



Patient Safety America Newsletter

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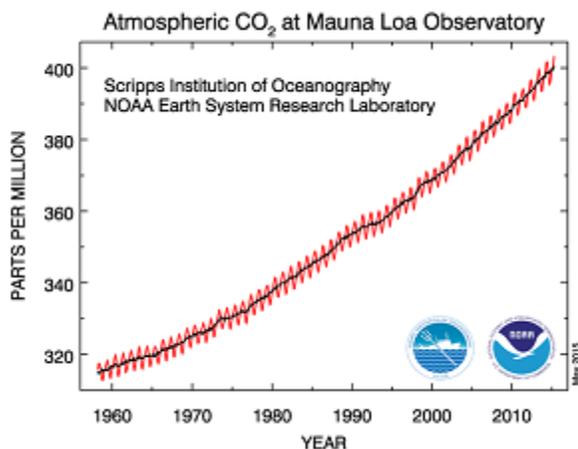
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John T. James, Ph.D.

Question: Up to 400,000 years ago the highest carbon dioxide level was 300 ppm. What is the current level?
a) 300 ppm b) 400 ppm c) 500 ppm d) 600 ppm e) 700 ppm

Global Temperature Change and Health

Just yesterday I spoke with a friend in the patient safety movement from the Seattle area. She said they had received 30 inches of snow in the past few days, leaving many people shut into their homes. This amount of snow is unprecedented for that area. We in Houston are still recovering from Hurricane Harvey, a 500-year storm that left many in our area with drenched houses where toxic, black mold loves to grow. Climate change is underway with [increasing CO₂ levels](#). Check the figure below.



Two experts wrote in the *New England Journal of Medicine* about the expected consequences of [global warming on health](#) across the world. These include heat-related illness, poor air quality, less efficient food production, and spread of vector-borne diseases. The authors reference a source claiming that August 2018 was the 406th straight month of average, world-wide temperatures above the long-term means.

The authors also note that levels of carbon dioxide in the atmosphere have increased considerably since pre-industrial times. The current rate of increase in global temperatures is 0.2 degrees C per decade. Scientists have used three sources to demonstrate that rate. The authors note that exposure to flooding may lead to depression and anxiety, something I have noted in a few victims of Harvey. Millions of premature deaths may be the consequences of airborne, fine particulates. In the U.S. these mostly come from vehicle traffic, fossil fuel use, and industrial operations. Vehicles leave behind respirable particles from brake linings, tires and exhaust. The dust problem may be worsened, especially in the American southwest, where dryer conditions will produce more [airborne dust](#).

In a [perspective](#) on global warming, two MDs called this an emergency. They pointed that the Camp wildfire in California in November 2018 not only caused local destruction, killing 85 people, but it contributed substantially to particulate air pollution. It was the worst wildfire in California's history. The writers point out that the U.S. healthcare industry is a major contributor to greenhouse gas emissions. Physicians have a responsibility to influence how healthcare systems operate. They should also be involved in the political arena to influence policies that favor mitigation of global warming. The article gives a small table on resources for physicians' actions. Patients would do well to consider what they might do to slow climate change. Climate change just passed the physicists' gold standard for truth based on an article in [Nature Climate Change](#).

Too Much Imaging

Three MDs wrote their [opinion](#) in the *JAMA* that the U.S. healthcare industry does far too much imaging. They begin by pointing that the rate of CT scans in the U.S. is 5 times that in Finland and the rate of MRIs is 3 times that in Finland. Our higher imaging rates lead to incidentalomas that require further resources and are almost always inconsequential. One possible solution to be implemented at the “point of care” is to have a shared-decision making session with the patient about the value of any imaging, including the gain and risks. This is seldom done. Perhaps, there should be expert “gatekeepers” that screen proposed imaging for a given patient. The authors discuss several other strategies to reduce overuse of imaging.

One possibility I did not see was for insurance companies to require specific, detailed written rationale for the use of imaging. If there is no compelling reason, then there would be no payment. Meeting some nebulous “standard of care” would never be adequate. It is not unheard of for hospitals to encourage use of scanning to help pay for the scanners. Patients have a role in reducing imaging. Specifically, ask what guidelines are being applied to cause the clinician’s recommendation for a scan, and ask how your treatment will change based on the results of the scan. What will be done if an incidentaloma is discovered? Finally, it seems to me that a team of experts should visit countries with much fewer imaging needs to determine the reasons for that. We in the U.S. could learn a lot from the way other countries do healthcare. We don’t.

To pursue the issue of overuse of medical procedures a little further, I want to discuss recent research on [low value procedures](#). These are procedures that are of minimal or no value to the patient. These include worthless cancer screening in the elderly, inappropriate diagnostic and preventive testing, worthless preoperative testing, and inappropriate imaging, such as for back pain or sinus inflammation. The investigators looked at more than 3 million Medicare claims involving primary care from 2008 through 2013. The annual rate of low-value services was 33 services per each 100 claims. There was substantial variation in the

amount of low-value services provided, but the authors were unable to identify physician characteristics that pointed to ordering more low-value services. The authors conclude that physician practices may foster lots of the low-value care provided by the U.S. healthcare industry. They suggest that “profiling” doctors to directly determine if they are providing too many low-value services may be necessary to curtail overuse.

An invited commentary by an MD was published in *JAMA Internal Medicine*. She writes about the [cognitive bias](#) that leads to physicians’ use of low-value services. She says that decisions by doctors are made reflexively or reflectively. The former may lead to more inappropriate use but the latter may also. One way to convert reflexive decision-making to reflective decision-making is to require doctors to write the reason for a procedure. She was not much in favor of this, but I am if there is a deviation from a quality, evidence-based guideline. According to the author, there is insufficient education of doctors to help them understand cognitive bias and how to engage patients in shared decision making. One solution that makes sense to me is feedback to physicians so they can see how often they order low-value procedures compared to the local or national norms. Patients have a clear role here in asking why a procedure is suggested. Ask about the value of the procedure and the risks associated with it. Ask for a decision aid. Ask, ask, ask.

Improving Patient Trust of Healthcare

I am biased toward mistrust of American healthcare because of my personal experiences and data showing that much harm occurs during care, and that there is little transparency or any forcing-function to cause improvement to occur. There are “islands of excellence” but I’m afraid these float in a sea of mediocrity or worse. Healthcare is incredibly complex, may involve many experts that must communicate well, and best practices change often. Regulatory agencies often fail the patient; for example, the FDA’s seminal role in starting the opioid epidemic ([60 Minutes](#)). Medical boards allow potentially dangerous physicians to continue to practice without informing their patients of their

status. Genuine informed consent and shared-decision making are rare in most situations.

Three experts wrote their opinion that [trust in healthcare](#) has decreased because the relationship between clinician and patient has eroded. They point out that much care depends on teamwork, so patients must trust everyone on their team; however, this is difficult when teams do not function well. Several factors are at work here. Teams may be comprised of people who have never worked together before. They may be destabilized by changes in policies and administration due to mergers. In the face of potential mistrust, patient trust levels must be solicited. The writers call for all involved in patient care, including healthcare executives and insurance companies, to focus more on building trust. They call for more transparency, as if that might actually happen.



In my opinion, if the healthcare industry wants to rebuild patient trust it should start by removing all perverse incentives, especially those created by drug and device manufacturers. Healthcare industry gifts to politicians and PACs should be banned. Federal agencies such as the Centers for Medicare and Medicaid Services should be subject to genuine sunset reviews every 3-5 years with the voice of the patient paramount in that review, as opposed to political biases. The Joint Commission should be subject to full transparency. State Medical Boards should start doing what they claim to be doing, which is protect patients from potentially dangerous doctors. National nurse-to-patient ratios need to be established within a learning system that optimizes this important aspect of patient care. I could go on, but you get the picture. I do not sign my emails "Be well or be careful" for no reason. Any patient that blindly trusts the American healthcare industry is asking for trouble.

To Vaccinate or Not

My family seems to have a gene that supports strong opinions. We are polarized on whether or not to vaccinate children. Three MDs wrote their perspective on the National Vaccine Injury Compensation Program. This [federal program](#) is designed to protect vaccine manufactures from liability for alleged harm from vaccination. To do so, those alleging harm may petition the Program for compensation. From 2006 to 2106, 3.1 million doses of vaccine were distributed and during that time, 3,749 petitioners were granted compensation, even though the majority of compensations do not require proof of cause-and-effect. This is roughly a rate of 1 in a million per vaccination. The program is funded by a \$0.75 excise tax on licensed vaccines. From 2013 to 2017, an average of \$229 million was paid out each year to petitioners.

Although I am not against vaccines, there is a perspective here that was not expressed by the authors. If the risk is 1 in a million for each vaccination, and a child receives roughly 40 vaccines as now suggested by the CDC, then the total risk for injury suitable for petition and compensation from a complete vaccination series drops to about 1 in 25,000. It seems to me that the CDC should rank vaccines according to their value and risk of harm so those cautious about vaccination could at least get the most important ones for their children. This would be equivalent to the way medical guidelines are rated, A, B, C, or D, on the strength of evidence.

Aspirin for Primary Prevention

There is no doubt that daily aspirin is valuable in preventing a cardiovascular event in folks that have already had one. This is called secondary prevention. For those who have never had such an event, it is prudent to ask whether aspirin might stave off a first cardiovascular events, such as a heart attack. An MD surveyed [recent findings](#) on this subject in an editorial in the *JAMA*. To date there have been 13 trials of the value of aspirin in

prevention of non-fatal heart attack or stroke, three of these only a year old. The concern is that aspirin also causes an increased risk of major bleeding. In total, the 13 studies involved 164,000 people with over a million participant-years of follow-up.

In aggregate, the data on aspirin show a reduction from 61.4 to 57.1 in non-fatal cardiovascular events per 10,000 participant years. But the associated increase in bleeding events was from 16.4 to 23.1 per 10,000 participant years. The author discusses the difficulty in applying these findings to any specific patient. It's complicated. He rightly recommends shared-decision making with each patient. He also recommends looking at other ways to reduce the risk of cardiovascular events such as smoking cessation or blood pressure reduction.

How Low Can You Go?

There's plenty of debate about how low one should try to keep their blood pressure to avoid higher risk of cardiovascular events. A new perspective has been added to the debate. The results of a [study](#) called "SPRINT MIND, which targeted the effects of lower blood pressure on mild cognitive impairment and "adjudicated probable dementia," were just published. The study assessed blood pressure in two groups of patients of average 68 years. One group was treated to a systolic blood pressure of less than 120 mmHg (intensive group), while a second group was treated to a systolic blood pressure of less than 140 mmHg (nominal treatment group). There were over 4,600 patients in each group with a median treatment time of 3.3 years and a median follow-up time of 5.1 years.

There were 149 cases of adjudicated probable dementia in the intense-treatment group and 176 in the nominal group. This amounts to 7.2 and 8.6 cases per 1,000 person-years. The difference was not statistically significant. When mild cognitive impairment was assessed, there were 14.6 and 18.3 occurrences per 1,000 person-years in the intense group and nominal group, respectively. This was statistically significant. The major conclusion

was that treating patients with high blood pressure to below 120 mmHg systolic does not decrease the chances of probable dementia compared to treatment to below 140 mmHg.

Invasive Procedures in Frail Seniors

There was a man in my church that in his 80s was living a vigorous life playing his trumpet and befriending an amazing number of people. He was perhaps a bit frail. One day, he was diagnosed with aortic stenosis. He underwent surgery, and he was never the same again. In months he lost weight, lost his vigorous demeanor and often could not recognize people he had known for years. He soon died. Two MDs writing in the "Less is More" section of *JAMA Internal Medicine* expressed their [opinion](#) that frail older adults must be afforded shared-decision making to ensure that their wishes are elicited when diagnosed with aortic stenosis. Many older adults would prefer to live a shorter, happy life rather than a longer miserable life. The authors caution that the benefits of surgery in younger adults do not necessarily transfer to frail, older adults. There is an increasing number of older adults with severe aortic stenosis. Be careful.

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Answer to question: best answer is b) 411 ppm, <https://climate.nasa.gov/vital-signs/carbon-dioxide/>