What You Need to Know

The number of people with coronavirus is rising and so are efforts to contain it, medical companies are targeting you right now with online ads, caregivers are the worst at caring for themselves, and more

Don’t Hold Your Breath Waiting for a Coronavirus Vaccine

It looks easy in movies, but developing a vaccine for a new virus is difficult, time-consuming, and expensive. And for the companies that have the resources to manufacture them, it often isn't worth it to bother. Some vaccines are already in the works for the Wuhan coronavirus, but there are many reasons why they may never reach production, even though the new virus has already claimed more lives than SARS. For one, viruses mutate quickly, and once the virus changes, any vaccine developed for the previous strain won't work anymore. It also takes a long time to develop the vaccine then pass through the rigorous multistage processes for approval by the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA), which includes a three-phase clinical development stage. Best case scenario? A coronavirus vaccine is at least a year off, but possibly several. Then once you have a vaccine, you need to produce it in quantity, and pharmaceutical companies have little financial incentive to work on vaccine research, development, and production. By the time most or all of these hurdles have been overcome, the need may not be as pressing anymore, and interest might wane as it did with the SARS vaccine.
**Patient Perspective — You Can Find Anything Online—Even Healthcare**

*If you spend any time on Facebook, Twitter, or Instagram, you're already familiar with targeted ads:* paid advertisements customized to display for specific groups of people based on their demographics, browsing habits, and complex algorithms. That's why that cute shirt that pops up on your timeline matches your style exactly or why you'll be inundated with links to cheap car tires just when you need them. Commercial products are one thing, but what about drug prescriptions and medical services? With so many people using social media these days, especially millennials, it's not surprising that **the healthcare industry is using targeted ads to reach potential customers too.** From Googling symptoms to telehealth to—increasingly—social media marketing, you can now meet some healthcare needs just from your smartphone without ever seeing a doctor in person. But how safe is it? The answer, like medical care itself, is complicated. It's probably safe most of the time, but there are some risks, especially for certain patients; for example, birth control pills may be contraindicated in some women with high blood pressure or those at risk for blood clots. Some companies using targeted ads will refer clients to in-person doctor visits when they see something concerning, but as with everything online, the old proverb holds true: Let the buyer beware.

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**Behavioral Health — If You Build It, They Will Come**

*When Tasnim Sulaiman and Zakia Williams built Black Men Heal,* a nonprofit offering **free therapy to black men in Philadelphia,** they weren't sure anyone would sign up—but dozens of men quickly responded to their initial social media post. Mental health issues for black communities are a rising concern—the Health and Human Services Office of Minority Health reports that suicide was the second-leading cause of death for African Americans age 15–24 in 2017—and yet many barriers prevent people of color from seeking help. Black Men Heal was founded to eliminate three of the biggest obstacles: the prohibitively high cost of therapy, therapists lacking the cultural competency to address the unique mental health challenges for this community, and the stigma of mental health. Each client accepted into the program receives eight free, hourlong therapy sessions with a volunteer, licensed clinician of color best suited to work with them. To date, 22 therapists have donated 368 client sessions to 46 men of color through Black Men Heal—and their next group of clients and clinicians promises to be the largest yet.

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**Researchers Are on the Right Wavelength**

*Choosing the best treatment for a patient dealing with depression is often a matter of guesswork,* a process of trial and error to see how they respond to different drugs or therapies. But that might change one day, thanks to a study published in *Nature Biotechnology* that found **a patient’s brainwaves can be used to predict whether they will do well with the drug sertraline.** An analysis of the brainwaves of more than 300 patients diagnosed with major depression before and after treatment with the antidepressant showed a common pattern of electrical activity in those who responded to the drug. The patients without that pattern responded better to transcranial magnetic stimulation, a nondrug therapy. While this is an exciting discovery that shift the paradigm in how mental illnesses are treated in the future, it's still in the early days. Next steps would be to confirm the predictive accuracy of using brainwave patterns to determine treatment and to identify patterns for other drugs.
Long-Term Care — Who Cares for the Caregivers?

It seems that the 43 million American adults who regularly care for loved ones with health problems are less likely to take good care of themselves. A study in Rehabilitation Psychology of 24,000 people providing care for family members or friends—informal caregiving—found they had a 26% higher risk of not having health insurance and a 59% risk of not seeking medical care for themselves, compared to non-caregivers. They are also more at risk for depression and life-limiting physical, mental, or emotional problems. The group of participants was predominantly white women under the age of 65, earning $10,000–70,000 a year, and half were employed while the other half was retired or unemployed. Study co-author Jacob Bentley noted that more research is warranted and there is a need for low-cost, accessible services for caregivers.

Infection Prevention — Two Weeks in Quarantine

For recent U.S. evacuees from Wuhan, China, ground zero for the coronavirus (COVID-19), spending 14 days in mandatory quarantine isn't too different from staying at a hotel—if that hotel were located on a military base and you weren't allowed to stray beyond a fenced-in area. They have three meals a day, internet, TV. They also have twice-daily symptom and temperature checks, and they are prohibited from getting within six feet of anyone else. At least face masks are optional. Still, even under involuntary confinement many of the evacuees would agree that they're better off in the United States, than they were in China, where they faced fear and uncertainty as well as a prolonged, frustrating evacuation process at the Wuhan airport. And in 14 days, if all is well, they can finally go home.

Surgery — Bringing VR to the OR

Being awake during arm surgery can be incredibly stressful because of the noise of drills and surgeons talking. Orthopedic surgeons at St. George's Hospital in Tooting, England, are trying something unorthodox to keep their patients at ease during procedures: Rather than giving patients a sedative to put them to sleep, they give them headphones and a virtual reality headset. The immersive experience transports them to relaxing, scenic environments, such as a sunny beach or a babbling brook, that they can explore at their leisure, removed from the sights and sounds of the operating room. Currently in trial, if the technique proves to be a success, the doctors hope it can be used in other types of surgery as well.

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**Improving Diagnosis — Teaching Computers to Diagnose Cancer**

*Artificial intelligence may offer a solution to two healthcare challenges:* 1) how to better serve veterans, one of the largest patient populations in the United States, many of whom live in remote areas, and 2) the swiftly declining number of working pathologists. Specifically, researchers have been *training machine learning software to not only distinguish cancerous cells from non-cancerous cells,* but also diagnose the type of cancer—just from looking at a picture. This is a huge evolution in AI software, which could help lighten the load of physicians as well as improve patient experiences with shorter wait times. And when combined with telehealth, AI can reach patients anywhere, including millions of veterans who otherwise have little or no access to local specialized care. The successful study, published in the Federal Practitioner journal, promises limitless possibilities for expanding these AI capabilities to diagnose other diseases as well as apply the technology to a broader patient population.

**Pediatrics — A Stimulating Discussion on ADHD**

*Dr. Perri Klass explores some of the issues surrounding the correct diagnosis and treatment of ADHD,* an ongoing source of debate. In consulting with various experts on the subject, she notes that marketing from drug companies, particularly for stimulants, is a major challenge—both because parents see a commercial for some new medication they want their children to try and because these companies inundate pediatricians with marketing too, which may influence what treatment options they recommend. For their part, doctors must try to balance all this with the needs of their patients and families, as well as navigate insurance policies that effectively limit what they can and can't prescribe. Concerned parents can be proactive by keeping informed and researching their prescriber to ensure there are no conflicts of interests, and they should feel comfortable discussing them with their doctors.