Does our need for speed influence what we see and hear in the media? Short answer yes. And for Science, with a capital S, that may be not such a good thing.

“In 1965, two Norwegian social scientists, Johan Galtung and Mari Ruge made a fascinating observation: What counts as "news" depends very much on the frequency with which we pay attention. If media outlets know most of their audience is checking in every day, or every few hours, they will naturally tell us the most attention-grabbing event that’s happened in that time.

… Weekly, daily, hourly-the metronome of the news clock changes the very nature of what is news.”

Tim Harford’s The Data Detective
While much attention is being paid to the distortions that social media make in our understanding of the world, we must not lose sight of how the attention economy’s “news cycle,” in fact, alters “the very nature of what is news.” Let’s use the example at hand, COVID-19, and focus on the science, not the ensuing policies.

**In the good old days – a year ago.**

Medical information had both a different pace and place a year or two ago, before the pandemic. To be on the cutting edge of a topic, you would have to be a researcher or someone using the information for their work. The cutting edge was one-on-one discussions, personal correspondence, and for those looking for broader dissemination, a pre-print server, like medRxiv [2].

“Pre-print advocates say they are a way to get findings out to the research community quickly and gather feedback before the work is published in a journal.” *Science Magazine* [3]

Some of that research went on through a peer-review process and were published in journals. Typically that process took slightly more than three months [4]. The publication in a journal brought the news to a more general but still highly interested audience – the subscribers. An alternative path was for the information to be presented at a national or regional conference, promising that the sponsoring organization, like the American College of Surgeons, would publish a more extensive version of the presentation in their journals within a few months. By either route, the “news” began dissemination into the larger medical community through websites like Doximity or other aggregators of medical news. Here was the news that was “fit to print” to a mainstream audience for discussion, debate, and perhaps adoption.

In turn, journal articles became topics of discussion in continuing medical education programs or “journal clubs,” where a group of physicians might choose a paper to discuss among themselves. Some of those articles would find themselves, hardbound, in yearly summaries; a vanishingly few found their way into textbooks. Textbooks summarize the dogma, our best current beliefs, and update slowly, every five years or more.

There was a pace to disseminating medical information, measured in weeks, months, and years. It allowed for the crowd, in this case, physicians, to vote with their reading and subsequent behavior, to separate the good, from the maybe useful, from the bad, to change medical care. Part of why medicine has a reputation for slowly changing is entangled in how information is disseminated, believed, and incorporated.

**The 24-7 news cycle comes to medicine.**

COVID-19, a pandemic, a public health crisis, shifted medicine’s news cycle into an altogether new and high-speed frequency.

“In January 2020 we got 240 manuscripts,” Inglis said. “In May of 2020 we got 2,400.”
The hastening applied not only to information but prompted changes in medical therapy. As I have written, the use of corticosteroids in the treatment of COVID-19 appeared first on a pre-print server in June. Within a few weeks, corticosteroids' use rose from 30% to 90% of patients – a tsunami change.

Not only has the number of submissions increased, so has the audience.

“A study published in Health Communication this year suggested that about 43 percent of news articles covering pre-print research did not accurately frame findings as scientifically uncertain or lacking peer review.”

Pre-print readership now includes journalists and ordinary citizens seeking to know the latest news. Of course, separating the wheat from the chaff requires a certain degree of scientific literacy, only about 25% of pre-print articles make the cut into a journal. The “raw” data of pre-prints is increasingly served up without further knowledgeable context, widely disseminated by posting to Twitter. Twitter is the public-facing media channel for most journals and their articles.

Twitter plays a pivotal role. A mention on Twitter and the retweets has a noticeable impact on who looks for the underlying article – this increase in the digital traffic to an article increases its impact factor – a metric of the journal’s readership. A presence on Twitter is necessary to enhance importance or prestige, but it is not a measure of integrity or value.

Of course, it isn’t all peaches and cream when you are on social media. The comments can be brutal. It is difficult to write about masks' use without gathering your share of trolls or individuals without a basic grounding in science. Twitter may aid dissemination but rarely supports reasoned debate.

When medical science was brought into the current news cycle, what it gained in dissemination, it lost in meaning. Medical knowledge does not change daily or weekly, let alone hourly. The older, slower dissemination allowed for knowledgeable people to contemplate what was being said, and in a “wisdom of the crowd” way, let the best percolate up to the next layer of sharing. Much of the mistrust of medical science comes from sharing what is not ready to be shared or readily communicated.

Science is incremental and slow, forcing it into a much faster rhythm, in service to a news cycle that is, itself, out of control, is a disservice to the work and fosters mistrust. The quickening dissemination of medical science is even more problematic because misinformation consequences are more significant than mistrust – we are talking about lives, not bruised egos. Trust is easily lost and requires years to repair. If you do not believe me, ask the vaccine-hesitant.