2022

The World Changed Completely Forever, March 3, 2022	Page 2
BA.2, and the Next Public Health Crisis, April 7, 2022	Page 4
Healthy Rhythms and Margin, May 5, 2022	Page 6
Paying Attention to What Matters, May 12, 2022	Page 8
Statistics, Sad but Important, May 19, 2022	Page 10
What You Need to Know About COVID Now, May 26, 2022	Page 12
What in the world is going on? Reflections on Mass Shootings, June 2, 2022	Page 15
What is going on… Part 2, June 9, 2022	Page 18
What is going on… Part 3, June 16, 2022	Page 20
What is going on… Part 4 of 4, June 23, 2022	Page 22
Rule by Men or Rule of Law, July 7, 2022	Page 25
Our Nation's Struggle Over Abortion, July 14, 2022	Page 28
Intellectual Honesty and Times of Upheaval, July 21, 2022	Page 31
COVID… again or still? August 4, 2022	Page 34
Monkeypox, August 11, 2022	Page 37
Medicine, Science and Culture article for Thanksgiving 2022	Page 40
Advent, a time for looking back and for looking forward, Dec. 1, 2022	Page 42
Flu, RSV and Other Bad Colds, December 8, 2022	Page 44
Why Do I HURT Like This? Part 1 December 15, 2022	Page 46
Why Bother? Christmas 2022	Page 48
Muscle Pain, Part 2 of "HURT" December 29, 2022	Page 50

The World Changed Completely Forever March 3, 2022

The world changed completely forever again on February 24, 2022. On that day Russia began an unprovoked full-scale invasion of a neighboring country. Nothing of this sort and magnitude had taken place since August 2, 1990 when Iraq invaded Kuwait, thereby gaining control of 20% of the worlds' known oil reserves. The same day, the UN Security Council unanimously denounced the invasion. On August 6, the Council imposed a worldwide ban on trade with Iraq, and the US President, oilman and transplanted Texan George H. W. Bush announced to the world, "This will not stand. This will not stand." It did not stand. I am proud to count myself among those who volunteered to participate in what was then called "Desert Shield." That's the conflict we later called "The Gulf War," before we knew we would need to number our Gulf Wars. The pretext for invasion was "Kuwait has always been part of Iraq." The danger was that this dictator controlled 20% of the worlds' oil, and he had the 3rd largest military force in the world to defend it. The parallels are striking, but not nearly so jarring as the differences. The current situation is that a dictator who controls the 3rd largest military in the world and 10% of the flow of oil in the world has seized a neighbor on the pretext that the neighbor is simply a renegade state. Importantly, no treaty obligation such as Article 5 required US action in either case. The differences are that there is no world-wide denouncement, no UN Security Council action will be forthcoming, the US will not lead a coalition to oust the invader, and the relative amount of oil at stake is half (or less) of what was at stake in 1990. The Iraq dictator did not have nuclear weapons, thanks to an early morning airstrike by Israel years before, but the current aggressor has multiple types of mass destructive capabilities, as well as thousands of nuclear weapons. More ominously, the Russian dictator has declared his intention to recapture multiple other countries, some of which now belong to NATO and which we (US) are therefore obliged to defend. Finally, just to make sure we get the point, Russian nuclear forces have been placed on high alert.

The world has changed completely forever a lot lately. The worst pandemic — arguably the only pandemic of real significance — in over 100 years certainly has changed things. As a result, we changed the way we work, the way voting is conducted, and what we expect from our government. Various bureaucracies have taken on outsized roles in our lives, and to put it as charitably as possible, they have not always acquitted themselves well. Just to take one example: It is one thing to say, "Masks don't work, the public should not use them," and then a few months later, to insist that they do work. Okay, people get things wrong, fine. It is something else again to then say, "Masks always help, and you absolutely must wear one!" As it turns out, the truth is that people at the CDC, National Institutes of Health and our US Surgeon General all knew perfectly well that surgical masks had a positive effect on reducing the spread of germs (hence their universal use during surgery), and that N95 or KN95 respirators were very effective for protecting the wearer. However, these people intentionally lied to us because they knew that the stockpiles of supplies they were responsible to have on hand in case of a pandemic had not been maintained, and in their scramble to purchase additional supplies, they didn't want to have to compete in the market place against a well-informed population. Then the CDC et. al realized that ordinary people were actually learning that masks did have some usefulness, and by sanctioning the use of cloth masks the government could appear to be doing something to protect the public and still avoid competing with the populace in procuring surgical masks etc. This is by no means

the full story of the mask fiasco, and that is not the only or even the worst case of deadly misdirection by some of our most highly paid bureaucrats. There is now well-founded and wide-spread mistrust of the government, as well as a dangerous and increasing polarization of the population. Our country and our state are receiving a truly historic immigration from our Southern border; death due to overdose has become the leading cause of death in the most productive portion of our population (18-49 y/o); inflation is at the highest level in 40 years; crime and murders are at the highest levels in more than 40 years nationally and at the highest levels ever recorded in many places; deaths due to gunshot have displaced motor vehicle accidents as the leading cause of trauma related death, numbers of people in mental health crisis are at record levels…. The list is long and could easily be extended, but the point is that all of these things impact the health and wellbeing of you, your family, and people you know. The Pandemic is ending in the same way that every pandemic in history has ended — enough people contracted the disease so that those who survived were almost all immune to it, and without many opportunities for new infections the disease and human population have established a sort of equilibrium. Now is the time to adjust to the new realities of our changed world. Perhaps the most important reality is that the world will continue its rapid and accelerating pace of change. An additional element of this is that we cannot rely on government to protect or inform us, the way that we relied on government during the 1960's. How, then, can we live? I suggest that we must return to what has worked before. We must again learn to rely on ourselves, both individually and collectively, and on God. Humans must cooperate in order to survive. The more we cooperate, the better we live as long as there is true cooperation. There are two great downfalls for cooperation, the first is what is called the free rider problem, and the second is that cooperation requires trust. There is always a temptation for a person to take the benefits of cooperative effort, but not put forth any significant effort of one's own. As you can see, that is also related to trust. Trust is earned by behaving in a trustworthy manner, and it is lost when someone is caught behaving in the opposite manner. When normal human beings interact regularly with one another, human nature dictates that it is harder to behave in an untrustworthy manner, and it is easier to detect untrustworthy behavior. Most people are more likely to go out of their way to be fair to someone they know than to a stranger or a faceless organization, and neighbors have a much better idea of who is exerting effort and who is shirking when it comes to community work, than does any national government. It is for this reason that cooperation on a local scale is so much more effective than large-scale cooperative efforts.

In order to effectively prepare for and cope with the new realities, we need to cooperate in ways that foster trust, and organize at a scale that is not too large and not too small. The Health and Wellness Coalition (HAWC) for Runnels County is one such effort. Several of us have worked for the last few years to establish HAWC as a coalition of organizations and individuals from every community in our county, dedicated to recognizing and addressing the most important health and safety issues, now and in the future. We know that nobody can do everything, but we believe everybody can do something. We will be meeting in early April, in person and by Zoom, and everyone who is interested is encouraged to attend. Details will be forthcoming, and will be published in this paper, on their FaceBook or website and at the Coalition's FaceBook page or website www.HAWC4RC.org.

BA.2, and the Next Public Health Crisis April 7, 2022

BA.2 is the newest subtype of Omicron (COVID) to receive attention, and according to the latest information from Texas DSHS it now accounts for about 40% of the COVID cases in our region of Texas. The other 60% of cases are due to the original Omicron, that is now known as BA.1 The same publication also noted that our region is seeing fewer cases of COVID than at any time since January of last year. At that time we were in the relative lull after the initial spike and before the onset of the Delta variant. I would note that locally I have seen more flu than COVID in the last month. I have previously said on these pages that I believe we have seen our last wave of pandemic COVID, but we will continue to see endemic or seasonal COVID, much as we have seen flu since that pandemic early in the last century.

What about this new variant, BA.2? Why should we not expect a new spike due to that variant? The reason lies in understanding the cause of previous spikes. The initial spike was due to the fact that this was a new germ and no one had an immune system that was well prepared to combat it. The virus replicated and invaded the tissues, especially lung tissue, so quickly that the response mounted by the body was very strong, but late. Often the response was too strong, and that accounted for a lot of the early deaths, until we learned to give medicines to tamp down the immune response in severe cases. Like all RNA viruses, this one changes continually. That change is the main reason why many people have had COVID more than once. After a person with a normal immune system recovers from a respiratory virus their immune system has developed an array of defenses against that virus. These defenses are usually strong enough that the person will not catch the same virus for a considerable period of time, typically a year or more. That array of defenses will also provide some protection against related viruses, such that the person may become ill with a related virus, but the body will mount an effective response more quickly than it would have otherwise, and the illness is likely to be mild. After the initial wave of COVID passed through our community there was a relative lull, and then we had the Delta spike. In a person whose body had learned to fight the COVID we had in 2020, Delta was different enough that their immune system was caught off guard. Delta was also different enough that the vaccinations developed in 2020 were not fully effective against it. In January of 2022, Omicron hit our community hard, in terms of cases, because it was different enough from all previous variants that neither a prior infection with COVID nor vaccination against COVID provided any protection against infection. However, it was similar enough to the previous strains that our immune systems were not caught totally off guard. So, in terms of total cases, Omicron went through our community as if we had never seen a COVID virus, but in terms of severe illness we had considerable protection.

This is a good time to point out how sophisticated the general public has become in regard to respiratory viruses. In 2019 probably not one person in 50 would have had any understanding of ‘herd immunity,’* and even fewer were familiar with the well documented tendency for novel respiratory viruses to be severe initially, and not terribly contagious, and then evolve to be less severe and more contagious. This is of course due to the fact that the main determinant of success in a virus is how many people are infected by each sick person. People who are dead or confined to a hospital bed are not nearly as good at spreading the virus as people who go to work sick for two weeks and tell everyone, “It’s just allergies.” In addition to its capacity to infect people who have some immunity due to prior infection or vaccination, Omicron also exhibited these last two characteristics – lower severity of illness and higher infectivity. These are the characteristics of a virus that is transitioning from pandemic to endemic. BA.2 is a subvariant of Omicron that is even more infectious than BA.1, and it is similar enough

to BA.1 that the diseases are clinically indistinguishable, and almost nobody who has had BA.1 gets BA.2. In our county and throughout Texas we had so many people get Omicron earlier this year that we finally have, I believe, reached herd immunity.

COVID was a monumental public health crisis, a hundred-year pandemic and a black swan event, or so they say. I do not think that we should take that to mean that we are immune to a public health crisis in the near-term. On the contrary, I think that we may experience something of similar scale before the decade is out, and maybe before the year is out! At any rate, we need to prepare with that thought in mind. This is one of the main reasons, if not the main reason why I will continue to ask for representatives from all of the health and safety organizations in the county, as well as individuals interested in volunteering, to come together in the Health and Wellness Coalition for Runnels County (HAWC4RC, for short). Our next meeting has been moved from this week, April 7, 2022, to Thursday April 21, 2022. We will meet at the Conference Room of Ballinger Home Health and Hospice.

*The term herd immunity refers to the fact that protecting an entire population or herd from an infectious disease does not require that every member of the population be immune. All it takes is for enough individuals to be immune so that each individual who does get sick will – on average – pass the disease on to less than one other individual. If that condition is met, the number of infected cases will become smaller with time and eventually go to zero.

Healthy Rhythms and Margin May 5, 2022

There is a rhythm to everything that is natural and healthy. The seasons of the year, the sleep/wake cycle of every animal on the planet and the cycle of contraction and relaxation in a beating heart. There are even cycles within cycles. Not only does the human heart have one to two cycles of contraction and relaxation every second, the heart rate itself fluctuates smoothly when we are calmly resting. It gradually speeds up from say 70 beats per minute to 80 beats per minute and then back down to 70 beats per minute, about every 10 seconds. The variability that is manifested in these cycles is a key indicator of health, because it reflects a capacity for compensation in the event of emergency. Heart rate variability (HRV) is an indicator of both physical and emotional/mental health. A patient with heart failure does not show good HRV, because their heart is not able to perform adequately at rest; by definition, it is constantly in failure and cannot compensate for any additional load. In these cases, we often we see an unvarying heart rate while the person is inactive. On the other hand, we see wide and erratic variations of heart rate in a person with high anxiety and a healthy body, while they are physically at rest.

Every healthy society also has rhythms, including communal celebrations that are often called "Feasts," Festivals" or "Fairs." This past weekend (on April 30, 2022) Ballinger followed in this tradition when it hosted the Texas State Festival of Ethnic Cultures Arts and Crafts Show. Disruptions in the cycles of society are also reflective of disease in the communal body, as we witnessed in the last 24 months. The stress of COVID resulted in many annual events being cancelled for the first time in memory. The reason I mention these things is related to the fact that I could not be present for the Festival, due to a prior commitment to attend the annual meeting of the Texas Medical Association (TMA). If I had been in Ballinger on April 30, I would have done my best to assist the Noon Lions Club with the Bike Fest and to also help with the booth of the Health and Wellness Coalition (HAWC). I was acutely aware of my absence from these when I attended the 6:30 AM Lone Star Caucus meeting on Saturday, and perhaps that is why I was so struck by what one of the speakers said. Dr. John Flores was speaking of the work that he and many of us are doing in our communities, through small non-profit organizations where, "…If you say, 'This should be done….' Guess what…You're doin' it!" He was not complaining, and neither am I. What he and I are doing is trying to change things for the better, both in and through TMA and in numerous other ways. Everyone in our society today is overwhelmed and distracted. There may be exceptions, but I don't personally know of any. Some people are overwhelmed with activity, and some by consuming depression, addiction, worry or pain, and all of us are distracted by the electronic devices that are ever more ubiquitous and more cleverly engineered to guide our thoughts and actions in ways that we would not consciously choose or condone. According to Richard A. Swenson, we lack "margin" (*Margin: Restoring Emotional, Physical, Financial, and Time Reserves to Overloaded Lives*). Margin is one of the primary resources that allows us to compensate in times of added stress, thus it increases our resilience.

Evidently the morning of Saturday, April 30, 2022 was the last one for Naomi Judd, who the family says was a victim of the mental illness with which she struggled, and about which she wrote (*River of Time: My Descent into Depression and How I Emerged with Hope*, and other books). Depression is a chronic, relapsing, fatal illness and it shares this and other similarities with drug/alcohol addiction. These conditions are often hidden, and they can rarely be successfully treated long-term without addressing mental, physical, emotional and spiritual factors. If a resilient life of balance and margin with regular

cycles of activity and rest is healthy, and an overburdened life of constant activity is like a heart in decompensated failure, the life of the addicted or mentally ill is like the erratic heart of the anxious. Suicide has been called a permanent solution to a temporary problem. It is because their behavior is erratic that these are the people most likely to commit suicide. One of the best ways to address that is to engage them in regular activity, giving them social contact and purpose. Perhaps the most tragic aspect of all of this is that work of the proper type and in the proper proportions is not only a benefit to the society, it is valuable to the one who works. However, people who are suffering from addiction or severe depression etc. often are not able to hold gainful employment. They need a circumstance which allows them to be productive on an ala carte or ad hoc basis. Volunteering opens up a lot more possibilities for them. This is just one of the reasons why I believe it is crucial that we develop a plan to organize and vet potential volunteers and volunteering opportunities in our County. There is work that needs to be done, and there are people that need to work. The importance of service work is often stressed in Alcoholics Anonymous, and the first type of service work people are encouraged to engage in is, “emptying the ashtrays, setting up the chairs and making the coffee.” There are also highly skilled and responsible people that would be glad to volunteer, in the right setting, and just need to be asked.

We are truly blessed to live in a great place, in the great State of Texas, in the greatest country on earth. We have problems, and our neighbors have problems that include but are not limited to mental health. Already many individuals and organizations are providing vital support and assistance in this area and other aspects of health and safety. There is more to do, but it will take organization, planning, resources and effort. Establishing a network of volunteers is part of the answer and we also need to remind people of the importance of face to face social connection, balance, rhythm and margin in their life. Over the next few weeks we will have the opportunity to get a better picture of the problems we face, and what can be done about them. As President of the Health and Wellness Coalition for Runnels County I know that this is an organization which seeks to help individuals as well as other organizations in Runnels County to be healthier and more effective in doing what they aim to do. We hope that you will come back here to learn more, and will consider joining with us.

Bradly Bundrant, MD, MPH www.hawc4rc.org May 1, 2022

Paying Attention to What Matters May 12, 2022

The world is changing more rapidly than ever, and the changes that are impacting us most profoundly are due to events and circumstances in distant places. To make matters worse, government agencies charged with protecting us from and alerting us as to potential threats have done a poor job. As late as February 2020 we were told it was unlikely that the novel coronavirus in China would have major health impact in our country. As late as October 2021 we were told that inflation was transitory. This February the US intelligence services apparently did not believe that Russia was actually going to make a major incursion into Ukraine until the invasion had been unfolding for several hours, and then their assessment was that the capital of Ukraine would likely fall within 72 hours. All of these predictions and so many more were not only completely wrong, they were unsupported by the evidence at the time. It turns out that the data gathered by our government is actually quite reliable, it is their analysis that has been flawed. What this means is that we need to use the data and other assets provided by our government, but we need to think for ourselves, develop our own expertise and act in ways that promote public safety as well as the health and wellbeing of ourselves and our neighbors. These are things to which many local organizations devote their resources and attention. More needs to be done. Those of you who are regular readers know I have more than once said that we need to organize and act locally for our own health and welfare, and the natural questions are these:

1. What are the most important problems?
2. What are the solutions to these problems?
3. How can we accomplish what needs to be done?

The answers to these questions are neither simple nor easy, and obviously the answers to the second and third questions depend on the one(s) above. While there is no single best answer, we can start by reviewing the most recent full data set from the federal government (https://www.cdc.gov/nchs/data/databriefs/db427.pdf,), showing the top ten causes of death for 2020:

1. *Heart disease**
2. *Cancer**
3. *COVID*
4. *Unintentional injuries***
5. *Stroke**
6. *Chronic lower respiratory diseases**
7. *Alzheimer's disease*
8. *Diabetes*
9. *Influenza and pneumonia*
10. *Kidney disease*

We need to be mindful that every death is a great loss, but the economic and societal loss is unquestionably greater when a person dies in the midst of their more productive years. There is also a greater sense of loss when it appears the death might have been preventable, or it involves a young person – or both. These considerations should cause us to pay particular attention to *unintentional injuries* as well as broaden our list of problems to consider *mental health*, *depression* and *suicide* as well as *drug and alcohol abuse* and the ensuing deaths due to *murder*, *overdose* and chronic disease. Suicide was the 12th leading cause of death in 2020, and for persons less than 65 it is in the top 10. An article appeared in the March 18, 2022 edition of the Journal of the American Medical Association showing

that *alcohol abuse* was actually responsible for more deaths in the US in 2020 than COVID, in people less than 65 years of age. Finally, *chronic liver disease* – due to *Hepatitis C*, *alcoholic liver disease* and *non-alcoholic fatty liver* – is currently the fourth leading cause of death in persons 45 to 64 years of age.

The problems shown in italics above are all worthy of further consideration. Perhaps there are others that would be uncovered in a local assessment of our County's needs. Next week we will consider what can be done about these problems, and whether there are special local needs that deserve our attention.

*Tobacco abuse contributes significantly

**Includes overdose deaths

Statistics, Sad but Important May 19, 2022

This is a follow-on from last week's column. At that time, I reiterated some of the reasons why we should organize at a local level for our own health and wellbeing, and I noted that we needed to arrive at the answers to three questions:

1. What are the most important problems?
2. What are the solutions to these problems?
3. How can we accomplish what needs to be done?

I also promised that this week we would begin thinking about where we might make a difference. From an economic or societal point of view, the value of a proposed intervention is often calculated using life years (LY) saved or added to a person's life. In some cases, it is more appropriate to look at the value of an intervention in ways that try to account for enhanced quality of life in addition to the intervention's impact on the quantity of years of life. The term for this is Quality Adjusted Life Years or QALY. Finally, I noted that an assessment of our local needs might be revealing. With that in mind, I gathered some information on cause of death in Runnels County over the last few years. The information below is from the Texas DSHS, and they have fully curated statistics only through 2019. In some cases, they do provide provisional data through 2021, but that must be used and cited with the full understanding that the information is provisional. Also, they "suppress" numbers less than 10, in published data, so that the privacy of an individual or family is not breached by the disclosure of information.

The total deaths in the county by year, starting with 2016 are 138 in 2016; 140 in 2017; 132 in 2018; 155 in 2019; 163 in 2020; 189 in 2021. COVID was the third leading cause of death in the county in 2020, with 19 deaths that year. In 2021 COVID caused 36 deaths in the county, making it the leading cause of death last year. Here are the top ten causes of death for Runnels County from 2016-2021

	Deaths
• Diseases of heart	192
• Malignant neoplasms (cancer)	163
• Chronic lower respiratory disease (COPD and emphysema)	62
• COVID-19	55
• Alzheimers disease	46
• Accidents	42
• Diabetes mellitus	40
• Cerebrovascular diseases (stroke)	28
• Chronic liver disease and cirrhosis	27
• Septicemia (overwhelming infection)	15
• Total Deaths from the Top Ten Causes of Death 2016-2021*	670
• All Deaths in Runnels County, Any and All Causes 2016-2021*	917

This week I am presenting some very sad statistics, but if we are going to make a difference we need to face facts. As I said last week, every death is a grievous loss, but the most painful deaths are often those that take a young person from us, especially if the death might have been prevented. With that in mind, when I looked at the statistics detailing cause of death for Runnels County residents in the period 2009-2019, one thing in particular stood out: Motor Vehicle Accidents (MVAs) in the age group 15-24y/o. This is the only age group showing a number other than 0, for MVAs. The two youngest age groups

(thankfully) have zeros, and each of the other age groups has a dashed line, indicating a number 1-9 which has been suppressed. Scanning up and down we see that the only other causes of death listed for the 15-24 group are two other types of accidents and self-inflicted harm. That means there were at least 12 young lives lost to accidents in 2009-2019. Also, at least one person took their own life. Just in terms of life years, this is a terrible loss. Using estimated life expectancy of 75 years, and the mid-range of 15-24, the data suggest that each of these deaths probably represents a loss of at least 55 life years, or 55 QALYs. In addition, experience suggests that many other young people survived motor vehicle accidents during that period, but they are left with regret about the accident or suffered significant injuries that may have left them with life-long troubles. In either case, surviving a major accident can greatly diminish quality of life. It is estimated that each QALY is worth at least $50K, so every one of these lost lives cost society at least 2 ¾ million dollars, in addition to the profound personal loss, grief and regret that attaches to each one. Estimating all of the economic burden represented in this, including the additional injuries etc., about 40 million dollars of economic loss to society was suffered over 11 years, or $3,625,000 each year. I do not know which of these deaths might have been prevented, and I bring up the economic aspect in part because it highlights the fact that exploring causes and possible interventions will be valuable as well as useful, even if it is painful.

Having made a good start toward answering, “What are the most important problems?” next week we will begin to look at some of the things that can be done.

*Death data for 2020 and 2021 are provisional. Provisional statistics are tabulated based on data that are not yet edited and may be incomplete.

What You Need to Know About COVID Now May 26, 2022

For the past few weeks we have been examining important health problems, to see what can be done at the local level to reduce the impact of those problems. Last week I ended with this, “Having made a good start toward answering, ‘What are the most important problems?’ next week we will begin to look at some of the things that can be done.” We will indeed do so. However, this article is one which is very different from the one I had expected to write this week. Today I am writing – yet again – on the subject of COVID 19. I do so not only because it was the leading cause of death in Runnels County last year, but also because there have been some new developments in the past several days which will impact our health THIS year.

The phrase ‘arms race’ is one that is commonly used to describe the ways that germs and people interact over time. In the case of COVID-19, for example, the first steps that public health officials advocated were aimed at creating a perimeter defense by using masks, handwashing and social distancing. These were part of the planned response for the next flu pandemic. As it turns out, they worked really well against the flu, and we had almost no influenza in our County or anywhere in the entire country during 2020 and 2021. Extending the combat metaphor, we were very well prepared to fight the last war. No doubt these perimeter defenses did help, but they were entirely inadequate to protect us from COVID-19 for two reasons. First, flu spreads mostly by droplets, and these don’t travel very far before falling to the floor or another surface. COVID, on the other hand, is spread mostly by aerosol. In this case, tiny droplets containing the infectious particles evaporate, leaving the virus suspended in the air for a considerable period of time. The second reason is that COVID spreads more easily than flu, due in part to reason number one.

The arms race between respiratory viruses and human beings has been going on for much longer than we have had public health officials, and the human body has a number of defenses against these germs. The system known as “acquired immunity’ depends on a type of intelligence gathering in order to provide a targeted and coordinated counter attack when the body is invaded. One of the reasons that COVID cases were so mild in most children is that the virus which causes COVID is related to a handful of coronaviruses that cause the common cold. Kids catch a whole lot of colds, and their bodies are in great shape to mount a defense. However, if a person was infected with COVID and did not mount a rapid and strong defense, the virus penetrated deep into brain and lung tissue, where it rapidly divided and killed cells. This in turn triggered another type of immune response, a more general system called innate immunity, that is heavily dependent on inflammation to overcome the invader. Unfortunately, this is a weapon system with very poor targeting capabilities, and there can be a lot of casualties due to ‘friendly fire’. Most of the people who died of COVID actually died as a result of this type of overly active inflammatory response. The first treatment that was proven to be effective in reducing the mortality of COVID was dexamethasone, which works by reducing the bodies inflammatory response. Two other things of note: I said that COVID invades brain tissue, and we know that it commonly does so because the sense of smell actually relies on brain tissue that is very close to the air coming into the body, and the loss of smell in COVID is due to the destruction of this brain tissue. There may or may not be destruction of other brain tissue; it varies from person to person. Also, the term “acquired immunity” is so named because it depends on the human body’s immune system acquiring a sort of an image of the invader, that is then literally remembered by the immune system and passed on to various cells that then function in harmony to target anything that displays that image. One of the main ways that this

system works is through the production of antibodies that adhere to molecules or cells displaying that image. This 'paints' the target, and then other cells destroy the target. This process typically takes a couple of weeks before it is functional, so it is of limited usefulness against an overwhelming initial attack.

In humanity's battle against COVID, after perimeter defense and the suppression of friendly fire, the next major tactical advance in weaponry for team human was development of the first monoclonal antibody (bamlanivimab) that could be given IV to treat the disease. Bamlanivimab – 'bam', as it came to be known – was the first of many manufactured molecules engineered to paint the COVID target, just like the body's own antibodies would do, if they had the opportunity. This was a huge breakthrough, but it didn't take long before variants arose that could 'defeat' or 'escape' this weapon. By combining two different monoclonal antibodies, the effectiveness was greatly enhanced. However, no advantage is permanent in an arms race. The next development that is widely held to be an advance was the wide-spread distribution of vaccines. These worked by teaching the body to make its own monoclonal antibodies, to paint the COVID invaders for targeting by the body's immune system. The intention was to inoculate people who had not had COVID, and prevent them from becoming ill with the disease. The initial reports were terrific! The people who were vaccinated had a 90+% decrease in their risk of becoming ill with COVID. However, the virus mutated so fast that by the time these vaccines were widely distributed they were not nearly that effective at preventing disease. The vaccines did, however, prepare the human body to mount a better defense, and greatly reduced the likelihood of death due to the friendly fire of uncontrolled inflammatory response.

Then there was Omicron. Omicron was different from previous variants in many ways. For one thing, it almost completely escaped or defeated every prior targeted response, including the monoclonal antibodies as well as immunity acquired from infection by a previous variant or by vaccination. Also, Omicron acts more like the coronaviruses that cause the common cold as it does not have as strong tendency to invade deeply into brain or lung tissue, as did prior COVID variants. Omicron has virtually replaced all other variants, because it replicates and spreads so quickly, and also because so many of the cases are completely asymptomatic. However, there are still more variants. They arise because they have some advantage in terms of the arms race. What we called Omicron when it tore through our County in January, is now called BA1. The next variant to arise was known as BA2, and it evidently spread even more quickly, but people who had had BA1 were still very unlikely to get sick if exposed to BA1 or BA2. However, there is a new variant, BA2.12.1 that has escaped or defeated the immunity derived from having BA1 or BA2, or from vaccines (apart from the few weeks following vaccination, when the body is in a state of high inflammation and immune hypervigilance). BA2.12.1 is responsible for the new rise in cases in Europe and the Northeastern US. In addition to this one there are two other variants that are on the rise in other countries, BA4 and BA5, which are able to completely defeat the immunity conferred by vaccination or infection with BA2 or prior strains. Also, it appears that one advantage that BA4 and BA5 have over previous variants is that they appear to be more easily spread through contact with contaminated surfaces. Perhaps the virus is more stable in the environment.

So, now what? Hand washing, disinfecting of surfaces and other basic sanitation measures are practices that we should maintain. Be sure to take advantage of all of the federal government's offers of free test kits and free masks. (See https://www.covid.gov/tests.) The at-home COVID tests are likely to maintain their current sensitivity (about 90%) so keep some on hand, and if you think that you may have COVID stay home until you have tested negative on two different days, then you can be fairly certain you don't

have COVID. If you do test positive, and begin to feel short of breath or are at high risk for severe disease, make a telemedicine visit to see if you should be treated. The new oral medications Paxlovid and molnupiravir are effective against all known variants. If you must go out without being tested, wear a surgical mask as that makes it much less likely that you will spread the disease to others, by catching the microscopic, virus-containing droplets in your breath. If you ae not sick and want to stay that way, consider wearing a respirator such as the N-95 if you are at high risk, either because of underlying health conditions or if (like yours truly) you are around a lot of people who are sick with unknown ailments.

In addition to these things that we can do individually, please consider some of the important ways that an organization such as the Health and Wellness Coalition for Runnels County (HAWC) might benefit the people you know. Such an organization could be a repository for donated masks and testing supplies, which could then be given to or delivered to individuals and families on an as-needed basis. Trained volunteers or Community Health Workers (CHWs) could facilitate telemedicine visits, assist in distributing masks and test kits and also respond to requests for thermometers and pulse oximeters. Such items were available for distribution at various times when COVID was peaking, because it was a way of keeping people out of hospital. Also, the CHWs could answer questions as to location and availability of additional information and services. These are but a few of the possibilities.

Finally, remember that there is more to life than avoiding disease. We do not know whether Omicron and its variants will cause as much persistent disease, or long-COVID, as the previous variants. There is reason to believe that it will not. In any case, do not let your life be dominated by fear.

What in the world is going on? June 2, 2022

What in the world is going on?! Instead of the usual drip, drip, drip of bad news we are experiencing a torrent of terrible news! Of course, the latest tragedy that has riveted our collective consciousness is the horrific school shooting in Uvalde, and before that we had the mass shooting in Buffalo, New York. There is also monkeypox, about which our President says, "Everybody should be concerned…." On another front, hundreds of infants across the country have been sickened due to a shortage of baby formula. Suicide and murder rates are climbing across the country. Emergency rooms across the country are seeing record numbers of patients with mental health issues. The number of deaths due to overdose in this country last year was the highest ever recorded. Besides these things, we still have the pandemic of COVID-19. Even the name is scary. It is not simply "COVID." Adding the number 19 sends the implicit message, "This is not the last COVID."

COVID-19 and its aftermath have been devastating in many ways, but probably none of the damage will be as permanent as the destruction of the public's trust in science and government. Perhaps the most telling example of this was the unannounced change in the definition of the word "vaccination." Previously the CDC defined vaccination as, "The act of introducing a vaccine into the body to produce immunity to a specific disease." On or about May 4, 2021 the CDC's website began to display a new definition, indicating vaccination is, "The act of introducing a vaccine into the body to produce protection from a specific disease." The difference between "immunity to a disease" and "protection from a disease" reflects the fact that we cannot rely on COVID vaccinations to do what we have done with Smallpox, or even measles. Smallpox has been eliminated, due to vaccination, and measles outbreaks in this country occur largely as a result of pockets of people who refuse to be vaccinated. When a person is immune to a disease, they are not only protected from experiencing that disease but they are also incapable of transmitting the disease to other unvaccinated persons. Our COVID vaccines cannot be relied upon to do either of these things. In the case of smallpox, we humans have succeeded in eliminating the disease (in 1979) through a technique called "ring immunization." After vaccination for smallpox had resulted in reducing worldwide cases to a few hundred a year, it was realized that we could not rely on universal vaccination to rid ourselves of the disease. This is for two reasons: no vaccine is perfect and there will always be some people who are unvaccinated. After we accepted these facts, the World Health Organization did something excellent. They began a program to identify each new case of smallpox, and they then sent teams to those locations to vaccinate all of the potential contacts of the people with smallpox. This created a ring of immunity around the outbreak.

The story of the smallpox vaccine is one worth retelling briefly. A country doctor in 18th century England noticed that milkmaids seemed not to be afflicted with the devastating and deadly disease of smallpox. From a very young age, these women were employed milking cows and Dr. Edward Jenner observed that they almost all got a case of cowpox early in the course of their employment. He reasoned that this was somehow related to them not being afflicted with smallpox. Since cowpox is a mild disease in humans, he tried introducing some of the contents of a cowpox pustule into scratches on the skin of himself and others. This produced a pustule or a few pustules in that area, as well as some malaise in the person, but they did not get smallpox when they were later exposed. It took some time, and the process was refined, but the modern process is essentially quite similar. The word vaccine is related to the Spanish word "*vaca*," which means cow, and it comes from the Latin word that was used for hundreds of years to denote the disease of cowpox, "*vaccinia*".

Smallpox, cowpox and monkeypox all belong to the Orthopoxvirus family of double stranded DNA viruses. There are 12 of these, and they are similar enough that we can use smallpox vaccine for monkeypox. It can be deployed, as with smallpox eradication program, in a ring-immunization pattern, and we can expect that it will work in the old-fashioned way to give actual immunity to the disease of monkeypox. This is one reason why not "Everyone" need be concerned about this disease; the other reason is that contracting the disease requires actual close physical contact with someone who is infected with monkeypox, and the recent outbreaks have been mostly (but not entirely) limited to men who have sex with men.

So, what about all of the other terrible things outlined in the first paragraph? Afterall, as I sit here writing this there are dozens of families less than 200 miles away who are grieving for the murdered victims in Uvalde, Texas. What is wrong with this world?! And besides, why is everything so POLITICAL nowadays? It just seems to be getting worse. What has happened? What can we do?

There is a point to all of this even if it seems like rambling, but before I make that point I want to touch on a few things that are important, but are not the point. To begin with, we must acknowledge the tremendous grief that weighs heavy on the hearts of the grieving families in Buffalo and Uvalde. We should also remember those who were physically or emotionally injured and yet survive. There is also great sadness and ongoing trepidation or fear in the lives of all of Ukrainians and every family member of any Russian soldier. Those of us who pray should remember them in our prayers, and we should pray daily for these and others. We should also pray for our nation and its leaders at every level. It is also true that elections have consequences, and we should be informed citizens. As such we should take active roles in our own governance. However, acknowledgement, prayer and political activism are none of my point today.

We are told that there is no one cause for our troubles, and certainly that must be true. However, it does FEEL like something has changed… like some THING has changed. I believe that thing is a radical shift in priorities. Human intellect, imagination and invention may be the most powerful things in the world, and for generations they have been used in service of the inventor and their family, tribe, state, nation and humanity as a whole. All of the great innovations – from lashing a stick onto piece of rock to create an axe, to Edward Jenner's use of cowpox to prevent smallpox – have been created first in the human mind. These came into being first as ideas that were solutions to problems. Only later did their inventors create definite plans and use real objects to translate their ideas into artifacts that could be useful for themselves and others. In these cases we see that intellect and imagination can be used in the service of real people. What the evidence points to in the case of each of the teenagers wielding guns in Buffalo and Uvalde is that they created horrific scenes of mayhem in their imagination, planned how to stage such scenes and then obtained the necessary materials in order to force other people to participate and die in accordance with the shooter's imaginings. In other words, real people were pressed into the service of the shooter's imagination. When individuals plan and stage mass murder, intending to not survive the day, everybody asks, "Why?" The Why question is asked so often that people have stopped trying to answer it. This is my point: There is an answer, and it has to do with the fact that these shooters force their twisted imaginings onto other people and force them to participate. Next week we will look more closely at such phenomena, as well as what we can do, in practical terms. Also, you can see more information at www.HAWC4RC.org. Under the Articles by Dr. B tab you will find

the article entitled “Sociopathy as a Public Health Issue” which was written after the mass shooting in Las Vegas in 2017,

What is going on… Part 2 June 9, 2022

Last week, after reciting a litany of the world's woes we focused on the problem of young men who commit mass murder followed with the intention of suicide by cop. In discussions of the two recent assailants in Buffalo and Uvalde we hear the often-repeated question that is regularly associated with hand wringing, "Why did they do it?" We hear it so often that it is taken as a rhetorical element, not as honest questioning. But it needs to be asked as such, and it needs a good answer. What could be the answer? Where can we look for the answer? According to common translations of Aristotle, all of our motivations come down to seeking "happiness." Aristotle never used the word happiness, of course, but he did indicate that ultimately we do what we do in order to have *eudaimonia** (which is translated as happiness) saying… "this we choose always for itself and never for the sake of something else, but honor, pleasure, reason, and every virtue [we] choose for… the sake of happiness, judging that by means of them we shall be happy." Dr. Bob Smith, co-founder of Alcoholics Anonymous, said that the two great things which we seek above all else are happiness and peace-of-mind. I certainly think that these words are true for most of us, most of the time. However, such thinking will never provide a motivation for murder-suicide. Such motivations are necessarily spring from different roots.

In the previous installment when I indicated that many of the problems we now face may be a radical shift in priorities, I was using the word radical to denote root. I submit that there is indeed one thing, beyond all others, that lies at the root of the unique problems of our day. Two quotations may help to provide some perspective on this. One is, "I am an old man and I have known a great many troubles, but most of them never happened," attributed to Mark Twain (Samuel Clemens). The second one is from George Bernard Shaw, "Some men see things as they are and ask why. Others dream things that never were and ask why not." Both men are acknowledging that we each know two worlds, one is the private world of imagination and the other is the world of reality shared with other human beings, animals, plants etc. Mark Twain seems to give pride of place to the shared reality, while Mr. Shaw seems to regard more highly that private ephemeral world of his imagination. A normal human outlook depends on keeping both world views in perspective, but In order to understand these murder/suicide plans and their enactment we must look into the private imaginings of these young men in the weeks and months preceding what I believe they must see as "Going out in a blaze of glory." We know that both of these young men were loners, and we have also learned that the mother of the Buffalo shooter had helped him to bury a cat that he had tortured and beheaded. A common trait among school shooters is to spend hours playing first-person shooter video games. These facts fit very well into a composite picture of a school shooter who is an introverted sociopath that is very focused on the virtual worlds of his imagination and his devices. He is dominated by these virtual worlds, and he privileges them above the world of shared reality.

When a normal person witnesses suffering in reality or in imagination, there is an emotional response generated in the brain of the observer, in response to viewing the person or animal who is suffering. In the mind of a sociopath, other people and even animals are animated objects with whom there can be no emotional connection. These animated objects in the sociopath's imagination are very similar to the Non-Player Characters (NPCs) in a first-person-shooter video game. They are mental simulations of their counterparts in the real world, and the sociopath, or his avatar in the electronic game or the imaginary world, are the only real people/players with freedom and feelings. It is understandable that this imaginary world – and/or the electronic first-person-shooter virtual world – come to be preferred over

the shared world of reality; these young men gravitate toward these virtual worlds, as there is no one who can ultimately thwart them there, whereas in the world of shared reality there are many barriers and troublesome situations. Whatever empathy these individuals might have had, if they had fully participated in the shared reality inhabited by other real people and animals, is smothered in these virtual worlds.

When we try to fathom the motivations of these young men, most of us are also hampered by a reflexive tendency to look to the future. To a great degree, there is a generational divide involved. To a certain extent it is a rolling divide. I know when I was 15 there was a popular saying, "Don't trust anyone over 30." At 18, a significant number of my friends could not imagine living past 30. Today there are a lot of young people who are convinced that the planet will die before they are 30. So, in addition to an inability to look to the future which can be normative, there is also a new and pervasive tendency to discount the future based on fears of climate change. This all reinforces a present bias that completely discounts the idea of happiness or peace of mind at some future time.

Mass murder followed with suicide by cop, and school shootings in particular, have become fixtures in the minds of many people, and they certainly seemed to be themes that captured the imagination of these two young men. I submit that when people turn their imagination to such, they obtain a certain amount of pleasure, but they would not continue to get pleasure week after week without additional elaboration. By embellishing their musings with plans of carrying out a specific scene in which they actually shoot and kill real people, their senses are heightened and pulse is quickened. In order to continue getting these feelings they must continually go farther. Musings become plans, general plans become purchases, then a specific plan with actual places and people. Very likely there are people who plan and do not carry out their plans. However, something may snap and they will then carry out a plan. Alternatively, they may have a well-developed plan that is not acted on until their self-talk begins to recriminate them for not following through. People can actually feel guilty for not carrying out their plans to be mean to other people. Perhaps the most important element is what these shooters believe about whatever future there may be, and the place they might occupy in it. Their greatest source of pleasure is often the sense of superiority they feel, and to imagine being on the leader board of most kills in a mass shooting in the US or in New York or Texas history probably has an almost irresistible attraction for some, especially when coupled with the belief that they will be remembered as having dominated others, thwarted authorities and gotten revenge for past injuries or slights.

There is much more that could be said, and that needs to be said. For some ideas on things that could be done, keep reading here each week, or go to www.HAWC4RC.org.

*Aristotle's word eudaimonia which is here translated happiness might be better translated as "human flourishing." (Nicomachean Ethics, Chap. 1.7

What is going on… Part 3 June 16, 2022

This is the third installment in what has become a series of essays which began with the question, "What in the world is going on?" In these we have tried to come to grips with the root of problems that seem now to typify modern America, and have especially focused on school shootings and other events in which the intent is mass murder followed by suicide. One of the most useful resources for the study of these tragic events is the book The Violence Project: how to stop a mass shooting epidemic written by Jillian Peterson and James Densley, published in 2021. These two, a psychologist and a sociologist, are both criminologists and researchers. With the help of their students they have compiled the most complete database on such violence: The Violence Project Mass Shooter Database, https://www.theviolenceproject.org. While their book is neither apolitical nor non-partisan, it does contain a great deal of useful information. Drawing on their research we can say that mass shootings follow certain themes, and this is especially true for school shootings. These shooters almost always (80% of the time, according to the database) have had a recent crisis which is often the loss of someone close, they intentionally pattern their events, and they frequently or usually:

- have a years-long fascination with previous school shootings,
- have extensive knowledge about one or more previous school shootings,
- have experienced multiple and severe Adverse Childhood Experiences (ACE's),
- have been close to someone who has committed suicide,
- have contemplated suicide, and may have prior attempts or a history of self-harm,
- do want to be remembered for the carnage they committed,
- do not have any adult in their life that they believe knows them and cares about them as a person,
- do not expect to survive the shooting.

Woody Allen once said, "I don't want to have immortality through my work, I want to have immortality through not dying." Most of us understand this implicitly, and agree. However, the young men who carry out these massacres do seek to be immortalized through the terror and horror they cause, and they do not want to go on living. The rise in school shootings looks very much like the rise in completed suicides by young people, which follows the same curve as the rise in all of the deaths of despair, such as drug overdose. Perhaps examining these mass shooter events as a type of suicide is the most useful perspective, in terms of preventing future events. Things that we know about suicide are that it usually occurs in someone who has a long history of emotional difficulties, the act is usually precipitated by a crisis, and even small obstacles to the commission of a suicidal act will reduce the likelihood of completed suicide. One quick example is that there was a more than 40% reduction in completed suicides in the United Kingdom attributable to the introduction of a requirement for paracetamol (the equivalent of Tylenol) to be sold only in blister packs containing not more than 32 pills. People could still purchase as many pills as they wanted, but it just required more sustained effort to kill oneself. The fact that nets under high bridges also reduce total suicides in the affected cities is additional evidence. The notion, "If someone wants to kill themselves, they will find a way," should perhaps be replaced by, "If a suicidal person can be given an excuse to not kill themselves, they won't." To that end, it is useful to look at 'the crisis' as perhaps the last best point at which we can intervene to stop these and other suicides. A crisis overwhelms a person's usual coping mechanisms. Peterson and Densley use the metaphor of a balloon that is inflated almost to the point of bursting, and any rough handling can cause

it to pop. A successful intervention need not deflate the balloon, just let enough air out so that it isn't about to pop. They say that crisis intervention (or crisis response) is like CPR – everyone can learn to do it and potentially save a life (or several).

If crisis intervention is the last best hope to prevent someone from committing mass murder/suicide, the first intervention should surely be aimed at reducing the occurrence of ACEs in a community. We should do this not only because it will reduce these acts and the rest of the deaths of despair, we should do it because it will reduce the incidence of heart disease, cancer, liver disease, substance abuse, physical abuse and sexual abuse. Perhaps most importantly we should do it because it will reduce suffering, and because it is what we do if we truly love our neighbors as ourselves. Between this first intervention and the last stop of crisis intervention, there are ways to potentially identify people who are suffering or are dangerous to themselves or others, and/or mitigate the danger they pose. Since I do not have solid data, I will limit what I say to these few things: anonymous reporting, such as can be done at www.p3campus.com or through their app, is likely to be most useful when there is confidence that authorities can be relied upon to investigate promptly and respond judiciously, neither overreacting when there is no need nor underreacting when there is. The same is true for Extreme Risk Protection Orders (ERPOs), also known as "red flag" petitions, which provide a way for law enforcement, a family member or household resident to petition to have a person's firearms removed if they are deemed by a judge to be a threat to themselves or others. Active shooter drills in schools have become common, but they run the same risk as the DARE program (Drug Abuse Resistance Education) or the staging of mock motor vehicle accidents involving high school students. All of these may inadvertently normalize the behaviors they seek to avert, and each may actually increase the incidence of the tragedies they seek to avoid. Drills involving teachers, staff and first responders only, and drills in which students initiate a single strategy in the event of any emergency, whether a shooter/bomb or weather event, may have better outcomes.

From a public health perspective, the first and most important thing that I would recommend is for much more attention be given to recognizing the sociopaths in our midst, and holding them accountable for the problems they cause. Sociopathy is an aberration as dangerous as schizophrenia and much more common. The essence of the disorder is that sociopaths do not regard the feelings of others as having any value. This is quite different from insanity, in which a person has what is termed, "a failure of reality testing." Indeed, sociopaths often regard themselves as the only sane ones, because they almost always behave in any way that they see as most beneficial to themselves, whereas people we call normal often make decisions that are clearly wrong, based purely on cost/benefit analysis, because the decision was based on sympathy or other emotional ties. There are questionnaires which are adequate as screening instruments, to discriminate between sociopaths and troubled normal people; one of these is the Hare Psychopathy Checklist-Revised (PCL-R). The principal criticism raised by its detractors (including Peterson and Densley) is, "expert psychiatrists and psychologists have concluded that the test cannot precisely or accurately predict an individual's risk for committing serious violence." My response to this criticism is that the test cannot predict this for the same reason that an assay of bullets cannot predict which will fatally injure a person. All bullets and all sociopaths will kill, in the right circumstance. There is no intrinsic difference between those that are ultimately fatal, and those that are not.

Next week I shall finish this series, and hopefully will tie most of the still remaining loose ends. For more information on sociopathy or ACEs, please visit www.HAWC4RC.org.

What is going on… Part 4 of 4 June 23, 2022

This is the final and most difficult portion of a four-part essay which was prompted by the May 24, 2022 shooting spree in Uvalde, TX. There is a widespread recognition that mental illness plays a direct role in some mass shootings in addition to creating many of the Adverse Childhood Experiences (ACEs) which shooters have suffered. Therefore, perhaps nothing would be better than this recommendation (taken from page 182 of The Violence Project), "We need to actually deliver on the promise of the Community Mental Health Act and the enduring vision of President John F. Kennedy, who signed it one month before he was assassinated in 1963: to build and fund affordable, community-based mental health treatment and assistance services that can be easily and readily accessed by the people who need them." Only a tiny fraction of the needed facilities was ever constructed, none are adequately funded or staffed, and it is very likely that even if they were, we would find the current inpatient psychiatric bed space is inadequate. Currently our state facilities are so inadequate that in our own county jail we have two inmates who have been found incompetent to stand trial and have been remanded to a state psychiatric facility, but they are held in our jail "temporarily," for lack of bed space. One inmate has been there in his current status for almost a year and the other for more than 6 months, waiting for a bed to become available. When a bed does become available, I expect that each will stay no more than 60 days before being released to be followed on an outpatient basis. Usually, in my experience, these people are lost to follow-up soon after discharge, until they again come into the criminal justice system. (As a side note, a large percentage of the homeless population living on the streets of our cities has a history exactly like the one I just recounted.) If we had adequate Community Mental Health Facilities to whose care such people could be discharged when they left hospital, perhaps more of them would be able to lead productive lives in the free world. Those who have shown themselves to be serial offenders should – for the wellbeing of the rest of us – be remanded for longer and longer terms each time they come before a judge. Being remanded by a judge to a psychiatric facility for the criminally insane is a severe abridgment of rights, but it is not without due process. In addition to those who lack capacity to stand trial, there are many others in the criminal justice system who have a psychiatric element that should be addressed. As I have previously stated, we would do well to screen for sociopathy in jails and prisons. We also have inmates with other personality disorders, severe depression and also addiction issues. Many of these would benefit greatly from treatment*, and the broader society would benefit also.

It is generally held that most of the rights afforded by the Constitution are available to all residents of the United States and its territories, and these rights may not be abridged without due process. I anticipate that the suggestions which follow will be controversial. I suggest that all adults should be required to show valid identification (such as a driver's license), issued by a state or a department of the federal government, in order to purchase a gun or buy ammunition. Importantly, the process of issuing these identification cards should always result in the information being added to a national database, and crosschecked for duplication or subterfuge. This list would then be annotated to identify convicted felons, fugitives, known active users of illicit drugs, former mental patients, and dishonorably discharged veterans in addition to persons convicted of domestic violence or subject to certain types of restraining orders. I do not advocate for limiting the rights and freedom of sociopaths, unless and until they come into the criminal justice system, but I do believe that everyone who comes into the criminal justice system should be screened for sociopathic tendencies (such as with the Hare Checklist, PCL-R). If they screen positive this should be taken as adequate due process, and an annotation made on the list. It

may be said that this is not due process, but the annotations should be subject to review or challenge, and successful challenge should result in complete removal of the annotation. All of the other names which have been annotated without due process per se should be reviewed periodically, say not less than every 3 years, and if there is no ongoing concern the annotation should be removed. The annotations would not be visible, only names without annotation would be visible and this would serve as a 'white list' of persons eligible to own firearms. I also suggest that persons with a juvenile record not be treated as full adults immediately when they turn 18 years old. Instead I suggest a type of 'adultolescence' between ages 18 and say 25, and during this time the juvenile record should be available for review by the court, if these individuals come to the attention of the criminal justice system. If they do not come into the criminal justice system between 18 and the end of their adultolescence, and they have no other reason for annotation, their name should be added to the white list for gun purchase. Prior to that time, they may use firearms only under the supervision of (or by the authority of) an adult or an organization that will be responsible and will see that they do not have unsupervised access.

The white list should be searchable by anyone with a verified identity who has a need to know. The process of verification of identity should not be onerous for the person searching. Anyone who wishes to transfer ownership of a firearm (through sale or gift) should go through the process necessary to obtain access to the white list, and then search the list before transferring ownership of a gun. There should be a process by which the identity of a purchaser or gift recipient is somewhat obscured, if desired. This could be accomplished by allowing searches of multiple names (perhaps as many as one-thousand), submitted at one time. These additional names could be drawn from people who volunteered to have their name and identifying information submitted, in randomly varied combination, so as to assist in balancing the right to keep and bear arms with the right to live in a society free of gratuitous violence. It should be a crime to transfer ownership of a gun or a large amount (say greater than 1000 rounds) of ammunition without checking the white list or selling to anyone without proper identification or whose name does not appear on the white list. In addition, anyone who sells items or transfers a gun in violation of these conditions could be charged as an accessory to any armed offense committed by the perpetrator who received the item improperly, regardless of the timing or other particulars of the sale or whether or not the exact item was used in the crime. Likewise, they could be liable for damages in civil court. Criminal and civil culpability should also extend to individuals and organizations who are delinquent in updating annotations to the white list or in related administrative functions.

Previously I suggested we should recognize that all of us inhabit two worlds simultaneously; one is a reality that we share with all other creatures, and the other world is the private world of our imagination. In this private world we alone have free will or agency, and all other humans exist as simulations or Non-Players-Characters (NPCs). The human capacity for imagination is actually the superpower of our species, and through it we have been able to create all of the tools, concepts and structures – both physical artifacts and cultural structures – that have allowed us to dominate the planet. These are examples of imagination used in service of people. However, there are certain types of people who become so convinced that the world created in their imaginings is superior to the existing shared reality, that they force other people into the service of their imagination. If that is true, then certainly a portion of the problems of the world today are due to the relationship that those individuals have with their conceptual world, as well as their behavior in our shared world. Importantly though, the

conceptual world of each of the rest of us also plays a large part in the creation of today's real-world problems. To begin with, limiting our scope to the problem of mass shootings, there are the ideals of freedom and liberty which come into play. Clearly, there would be no mass shootings by civilians if the government effectively confiscated all firearms. The reason that we have not tried to do anything like that is due to our history, culture and the founding documents of our nation which include the Constitution and the Bill of Rights. The ideals embodied in these artifacts exist as ideas in the minds of each person who holds them dear, and these ideas have the capacity to shape culture because so many of us hold them in our minds in a certain way. One of the framers of these documents, John Adams, was at pains to warn his fellow Americans against all revolutionary manifestos envisioning a fundamental break with the past, a fundamental transformation or promises of utopian societies. I say these things as an acknowledgement of thorny constitutional issues raised by what would otherwise seem to be "common sense gun law" solutions to the problem of mass shooters. We need to limit our use of imagination to addressing problems in the real world, and look for solutions which can be actually implemented. I have tried to do that here. The measures would cost money, but at least 40,000 life years have been lost in the mass shootings in the US since 1966. At a conservative figure of $50k per Quality Adjusted Life Year, at least 2 billion dollars has been directly lost. What we should not do is aim to completely remake society, or act as if human nature can be perfected. Whatever we do should be done within the framework of our Constitution.

Next week we will move on to other topics.

* In addition to my other duties, I serve as the physician for our county jail. We lack funding to provide care beyond what treatment appears medically essential. There is limited access to mental health services via telemedicine. We provide no preventive care, and the only screening provided is the screening for tuberculosis which is required by law. I wish that we could do more, but I am grateful that we now have a nurse (Stephanie Smith). I thank Judge Miller, Sheriff Squyres, Capt. Dunn and especially our County Commissioners for their support.

Bradly Bundrant MD, MPH

Rule by Men or Rule of Law July 7, 2022

Many of us recently celebrated the July 4, 1776 signing of The Declaration of Independence. However, another large segment of our society protested the fact that the Supreme Court of the United States (SCOTUS) could not locate any right to an abortion within the US Constitution, and they determined that the previous ruling on the matter had amounted to rule by men. Those who are unhappy with the recent SCOTUS decision have not disputed these things, but they have tried to make the point that in this case the rule by men was superior and that the recent ruling has diminished our health or our health-care. I believe that a brief and accurate review of the historical record will make clear that there has been a direct and clear improvement in the general health whenever the rule of law has been advanced. It is for this reason that I hope you will review the record with me, before reaching a final decision as to whether rule by men is superior to rule by law.

Besides the Revolutionary War, there was another revolution in 1776 which sprang from the publishing of Adam Smith's second book, An Inquiry into the Nature and Causes of the Wealth of Nations, usually known simply as The Wealth of Nations. In this book we find the first clear statements of the principles of economic freedom and self-determination that we call capitalism. We would not have the freedom and comforts we now enjoy, if it were not for the combined power of these two gifts which were both delivered in that year. However, each rested on a long history of necessary, slow and incremental developments.

A brief recounting of these developments should perhaps begin with the Greeks and the Hebrews. Each of these cultures had one of the earliest written languages, and each had a tradition which greatly valued scholarship. The ancient Greeks gave us the first historical representative government and the original documents that underpin modern philosophy and science. The Hebrews were the first to have a religion of moral theology. Both of these cultures had rule by law. The Greek culture was incorporated into the Roman world, and the Hebrew traditions were expressly tolerated by the Romans. Of course, Christ was a Hebrew, and Christianity is taken to be an extension of the Hebrew traditions and law. In the fourth century the Roman Empire took Christianity as its state religion, and before the empire crumbled, southern England and almost all of Western Europe had become at least nominally Christian. The facts that all of these lands had a tradition of rule by Roman law and shared a respect for the morality expressed in the Bible are crucial to understanding all of world history over the last 1500 years.

For whatever reason, the Roman Empire crumbled before the end of the 5th century. After that, all of the previously Roman territories north of the Alps became what we would now call 'a failed state'. In such conditions, lawlessness abounds and warlords arise. These warlords always busy themselves in two ways: they confiscate some of the wealth of the local population, and they do battle with other people who try to do the same. Eventually, they make alliances with other warlords, and thus developed the system of vassals and the feudal society we associate with the Middle Ages in Europe. These were called the Dark Ages by some later scholars, because of the declines in literacy and the rise in lawlessness. This was a time when castles dotted the countryside, though many of these were little more than dank defensive structures made of stone, sticks and mud (wattle and daub), some were of the more imposing – but still very uncomfortable – moat and bailey variety. However, for the people who lived nearby, the most important structure was not the dwelling, it was the presence of a gallows nearby. This meant that the lord in residence had the power of life and death. These were times when life was truly, "nasty, brutish and short" and Europe's population was subject to the rule of man. Perhaps due to the threat of

Islam, the situation began to change. In 732 Charles (The Hammer) Martell forged alliances and turned back the first Islamic thrust into Europe. His son, known as Charlemagne, later united most of western continental Europe and began to return the rule by law to this area. In 1066 William the Great brought rule by law to England. In 1215 with the signing of the Magna Carta, the English brought something new into the world. This was the rule OF law, meaning that everyone – even the king—was subject to the law. The English later had a civil war and beheaded a king. They capped this with what they called the Bloodless or the Glorious Revolution of 1688, bringing in William of Orange and his wife Mary to be monarchs, and establishing a system by which every English citizen was at least theoretically represented in Parliament, so that there was no taxation imposed without representation. It was for these reasons that the men who gathered to sign the Declaration of Independence felt that their rights as Englishmen were being trampled.

Increases in freedom, self-determination and economic freedom are highly correlated with increased health and reduced mortality. That is true in almost every known circumstance. A male child born in serf-owning 18th century France had a life expectancy of less than 30 years. A male child born in 18th century England (which had no serfs*) had a life expectancy of 34 years. Life expectancy in England had risen to 41 years by 1820, and 50 years by the early 20th century. In 2018 the life expectancy at birth was 81 years in the United Kingdom, 82 years in France and 80 years in the USA.

Since 2018 in this country, life expectancy has declined. It was declining before COVID and declined even faster with COVID. So, if life expectancy and freedom are correlated, does that mean we are becoming less free? Francis Fukuyama wrote a long essay, published several weeks ago in the Wall Street Journal, regarding the declaration Martin Luther King Jr., ”The arc of the moral universe is long, but it bends toward justice.” Fukuyama recounts a story told by Alexis de Tocqueville, “…the story of Madame de Sevigne… [aristocrat in 17th century Paris]… who wrote a lighthearted letter to her daughter noting she had witnessed a tailor being broken on the wheel for stealing a loaf of bread. Tocqueville comments that her amusement at this scene reflected the fact that she simply could not see the tailor as a fellow human being….” Fukuyama goes on to concede that there are still contemporary instances in which individuals, “…are similarly dehumanized and excluded from our circle of human solidarity. But with every passing generation it has become harder to do this….” I wish that I could put as much faith in this statement as the author does. I think that with each passing year it is easier to dehumanize others, as we increasingly interact not with one another, but with virtual representations or even with caricatures.

Since 2018 the increases in longevity which had been attained over the previous 25 years are gone, due to increasing deaths of despair – suicide, drug overdose and murder. Also, the recent rulings of the Supreme Court of the US notwithstanding, our culture seems ever more ready to abandon the foundations on which 1500+ years of progress rest. Let us not forget that this has been tried in the last century by the most brutal totalitarian regimes the world has ever known. The first of these was the communist government in Russia, then the Nazi regime arose in Germany about 20 years later. The deaths resulting from communist governments and the World War started by the Nazis amounted to at least 140 million, and perhaps 180 million people. These dictatorships would not have been ended but for the USA, and the dedication of the men and women of this great country who pledged their lives, fortunes and sacred honor in order that the cause of freedom not perish from the earth. The Declaration of Independence and The Gettysburg Address are two short documents that are well worth re-reading as we remember this country’s striving to fulfil the founders’ dream of a sovereign and independent nation where people are free and equal. It is often alleged that capitalism is amoral and is not as

compassionate as socialism. In answer to this I might suggest reading Adam Smith's first book, The Theory of Moral Sentiments, which is still one of the world's most influential books on the philosophy of morals. However, a better answer would be to interact with someone real; invite someone over for a meal, and have a discussion. Perhaps best is to read the Bible with an open mind, and pray for God's will in your life and in the life of our nation… even if you have done so before, and especially if you haven't.

* For economic reasons, serfdom had largely died out in England before the 16th century and Queen Elizabeth freed the last serfs in 1574.

Our Nation's Struggle Over Abortion July 14, 2022

This is the first of a new series of weekly columns called Medicine, Science and Culture. As I see it, these, are nested subjects, like Russian dolls; medicine is a part of science and that is a part of culture. When I first had the idea for a weekly column with this title I had expected to use the first week or two to define 'science' and 'culture' and also address how medicine relates to these in the modern world. However, the issue of abortion has evolved with such speed and ferocity that I think anyone who can say something which would potentially bring the opposing sides closer together should feel obligated to speak up now, as loudly and clearly as they can. That is my purpose today, so I will ask my readers to be patient as I proceed to use 'medicine, science and culture' without further clarification. Regardless of specific definitions, sexual behaviors and other matters related to reproduction are defining aspects of culture and central aspects of medicine. They are also central aspects of life for most people, at least at one time or another. It is therefore no surprise that choice in reproduction has the potential to become the most contentious issue of the day. That is the backdrop to the recent ruling by the Supreme Court of the United States (SCOTUS, in Dobbs v Jackson) which has overturned previous rulings that were based on the supposition that there was a right to abortion contained within the US Constitution.

I believe history will record that we have recently witnessed one of the greatest struggles ever waged in our country over an issue of civil rights. Just as freeborn white voters argued, campaigned and voted to support the rights of black people in the 19th century, so too did free born voters argue, campaign and vote in support of unborn people in our time. There are many parallels between the two struggles, but we have not yet fought an actual war, nor have we had the assassination of a President because of this issue. However, one of the principal similarities is that the victors are made up of a number of different factions, some of whom incline not at all towards magnanimity in victory. Similarly, many of partisans on the losing side loathe any notion of calling an end to hostilities. It is fortunate for many reasons that we have not faced the succession and then the subjugation of any geographic or political territory. That subjugation was not only military, it was political. The states which had succeeded were, of course, not represented in Congress. There, the victors reacted with moral outrage and intransigence over the fact that their just cause had been so long and bitterly opposed. The assassination of President Lincoln eliminated the nation's last hope of rapid healing in the period after The War. Without wise and prudent leadership from someone like Lincoln, and lacking a functioning government that represented both sides fairly, the victors of that War Between the States sought retribution and called it Reconstruction. This had the effect of promoting a few black men in the South, and sending many self-promoting white men to the South, while humiliating the vast majority of those who had championed the South and were to remain the majority there. This humiliation fueled continuing hostility and resentment that remained palpable in the State of Alabama in the 1980s, when I spent time there. I never heard any native of Alabama speak of the Civil War, but I often heard of the War of Northern Aggression. The backlash against Reconstruction was inevitable, relatively swift and extremely tenacious and violent. To call it the Jim Crow South is much too tame and obscures too many lynchings and other violence, but that is the epithet most commonly given so we will use it. The persistence of Jim Crow is the most embarrassing aspect of American history for me personally, and I believe that it has historically been the greatest barrier to good-will between the races in America. In short, the freeborn white people of the North had won the war, but they lost the peace. They did, however, provide a lesson for us through their negative example.

I have belabored these historical issues not only because the period leading up to the War Between the States has parallels to our struggles over abortion over the last 49+ years, the history of Reconstruction and Jim Crow contain the lesson that polices guided by the most extreme viewpoints of the victors can lead to results that are both unpredictable and destructive. Now that we have seen a (relatively) bloodless victory through the SCOTUS action, let us pray for tolerance and seek the accommodations that will allow all parties to come to agreements that will not violate the moral convictions of the respective parties. On the one hand, victors should remember the old saw, "A man convinced against his will, is of the same opinion still." If we are not able to see that perspective, and we take a stance such as, "What accommodation can there be with murderers!" we may yet have open warfare. For their part, it must be remembered by those who call themselves, 'Pro-Choice' that the bedrock of all of our freedoms, including the exercise of our right to be free in our person, depend upon a functioning democracy based on faithful adherence to our Constitution.

As part of the functioning of our democracy, during the 2008 Presidential race Dr. Rick Warren was host in a debate in which he asked both candidates to say when a new human life begins. Mr. Obama said that to answer that was beyond his pay grade. It is common to hear Christians say, "Life begins at conception." I am not absolutely sure what the word, "conception," means in this context. Here are three things I know. First, scripture does not directly answer the question of when life begins, but it is quite clear and consistent on the subject of where life resides, "The life is in the blood." (Gen 9:4, Lev 17:11 and 14) Deuteronomy 12:23 says, "…the blood is life itself…." (NET) I know of only one milestone that occurs during the course of normal pregnancy that has any scriptural support for marking the beginning of life: onset of blood flow as indicated by a beating heart. This makes 'heartbeat laws' consistent with scripture. In Jeramiah 1:5 God says, "Before I formed you in the womb I knew you, before you were born I set you apart; I appointed you as a prophet to the nations." Do you suppose that God did all of that knowing and appointing after Jeremiah's parents became amorous and before sperm and egg joined? My reading is that God conceived of Jeramiah, giving him a reality and a role, long before he had any sort of a physical body; we should pay more attention to, "before," and, "set apart," than to "womb."

The second thing I know is that if we choose what I will call the extreme position, that human life begins the instant that male and female seed (gametes) join to form a fertilized egg, we have taken a position that does not allow for any accommodation of the parties that were defeated in this most recent SCOTUS case. The extreme position will never be acceptable to those who are likely to be most tenacious and violent in support of their opinions, and if we insist on the extreme position, it is likely to spark the same kind of acrimony and backlash as Reconstruction. Furthermore, it is a position that would probably not get majority votes in Texas or many other places. Insistence on such a position would almost certainly snatch defeat from the jaws of victory. Of course, such arguments cannot hold against moral conviction, but on what does that moral conviction rest? (See paragraph above.)

The third thing is that the extreme position largely rubs out the distinction between birth control and abortion. Some oral contraceptive pills work by preventing successful implantation of a fertilized egg. Of special note is that the same hormones that are used in some birth control pills can be taken so as to cause a woman's reproductive tract to flush out any fertilized or unfertilized egg, resulting in what otherwise seems to be a sudden, early menstrual flow. From the point of view of most family physicians, pediatricians and obstetricians, there should be a rescue method of birth control available for the instances when the primary method fails. This is true for barrier methods, so-called rhythm methods, or

the failure of well-intended abstinence. The combination of hormones just mentioned is sold without prescription. One brand is appropriately named: Plan B. There are other methods that can be quickly and simply used within a couple of weeks of the first missed period, and this is before a heartbeat or blood is present in the embryo.

By framing the issue as one of civil rights I am declaring that I am neutral on the question of abortion, when it does not take the life of a living being, and I believe that the recent SCOTUS decision was sound. However, I will say that my opinions have changed over the years, and – at least in this particular article – I do seek to provide content and context that will influence the opinions of others. My own opinions about abortion extend far beyond what I have written here, and for myself as well as for our nation… it's complicated.

Intellectual Honesty and Times of Upheaval July 21, 2022

We have all been through a period of time in which it seems that literally everything was difficult or changed, and all of us were worried. Most of us have had at least one experience of having contracted COVID, a disease that was entirely unknown three years ago and is in many respects unlike anything we have ever seen previously. Most of us also have lost friends and/or loved ones who have died with this disease. In addition, the responses of governments here and abroad have perhaps been well intentioned, but they appear to have been largely counterproductive. In addition to the massive dislocations attributable to COVID, there are other forces that have for some years been in the process of transforming American society in ways that are unhealthy. To chose just one example, life expectancy in the geographic US had been generally increasing since well before the birth of our nation, until 2014; it has been decreasing since that year. Whenever you read such things, it is natural to expect that the writer is about to suggest that something be done about all of this. These days it seems that we are forever hearing about one or another form of impending doom from which we will be saved if we simply support this or that cause or candidate, because they can surely rise to the implied challenge, "Don't just stand there ... DO SOMETHING!" That is not my purpose today. As an Emergency Physician I know the wisdom of, "Don't just do something, stand there." Standing there for a short time, and using that time to better understand what is taking place, is far superior to intervening in a bad situation that is in the process of correcting itself, or doing something else that will make things worse. What I would like to do this week is to stand here with you for a bit as we try to understand our situation a little better, so that any action we then take will likely do more good than harm.

When a person tries to make sense of a new situation, they often must use narrative to do so. At a minimum that narrative will have a beginning and a progression that arrives at the present set of circumstances. In addition, it is often very tempting to add an additional element to the narrative: a conclusion. As tempting as they are, however, conclusions are very different from the other aspects of narrative, and they contain hidden dangers. Therefore, before trying to use any particular narrative to make sense of our current situation, let us look at one of the current narratives that is driving society. One of the most important conclusion-driven narratives is climate change. We hear such things as this, "The world is gonna end in 12 years if we don't address climate change and your biggest issue is how are we gonna pay for it?" (Representative Alexandria Ocasia-Cortez, aka Sandy Cortez, D., N.Y.). These words were uttered in January 2019 when an interviewer pointed out that diverting trillions of dollars to the proposed Green New Deal would necessarily result in a drastic reduction of resources available for other things, consequently lowering the general standard of living.

Lowering the general standard of living does seem to be the desired conclusion. Climate change was something that I first noticed as a political movement in the late 1970's. At that time the fear was that the earth was cooling, but the conclusion – we need to drastically lower the average standard of living – was the same. As a means of influencing public opinion climate change is a very handy tool because climate is always changing, and there are always fresh details to spice up the narrative. Almost all of these details are not actually aspects of climate at all, but are really weather events. Any particular weather event is almost never a climate event. The only possible exceptions are occurrences which were once common, and have ceased, or events that occur for the first time in hundreds of years. Two illustrative examples occurred during the Roman Empire in Europe. When Romans first occupied the island of Britain the climate was sufficiently warm so that wine grapes were grown there. This coincided

with the highpoint of Rome's power. About 400 years later another sentinel event marked the beginning of the end of Rome's power in Europe, when the climate cooled to the point that the Rhine river froze, allowing barbarian hordes to rush across and overwhelm the frontier garrisons. These two events, and their associations, are telling. On the whole, warmer is economically better than cooler, although for certain locales the opposite will be true. (By the end of the twentieth century the climate had again warmed to the point that England re-developed a wine industry, for the first time since the 13th century.)

A good rule of thumb is to limit the use of the phrase "Climate Change" to events lasting more than 30 years. Another good rule of thumb is to refuse to accept any narrative that is driven by its conclusion. I have three points that I want to make here. The first one is that I will do my best to not tell any narratives that are driven by a conclusion. I want to always be as intellectually honest as possible with my reader. That means I may sometimes sound like I do not believe the Bible, or that I am not a Christian. Just as I do not think that any historian can do justice to the story of Jesus if they start from the conclusion that, "He could not have come to life after having been crucified," I do not think that I can talk about the science of biology if I start from the conclusion that what appear to be the fossils of ancient life forms are actually not what they appear to be. To be clear, I think that Christ having risen from the dead is central, and beliefs about natural history are peripheral, in regard to having life eternal.

Second, I do want to address the issue of Climate Change. It is an important issue for a number of reasons. I have spent considerable time studying climate change, especially how climate has changed in a fairly predictable pattern over the last 3 million years or so, driven by what are known as the Milankovitch cycles* which are the principal drivers of ice-ages and short inter-glacial periods. Apart from these cycles, we are now in a 'long-term warming trend' related to the end of the Little Ice Age that began in the early 14th century and ended in the middle of the 19th century. It is also true that we are burning carbon, derived from life that lived and died millions of years ago and was stored in the Earth's crust, adding to the CO2 levels in the atmosphere and increasing surface temperatures. The Progressive Agenda for Climate Change is a conclusion-driven narrative that uses facts selectively and has co-opted many well-intentioned people. The ancient Greek's word for this type of argument is, "sophistry." The defense against such sophistry is to be better informed. If you are looking for something to do… I highly recommend reading (or listening to) *False Alarm: How Climate Change Panic Costs Us Trillions, Hurts the Poor, and Fails to Fix the Planet* by Bjorn Lomborg. In it, he addresses the issue of a warming planet made warmer by human activity. He shows that there are different options which we can reasonably pursue, and that the so-called Paris Accords are not among these reasonable options. Lomborg explores the various options from the point of view of their effects on people. He also calls out the Progressives for telling the lie that poor people will suffer the most if the Paris Accord goals are not met. He shows that meeting those goals will be impossible in any case, and the poor will suffer the most as a result of any attempt to meet them. Lomborg accepts that changes in climate will require adjustments, but amasses a great amount of data showing that a world that is better off economically will be able to afford those adjustments. He also shows that – as long as we don't waste our money on impossible schemes – we will be able to continue increasing the average standard of living throughout the world, in the same way it has been increasing since the later part of the 20th century. That historic increase has occurred in large part because of the use of fossil fuels. Lomborg advocates for applying technology to use all of our resources more efficiently, while pursuing many possible break-through

technologies that would be revolutionary, just as steam energy revolutionized manufacturing which had previously relied on power from water wheels.

Finally, I want to remind everyone that we have been through a great deal of upheaval, and we need to be kind and tolerant, toward ourselves and others. There is value in spending time in other ways, besides doing. Remember that we call ourselves human beings, not human doings.

* These are cycles based on predictable changes in the effects of solar heating of the Earth due to variations in the Earth's orbit and tilt. It is the interaction of three cycles, lasting roughly twenty thousand, forty thousand and one-hundred thousand years. (https://climate.nasa.gov/news/2948/milankovitch-orbital-cycles-and-their-role-in-earths-climate/)

COVID… again or still? August 4, 2022

No doubt you have heard, “Life is just one damned thing after another!” It’s not true. The truth is that life is one damned thing over and over and over! COVID is a good example of that fact. As of this writing a full 2 years and 7 months have passed since we started talking and worrying about the new coronavirus from China. We have had four waves or peaks of hospitalizations and deaths associated with the virus. Two were before we started naming subvariants, a third peak was associated with Delta and a fourth was associated with Omicron. During the time of Delta, the vaccines still offered some protection, but Omicron was so different from previous variants that vaccination offered no protection against infection. (However, by having had either vaccination or prior infection a person’s immune system has had some exposure to COVID, thereby reducing the likelihood of hospitalization or death.) Now, all of the COVID currently circulating is some sub-variant of Omicron, and we are well into the next rise in cases, heading toward a fifth peak in hospitalizations and deaths due to COVID. This time the sub-variant is mostly one known as BA.5, but there are a minority of cases caused by BA.4. These are subvariants of Omicron which are sufficiently different from previous variants so that immunity gained from prior infections will not prevent infection with BA.4 or BA.5. These are the most important facts which you need to know. However, there are a number of other things that may be useful, and I have tried to gather these together in a succinct fashion in the paragraphs that follow.

At least 20% of colds have been due to coronaviruses, prior to January of 2020. Just like all coronaviruses affecting humans, it can cause disease in certain other animals, such as bats. Just like all viruses, it has a life cycle that is very simple: a viral particle first gains access to a living cell, it binds to the surface of the cell and then sends genetic material into the cell; this genetic material then co-opts the molecular machinery of the cell in order to make proteins and more viral genetic material that is then packaged and sent out of the cell as hundreds or thousands more viral particles. One thing common to almost all viruses is that they have an outer coat or covering, called the ‘envelope’. One thing that makes coronaviruses unique is that their envelope is studded with spikes. It is these spikes that cause the particle to look a little like a crown when viewed with an electron microscope, and from that resemblance came their name (think crown and coronation). It is these spikes that facilitate passage of genetic material into the cell, and much of what is unique about COVID has to do with these. Carl Zimmer wrote about this in the New York Times, and quoted Marc Eloit, a virologist at the Pasteur Institute in Paris, “After a new SARS-CoV-2 virus is created in a cell, its spike protein changes shape, with an effect like spring-loading a crossbow. When the virus then binds to a new cell, the primed spike protein shoots out molecular bolts that draw it into its new host. This shape-shifting region of the spike — known as the furin cleavage site — is crucial to the success of SARS-CoV-2. When scientists have engineered viruses lacking this site, the mutants struggle to replicate in the lungs of lab animals or spread to new hosts.” This is one way that COVID is unlike the previous coronaviruses. Whether for this reason or some other, when COVID first came to our attention is was because of infection in the tissue of multiple regions of the lungs of some victims. The infection then caused a severe inflammatory response, which actually was the cause of much of the damage and death caused by the disease.

Omicron reset things in at least two ways. First, it had a spike protein that was immunologically very different from the previous variants. This meant that it was unaffected by most of the vaccines and antibody treatments that had been effective for previous variants, because these were directed against the spike portion of the viral particle. The immunologic changes were significant enough that even

people who were healthy and had been triple-vaccinated in addition to having recovered from COVID were not immune. That's bad. On the other hand, Omicron tended to behave more like a typical cold virus and to stay mostly in the upper respiratory tract, not often invading lung tissue. That's good! But wait, there's more… Omicron soon gave rise to a subvariant, BA.2, but people who had recovered from the original Omicron (now dubbed BA.1) were almost completely immune from BA.2. Then there was BA.2.12.1, and that was different enough that infection with BA.1 or BA.2 did not confer immunity. This and all subsequent variants have so far continued to exhibit the less lethal behavior, more like a cold. By the time of Omicron there were over-the-counter antigen detection kits that could be purchased (based on local availability) which gave results that were and are quite useful. Some of the most important pieces of information which I hope to impart today has to do with these kits. Antigen detection corelates pretty well with infectivity, but there is a substantial false negative rate. A positive test with one of these self-collection tests means, with almost 100% accuracy, that the person has COVID and is infectious. One negative test means that they probably don't have COVID, and therefore can't pass it on. However, there is about a 20% chance that the negative result is a 'false negative'. It is for this reason that the instructions always indicate that every test that is initially negative must be repeated a day or two later. It turns out that two independent tests that each have a 20% false negative rate, when taken individually, have a false negative rate of 20% x 20% = 4%. (If you were to do 3 such tests, and they were all independent, the false negative rate would be 20% x 20% x 20% = 0.8%.) Also, about the time of Omicron, the CDC seemed to give up all pretense of providing unbiased information and recommendations. They reduced the length of time required for isolation after a positive test, from 10 to 5 days (counting from onset of symptoms). They did say that people should continue to isolate if they still were running fever or their symptoms were not improving, and they should wear a mask when around others, until at least 10 days after onset of symptoms. There was no new evidence that indicated this change was appropriate, and there is reason to believe that the newer variants remain infectious even longer than did the original types on which the previous isolation guidelines were based. The reasons given for shortening time of isolation all had to do with managing public behavior and perceptions. On the topic of ending isolation, I advise that people may go out after the 5th day, if they are getting better and have no fever, but they should wear a mask 100% of the time, when around people who are subject to infection. Further I advise that they use an antigen test at 10 and 14 days after infection, and continue to wear a mask until the 14th day. If the tests on both of these days is negative, they need not continue with mask use. If one of these tests is positive, they should continue to wear a mask and test every 24 to 48 hours, until two tests in a row are negative.

There is at least one new vaccine that will soon be available: Novavax. I am very hopeful about this, and I advise that it be considered by anyone who needs a COVID vaccine for any reason. I say this because it is entirely different from the vaccines that have been previously available for COVID. Until now the COVID vaccines available in the US have been based on a strategy of co-opting the molecular machinery of the cells of the person receiving the vaccine, to make spike protein which then acts as the immunogenic stimulus for their body to create antibodies. Moderna and Pfizer use messenger RNA (mRNA), and the Jansen/Johnson & Johnson vaccines use DNA to create this spike protein, or a portion of that protein. The Novavax vaccine does not use DNA or RNA, it uses portions of proteins that appear on the spike protein and also on another part of the viral envelope: Receptor Binding Domain or RBD. The RBD has not undergone nearly as much change as has the spike protein, so it is reasonable to believe that Novavax will continue to be effective, even though the spike protein of current and future variants are

very different from the spike protein used to create all of the available vaccines. Novavax has received the go-ahead from FDA and CDC with Emergency Use Authorization (EUA). The dose is 0.5 ml, repeated in 3 weeks, in adults. This vaccine and another one – Covaxin – use an 'adjuvant' to increase the bodies immunogenic response to portions of proteins found on the outside of the SAR-CoV2 viral particle. Covaxin has proteins from multiple sites on the outside of the viral particle. Note: Myocarditis (inflammation of the heart muscle) is a reported occurrence with vaccines for many conditions; it has been reported in young adults taking any of the available COVID vaccines, including Novavax.

There are treatments for those who have mild or moderate disease and are at high risk for complications. Paxlovid was the first oral medication authorized by the FDA for treatment of COVID-19 after the EUA for hydroxychloroquine was revoked on June 15, 2020. Paxlovid was studied during the time of the original COVID outbreak. There were 10 COVID deaths in the control group, and none in the treatment group of the same size. There was also marked reduction in hospitalizations (almost 90% fewer), and there were no serious side effects. Paxlovid actually is a combination of two medications, nirmatrelvir (PF-07321332) and ritonavir (currently part of some regimens used to treat HIV). It has been found that some portion of those who take this drug will resolve their symptoms and test negative for the antigen at the end of 5 days, but will have a positive antigen test a few days later. A smaller number will actually become symptomatic again. There is not good data on the numbers of these, but I have heard up to 40% will revert to a positive antigen test, after finishing treatment with a negative test. This is one reason I have suggested the schedule above, to be used at the end of isolation. Paxlovid requires the use of two drugs in combination, the purpose of the second drug is to slow down the metabolism of the first drug, but it also slows down the metabolism and clearing of many other drugs, including statin drugs used to prevent heart disease. For this reason, statins and many other drugs must be stopped while taking Paxlovid; Also, careful attention must be given to kidney function. It is not to be prescribed to hospitalized patients, though patients taking the drug at the time of admission may continue with their course of treatment, and it is not to be used in patients under 12 years or 40 kg. (or 88 lbs.). Finally, it gives a bad taste in the mouth with many people, myself included. It does work, however. Molnupiravir is a drug which was being developed for seasonal flu, marketed by Merck, and it received an EUA for use in COVID one day following the EUA for Paxlovid. Like Paxlovid, it is taken twice daily for 5 days and it is not to be prescribed for patients who are in the hospital, but patients who are on the drug may continue with their course if they require admission to the hospital. It is not to be used in anyone younger than 18. The FDA has advised that this drug should be used only if other authorized treatments are unavailable or contraindicated. Remdesivir is an IV medication that works by interfering with the viral genetic replication process, and it must be given daily for 3 days. It may be used in patients in or out of the hospital. Bebtelovimab is a monoclonal antibody given in a single IV infusion that works by blocking the binding of the spike protein. All of these treatments are effective against all known variants, and they all work better the earlier they are given. If you think there is any chance that you have COVID and you have any of the factors that put you at high risk, including previous severe infection with COVID, test early and repeat if negative. If positive, contact your provider for instructions.

Monkeypox August 11, 2022

NOTE: This article is more clinical than most of mine, and it contains language that may be offensive to some. Please simply take what you can use, and leave the rest.

Just like coronavirus, monkeypox is a viral disease of animals that can sometimes infect humans. Until now, this has been a relatively rare disease, confined to a few countries. The recent outbreak of monkeypox is related to its sudden appearance in Europe in May of this year, among men who have sex with men (MSM). This year the countries that typically see a few cases are seeing more, 243 as of this writing, but the countries that usually never see any have documented 16,593 cases. (This is the data as of 5 pm on July 22, 2022. It is from the CDC website (https://www.cdc.gov/poxvirus/monkeypox/response/2022/world-map.html) In addition, the Democratic Republic of Congo is reporting that the geographic range of cases is suddenly much wider this year than it has been in the past, extending into the highlands for the first time. This set of facts is disturbing, in light of the fact that a coronavirus which was unknown in the summer of 2019 has now infected and upended the life of practically everyone in the country, and killed millions around the world.

Some of the things that we knew about monkeypox before this year are that there are two types, the Congo variety (mortality about 10% in humans) and the West Africa variety (mortality about 1% in humans). It requires intimate contact. This can be from secretions or large respiratory droplets, but usually it is from direct contact with material from the pox lesion. This contact can be direct or from towels/blankets/razors etc. A break in the skin at the site of the contact is not required, but it does allow the virus to infect much more efficiently. After the virus gains entry there is a 1 to 7 week wait until the first symptoms appear, and these are called prodromal symptoms, and they typically consist of fever, malaise and swelling of lymph nodes. A few days later a rash begins to appear. The skin rash is often preceded by what is called an enanthem or rash-like lesion in the mouth. The rash progresses from a small bump on the skin to a deep, painful, rubbery, pus filled blister (typically 1 to 10 millimeters in diameter) and then to a crusted sore which resolves in 1 to 2 weeks. This may or may not leave a scar. Often the rubbery lesion will be 'umbilicated', meaning that it has a depression in the center, like a belly button. Any of these lesions, from the bump through the crust, can transmit the disease. The rash often appears first at the site of inoculation, then elsewhere. There are often lesions in different stages on the same patient. When a person contracts the disease and survives, they are expected to have life-long immunity. Vaccination against smallpox within the last 3 years is believed to provide good immunity from monkeypox infection, and there is some protection even many decades after vaccination.

The current outbreak is most closely related to the less lethal West African type. A virus collected from a patient in Massachusetts has been genetically sequenced, and it differs from one of the previously known West African sub-types (from 2018) by about 100 of the 197,000+ nucleotide base pairs which constitute the viral genome. Clinically, it has a somewhat different disease course. For one thing, the rash develops faster. One case that was presented in a COCA (Clinical Outreach and Communication Activity) webinar by the CDC followed a case in which a man was exposed on May 29, and on June 2 he noted some bumps on his penis, which turned out to be the beginning of a very painful, moderately severe case of monkeypox. This case also demonstrates another feature of the current outbreak, in that the rash often develops before the prodromal symptoms or even in the absence of these symptoms. This patient did recover fully, and his case was instructive in yet another way. He had intimate contact

with another man on June 1, and this man did not develop the disease. Clinicians should consider going to the CDC website to find and view the one-hour COCA webinar from June 29, if they want further information. ln the initial May outbreak over 98% of the cases involved MSM, and many of the subsequent cases have had that same set of risk factors. However, as time goes on, more and more people without this life-style have been diagnosed. This is one of the reasons why this column is being presented at this time. The fact that monkeypox is a topic for discussion at all is directly due to an exponential spread among MSM, but the messaging from the federal government, as well as that from most media outlets, has completely ignored the connection to this life-style. In the case of monkeypox there actually does seem to be some effort to insist that people 'don't say gay' even though any attempt to deliver a clear public health message practically demands it. On the other hand, it is essential that providers of healthcare services not assume monkeypox cases will be limited to this population, Indeed, there is increasing spread of the disease among persons who do not have a homosexual life-style, and it is foolhardy to believe that the disease cannot continue to spread outside of the gay community. All of us have learned a lot more than we ever thought we would want to know about the behavior of viruses, and so it may strike my reader as obvious when I say this: a virus will continue to spread if (on average) each person who contracts the disease spreads it to one or more other people; if not, the disease will eventually disappear. That is what we must bear in mind.

There are countermeasures against monkeypox. There are two smallpox vaccines that can be used to prevent the disease. These vaccines differ from the COVID vaccines in many ways, and the most important way that they differ is that we know these vaccines actually prevent a fully vaccinated person from getting sick or passing on the disease, after being exposed to that disease. JYNNEOS is a live virus vaccine based on the cowpox virus (vaccinia), which was licensed by the FDA in September 2019 and is indicated for the prevention of smallpox and monkeypox disease in persons over 18 y/o. The CDC is developing an Expanded Access Investigational New Drug Protocol (EAINDP) to allow use in pediatric population against monkeypox. JYNNEOS is given as two subcutaneous injections, 28 days apart. The virus cannot reproduce, so there is no lesion that develops at the site of injection. The other vaccine is ACAM2000, also a live vaccinia virus, which was licensed by the FDA in August 2007. The CDC has an EAINDP to allow its use against monkeypox during an outbreak. Inoculation with ACAM2000 is like the smallpox vaccine used widely in the US in years past, in which multiple shallow needle sticks provide entry for the inoculum, and this leads to the development of a lesion or sore that crusts. This lesion shows that the vaccination 'took' but because the ACAM2000 – like the Dryvax vaccine used to eradicate smallpox – is a live virus which can replicate, the lesion can also spread to other people or other parts of the body. There is also a risk of myopericarditis of 5.7 per 1000 first-time recipients. (Myopericarditis, or inflammation of the heart muscle, has not been reported with JYNNEOS.) Historically, vaccination after exposure has been effective in preventing monkeypox, but I am not convinced that this will be continue to be the case, given how rapidly the disease is developing in the current outbreak. There are also treatments for monkeypox. Tecovirimat (aka TPOXX) is the principal antiviral medication that is currently being used for monkeypox. It is available in oral and IV formulations and is approved for smallpox in adults and pediatrics above 3 kg in weight. The CDC holds an EAINDP for use in monkeypox. Another antiviral, cidofovir, and intravenous immunoglobulin are two other possible treatments. All of these treatments and vaccines are available in the Strategic National Stockpile, but most are in limited supply. The supply of ACAM2000 is not particularly limited, as the Strategic National Stockpile has more than 100 million doses of this, and more vaccine could be manufactured well before these were depleted. No smallpox vaccinations are available to the general public (outside of certain specific indications).

Now, for the two most important elements for me as a practicing physician: diagnosis and prognosis. In order to make the diagnosis, it is important to completely examine every person suspected of having the disease. It is important to look in the ears and the mouth, as well as carefully examine the eyes, armpits, genitals and every other part of the body, for the rash. Press—with a gloved or double-gloved finger – on one or more suspicious lesion, and collect specimens from at least two sites. Full Personal Protective Equipment (PPE) should be worn. Specimens are to be collected from the surface of an intact pustule, either from the surface or from fluid, if the pustule is unroofed. Sterile polyester, nylon or Dacron swabs (not cotton) are to be used. The CDC recommends selecting the one lesion that appears most typical of monkeypox, then collecting samples on 2 swabs from the same lesion by vigorously swabbing with each swab. These need then to be placed in a sterile plastic transport tube, without any liquid, sealed and sent for study. The CDC further advises that this process be repeated on at least one more suspicious lesion that has a different appearance or is in a different site. A handful of laboratories, including Lab Corp and Quest, are processing the specimens. The laboratories at both hospitals in Runnels County are prepared to handle such specimens. The laboratories return results as Positive, Negative or QNS (Quantity Not Sufficient for testing). The positive results are reported to the ordering provider or facility as positive for pox virus, but they are only 'presumptive positives' for monkeypox. The CDC is insisting that only they can determine if a positive result represents a case of monkeypox. However, a positive test should be treated as positive for monkeypox, as there are no other viruses in the US that could cause the test to be falsely positive. As far as prognosis, the recent cases have almost all recovered with few or no residual problems. I have not been able to learn how many of the lesions led to scarring, but it is important to remember that most of the cases have been in young men who have been otherwise healthy, apart from a history of multiple sexually transmitted infections (STIs). Older people or the very young may have a different clinical course.

In closing, I would like to say that it is important to look for this disease especially in those at high risk for STIs, but also remember that it can show up in other people as well. I am very concerned about monkeypox because it is not behaving as it has in the past, the rash and therefore the infectious stage of the disease is appearing prior to the usual warning signs of illness, such as fever. I previously referred to the capacity to spread prior to the onset of symptoms as "COVID's superpower." My greatest fear is that this new variety of monkeypox may have that superpower as well.

Medicine, Science and Culture article for Thanksgiving 2022

I am blessed, and I am grateful. No doubt there will be millions of blog posts, YouTube videos and Facebook posts this week about Thanksgiving and about giving thanks. I am glad for that, and for my part, I am taking this opportunity to express my personal gratitude and to encourage others to share in the attitude of gratitude. We do have so very much for which to be grateful, and gratitude actually has measurable positive effects on our individual health. It is an underappreciated fact that how healthy we actually are is dependent on several things besides our genetics and our physiology. Our attitude and our emotions play a major part in health outcomes. Also, our circumstances are very important. We have known for many years, based on studies done in the United Kingdom (where class distinctions are more clearly marked than here in America), that people in the lower classes did not live as long as those in the upper classes, even if they had the same access to healthcare, food and the other necessities of life. We also know that married people live longer and healthier lives than single people, all other things being equal, and children raised in a home with two parents live longer than children without two parents in the home. The reasons for these differences are being studied, and we have some of the answers which are fascinating. However, it is important that we apply our knowledge of these facts, rather than be sidetracked by wondering how or why these things are true. How we feel, emotionally, affects our health. The health of our community affects our personal health. How we raise our children, and what they learn in school affects their health.

Having gratitude also has other effects. It leads to reduced loneliness and it increases the likelihood that a person will give assistance to another person who is in need. Gratitude also increases the chance that someone receiving aid will reciprocate or give aid to yet another person who is in need. These are the things that are the heart of my message today. Having a special time for reflection and for giving thanks is a wonderful tradition. In our country the time we call ‘the holiday season’ begins with Thanksgiving, and then the focus turns to giving. This includes the giving of gifts at Christmas and Hanukah as well as charitable giving. Beginning the week of Thanksgiving you will start to see Salvation Army workers and volunteers ringing bells and inviting passersby to drop a donation into the Salvation Army kettle. The money that goes into that kettle stays in the community where the donation occurs. That is a crucial piece of information that I did not have until this year. In Ballinger it is the Ballinger Ministerial Alliance that is responsible for collecting and using those donations. They use it to help people in need in our community, buying medication, helping with utilities, fuel, car repairs and a multitude of other needs.

It is not enough to desire to do what is right, and it’s not enough to simply avoid doing what is wrong. What we are called to do is to love others. In particular we are to “love our neighbor.” This is one of the Great Commandments of both the Old and New Testaments of the Christian Bible (Lev 19:18, Mk 12:31). It has also been the central ethical message of the generation called ‘baby boomers’ since the 1960’s, though this seems to have been forgotten by many, as fear or hateful rhetoric evidently generate more reposts on social media. Love means to seek the good of and for the one who is loved. In a very concrete sense, it means giving them what they need, when they are in need. We are very often unable to see what our neighbors need or want, and even more often we are unable to distinguish need from want. The literature – both the research literate and Christian scripture – clearly demonstrate that aiding another person is beneficial to the one who gives aid. When we provide assistance, what matters most for our ultimate good is our intention (what is done should be done in love). What matters most to our neighbor is the timing and the nature of the act or gift. I believe that it is also important that the

recipient also understand that this is something being done neighbor-to-neighbor, and there is no implication of hierarchy. That is to say, it is done with the mutual understanding that the one receiving will not always need to be receiving, that they are or will one day be able to contribute to the wellbeing of their neighbors, because they have worth and value, which is bestowed by a loving God. I believe that we all, in our heart of hearts, do indeed desire to be, "… a friend among friends, a worker among workers, one in a family."

At the Health and Wellness Coalition for Runnels County our motto is: Nobody can do everything, but everybody can do something. The Ballinger Ministerial Alliance is a member of the Coalition, and together we help our neighbors in need. Because they call on us and tell us what they need, we are able to give them what they need, when they need it. We do our best to use our resources judiciously and to see that assistance does not become 'enabling', and we are developing ways so that our motto can be actualized by everyone we touch. When you see us ringing bells with our kettle, please give generously with a loving heart. Everyone can do something.

If you have questions, need assistance or wish to help others visit our website, call us at (325) 315-0723 or visit us at the Ballinger Cares Hugh Wade Center at 402 Crosson Ave. in Ballinger, Texas.

Bradly Bundrant MD, MPH

www.HAWC4RC.org.

Advent, a time for looking back and for looking forward Dec. 1, 2022

There are cycles in nature and in life. The cycles of the Christian calendar are reflective of this, and now (the first week of Advent) is when we begin to look back as well as to look forward.

The longer I practice medicine, the more convinced I become that the nature versus nurture argument misses the point entirely. I have written about a dozen articles this year, mostly on things that seemed to be the most important topics at the time. Two articles dealt with COVID, one was on Monkeypox and two were overviews of the causes of death nationally and then locally. The rest of the articles all dealt with aspects of health that were consequences of conscious decisions on the part of someone. They had to do with the war in Ukraine, (The World Changed Completely Forever; February 28, 2022), suicide, Naomi Judd and others (Healthy Rhythms and Margin; May 5, 2022), mass shootings (What in the world is going on?; June 2-23, 2022), the health benefits that go along with increasing freedom throughout history (Rule by Men or Rule of Law; July 7, 2022), abortion (Our Nation's Struggle Over Abortion; July 14, 2022), climate change (Intellectual Honesty and Times of Upheaval; July 21, 2022) and the value of having gratitude and of being of service to others. (Medicine, Science and Culture article for Thanksgiving 2022; November 23, 2022). These all highlighted how critical human decisions are, in determining one's own health and the health of others in the world. Even the articles on Monkeypox and the overviews of the leading causes of death showed that most death and disease are the result of conscious human choices. Now, it is true that some of the causes of suffering and death are the choices of other people, such as political actors in the case of the war in Ukraine, or the shooter in the tragedy in Uvalde. However, there still are additional people who played a part in the unfolding of those situations. For example, the price of oil was intentionally made high by US governmental policy, to combat climate change, and without this additional income Russian might not have attacked Ukraine. The response in Uvalde played a large part in determining the death total there, as did the failure to recognize and adequately respond to the warning signs exhibited by the shooter in the days, months and years prior to the shooting. Perhaps even more to the point, there is no doubt that the shooter's life and outlook were shaped by a series of Adverse Childhood Experiences (see Another type of ACE, Adverse Childhood Experiences; March 5, 2018). One point of looking back is to see what is important, so as to pay more attention to these things going forward. Another related point is to recognize that … it's complicated. Taken together, these points indicate that we should try to pick out the important positives and negatives, and we should try to keep it very simple.

The reader is encouraged to make their own assessments, but my distillation of what is important includes these things: Suffering is perhaps the greatest negative aspect in the world. The positives include gratitude, optimism and joy as well as the signature element of this first week of Advent: hope. These are things that can be shared or solitary. There are other things that necessarily involve another: There are the offenses of theft, murder, deceit and adultery, but demeaning, dominating or otherwise abusing another person – especially a child – are even more widespread and together these things diminish the lives of everyone. The positive elements between people include forgiveness, honest communication, teaching and other forms of service as well as love. Perhaps you noted that suffering and murder were both listed in the negative column, but death was not. That is not an oversight. Death by murder or suicide are offenses and a source of continuing suffering for the people who are left, because of the element of intention to kill. I do not regard the death of our human body as an evil or a foe to be overcome, because all of us will die. Our efforts should be toward molding the circumstances

and the timing of our death. We should accept that there is such a thing as ‘a good death’ on these terms. If we try to defeat death, we will lose.

Although I have tried to sift out and highlight only the important things, I believe that we can actually collapse them still further. On the negative side we have the deeds that spring from selfish wanting, and on the positive side are the fruits of love and service. I have hope that as a society, or at least as a community, we will go forward with a vision that will help us to desire the good, and develop the habits that go along with love and service. Proverbs says, “without a vision, the people perish.”

I expect that I will have columns in 2023 that deal with such subjects as diabetes, liver disease, sleep, the common cold and other medical topics, but I also hope to focus on the importance of coming together as a community as well as managing our time, attention and even our desires.

If you would like to view any of the articles mentioned above go to www.HAWC4RC.org, You can give me feedback or input by emailing bbundrant@hawc4rc.org.

Bradly Bundrant MD, MPH

Flu, RSV and Other Bad Colds December 8, 2022

Nothing has been the same since COVID hit in 2020, and this year we are having an unusual amount of illness due to influenza and bad colds. All of these respiratory illnesses become more prevalent as the weather cools, and usually the number of office visits for flu-like symptoms begins to rise during October. Typically, by sometime during November or early December about 2.5% of all office visits to a healthcare provider are because of flu-like symptoms. This year we were already at that threshold level of 2.5% of office visits on October 1, and since then the percentage has increased sharply. During the most recent week these visits accounted for 7.5% of all visits. This is as high or higher than the peak reached in any recent year, going back to at least the 2017-2018 season. While not all of the people who present with flu-like symptoms actually have influenza, we know that influenza is widespread throughout Texas, and it is worse in our region than in Texas as a whole.

Respiratory Syncytial Virus (RSV) is an important cause of illness in young children. Most (68%) infants are infected in the first year of life and nearly all (97%) by age 2. For most it is just another cold, or maybe a bad cold. However, according to the CDC, 2-3% of all infants will be hospitalized for RSV. It is the leading cause of hospitalization of children less than 1 y/o in this country, and typically hospitalizations for this disease peak at between 3.5 and 7 per 100,000 children. The peak is usually reached in December or January. This year the national data reflects the hospitalization rate was already about 6/100K at the end of September. And it was rising rapidly. By the end of October, it was more than 13/100K. It may have peaked, dropping to just under 12/100K the next week (the last week for which we have data). RSV also can cause severe disease in elderly persons as well as those with emphysema or other serious underlying conditions. It can also cause wheezing in many people who have never had asthma or wheezing previously.

Of course, we still have COVID. According to the Johns Hopkins website the number of daily cases and deaths has risen sharply since a recent low in mid-October. At that time the 7-day average was about 35,000 new cases and 358 COVID deaths each day (reported as of Oct. 16, 2022). Now (as of Dec. 1, 2022) the numbers are 77,710 and 423, respectively. Almost all of these are due to a sub-variant of the Omicron variety. For some perspective, the absolute low recorded on the Johns Hopkins site, after the initial rise in cases, was in the summer of 2021 when an average of 2,318 cases and 224 deaths per day were recorded.

One of the things that has changed since 2020 is the widespread deployment of PCR testing technology into community hospitals. With this technology, in a matter of hours we can usually determine which germ is causing a person's respiratory illness. These PCR tests can identify 20 or more different germs with just a single sample. These tests are usually used after we get negative results from the rapid tests that are used to screen for flu, COVID or RSV. While it is not worthwhile to use PCR testing in every case, when someone does have severe respiratory symptoms and screens negative for COVID and flu, we can often discover the specific cause of their illness. In my experience we commonly see that the PCR results do actually show the cause to be COVID, and less commonly influenza, after negative screens. Also, I often see bad chest cold symptoms due to parainfluenza (the most common cause of croup in children), or what is classed as rhinovirus/enterovirus. This last entity is actually a very large group of viruses that can cause a whole range of diseases in addition to cough and other cold symptoms.

The important things to know about respiratory illness are what you need to do, when to seek treatment and where to get more information. Pulse oximeters have become readily available, since COVID, and I advise that everyone – especially parents – have one of these as well as a good thermometer. Seek immediate treatment for the following:

- Anyone who is having trouble breathing, beyond just nasal congestion, may need to be seen. That definitely includes anyone whose lips or finger tips turn blue or gray, or whose chest wall retracts or 'sucks in' with every breath, showing the outline of the ribs or the bones at the top of the chest. It also includes anyone who normally has no breathing problems, but has a pulse oximeter reading that remains less than 92% when sitting quietly.
- Any child less than 12 weeks old who has a fever
- Anyone whose fever cannot be gotten lower than 104 degrees F
- Anyone with an underlying breathing condition or other serious health condition who develops a respiratory illness or cough.

There are treatments available to be prescribed for people at high risk who are sick with flu or COVID, and the earlier in the course of the disease that treatment is started, the better. Finally, don't go to work or school if you feel sick or if you have had a fever in the last 24 hours. If you are coughing, please consider wearing a surgical mask and not shaking hands. These measures will reduce the chance that you will spread your illness to other people.

For more information see Texas Department of State Health Services (https://dshs.texas.gov), the Johns Hopkins Coronavirus Resource Center C:\Users\drbundrant\Desktop\HAWC Articles Folder\COVID-19 Map - Johns Hopkins Coronavirus Resource Center (jhu.edu)(https://coronavirus.jhu.edu) or Articles by Dr. B on the HAWC for RC website (www.hawc4rc.org).

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Why Do I HURT Like This? Part 1 December 15, 2022

Pain is a part of everyone's life. There is a straightforward reason for this: pain carries information that something is wrong, and pain also provides the motivation to act on that information. Although these basic facts may seem simple, it turns out that pain and the treatment of pain are not simple at all! Very often, the things that seem as though they should help turn out to make things worse, and the things that actually help may cause more pain for a short time. That is really the crux of the problem, and there is much more to say than what I have time and space to touch on. However, because pain touches all of us, and because the abuse of the 'pain killer' fentanyl is the leading cause of death for Americans age 18-45, I am convinced that what I can say here is worthwhile.

Perhaps the most basic distinction that can be made, in regard to pain, is acute versus chronic pain. Acute pain is pain that has come on recently and is due to an injury or an event that has occurred within the body. These events may be infections, like the pain of strep throat; it can be from the rapid growth of an organ that stretches the surrounding tissue. These are the most common, but there are many other causes of acute pain in the body. Acute pain is important because it is carrying new and important information regarding the body, indicating that something is wrong. Usually, if the thing that is wrong is corrected, such as a broken bone being properly splinted, the pain will improve substantially. Pain has done its job in that case. We might even call this good pain. Chronic pain, on the other hand, is pain resulting from injuries or other events in the past. (Usually we use 3 months duration as a cutoff to distinguish chronic from acute pain.) Nerve pain (neuropathy) is a common cause of chronic pain, for example, and that is due to injury to nerves which began to affect those nerves many months or years ago and may or may not be ongoing. In most cases, medicine cannot correct the problem causing the pain, so there is nothing good about this pain.

In the case of acute pain or chronic pain, it is usually the pain – and not the underlying problem causing the pain – which is the reason people seek medical attention for their problem. Therefore, good medical care for these cases always requires some treatment of that pain. Acute pain is easier to treat for many reasons. First, the cause can usually be identified and at least partially corrected. In the case of strep throat, the correction involves a treatment with antibiotics, and the healing effects can reliably be expected to occur in a day or two. Just the knowledge of what the problem is (firm diagnosis), and the assurance that it will get better soon (good prognosis), are great comforts to patient and family. Even though doctors often fail to address the actual pain, with advice about salt water gargle or use of throat lozenges for example, patients are usually quite pleased if they simply get a prescription (treatment) for the underlying condition. When we do treat acute pain, such as giving a medication like morphine or hydrocodone (opioid medications) for a fracture after we splint it, there is good evidence that that medication will help and not harm the patient.

When people seek care for chronic pain the situation is entirely different. In the first place, since the event causing the pain occurred (or at least started) months or years ago, it is often difficult to determine exactly what is causing the pain. It is therefore often difficult to give a firm diagnosis*, at least initially. Secondly, because the pain has been in place for a long time, even if the original problem

can be corrected, things may have taken place in the body which may cause the pain to continue despite this corrective procedure. The reasons for this are complex and still somewhat obscure (we will explore some of these in a future column), but the truth is that chronic pain differs from acute pain in part because even when we do have a 'firm diagnosis' we really don't know what the future holds. We cannot give a good prognosis. Finally, the treatment of chronic pain is different because we cannot be sure that our treatments will not do more harm than good. One way to see this is to look at the amount of disability due to back pain in the developed world, compared to the parts of the world where there is little access to modern medical care. In our society there are lots of people who are completely disabled due to low back pain, and they often believe that their condition is due to some work-related physical activity. However, in low-income countries, where the physical demands of work are much greater, hardly anyone is completely disabled due to low back pain. There are many components that contribute to this, but at least one component is that our treatments sometimes do more harm than good. In particular, treatment with opioid medications carries potential dangers along with its potential benefits, and those dangers increase greatly when treatment extends beyond a few weeks. We will explore these dangers as well as some of the other complexities of pain in the near future.

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* The term diagnosis derives from Greek, and it means thorough or all-encompassing (*dia*) knowledge (gnosis). The implication is that to know the diagnosis means to know all one needs to know about the condition. That includes knowing how to treat it and what the progression of the condition will be in the future (prognosis).

Why Bother? Christmas of 2022

What, really, is worthwhile or important? We are heading into a period during which people spend a lot of time doing things that they don't normally do. We are getting ready for Christmas, going to holiday parties and celebrating the new year. For people like me who spend time watching cable news there will be a lot of programing devoted to looking back at, "The Most Important Events and People in 2022," followed in short order by programing advising us as to what we should expect in 2023 and what we should do about it. Much of this seems trivial, if not useless, especially what is served up as 'news'.

Why bother doing anything? That is a question which someone asked me in all seriousness, just two days ago. The first thing I thought of is that although this question was asked out of a kind of despair, it does have a positive element. Supposedly Socrates said, "The unexamined life is not worth living," and this question came from a person examining their life. We shall return to Socrates's comment in a moment. The response that I gave is, "Anything you can do to reduce human suffering is worthwhile." This answer is based on observations by Viktor Frankl, a Jewish psychiatrist imprisoned by the Nazis, who witnessed some of the most horrific and depraved acts imaginable. He survived, and as he was doing so he developed insights into the human condition which are extremely pertinent. I advise that everyone read his short book, Man's Search for Meaning (192 pages in paperback, $7.49 on Amazon). According to Frankl, there are three sources of meaning in life: work (doing something significant), love (caring deeply for another; intending always to act in the best interest of the beloved) and suffering (typically this is best exemplified by one who accepts suffering consciously, while remaining, "… brave, dignified and unselfish").

Of the three paths to a meaningful life, most of us would choose one of the first two, and preferably to have a great love that would give our life meaning. Even so, a life that is given meaning by a great love can be even richer when one does meaningful work. (I speak as one who is blessed by having a family and living with the love of my life for the past 27 years. I have seen how love becomes richer and deeper with time.) The question then is, what is meaningful work? My answer is based on my belief that suffering and love are two things that are certainly real, and if we can work to diminish the suffering or increase the love that is present in the world, we have accomplished meaningful work. When I say love and suffering are 'real' I mean that they are not constructs of society or our imagination. Money and wealth, for example, are based on mutual agreement. If other people cease to recognize money as valuable it no longer functions as money, and 'wealth' is shown to have never had more than a semblance of reality. On the other hand, the person suffering or the person who loves deeply will still have suffering or love, regardless of what anyone else says or thinks.

That is one reason I do what I do. In my work as a physician I will always place the relief of suffering ahead of other duties that crowd my schedule. Other things that are real include contemplation, mindfulness/meditation and the examined life. I concluded some years ago that Socrates surely did not mean what has been handed down in the translation, "The unexamined life is not worth living," because there are other things that make life worth living. I thought he might have said something more like, "The unexamined life is not a fully mature human life." After I was asked the question mentioned in the second paragraph above, I decided to spend a little time in order to look into the original Greek wording. I found that the phrase was uttered by Socrates during the sentencing phase of his trial (for impiety, and corrupting the youth of Athens). I also learned that a better translation is, "… the unexamined life is not [a life] to be lived by man." (*Apology* 37e-38a, https://tomblackson.com/Ancient/transtoc.html). I do think that time spent mindfully is always worthwhile, and I believe writing and reading such things as this are also worthwhile.

By working together through our churches and civic organizations we can make a difference. The Health and Wellness Coalition for Runnels County is a local group that is devoted to reducing the suffering of people in Runnels County. You can learn more at hawc4rc.org.

Muscle Pain, Part 2 of “HURT” December 29, 2022

A lot of the pain of normal life is muscle pain. When we have a painful bruise, it is usually the muscle that is bruised. When we engage in exercise that exceeds what we have been used to, our muscles often hurt for the next few days. When we ‘sleep wrong’, it is the muscles that let us know that. In addition to these types of acute pain, muscle pain is actually the cause of a great deal of chronic pain. In an earlier article it was mentioned that very often when pain has become chronic, “even if the original problem can be corrected, things may have taken place in the body which may cause the pain to continue despite this corrective procedure.” The development of muscle pain, in addition to whatever original problem existed, is a very common occurrence. Many authorities flatly state that muscle pain is a significant factor for the majority of patients who have chronic pain, and in many of these patients it is the most important factor.

The type of muscle pain that is important in chronic pain is usually known as myofascial pain, and it is characterized by what are known as trigger points. These terms are unfortunate, because the term “myofascial” seems similar to “fibromyalgia” which is a very different condition, though it also is characterized by trigger points, but of a different type. I apologize for the terms, and I won’t say any more about fibromyalgia here.

Myofascial pain occurs when something disrupts or otherwise interferes with the normal function of a muscle. Usually this is because we do something that causes the muscle to work harder or differently than it is accustomed to. A common occurrence is that someone will be ill or anxious and that will cause them to breath in an abnormal fashion, overusing muscles known as accessory muscles of breathing. In these cases, instead of relying on the diaphragm and the muscles in the chest, they will unconsciously use some of the muscles in the neck to help expand the chest. These muscles are not equipped to work in a forceful way for an extended period of time. What often happens in these cases is that the neck muscles respond by developing taut bands of muscle tissue centered, more or less, around a trigger point. The overall result is that the whole muscle tends to be shorter than normal. The trigger point may or may not cause pain at that location. However, it will always be tender if pressure is applied to it, and it will often make itself known by causing pain at a location some distance away. For the neck muscles, that location is often in the head, ear or face. However, the pain can also be more distant, and it can be accompanied by tingling, weakness and swelling. More on that later, but here I want to highlight two other things. First, the fact that anxiety causes abnormal breathing which in turn causes a muscle problem that then causes headache is one path by which ‘stress’ causes headache. The second thing I wish to point out is that I often hear, “I don’t know what I did to cause this pain.” Actually, it is very often the case that our modern life causes us to develop habits that are the underlying reason for our health problems, in this case our habit of unnatural breathing which is partly due to anxiety and partly due to not ever having practiced breathing the way our body is supposed to breath. (This is also the subject of a future column.) Other things that can disrupt the muscle are putting it in a position of chronic stretch or chronic shortening. Having ‘slept wrong’ usually is a case of keeping one muscle short for too long. On the other hand, a muscle may be disrupted by being chronically stretched by an opposing muscle that is shortened by having a trigger point and a taut band. In this way, more and more of the body becomes involved and the pain spreads and worsens. Sometimes abnormal breathing

causes shortening of neck muscles that are attached to the top rib. This raises that rib, putting pressure on the nerves going to the arm, and the veins returning from it. Hence, myofascial problems in the neck can cause tingling, numbness and swelling in the arm and hand.

The trigger point is the key to understanding and treating myofascial pain. These trigger points usually are found to be in the region of the muscle where the nerve enters. Since this is the place where the muscle normally receives the message to contract, it makes sense that a problem at this location would affect the entire muscle. We also know that one of the things that happens at the trigger point is that blood flow is reduced, compared to what is needed. We also know that by stimulating the trigger point in various ways, it is possible to provide partial or total relief of the pain and associated problems. There are a number of ways that the trigger point can be stimulated. Simply piercing it with a needle is often effective. This 'dry needling' can be done with an acupuncture needle, and this is often done by a physical therapist, chiropractor, acupuncturist or other practitioner. This is called "dry needling" to distinguish it from "trigger point injection" (TPI) in which the trigger point is pierced and then a small amount of an anesthetic such as lidocaine is injected. Dry needling and TPI are about equally effective overall, but dry needling results in more pain in the hours after the procedure. Other things often accompany the needling procedure, and it is important that the muscle be stretched and heat applied afterward. Also, dry needling is often enhanced by electrical stimulation. Sometimes a cortisone type of medication is injected along with a local anesthetic, when doing TPI*. In recent years it has been found that certain types of lasers can be used in a fashion very similar to a needle. This is safer, less painful and can be equally effective, but it takes longer to treat each trigger point (2 to 3 minutes versus a few seconds). Also, it is not covered by most insurances. Even pressure applied correctly, as with a Thera Cane (see www.theracane.com) can provide relief at home. In any of the ways mentioned, adequate stimulation of the trigger point, followed by heat and stretch, will often result in near total relief of the pain. The length of time of that relief depends on whether or not there are ongoing causes of the pain and what other factors are involved.

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*cortisone type medications can have powerful unintended effects, and there is no evidence of significant benefit when they are used in this way.