***MYTHS and Delusions about Covid-19 (COVID)***

For months, so many of my friends, including veterans and some former senior government officials, have warned me not to exaggerate the threat of COVID. The Pandemic in 1918 killed 50-100 million people, or between 1-2% of the world population. COVID isn't going to match that result.

This COVID virus threatens seniors mainly, and young people are pretty safe, I was told by many colleagues. Ironically, these were all seniors telling me this myth.

During our current pandemic, (as of December 24, 2020) the world has lost 1.7 million lives, but we are not yet done.

Of course in 1918, our knowledge of fighting virus was almost nothing, and today we have decades of scientific and medical knowledge from dealing with the flu and many other viral threats in the last 100 years. We also have many more hospitals (with modern equipment like respirators and ventilators, and better trained doctors and medical staff.)

Regarding COVID we have learned much, but we have so much more to learn. Since the virus has detected only about a year, we really do not know the long term effects for the many people who just got sick and recovered. We do now know that for many victims who recovered, that many have relapses, with more severe effects. These are the "long haulers." Even those who only had mild symptoms had much worse relapses. This is very concerning and will be another burden for our currently exhausted healthcare staff.

Regarding our newly developed vaccines, the long term effects of these vaccines will not be known until a lot of time has passed.

We now know that COVID is not just serious health threat to the elderly or those with a severe, chronic illness. Those who are in terrific shape, are young and have no prior illness can, indeed, become critically ill from COVID.

There is an explanation for the varying outcomes. The amount of COVID that invades any human being is likely the answer. And it is logical. If anyone receives a "small" dose of the virus, our normal immune systems can neutralize the invader - assuming the victim is healthy. However, any person, regardless of age, sex or gender, who is unfortunate to receive a large dose, can get serious sick and die. Infections among the young is growing and has two major outcomes. They themselves can get sick, and they can also infect many others, including friends, and family. One infected person can spread the virus to several members on one family and destroy several members in one family. These stories are too sad to repeat.

Median age for hospitalized COVID patients is now only 40 years of age. Once a victim needs to be hospitalized, the likelihood of death escalates.

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**The 'dose' of coronavirus a person gets may determine how sick they get; masks could help**

**Dr. Sanjay Gupta and Andrea Kane, *CNN*, Sun November 1, 2020**

(***CNN***) "The dose makes the poison" is an adage credited to Paracelsus, a Swiss physician-philosopher from the early Renaissance.

Basically, it means that any substance can become toxic if given at a high enough concentration. Even too much water can throw off your electrolytes and be potentially fatal.

Viewing the coronavirus through that lens -- that the "dose" of the virus you receive might make the difference between being asymptomatic, getting mildly sick or becoming critically ill -- may be helpful when thinking about protection against Covid-19 as the colder temperatures arrive and cases spike.

**SARS-CoV-2 likely behaves like other viruses**

The concept of needing a certain dose of a pathogen -- a disease-causing organism -- to trigger an infection has been shown to be the case for many viruses, such as the influenza virus, poxviruses and others, explained Erin Bromage, an associate professor of biology at the University of Massachusetts, Dartmouth.

Many counties that hosted Trump rallies had a significant increase in Covid-19 cases

"If you hit an animal with a low enough dose, they'll be able to fend that off without developing any disease at all. If you get a magic number of an infectious dose, an infection will establish and that animal will then succumb to the disease from that particular pathogen. But if you hit them with more than the infectious dose, in most situations a high dose of pathogens -- like a high dose of a virus, for example -- leads to more severe outcomes. So, dose becomes really important," he said, calling the relationship "dose-dependent."

It's not because you need a certain number of particles of virus to infect a cell -- it just increases the odds that one of those viral particles will make it into the cell and infect it, setting off the chain reaction.

Another way to think of it is like conception: You don't need millions of sperm to fertilize an egg -- you only need one -- but men make millions of sperm to improve the chances that one will reach the egg, overcome its defenses and fertilize it.

Getting a viral dose all at once or spread out over time

There's another dimension to viral dose and it has to do with time. It's not the dose of the virus you get simply at one point in time that matters; it may also be the sum of viral doses you get over a certain period of time.

About 20% of grocery store workers had Covid-19, and most didn&#39;t have symptoms, study found

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"Some people are speculating about it: Is this why, for example, bus drivers or people working in emergency rooms are more likely to have more adverse outcomes? Because they're exposed to higher doses, or because they're in an environment where they get exposed to it over an extended period and get a larger swath of it into them?" asked Bromage.

In mid-October, of the US Centers for Disease Control and Prevention changed its definition of "close contact" to include multiple, brief exposures that add up to 15 minutes or more with an infected person. Previously, the CDC defined a close contact as 15 minutes of continuous exposure to an infected individual.

It's not only about the virus, it's also about the host

The virus itself isn't the only organism that plays a role -- it also has to do with the individual.

"Each person has a different amount of virus that they need," said Bromage. "Somebody that is immunosuppressed, or somebody that is stressed, for example, may need less of a [virus] challenge in order to get the same outcomes as somebody that is in a healthy condition."

Put it all together, and the chance of infection depends on the physiology of the potential host, as well as their personal behaviors and health habits such as smoking status, diet, physical activity and sleep. An elderly or unhealthy host in the face of large, recurrent exposures is clearly the worst case scenario. But a medically fragile person could be sickened by even a low dose of virus; conversely, a healthy person can be overwhelmed with a high enough dose.

Already, pharmaceutical companies&#39; predictions about Covid-19 vaccines haven&#39;t come true

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One tragic example is the death of the young and seemingly healthy doctor Li Wenliang in Wuhan, China. On December 30, 2019, he privately raised the alarm after seeing seven cases of a SARS-like illness among patients at his hospital; four days later he was accused by the police of "severely disrupting social order," and "spreading rumors online." Shortly after spending time caring for those critically ill patients, Li developed symptoms of Covid-19; he died less than a month later. He was only 34.

Still, we are just talking about odds and likelihoods. Pinning down the exact scenario that leads to infection is much harder to do.

"We simply can't study the exact viral dose that would make someone sick because it's completely unethical," said Dr. Monica Gandhi, an infectious disease doctor and professor of medicine at the University of California, San Francisco. That's because it would mean knowingly exposing people to progressively higher doses of the virus to determine when an infection occurs.

"I don't think we're going to actually get to that value. We can in animals -- there's been a ferret model and there's been a hamster model -- now two animal models where the more you give them the more sick those animals get and that is helpful, and it may give us a sense. But we won't know with humans, unfortunately, how much it takes," she said.

**Viral dose and viral load**

"There is an interesting two-sides-of-the-coin dance coming out between viral [dose] -- what goes in -- and viral load -- what comes out," said Gandhi. Viral load is the amount of virus an infected person has in their body; some, but not all, studies have shown that the sicker a patient is with Covid-19, the higher the viral load.

"If you get less of a viral dose in, then you can calmly take care of it and wall it off. You have this asymptomatic infection and maybe you are less likely to produce a high viral load; you produce a lower viral load, and thus it's related to less severe disease," she said.

She noted that in places and situations that had adopted universal masking -- such as on an Argentine cruise ship and at several US food-processing plants -- the asymptomatic infection rate, at above 80%, was more than double the CDC's estimated asymptomatic infection rate of approximately 40%. The mask appears to lower the dose by filtering out some of the viral particles.

**The connection between masks and vaccines**

There is, however, another fascinating and important way to think about virus dosing. If the dose is small enough, it may not cause illness but could still generate an immune response, similar to a vaccine. This is a remarkable and critically important concept.

In fact, Gandhi and her coauthor, Dr. George Rutherford from the department of epidemiology and biostatistics at UCSF, wrote a perspective piece in the New England Journal of Medicine in September putting forth the argument that by wearing a mask, a person, if exposed, would get a smaller dose of the virus than they otherwise might -- preventing illness but still triggering the body's immune system.

In her article, she and Rutherford drew the comparison with "variolation," which is what a similar process was called when people were deliberately exposed to a bit of smallpox matter from a sick person in order to create immunity. This was before the introduction of the smallpox vaccine.

"We're going to give them a teeny bit of virus and they're going to get just a teeny bit sick and then they'd develop an immune response -- and it totally worked," she said.

It could also help explain why some people never develop symptoms of Covid-19, but still have antibodies to the virus. But more research will need to be done to confirm that.

Because people can't control if, let alone how much, of a viral dose they get, Gandhi reiterated what most all public health experts have been saying we should do to stay as safe as possible: maintain physical distance from those not in our household, choose outdoor spaces over indoors, practice good hand hygiene and -- please -- mask up!

Statistically, we now know that preconditions make many more vulnerable to a fatal outcome. Most are aware that preconditions such as cancer, heart conditions and old age are in the greatest danger, but one other major issue needs to be broadcasted. Obesity, which includes 85,000,000 Americans is also a critical factor for severe COVID. This is an issue that must be dealt with, as many of us need to lose some weight for many reasons, and now we know COVID can be added to threaten humans, along with heart issues.

If COVID motivates many people to control their weight, it is one of the few good consequences of the COVID virus. While many of us need to lose a few pounds, today, no one should forget to wear a quality face mask and keep a safe distance from others who may, or may not be, an intentional spreader.

We will eventually get control of the virus with the new vaccines. In the meantime keep your mask on, and don't get too close to others. Social distancing is for mutual benefit.

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[***https://www.usatoday.com/story/news/health/2020/11/28/fighting-dangerous-myth-covid-only-threatens-old-ill/6440182002/***](https://www.usatoday.com/story/news/health/2020/11/28/fighting-dangerous-myth-covid-only-threatens-old-ill/6440182002/)

**The young die as well from COVID-19, even as many engage in denial**

**Mark Johnson, November 28, 2020, *Milwaukee Journal Sentinel***

MILWAUKEE – **A dangerous fiction has made its way through social media and American politics, the idea that COVID-19 is really only a danger to the elderly or those with a severe, chronic illness.**

**"Those who are in terrific shape, are young and have no prior illness can, indeed, become critically ill from COVID**," said Nina Shapiro, a professor at the David Geffen School of Medicine at UCLA and author of the book, "HYPE: A Doctor's Guide to Medical Myths, Exaggerated Claims and Bad Advice."

"Many have died and many will die. In addition, **healthy people are continuing to unknowingly spread COVID to the elderly, who, in turn, become quite ill and are at higher risk for death."**

To those young adults who doubt their vulnerability to the pandemic, "I would invite them to visit our ICU and see the multiple tragedies of younger people who are infected with COVID," said Daniel S. Talmor, chairman of anesthesia, critical care and pain medicine at Beth Israel Deaconess Medical Center in Boston.

"**I think people are willing themselves to believe that they are not at risk because they are young and healthy, but that's a very dangerous and mistaken belief."**

**The persistent dismissal of the pandemic as an overhyped virus that kills mainly the elderly and those already severely ill has undermined the public health message that "we're all in this together."**

Moreover, when **the young and healthy underestimate the danger**, it provides new opportunities for the virus to spread, especially at a time when many Americans have grown weary from months of wearing masks, canceling birthday parties and downsizing weddings and funerals.

The result has been all-too-predictable: reckless behavior and skyrocketing cases, with Wisconsin ranking among the highest rates of COVID cases in the nation.

**College parties are believed to have triggered outbreaks at Notre Dame, the University of New Hampshire and the University of North Carolina at Chapel Hill**. Riskier yet was the 10-day motorcycle rally in Sturgis, South Dakota, which drew almost half a million people in August. The rally has been linked to COVID outbreaks in South Dakota and Minnesota, and cases across a dozen states.

Now, Americans face a moment of peril, but also promise. Public health leaders worry that at a time when the first vaccines appear to be just a few weeks away from emergency use, people will disregard warnings and gather for the holidays.

"The tragic thing is that now we're very close to having a solution available, if people would just hold on for a few more months," said Nasia Safdar, medical director of infection control at UW Health in Madison. "We don't have to see the devastation in health care systems, and the people who are dying from it."

Safdar and others say that **while age definitely increases the likelihood that a patient will experience more severe illness from COVID-19, there is no ironclad protection for the young.**

Macy's criticized for calling Black sorority a 'diverse dance group' during Thanksgiving Day Parade

Fauci worries Thanksgiving may be the start of a dark holiday season

**"That concept that young people do not get extremely ill and die from COVID-19 is simply not true," said Jakob I. McSparron, associate director of critical care medicine at Michigan Medicine in Ann Arbor.**

"The majority of patients in our intensive care unit currently are below 60. There are three patients in their 20s."

McSparron said the myth that the young have little to fear from COVID has also led to people unknowingly infecting friends and loved ones, who have then died. An infected person may not show symptoms of the disease, but they can still pass it to others, a phenomenon doctors call "asymptomatic spread."

"We had a very young man with chronic disease who was very fearful of acquiring COVID," McSparron said. "Unfortunately, someone visited him at home who did not know they had COVID. The young man did end up getting COVID and dying of COVID."

**A grim toll**

**The death toll of Americans under the age of 40 from COVID-19 — 3,571 — has now surpassed the total death toll from the 9/11 terrorist attacks.**

The idea that COVID-19 was mostly a disease of the elderly took hold early in the pandemic when testing capacity was limited and directed largely toward residents of nursing homes and people who showed symptoms.

By the summer, the U.S. had broadened its testing for the new coronavirus.

"We found younger and younger people being infected," said Frank Esper, a pediatric infectious disease expert at Cleveland Clinic Children's hospital.

**Esper said the median age for hospitalized COVID-19 patients across the nation is now hovering around 40**.

"I've seen plenty of children without any underlying health conditions have problems with COVID and get very sick and require oxygen," Esper said.

McSparron said health care workers are "exasperated" by the way many Americans have let down their guard on mask-wearing and social distancing, failing to take the pandemic seriously.

"I think there's a sense out there that we have a better way to treat this," McSparron said. "We have gotten better and the outcomes are better than they were months ago. However, we do not have a magic bullet."

**Remdesivir, plasma, steroids and placing patients in a prone position to increase their oxygen intake have all helped save the lives of COVID-19 patients. But there remain many cases when none of these treatments work.**

**Millions have extra risk factors**

Another fact often downplayed is just how many Americans suffer from conditions that put them at higher risk for severe disease from COVID-19. While some adults no doubt suffer from more than one risk factor, the total number with at least one is likely to be 100 million or more.

***Obesity alone — listed in multiple recent studies as a risk factor for severe COVID-19 — afflicts an estimated 85 million adult Americans.***

Other risk factors listed by the Centers for Disease Control and Prevention include: chronic kidney disease (37 million Americans); smoking (34 million Americans); Type 2 diabetes mellitus (30 million Americans) and chronic obstructive pulmonary disease (16.4 million Americans).

**That doesn't include the number of people with weakened immune systems from cancer treatments or organ transplants**.

**At present, the highest number of COVID-19 cases is in the 18- to 29-year-old age group.**

"It's really quite striking," said Lew Kaplan, president of the Society of Critical Care Medicine, a nonprofit medical organization. "What's worse is that they're young enough to have parents and grandparents. The rate of asymptomatic spread is very dangerous for everyone around them."

Kaplan said the high rate of spread by younger Americans "belies the social contract that we have in which we care for and about one another."

Like all experts interviewed for this story, Kaplan stressed that in order to bring the pandemic under control Americans must practice mask-wearing and social distancing and embrace the idea that "we are in this together."

"It is absolutely essential," he said. "Buy-in makes it all work. Lack of buy-in puts everybody at jeopardy."

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