Healthcare on Fire:
A COVID Chronicle

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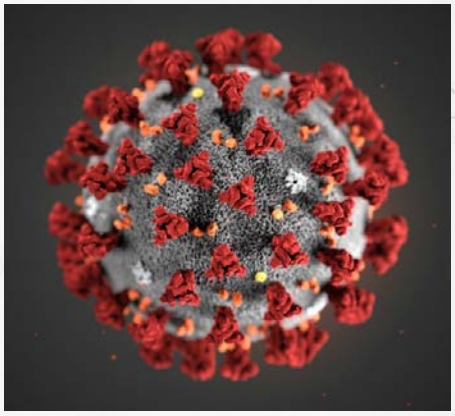

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As COVID spread across the globe in early 2020, my clients, like healthcare leaders everywhere, were facing massive disruption and change. They had their hands full. I was asked if I could help them produce an overview on COVID's impacts that they could share with their leadership teams and trustees. The pages that follow are my attempt to provide a retrospective snapshot of consequential dynamics characterizing the pandemic particularly as they relate to hospitals and health systems. I've also offered some thoughts on the implications of COVID for leadership. I hope you will find these perspectives of value as you continue to steer your organization through uncertain times.

J. Daniel Beckham

I) THE SHAPE OF A COVID WORLD

Meg O'Ryan looked around the room at her leadership team. A dozen masked faces looked back. Those faces had changed since they had gathered early in 2020 to hammer out a plan in response to dire warnings about a novel virus. It took COVID only a few weeks to upend that plan and pitch O'Ryan and her hospital into a raging firestorm of uncertainty and disruption. O'Ryan was better conditioned for crisis than most. She had started her career with deployments as an Army nurse and then during the heartbreaking turmoil of hurricane Katrina she had worked an ICU in New Orleans. But even those experiences hadn't prepared her for the seemingly endless pummeling that COVID brought.

During her time as a critical-care nurse, O'Ryan had learned to read eyes because faces were so often obscured by surgical masks. A forced smile can sometimes disguise emotion but the eyes never lie. The eyes she saw around the room that morning in October of 2021 were tired and worried. Over more than twenty months, there had been wrenching ups and downs as the virus seemed to recede only to surge again. Now the ED was back on diversion. The ICU was full. Patients were more acute than ever. Optimistic expectations for the vaccines seemed to be crumbling. And there was always the constant fear that things could get much worse with the reports of body bags and refrigerated morgues still lingering in the backs of everyone's mind.

That morning, O'Ryan saw the sparks of hope and commitment threatening to flicker out in her team's eyes. As her hospital's top executive, she knew it was her job to fan those sparks back into fire. To define reality. To tell stories. To guide a response. To meet an uncertain future with confidence and resolve.

*Never had her leadership been more vital. **

*"Meg O'Ryan" is fabricated. Her story is not.

Change has Changed

COVID 19 surged into a world like a wind-driven wildfire. It's still uncertain when its flames will be fully contained. Worldwide, more people died from COVID in the first five months of 2021 than died in all of the previous year. More than twenty months into the pandemic, the virus continues to mutate. It has charred and transformed the world. Fire is a force of nature. So is COVID. No nation has escaped its flames. In some instances, COVID has been the fire. In others, it has been the wind that fanned the fire.

COVID is the face of change at its most rapaciously destructive. The virus has already killed at least five million worldwide. Its direct impacts in the U.S. include more than 700,000 dead, shutdowns of vital economic and social institutions, a tripling of the U.S. debt, and hospitals stretched to their breaking points.

The virus has generated widespread bottlenecks and shortages paralyzing production of a wide variety of goods including medical supplies. Meanwhile, an exodus from urban hotspots is draining major cities. And it has pushed the use of remote care into a full blown revolution.

A metaphor involving a "boiled frog" has been used to describe how change overcomes organizations. It suggests that if you take a frog and put it into a pot of cool water then gradually turn up the flame, the frog won't try to escape because the heat will overcome it only gradually. That metaphor no longer holds. Change has changed. A better metaphor involves putting the frog in an open casserole dish then shoving it into a microwave running on high for five minutes. Change has become a very messy proposition. Today, organizations are much more likely to explode and splatter than they are to be slowly boiled. Change has sucked the predictability out of the world.

We would like to think we live in a world of tidy bell-shaped curves where even complex events can be made to surrender to data-rich forecasts. In this world, bad things happen but their impacts can be constrained as life drifts reliably back towards normal. In his bestseller, The Black Swan, Nassim Taleb calls this normal world "Mediocristan." But there is another world he calls "Extremistan" where nothing can be predicted with confidence and very bad things that seem impossible happen.

"Black Swans" inhabit Extremistan. Black Swans are devastating surprises with huge impacts only understood in retrospect. They include 9/11, the Great Depression, the Dot Com bubble, the 2008 recession, Chernobyl, hurricanes, wildfires and COVID. Change is a much different animal in Extremistan than it is in Mediocristan. It is an untamable animal.

You can think of Extremistan as the inner core of a two-layered sphere. The outer layer is Mediocristan. The relative size of the two layers is shifting. The Extremistan core is swelling while Mediocristan's outer layer is shrinking. Flocks of Black Swans are spreading.

Pandemics used to be slower to form and slower to spread. The Black Death arrived in Sicily around 1347. It then took about two years to move across France and another year to reach Russia. As technology facilitated the speed of human migration, the spread of pandemics accelerated. COVID emerged worldwide in less than three months. In the beginning, the places struck hardest in America were those within easy driving distance of New York City.

I believe there are two things that are fundamentally driving the change in change; *"information"* and *"connections."* Over the past half century, there has been an explosion in both and they are deeply interrelated. In every corner of the world, information has become pervasive and overwhelming because of exponential growth in connections including telephones, radio, television and, of course, the internet. As the volume of information has surged so has the number of connections and vice versa. The network of highways blanketing the globe has allowed people to become extraordinarily mobile. Millions of air travelers now move almost exclusively through airport hub connections. Every disembarking passenger is one more bundle of information packaged in DNA and neural pathways. Together, information and connections have produced a volatile stew for transformative change. Change generates change. And accelerating change accelerates change.

Change can be a force for good or it can set off a rapidly widening wave of destruction. In this, it is like fire. Fire can heat your home and cook your meals. It can also burn down your neighborhood. A small fire can explode into a consuming firestorm. But today's change is different than fire in one important way. With fire there is at least the potential for containment and control. The continuing change in change requires new leadership perspectives for guiding organizations into the future. COVID has provided insights that can enrich those perspectives.

The Data is a Source of Uncertainty

Throughout the pandemic, Americans have been continuously instructed to "follow the science." But data is not science. Data is a tool of science. Science is a disciplined process of discovery that relies on hypothesis, experimentation and confirmation. It relies on good data. Bad data yields bad science.

In March of 2021, CDC director Rochelle Walensky warned that COVID cases and deaths were rising nationwide. But a month before, the data had suggested that cases were falling precipitously with deaths per day down by 25%. A month later, cases fell again. Data backlogs as well as reporting lags and inconsistencies appear to have been at the heart of the problem.

Bad data creates bad forecasts. But sometimes bad forecasts just spawn more bad forecasts. In May of 2020, the Institute for Health Metrics and Evaluation (IMHE) projected that cumulative U.S. deaths from COVID would reach around 130,000 and trail off to insignificance by August of that year. A year later, reported deaths exceeded 160,000 and the cases attributed to COVID's Delta variant were surging. By October of 2021, deaths had surpassed 700,000.

During the pandemic, the data set that seemed most accurate had been the hospitalization numbers collected by HHS. Still, much skepticism has arisen regarding whether reported deaths had been accurately classified as COVID. This skepticism was deepened by the apparent disappearance of flu related deaths which historically had been around 60,000 annually in the U.S. For some, the explanation from experts that hand washing and social distancing related to COVID prevention explained the near complete elimination of seasonal flu strained credibility. So did continuing inconsistencies in data.

In 2020, the COVID Tracking Project with more than 550 volunteer contributors took on the task of trying to clean up the COVID data. Founders of the group had this to say about the "data" and the "science" Americans were being asked to rely on. *"Data are alluring. Looking at a chart or a spreadsheet, you might feel omniscient, like a sorcerer peering into a crystal ball…we now know that early case counts reflected only a small portion of the true number of cases. They were probably 10 or even 20 times too small according to latter academic studies. The government missed the initial explosion of COVID-19 cases because, despite its many plans to analyze data, it assumed data would simply materialize."* The authors continued, *"Tens of millions of COVID tests are going unreported. Where are they happening? How many are coming out positive? No one has any idea."* Much of the problem resides at *"the cracks of federalism, where state and national governments grate against each other."*

Of particular concern has been the likelihood that the number of COVID cases has been up to 85 times higher than reported. This is significant, of course, because the number of cases serves as the denominator in the ratio that constitutes the death rate. With the higher number of cases, the death rate is 0.12% to 0.20% compared to the much more lethal rate of 2.5% to 3% public health officials have been relying on. By comparison, the lethality of seasonal influenza is about 0.10%. The inaccuracies in bad data often magnify when they are then built into forecasting models and this apparently has occurred throughout the pandemic.

Data problems aren't just a product of the early days of the pandemic. They persist. And they are potentially consequential. For example, as of May of 2021, the data suggested South Carolina's per-capita COVID death rate was about three times that of North Carolina. If that data was accurate, it is cause for concern. But was it accurate? It may come as a surprise that the CDC only pulls data from 14 states representing about 10% of the U.S. population. It pulls no data from hospitals in Florida.

Today, COVID updates are being presented by the media on a daily basis including rates for "tests," "positivity," "hospitalizations," and "deaths." These updates are being presented like the morning weather report. There is a big difference, of course, between COVID data and weather data. The temperature at Chicago's O'Hare Airport is a matter of confirmable fact. The COVID data is not. Even with good data, the weather remains notoriously difficult to forecast beyond a few days. But still, bad data is being used to predict the future trajectory of the pandemic. This is a special kind of insanity.

Conflicting studies from creditable sources further muddy the water. A New England Journal of Medicine study had found the effectiveness of the Pfizer vaccine against symptomatic disease from the Delta variant to be 88%. On the other hand, a subsequent study from Mayo Clinic found it to be only 42% effective.

Causes of the bad data are many. Data collection remains largely reliant on a variety of manual inputs. There are variations across the front line workers conducting tests and administering vaccines. The path from delivery to reporting is a hodgepodge of variation. And there is the variability across governmental and agency boundaries. Comparisons across states, counties and municipalities have frequently failed to compare apples-to-apples. Finally, there is "noise" including efforts to politicize and spin data to support a multitude of agendas. In other words, the data is awash in variation which means it is of distressingly low quality. The object of quality management is, of course, to drive out variation. What we currently have is a patchwork of inconsistent voluntary data collection and reporting processes in which some hospitals and other essential agencies don't report. The COVID data today brings to mind the old hot dog story. You wouldn't really want to see how hot dog is made.

Policy makers have been compelled to make policy using bad data. And hospital leaders have been forced to make consequential day-to-day decisions within the context of the same bad data. In many instances, hospitals have chosen, appropriately, to rely on local and often anecdotal data to guide their decisions and action. In many ways, the situation is analogous to battlefield operations where frontline officers learn to ignore the input of commanders safely ensconced far from the fighting. An August 2020 article in the MIT Sloan Management Review (Davenport, Godfrey, Redman) captured the essence of the problem as it relates to COVID: *"Without good data planners can't plan, policy makers can't make policy, and citizens don't trust what they are told. Bad data has led to poor decisions – behavioral and policy-oriented - which in turn have prolonged the disease and contributed to unneeded suffering and death … Many of the problems in pandemic and public health data arise from the front lines of healthcare provision - hospitals…. The New York Times reports very specific death counts, camouflaging the uncertainty and severity of the issues, and distracting people from addressing the root issues."*

One characteristic of the current crisis is that it is complexifying. A crisis often clarifies over time in terms of its causes and effects. COVID, on the other hand, has grown increasingly murky. Because we often find ourselves drowning in information, it helps to crawl out of the rabbit hole and get some distance. For example, looking back at the broad patterns reveals a large COVID wave in New York in the spring of 2020 followed by a smaller wave that summer in the South, a massive nationwide wave in the winter followed by a small spring wave in the upper Midwest and then, in August of 2021, a massive wave in the Southeast. It would obviously be helpful to see big movement as it emerges rather than only in retrospect.

In the fjords of Norway, there is an elaborate network of sensors that detect the slightest movement of rock formations vulnerable to breaking away and setting off a deadly tsunami. Metaphorically, a similar system is desirable to provide alerts for emergent viruses and warning of waves as they appear. But then, there is a big difference between tracking shifting rocks and identifying an emerging pandemic.

There are the big, broad implications that will ultimately be drawn about COVID including its economic impact. The danger is that we'll continue to be enthralled by the data mongers including economists, and then make policy decisions based on their pronouncements. But the veracity of expert assessments will always depend on good data. Otherwise, we're left with the philosopher, John Locke's, Madmen who "reason correctly from erroneous premises."

Big Utilization and Financial Impacts in Healthcare

Looking forward, American healthcare appears extraordinarily turbulent and uncertain. As 2020 ended, inpatient volumes were down about 20% and outpatient around 35% with ED and physician practice visits off by more than 40%. In 2020, hospital operating margins fell around 46%. In the second quarter of 2020, half of U.S. hospitals had reported negative margins. Forecasts now suggest that up to half of U.S. hospitals will generate negative margins in 2021. Analysis indicates that the 2020 median margin for hospitals without Federal relief would have been less than a half percent. With the relief, half the hospitals generated gains of slightly less than the 2019 median margin of 3.1%.

By the time 2020 ended, hospitals had piled up losses estimated to be in excess of $320 billion. Some forecasts anticipate additional losses for hospitals exceeding $100 billion in 2021. During that period, Federal relief amounting to $175 billion was allocated to all healthcare providers with about $70 billion of that disbursed to hospitals through October of 2020. Unfortunately, dollars allocated don't always mean dollars disbursed. It wasn't until September of 2021 that HHS finally released an additional $25.5 billion in COVID relief. Levels of relief have been inconsistent with some hospitals seeing payments amounting to less than 20% of their losses while others received in excess of 35% of losses.

A "V-shaped recovery" in American manufacturing began to emerge around June of 2020. For hospitals, a recovery towards 2019 levels appeared to be shallow and "U-shaped" at best. By May of 2021, compared to 2020, adjusted discharges had risen nearly 10% while ED and physician practice visits remained flat. Compared to 2019 however, adjusted discharges were still down by more than 4% with ED visits reduced by more than 14%.

Moving towards Christmas of 2021, a growing number of hospitals were reporting that their utilization had recovered to 2019 levels including inpatient, ED, outpatient and physician practice volumes. It is unclear how much of this rebound is related to pent-up demand. Some forecasts suggest that 2022 volumes may run 4% above 2019 levels.

Operating margins early in 2021, appeared to be up by nearly 90% compared to 2020; however, compared to 2019, there was still a shortfall of about 20%. As of April 2021, overall revenues were still down 7%.

Beginning in the fall of 2021, some hospitals were reporting that their EDs were once again at capacity as a backlog of non-COVID patients who had delayed care during the pandemic began to appear, many of whom who were acutely ill.

Some health systems weathered 2020 much better than others. HCA generated profits of $3.8 billion due largely to increases in acuity and favorable payer mix. Being able to generate outsized margins on health insurance pushed up profitability at nonprofit systems that owned health plans including Kaiser Permanente and University of Pittsburgh Medical Center (UPMC).

In May 2020, anticipating $3 billion in COVID related losses, Mayo Clinic furloughed or cut hours for 30,000 of its 70,000 staff members. It also reduced wages for physicians and top executives by 10 to 20 percent and instituted a hiring freeze. It dipped into its reserves for $900 million of cash and halted major construction projects. Mayo received $338 million in Federal relief funding but instead of losses, it ended 2020 with $202 million more in revenue than in 2019 resulting in a 5.2% margin. Mayo then returned more than $150 million of the relief funding. In the first quarter of 2021, the Clinic had net income of $782 million and a margin of 21% compared to a loss in the first quarter of 2020 of $623 million. It subsequently succeeded in raising $500 million in a bond offering.

Although some hospitals and health systems returned significant portions of the Federal relief they received, most did not. UPMC got $460 million in bailout funds but it generated $2.5 billion more in revenue in 2020 than it did in 2019 producing a 3.6% margin with much of the profit coming from the health insurance plan it owns. Fewer surgeries and reduced physician ED visits drove profitability up for health insurance plans because fewer claims were paid out. UPMC came in for criticism because it launched a fund-raising campaign that emphasized the sacrifices of its front line employees during the pandemic despite its strong finances.

Baylor Scott & White furloughed 1,200 employees in May of 2020 as it braced for COVID. The Federal government then provided it with half-a-billion dollars to help it weather the storm. By the end of 2020, Baylor, Scott & White had generated a 7.5% operating margin reflecting an $815 million surplus; $20 million more than the prior year. The system indicates it spent $257 million in the first year of COVID on pandemic-related expenses. As 2020 came to a close, it still had $197 million available to spend in 2021 and anticipated its COVID related expenses and lost revenue would exceed any Federal relief it received.

Exacerbating the financial perils for hospitals are wide-spread job losses that reduce the disposable income needed to pay for what insurance doesn't. Of equal concern is the loss of insurance coverage associated with unemployment. It currently appears that over 5 million Americans lost their health insurance in 2020 which constitutes over 16% of the total number of uninsured. If current trends hold, a significant percentage of the American workforce may forgo employer compensation and health insurance by not returning to work even as the pandemic eases.

According to rating agency Fitch, the financial impacts on hospitals associated with COVID may last for decades. One significant consideration will be the need to significantly accelerate investment in outpatient capacity while transitioning away from inpatient-centric facilities and operations.

An Uncertain Path Ahead

The non-financial burdens on hospitals have been inconsistent with well-publicized reports of exhausted staff operating in war zone-like conditions at some hospitals. Well into 2021, some ERs were on diversion more than 450 hours a month. Into this environment, multiple vaccines have been deployed with a significant percentage of the population still indicating they don't intend to get vaccinated. Even as restrictions in the U.S. were being lifted in 2020, virulent variants of the virus began taking a devastating toll in other countries. Persistent resurgences appear to be associated with new variants as the virus continues to mutate. There is growing evidence that the originally deployed vaccines are losing their effectiveness giving rise to calls for booster shots.

It's clear that viruses do what all living things do when they encounter resistance to their continued survival, they mutate. COVID has been a rapid mutator. Italy was hit early and hard by the virus. It started off slow, killing about a thousand Italians in the first month. Then it killed a thousand more in the span of four days. In the U.S., on March 9 of 2020, there were 546 confirmed cases and 22 deaths. Within a week, 22 Americans were dying per-day and another week later the number of deaths per-day had climbed to 220. The Alpha variant, first identified in the UK, quickly became the dominant strain in the U.S. by the beginning of March 2021. In the final week of 2020, it had represented only 0.22% of cases. By June of 2021, the Delta variant that had devastated India in April and by May already constituted more than 25% of U.S. cases and by July it represented

upwards of 80%. WHO reported in early July of 2021 that the variant labeled "Lambda" was becoming dominant in Peru and was threatening to spread across South America. By late July of 2021, Lambda made its first appearance in the U.S. at The Methodist Hospital in Houston. Methodist had been one of the first hospitals to fire caregivers who refused to be vaccinated. As of August 2021, WHO had identified 10 COVID variants each emerging in a different spots on the globe.

Recurrent resurgences in COVID cases along with the appearance of growing numbers of variants raise concerns about the development of a persistent "W-shaped recovery" in healthcare; resurgence then decline, resurgence then decline and so on. A critical question is how long hospitals can endure sustained whip lashing by variants and resurgences. It's hard to see the light at the end of the tunnel when the tunnel keeps twisting.

Evolution depends on random mutations which are impossible to predict. As Andrew Read, an evolutionary biologist at Pennsylvania State University has observed, "It is very tricky to know what's possible until it happens. It's not physics. It doesn't happen on a billiard table." If the pandemic demonstrates anything, it's the futility of predictions; even expert predictions. At the onset of the pandemic, some experts forecasted a return to pre-COVID levels of utilization for hospitals within a year. Others predicted four years. And some suggest it may take a decade or more. The CEO of Moderna has predicted, "We are going to live with this virus, we think, forever."

Acknowledging the continuing environment of uncertainty, there appear to be at least four possible paths related to the overall trajectory of COVID-19:

- **Sudden end.** This is what happened with the deadly 1918 flu virus. It simply collapsed, perhaps because the virus ran out of hosts to infect apparently triggering herd immunity.

- **Gradual end.** Rather than ending suddenly and completely, the incidence of the virus diminishes over a period of several years. One of the lasting questions will relate to the lasting impacts of "long COVID." Studies indicate that up to 38% of patients, post-COVID, still have at least one symptom more than 12 weeks out.

- **Continuing mutation.** COVID stays a step ahead of the vaccines deployed against it. The virus becomes a standard characteristic of the landscape that society learns, reluctantly, to live with just as it's learned to live with other killers such as cancer, heart disease, diabetes and seasonal flu.

- **Virulence.** The virus mutates into ever more devastating variants eventually causing cataclysmic collapse of social and economic institutions. A virus, like all living things, has two imperatives: reproduce

and spread. If pressured, it mutates in order to fulfill those two imperatives. The more it is pressured, the more it will try to escape and it may grow more dangerous in the process.

Big Winners and Losers

Pharma must be considered a big winner in the COVID crisis, particularly Pfizer whose vaccine is expected to generate $38.5 billion in revenue in 2021. At Moderna, 2021 vaccine revenues are expected to exceed $18 billion. Because of negative indications and contamination problems, J&J is expected to capture $2.5 billion. J&J was more vulnerable to losses tied to medical devices and suffered as hospitals paused many electable procedures. But by the second quarter of 2021, J&J profits soared 73% as hospital utilization began to return to more normal levels. Plans to deploy boosters in the face of waning effectiveness of the vaccines will further fatten profits for the vaccine manufacturers and their stockholders as will new COVID therapeutics.

Health insurers have also been big winners as the result of COVID. UnitedHealth Group ended the first quarter of 2021 with $4.9 billion in profits up from $3.4 billion in the same period in 2020. Its revenues in the period ending in March of 2021 were $70.2 billion compared to $64.4 billion in the same period in 2020.

Outside of healthcare, robust performance has been reported for some sectors particularly grocers including Wal-Mart. This may simply reflect a lack of online alternatives for perishable food items. Meanwhile, Amazon has been busy during COVID developing same-day delivery of groceries. Even before the pandemic, Amazon had begun to address its most glaring vulnerability; lack of reliability in its delivery options particularly the U.S. Postal Service. In response, it has built its own formidable delivery network with Amazon-branded vans, semi trucks and delivery personnel. It now employs or contracts with over 500,000 drivers worldwide and has built the fourth largest delivery network in the nation. In 2019, it delivered about 58% of the 4.5 billion parcels it shipped to its U.S. customers. In the third quarter of 2020, Amazon's revenues were up 37% and it controlled 40% of online sales.

Many residential contractors and builders have been reporting their highest revenues in a decade. Strong performance by Lowe's and Home Depot appears to reflect efforts by displaced unemployed and furloughed workers to redirect their available time and resources to improving the homes where they found themselves constrained.

Most damaged during the first year of the pandemic were restaurants, theaters and all manner of public transportation including the airlines. Lockdowns, remote meetings and avoidance of urban areas by tourists grounded the airlines and reduced the traffic at major-metro airports by upwards of 60%. More than 1 in 6 restaurants have closed since January of 2020. This may bode ill for big cities as well as the hospitals and physicians that serve them. The residents of the revitalized city cores in Chicago, New York, LA and other large American cities moved there because they valued a lifestyle that once delivered prosperity to restaurants and theaters. During COVID, that lifestyle began to evaporate and with it, at least in the near term, prospects for continued urban prosperity. Air travel and other public activities were showing clear signs of recovery as fall of 2021 arrived but were also struggling with significant shortages of employees.

There is much evidence that outmigration is impacting most urban areas with the primary beneficiaries being the exurbs and southern states. Thirteen of the top cities for in-migration in 2020 were in the southeast with the top three all being in Florida resulting in a statewide population increase of 240,000. Texas grew by 374,000. California lost the most people in 2020 with the five largest Northeastern states – New York, Pennsylvania, New Jersey, Massachusetts and Maryland – also rating in the top 10 losers. Large coastal cities like San Francisco and New York have been big losers when it comes to out-migration. Absent tax revenue and Federal relief, these cities are likely to see service cuts, particularly in public transportation. A recent survey by the San Francisco Chamber of Commerce indicated that upwards of 40% of the city's residents were planning on moving out. A significant upswing in urban crime since January of 2020 is impacting many American cities. In Georgia, the affluent Buckhead community has been overwhelmed by crime spilling out of Atlanta and is seeking to secede from the city; a move that would deprive Atlanta of a significant chunk of its tax base.

It is worth noting that many American cities have sprung back from dire conditions before and may have the resilience to do so again. But for the present, COVID has been a major factor in sparking a migration out of major cities not only by residents but by their employers as well. Goldman Sachs recently announced a planned move from New York to Florida. Its employees will probably have lots of company as they flee south on I-95.

Consumers Segmenting

In September of 2020, a consumer survey had indicated that only a third of U.S. respondents had resumed out-of-home activities. In France, the percentage was 50% and in Mexico just 18%. In China, on the other hand, it was 81%. Sixty percent of U.S. consumer respondents to a survey early in 2021 indicated they would not dare to go to a movie over the coming year.

After months of lockdowns and other restrictions, the American consumer started to break out in 2021. In places where constraints were lifted, the response appeared immediate and robust. The consumer surge shouldn't be mistaken for a sustainable flow. Pent up consumer demand can be like water behind a dam. Once it's released, it rushes with force but then it usually subsides. Having grown comfortable ordering products online, consumers will be unlikely to resume their full patronage of physical retailers. In the first half of 2020, e-commerce increased at a rate equivalent to that of the previous 10 years.

For hospitals, postponed care, lifted lockdowns and resurgent consumer demand means electable, discretionary services may surge. But they may surge in outpatient centers not owned by hospitals and health systems. COVID has accelerated the movement of utilization towards outpatient alternatives including freestanding surgicenters with their lower capital requirements and less stringent CON requirements.

Hospitals had been adjusting to the shift to outpatient settings before COVID hit although, for reimbursement reasons, most continued to deliver as much surgery and imaging in their inpatient settings as possible. Some studies suggest that billions could be saved by shifting procedures out of hospitals into freestanding surgicenters. On January 1, 2021 total hip replacements began to be covered by Medicare in ambulatory surgery centers (ASCs). In July, in a dramatic demonstration of just how quickly the tide can shift, CMS reversed course and indicated it was moving 258 procedures including total hip replacements from the ASC payable list back to "inpatient only" (IPO) category. It was a victory for inpatient-based surgery programs.

Hospitals have begun to mount defensive moves in response to threats to their inpatient utilization. Minnesota based Allina Health is shifting high acuity procedures including spine and orthopedic cases to freestanding surgicenters. It reportedly plans to open or acquire up to 12 ambulatory surgery centers over the next five years in partnership with Optum owned Surgical Care Affiliates (part of UnitedHealth). Meanwhile AdventHealth is beginning operations at a $300 million 300,000 square-foot surgery center with 18,750 square-feet in operating rooms.

Today, healthcare consumers appear to be segmenting in ways different than they were before COVID. I'd suggest there are now five discernable consumer segments, each with a unique attitude toward healthcare services:

- **The Unconcerned.** Members of this segment have discounted the risks associated with COVID from the onset. They tend to be young. Historically, utilization of healthcare services by the Unconcerned has been lower relative to other segments. Tech savvy, they are prime candidates for telehealth and remote care options. They represent about 15% of the U.S. population and include many Millennials and GenXers for whom virtual care won't be a back-up option; it will be their preferred first option.

- **The Trusting.** This segment is heavily comprised of older adults and the elderly. They tend to be relatively heavy users of healthcare. They are also more compliant and responsive to experts including physicians. If prompted to get tested and vaccinated, they are likely to comply. They are less likely to default to telehealth or remote care options. Estimated percentage of the population is about 35%.

- **The Wavering.** Uncertain and confused by information related to COVID, the Wavering shift between compliance and taking a wait-and-see stance. They are well-educated and well-informed. This segment includes a strong representation of the critical female healthcare decision makers. Compelling evidence of problems with vaccines and rising levels of variants could cause the wavering to shift to non-compliance. Estimated percentage of the population is about 20% and they are moderate users of healthcare.

- **The Spooked.** This is the group that drove declines in ED utilization and visits to physician offices. They are very sensitive to media reports regarding cases, hospitalizations and deaths. They worry that transmission rates will be higher in settings with concentrations of people who are likely to be COVID positive. As a result, they tend to view hospitals and physician offices as potential COVID hotbeds. They are also suspicious of COVID vaccines. They are prime candidates for telehealth and remote care options and make up about 20% of the population. Their numbers could swell if the Wavering shift away from compliance.

- **The Militant.** This is a sharply divided group that views COVID through a political and cultural lens. It stretches from far-right to far-left with an ideological wall separating two opposing mindsets. One side sees government policy as an intrusion to be resisted. The other sees government policy as a tool to be mandated. The divide is most pronounced around the question of vaccination. Upwards of 10% of the population can be considered militant.

The boundaries between these five segments can't be brightly drawn. They are best envisioned as a Venn diagram of overlapping circles. Consumers are continuously shifting at the edges of the circles with the Wavering shifting to Spooked for example. Of the five categories above, the Wavering and the Spooked should be of the greatest immediate concern to hospitals and physicians because they are driving the declines in utilization and they constitute the preponderance of the unvaccinated.

Any sustained reduction in visits to EDs and physicians' offices is a development that should set off alarms in C suites and boardrooms. Of all hospital services, EDs are among the most sensitive to consumer demand. The ED remains the community's primary window to the hospital. What happens in the ED defines impressions of the hospital overall and it generates lots of word-of-mouth. It also produces about 50% of the admissions to inpatient care for the average community hospital. Physician practices are similarly vulnerable. The prevalent explanation for the significant declines in these two services is consumer fear of a higher potential for COVID transmission. At the end of March 2021, ED visits were off by 20% from pre-COVID levels while physician practices were down more than 30% although both were showing signs of steady recovery in fall of 2021.

The danger, and I feel it's a significant one, is that many consumers post-COVID may come to view the entire hospital campus as a source of potential infection rather than a safe harbor. From a consumer perspective, those who die from COVID died in a hospital. It is a hospital ICU, after all, that's been the ultimate destination for the most acute COVID patients. A study of consumers conducted in the summer of 2020 indicated more than 75% of them would prefer to get their care at a site not linked to a hospital facility.

During the COVID pandemic, the incidence of healthcare-associated infections increased significantly. In the fourth quarter of 2020, four of the six regularly tracked infections increased compared to 2019 including:

- Central line-associated bloodstream infections up 47%.
- Ventilator-associated events up 44.8%.
- Methicillin-resistant Staphylococcus aureus up 33.8%.
- Catheter-associated urinary tract infections up 18.8%.

The rate of postoperative sepsis among pediatric patients was up 28% in 2020. According to Ann Marie Pettis, president of the Association for Professionals in Infection Control and Epidemiology *"The unfortunate reality is that in one year we lost a decade of progress against HAI (Healthcare Acquired Infections)…"*

Hospitals were once the resources of last resort where only the poor went while the wealthy got their care at home. COVID may reestablish that dichotomy absent concerted efforts to offset it. Critical will be well publicized efforts by hospitals to offer facilities and processes engineered to be infection resistant.

A Remote Care Rush

Telehealth was being heralded as the future long before COVID hit. Still, despite high expectations, it was slow to take off. Then the virus poured gas on the smoldering telehealth fire. Hospitals that were experiencing a couple thousand visits in all of 2019 saw demand jump to 5,000 a week by the middle of 2020. In the span of one week in March of 2020, Jacksonville-based Nemour's Children's Health System saw its telehealth visits increase more than 1000%. Fewer than 1,000 institutions offered remote care in 2018. By July of 2020, 16,000 did.

In reality, most hospitals are very late to remote care. Kaiser Permanente is an exception. By 2016, it was already delivering more than half of its physician visits virtually. And Mayo Clinic has been providing care remotely for decades. Mayo's CEO Gianrico Farrugia MD spoke to the broad impacts of COVID on July 28 of 2020 when he suggested *"The COVID pandemic has unleashed an uninvited, but necessary, stress test on the U.S. healthcare system and hospitals in particular."* On the negative side, it has revealed problems with *"fragmentation, uneven access, a fragile supply chain, misaligned payment models and healthcare disparities."* On the plus side, *"it has provided the impetus for swift, much needed innovation in a slow-to-change industry."* Like others, Mayo has seen that impetus accelerate adoption of remote care particularly telehealth. In 2020, Mayo went from 200 visits per week to a peak of 35,000. It also found that its patients were as satisfied with virtual visits as they had been with face-to-face care.

Going forward, those healthcare providers that move quickly and aggressively to offer telehealth will be advantaged. But even early movers will soon find themselves with lots of company because telehealth will quickly become ubiquitous. The growing telehealth herd will increasingly find itself gnawing short grass. A familiar pattern will emerge with lots of early startups gradually being driven out or acquired until there are just a few survivors left slugging it out for dominance. The telehealth programs built by hospitals during COVID will experience the same sort of winnowing out. Ultimately, the game will come down to differentiation that answers the question: *"How is our remote care different in a way that's meaningful and valuable to those we serve?"*

Telehealth and other forms of remote care are evolving rapidly by weaving together wearable tech with home-based diagnostics and therapeutics. Smart phones and watches are already transforming the delivery of care by combining enhanced communication with monitoring and diagnostic tools. It's likely individuals will eventually have a version of the Star Trek "Tricorder." It will access expertise and action in two layers. The first layer will be driven by Artificial Intelligence that will get smarter and smarter as it accumulates use and data over time. If the AI can't handle the challenge, then the technology will default to the second layer consisting of human expertise. In this way, it will augment and amplify human involvement rather than replace it.

Telehealth will become increasingly focused along specialty and disease lines. (e.g. oncology, orthopedics and joint disease). As remote care options expand, consumers will connect directly with cardiologists, orthopedists, dermatologists and so forth without any intermediation by primary care providers serving as gatekeepers. This may dilute and, over time, negate efforts by hospitals to use their primary care networks to influence referral flows.

The movement of care into outpatient facilities and physician practice settings will continue but the momentum and volumes will shift into the home. Late in 2020, CMS announced reimbursement parity with hospitals for inpatient care provided in the home and began to approve "hospital at home" programs. The Acute Hospital Care at Home program makes it possible for approved providers to treat more than 60 acute conditions in a home setting. Kaiser Permanente and Mayo Clinic have been approved by CMS and are partnering on a hospital-in-the-home model. In March of 2021, Amazon announced it was partnering with Intermountain Healthcare and Ascension to launch "Moving Health Home" to offer advanced remote care in the home. The notion of moving care out hospitals and into homes is threatening to nursing unions which have already signaled their intent to organize to resist the trend.

During 2020, the Federal response to COVID quickly cleared many of the obstacles to the expansion of telehealth and remote care. In March of 2020, President Trump signed an $8.3 billion emergency funding bill that included $500 million in waivers for Medicare telehealth services regardless of location. A week later, Trump's declaration of a national emergency cleared the way for physicians to deliver telehealth care across state lines. Further approvals included use of common software platforms like Apple Face Time, Zoom and Skype as well as devices to remotely monitor patient vitals. Insurers were warned that they would be penalized if they eliminated any of their covered services as a way to offset the costs of expanded telehealth benefits.

On March 27 2020, Congress approved a $2 trillion COVID relief package that included an additional $185 million to support expansion of telehealth at critical access hospitals. CMS added 85 services to the list of those covered by Medicare for telehealth delivery and approved reimbursement for telehealth services by physical therapists, occupational therapists and speech therapists. HHS then authorized more than $200 million for telehealth services at rural hospitals.

From April 30, 2020 through the end of 2020, the FCC received more than $600 billion to fund telehealth applications and infrastructure investments by healthcare providers. The Department of Veteran Affairs awarded Phillips a 10 year $100 million contract to expand the VA's telehealth services. Meanwhile the U.S. Department of Agriculture awarded $71 million to provide broadband in rural Kansas and Oklahoma.

In October of 2021, there was talk of rescinding the ability of physicians to provide telehealth across state lines and reinstating other restrictions on telehealth. If this materializes, it could significantly reduce expansion of remote care.

Amazon knows a lot about its customers. It uses that knowledge to target and personalize the buying experience. Despite concerns about privacy and intrusiveness, Amazon's continuing success suggests that for consumers, so far at least, a convenient and frictionless buying experience is worth the tradeoff. The Amazon example demonstrates that personalized interaction on remote algorithm driven interfaces can establish and maintain trust and confidence. Of course, buying healthcare is not the same as the passionless experience of buying printer ink online. Healthcare is among the most intimate of human services sold to people whose lives are sometimes balanced on a precipice. The danger in remote care is that it creates a faceless and bureaucratic experience.

The extent to which hospitals and physicians avoid being displaced in the future by remote care alternatives will depend on how well they've cultivated virtues that can't be easily delivered on a telephone or computer screen including empathy and responsiveness. In personalized care, the caregiver will help the patient make the connections necessary to defragment their care while putting in place the mechanisms for disciplined follow-up and a sustained relationship. For hospitals, this means that a patient must be known and understood across all of the institution's points of interface, be they virtual or physical. For online providers, the challenge will be how to replicate the nuances of face-to-face care. In any case, the goal won't be to increase "transactions." Transactions are cold and impersonal. They have no glue to sustain continued loyalty. When every transaction is like every other, there's no incentive to seek care from one provider versus another.

According to Michael Serbinis, CEO of the healthcare platform League*, "At its core, the jet fuel for engagement is personalization. Imagine if you could harness all of the data that exists in your electronic medical record system. What if you could add to this data and combine the depth of medical records with actionable data from health apps, wearables, pharmacies and insurance claims? What if you could use this data to power personalized health programs for all your consumers, no matter where they were on their healthcare journey? What if your patients actively participated in these health journeys? What if they engaged with their health journey in the same way they engage with their recommended watchlist?* Serbinis further observes, *"In healthcare, incumbents need to consider changing their focus from "healthcare" to "health." Your market isn't limited to patients during episodes of care. Your market is much bigger and you should be engaging with it 365 days a year."*

Many providers have facilitated the growth of remote care options with the presumption that, after COVID subsides, patients will return to traditional models of care delivery including visiting a physician in person. This may prove shortsighted. Given current levels of online adoption and high satisfaction, hospitals may find patients increasingly opt to receive the preponderance of their care remotely. Research studies suggest upwards of 40% of consumers intend to continue to use telehealth moving forward and a similar percentage are interested in broader remote care options including in-home care and "virtual first" health plans which offer lower premiums because they rely on remote care as a preferred option. As of April 2021, more than 80% of American physicians reported offering remote care options and more than 50% indicated a preference to continue offering care remotely.

Consumer preference for online purchases will extend to "licensed expertise." Expertise is portable. There's no shipping involved and it can be delivered without delay. But licensed expertise is expertise that not everyone can sell. LegalZoom.com is an example of online delivery of the licensed expertise of lawyers. Another example of licensed expertise is obvious – physicians providing telehealth.

For many hospitals, being geographically the closest healthcare provider has been their primary point of differentiation. Proliferation of remote access to institutions with international reputations for quality and expertise will marginalize "localness" as a differentiator. Absent regulatory constraints, consumers will increasingly be able to access expertise from physicians affiliated with mega-brand institutions thousands of miles away just as easily as they can access it from local physicians. This represents the often-predicted "death of distance."

Individuals and organizations are becoming increasingly "location agnostic." With a transition to remote care and remote work, geographic concentrations or "clusters" of related enterprises may dissolve. For example, the "Silicon Valley" cluster is already being dispersed across many locales that are ever more widely separated geographically. COVID has reinforced the role of the Internet in providing a viable substitute for the localness once afforded by geography. The advantages of locating expertise and production shoulder-to-shoulder may be greatly diminished.

Supergroups and the Continuing Consolidation of Physician Practices

Over the past three decades, the most significant transition in healthcare was the surrender of the private practice of medicine. Hospitals consolidated primary care by acquiring practices and employing physicians. They did this to protect their referral base including preserving referrals to the specialists who generate the preponderance of hospital margins. Few physicians joined up with hospitals out of a desire to enjoy the benefits of "integration" and "systemness." They certainly didn't join to preserve hospital referrals and margins. They joined because the costs of continued independence grew too high. Primary care physicians in particular were struggling to protect their incomes and lifestyles. Hospitals promised that protection. Today, nearly 70% of physicians are employed, most of them by hospitals. Corporate entities like insurers and investment firms employ around 20% of all physicians. During the second half of 2020, more than 11,000 physicians signed employment contracts.

More than 90% of physicians have indicated that COVID has had a negative impact for them financially. Even as practice expenses increase dramatically as pandemic related inflation rises, CMS plans to cut physician pay by 9% in 2022. Medicare physician pay has dropped 20% over the past two decades. Research conducted by the American Medical Association throughout the pandemic indicates that more than half of the 60,000 respondents reported experiencing symptoms of burnout while more than a third reported they experienced anxiety and depression to a moderate or great degree.

If, as the result of declines in utilization related to COVID and rising costs, hospitals and health systems reduce physician compensation and increase workloads, physicians are likely to resist. Such moves by hospitals will violate the deal most employed physicians feel they negotiated. They may begin looking for alternative sources of employment. And they'll find them with a growing number of new competitors hungry to expand their physician base.

There are other threats to hospital-owned physician networks. In January of 2021, the FTC announced its plans to retrospectively examine the impacts of physician group acquisitions by hospitals on competitive behavior including prices, referrals and quality. In addition, the Department of Justice has signaled a move toward increased antitrust scrutiny in the healthcare provider sector.

Today, many specialists and subspecialists are breaking away from their traditional hospital relationships. They are forming super groups and moving profitable procedures out of the hospital and into their own facilities. Super groups are forming nationwide. Since January of 2020, rapid consolidation has occurred in orthopedics particularly in southern states. In Texas, six orthopedic groups with 150 physicians merged in 2020. It now has 1,000 employees and 40 locations. In Tennessee, three orthopedic groups with 104 physicians and 800 employees merged to deliver care in 27 locations. And in Florida, two groups consolidated to form the largest orthopedic group in the state with 150 providers in 17 locations. Data suggests that these super groups often provide care that is less expensive and more consumer friendly than that delivered in inpatient settings by hospitals. They've also produced clinical outcomes on par with those generated by hospitals.

Rather than lose their orthopedic base, some health systems are expanding access and capacity. AdventHealth has formed a partnership with Rothman Orthopedics for a $100 million facility in Orlando. Jewitt Orthopedic Institute, one of the largest orthopedic providers in the nation, is building a $189 million facility in Orlando. It will have 75 beds, 10 ORs, and an outpatient surgery center with an additional 10 ORs. New York based Hospital for Special Surgery is building a 60,000 square foot orthopedic hospital in West Palm Beach. And Allina Health in Minnesota plans on building or acquiring a dozen ambulatory surgery centers for orthopedic and spine procedures over the next five years in partnership with Surgical Care Affiliates.

The formation of specialty super groups has fueled growth not only in new facility construction but in technology sales as well. Demand for robotic technology in ambulatory settings has increased during COVID. For example, Stryker moved 100 robots into ambulatory surgery centers in the fourth quarter of 2020 alone, an increase of 33% over prior year. Its sales targeted to ambulatory surgery centers included a comprehensive product line bundled with financing. Historically, specialists have looked to hospitals to fund their facility and technology needs. Today they have a growing pool of willing new investors. In the past, hospitals have been able to wait patiently until physician owned enterprises like surgery centers ran into financial problems then snap them up through opportunistic acquisition. Such opportunities are likely to diminish.

Meanwhile, the employment and acquisition of physicians is moving beyond hospitals to include insurers and for-profit investors. In May of 2021, JP Morgan announced formation of Morgan Health which it says will focus on the acquisition of primary care providers as well as pharmacists and nurses to provide a more comprehensive and navigable experience. It is partnering with CVS/Aetna on the venture. In August of 2021, Goldman Sachs acquired majority ownership of MDVIP a national network of 1,100 primary care physicians providing concierge medicine to 357,000 patients.

Optum, part of UnitedHealth, has assembled more than 50,000 physicians into a controlled delivery system poised to steer utilization. Optum-owned Surgical Care Affiliates recruited more than 1,000 physicians through the third quarter of 2020. During 2020, United Surgical Partners International, part of Tenet, added more than 3,700 physicians through employment and acquisition that included purchasing 45 surgery centers with the company targeting the acquisition of 25 to 40 more ASCs in 2021. In November of 2021, Tenet announced it was adding 92 more surgery centers through acquisition of Towson, MD based SurgCenter Development which plans to develop 50 more surgicenters over the next 5 years. Its intent is to create *“the largest ambulatory platform for musculoskeletal services, a high-growth service line.”* Tenet expects the deal to generate strong financial returns.

There are new players prowling the American healthcare landscape. In April of 2021, Babylon, a London-based digital company, acquired the 700 physician Meritage Medical Network based in Novato, CA. The company uses AI and remote care to provide 24/7 service to more than 100,000 Americans. Babylon is acquiring FirstChoice Medical Group a health insurance platform.

Brand Power Becoming Even More Essential

Too often branding has involved developing a new logo and plastering it on stationery and signage at great cost. In October of 2021, a five hospital system in Illinois launched a rebranding effort the most significant elements of which included dropping "system" from its name and redesigning its logo. The cost? $3.85 million. But a powerful brand emanates from the product or service out, not from a logo in. A brand identity without meaningful differentiation at its core is meaningless.

By their nature, services are intangible. A can of cola can stand for itself. You can touch it. Taste it. A service, on the other hand, is a performance. You can't touch it. You experience it. Because a service is intangible, you need to tangibilize it. That's what a service brand is: a tangible symbol of an intangible product. It is a visible manifestation of the differentiation that the service promises to deliver. In the past, healthcare services have been tangibilized by things like buildings, technology and uniforms (lab coat, scrubs, nurses caps). As more care is delivered at a distance, these old forms of tangibilizing will become less relevant. *"Tangibilized expertise and outcomes"* will become the key differentiators. And those will be the key differentiators embodied in the most powerful brands.

Hospitals aren't the only organizations that deal in intangibles. Universities sell education, the comparative value of which is difficult to assess. But in academia, COVID has reinforced the importance of holding a brand advantage. During the pandemic, first tier universities like Harvard, Yale and Stanford have seen their applications soar by upwards of 30% while second and third tier institutions have seen applications decline by a similar percentage. It is likely that health systems will see a similar dynamic with players like Mayo, Cleveland Clinic and Hopkins expanding their already outsized market reputations. During a crisis, the rich often become richer.

In an environment of increased uncertainty and expanded access to distant providers, consumers will seek demonstrated advantages in expertise and outcomes. This advantage accrues most strongly to academic medical centers, particularly those institutions with "mega brands" like Mayo Clinic, Johns Hopkins and Cleveland Clinic. In the most recent U.S. News & World Report listing of the top hospitals, every one of the top 20 were academic medical centers. That's a pattern likely to persist as consumers and referring physicians continue to default to institutions with the strongest brands.

COVID has triggered consolidation of complex cases at leading academic institutions. Up until 2020, Stanford averaged 65 heart transplants per year. In 2020, the number jumped to 86 as COVID caused other lower volume transplant centers to close. Vanderbilt's heart transplant grew to 148 during 2020, the most in the world. Other academic medical centers that have the ability to turn deep expertise and superior outcomes into a drawing card may prosper from similar case consolidation.

Non-academic providers will not be able to invest sufficiently to match the perceived expertise advantages of the megabrand institutions whose reputations are already well established. Their best option will be to position themselves with an academic medical center particularly a megabrand institution.

By partnering with megabrand players like Mayo, Cleveland Clinic and Hopkins, other hospitals will be able to position themselves as the "virtual front doors" to world class expertise and outcomes. They will be able to navigate patients through their *"virtual front door"* and down their *"virtual hallway,"* triaging them toward their own services or alternatively to those of their megabrand partners. In some instances, the megabrands will return the favor by redirecting patients back to their local partners.

Subspecialty services and second opinion programs can be aggressively promoted by the megabrands with resulting consumer inquiries allocated across a national network of affiliated community hospital partners. Physicians will have an opportunity to be positioned to advantage with distant colleagues who have established world class reputations. They will increasingly be able to consult with these megabrand colleagues through telehealth and collaborate through remotely assisted monitoring and robotics.

Growing Dominance of Platform Empires

One of the most significant outcomes of the COVID crisis has been the accelerated growth and fortification of the major internet-based platform organizations including Amazon, Google, Facebook, Twitter, Apple, and Microsoft. These organizations serve as facilitators and gatekeepers for anything that can be done with internet-based technology including data search, shopping, transactions, social interaction, and entertainment. By positioning themselves between products and buyers and establishing dominance at that interface, platform organizations have developed a breathtaking degree of market influence bordering on monopoly power. By accelerating the movement of buyers and sellers to online options, COVID has significantly strengthened the power of these platforms.

Sears & Roebuck was once as dominant in the retail life of America as Amazon is today. In many ways, Amazon has replicated Sears. Instead of the internet, Sears had a catalog offering a comprehensive range of products. This and the advent of rural mail delivery afforded it great leverage in a nation that had yet to be urbanized. Some of Sears's sub-brands became dominant in their categories including Kenmore in appliances and Craftsman in tools. Sear's catalog-based interface with the consumer and its strong market position gave it tremendous downstream bargaining power with suppliers whose existence depended on maintaining a good, albeit subordinate, relationship with Sears. Sears solidified its market leadership by opening large anchor department stores in the nations expanding suburban shopping malls.

Wal-Mart successfully entered rural markets displacing Sears with brick and mortar stores more conveniently located and selling at a lower price. Like Sears before it, Wal-Mart eventually expanded into the lucrative suburban markets. In the end, Wal-Mart was to become much more geographically accessible than Sears. It too established significant downstream bargaining power with its suppliers. To date, Wal-Mart has not built a truly successful online platform leaving itself vulnerable to Amazon's "sell everything and deliver it to your door" juggernaut. But Amazon has yet to match Wal-Mart when it comes to perishables including groceries and so far, that advantage alone has carried the Bentonville enterprise forward on the crest of the COVID wave. It is expanding Wal-Mart Health focused on primary care and it recently acquired telehealth provider MeMD.

In August of 2021, Amazon for the first time outpaced Wal-Mart as the world's largest retailer. During the same month, reports began to surface that Amazon was going to begin building its own brick and mortar stores on the scale of 30,000 square feet. If true, this will count as particularly bad news for Wal-Mart. But it may be that Amazon's expansion into brick and mortar is not so much a competitive attack on Wal-Mart as it is instead an effort to shore up a key vulnerability of its own business model.

The pandemic has stretched the world's shipping and logistics infrastructure to the breaking point. This has put tremendous pressure on what Amazon and others describe as the "last mile" in a delivery – the challenge of getting that Amazon box to your front door. That last mile is the most expensive in the entire process. Another related cost built into Amazon's business model is associated with "returns." Around 25% of all online orders are returned and cost a seller an average of $20 each. This cost is enough to cause an online retailer to simply forgo making the customer return an item and just keep it along with a refund. And then there are all those shipping boxes that are swelling landfills. But there's a way to mitigate the high costs of the last mile, returns and dumps overflowing with shipping boxes – make a return to brick and mortar stores.

A burning question is whether dominant platforms like Amazon will move forcefully into healthcare. To date, their efforts have been tentative but they are clearly probing for opportunities. Launched in 2019, Amazon Care offers virtual and in-person primary care to Amazon employees and their dependents. Amazon plans on making the service available to other companies sometime during 2021.

If past history is any indication, whatever healthcare platforms emerge may not come from the legacy platform organizations (e.g., Google, Amazon, Facebook) or the legacy health systems (Mayo, Cleveland Clinic, Hopkins) but from ragtag upstarts with access to venture capital. That was, after all, the origin of most of today's high tech giants.

The healthcare institution with the best shot at becoming a dominant platform is probably Mayo Clinic. Mayo already has the essential experience, the brand, the reputation, the culture, the technology and the data. It also has the intent. Mayo CEO Farrugia feels healthcare needs to shift from a *"product based"* model to a *"platform model"* that integrates care. To move forward, Farrugia argues, the healthcare sector must *"fully embrace platform and digital technologies along with cross-sector partnerships…but like a stiff rubber band, once stretched, healthcare will reflexively snap back unless we intervene."* Key to successful intervention will be *"disciplined, deliberate measures to maintain important gains in virtual care while continuing to evolve care for the future…"*

Mayo has articulated an expansive ambition to create the most powerful information technology platform in healthcare. It launched the Mayo Clinic Platform in 2019. Among the early initiatives of the platform is an app that allows patients to upload data from wearable devices and use Mayo algorithms to analyze and integrate the data. Another product of the Mayo Clinic Platform is "Advanced Care at Home" which uses the Clinic's already strong capabilities in remote care to allow hospital patients to be released early and continue their hospital care at home. The Mayo Clinic Platform is also focused on providing personalized treatment guidance using insights embedded in more than 150

years of accumulated Mayo patient records representing millions of data points. Mayo currently has more than 30 petabytes of patient data. In the fall of 2020, it completed "deidentification" of 12.5 million patient records using advanced analytics to mine and scrub the data.

Mayo has already formed partnerships with other platforms including Google. It describes its partnership with Google as providing a cornerstone for its digital transformation. Its partnership with Medically Home allowed it to launch its Advanced Care at Home program more than a year earlier than it would have been able to otherwise.

Mayo isn't the only player forming partnerships. In May of 2021, HCA announced a multiyear partnership with Google Cloud focused to building a health data analytics platform using data derived from HCA's 32 million annual patient encounters. Data initiatives by HCA and Mayo drive home a reality for health systems aspiring to use "Big Data" as a cornerstone strategy: "*To leverage Big Data, you've got to have Big Data."* And most health systems don't have it. Which means they are going to have to rely on someone else's Big Data.

A platform strategy represents an essential defensive move for today's hospitals and health systems. Every third party seller on the Amazon platform pays up to a third of its sales for the privilege of being there. As remote care options proliferate, hospitals will need a platform presence. Once there, unless they own the platform, they'll be compelled to pay rent like the third party sellers on Amazon's platform. They may also find themselves reduced to commodities distinguished only by price.

The costs of becoming a true platform, a superior platform, will be high; far too high for most single hospitals to pursue alone. The best path will be partnering to share investment in developing a platform or gaining an advantageous position on an existing platform. Success will require a solid business model supported by experienced leadership. The leadership and talent for such an enterprise probably won't come from the ranks of today's hospitals. And it's certainly not an initiative that can be delegated to most hospital IT departments. In the near term, platform leadership will probably need to come from existing platform enterprises operating outside healthcare.

In December of 2020, remote care platform Biofourmis, in partnership with Boston's Brigham and Women's Hospital, began to roll out Biovitals Hospital@Home which delivers inpatient-level care within patient homes. The program allows clinicians to continuously monitor multiple indicators. It also integrates program administration, operations, supply chain and revenue cycle management. In May, to guide the platforms continued development, Biofourmis recruited the cardiologist who developed Amazon's Halo wearable device. Biofourmis' vision is to become the *"most comprehensive and tightly integrated care-at-home platform across a range of patient acuity levels and medical conditions."*

Of course, the organization best positioned to build *"the Amazon of healthcare"* may be Amazon, in which case hospitals and health systems will face the prospect of becoming commoditized downstream vendors. Analysts have predicted that if Amazon enters healthcare, it could take at least $100 billion from the incumbents currently serving that market.

Michael Serbinis is trying to position League as healthcare's leading platform and has defined what he sees as the opportunity, *"The healthcare experience is stuck in the past. It's confusing, fragmented, and frustrating. In a world where technology revolves around people, healthcare has done little to keep up. So we decided to do something about it."* Time will tell whether League is up to the challenge particularly with Amazon and Mayo stirring.

Unabated Entrepreneurial Fire and Innovation

One might assume COVID has crushed entrepreneurial activity. Multiple studies indicate quite the opposite. The last time the U.S. tallied 340,000 new business applications a month was 2005. In every month from June of 2020 to June of 2021, applications have matched or exceeded that number. During 2020, France saw 84,000 new business startups, its highest ever recorded. This record-setting pattern was repeated in Germany, Japan and the United Kingdom.

Venture capitalists aren't throwing money at acquisitions of hospitals. They're putting it into healthcare "disrupters." Crises like COVID can fuel a surge of "new competitors" that don't look, think or act like the "old competitors." And they can have the kind of impact on the status-quo that the barbarians had when they invaded ancient Rome.

Private equity firms are said to be sitting on $1.5 trillion in capital. Investment bankers and entrepreneurs have smelled the scent of opportunity in the COVID crisis. In just the first half of 2021, investments in digital health equaled the total amount invested in 2020 and twice the amount invested in 2019. ($7.7 billion) In 2020 alone, digital healthcare startups generated $14.7 billion in investments across 600 deals including Teledoc's acquisition of Livongo in 2020 for $18.5 billion. Teledoc stock subsequently grew by 140 percent over the year. Teledoc's transaction was the largest-ever digital deal and the third largest deal in the U.S. overall that year.

In March of 2021, telehealth provider Doctor-on-Demand and platform provider Grand Rounds announced they were merging to create a $2 billion virtual care company. Optum Ventures, the investment arm of UnitedHealth Group's Optum, is investing in smart phone-based applications that combine machine learning with the input of medical experts.

10 of the 70 startup companies that achieved $1 billion in 2020 were in healthcare. One Medical a primary care startup completed a successful IPO early in the year and then announced its plan to acquire Iora Health a Medicare Advantage focused primary care group. Other primary care startups focused to Medicare Advantage that have completed or are considering a public offering include Oak Street Health, VillageMD (backed by Walgreens) and ChenMed. In 2021, 13 of the companies on Inc.s list of fastest growing private companies were ASCs and physician practice companies.

Entrepreneurs fueled by ready capital are pushing care into the home. The availability of high quality video capabilities and the ability to monitor from a distance have opened up plenty of running room for innovators. Consumers are growing ever more comfortable with remote internet interfaces including high value apps like Zoom and bio-monitoring technology like Fitbit.

When it comes to innovation, necessity really is the mother of invention. And crisis is the mother of necessity. For many, the conversion of refrigerator manufacturers to ventilator production during the early days of COVID seemed implausible, but it had happened before. In the throes of World War II, all manner of manufacturing shifted to war production including the conversion of auto and tractor manufacturers to making bombers and tanks. The crisis of world war opened doors to new players. A highway contractor by the name of Henry Kaiser revolutionized ship building. He also brought innovation to healthcare as an architect of what would become the nation's largest integrated managed care enterprise; Kaiser Permanente.

War also generated innovation in management. There's a tendency to associate innovation with hard-edged technology. Advances in tangible things get much of the attention but just as transformative is innovation in "processes and methods." For example, many of today's dominant organizational models were borrowed from military models forged in the harsh realities war. Will Mayo and Cleveland Clinic founder George Crile developed their concept of a multispecialty group practice while working in military field hospitals in World War I then sharing their ideas when they returned to America on the same troop ship. Crile captured the essence of the innovation they brought to healthcare when he made "Act as a Unit" a cornerstone commitment of the Cleveland Clinic and made teamwork a lasting principle.

"Lean manufacturing" and "just-in-time' inventory systems weren't invented in Japan. They were invented in America during World War II by manufacturers like Boeing. After the war, American executives and managers set aside their well-honed war production methods and seemingly managed to forget them. But W. Edwards Deming and other consultants eventually packaged those methods up and exported them to Japan. There, they were adopted by companies like Toyota that had been compelled to rebuild after their factories were obliterated during the war.

For more than three decades now, many of the world's most impactful innovations have consisted of intangible processes and methods enabled by computers. Software giants like Microsoft and Oracle are process and methods innovators. So are Amazon, Google and Facebook. And so are most of today's digital startups.

Breakthrough innovations often take a while to get traction. Seven decades after the first telephone was patented in the 1860s, less than half the American population owned one. Eventually, adoption of telephones surged. That surge reflected Metcalfe's Law of Networks, which suggests that growth of a network rises exponentially with the number of its users. Rather than "diminishing returns," networks can generate "increasing returns" often on an exponential scale.

The airlines were once convinced their customers would insist on continuing to book their flights through the travel agents who had long served as gate keepers for travel. Initially, that assumption blinded the airlines to online booking startups like Expedia. But the airlines soon embraced the new online technology because it made life easier for their passengers while also delivering a significant reduction in airline operating costs.

Bankers once felt strongly that their customers would always prefer to interact with tellers. Hundreds of thousands of ATM machines and the growth of online banking would prove otherwise. In January of 1978, a snowstorm hit New York City closing down the city and its bank branches for days. During the storm, residents who had been reluctant to use the newly introduced ATMs found that the machines were their only option resulting in a significant increase in their use. It was the beginning of a rapid adoption. Today, the similar pattern is emerging for telehealth.

COVID has caused previously unrelated people and technologies to coalesce. In 2009, Heather Duncan, a critical care physician in the UK, had happened to hear a presentation by the managing director of McLaren Applied, a spinoff from the McLaren Formula One auto racing team. He explained how more than 300 embedded sensors monitored the performance of components of McLaren's F1 cars including a flow of data regarding the engine, tires and fuel as well as the driver. This data was continuously monitored and interpreted in real time by trackside engineers and mechanics. Duncan decided a McLaren F1 type platform could be adapted for sick kids. Over the next decade, she worked with collaborators from academia and industry to engineer a workable system that integrated algorithms and machine learning with biosensors. Data from patients was viewed in a central monitoring station where the trajectory of vital signs could be predicted allowing for much earlier interventions. As COVID spread to children, Duncan's innovation got tested.

Innovation often involves applying existing methods and technology to new challenges. Physicians at New York Presbyterian rigged cheap children's walkie-talkies across 10 care units to allow them to be used with an app that allows COVID patients to communicate with loved ones. Besides low cost and ready availability, the walkie talkies had the advantage of being simple to operate. Patients had only one button they needed to press to talk.

Digital startups delivering care remotely will become a growing source of referrals for specialty care as well as imaging and lab work. They will have an expanding number of options when it comes to making a referral and will be able to steer patients to or away from hospital owned services. Independent imaging centers have already proliferated as have surgicenters. These independent players have the potential to deliver outcomes and patient experiences on-par or better than those of a hospital and at a lower cost. It will be important for hospitals to keep their "electable" services safe from predation by these new competitors. In the end, the only way to do this will be to be competitive on patient experience, expertise, outcomes and cost.

Research and recent experience suggest patients are as satisfied with care delivered remotely as they are with face-to-face care. Tomorrow's gatekeepers may not be locally placed primary care providers but branded networks of remotely located physicians, mid-levels and nurses available online 24/7. The primary care networks hospitals have built through acquisition and employment may be displaced by aggressive digital competitors. What remains uncertain however is whether the expansion of telehealth precipitated by COVID will continue. Expansion could be reversed if restrictions existing pre-COVID are reinstated particularly constraints on delivering care across state lines.

In the foreseeable future, some capabilities will remain relatively secure within the domain of hospitals and their aligned proceduralists. Ultimately, the most sustainable role for hospitals may be as highly specialized surgical factories fortified by leading- edge imaging and robotics that enable clearly superior outcomes. Hospitals should ensure their capital plans reflect this opportunity. John Halamka MD, president of the Mayo Clinic Platform, reflected on the accelerating impact of COVID, *"…anything that we thought would take a decade to do is going to be an expectation for next year … we have changed so much, so fast with COVID 19."*

Balkanization of Healthcare

COVID has acted as an accelerant for the solidification of five competing sectors poised to trade punches in the future:

- **Legacy Providers.** The traditional array of healthcare providers including hospitals and their employed physicians will resist disruption of the status quo. Legacy providers will attempt to use legislation and regulation to disrupt the disrupters. However they may struggle to disrupt themselves enough to evolve into a sustainable strategic stance. Eventually patient experience, expertise, outcomes and cost will decide the future of today's hospitals and health systems.

- **Entrepreneurial Specialty Physicians.** Independent specialty supergroups will constitute an influential block in the future if they can avoid regulatory constraints. While primary care physicians may be supplanted by nurse practitioners and physician assistants, this generally will not be the case with specialty trained physicians. Specialty supergroups will be well positioned to purchase ancillary technologies including imaging and robotics. As a result, they will constitute a growing threat to the revenue base of hospitals. Historically, specialists have been much more resistant to being acquired or employed by hospitals than their primary care colleagues. Regulation, technology shifts, other specialists and oversupply may eventually represent significant challenges to some specialty physicians as has already been the case for general surgeons and thoracic surgeons. Still, shortages forecast across most specialties will only increase the market leverage of specialist supergroups.

- **Gatekeepers.** This sector includes not only existing primary care physicians and mid-level providers but will increasingly be comprised of digital startups that operate exclusively through telehealth and other remote technologies. In the future, these gatekeepers, unlike their predecessors in the 80s and 90s, will be incented to more actively steer referrals to preferred specialist colleagues and hospitals. Large, independent primary care groups that contract with narrow networks pose a significant threat to the fee-for-service models that still drive the economic engine of most hospitals. Independent primary care groups focused to Medicare Advantage have already demonstrated their ability to strip away a hospital's imaging business and redirect their referrals. Some of today's large primary care groups have regional and national ambitions and are distinguished by their emphasis on risk-based reimbursement. Because they are generalists, primary care gatekeepers are less vulnerable to advances in clinical technology than specialists and less dependent on capital.

- **Insurance-based networks.** Healthcare insurers had already accumulated massive financial reserves prior to COVID. They've significantly expanded those reserves during the pandemic. While their enrollees put off or delayed care, insurers continued to receive full premium payments. This resulted in dramatic declines in their medical loss ratios and equally dramatic increases in their profits. Insurers are sitting on piles of cash and they're spending it in ways that deleverage hospitals. Managed care companies continue to expand their employment of primary care physicians and mid-level providers. Optum, the subsidiary of massive UnitedHealth Group, already has around 50,000 physicians employed or affiliated in its network. So far in 2021, it has added 5000 more and intends to add an additional 5000 by year end. In March, it acquired a 715 employee physician group in Newton, Mass. It now operates about 1600 clinics serving some 20 million patients. UnitedHealth intends to channel its enrollees to providers in its owned and controlled networks as well as directing more than 50% of its enrollees' surgeries to ASCs by 2030. It expects the move will save it $20 billion and reduce hospitalizations by 500,000.

  Insurers are partnering with and employing physicians to keep them independent of hospitals. Blue Cross Blue Shield of California has invested in Altais, a company that provides ownership and partnership options for independent physicians including an integrated technology platform. In 2020, it partnered with Brown & Toland Physicians, a 2,700 physician network. In June of 2021, Blue Cross Blue Shield of North Carolina launched a joint venture with a healthcare investment company to support independent physicians with a variety of practice management services. In early August of 2021, Blue Cross Blue Shield of Michigan added a physician practice management business. Humana is also buying practices and has formed a joint venture with private equity firm Welsh, Carson, Anderson and Stowe to grow the number of primary care practices it already owns.

  A few years ago, I facilitated a gathering of CEOs from ten of America's largest and most prestigious health systems including Mayo Clinic. All, but the Mayo CEO, were unified in their belief that the greatest threat their institutions faced was competition from the physicians on their medical staffs. I was astounded. It was clear to me then and it's clear to me today. The insurers are the biggest threat to America's hospitals. Absent recognition of this reality, hospitals may be destined to become price-taking commodities. And if the insurers join forces with the likes of Amazon, hospitals will be even more disadvantaged.

- **Platforms.** COVID has greatly increased the market power of platforms by driving consumers online. Platforms can leverage their algorithms, internet presence, user interfaces and brand preference to position themselves as the "first click" for consumers seeking healthcare services and products. Amazon is well positioned to provide such a platform. So is Mayo Clinic which is already in collaboration with power players like IBM and Epic, UnitedHealth and Google.

It should be obvious that there is a potential for alliances to be built across the five sectors described above. It should also be obvious that it's possible to get cut-out and marginalized.

Size and Structure Stress-Tested

COVID is testing the assumptions related to the "right" size and structure for hospitals and health systems. Many small hospitals are clearly at risk with most of these endangered institutions being rural. But that was the case pre-COVID as well. COVID will intensify the closure rate for these small hospitals unless they are thrown a lifeline. In the past, that lifeline was the Critical Access designation that allowed small hospitals to generate modest margins. In March of 2021, the Biden administration endorsed provision of a $1.9 trillion COVID relief package that included $8.5 billion for rural healthcare providers. Unfortunately, too often, such support has been used to support an unsustainable model of care. Most rural hospitals date to the Hill Burton era and are seriously outmoded from the perspective of their facilities and operations. Today, rural communities don't need inpatient beds. And they don't need ICUs. What they really need is state-of-the-art outpatient services including up-to-date diagnostic capabilities and telehealth linkages as well as basic emergency care. Funding efforts are underway in some states to incent rural hospitals to close beds and convert themselves into freestanding centers focused to emergency care. Beginning in January of 2023, a new rural emergency hospital designation (REH) will provide Critical Access hospitals with funding if they maintain a basic ER.

Also endangered are large medical centers located in the heart of vulnerable cities. Because these institutions serve as safety-nets for vulnerable populations and because many are affiliated with universities, they are likely to be deemed too large and too vital to fail. They will attract additional subsidies. Rather than being periodic, such subsidies will have to become perpetual. If mayors and governors want their big city hospitals to survive, they'll have to subsidize them through taxation. The problem is that, at least in the near term, many big city tax-payers are already in full flight from rising crime and high taxes.

Hospitals that thrive in the post-COVID era will be of three types:

- Largely because of regionally powerful brands supported by deep and comprehensive clinical capabilities as well a strong referral networks and research capabilities, academic medical centers were the strongest hospitals pre-COVID. They will emerge even stronger post-COVID. (The exceptions may be academic medical centers in the heart of large cities) All the megabrand hospitals are academic medical centers including Mayo and Hopkins. (Cleveland Clinic is still something of an academic hybrid) New market entrants, including digital startups, will seek to position themselves with the reputations of leading edge academic medical centers.

- Large nonurban institutions with 300 to 700 beds married to strong outpatient capabilities, loyal procedural specialists and a cohesive primary care referral base will continue to prosper. If these institutions have the benefit of an academic affiliation, they will be further strengthened. This assumes they are well-led and agile. Unfortunately, large size can breed bureaucracy and delusions of invulnerability.

- The third type includes the 100 to 300 bed community hospitals serving populations with strong demographics. These institutions are, by their nature, more attuned to their local markets. They are prone to be less bureaucratically complex and have the potential to be more agile. They can more effectively mobilize community support and they tend to produce consistent margins as well as adequate reserves.

Hospitals and health systems that own health plans have been financially advantaged during COVID because they have been able to use outsized profits from their insurance business to offset losses related to their delivery of care. This will be a temporary advantage that will diminish assuming the impacts of COVID decline.

COVID has challenged assumptions about structure and particularly the durability of health systems. There are significant questions related to whether multi-hospital systems really operate as "systems." Systems expert Russell Ackoff once suggested that you know you have a viable system if, when you take out a piece of the system, it's worth less than when it was in the system. And the system is worth less. This relates to the concept of "break-up value" which asks, *"Is the organization in aggregate worth more than it would be if it was broken into its key enterprises and those enterprises sold as independent pieces?"* If it's worth more in pieces than whole, then "wholeness" wasn't creating much value to begin with.

Reportedly, more than two-thirds of America's hospitals are part of a multihospital system. Promoters of multi-hospital systems have touted analysis that suggests hospitals that are members of a "system' financially outperform "independent" (nonsystem) hospitals. This analysis invariably lumps struggling rural hospitals into the "independent" category and by so doing misrepresents the performance of strong independent hospitals.

One sign of "systemness" is consistency across the pieces. For a health system, patient experience and outcomes should be reliably consistent no matter where or when the patient interacts with the system whether in the ED, on an inpatient floor, in a physician practice or in the billing office. Underperformance in one piece undermines the others. In this, a true system is like a Calder mobile. Touch one piece and all the others move.

Some once independent hospitals that joined a multi-hospital system have found themselves forced into queues when it comes to access to capital and other resources. They have also, on occasion, been immobilized as they wait for decisions to be made by system executives. This may be workable in normal times but then these aren't normal times. Multi-hospital systems are quick to point to their combined assets as a formidable strategic advantage. But a big balance sheet means little if it's locked up.

COVID has created a need to quickly and effectively allocate resources including not only dollars but expertise and attention. Faced with crisis, resilience, agility and speed- to-market can be paramount. Standing still, paralyzed into inaction, may prove fatal. Those hospitals and health systems that define, embrace and solidify an advantageous strategic stance early can gain an advantage over laggards.

The costs of transforming legacy infrastructure and processes will be high both in terms of dollars and learning curve. Because they tend to be more agile, it may be independent hospitals that are able to make the transition most effectively. They will benefit significantly by partnering with other independent hospitals to share knowledge and funding enhanced capabilities through partnerships with other hospitals.

Some of today's hospitals and health systems may find themselves profoundly out-of-synch with the new demands of their environment in much the same way that dinosaurs found themselves out-of-synch. For this, of course, most dinosaurs paid the price of extinction. When it comes to building bigger health systems through mergers and acquisitions, I'll only observe that if you could mate a dinosaur with a dinosaur, you'd probably still end up with a dinosaur.

A Possible Acquisition Spree

In every economic disruption, the consolidators come alive with calls to aggressively pursue mergers and acquisitions arguably in the interest of greater survivability. This is, in part, fueled by firms that make a handsome living facilitating M&A deals. In healthcare, it's also fueled by a lack of informed analytics and strategy related to size and structure. COVID has greatly deepened the need for change. But there's little to suggest that the best way to accomplish or facilitate that change is through mergers and acquisitions.

Research consistently indicates that in all industries, including healthcare, most mergers fail to deliver anticipated benefits. Mergers are notoriously distracting. They consume inordinate amounts of time from leaders and are prone to debilitating culture conflicts at all levels of the organizations involved. They suck up people and dollars often much better allocated elsewhere. A pandemic is no time for organizational distractions and conflict.

In 2020, there were 79 M&A transactions involving hospitals announced, down significantly from the 92 announced in 2019. Throughout the pandemic, the number of completed M&A transactions has declined including during the first quarter of 2021. And several significant mergers have been called off since May of 2020 including Sanford-Intermountain, Atrium-Warner Robins, Advocate/Aurora-Beaumont, Ventura County-Dignity Health, Summa-Beaumont, Advocate Trinity-Mercy-South Shore-St. Bernard, and CommonSpirit-Essentia. Some of these deals, if consummated, would have represented "megamergers."

Today many multi-hospital systems are the result of acquisitions where insufficient attention appears to have been given to institutional performance, cultural fit and market dynamics. While cobbling hospitals together allows an acquiring health system to boast a larger revenue stream, that revenue stream may be less profitable because some of the acquired hospitals are perpetual underperformers. In other words, acquisitions can be financial drains on the system rather than productive contributors.

Support for underperforming system hospitals too often comes in the form of resources diverted from the system's better performing institutions. This means a flagship hospital may be deprived of resources it could have used to strengthen itself. As a result, an excellent flagship can end up marginalized in exchange for a mediocre multi-hospital system.

Some hospitals and health systems will be so weakened by impacts of the pandemic that they will seek financial bailouts. Bailouts will come from federal and state initiatives to prevent the widespread collapse of the healthcare delivery system nationally. But bailouts will also come from institutions that have weathered the storm sufficiently to finance acquisition of wounded players. As it does with banks that acquire failed banks, government may help fund and facilitate the acquisition of troubled hospitals by healthier ones.

Although the number of hospitals available for acquisition at little or no cost may increase because of COVID, it's worth remembering the origins of the notion of a "fire sale." It pertained to goods sold at a deep discount because they were smoke damaged. It should be a concern that investors today are betting their money on healthcare ventures other than hospitals. When the only organizations acquiring hospitals are other hospitals, alarm bells ought to be going off.

Even if the price of an acquisition is low, the fundamentals needed for success will remain unchanged including favorable market demographics, the quality and entrepreneurial capacity of the medical staff, status of technology and facilities, consumer preference and debt levels. Absent solid fundamentals, many hospitals available at bargain basement prices will represent very bad deals that consume dollars and attention that could have been directed towards much better opportunities.

In 2018, a study conducted for The New York Times found that market competition decreases and prices climb from 11% to 54% when hospitals consolidate. The study also concluded that price increases were even higher when systems acquired affiliated physician practices. Another study in Health Affairs examining the period 2013 to 2016 found significant price increases related to system acquisitions of physician practices in California. From 2010 to 2016, the percentage of physicians in practices owned by hospitals grew from 25% to 40%.

A study in January 2020, in the New England Journal of Medicine found that hospital mergers and acquisitions were associated with modestly worse patient experiences and insignificant changes in readmissions and mortality rates. According to the study's authors, *"These findings challenge arguments that hospital consolidation, which is known to increase prices, also improves quality."*

In July of 2021, the Biden administration signaled its intent to strengthen review of hospital mergers. Associate Attorney General Vanita Gupta commented *"…today, dominant health systems can approach 50 percent control of a relevant local or regional market. This kind of consolidation can be detrimental to our economy."* In response, the American Hospital Association wrote a letter to federal officials arguing that the majority of hospital mergers *"present no competitive issues."* It cited a study by Charles River Associates that found health systems have been able to lower costs and improve quality through hospital acquisitions.

The effects of industry concentration created by acquisitions and mergers became more than a theoretical consideration during COVID. Meat packing has become a highly concentrated industry with just four large packers processing 80% of the nation's beef. Dangers associated with this level of concentration became obvious during the pandemic as periodic closures of the packing plants caused significant disruptions of meat supplied to grocers. While most consumers may not pay much attention to the spot price of

oil, they do pay attention to the price at the gas pump and the price of meat in the grocery store. Gas and beef prices are way up. The price of ground chuck at Wal-Mart climbed to more than $5 a pound in September of 2021. Tellingly, the price of eggs has remained low throughout the pandemic. Egg producers are a notably unconsolidated segment of the food industry.

A lack of positive results associated with mergers and acquisitions may suggest that M&A just doesn't work. On other hand, it may simply mean that M&A initiatives have the potential to generate value but have consistently fallen short because of poor execution.

Nobel laureate Daniel Kahneman has observed that *"Leaders of large businesses sometimes make huge bets in expensive mergers and acquisition, acting on the mistaken belief that they can manage the assets of another company better than its current owners do. The stock market commonly responds by downgrading the value of the acquiring firm because experience has shown that efforts to integrate large firms fail more often than they succeed. The misguided acquisitions can be explained by a "hubris hypothesis"…the executives of the acquiring firm are simply less competent than they think they are."*

In healthcare, the key for M&A success is to push beyond the balance sheet into day-to-day operations so that clinical care and patient experience are integrated in ways that generate demonstrable improvements system-wide while simultaneously reducing costs. Most mergers never achieve that goal.

Over the past 30 years, I've been involved in and around a lot of hospital deals and, from my perspective, there are several reasons they miss their mark:

- The strategic rationale for the deal was never defined. A worthwhile deal should make 1 plus 1 equal 3. Obviously, if 1 plus 1 just adds up to 2, the deal isn't worth the trouble.

- Too often, the rationale is simply "bigger is better." But most hospitals, including system hospitals, serve unique local or regional markets making it nearly impossible to achieve economies-of-scale through consolidation.

- Parties to the deal are strangers (or former competitors). There is often little basis for trust.

- Compatibilities in personnel and capabilities aren't fully assessed.

- The deal gets done in secret by a small group of top execs facilitated by a cadre of outside dealmakers and lawyers.
- Key stakeholders, including physicians, are kept in the dark. Physicians can derail or marginalize a deal.
- Any decision to abandon the deal is positioned as a "failure."
- Post-deal leadership and governance roles are left murky.
- Co-leadership arrangements and mergers of equals fall apart resulting in bitterness and sabotage at the top.
- Personal self-interest in a well greased post-merger exit becomes a deal driver.

Partnerships are less distracting, less disruptive, less expensive and more flexible than the M&A option. There's little that a merger can do that a portfolio of well structured partnerships can't. A portfolio of partnerships can be established across organizations. A partnership model can focus talent and resources with greater specificity while being much more responsive to unique market dynamics. A partnership can be used to create an array of agile semiautonomous operating units rather than a centralized bureaucracy..

In the movie *Treasure of Sierra Madre*, Humphrey Bogart is confronted by bandits posing as Federales. When Bogart demands to see their badges, the bandit leader famously responds: *"Badges? We ain't got no badges. We don't need no badges. I don't have to show you any stinkin' badges!"* And often, "You don't need a stinkin' merger!" A partnership will usually be a better choice.

Supply Chain Disruption

COVID has fanned existing supply chain problems into flames. Today, a wide variety of industries have been strapped by a shortage of semiconductors. Fires in the far-east, where most semiconductors are manufactured, had already caused chip backlogs pre-COVID. One Japanese fabricator that stopped production after a fire had previously provided 30% of the semiconductors for the auto industry worldwide. Many of the top semiconductor companies no longer manufacture their own chips. They just design them then outsource production to a small number of fabricators. These fabricators were quickly overwhelmed by the demand generated indirectly by COVID. As the virus first struck, consumers bought up computers and routers to ensure internet access as they found themselves shopping online, working from home and relying on telemedicine. As the pandemic persisted, the number of online gamers swelled putting more pressure on semiconductor supplies.

Meanwhile, as air travel evaporated in the face of COVID, car rental agencies faced bankruptcy and auctioned off their fleets of rental cars. This resulted in a dramatic drop in sales of new automobiles causing manufacturers to cancel orders with their suppliers including semiconductor manufacturers. But despite expert predictions of a prolonged decline in auto sales, demand soon bounced back.

Electronics, including a multitude of semiconductors, now comprise more than 40% of the cost of the average automobile. As automotive demand surged, new $50,000 cars couldn't be brought to market because they lacked $3 semiconductors. In January of 2021, Ford's plant in Louisville and its 3,900 employees stood idle. It cut back or halted production at eight assembly plants including the one that makes the best-selling vehicle in America, the Ford 150 pickup truck. General Motors halted production at assembly plants in Kansas, Canada, and Mexico. Toyota was forced to begin planning a 40% reduction in production of its Tundra pickup truck. Experts now predict auto production will be reduced by 1 million vehicles in 2021. As demand swelled beyond supply, the price of used cars at auto auctions jumped 50% while on new car lots dealers routinely began to mark up sticker prices by more than $5,000. Similar shortages can be seen across most industries including healthcare. There is a big difference, of course, between waiting months for a pickup truck and waiting for a heart transplant.

Backups anywhere along a tight supply line can cause shortages and pileups upstream and downstream. Online orders have generated a surge of shipments out of Asia. Dockside labor shortages have been the primary catalysts for massive backups at America's major ports. Up to one third of the nations imports pass through the ports of Los Angeles and Long Beach. At times, as many as 40 ships have been anchored waiting off LA/Long Beach. Up the coast, waits at Oakland have been measured in weeks. Similar bottlenecks are occurring at ports on the east coast. The backups have been compounded by shortages of rail and truck transport to move cargo inland. Problems at U.S. ports are a subset of similar disruptions worldwide with exports including rice, soybeans, sugar and coffee piling up at foreign ports.

Included in the containers waiting on backlogged ships are lots of healthcare supplies. It is estimated that pre-COVID up to 90% of these essential supplies had been outsourced to China and were shipped across the Pacific on container ships. Shipping and freight costs have jumped more than tenfold. For shipments from China to the U.S., the cost of a container has risen from $2,500 to more than $20,000.

"Supply chain" is an unfortunate description for the flow of products and services to buyers. In reality, a robust flow of supplies operates as a network not a chain. Lose one link in a chain and the entire chain fails. On the other hand, a healthy network incorporates nodes rather than links and demonstrates redundancy across those nodes. If a node fails, supply reroutes around it. Redundancies in nodes allow flows to reroute and for the network to rebalance. But problems at one node of a delivery network can cascade into multiple problems across the rest of the network. Networked supply flows are usually "self healing" when they are disrupted by isolated events like the loss of a single manufacturing source. They are also "self optimizing" when it comes to adjusting supply to meet changes in demand. With COVID, disruptions to supply flows have been so multifaceted and widespread that overwhelmed networks have often been unable to quickly heal or optimize.

A crisis often brings overlooked vulnerabilities into sharp focus. Just-in-time inventory systems (JIT) ensured participants up and down the supply line had no breathing room when it came to meeting fluctuating demand during COVID. By August of 2005, most of America's hospitals had embraced JIT inventory systems. When Hurricane Katrina struck that month, it soon became clear how much of a liability JIT could be as flooded streets, debris and gangs blocked surface transportation of desperately needed medical supplies bound for New Orleans wounded hospitals. COVID is providing a similar lesson about JIT inventory systems but on a global scale. After Katrina, some organizations began to supplement their JIT inventories with JIC - "just-in-case" inventories geographically distributed in hubs so there would be backup inventory in case other locations are lost or compromised.

Americans were surprised to learn that most of their nation's healthcare supplies were originating in China. It has been estimated that a single hospitalized COVID patient triggers demand for 36 pairs of gloves, 14 gowns, 3 pairs of goggles and 13 N95 masks. In April of 2020, the demand for N95 masks was estimated to be 300 million per month while domestic manufacturing levels were only around 35 million. The price of isopropyl alcohol used in hand sanitizers surged from $1000 a metric ton to $3160. Meanwhile, the U.S. Strategic National Stockpile was reported to be nearly drained of essential medical supplies. In the U.K., Andrew Pollard director at the Oxford Vaccine Group lamented that as the pandemic struck *"We needed thermometers for our volunteers: there were none anywhere in Europe."*

On Wednesday, February 10, 2021, as if COVID wasn't enough, a cold front began to move into Texas. Sleet, freezing rain and snow were followed by an Arctic blast. Four days later, on Sunday, every square inch of the state was under a winter storm warning. Then on Tuesday the temperature in College Station dropped to 5 degrees and in Houston it fell to 13 degrees. The frigid outbreak lasted 10 days and left the states power grid and pipelines paralyzed. At its peak, more than 5 million Texans were out of power, some for more than 3 days. Water service was disrupted for more than 12 million. 100% of the Texas orange crop was lost and grocery stores throughout the state were forced to close. Estimates suggest more than 200 people died and, at $195 billion, the economic damage exceeded that created by Hurricane Harvey.

The Texas freeze crippled resin suppliers who then put their customers on backorder allocations. Automotive manufacturers began scooping up all the resin they could. On resin waiting lists, toy manufacturers were put on par with healthcare manufacturers. Resin costs quickly jumped 56% and the supply of plastic syringes began to dry up. In June of 2021, Robert Handfield PhD shared the perspective of one syringe manufacturer: *"We looked at the value stream mapping and whether to bring (production) back to the U.S. but we saw significant margin erosion would be needed to do that. Our operations team isn't willing to do that. They want more agility but refuse to pay a price increase…We are facing a lot of pressure from Wall Street to improve margin and customers say they will go out to bid if we raise prices."* According to Handfield *"Although healthcare providers are concerned about moving away from their Chinese manufacturers, they don't want to pay extra for local domestic suppliers, even though the promise of greater resilience in the face of a pandemic looms still. It seems as if there has been a complete memory loss of the shortages that existed during the pandemic, as if everyone is going back to normal."*

The cost of most goods has gone up significantly since the onset of the pandemic. In November of 2021, estimates of the overall rate of inflation in the U.S. exceeded 8%. A poll of U.S. consumers indicated that 82% of respondents were "extremely" or "very" concerned about the rising cost of living. Shortages and price inflation are obvious political liabilities.

Work Realignment

In 1989, when an earthquake took out the Oakland Bridge, employers in San Francisco and the Silicon Valley were compelled to let their employees work from home. They expected those employees to happily migrate back to office settings when the bridge reopened. But many didn't. They liked working from home. Many organizations that want their employees physically back in their offices post-COVID are experiencing similar resistance. Although the numbers are still unclear, there are already wide spread reports of healthcare workers choosing not to return to their pre-COVID positions. Rebuilding a work force after more than a year of absence made possible by generous unemployment benefits and paid layoffs will be a hard stretch for many organizations.

In hospitals, the stresses brought on by COVID have been particularly intense. Initially, when the pandemic began, many hospitals actually saw employee satisfaction increase. Although most healthcare workers rallied to the crisis, adrenalin and compassion have their limits. Today, leaders worry that continued uncertainty and fatigue is driving down morale. Even before COVID, there was deep concern about burnout among caregivers including physicians and nurses. As the pandemic has persisted, burnout has intensified.

Since February of 2020, the healthcare sector has lost nearly half a million workers and 18% of healthcare workers have quit while 12% have been laid off. More than 30% of the remaining healthcare workforce and up to 60% of the nations acute and critical care nurses have indicated they are considering quitting their jobs.

Unfortunately, a shortage of employees willing to return to work increases the pressure on those who have chosen to stay on the job thereby intensifying burnout. It may also set the stage for resentment among those who weathered the storm for staff that stayed home. The loss of seasoned staff degrades the accumulated experience and knowledge of the institution and inhibits productive mentoring. It also erodes the trust that can only be built by working together. Cassandra Werry an ICU nurse in Idaho foresees "…at least three or four years post-COVID where healthcare outcomes are dismal."

In a 2021 article in The Atlantic, Ed Yong observed *"Throughout the pandemic, commentators have looked to COVID hospitalization numbers as an indicator of the healthcare system's state. But those numbers say nothing about the dwindling workforce, the mounting exhaustion of those left behind, the expertise now missing from hospitals, or the waves of post-COVID or non-COVID patients. Focusing on COVID numbers belies how much harder getting good medical care* ***for anything*** *is now – and how long that trend could potentially continue. Several healthcare workers told me they are now more concerned about their own loved ones being admitted to the hospital."*

One cause for hope for the future of the healthcare workforce is a rise in applications to medical schools and nursing programs during the pandemic.

Just as online retail and remote care are here to stay, so is remote work. Recent surveys suggest over 80% of employees want to be allowed to work remotely some or all of the time and 25% say they might quit their job after the pandemic to find work that offers flexibility. And they are likely to find plenty of opportunities. The number of postings for fully remote jobs rose 76% between 2019 and 2020.

Some experts predict work settings will eventually settle into a mix of remote and onsite. There are other studies that seem to suggest that the move to remote work is being overstated and the eventual impact may involve just 20% of the workforce. One consequence of workers who fail to return to their jobs may be an increase in work outsourced offshore.

Current research indicates that up to 30% of the healthcare workforce can be located remotely. And at least 40% of that work force isn't interested in returning to their previous work environments. Hospital and clinic real estate is expensive and so is its associated overhead. It's really no place for clerical staff. People who aren't needed on the frontline can be transferred home or to distant work sites. And many doctors and nurses can deliver telehealth as easily from home as from an office.

Before COVID, many rural communities and towns in the exurbs had already begun renovating their once vital main streets and installing broadband. Today, their under-used buildings represent affordable and attractive work spaces in the secondary and tertiary service areas of hospitals where an economic boost is often needed.

Obvious downsides of remote work include the difficulty of building and sustaining a cohesive organizational culture as well as challenges to collaboration. However, there is a persistent tendency to understate the significant disadvantages long associated with onsite work including counterproductive office politics and dysfunctional interrelationships as well as the costs of commuting.

A workforce crisis may represent one of the most significant long term challenges facing healthcare leaders post-COVID. The lingering shadow of the pandemic along with an aging workforce and growing shortages of physicians and nurses will combine to create a potentially intractable problem. The most productive response will be two-fold. Redesign work processes for efficiency and wherever possible automate those processes with technology including widespread adoption of robotics.

In agriculture, the response to labor shortages has been technology. The large combines working crops today are packed with computer screens and AI. GPS systems allow them be driven across fields with accuracy within 2 inches. Drones fly overhead and transmit moisture levels and crop status. A phone app activates irrigation systems.

Technology is and always has been a human enabler. But in the end, it will be the quality and commitment of the people using the technology that ultimately matters. It used to be that an organization with average performers could still survive. Today, the competitive environment is characterized by a "winner-take-all" dynamic with most of the market share and profitability accruing to the top 20% of players.

II) LEADING IN A COVID WORLD

Developing a Crisis Mindset

COVID was introduced to the world as a "novel" virus. Nothing like it had ever been encountered before. The crisis it produced has also been novel. Nothing in the experience of the nation's leaders matches the level of uncertainty and disruption generated by COVID. There's no playbook for a novel crisis. There's no "to do" list held in reserve. In the end, responding comes down to a developing a flexible mindset ready for crisis.

We all develop a mindset, a way of seeing and responding to the world. We hold onto that mindset, often tenaciously, until circumstances compel us to change it. It is our experiences that make and remake our mindset. Accumulated experiences enrich our mindset and fortify our perspectives. Well-fortified perspectives build good judgment.

Confronting any novel challenge with the attitude that past experience has provided all you need to prevail can be a dangerous kind of hubris. Lt. Col. Chip Berke is a retired Marine fighter pilot. During his career, he flew the most advanced fighters in the world including the F-18 Hornet and the F-22 Raptor eventually moving to command a squadron of the F-22s successor; the F-35 Lightning. Today the F-22 Raptor remains the fastest, most powerful fighter ever built. It was its level of *"Information dominance in the battlespace"* made it truly different from its predecessors.

Berke had a tough time transitioning from the F-18 to the information driven systems of the F-22. It came down to mindset. He still had a more conventional "F-18 Hornet mindset." As a result, younger pilots with much less total experience were outperforming him. They had grown up flying the data-rich F-22. According to Berke, *"I showed up with guys who had about half my experience, who were just annihilating me in the airplane. They just understood things better than I did. It was a very difficult transition for me. So much of what you knew as a pilot didn't apply. It was very frustrating to make fourth generation decisions - my Hornet brain - inside an F-22. A lot of those times, if not most of the times, those decisions proved to be wrong."* But with experience, as Berke's mindset adapted to its new F-22 circumstances, he regained his ability to demonstrate dominance in combat performance.

There are the journeys we take by choice and there are journeys that take us kicking and screaming. COVID is an example of the latter of course. Crisis takes many forms. A virulent pandemic is obviously a crisis. So are wars, earthquakes, wildfires, nuclear meltdowns and economic collapses. All crises share some common characteristics. They are unexpected. They are disruptive. They are time stressed. They are potentially deadly. But every crisis is also unique. Crises vary in their duration, reach, intensity and complexity. An earthquake produces a crisis that is intense but relatively localized. COVID represents a prolonged crisis of unprecedented reach and complexity but with varying intensity. Most crises are characterized by intensity at the onset followed by diminishing impacts over time. COVID has been more like a distant wildfire that spreads as it rolls ever closer until it's on you in a consuming firestorm. But then it doubles back to burn you again.

How can leaders accumulate the experiences needed to shape a mindset ready to wrestle with a crisis? The best approach is to journey through analogous experiences. Experience comes in two flavors; direct and indirect. For example, we can develop an impression of a place directly by physically placing ourselves there. Or we can develop perspectives based on the experiences of others.

There are individuals who deal in crisis with a degree of regularity including firefighters and other first responders, search and rescue teams and members of law enforcement. In times of war, members of the military face crisis. Caregivers as well as aid workers can find themselves engulfed in disasters. And a single individual can find herself fighting for survival on the open sea. Many of these individuals have stories to tell. Here's a reading list sure to cultivate a crisis mindset:

Adrift: Seventy-six Days Lost at Sea by Steve Callahan

Young Men and Fire by Norman Maclean

Fire on the Mountain by John Maclean

Fire in Paradise: An American Tragedy by Alastair Gee

Midnight in Chernobyl by Adam Higginbotham

The American Plague: The Untold Story of the Yellow Fever by Molly Crosby

The Great Influenza: The Story of the Deadliest Pandemic in History by John Barry

Leave No One Behind (Hurricane Katrina and HCA’s evacuation of Tulane Hospital) by Bill Carey

Five Days at Memorial (Hurricane Katrina and Tenet’s Memorial Medical Center) by Sheri Fink

The books listed above aren't prescriptive. They describe what people did in crisis not what they should have done. Each immerses the reader deeply in the experience of crisis. It may be tempting to dismiss such reading. Leaders are busy and time is limited. But if the environment is destined to be characterized by more crises, then developing a crisis mindset becomes an obligation not an option. It's important to push beyond the envelope of past experience and prevailing mindsets. The further the push, the richer the insights.

Unleashing the Power of Metaphor

Leaders benefit from metaphors. So do followers. Metaphors provide context that can shape mindsets and spark action. They anchor the unfamiliar to the familiar. They offer guidance for what may lay ahead. They suggest what may work and what may not. Metaphors enrich stories. They make them more compelling. A metaphor isn't a fantasy. It's the juxtaposition of two realities that share similarities; two realities that are at once different and alike.

Fire is a worthy metaphor for COVID. It provides a rich context for the virus. Both COVID and fire are potentially deadly. Both are threatening enough to trigger panic and disorder. Both can explode from a seemingly harmless smolder. Both can spread exponentially. Both depend on a pyramid of factors for survival. A fire depends on oxygen, fuel and heat. A virus depends on a host, transmission and rapid reproduction. Disrupt their pyramids and you can kill them. Water can kill a fire and antibodies can kill a virus. All fires eventually go out. And so do all pandemics - eventually.

A solitary sneeze spreads the virus like wildfire embers that float down to spark new flames. Super spreader clusters are like the wildfire blowup that creates its own incendiary storm and feeds on itself. The masks, the hand washing, the physical distancing are like the fire lines dug to deprive the fire of fuel. And all those folks on the frontlines of care are, of course, like soot-covered firefighters. Imagine the hills around your hospital are on fire. You drive through the smoke and drifting embers. Never have the responsibilities of leadership been more urgent.

You pull into parking lot and your worst fears come alive. Your hospital is on fire. Smoke is billowing out the upper windows. There are patients and staff scattered across the parking lot. This is no time for strategy. It's time for tactical action.

There is a single fire truck hosing down the entrance to the hospital. Firefighters are slipping ghostlike in and out of the smoke. They know fire and ways to defeat it. They've learned that a key to confronting a chaotic situation is to meet turbulence and confusion with disciplined order.

The first step in fighting a fire is to frame the situation. This is called the "size-up" during which firefighters gather and communicate critical information describing the situation including occupancy, number of floors, and available sources of water supply. When fighting a structural fire, an acronym provides prevailing wisdom; RECEO VS. It translates to:

- **R**escue. Saving lives is a continuous priority. Often the first step in saving lives is, of course, to control the fire.
- **E**xposures. Reduce the potential for fire damage to surrounding structures
- **C**onfine. Keep the fire from growing.
- **E**xtinguish. Put the fire out.
- **O**verhaul. Check to ensure all pockets of fire have been extinguished.
- **V**entilate. Open up places for the fire's smoke and heat to escape.
- **S**alvage. Protect the structure and its contents from additional fire damage.

Take a few minutes to reflect on the list above by replacing the word "fire" with "virus."

On the evening of June 18, 2007 firefighters in Charleston, SC arrived at what should have been a fairly routine fire at a mattress store. The fire was smoldering on the loading dock. It apparently started when a cigarette was tossed into some discarded furniture. An employee was quickly rescued and firefighting was limited to the loading dock until a door was opened at the rear of the store near where the fire was burning. Firefighters were unable to reclose the door as the fire surged into the stores showroom. There was no sprinkler system. Mattresses are highly flammable and the fire spread quickly and intensified. Water was being intermittently cutoff as cars continued to drive over the fire hoses stretched across the highway in front of the store.

There were 16 firefighters in the building when their buddies outside started to hear "Maydays" over their radios and began getting alerts from devices used to signal distress. They smashed in the windows at the front of the store to let the trapped firefighters escape. This allowed air to rush in pulling the fire across the entire store and erupting into a "flashover." Rescuers were driven back as the front of the store collapsed and sent a fireball over their heads. 37 minutes had passed since first report of the fire came in. In that time, nine firefighters died. It was the deadliest structural firefighting incident in America since 9-11. Tragically, principles embodied in RECEO-VS had gone unheeded.

Gordon Graham is a research consultant who advises and educates firefighters and other professionals focused to high-risk situations including those at Department of Homeland Security and FEMA. He advocates a four quadrant grid for assessing danger. The “Risk” associated with an incident is arrayed from low to high along one axis of the grid. The “Frequency” of the incident occurring is arrayed along the other axis. Low Frequency means the situation is unfamiliar or "novel." The High Risk/Low Frequency quadrant is the one where things have greatest potential go seriously wrong. COVID lives in that quadrant.

On August 5, 1949, the Mann Gulch fire in the mountains of western Montana became a blow-up that burned 3,000 acres in ten minutes and consumed the lives of 13 smokejumpers. Norman Maclean later immortalized the event in his book Young Men and Fire. Maclean sized up the fire and identified several factors that coalesced into disaster:

- **Terrain.** An incline of 75% allowed the fire to move faster up the slope and made it difficult for smokejumpers to outrun it.

- **Fuel.** The ground was knee high in highly flammable cheatgrass that had been allowed to grow tall because it covered a wildlife area where grazing had been prohibited.

- **Weather.** It was extremely hot and dry with strong winds blowing up the gulch fanning the fire towards the smokejumpers and their escape route.

- **Communication.** The crew's only radio was ruined when its parachute failed. Smokejumper foreman Wag Dodge turned his crew over to the second-in-command for several minutes during which they were allowed to spread out and lost contact with one another.

- **Leadership.** Dodge didn't know his men well. When he told them to lie down in an area where he had started a spot fire, they ignored him and tried to outrun the fire instead. They died. Dodge survived.

The first three factors above were "uncontrollables"; beyond influence. In a situation dominated by unconrollables, it's essential to focus on the controllables. Communication and leadership fell short in Mann Gulch.

In a crisis, clear communication by leaders is vital. Credible leadership requires communication that has integrity. Messaging with integrity is consistent across time and space. The human mind is a difference seeker. At a conscious and subconscious level, it looks for patterns that distinguish predator from prey, normal from abnormal, connected from disconnected, consistent from inconsistent. It also needs help sorting out the essential information from the noise. While communication is obviously essential in a complex crisis like a wildfire, it needs to be controlled. In some wildfires, a flurry of nonessential chatter on radios has drowned out the truly essential messages.

Looking back on the tragedy of Mann Gulch, University of Michigan professor, Karl Weick, provided a warning uniquely relevant to leaders in a world beset by pandemic: *"What holds organization in place may be more tenuous than we realize. The recipe for disorganization in Mann Gulch is not all that rare in everyday life. The recipe reads, Thrust people into unfamiliar roles, leave some roles unfilled, make the task more ambiguous, discredit the role system, and make all these changes in a context in which small events can combine into something monstrous. Faced with similar conditions, organizations that seem much sturdier may also come crashing down."*

The firefighters in Mann Gulch didn't have the benefit of trust in their leader not because he was untrustworthy but because he was unknown. Trust is essential to leadership because it's sometimes necessary to move people against their instincts. On September 11, 2001 a police helicopter hovering above the Twin Towers alerted police personnel that the North Tower was nearing collapse and called for an immediate evacuation. The warning was received 21 minutes before the building collapsed but the firefighters in the North Tower never got the message. On its face, the communication breakdown resulted because the police and fire departments in New York had no linkage between their radio systems. In fact, there had been much animosity and mistrust between the two agencies prior to 9-11 and little meaningful coordination. 1434 civilians and 121 firefighters died when the North Tower collapsed.

Historically in healthcare, there has been a strong reservoir of trust. According to a recent survey conducted by the University of Chicago's Harris School of Public Health, more than 70% of respondents said they trust physicians, nurses, and pharmacists to do what is right for them and their families. The good news is consumers trust healthcare providers as a group more than they do tech companies. That may provide an edge when it comes to establishing a platform presence. Unfortunately, in the survey, fewer than 25% trusted hospital executives. Why is there less trust for hospital executives? Here's my theory; hospital executives are too often viewed as distant denizens of the corporate world unlike physicians, nurses and pharmacists who are viewed as frontline caregivers. Executives look out for the bottom line and caregivers look out for patients. Too often, it's a hospital executive who serves as the spokesperson for the institution during a crisis. It would be better to have a physician in this role if the goal is to deliver a trustworthy message.

Most destructive fires are accidents. A smoldering cigarette butt ends up on a flammable couch. A lightning bolt accidentally hits dry brush in Montana. A novel virus escapes a laboratory in China. A certain percentage of accidents are probably inevitable. The Yale sociologist Charles Perrow labeled such inevitable accidents "normal." He has suggested that in complex systems big accidents tend to cascade into bigger accidents. And he has emphasized that "Technology is not the problem. Organizations are." Perrow identifies three characteristics that generate Normal Accidents:

- The system is complex.
- The system is tightly coupled. In other words, there is a high degree of interdependence with impact on one component having an immediate and significant impact on the others.
- The system has the potential for catastrophe.

Here's the thing. A modern hospital is considered one of the most complex of all enterprises. The object of its concern, human beings are the most complex things yet encountered in the universe. Hospitals and humans are both very tightly coupled. And both hold the potential for catastrophe.

According to Perrow, in complex environments, efforts at control can actually compound the problems they were intended to contain. A classic example of this is the effort to control wildfires in the early 1900s which led instead to a buildup in highly flammable dead trees and underbrush. This fueled rather than limited wildfires. When Gifford Pinchot became the first leader of the U.S. Forest Service he was determined to control wildfires in the west. In 1910, what he got instead of control was the "Big Blow-Up" that killed more than 70 firefighters, burned more than 3 million acres of prime timberland and reduced nine towns to rubble. Smoke from the fire reached New York and Boston and disrupted ship navigation in the Pacific. It deposited soot on ice in Greenland. It still ranks as the largest and most deadly fire in North America.

Navigating the Two Phases of Crisis

A review of past crises suggests there will be two leadership phases relevant to the pandemic. There is the "Surprise" phase when the unsinkable ship hits the iceberg. It's time for quick thinking and "good enough" solutions. As the old saying goes *"There's no point rearranging the deck chairs when the ship is sinking."* Keep the ship afloat and the passengers and crew safe, then it's time for the second phase; "Recovery."

Some leadership behaviors are essential across both the Surprise phase and the Recovery phase including:

- **Frequent communication.** There is a hunger for information and a sense of organizational community during a crisis. Michael Fisher, CEO of Cincinnati Children's Hospital Medical Center, had already been doing online videos targeted to employees sporadically for ten years before COVID hit. He started doing them once or twice a week once the pandemic began. At first they would get 1,500 views. Eventually, that grew to more than 5,000 views. He also started doing two-way virtual leadership updates with managers every Monday for an hour. He didn't know if they'd get 50 people or none. The sessions averaged 800. At Augusta Healthcare in Virginia, CEO Mary Mannix wrote a letter on COVID every day to every hospital stakeholder including employees, physicians, and trustees.

- **Self-sacrifice.** A crisis invariably requires personal sacrifice. It requires stepping out of seemingly safe patterns of behavior. And it requires extraordinary commitments from leaders and followers alike. Subordinates who make sacrifices want visible evidence of sacrifice by leaders. It is a time-tested truth from the battleground that the respected officers lead from the front and they ensure their troops always eat first.

- **Calm confidence.** A sense of calm is a precious asset in the face of chaotic uncertainty. People want to know their leaders are working on the problems that matter most and that they have the capacity to make a difference. Jim Collins popularized the "Stockdale Paradox" which holds that difficult times require acknowledging "brutal realities" while remaining confident that you'll eventually prevail.

- **Effective delegation.** An organization chart and its associated hierarchy of accountabilities represent the status-quo. A consistent characteristic of a crisis is its capacity to disrupt the status-quo. Doing the usual things in the usual way rarely provides a way through unexpected turmoil. In such situations, leaders often need to improvise. The most important tools for organizational improvisation are bound up in people particularly those at the frontline during a crisis. The key is to be open-minded and deliberate in allocating the organizations best capabilities to its most pressing challenges regardless of what the organization chart says.

In the Surprise phase, three additional behaviors are key:

- **Assessment.** This means seeing the essential patterns early and continuously. It requires vigilance. In novel situations, something unexpected can't be expected. You have to spot it as it emerges.

- **Adjustment.** This involves moving continuously from a present state to a new state of situational fitness.

- **Rapidity.** It's vital to avoid paralysis by analysis and the lethargy of bureaucracy. (Ready, shoot, aim!)

When the situation is chaotic, improvisation is a necessity. But, it still makes sense to default to familiar frameworks with a demonstrable record of success. It's a matter of pulling the right tool out of a tool box. The well-worn PDCA cycle is a proven tool. It involves Planning (P), Deciding (D), Checking (C) and Adjusting (A) then repeating the cycle. The problem with this method in a crisis is the planning component. Like other crises, the onset of COVID and its subsequent mutation has provided little time for planning.

Still, every decision and subsequent action, no matter how hurried, results from a degree of planning. In a crisis, decisions must be deliberate but much quicker. The key is to accelerate the PDCA cycle recognizing that the quality and timeliness of available information will always be lower than you'd like. In normal times, high level decision-makers might spend 30% of their time prepping and planning, 30% of their time debating and deciding then the rest of their time moving into action. In a crisis, the percentages should shift towards action.

The first phase of a crisis is invariably about responding rather than controlling because, at least at first, the crisis invariably has the upper hand. In the early 60s, well before PDCA had been popularized, an Air Force fighter pilot named John Boyd introduced a similar tool to air combat. It was called the "OODA Loop" and included these steps Observe (O), Orient (O), Decide (D), and Act (A). It differs from PDCA in important ways. It emphasizes observation informed by experience. Experience allows the pilot to see what others can't and then quickly respond to the situation. It recognizes that in a confrontation between modern fighter aircraft, there is precious little time for planning. OODA is, by its nature, an accelerated process designed for fast-moving, fluid conditions. It involves maneuvering faster than your adversary to disrupt him and in that way move from simply responding to influencing and controlling.

The opponent in pandemic is a mindless virus. It attacks, sickens, kills and mutates. Its central imperatives are replication and spread. The way to fight it is to disrupt and steer it. In Homer's Odyssey, as the Spartan king Menelaus is leading his men home from the Trojan War, they are shipwrecked. If they can defeat the sea god Proteus, he will reveal the secrets essential to their continuing on a safe journey. But Proteus is a formidable foe. He is a shape-shifter able to continuously remake himself. The Greeks' traditional weapons were of little use as Proteus transformed from serpent to panther to wild boar, then to rushing water and fire. In the end, the key to defeating the god was to adapt faster than he could shift. Finally overwhelmed, Proteus revealed his secrets and the Greeks sailed home. In its continuing mutations and the diversity of its impacts, COVID is like Proteus.

The F-35 is the intended successor to the F-22 fighter. It has a number of characteristics that make it unique including a stealth design that renders it nearly invisible on radar, an ability to take off horizontally and vertically, the capability to network with other F-35s in combat and an advanced machine-human interface. Key to that interface is a $400,000 helmet the pilot wears that allows him to "see through the aircraft" using a display projected on the inside of his visor along with critical data. This allows for significant enhancements to the pilots situational awareness as well as his ability to "master the battlespace." In other words, it accelerates and enhances his ability to Observe, Orient, Decide and Act.

In 1984, Gary Klein's small research firm received a request for proposal from the U.S. Army. It read in part: *Commanders, intelligence analysts, and others are often required to make decisions under conditions of uncertainty and severe time stress. Uncertainties may be associated with missing, incomplete, or ambiguous information, or with future outcomes that are unknown. Research is needed to: (1) better understand the cognitive processes (e.g., memory, judgment, or problem solving) of the decision maker under such conditions, and (2) suggest approaches for supporting the cognitive processes so that the overall quality and timeliness of decisions made under uncertainty and time stress are enhanced.*

To find an answer, Klein turned to firefighters. What he found was that fire commanders as well as others in uncertain and time stressed situations don't make a list of options, evaluate them all, and then select the best one. Instead, they rely on a two stage process starting with informed intuition as they recognize they need to respond followed by a rapid mental simulation of a possible response to see if it will work. As Klein indicates it's *"A blend of intuition and analysis, not just gut feeling."* But it is not the intuition and analysis of the novice. It's built on experience. It's the intuition of the firefighter who somehow knows the floor he's standing on is about to burn out from under him and visualizes an escape route or the military officer who can quickly distinguish an incoming enemy missile on radar from a friendly aircraft or the paramedic who can immediately determine whether a patient is having a heart attack rather than suffering from a severe case of indigestion.

Klein's research team reached beyond firefighters in their investigations. They interviewed NICU nurses who could tell that a baby needed antibiotics just by looking at it. According to Klein, when asked how they did that, the nurses responded, "*it's intuition*," or else *"through experience." "And that was that. The nurses had nothing more to say about it. They looked. They knew. End of story."* Of all their interviews, those with the NICU nurses were the most draining for the researchers. More than half of the nurses cried at some point when they recalled their experiences with their tiny patients.

One of Klein's conclusions relates to the value of building "organizational memory." This involves having someone responsible for observing the behavior of decision makers and sharing the patterns they see. When decision makers are operating in situations of uncertainty and time stress, they aren't fully conscious of their behavior but someone outside the decision-making process, an "outsider," can often document the behavior then feed it back.

Klein turned his research into an influential management book called Sources of Power. More importantly, application of his work enhanced decision-making in a variety of high stakes organizations including healthcare.

Sometimes leaders are encouraged to be bold in the face of crisis. Boldness has come to suggest a significant, potentially revolutionary, leap from a current position to a fundamentally different and better place. That, of course, implies that the better place is knowable and attainable. Knowability and attainability require predictability. Doyne Farmer is a professor at Oxford University and the Santa Fe Institute. He is also a pioneer of chaos theory and complexity science. In a rapidly changing and uncertain environment filled with complexity, Farmer has suggested that while you may be able to predict short, you can't predict long. Bold leaps are, by definition, long leaps. Predicting long in the face of rapid change and uncertainty has a name. According to Nassim Taleb, it's called "gambling" and it's too often recommended by people who have risked little in their own lives.

A crisis is no time to be bold. It is a time to be incremental in decisions and action. An incremental approach allows for probing and frequent feedback. It facilitates timely adaptation. And adaptation is the engine that drives the sustainability of organisms and organizations. If the situation demands speed, the best answer is usually "accelerated incrementalism."

In the press of a crisis, there may be limited opportunities for group decision-making. The buck will, as always, end up on the CEOs desk. But in a crisis, there will be more bucks and they'll pile up faster. There has been a trend in management towards group decision-making and away from the unilateral. Central to this shift is a presumption that group decisions are invariably superior. But how could you ever know that the outcome of a group decision was better than an alternative decision made by an individual? The presumption of the superiority of group decision-making is speculation. It's impossible to validate.

Unfortunately, the "cult of the group" has created leaders who ask for a show-of-hands for every decision. But management is not a democracy and neither is leadership. In the 1910 Big Blowup, 29 men died near Avery, Idaho when they tried to outrun the fire. Not far away a U.S. Forest Service ranger named Ed Pulaski led a crew of 44 men to what he hoped would be safety in an abandoned prospect mine. He told the men to lie on the floor of the mine while he fought off flames at the entrance with wet towels. When one of the men announced he was getting out, Pulaski pulled his pistol and promised to shoot the first man who tried to leave. All but five of the men survived.

Crowds are not always smarter. Indeed crowds can be the very opposite of smart. For the proof, count the crushed bodies at large public gatherings like soccer games and religious gatherings. A circus fire crush in Hartford in 1944 killed 168 people. 328 were crushed to death at a soccer game in Peru in 1964 and 96 at another soccer match in the UK in 1989. 11 people were crushed at a Who concert in 1979. And more than 4000 have died in crowd crushes during the Hajj just since 1990.

There is a place for groups in a crisis and that's to provide input that produces richer context for decisions by leaders. One the most valuable tools for providing this input is the After Action Review a method developed by the U.S. Army to take disciplined retrospective look and answer the question *"What have we learned?"*

When Katrina hit in August of 2005, twenty helicopters leased by HCA evacuated 200 patients and more than 1200 employees from HCA affiliated Tulane University Hospital and Clinic. It also evacuated patients and staff from nearby Charity Hospital and University Medical Center. New Orleans was without power, so ham radio operators helped guide HCA's fleet of contracted Blackhawks, Medi-Vacs, passenger helicopters as well as military Chinooks across the darkened city. Each inbound helicopter flight carried 750 pounds of food, water and medical supplies. To support staff in New Orleans, the company flew in additional patient care personnel on private aircraft. Katrina provided HCA with lasting lessons related to preparing a hospital for crisis including:

- Get satellite radios because land-lines and cell phones often fail.
- Buy backup generators, lights and batteries.
- Stockpile water.
- Pre-lease helicopters.
- Establish relationships with local ham radio operators.

A good After Action Review is short and to the point. Unfortunately, as with many management tools, there has been a tendency to turn them into lengthy mind-numbing exercises in bureaucracy. It's not unusual to see these reports run into the hundreds of pages when five pages would do.

Because COVID is a prolonged and mutable crisis, it requires a unique “rolling' approach to After Action Review with groups meeting on an ongoing basis to share what's been learned. These lessons can then be can be chronicled for later review and implementation. By the time an organization moves through the Surprise Phase with COVID, the crisis will no longer be novel. Leaders will have become experienced with dealing with the kind of crisis the pandemic has represented. But that experience will be much more valuable if it's captured and ready to be applied to future crises. After Katrina, leaders of EDs throughout the region met to share and apply the lessons they had learned.

It will be important for hospitals and health systems nationwide to share and apply lessons learned from the pandemic. The After Action Review will be a useful tool in accomplishing this. (There is an excellent guide to conducting an After Action Review available online at as.vanderbilt.edu)

In the Surprise phase, Assessment, Action and Assessment are the essential leadership behaviors. In the Recovery phase, space has opened up for other essential behaviors most notably Forethought, Fortification, Persistence and Optionality. There are opportunities to move from responding to the situation to shaping it. In Recovery, four additional behaviors are fundamental:

- **Forethought.** Informed anticipation is cultivated related to the future's most likely trajectory.
- **Fortification.** Core differentiation and capabilities are strengthened while weaknesses are mitigated.
- **Optionality.** Alternative courses of action are defined and stockpiled in reserve.
- **Flexible Persistence.** Once a path forward is discerned, sticking to it while making incremental adjustments when encountering resistance and inevitable surprises.

In 2007, Nassim Taleb wrote his best seller The Black Swan. "Black Swans" are catastrophic events that are beyond prediction. Experts are of little use when it comes to Black Swans which proliferate in an environment Taleb calls "Extremistan." In Extremistan, unanticipated random events can cascade into unanticipated and cataclysmic consequences.

Taleb followed The Black Swan with the publication of Antifragile in which he suggests that the kind of turbulence associated with Black Swans and Extremistan actually makes some organizations stronger. Taleb calls such organizations "antifragile." There is an allegory from nature in this. Gardeners have long known that the best way to reinvigorate their flowers is to occasionally uproot them, divide them and then replant them. They also know that a ruthless pruning often strengthens shrubs and trees. It is important to emphasize that in Extremistan not only are there unexpected downsides but also unexpected upsides. Home runs in book publishing, movie making and business startups often have their roots in Extremistan rather than in genius and hard work.

Maintaining a rich stockpile of options provides the best protection against Black Swans and helps set up Antifragility. Optionality isn't about scenario planning. Scenarios require speculating about the dynamics of possible futures and are often a waste of time largely because the number of possible futures is theoretically infinite.

Optionality means you have alternatives in reserve. It's about "degrees of freedom." So as you head north, you have the option to swerve east or west, the option to stand in place, the option to reverse. Optionality provides the flexibility to shrink as well as grow, disinvest as well as invest, consolidate as well as diversify, retreat as well as advance. Optionality is about being a better fit for any future. It's about becoming resilient in a turbulent world beyond prediction. There are the big lessons in The Black Swan and Antifragile including "expand your options" and "ignore expert prediction." Experts can be dangerous for a number of reasons not the least of which is that they can stampede the herd.

III) Embracing the Past

Often looking back is the best way to look forward. The world's experience with the virulent 1918 flu may be the most valid point of reference for examining the current COVID crisis. Anyone insisting that we should "follow the science" is derelict if they've ignored the period 1917 to 1919 not only from the epidemiological perspective but also in terms of social and economic impacts. Science shapes the future but is built on the past. Here are some highlights from the world's last devastating pandemic:

The 1918 Spanish Flu killed upwards of 60 million worldwide, somewhere between 2.5% and 5.5% of the world's population. It generated a pronounced spike in deaths that took off around August of 1918, peaked in October, and then began to trail off into insignificance by March of 1919. In the U.S., it killed more than 650,000 (over 6% of the population) with more dead in four months than all the U.S. combat deaths in the 20th Century. Death rates were higher in cities than in the country although there was significant variation from city to city. The deadliest city in America during the pandemic was Pittsburgh, Pennsylvania, where the mortality rate per 100,000 was 1,243. The safest was Grand Rapids, Michigan, with a mortality rate of 282. Nonwhite populations experienced higher mortality rates. Unlike COVID-19, the 1918 pandemic impacted the young much more than the old. One explanation for this is the possibility that the older population developed herd immunity during an earlier epidemic that had lasted from 1889 through 1890.

Because the population aged 15-40 was particularly vulnerable to the flu, the available workforce was significantly impacted and wages rose as a result with labor shortages pervasive. Inflation and declines in economic activity correlated with drops in the real returns on stocks on the order of 7% to 26% as well as declines in returns on short-term government bonds. Coal production, the primary fuel of industry, declined dramatically.

On one hand, World War I, which raged from 1914 to 1918, accelerated the spread of the flu. On the other hand, government spending to fund the war softened the economic blow. Still, reliance on welfare increased and there were widespread worker strikes. Research suggests that the pandemic led to long-term reductions in U.S. socioeconomic status including lower lifetime incomes for a significant percentage of the population. Social impacts were also long lasting with large numbers of orphaned children and destruction of family structures occurring at a time when government welfare and social services were still in short supply. Education levels fell significantly during the period. There is also evidence that there were lasting impacts on population health status with increases in heart disease and other disabilities as well as lowered cognitive skills and increased levels of mental disorders including depression.

A review of newspaper stories during 1918 and 1919 reveals striking similarities to the current pandemic. The most prevalent tactics for combating the virus will sound familiar. They included social distancing, shutting down businesses and organizations where people gathered, hand washing and wearing of masks. There was also mention of keeping windows open, staying outside, gargling saltwater and spraying disinfectant down throats. Interestingly, there were also reports of confrontations between those who advocated strict compliance with mask mandates and those who opposed such restrictions either out of distrust or fears of economic damage.

As destructive as the 1918 virus was, there have been much worse. From 1346 to 1353, the Black Death killed up to 70 percent of the European population. It shattered social, economic and artistic norms. It upended feudal serfdom and set the stage for uprisings. Its disruption, historians contend, opened up opportunities for the new craftsmen, business people and artists who gave birth to the Renaissance. The plague wiped out two thirds of the residents of Florence. But Leonardo da Vinci, the son of a peasant woman, was born out of that disaster. The social hierarchy that prevailed before the plague was leveled, so much so, that Cosimo de' Medici would end up sending his son to a school where he studied side-by-side with the son of a brass maker. Sporadic outbreaks of the Black Death persisted until the early 1900s.

Current data related to COVID in many parts of the world reveal a pattern evident during the 1918 flu pandemic with deaths peaking, declining dramatically, rising in a second wave and third wave then falling to very low levels. There were differences, of course, and those differences give rise to cautions regarding over reliance on historical precedent. For example, the population today is exceedingly more mobile, connected and global. Another difference; there were no vaccines in 1918.

Historically, there has always been a tendency to expect things to default back to normal after a crisis. That describes the attitude of the British aristocracy in the second decade of the 20th century. It has often been suggested that it was the devastating death rate of World War I, that precipitated the collapse of the British aristocracy but the 1918 flu arguably had just as great an impact. It wasn't until people who had once been "in service" failed to return to their posts in the manor houses, that aristocrats began to realize that their world had changed forever.

Today a significant percentage of the American work force has indicated they don't intend to return to their jobs post-COVID. There are wide spread labor shortages and inflation. Persistent denial in the face of dramatic change can blind and paralyze until it's too late.

IV) Moving Forward in COVID World

Based on my conversations with health care leaders nationally, throughout the pandemic, they have shared a number of ideas and practices that begun to transform the way they lead including these:

"Big Question" Reach Outs

Peter Drucker once suggested that great leaders ask questions- "the right questions". Today it's relatively easy for a CEO to deploy Big Questions for rapid feedback. Big Questions tend to be strategic questions. A Big Question can be broadcast to smart phones and tablets with a request for rapid and succinct feedback directly to the CEO. It's a lot faster than convening a meeting and it can be more inclusive. The key is to be disciplined by selectively deploying only truly important questions so the Reach Outs don't lose their impact.

CEO Huddles

The arrival of COVID has driven health systems into new territory. Out of necessity, there's lots of experimentation and learning going on much of it unique at an institutional level. There's no way to overstate the importance of sharing insights at the executive level particularly among CEOs. The days of facilitated offsite CEO gatherings may return but for now such gatherings are often beyond reach. What is possible and relatively easy to accomplish are weekly online conference sessions between a half dozen CEOs who share their experiences and lessons in response to the challenges they hold in common. Diversity of perspective is an asset. Rather than convene CEOs from a single state or region, it's good to have a CEO from Arizona linked up with CEOs from Virginia and Minnesota for example.

Online Polling

It's now possible to solicit input organization wide using a voting app. Online polling allows leaders to quickly collect frontline perspectives so they stay in touch with realities on the ground and can monitor developments in real time. Furthermore, the polling results can be made quickly available online so they generate a shared view that reinforces transparency.

Pagonis Reach Ups

General Gus Pagonis made his reputation by orchestrating logistics during the first Gulf War. He got all the right equipment and supplies where they were needed and when they were needed. One of his key tools was a simple 3x5 card. Anyone at any level could write out a problem on a card and send it up the chain of command. As the card moved from level to level, any officer along the chain with the capability to fix the problem was expected to do so. The card was then sent back down the chain with a note about its resolution. There were reprimands

if a card moved beyond a level where the problem could have been fixed. Thus, only the most intractable problems made it to Pagonis who could then bring the full weight of his position to bear. Today smart phones and tablets can generate digital substitutes for the 3x5 cards but the cards are less ephemeral. They hang around and continue to nudge people into action.

Expert Reach Outs

Some experts have developed international reputations including individuals like Michael Porter (Strategy), Nassim Taleb (Black Swans), Daniel Kahneman (Thinking Fast and Slow) and Jim Collins (Good to Great). These folks are always in demand and they charge accordingly. But by creating joint participation by multiple CEOs in a Reach Out to an expert, the cost can be shared. The key is to identify a discussion topic of shared importance along with a set of essential questions.

Decisions and Action at a Distance

This is a broad domain that includes not only the remote delivery of care but also many of the daily functions of management including strategic decision-making and implementation. The reality is that people no longer need to be in the same room to lead, follow or collaborate. Office space is expensive. Travel is often a waste of time and energy. There are inherent barriers to participation in meetings involving personal proximity. Physical space and financial resources as well as time, attention and energy are best allocated directly to value creating delivery of care. In other words, it's time to turn office space into triage rooms and testing sites. Making decisions and taking action at a distance will persist beyond COVID.

Reengineering Redux

Process reengineering faded as a management tool over the last decade. It's time for a comeback but with a different focus. In the past, reengineering centered on removing unnecessary steps in a process to reduce cost and increase value. Today, and particularly in health care, the focus has shifted to eliminating or transforming "contacts." The imperative is to make the delivery of care as "contactless" as possible without sacrificing quality and safety. Efforts to reduce and automate contacts will persist beyond COVID because they will also reduce costs and in many instances increase satisfaction.

Inner Circles

There's ample historical evidence that when confronted with a crisis, organizations benefit by defaulting to a trusted "inner circle" to make big decisions and take action. This isn't out of an interest in secrecy. It's out of an interest in agility and effectiveness. Seeking input too widely chews up precious time and focus. It can also rob leaders of their prerogative to lead. Big decisions

belong in the realm of top leadership including the CEO, other senior executives and Trustees. Indeed, that's what senior leadership is there for - to take on the big decisions and make sure they are effectively implemented.

Distributed Triage

Triage is usually associated with the ED but it's being expanded to the full continuum of care. Patients don't always show up at the most appropriate point of care. Today, it's important to do an immediate assessment and then facilitate patient movement to the right care at the right place at the right time. Triage can occur on the phone, on a computer or in person.

Semi-Autonomous Operating Units

Kevin Kelly *(Out of Control: The New Biology of Machines, Social Systems, and the Economic World*) once observed that you create big things that work by assembling lots of small things that work. Health systems are exceedingly complex enterprises. While seamless integration across the continuum remains the "holy grail" of health care delivery, there's still a long way to go in realizing that aspiration. The coordination that is the goal of health care integration consumes time and infrastructure. And it can be costly, financially as well as in terms of safety when it falls short. The better approach is to create a higher level of semi-autonomy in distinct operating units such as the ED, OR, imaging and Ambulatory Care. Each of these operating units has a unique skill sets, technology and culture. Extending the skill set, technology and culture of an inpatient OR to an outpatient surgery center will backfire. Better to make each operating unit perform at superior levels then manage the interfaces across the full continuum. As desirable as treating a patient holistically may be, health systems will be compelled to treat them in pieces for the foreseeable future.

DYI Strategic Consulting

COVID has forced a greater degree of self-reliance within health systems. Leaders are doing for themselves what, in the past, they might have brought in a consultant to do. Although the need for strategic thinking will continue to increase, the process of facilitating such thinking will be internalized. DYI strategic planning requires identifying executives who can, with credibility and competence, take on roles traditionally filled by outside consultants. It's important for the internal consultant to avoid promoting an agenda and to serve as an honest broker of information, input, decisions and process. Internal consultants often benefit from coaching by seasoned outside consultants.

V) KEY TAKEAWAYS

Here are some key takeaways drawn from the preceding pages:

Change has changed. The frequency of consequential disruptions is increasing. This requires new ways of seeing the world and leading.

Hospitals and physician offices may come to be regarded as hotspots for infection.

Some consumers and physicians may abandon hospitals for all but their most acute needs.

The business model of healthcare insurers is in direct conflict with the hospital business model. Insurers represent the most significant threat to the financial viability of hospitals.

Cornerstones of the traditional hospital business model are vulnerable to new competitors most notably their ORs, EDs, imaging services and physician organizations.

Well-financed competitors to hospitals are proliferating and they are targeting the drivers of hospital profitability including imaging and procedures.

Specialty supergroups will not be reliant on hospitals and will be positioned to become significant competitors.

Megabrand hospitals may disrupt local referral patterns and redirect utilization of a local hospital's most profitable service lines.

Most hospitals are way behind when it comes to digital transformation including their ability to deliver care remotely.

There is no going back from the consumer shift to remote care.

A move to remote care including telehealth will be necessary but will not provide long term differentiation or strategic advantage. Telehealth will become ubiquitous

Remote care providers may displace primary care physicians as sources of steerage for referrals and ancillary utilization.

Participation in a strong online platform will become essential to hospital viability.

Most hospitals are going to need high value partnerships with other hospitals, megabrand providers, and platform players to be sustainable.

Mergers and acquisitions may represent dangerous distractions. Strategic partnerships will provide greater flexibility and focus.

Thrivers in the decade ahead will be academic medical centers, independent community hospitals with strong demographics (100 to 300 beds), and large regional referral hospitals (300 plus beds) in the suburbs. The most threatened hospitals will be rural and inner-city institutions.

The data available in a crisis is often worse than useless particularly for tactical, day-to-day decision-making. Local anecdotal information is likely to be more valuable particularly when it's collected and vetted with discipline.

Localness will lose its importance when distant options are available that are clearly distinguished by their expertise and outcomes.

VI) AFTERWORD

As I am completing this monograph in November of 2021, the future trajectory of the COVID remains uncertain. In the U.S., the prevailing attitude might best be described as *"Time to move on."* Regardless of reported case numbers, hospitalizations and deaths, the airlines are beginning to fly full, restaurants are reopening, theaters are lifting their curtains, and sports venues are packed. Masks are disappearing. And hospital volumes appear to be rebounding.

Still the virus remains mutable and resurgent with hotspots continuing to emerge across the globe along with continuing lockdowns and mandates. Only time will tell whether this is the beginning of the end or just a pause on the road to greater virulence and disruption. The number of COVID dead in 2021, now exceeds those who died in 2020.

In the midst of crisis, reality is often difficult to define. We default to data and are compelled to use the data we have. There is seldom time to establish its veracity. Early in this chronicle, I emphasized the inadequacies of the data available during the pandemic. The quality of the data available today may not be any better than it was at the onset of the virus. As I have referenced data throughout this document I have tried to rely on what I consider reliable sources. Still, there is a possibility that the future will prove that data, and its implications, wrong.

In the end, leaders must rely on their best judgment. More than two years of unrelenting uncertainty and disruption have enriched and fortified the judgment of America's healthcare leaders. Although today they and the organizations they lead may be fatigued, they are also smarter and, in many ways, stronger than when COVID first emerged. The future will demand their wisdom and their strength.

America's healthcare leaders are a breed uniquely equipped for crisis. The organizations they lead were once described by Peter Drucker as among the most complex of all modern enterprises dealing as they do with the intersection of technology, science, government, economics and humanity. After all, many more small crises occur every day in a hospital than occur in other organizations in a year. When COVID finally subsides, American healthcare will have many stories to tell and many lessons to share. It will be essential to listen and learn – and prepare.