EDITORIAL

The plural of anecdote is not data, please mind the gap between virtual and real life

The COVID-19 pandemic introduced challenges to everyone in society but particularly so to every aspect of medical practice. It is bewildering how quickly the profession has had to respond to a rapidly changing clinical landscape. Our well-established methods involve collecting and analyzing data to generate an evidence base which is then disseminated and implemented into routine clinical practice. This approach, which champions a careful and considered assessment of novel clinical concepts, is unable to respond quickly enough in this chaotic environment. It is therefore clear that adaptations have to be made for sharing our rapidly gained individual experiences and thoughts in a timely manner.

The Chinese word for "crisis" (simplified Chinese: 危机) is frequently invoked as being composed of two Chinese characters signifying "danger" and "opportunity" respectively. This indeed reflects our conundrum—we have to embrace change, be quick in adapting to new challenges, and grasp the opportunity, but there are many dangers along this path. In 1928, John A Shed warned us that, "A ship in harbor is safe, but that is not what ships are built for." While something might seem very protective in the nonclinical environment, it does not mean it will be in the real world. In the time of crisis, we should be adaptive but always put our own safety and the safety of our patients first—the need to be innovative needs to be balanced with safety and efficacy in the real world.

Given the nature of the pandemic, with a virus spread by droplets and aerosols, a key aspect of clinical practice to come under the microscope was airway management and intubation. Guidelines were rapidly produced by expert groups[1,2] that are professionally researched and used the best evidence available, combined with expert opinion to formulate clear, actionable advice in a similar way to prepandemic projects. At the same time, the fear (and in some institutions harsh reality) of inadequate (or even close to absent) personal protective equipment (PPE) provision saw a rapid proliferation of suggested mechanisms to prevent provider contamination. This was also driven by the understandable desire to offer another layer of protection to frontline workers. Physical barriers - placed between the patient and intubating clinician, oxygen face masks and filters combined to form makeshift N95 respirators, repurposed scuba diving face masks, adaptations to snorkels being worn during intubation all appeared in online forums and discussion groups. Sophisticated videos were produced extolling the virtues of these makeshift devices without any methodical testing or data presented to demonstrate their safety or efficacy. The drive for individuals to protect themselves has been fueled, in part by generalized fear and emotions. Combined with many brilliant medical professionals keen to offer their help amid outstanding public goodwill, produced a situation where untested innovations rapidly became accepted as a good idea, or even as a standard of care. The ready availability of social media and the re-posting of the same—often unverified data—made "inventions" or "solutions" quickly appear as mainstream routine practice. An example of how social media companies tried to counteract this phenomenon can be seen with the actions of WhatsApp ™, a multimedia messaging platform owned by FaceBook™ (Menlo Park, United States). On the 7th of April 2020, WhatsApp™ placed new limits on the forwarding of messages. So-called "highly forwarded" messages (defined as having been sent through a chain of five or more people) could now only be forwarded to a single other-user at a time. The intent was to slow the spread of information and hopefully reduce the proliferation of unproven theories, fake news, and other fiction.

Apart from airway-related prototypes like boxes and homemade protection masks, various drugs with more or less solid theoretical evidence behind them were hailed as "game changers" and life-saving without (much) data to support their benefit in the current setting. A single nonreferenced line in a publication about the danger of ibuprofen in the context of COVID has led to many patients around the globe stopping their regular medications, similarly with angiotensin-converting enzyme (ACE) inhibitors. Stopping the ACE inhibitor in a previously well-controlled patient can easily cause harm, which is even more enhanced if the patient lives in an area with a poor healthcare system. The perceived, unproven benefits of hydroxychloroquine widely touted in the media led to a mass prescribing of the drug and complete depletion of stock in many locations. This has led to reports of morbidity and mortality associated with self-medication by patients and increased the general use of hydroxychloroquine.[3]

The urge to assist and make a difference during this pandemic has also led to numerous instances of "faux" innovation that are akin to scavenging or intellectual piracy. The touting of jerry-rigged ventilators, ventilator splitters, and 3D-printed ventilators has led to a flurry of "first to market" and false invention claims. In the most perplexing instance, STL files for an open-source 3D-printed ventilator available online were accessed by many "innovators" and hospitals across the globe. These were 3D-printed and paraded as innovation from these local entities and at times branded as startups[4]. Many of these entities have claimed the life-saving utility of such devices without formal testing, approvals, and licensing. In most instances,

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both the traditional media—likely hungry for positive news stories—along with social media have been explosive vehicles for extolling these claims without due verification. We doubt that these "innovators" would accept the use of scavenged, reused, and jerry-rigged equipment to perform surgery on themselves or their loved ones, especially without evidence to efficacy and safety.

Additionally, we have also borne witness to the elevation of the populist, anti-expert, and pseudoscientist. Social media provides the population with access to a massive amount of information and misinformation. While most people will be able to differentiate the expert from the nonexpert or quack, many cannot and may take actions that could harm themselves. The most glaring example we have seen followed comments by US President Donald Trump, when he stated at a daily briefing, "I see the bleach, where it knocks it out in one minute. And is there a way we can do something like that, by injection inside or almost a cleaning...". While President Trump later clarified that he intended his statements as sarcasm. The damage had already been done and the widely reported global news about the press conference on a background of massive media coverage of the COVID-19 pandemic, and previous reports of consumer shortages of cleaning and disinfection products together this led to an increase in calls to poison centers related to the inappropriate ingestion of bleach and cleaning fluids.[5]

Social media can be a vital tool to keep clinicians and other frontline workers connected in trying times; however, these examples clearly illustrate the dangers of social media influencing medical professionals and the impact it can have on the general public. Anecdotes often morph into data and become prevailing wisdom; single case reports may lead to generalized anxiety and irrational behavior. While some aspects of our traditional system have held up well, others need to change. Access to timelier expert review and systems to rapidly assess novel technology or devices must be put in place. Merely reproducing the "see one, do one, teach one" culture online is not a good enough way for us to move forward. Our patients deserve better, and we should take this opportunity to drive the evolution of peer review and the professional publication process to become a rapidly responding vehicle for change, rather than a ponderous, plodding beast that is dragged down by the weight of its history and tradition.

CONFLICT OF INTEREST

FUNDING INFORMATION

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