quarantining very effectively done because of that on-the-ground machinery at the neighborhood level, facilitated by AI [artificial intelligence] big data."[1] It is important to point out that this was a two-sided effort; even though the public rebuked these stringent measures, they nevertheless complied.

In addition to mass quarantine and lockdowns, China has also managed to alleviate the crumbling healthcare system through mass-producing masks and ventilators, building dozens of new hospitals in a matter of days, and dispatching hundreds of health professionals to swamped hospitals. China has sent more than 30,000 medical staff to Hubei and designated around 50 hospitals in Wuhan to house confirmed cases of COVID-19.[2] In order to detect new cases and trace contacts of infected cases, the government also sent more than 1500 surveillance teams to Hubei.

The World Health Organization concluded in a recent report that China's most effective measures were "extremely proactive surveillance" and an "exceptionally high degree of population understanding and acceptance" of this crisis.[3] Additionally, the organization praised China's "bold approach," which they believed had "changed the course of a rapidly escalating and deadly epidemic."[3]

Parts of the Wuhan International Convention and Exhibition Center were converted into temporary hospitals. (Anadolu Agency)

Despite the diminishing number of cases and deaths in China, the consequences of these draconian measures to contain the virus linger. With millions living in isolation and nearly all businesses shut down, China's economy has ground to a near standstill. According to a survey of one thousand business owners by Peking University and Tsinghua University, "One-third of small firms in the country are on the brink of running out of cash over the next four weeks."[4] In Caixin, one of China's best-regarded publications, economists wrote that "If all regions rely on blocking, they may block viruses, but they may also block the economy... a wave of corporate closures and unemployment may occur, worse than the current epidemic."[4] Since the pandemic has now died down, the Chinese government is finally beginning to revoke shutdowns, signaling the resumption of regular activity for cities, businesses, and agricultural production.

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JAPAN ADOPTS RI

By Yumika

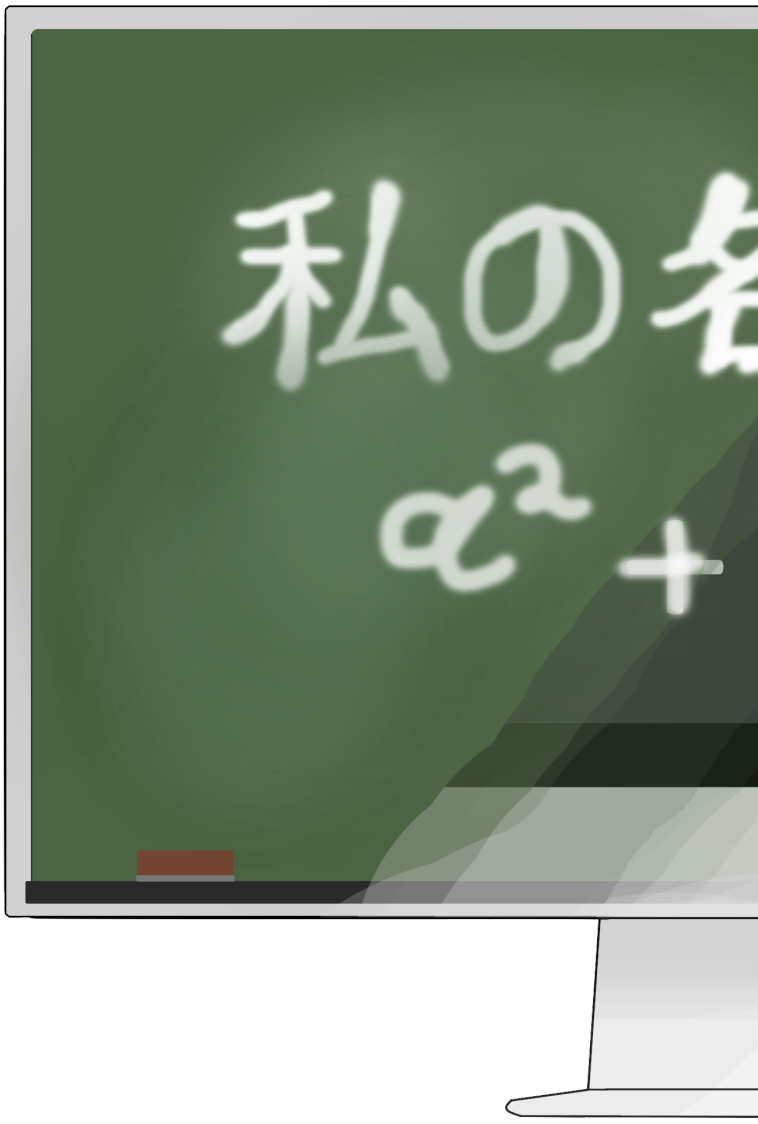
Following widespread announcements of school closures across the United States due to COVID-19, many students have been left at home, wondering about its implications for their future studies. One country has already experienced a similar situation and may have the answers students and parents are looking for.

On February 27, Prime Minister Shinzo Abe of Japan ordered the closure of all schools in the country until April 8. At the time, the COVID-19 outbreak had already rampaged the country and infected more than 800 patients.[1] While Abe's unexpected order raised various concerns for students and parents alike, it also became an opportunity for Japanese people to witness and appreciate the strength of love and support in overcoming this difficult situation.

Leading up to this stringent order, the Japanese government had faced intense backlash after it failed to quarantine ill passengers on the Diamond Princess cruise ship, which is widely believed to have contributed to the spread of the virus.[2] The fiasco forced Abe — the "Japanese Houdini" — into political hiding, but he and his administration soon reappeared in the public eye to order the closure of all schools grades one through twelve until March 2.[3] Though this was an official order from the Prime Minister, the actual decision of whether to shut down schools was left in the hands of each city's mayor, and the unprecedented news wreaked havoc in local governments across the country.

One of the first problems that arose since the start of remote learning was the lack of a support system for students with working parents. With no one else home and most caretaking facilities closed, many students found themselves at a loss for places to stay during the day. Moreover, even if some parents managed to take time off from work to take care of their young children, many — especially low-income families — faced financial strains without a steady source of income.[4] Many schools quickly responded to these unusual circumstances by installing online learning courses for students on material that was supposed to be covered in the last few days of school. Some other schools have also agreed to open certain sterilized rooms for students who need a place to stay during the day.[5]

Another significant issue that emerged due to these school closures was the fear that students would lag behind in their studies. This was especially distressing for those preparing for entrance exams, as the slightest delay in their learning could result in a serious disadvantage during the college admissions process. On top of hindering students' studies, school closures also prevented students from celebrating friendships and connections built throughout the years, devastating many seniors as they mourned

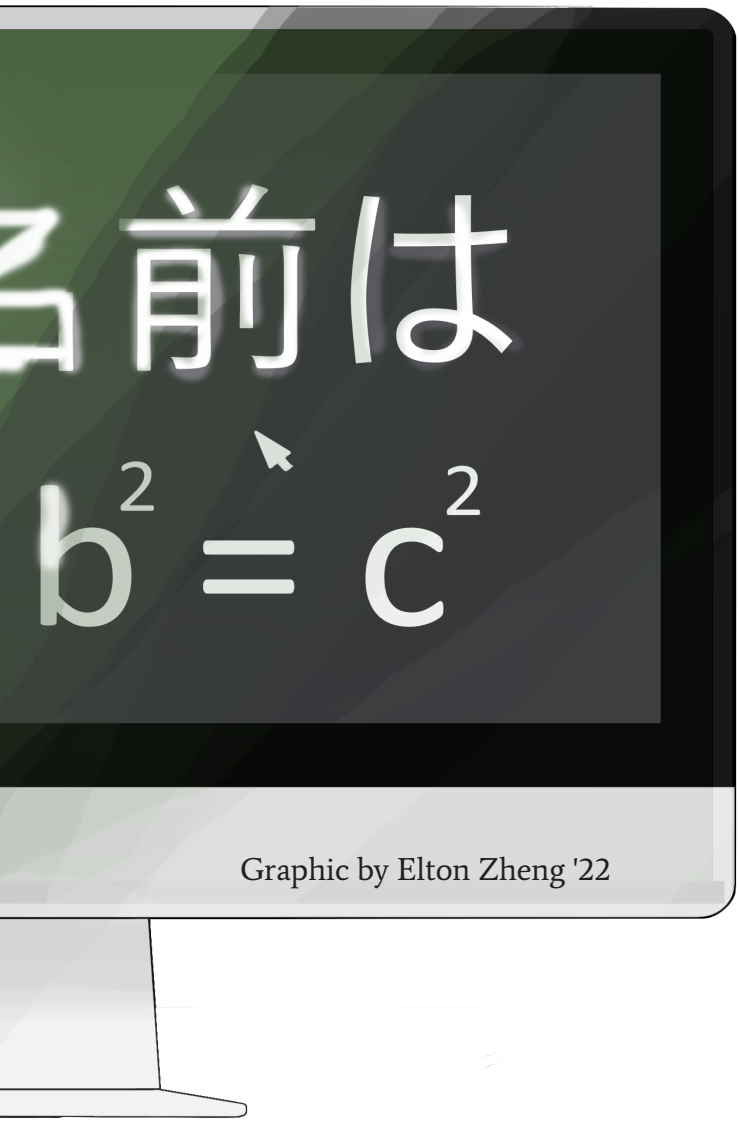


EMOTE LEARNING

a Sato'21

the abrupt end of their student careers. Since March marks the end of the school year in Japan, the month is usually packed with various events that most students look forward to throughout their childhood, such as graduation and farewell parties. In response to school closures, Japanese television channels stepped in to spread love and support, collaborating with various schools across the country to televise short messages from teachers to seniors whose graduations were cancelled. Furthermore, different channels also called on singers and performers across the nation to come together for a virtual graduation festivity show.

Nonetheless, various challenges continue to remain for both students and parents in Japan. Online learning has not been a popular education option in Japanese schools, and many poorer regions are struggling to set up the expensive tools and technology needed to provide the proper education to all students. Similarly, children without laptops or tablets struggle to receive the same quality of education as those with access to technology.



Graphic by Elton Zheng '22

As COVID-19 continues to spread across America and the rest of the world, many schools, including Choate Rosemary Hall, have closed their campuses for the spring term. This growing number shutdowns has been creating much concern and confusion for affected families. Nonetheless, it is not only important to learn from both the effective and ineffective practices taken as a part of the remote learning initiative in Japan, but also to focus on the efficacy of these bold measures in the long run instead of the immediate consequences. In this widespread time of difficulty, community support and the strength of citizens will help ensure a safer environment for everyone.

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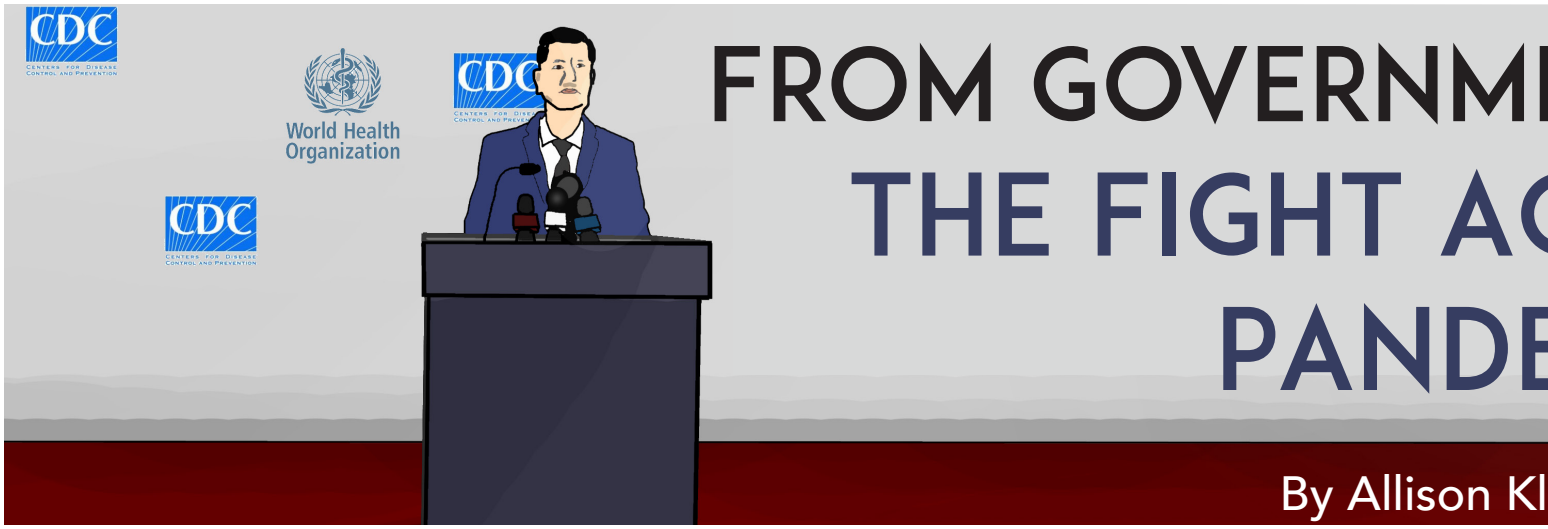

FROM GOVERNM
THE FIGHT AG
PANDE

By Allison Kl

As COVID-19 continues to spread, many governments and nongovernmental organizations (NGOs) have taken steps to combat this disease. Organizations and agencies such as the Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) have released recommendations to help civilians and professionals prevent the spread of coronavirus. This includes instructions for civilian communities and corporate business employees, as well as travel recommendations. Individual national governments have also taken different steps to combat the disease in their respective countries. Many governments have ordered schools to close and banned large gatherings of people. In the United States, billions of dollars are being allocated to the research, prevention, and containment of COVID-19, and both mandatory isolation and self-isolation orders are being instituted in most states.

Both the WHO and CDC have released articles detailing the steps individuals should take to prevent the spread of COVID-19. In the absence of effective drugs and other pharmaceutical approaches to prevent and treat the virus, the CDC has instead recommended community mitigation strategies. These approaches are tailored to each community and range from low risk (preparedness phase) to substantial risk. The instructions range from understanding the symptoms of coronavirus to restricting visitor access in senior living facilities.[1] The WHO has requested that individuals implement increased hand hygiene, cover their mouth when sneezing or coughing, thoroughly cook meats and eggs, and avoid close contact with anyone showing symptoms of illness.[2]

Many NGOs have also released a variety of recommendations for business personnel and travelers. In conjunction with the International Civil Aviation Organization, the WHO has recommended that all individuals abstain from non-essential travel at this time, but they have not suggested the closing of all airports.[3] The CDC has recently shut down all non-essential businesses, forcing millions of employees to work from home. The few businesses that remain open include the food industry, the healthcare industry, and the post office.[4] As a response to these precautions, countless concerts, religious ceremonies, and other social gatherings have been canceled around the world. The CDC's guide also warns against discrimination and risk assessment based on national origin or race.[4]

In addition to adhering to recommendations by the CDC, many governments are taking further steps to protect their citizens. School closures have affected 300 million students globally, and some countries such as Italy and Iran have even ordered the closing of all schools.[5] Two weeks ago, Italy experienced the worst outbreak of coronavirus outside of China. The government there continues to take extensive measures to prevent the spread of the disease. All commercial activities have been shut down with the exception of newsstands, pharmacies, and supermarkets. Additionally movement in Italy has been restricted through sporadic checkpoints at which travelers must stop and fill out forms justifying their movement.[6]

Other countries are taking less aggressive approaches to their outbreaks. In South Korea, the government has avoided officially restricting movement as in Italy, although it is still discouraged. Instead, South Korea has been instituting intensive testing to monitor infections.[6]

Unlike South Korea, where rates of infection have begun to decline due to careful monitoring and prevention methods, other countries are struggling to combat this crisis. Iran failed to acknowledge that the coronavirus would be a problem in its initial outbreak and thus failed to take necessary protective measures to prepare for its arrival. After a number of government officials were infected, Iran closed schools, Friday prayers, and enforced a nationwide lockdown.[6] In addition to struggling to contain the outbreak, Iran faces a mounting political disaster because Saudi Arabia has blamed its COVID-19 outbreak on the nation. Saudi Arabia claims that Iranian authorities recklessly spread the disease to other Arab monarchies.[5]

In the United States, while movement has not been officially restricted in all states, once populated streets have been all but abandoned as fear of the virus sweeps through the nation. New York has been hit particularly hard, and as of April 21st, the New York Department of Health has reported a staggering 253,400 total confirmed cases and over 10,000 confirmed deaths in the state.[7] Additionally, large scores of money have been provided for coronavirus relief. The Senate has approved a $2 trillion coronavirus stimulus package as well as a $484 billion aid package to support the unemployed, small businesses, hospitals, and industries impacted by the crisis.[7]

As the number of cases continues to rise globally, it is important to follow the recommendations laid out by the CDC and local government agencies to mitigate the pandemic.

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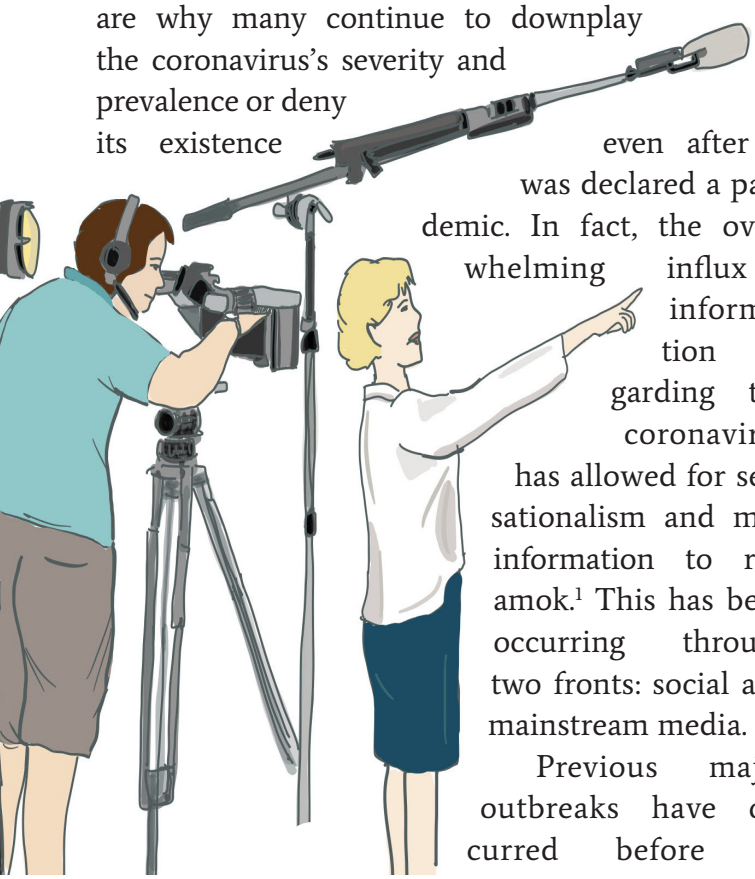
THE INTERNET AGE: MEDIA AND COVID-19

By Charissa Lin '21

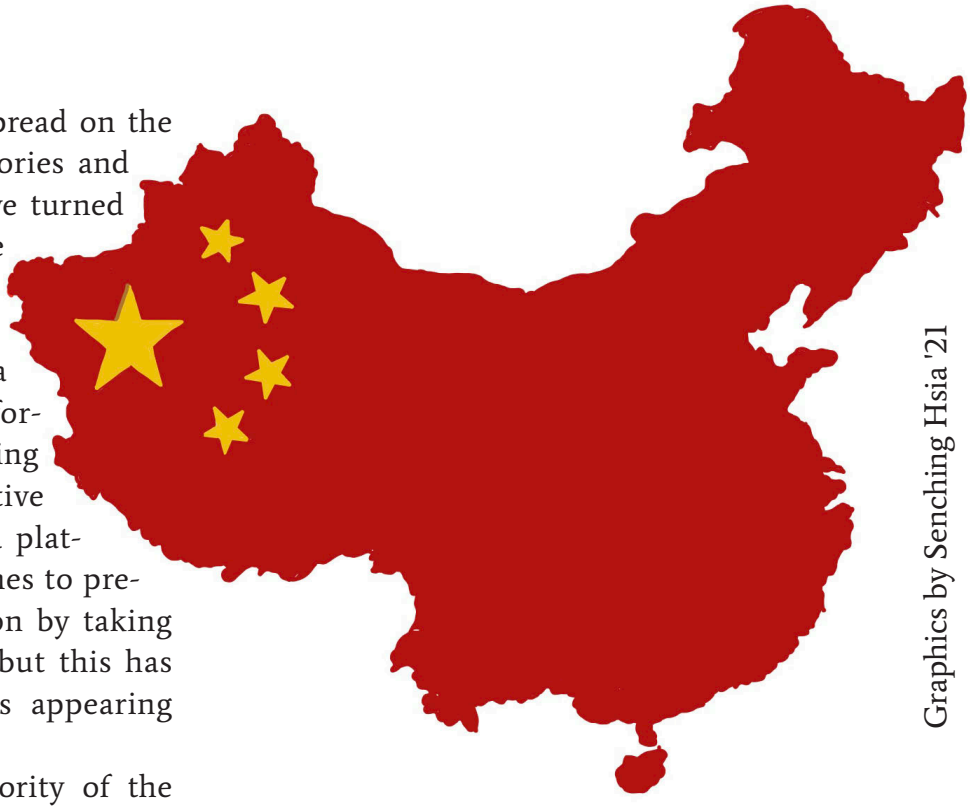
Coronavirus. COVID-19. The "China virus." Recently, these words and information related to them can be found everywhere: on the TV, the radio, and social media. Lots of good has come from this steady stream of information, such as allowing people to empathize with and support one another. However, the internet is also riddled with false information and attention-seeking articles. They are why many continue to downplay the coronavirus's severity and prevalence or deny its existence even after it was declared a pandemic. In fact, the overwhelming influx of information regarding the coronavirus has allowed for sensationalism and misinformation to run amok.[1] This has been occurring through two fronts: social and mainstream media.



Previous major outbreaks have occurred before or during the inception of social media, making the COVID-19 outbreak the first major outbreak through which social media has existed in full force.[1] This has allowed for the free sharing of information that, when utilized correctly, could help millions prevent themselves from falling ill. However, this is an optimistic view of how social media operates. Most are well aware that it is often not the truth that the internet determines as worthy of going viral. Conspiracy theories, denial, and racism surrounding COVID-19 have all risen in prominence due to the influence of social media. Experts are struggling to be heard over the voices of conspirators and internet trolls.[2] This has been further exacerbated by the responses of those in positions of power, notably the U.S. president. Throughout the outbreak, President Donald Trump has declared the coronavirus a hoax, continuously called it the "China Virus," discredited factual news reports, and contradicted the words of health officials. Some of his representatives have also spread misinformation, stating that the outbreak is under control, for instance.[2] This created a false sense of security in many citizens' minds, as the president is seen as a figure armed with the facts and tasked with the nation's safety.

With all of this contradictory information coming from the government, it is important

that accurate information is being spread on the internet. But beyond conspiracy theories and trolls, social media, where many have turned to for information, has proven to be an untrustworthy source. Social media algorithms prioritize posts that are eye-catching. This algorithm is a primary cause of the spread of misinformation and sensationalism, as shocking or emotional content is most effective in capturing attention. Social media platforms are taking aggressive approaches to preventing the spread of misinformation by taking down posts spreading false claims, but this has proven difficult, due to such posts appearing faster than they can be deleted.[1]



Graphics by Senching Hsia '21

While social media takes a majority of the blame for the spread of misinformation, mainstream media has also played a significant role. News reports from reliable sources typically have information that is dependable. However, in this situation, these normally reliable sources have also contributed to the spread of sensationalism and misinformation. As a matter of fact, they are one of the primary causes of the sensationalism surrounding the coronavirus. The *New York Times*, a widely respected publication, wrote an article about "China's omnivorous markets."[3] Within this article, the publication identifies China's Huanan market as the source of the outbreak, resurfacing concerns that were raised in the SARS outbreak in 2002.[3] The article proceeds to bring attention to the "unusual fare" that is being sold in the market, such as live snakes, guinea pigs, and wolf cubs.[3] In writing about the virus and the market in this way, the article exoticises the virus, making it clear that the virus is from a foreign land completely different from the United States. This exoticising language has made its way into nearly all coronavirus news reports, effectively cementing the notion that the coronavirus is from Asia, therefore leading most to blame the spread of the virus on all Asians.[3] Further building upon this blame, the pictures spread across news reports have been of Asians in surgical masks, causing the stigmatization of that image.[3] It is due to this stigmatization and exoticising that Asians are being harassed and blamed for the coronavirus.

Nearly all internet users are well aware of the misinformation and racism that plagues the internet, yet most still fall victim to it. As a result, people are getting hurt and many are falling ill to something that could have been prevented or contained had the correct, unbiased information been spread. But that does not mean that the effects cannot be contained or alleviated. It is crucial from now on that the information shared is factually sound and free of racial implications. If the information can be communicated in a factual and unbiased way, the situation will undoubtedly improve.

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THE RACE FOR A VACCINE

By Aarthi Katakam '21

As of Monday, March 16, a novel coronavirus vaccine produced by the biotechnology company Moderna entered the clinical trial stage. This vaccine works using the messenger RNA sequence of the new coronavirus's spike protein, allowing the body to create antibodies that attack the virus. For the trial, 45 healthy adults between the ages of 18 and 55 will receive the vaccine in two doses and be monitored over the course of the next year.[1] This progress is remarkably fast compared to the development of other vaccines. The efficiency is due to the similarities between the new coronavirus and the viruses that caused the outbreaks of severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).[2]

However, as the vaccine will not be available until next year, the current focus needs to remain on prevention and treatment of the novel coronavirus. Currently, treatment focuses on alleviating symptoms like fever, cough, and trouble breathing.[3] One new treatment, an antiviral drug called remdesivir, blocks the virus from reproducing and has been shown to alleviate symptoms in some patients. Some are hopeful about this development, but others warn that it is too soon to tell the drug's effectiveness.[4]

For now, the best course of action is to focus on prevention, increase testing, and providing treatment to the infected. We can all do our part by engaging in social distancing and following the advised prevention methods.

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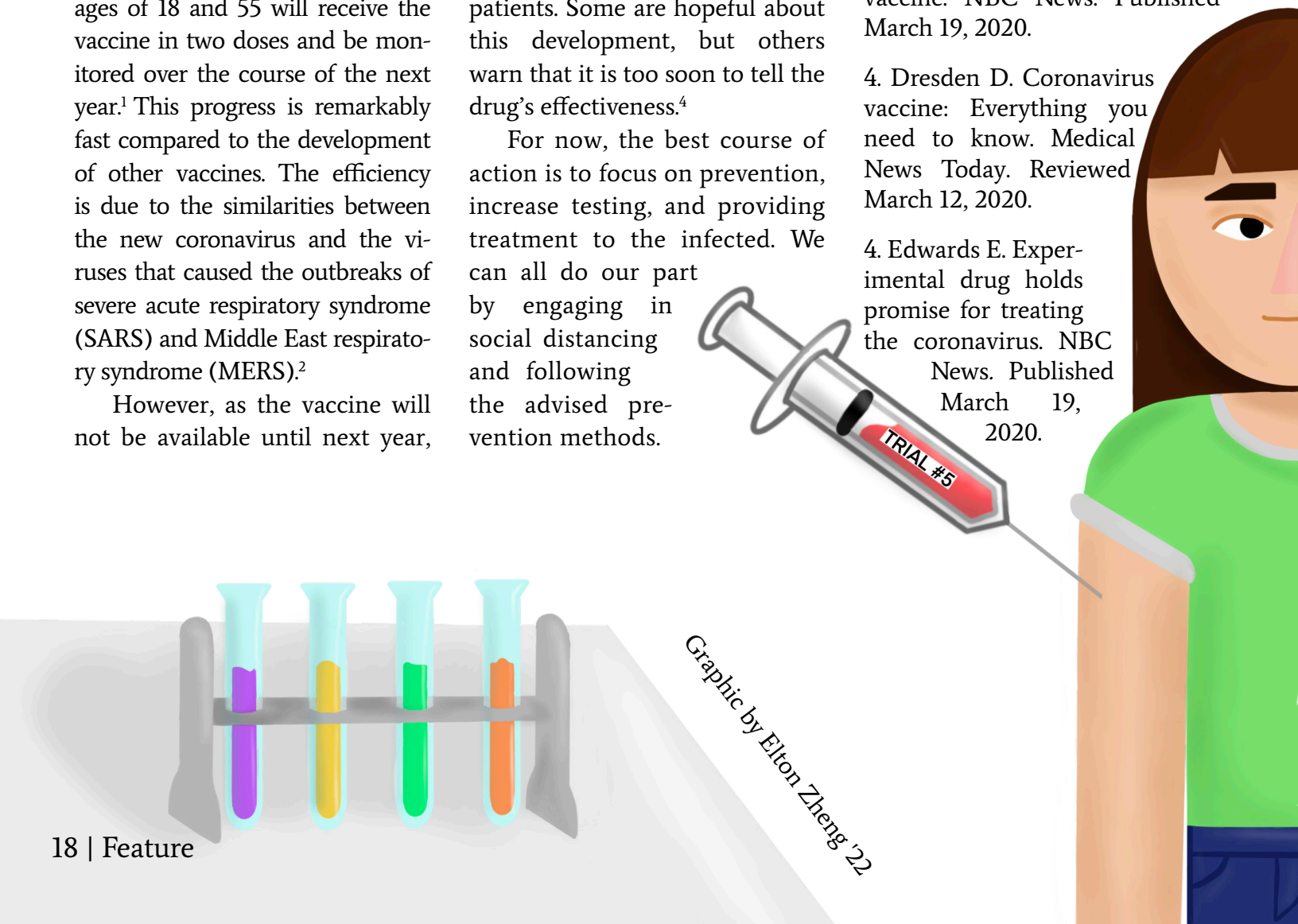


Graphic by Elton Zheng '22

CORONAVIRUS MYTHS DEBUNKED

By Jessica Zhao '23

Myth: COVID-19 was created in a lab and was meant to be used as a bioweapon.
Fact: Scientific genome analysis has shown that the new coronavirus came from nature. The leading hypothesis among scientists is that the virus came from bats and spread to humans from a wildlife market in Wuhan.

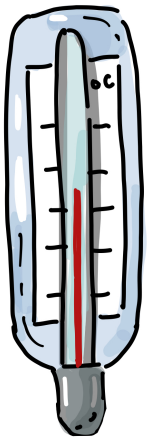
Myth: COVID-19 cannot be transmitted to younger people.
Fact: Anyone can be infected with the virus. However, the elderly, young children, and those with pre-existing conditions like asthma, diabetes, and heart disease are more likely to become severely ill due to the virus.

Myth: Chinese people are more prone to being infected with and transmitting the virus.
Fact: Although believed to originate from Wuhan, China, anyone can be infected by the virus. COVID-19 has no bias towards race. Perpetuating the myth that it is a "Chinese Virus" is harmful and racist.

Myth: Rinsing your nose with saline solution will help prevent COVID-19.
Fact: There is no evidence that rinsing your nose with saline solution will prevent getting infected. This practice sometimes helps prevent the common cold, but it has not been shown to prevent respiratory infections.

Myth: Spraying yourself with disinfectant is beneficial.
Fact: Disinfecting surfaces can help keep you healthy. However, if the virus is in your body, spraying chemicals on your skin will do more harm than good.

Myth: Ultraviolet (UV) lights are a safe way to kill the virus.
Fact: The World Health Organization warns against using UV lights to kill the virus because it could cause skin irritation. The best way to protect yourself is to disinfect surfaces routinely, practice social distancing, and wash your hands.



Graphics by Senching Hsia '21

Myth: COVID-19 is mainly spread through contact with objects.
Fact: COVID-19 is a respiratory virus. It is mainly spread through person-to-person contact and the respiratory droplets that come from coughs or sneezes.

Myth: COVID-19 is sensitive to temperature.
Fact: COVID-19 can be transmitted in all climates. Taking a hot bath will also not kill the virus; your internal body temperature remains consistent regardless of external temperatures.

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