

## Spine Surgeons Under Duress: Game-Planning the Future While Weathering a Catastrophe

Every aspect of spine care has been disrupted during the first few months of the COVID-19 pandemic. Spine care providers, the medical system, and society-at-large are facing a rapidly changing reality that challenges every aspect of medical care. And it is not clear whether there will ever be a return to the previous version of “normal.”

There are two major priorities at this point. One is managing the current pandemic and preventing widespread loss of life, economic mayhem, and massive social disruption. The other priority is developing long-term plans to address the next pandemic, the one after that, and the one after that.

The latter should have occurred years ago. But it didn't. And the spine field, like other areas of medicine, will have to rush to make up for lost ground.

The one thing that stands out in the current pandemic—in spinal medicine and in almost every other medical field—has been the woe-ful lack of forward strategic planning. Societies and whole areas of medicine have had to fly by the seat-of-their-pants in addressing this crisis—without a long-term game plan and without adequate resources. Yet experts and pundits had predicted the occurrence of a worldwide pandemic for years.

A recent article in the *Spine Journal* detailed the spine care experiences of a major New York City hospital during the recent COVID onslaught there—a virus which infected at least 210,000 New Yorkers and killed more than 20,000 of them. (See *New York Times*, 2020.) This wave of infection overwhelmed the medical system there. Healthcare providers in New York did a heroic job of managing the crisis without adequate planning, resources, and equipment—and without adequate help from the federal government.

J.M. Lombardi, MD, and colleagues in the department of orthopedic surgery at Columbia University Medical Center recently penned a fascinating narrative about this struggle from a spine-care

perspective. It is an open access article that is well worth reading and pondering. It is a testament to the creativity and bravery of front-line medical providers—who voluntarily put their lives on the line to help gravely ill patients. (See Lombardi et al., 2020.)

### The View From a Counter-Terrorism Expert

What is most unusual about this article is that a prominent US general and expert in counter-terrorism is a coauthor. Retired four-star General Stanley McChrystal is someone who has vast experience in dealing with complex, rapidly changing crises.

He led the US Joint Special Operations Command (JSOC)—the primary US counter-terrorism force—from 2003 to

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## Drugs for Chronic Pain

Patients with back and other forms of chronic pain should not expect medications to have a major impact on the course of pain and disability.

The poor risk/benefit profile of opioid therapy has led an increased focus on the potential of nonopioid pain medications—such as nonsteroidal anti-inflammatory drugs (NSAIDs), antidepressants, and gabapentin/pregabalin—to provide pain relief.

A major review from the Agency for Healthcare Research and Quality concluded that none of these drugs lead to more than small improvements in pain and function.

M.S. McDonagh and colleagues conducted a comprehensive literature search on widely prescribed nonopioid medications for several common forms of chronic pain, including low back pain, osteoarthritis,

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*Does the Coronavirus Cause Musculoskeletal Problems?; “Buyer Beware” When It Comes to Artificial Intelligence; What About Social Policies to Address Back Pain?*

# Tremendous Increase in Anxiety and Depression

The COVID-19 pandemic has led to a wave of anxiety and depression in the United States. According to a poll in late April by the Kaiser Family Foundation (KFF), 45% of Americans reported that the COVID-19 pandemic had harmed their mental health.

Reporting of mental health problems was elevated in several groups: those sheltering-in-place or in lockdown mode, older adults, adolescents, parents with children younger than 18 years, and those who have lost jobs or income because of the pandemic.

The COVID-19 pandemic and resulting economic downturn have negatively affected many people's mental health and created new barriers for people already suffering from mental illness and substance use disorders," according to Nirmita Panchai, MD, and colleagues. (See Panchai et al., 2020.)

"In a recent KFF poll, nearly half (45%) of adults in the United States reported that their mental health has been negatively impacted due to worry and stress over the virus. As the pandemic wears on, it is likely the mental health burden will increase as measures taken to slow the spread of the virus, such as social distancing, business and school closures, and shelter-in-place orders, lead to greater isolation and potential financial distress.

"Though necessary to prevent loss of life due to COVID-19, these public health measures expose many people to experiencing situations that are linked to poor mental health outcomes, such as isolation and job loss. Additionally, feelings of anxiety are increasingly common, as people are fearful of themselves or loved ones falling ill and are uncertain of the repercussions of the pandemic," they added.

A recent study in *JAMA Network Open* charted a sharp rise in mental health problems in response to the COVID-19

pandemic among the general population of China.

In a population-based survey of 56,679 subjects across China, Le Shi, PhD, and colleagues found that 27.9% of respondents reported symptoms of depression, 31.6% reported symptoms of anxiety, and 24.4% reported symptoms of acute stress.

"Factors independently associated with negative mental health outcomes included having confirmed or suspected COVID-19, having a relative with confirmed or suspected COVID-19, having occupational exposure risks, living in Hubei province, and experiencing quarantine and delays in returning to work," according to Shi et al.

So the world may be seeing an *international* pandemic of mental health problems. And it is not clear at all how best to address these mental health problems. No one knows what proportion will subside on their own—or what proportion warrant treatment. However, Shi et al. recommend careful study of these issues—and urgent action to address them.

"Population-specific mental health interventions are urgently needed to meet demand during this outbreak. Future studies are needed to explore the association of the COVID-19 pandemic with mental health in other countries and its long-term outcomes," Shi et al. added.

Of course, all of these mental health issues are potential risk factors for the development or exacerbation of chronic pain problems and related disability.

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## References:

Panchai N et al., The implications of COVID-19 for Mental Health and Substance Use,

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# Epidural Steroid Injections Offer Only a Marginal Benefit for Patients With Sciatica

**M**any patients with sciatica—or lumbosacral radicular pain—opt for epidural steroid injections on the premise that they can have a substantial impact in terms of pain and disability.

However, according to an updated review from the Cochrane Collaboration, epidural steroid injections only offer a marginal benefit—and one that may not be clinically relevant. This suggests that epidural steroid injections may be overpromoted and overused.

Crystian B. Oliveira, PhD, from Sao Paulo State University in Brazil, and colleagues suggest that healthcare providers present patients with accurate information about the modest impact of epidural steroids. “As a key part of a shared decision-making approach we would encourage clinicians to inform patients of the average size of the treatment effect.” (See Oliveira et al., 2020)

Oliveira et al. updated a Cochrane review originally published in *Annals of Internal Medicine* in 2012. Their goal was to investigate the efficacy and safety of epidural steroid injections as compared with a placebo or quasi-placebo injection.

After an exhaustive literature search, the reviewers found 25 randomized controlled trials (RCTs) that met their inclusion criteria. The 25 RCTs embraced a total of 2470 patients.

“Although the current review identified additional trials, the available evidence still provides only limited support for the use of injections of anti-inflammatory steroids into the lower spine for sciatica as the treatment benefits are small, mainly evident at short-term follow-up, and may not be considered clinically important by patients and clinicians,” according to Oliveira et al.

The quality of the evidence left much to be desired. “According to GRADE, the quality of the evidence ranged from very low to moderate, suggesting that further studies are likely to play an important role in clarifying the efficacy and tolerability of this treatment.”

Sciatica has a favorable natural history for most patients. But few if any nonsurgical treatments appear to significantly speed up the relief of pain and dysfunction.

Many spine specialists will privately admit that they prescribe epidural steroid

injections because they are not confident that other nonsurgical methods are effective. And they use epidural steroid injections in an attempt to help patients cool down their sciatica while the favorable natural history kicks in.

So what about other nonsurgical treatments? A 2016 review in the *New England Journal of Medicine* by Richard A. Deyo, MD, and Sohail Mirza, MD, pointed out that the favorable natural history of sciatica related to a disc herniation obscures the fact that many conservative treatments lack evidence of substantial benefit. (See Deyo and Mirza, 2016.)

“There is no evidence that conservative treatments change the natural history of disk herniation, but some offer slight relief of symptoms,” according to Deyo and Mirza.

Medications do not offer much help. It is not clear that nonsteroidal anti-inflammatory drugs provide a clinically significant benefit. Randomized trials, systematic reviews, and evidence-based guidelines do not offer clear support for the use of opioids, acetaminophen, benzodiazepines, antidepressants, oral steroids, anticonvulsants, or biological agents.

Exercise can provide some benefit. But again, the advantage in RCTs is marginal. “Exercise reduces intensity of leg pain in the short term, as per a systematic review (five randomised controlled trials) but the effects are small,” according to Rikke K. Jensen, PhD, et al. in a *BMJ* review. “Clinical guidelines from the UK, US, and Denmark recommend exercise therapy and mention a range of exercises, but do not indicate whether one type of exercise is better than another.” (See Jensen et al., 2019.)

There is scant evidence to support the use of manual therapies such as spinal manipulation.

For example, the 2017 Danish National Clinical Guidelines offered a weak recommendation in favor of spinal manual therapy. It suggested that clinicians “should consider offering spinal manual therapy to patients with recent onset nerve root compression as an add-on to the usual treatment.” However, lead author Mette Jensen Stochkendahl and colleagues gave this recommendation a “very low” evidence-quality rating, suggesting they had little



confidence in the estimated treatment effect. (See Stochkendahl et al., 2017.)

In the discussion section of the guidelines, the Danish authors offered an important take-home message.

They noted that they found a “striking lack” of evidence for the effectiveness of all the interventions they examined. “Thus, commonly used interventions like information and guidance, medication, mechanical diagnosis and therapy, massage, acupuncture, motor control exercises, and spinal manual therapy had either no or limited quality supporting evidence...”

So existing guidelines in this area may be more valuable for defining a research agenda than a proven treatment approach.

Disclosures: None declared.

## References:

- Deyo RA and Mirza SK, Herniated lumbar intervertebral disk, *New England Journal of Medicine*, 2016; 374:1763–72. doi: 10.1056/NEJMc1512658.
- Jensen RK et al., Diagnosis and treatment of sciatica, *BMJ*, 2019; 367. doi: <https://doi.org/10.1136/bmj.l6273>.
- Oliveira CB et al., Epidural corticosteroid injections for lumbosacral radicular pain. *Cochrane Database of Systematic Reviews*, 2020(4):CD013577. doi:10.1002/14651858.CD013577.
- Stochkendahl MJ, National clinical guidelines for non-surgical treatment of patients with recent onset low back pain or lumbar radiculopathy, *European Spine Journal*, 2018; 27(1): 60–75.

# Screening Patients for Unhealthy Drug Use: Ground-Breaking Recommendations, *Lingering* Uncertainties

**I**t would be tremendously useful for back care providers to find out whether their patients are utilizing unhealthy or illegal prescription and nonprescription drugs.

It could affect surgical and nonsurgical decisions and help route patients toward effective treatments for both back pain and problematic drug use. That having been said, the benefits and risks of universal screening are not all that clear. The potential harms are particularly murky.

The US Preventive Services Task Force (USPSTF) recently broke new ground by concluding that screening for unhealthy drug use may have a net benefit in primary care settings. “In adults, the USPSTF concludes with moderate certainty that screening by asking questions about unhealthy drug use has moderate net benefit when services for accurate diagnosis of unhealthy drug use or drug use disorders, effective treatment, and appropriate care can be offered or referred,” according to Carrie D. Patnode, PhD, and colleagues.

The Task Force declined to make a similar recommendation for adolescents due to a lack of evidence.

Although the Task Force found evidence demonstrating the accuracy of screening instruments and evidence that both drug and psychosocial treatments can improve treatment outcomes among those seeking treatment, there are some major gaps in the evidence—and major uncertainties surrounding this entire area.

The most glaring is a lack of direct evidence that screening adults produces better outcomes than not screening them.

## No Evidence That Screening Improves Health?

Or as an accompanying editorial by addiction specialist Richard Saitz, MD, put it, “Screening for drug use is reasonable to consider in clinical practice, but it is not evidence-based for improving health. These observations should serve as an important call for the development and study of new strategies that can identify and address drug use in ways that can reduce related harms of such use.” (See Saitz, 2020.)

*JAMA* publications offered several commentaries on the new recommendation in favor of drug screening. And given some of the holes in the evidence, one can make arguments for and against widespread screening in primary care.

Here is an excerpt from a broadly positive commentary in *JAMA Internal Medicine* by Katherine A. Bradley, MD, et al. (See Bradley et al., 2020.)

## Small But Necessary Step to Address Unhealthy Drug Use?

“In sum, drug use disorders [DUDs] are common—9.9% of US adults have DUDs, and most do not seek or receive treatment. Screening can identify adult primary care patients with drug use. Screening using patient self-report (e.g., on paper) will increase reporting of drug use, and use of separate screening questions for cannabis and other drug use is important in states with legal cannabis use. While treatment is effective for motivated patients, those



identified by screening will need more than brief counseling in primary care to improve outcomes. We support the USPSTF’s conclusion that routine drug screening should be part of high-quality primary care. Screening for drug use is a small but necessary step toward integrating care for DUDs into medical settings.”

## Some Black Holes in the Evidence Record

And here is a comment from Jill Jin, MD, from the *JAMA* Patient Page on the potential benefits and harms of screening.

“The potential benefit of screening for unhealthy drug use is reducing negative health, social, or legal outcomes related to drug use. No studies have directly looked

**Table I. Recommendations on Implementing Screening for Unhealthy Drug Use**

For adults: Ask adults about unhealthy drug use. Clinicians can ask the questions or ask their patient to share their answers on a form, computer, or tablet. There are a variety of screening tools available, such as:

- Brief tools (e.g. NIDA [National Institute on Drug Abuse] Quick Screen, which asks four questions about use of alcohol, tobacco, nonmedical use of prescription drugs, and illegal drugs in the past year), which may be more feasible in busy primary care settings.
- Longer tools (e.g. the 8-item ASSIST [Alcohol, Smoking and Substance Involvement Screening Test]) that assess risks associated with unhealthy drug use or comorbid conditions.
- The PRO (Prenatal Risk Overview) for pregnant people.

Primary care providers should be aware of state requirements and best practices on informed consent for screening, documenting screening results in medical records, and confidentiality protections.

For adolescents: Evidence is insufficient, so clinicians should use their judgment about screening by asking questions about drug use.

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# Some of the Uncertainties Surrounding Routine Screening for Unhealthy Drug Use

- There is no direct evidence from rigorous clinical trials that screening for unhealthy drug use is superior to not screening.
- Trials supporting the efficacy of treatments for drug use disorders occurred in patients *seeking* treatment. There is no evidence of similarly positive results among patients who were identified by screening alone (i.e. among people who *were not seeking* treatment).
- The USPSTF recommended that drug screening should only occur in practices where accurate diagnosis and effective treatment of drug use disorders are available, in the practice or by referral. Unfortunately, it is not clear what proportion of primary care practices meet these criteria—and whether these services are routinely available locally, with insurance coverage or at reasonable cost. Primary care services and mental health/addiction/dependency services often occur in different silos in the medical system.
- Many primary care providers have outmoded views about unhealthy or illegal drug use, regarding addiction and dependency disorders as moral failings rather than diseases. Would this substantial minority of doctors facilitate evidence-based treatment?
- Screening can be harmful. “Screening for unhealthy drug use among adults raises many questions. From its inception, organized medicine has struggled with tensions between paternalism, beneficence, and non-maleficence [i.e., balancing benefits, harms, and risks]. Unlike screening for high cholesterol or elevated blood pressure levels, detection of drug use has led to devastating consequences for some individuals throughout US history,” according to Arthur Williams, MD, and Frances Levin, MD, in *JAMA Psychiatry*. (See Williams and Levin, 2020.)
- The magnitude of potential harms is not clear currently. “Although there is little published evidence of harm of screening, the bounds of magnitude of harm are almost certainly not small,” according to Richard Saitz, MD. (See Saitz, 2020.) Drug screening can lead to legal problems. For example, 23 states and the District of Columbia classify illegal drug use by pregnant women as child abuse. In several states drug use is grounds for civil commitment. There are many instances of pregnant women being arrested and having their children taken away after a positive drug test. This has been a particular risk for low-income women of color.
- The implications of a positive drug screening test in the medical record have not been well-studied. Would it affect future medical care or employment? Could it affect future legal proceedings?
- If patients declined to take part in screening tests over medical, legal, or privacy concerns, would this put them in any kind of jeopardy going forward?

## Screening Patients for Unhealthy

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at the effects of screening on these outcomes. For adults, there is adequate evidence that screening questionnaires are able to accurately detect drug use disorders and that treatment of these disorders with medications and/or psychotherapy can reduce drug use as well as relapse. There are little data available for adolescents. Potential harms include stigma from being labeled a drug user as well as side effects from medications used to treat drug use disorders. For adolescents, there is uncertainty about how some of these medications may affect brain development,” according to Jin. (See Jin, 2020.)

### The Definition of “Unhealthy Drug Use”

“Unhealthy drug use” according to the new review refers to (1) the use of illegal drugs; and/or (2) the nonmedical use of prescription medications. This definition would

embrace about 12% of US adults and 8% of adolescents.

The recommendations do not cover another important group: adults and adolescents using legally prescribed but inappropriate drugs or legally prescribed drugs that have an unfavorable risk/benefit profile. Some examples of the latter would be the use of prescription opioids, benzodiazepines, and/or gabapentinoids (such as gabapentin and pregabalin) for chronic back pain. These are still widely prescribed despite guideline recommendations to the contrary.

So how would primary care providers implement these recommendations? They would do so by asking a few simple questions or by administering a standardized questionnaire. (See Table I.)

Disclosures: None declared.

### References:

Bradley KA et al., Screening for drug use in primary care: Practical implications of the new USPSTF recommendation

[published online ahead of print June 9, 2020], *JAMA Internal Medicine*; doi:10.1001/jamainternmed.2019.7335.

Jin J, Screening for unhealthy drug use in adults and adolescents, *JAMA*, 2020; 323(22):2350. doi:10.1001/jama.2020.8192

Patnode CD et al., Screening for unhealthy drug use: Updated evidence report and systematic review for the US preventive services task force, *JAMA*, 2020; 323(22):2310–28. doi:10.1001/jama.2019.21381.

Saitz R, Screening for unhealthy drug use, *JAMA*, 2020;323(22):2264–65.

Williams AR and Levin FR, The perils of screening for unhealthy drug use are a call to action for the Mental Health Work Force [published online ahead of print June 9, 2020], *JAMA Psychiatry*; doi:10.1001/jamapsychiatry.2020.1503.

# COVID-Related Surgical Dangers

People who test positive for coronavirus disease-2019 (COVID-19) should think twice about opting for any form of nonessential, nonurgent surgery, if a new study is accurate. A multicenter international study found dramatically elevated rates of mortality and pulmonary complications in patients with COVID-19.

The death rate among COVID-19 patients was several-fold higher than would be expected among uninfected people.

Almost a quarter of surgery patients with COVID-19 died in the month after surgery. The 30-day mortality rate in the study was 23.8%. And the death rate was elevated in every subgroup the research team looked at: emergency surgery (25.6%), elective surgery (18.9%), major surgery such as hip or colon cancer surgery (26.9%), and minor surgery such as appendectomy or hernia repair (16.3%).

A third of patients older than 70 years died within 30 days, compared with 13.9% of those younger than 70 years. Men had higher mortality rates than women, by a significant margin (28.4% vs. 18.2%).

The study offered more grim news. Half the patients developed pneumonia, acute respiratory distress syndrome, or required mechanical ventilation.

Overall, the greatest risk of death and severe complications occurred among those with preexisting medical problems, those undergoing cancer surgery, and individuals undergoing emergency surgery. Most patients who died (81.7%) had experienced pulmonary complications.

“The decision in most hospitals to postpone elective surgery was made to both protect our patients as well as increase capacity to take care of the COVID-19 patients during the peak of the pandemic,” said report coauthor Haytham Kaafarani, MD, MPH, from the department of surgery at Massachusetts General Hospital and an associate professor of surgery at Harvard Medical School. “The high mortality and morbidity rates of the elective surgery patients in this study is proving that the decision was sound, as we would normally expect mortality for patients having minor or elective surgery to be under 1-3%.”

Many hospitals are starting to allow the resumption of nonurgent surgery. However, the researchers point out the threshold for

COVID-19 patients having any type of surgery needs to be substantial.

“We recommend that thresholds for surgery during the SARS-CoV-2 [COVID-19] pandemic should be raised compared to normal practice,” said Aneel Bhangu, MD, PhD, Senior Lecturer in Surgery at the University of Birmingham, the coauthor and overall study lead. “For example, men aged 70 years and over undergoing emergency surgery are at particularly high risk of mortality, so these patients may benefit from their procedures being postponed.”

The researchers looked at 1128 patients from 24 countries who had surgery between January 1 and March 31, 2020, of whom 74% had emergency surgery and 24.8% had elective surgery. Most of the patients came from Italy, Spain, the UK, and the United States—countries whose health systems have been overwhelmed by the rapid spread of COVID-19.

This study indicates that anyone undergoing surgery in the pandemic should be tested for COVID-19. Rapid reliable testing is currently impossible in many hospitals, regions, and countries. So there are challenging logistical issues going forward.

“When hospitals resume routine surgery, it is likely to be in environments that remain exposed to SARS-CoV-2. In the future, routine preoperative screening for SARS-CoV-2 might be possible with rapid tests that have low false positive rates, but hospital-acquired infection would remain a challenge. Strategies are urgently required to minimize in-hospital SARS-CoV-2 transmission and mitigate the risk of postoperative pulmonary complications in SARS-CoV-2-infected patients whose surgery cannot be delayed,” according to Bhangu. (See Bhangu et al., 2020.)

This study should probably be regarded as preliminary—a first stab at a major research topic. It will take a series of studies to determine the generalizability of these results to other groups, other institutions, and other countries.

However, this a valuable contribution alerting surgeons and other healthcare providers about the possibility of catastrophic outcomes following surgery in COVID-19 patients.

A commentary accompanying the study in the *Lancet* points out that speedy studies

addressing urgent issues often come with some limitations.

According to Paul S. Myles and Salome Maswime, “it should be recognized that speed and a simplified data collection process relying on site investigators identifying cases can come at a cost. No control group was used, so the outcomes in those who did or did not have COVID-19 cannot be directly compared. Protocols for laboratory testing and radiological investigation were not standardized.” (See Myles and Maswime, 2020.)

“Thus, there is a risk of ascertainment bias because patients who had an uneventful postoperative course were unlikely to be tested for SARS-CoV-2 or have radiological investigations and so were not counted in the analysis. Those developing respiratory or sepsis complications after surgery will receive additional postoperative testing and this might have inflated the apparent COVID-19-attributed mortality and respiratory complications. Ascribing cases on a clinical diagnosis or CT scan might have led to inclusion of non-COVID-19 cases, and inflates the risk estimates because of other underlying disease processes,” they noted.

But they suggested that the results are worrisome at best—and pose major questions for surgical policymakers. “The study highlights the need for clear perioperative guidelines for emergency and elective surgery during the pandemic.”

“Surgery is an essential part of modern medicine, but additional risks during the COVID-19 pandemic must be carefully considered,” according to Myles and Maswime.

Disclosures: None declared.

## References:

- Bhangu A et al., COVIDSurg Collaborative, Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: An international cohort study [published online ahead of print May 29, 2020], *Lancet*; doi:10.1016/S0140-6736(20)31182-X.
- Myles PS and Maswime S, Mitigating the risks of surgery during the COVID-19 pandemic [published online ahead of print May 29, 2020], *Lancet*; doi:10.1016/S0140-6736(20)31256-3.

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2008. And he was the Commander of US and NATO Forces in Afghanistan in 2009 and 2010. He was renowned for thinking out of the box and developing strategies that could change on the fly as conditions evolved.

He has worked as a consultant for cities, regions, and various medical groups grappling with COVID-19. He has been critical of the lack of strategic planning for this pandemic—and the absence of adequate leadership and teamwork in addressing it.

In late March McChrystal was interviewed by Jim Cramer on CNBC and was asked how he would advise organizations to respond to this crisis. McChrystal suggested that the United States and other countries had been caught flat-footed by the COVID-19 pandemic and needed to change their entire planning approach. (See CNBC, 2020.)

### **Is the COVID-19 Pandemic a Black Swan Event?**

“There is a temptation for us to say this is a ‘black swan’ event and no one could have seen it coming. Therefore, we have an excuse for not being prepared and not adapting well. But I don’t think that is right. One thing we know about crises is that they are inevitable. They are all a little different. But they have a common DNA. And the reality is we have to deal with them,” McChrystal explained.

A “black swan” event, of course, is a term popularized by probability and risk management expert Nassim Taleb to signify a crisis that simply could not be predicted or foreseen. Something completely beyond the scope of usual experience and expectations.

However, McChrystal asserted—as Taleb has recently—that the COVID-19 crisis is in no way a black swan event. As mentioned above, the probability of a destructive world-wide pandemic had been discussed for years. The world simply didn’t plan for it. (See Taleb, 2020.)

### **The United States and Many Other Countries Didn’t Have a Strategic Plan**

Most nations, the United States in particular, didn’t have a stockpile of personal

protective equipment and didn’t have adequate hospital beds and intensive care facilities. They didn’t have the infrastructure for contact tracing. They didn’t have the ability—and many still don’t—to test hundreds of millions of people for this virus and infection. And the United States didn’t have the ability to scale up that effort quickly and efficiently.

In fact, the US government was late to accept the reality of the pandemic, resulting in thousands upon thousands of unnecessary deaths.

### **Spinal Medicine Unprepared?**

The world of spinal medicine was also unprepared. It didn’t have guidelines in place on how to respond to the elimination of non-elective surgery. It didn’t have a game plan on how to make a massive transition from face-to-face care to telemedicine and telehealth interventions.

It didn’t have focused plans on how to proceed with spine surgery in the context of the pandemic. Where would spine surgeons live during the pandemic? What staffing strategies would be necessary to account for loss of personnel as spine surgeons and their teams succumbed to the coronavirus? These are all issues that could have been discussed and planned ahead of time even if those plans had to change on the fly.

Strategic plans have to take into account the potential of rapidly changing conditions in a chaotic interconnected world, according to McChrystal.

“What we should be thinking about in our organizations and not just at the national level...is to build our organizations with the fundamental premise that crises will arrive. Therefore, we have to deal with the speed and complexity of the modern world by building the ability to respond to crises and not just trying to avoid them,” said McChrystal. In other words, by actively planning for them and developing flexible and adaptable strategic plans. (See CNBC, 2020.)

### **COVID-19 a Familiar Experience for a Counter-Terrorism Expert**

In a preface to the *Spine Journal* article McChrystal said that the COVID-19 epidemic felt familiar to him. He had lived through broadly similar experiences in Iraq and Afghanistan.

“In the first weeks after taking command of Joint Special Operations Command

(JSOC), it became apparent we were losing the battle to Al Qaeda in Iraq (AQI). JSOC, America’s elite counter-terrorist task force, was built to operate in small teams conducting elegant, but infrequent, precise strikes. We were the most efficient and effective counter-terrorism force in existence – but we were not adaptable. We’d never really had to be.”

However, Al Qaeda, the opponent in Iraq, forced JSOC to change its rules “by morphing faster than our slow, but precise, operations could counter. A target, or fleeting opportunity, that was located in the morning was typically gone by evening. Against an enemy that operated differently than anything we had seen before, we had to change...So, we adopted a policy of ‘question how we do everything.’ Nothing was held sacred – we needed to find out what worked to defeat Al Qaeda and we needed to do it quickly. It was disconcertingly disruptive for a force inclined to developing and then refining to near perfection our tactics. But it worked. We iterated adaptations until JSOC became instinctively flexible and wickedly fast.”

McChrystal pointed out that most organizations don’t change until they are forced to do so. “What is often touted as a leader’s foresight or vision was really driven by the reality of a burning platform—change or grow irrelevant; adapt or die.” And this is what is happening in the current response to COVID-19.

### **Should Crisis Research Become a Major Spine Research Area Going Forward?**

A *BackLetter* editor asked a prominent COVID-19 researcher if crisis and pandemic planning should become major features of spine research going forward?

Dino Samartzis, DSc, is the Director of the International Spine Research and Innovation Initiative at Rush University in Chicago and chair of the International Research Commission of AO Spine. These groups have collaborated on an impressive series of studies, articles, and editorials produced at lightning-strike speed to outline the scope and implications of the COVID-19 crisis for the spine community and international healthcare organizations. (See Louie et al., 2020).

Samartzis responded that spine researchers need to carefully study the past and the

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# Game-Planning Future Health and Spine Care Crises

As mentioned in the feature article of this issue, the United States, major healthcare agencies, and individual areas of medicine—including the spine field—all failed to engage in adequate forward strategic planning for COVID-19. This left society, healthcare providers, and patients in the lurch.

And most areas of medicine have no concrete plans for addressing future healthcare pandemics and crises. These gaps in knowledge and strategic planning have to be filled in quickly.

Fortunately, there are playbooks and resources on how to anticipate and plan for future crises.

For example, in 2018, the Johns Hopkins Center for Health Security conducted an exercise to identify policy issues and preparedness challenges that might arise in the face of a severe infectious disease pandemic.

It addressed an outbreak of a fictional influenza virus (named Clade X) that was moderately contagious, moderately lethal, with no known effective treatments, prevention methods, or countermeasures. The researchers discussed the crisis with a group of government officials, academics, and members of the health security community—in order to come up with suggestions on how best to contain this crisis.

Over four meetings—live-streamed on YouTube—the researchers asked the players to address 10 “difficult policy questions,” the answers to which would be presented to the President of the United States.

The problems the Clade X exercise investigated are eerily relevant to the current COVID-19 pandemic:

- The adequacy of global health security;
- The capacity for isolating, transporting, and caring for highly infectious patients;
- How and whether to conduct screening, monitoring, and quarantining of exposed people;
- Understanding the lines of US government authority in responding to the crisis, given the complex US federal and state systems of government and public and private healthcare systems;
- The complex and competing priorities regarding international relations, US foreign policy, military strategy, and health security; and
- The challenges inherent in the “development, manufacture, and dispensing” of medical countermeasures under crisis conditions.

The Clade X panel recommended: (1) developing a system of producing new vaccines and drugs that could be developed in months rather than years and decades; (2) pioneering a strong global health security system; (3) building a national public health system that could effectively manage the challenges of a pandemic response; (4) developing a plan to harness all US healthcare assets in this effort; (5) developing a strategy for addressing research needs; and (6) ensuring that the US national system is prepared

to prevent, detect, and respond to disease emergencies.

These types of exercises need to be conducted across governments and in every area of medicine—including spinal medicine. And quickly.

The organizers of the CLADE-X exercise hope their exercise will help inspire other groups to come up with concrete suggestions on the best ways of preventing and mitigating future crises.

This type of effort could be conducted in any area of spine care—bringing together a broad variety of interested parties: researchers, government officials, healthcare providers, policy makers, politicians, payers, and members of the general public.

The CLADE-X exercise at Johns Hopkins determined that the fictional virus would have devastating effects and then disappear after 20 weeks—but not before killing 150 million people worldwide and 15 million in the US.

The next lethal virus could jump into humans at any time.

Disclosures: None declared.

## Reference:

Johns Hopkins Center for Health Security, CLADE X exercise: improving policy to prepare for severe pandemics, 2018; [https://www.centerforhealthsecurity.org/our-work/events/2018\\_clade\\_x\\_exercise/pdfs/Clade-X-executive-summary-document.pdf](https://www.centerforhealthsecurity.org/our-work/events/2018_clade_x_exercise/pdfs/Clade-X-executive-summary-document.pdf).

## Spine Surgeons Under Duress

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present to anticipate the future. And he said the timely production of these papers shows that researchers are more than willing to move together quickly to address major gaps in research.

He echoed some of the themes that McChrystal discussed.

“At times, it feels that we are a society that subscribes to ‘amnesia.’ In order to know where one is headed, one must understand and grow from the past. In a recent study of ours assessing the global spine community, we noted that irrespective of past

experiences of outbreaks and epidemics, the spine community still was not adequately prepared and not capable of responding as efficiently to the COVID-19 pandemic as would have been expected. (See Weiner et al., 2020.) “We need to take stock of ourselves and past experiences, plan ahead, and avoid having history repeat itself. Our study had been requested by the World Health Organization to help in their decision-making and future planning. This speaks to the increasing need for research in this area,” said Samartzis.

“It seems that every few years we have some sort of global health crisis,” he noted. “As the world becomes more globalized

and interconnected, this trend may continue and the intervals between these crises may actually be shortened. So we have to learn from our mistakes. I see a space for pandemic and other disaster-related planning as a major research field.”

He offered more evidence of the need for focused strategic planning and research. “At the start of the pandemic and throughout its early phases, many in the spine community felt as if the field had no direction,” he commented.

Based on their series of surveys and studies, Samartzis and colleagues found some general similarities in the responses

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# An Eye-Opening Survey of Spine Surgeons in the Grip of a Catastrophic Health Crisis

A fascinating survey recently looked at the global impact of COVID-19 on spine surgeons and spine care. It clearly showed that spine surgery is an area of medicine in deep crisis. However, it also highlighted resilience and hope among spine care specialists around the world.

Philip K. Louie, MD, and colleagues emailed a 73-item survey to members of AO Spine, an organization of 6000 spine surgeons in 91 countries and seven global regions. All told, 902 surgeons completed the survey between March 27 and April 4, 2020. (See Louie et al., 2020.)

Lead investigator Dino Samartzis, DSc, said the survey demonstrated that spine surgeons in a variety of cultures and settings displayed remarkably similar concerns. “There were several areas that surprised me based on our large-scale global studies. For one, as a global community we have more similarities than we had previously envisioned. The spine community exhibited expressions of unity, hope, and the importance of family. These are testaments to the fact that we fundamentally don’t differ that much and that our concerns translate across borders and languages.”

Samartzis also suggested that this survey highlighted the ability of spine researchers to quickly and efficiently address the impact of a major crisis on an entire healthcare field. “This project of ours was the first to assess the impact COVID-19 on healthcare professionals worldwide, in our case addressing spine surgeons. This work was conducted in record time and released/published in the community expeditiously,” he explained.

“This project consisted of a multidisciplinary group of individuals that have a passion for the spine discipline and the community. This project typifies ‘team science’. There were no egos involved, no hidden agendas, etc. It was a beautiful collaboration. We worked together as a team to address issues that affect the whole global community.”

“It represented the best that we could be and should always aspire to be in research. I am immensely honored and proud to have worked with my fellow colleagues/co-authors on this project,” said Samartzis in a recent email.

## 75% of Surgical Cases Were Cancelled

The survey documented the heavy impact of COVID-19 on spine surgery. The surgeons who responded to the survey collectively reported that roughly 75% of surgical cases were canceled each week. About 25% of surgeons were working outside of their normal scope of practice. The rest were engaged in “urgent/emergent” spine surgery or taking time off.

Many surgeons lacked important personal protective equipment (PPE). Only 50% said they were satisfied with the PPE that was available to them. This is a key issue. Over a third of the respondents reported having a medical condition that put them at elevated risk regarding COVID-19.

The survey found that testing surgeons for COVID-19 was rare. So the surgeons couldn’t assess their own infectiousness. Only 6% reported having been tested. About 1% of the 902 surgeons had tested positive.

## Many Surgeons Reported Health Issues

As mentioned above, many of the spine surgeons reported health issues—mental and physical. About half of surgeons reported depression and 72% disclosed significant psychological distress. The world-at-large always assumes that physicians and other medical providers are immune to these problems. But that is far from the case. These are highly trained professionals grappling with loss of employment, health fears, financial problems, and highly uncertain futures. Psychological distress is in many respects a normal response to this highly abnormal situation.

“The survey showed that spine surgeons are not necessarily the epitome of fantastic personal health,” said Samartzis. “They sustain a tremendous amount of stress and some have multiple comorbidities. We have noted in our studies (Sayari et al, Neurospine 2020, in press) that a spine surgeon’s own personal health profile has played a role in their own personal perceptions, healthcare delivery, and decision making during this pandemic.”

“Studies have shown that the more comorbidities one has, the higher the chance for

COVID-10 related complications if one was to ever get infected. With that in mind, spine surgeons are a high-risk group for such complications. There is a need for a heightened sense of awareness about this issue and the provision of proactive wellness plans in this community,” according to Samartzis.

## The Importance of Continuing Educational Activities

COVID-19 has disrupted much of medical education and led to the cancellation of important educational activities at conferences, seminars, and training courses. An impressive 97% of surgeons expressed interest in transitioning to online educational programs.

“With the uncertainty of how this pandemic plays out in the upcoming months and the need to get back to a recovery phase for all spine specialists, traveling to meetings, workshops and other educational events will be a challenge,” said Samartzis.

## A Need for Best-Evidence Guidelines

The surgeons were generally supportive of the policies of governments and hospitals regarding COVID-19 containment. However, 95% of them reported a need for further guidelines on performing spine surgery during the COVID-19 pandemic and performing spine surgery on patients in the throes of COVID-19 disease.

“Some institutes have some form of guidelines here and there, but standardized formal ones don’t exist in the community and are needed,” said Samartzis.

He also noted a need for the entire field to develop policies on how to address epidemics and disasters in the future. He further remarked, “This study shows that we need to prepare for other disasters moving ahead or risk history repeating itself.”

Like many fields, spine surgery is likely to make a major leap towards telemedicine and telehealth interventions.

But this will also pose challenges. “In the near term, for instance, telemedicine will likely become more prominent in the future and more acceptable to all involved post COVID-19,” according to an accompanying

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# Wave of COVID Pandemic-Related Back Pain Due to Poor Ergonomics?

Articles in the mass media continue to blame back and neck pain on poor working conditions in home offices and other living spaces during the COVID-19 pandemic. Many people are sheltering-in-place and working at home, so there is a huge audience for advice on these issues. However, features in the mass media have a tendency to be sensational and less than accurate.

“With millions of Americans now working from home, many are finding that they haven’t nailed the basics, ergonomically speaking. They are slumping on the couch with laptops, then slumping again to watch TV. They’re sitting on beds, necks strained from staring down at cellphones. Many have ignored widely available tipsheets on how to set up workstations at home,” according to an article in the *Wall Street Journal* by Aaron Zitner. (See Zitner, 2020.)

“The result: Weeks of poor posture have led to backaches, neck pain and headaches, say physical therapists and other practitioners who are fielding more complaints,” he added.

This article, based on interviews with healthcare providers, has a somewhat

catastrophic tone, as if there is an epidemic of pain based on poor ergonomics.

However, it is almost impossible to accurately assess the prevalence of back and neck pain in homes and home workplaces at the moment. Interviewing healthcare providers is not a good way of documenting these problems. Healthcare providers only see people who are symptomatic and seeking care—the tip of the musculoskeletal iceberg.

It is certainly possible that there is a rising tide of musculoskeletal complaints. But that would have to be assessed with broader and more representative surveys and ones that could consider a variety of potential risk factors—and not just ergonomic influences. The COVID-19 epidemic has brought profound social, economic, and psychological problems, all of which could influence the development and reporting of back and neck pain.

There is not much evidence that the ergonomics of home offices lead to widespread back problems. And ergonomic prevention programs have not shown well in randomized controlled trials and systematic reviews. And there is conflicting evidence on

the role of sedentary lifestyles in the development of back problems.

So it may be best to withhold judgment on many of these issues, pending further research. In the meantime, it is important for those languishing at home to find comfort in their work. They can pursue commonsense strategies, try to live balanced lives, and exercise regularly. However, they should probably be skeptical about the many detailed lists of ergonomic solutions appearing in mass media features. Most of these are based on personal opinions and less-than-definitive scientific evidence.

Disclosures: None declared.

## Reference:

Zitner A, Working from home is taking a toll on our backs and necks, *The Wall Street Journal*, May 13, 2020; [www.wsj.com/articles/working-from-home-is-taking-a-toll-on-our-backs-and-necks-11589398420?mod=hp\\_jr\\_pos2](http://www.wsj.com/articles/working-from-home-is-taking-a-toll-on-our-backs-and-necks-11589398420?mod=hp_jr_pos2).

## Drugs for Chronic Pain

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inflammatory arthritis, fibromyalgia, neuropathic pain, chronic headache, and pain related to sickle cell disease. They also looked at studies on the effects of acetaminophen and marijuana derivatives. (See McDonagh et al., 2020.)

They characterized the impact of these drugs over the short term (one to six months), intermediate term (six to 12 months), and long term (12 months or greater). They gauged the clinical impact of the medications as small, moderate, or large, based on previously defined criteria. And they assessed overall strength of evidence by objective criteria.

They found 185 randomized controlled trials and five systematic reviews. The results did not provide much to write home about.

“In the short term, small improvements in pain and/or function were seen with SNRI [serotonin-norepinephrine reuptake inhibitor] antidepressants for neuropathic

pain, fibromyalgia, osteoarthritis, and low back pain; pregabalin/gabapentin for neuropathic pain and fibromyalgia; oxcarbazepine for neuropathic pain; and NSAIDs for osteoarthritis and inflammatory arthritis. Improvement in function was not found with duloxetine for low back pain and pregabalin/gabapentin for neuropathic pain.”

The reviewers could not characterize the benefits of most of these medications over the medium- and long-term because most of the randomized controlled trials assessed outcomes only over the short term.

None of the other drugs had any obvious beneficial effects. “Other drugs studied, including acetaminophen (osteoarthritis), capsaicin (neuropathic pain), cannabis (neuropathic pain), amitriptyline (fibromyalgia, neuropathic pain), and cyclobenzaprine (fibromyalgia) had no clear effects.”

Several of the drugs had objectionable side effects. “Withdrawal from study due to adverse events was significantly increased with nonopioid drugs, with the greatest increase over placebo seen with cannabis.

Large increases in risk of adverse events were seen with pregabalin (blurred vision, cognitive effects, dizziness, peripheral edema, sedation, and weight gain), gabapentin (blurred vision, cognitive effects, sedation, weight gain), and cannabis (nausea, dizziness). Dose reductions reduced the risk of some adverse events with SNRI antidepressants. In the short-term small increases in risk of major coronary events and moderate increases in serious gastrointestinal events (both short- and long-term) were found with NSAIDs,” according to McDonagh and colleagues.

Disclosures: None declared.

## Reference:

McDonagh MS et al., *Nonopioid Pharmacologic Treatments for Chronic Pain*. Rockville, MD: Agency for Healthcare Research and Quality; 2020. Report No.: 20-EHC010.

## Tremendous Increase

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Kaiser Family Foundation, April 21, 2020; [www.kff.org/health-reform/issue-](http://www.kff.org/health-reform/issue-brief/the-implications-of-covid-19-for-mental-health-and-substance-use/)

[brief/the-implications-of-covid-19-for-mental-health-and-substance-use/](http://www.kff.org/health-reform/issue-brief/the-implications-of-covid-19-for-mental-health-and-substance-use/)

Shi L et al., Prevalence of and risk factors associated with mental health symptoms among the general population in

China during the coronavirus disease 2019 pandemic, *JAMA Network Open*, 2020;3(7):e2014053. doi:10.1001/jamanetworkopen.2020.14053

## Spine Surgeons Under Duress

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and views of spine surgeons in various global regions. One thing that stood out was the need for best-evidence guidelines on how to proceed in the face of the COVID-19 epidemic.

“The majority of individuals firmly stated that formal, standardized guidelines are needed. We are currently conducting studies to assess the current state of affairs in the most recent phase of recovery as spine surgeons begin to return to somewhat normal work.” And he hopes that this information will aid in the development of guidelines.

“Such guidelines are important to help the community navigate through the roller-coaster ride of this public health crisis and to establish a firm foundation to assist with any future outbreaks.”

(Editor’s note: See related articles on pages 92 and 93.)

Disclosures: None declared.

### References:

CNBC, Retired Gen. Stanley McChrystal says ‘tremendous lack of teamwork’ ails pandemic response, *Mad Money* with Jim Cramer, March 27, 2020; <https://www.cnn.com/video/2020/03/27/retired-gen-stanley-mcchrystal-says-pandemic-fight-requires-teamwork.html>.

Lombardi JA et al., Addressing a national crisis: The Spine hospital and department’s response to the COVID-19 pandemic in New York City, *Spine Journal*, 2020. doi: 10.1016/j.spinee.2020.05.539.

Louie PK et al. The impact of COVID-19 pandemic on spine surgeons worldwide.

*Global Spine Journal*, prepub ahead of print, May 6, 2020. <https://doi.org/10.1177/2192568220925783>.

*New York Times*, New York City coronavirus map and case count;

<https://www.nytimes.com/interactive/2020/nyregion/new-york-city-coronavirus-cases.html>.

Taleb N, Pandemic was preventable, *Bloomberg News*, 2020; <https://www.youtube.com/watch?v=BVHBSzRrkbG>.

Weiner JA et al., Learning from the past: Did experience with previous epidemics help mitigate the impact of COVID-19 among spine surgeons worldwide? *European Spine Journal*, 2020;1-17, online ahead of print. doi: 10.1007/s00586-020-06477-6.

## An Eye-Opening Survey

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editorial by Jens Chapman, MD, and colleagues. (See Chapman et al., 2020)

“For the spine community this would mean developing online physical exam surrogates that can at least substitute for a formal exam in the near term and open the door for remote consultations.”

In the United States, this transition also raises profound logistical concerns. For example, how would spine specialists in Boston or New York arrange spine care services for patients in northern Maine or remote areas of New York State? How

would they find skilled surgeons in those locales?

How would they identify the best non-operative care providers in regions they have never visited? How would they arrange physical therapy, addiction and dependency services, or multidisciplinary rehabilitation?

How can they overcome licensing issues and continue to offer medical services in multiple states and regions? There has been a temporary loosening of regulations in this area. But the changes may not be permanent.

And how can spine care providers convince public and private payers to reimburse telehealth services at fair prices?

Stay tuned.

Disclosures: None declared.

### References:

Chapman J et al., Learning from disasters: The CoVID-19 fallout on spine care, *Global Spine Journal*, 2020, epub ahead of print; <https://doi.org/10.1177/2192568220927719>.

Louie PK et al. The impact of the COVID-19 pandemic on spine surgeons worldwide, *Global Spine Journal*, 2020; epub ahead of print, <https://doi.org/10.1177/2192568220925783>.

## Coming Soon:

- Which Groups are Most Vulnerable to Pain and Despair in the Wake of COVID-19?
- Chronic Pain and Deaths of Despair
- Treatments for Chronic Back Pain: A Scaling Down of Expectations
- Device Makers Ignoring the Perspective of Female Surgeons
- New Data on the Importance of Reining in Opioid Use After Spine Surgery

## THE **BACKPAGE**

### Does the Coronavirus Cause Musculoskeletal Problems?

Scientists are just beginning to document the health consequences of COVID-19, which appear to be broad and varied. However, it is not clear to what extent COVID-19 typically leads to musculoskeletal problems.

Nathaniel P. Disser, BS, and colleagues from the Hospital for Special Surgery in New York recently reviewed potential musculoskeletal consequences of COVID-19. They based their article on the thin evidence on COVID-19 and more substantial evidence from prior pandemics, such as the severe acute respiratory syndrome (SARS) pandemics of 2002 to 2004.

Eighty percent of people with COVID-19 appear to have mild symptoms or no symptoms at all. And mild complaints do not usually include reports of musculoskeletal issues.

However, more severe cases appear to lead to a broad variety of musculoskeletal problems

“Studies from patients who contracted moderate and severe SARS infections have indicated a substantial musculoskeletal burden of this disease, including skeletal muscle, neurological, bone, and joint disorders. Extended ventilator times are also known to induce proinflammatory conditions that lead to muscle and bone frailty, which can reduce overall quality of life. In addition to directly infecting cells outside of the respiratory tract, the inflammatory response in the airway can lead to systemic inflammation that can impact nearly every organ system,” according to Disser and colleagues.

They suggest it is appropriate to anticipate a wide range of musculoskeletal problems among those with moderate to severe COVID-19. These include inherent problems related to infection

with the coronavirus and also the side effects of both anti-inflammatory and immunological treatments used in the treatment of this disease. Corticosteroids, for example, have negative effects on both muscle and bone. Immunological therapies can slow recovery in musculoskeletal function.

The SARS epidemic led to many different musculoskeletal issues. Muscular issues included myalgias, atrophy, weakness, and fatigue. Bone and joint problems included arthralgias, bone mineral loss, osteonecrosis, and chondrolysis.

And Disser et al. suggest that healthcare providers keep an open mind about the potential benefits

flawed nonrandomized clinical trials, according to Myura Nagendran, MD, et al. Most of the nonrandomized trials are not prospective, are at high risk of bias, and deviate from existing reporting standards, according to these researchers.

So when it comes to AI, the appropriate attitude is “buyer beware.” “Deep learning AI is an innovative and fast-moving field with the potential to improve clinical outcomes. Financial investment is pouring in and some algorithms have already been applied to millions of people. However, many claims are exaggerated, which presents a risk for patient safety and population-wide health.”

conditions, educational attainment, job security, and other socioeconomic issues—often have greater influence on health.

“A host of associational studies have solidified strong and consistent relationships between socioeconomic circumstances and an array of measures of physical or mental health and longevity. In the United States, low socioeconomic position is associated with a larger burden of disease than smoking and obesity combined,” according to a study by Emilie Courtin and colleagues in the *Milbank Quarterly*.

“These observations from associational studies have led health policy experts around the world to propose policies targeting early childhood development, educational attainment, poverty, housing, and employment as ways to improve population health and reduce health system costs.”

To assess the scientific basis of those proposed policies, Courtin et al. performed a systematic review and meta-analysis of 38 randomized controlled trials.

They found that risk of bias was high in 33 trials, moderate in 11, and low in 17. “Of the 451 parameter estimates reported, 77% were underpowered to detect health outcomes,” they found.

Of adequately designed and powered studies, 9% demonstrated a significant health improvement, 44% had no effect on health, and 7% were associated with significant worsening of health.

They reported that early life, income, and health insurance interventions had the capability of improving health. Housing and neighborhood interventions did not have much success.

They concluded that social policies hold promise as health interventions but that this entire field needs to upgrade its research quality. (See *Milbank Quarterly*, 2020; doi:10.1111/1468-0009.12451.)

### The BackPage Online

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This month:

- **How to Read a Scientific Paper in the COVID-19 Era**
- **COVID-19 Exposes the Profound Limitations of the Electronic Health Record**
- **The Pandemic is Exacerbating the Opioid Addiction and Overdose Crisis**

of post-COVID rehabilitation programs to increase aerobic fitness, strength, flexibility, and the ability to perform common day-to-day physical activities. (See *Journal of Bone and Joint Surgery [Am]*, 2020; 00:e1[1–8].)

### “Buyer Beware” When It Comes to Artificial Intelligence

Artificial intelligence (AI) through “deep learning” has been hyped as a breakthrough in the diagnosis of medical complaints, including back problems. However, a recent systematic review in *BMJ* suggests that most of the claims of proponents are unproven.

The vast majority of the evidence on AI to improve imaging interpretation comes from methodologically

The mass media appears to have played a major role in promoting AI for imaging prematurely, in the absence of convincing evidence.

Ironically, claims based on inconclusive studies have led to FDA marketing approval of AI algorithms in 16 different applications in medicine—raising troubling questions about the FDA’s scientific standards in this rapidly growing area. (See *BMJ*, 2020; 368:m689. doi:10.1136/bmj.m689.)

### What About Social Policies to Address Back Pain?

One can argue that medical treatments often do not have an overwhelmingly powerful influence on human health, including low back problems. And that other influences—inequality, early life