What You Need to Know

What happens when sperm banks deliver the wrong babies, how unicorn horns are helping doctors study ADHD, and new research shows sepsis survivors are at higher risk of death

Switched Before Birth

As consumers, we’re familiar with the phrase “buyer beware,” but no one ever dreamed that this simple caution also applies to artificial insemination—and in most cases there was no way to be sure you were getting what you paid for. However, now with broader availability and affordability of DNA testing, a growing number of families all over the United States are discovering that their child’s biological father is not the sperm donor they chose. And the consequences of that mix-up go beyond feelings of violation and deception—not knowing the health and background of the true donor can have devastating medical implications, from a family history of cancer to a genetic predisposition for Alzheimer’s disease.

Sperm banks are not well-regulated, and when a mistake or wrongdoing are ultimately discovered, families have few legal options. Often, there’s no clear-cut crime involved, other than negligence or poor record-keeping, and courts are more concerned with the health of the child when considering it as a case of injury or wrongful birth. The feelings of the family make such situation even more fraught, because regardless of the sperm donor, parents love their children.

Many experts believe there should be more government regulation of the donor selection process and sperm bank practices, and harsher laws to protect families when things don’t
Behavioral Health — Taking ADHD by the Horn

Dutch fashion designer Anouk Wipprecht has come up with a magical way to help doctors better understand how kids with attention-deficit/hyperactivity disorder (ADHD) see the world and how their environment affects them: Agent Unicorn, a wearable medical device shaped like a unicorn horn that records electrical activity in their brains.

Specifically, the horn is designed to track data about the “P300 wave,” a wave of activity that happens in your brain every time you make a decision—which is known to be delayed in kids with ADHD. Unsurprisingly, kids get excited about getting to put on the fun and stylish horn, and prefer the head-mounted, portable EEG monitor to being hooked up to electrodes and a much bigger machine. It also allows continuous recording of what the children are reacting to throughout their day, under typical, real-world conditions. A camera in the horn records video, which is linked to EEG data when the P300 wave is detected. Potentially the information gathered will help caregivers treat ADHD, perhaps even prescribing fewer drugs. The horn is currently in clinical trials to confirm its value in treating children with ADHD, but a simplified, Bluetooth version is commercially available now.

Long-Term Care — Keep Residents Safe During Natural Disasters

Is your facility prepared for bad weather? Dangerous conditions like hurricanes can cause flooding and power outages which threaten the safety of residents, as seen in Hurricane Irma in Florida two years ago, when stifling heat killed eight people. Consequently, recent state regulations in Florida require nursing homes to have generators or demonstrate a safety plan for residents, whether by temporary generators, evacuation, or shelter-in-place procedures. Purchasing and installing generators takes time, as does training staff to be prepared to protect the safety of residents in an emergency.

Although Pennsylvania typically isn’t prone to as extreme weather conditions as Florida experiences, flooding, heat waves, high winds, and blizzards aren’t out of the question year-round—which all can potentially cause power interruptions. According to the Pennsylvania Health Care Association (PHCA), most Pennsylvania long-term care facilities have generators for backup power, and they are required to have emergency plans in place, which are reviewed annually. And federal emergency preparedness requirements include risk assessments and plans for emergencies ranging from power loss to cyberattacks,
**Natural Disasters (cont’d)**

which include cooperation with state and local agencies, and testing plans and generators.

Further reading: CMS State Operations Manual Appendix Z — Emergency Preparedness for All Provider and Certified Supplier Types Interpretive Guidance (PDF, Updated 2/1/19)

CMS Emergency Preparedness Website

**General Interest — Spreading the Truth, One Tweet at a Time**

Today’s proliferation of “fake news” has an impact on more than just politics; Dr. Austin Chiang, Jefferson’s chief medical social media officer—the first ever at a major hospital—believes it is one of the biggest problems facing healthcare today. After all, propaganda against vaccination has fed millions of people dangerous misinformation, which has resulted in the largest measles outbreak in the United States since the disease was effectively eliminated in 2000.

Chiang, armed with hashtags like #verifyhealthcare and #dontgoviral, and a new group called the Association for Healthcare Social Media, is encouraging his fellow medical professionals to take to Twitter, Facebook, Instagram, and LinkedIn to talk directly and truthfully with consumers about their health. With more than 20,000 followers of his own on Instagram, Chiang has a broader reach than most doctors, which gives him the power to influence the conversations happening online about healthcare. While sharing selfies, he’s also dishing out information about new research and medical advice, and he’s leading by example, in the hopes that his colleagues will be less hesitant to put themselves out there on social media.

If you’re curious about how social media can improve patient safety, or if you’re ready to join Chiang’s growing army of social media ambassadors for healthcare, follow him on Instagram, Twitter, Facebook, and YouTube at @AustinChiangMD.

**Infection Prevention — The Lingering Effects of Sepsis**

A study led by Guy’s and St. Thomas’ Hospital in London has revealed some disturbing insights about the long-term effects of sepsis, a serious, potentially deadly complication of an infection in which the body’s immune system attacks its own organs and tissues. Researchers analyzed data from 94,748 patients from 192 critical care units in the UK who had survived sepsis between April 2009 and March 2014 and found that sepsis survivors are at higher risk of death for years following their illness—particularly the elderly, men, and those with complex health. Several factors seem to be at play, and researchers are still investigating why sepsis increases risk of death, but these findings suggest a need for better follow-up services and education for sepsis survivors who were admitted to ICUs.
Improving Diagnosis — New Tricks for Old Ticks

As if we weren’t all already paranoid about ticks, a new tick-borne disease was recently discovered in Inner Mongolia, bringing the grand total of tick-related diseases that can infect humans to 17—that we know about. There could be a lot more.

As reported in the New England Journal of Medicine, the new nightmare fuel for people worried about ticks has been named Alongshan virus (ALSV), after the hometown of the first patient to present with it, a 42-year-old female farmer. Identified with genome sequencing, the disease subsequently was found in 86 more patients from the same region. ALSV causes fever and headache three to seven days after a tick bite.

Now for some good news: Patients in the study were successfully treated with the antiviral ribavirin and an antibiotic, benzylpenicillin sodium, for three to five days, and they all recovered completely within about a week. And so far, ALSV is limited to Ixodes persulcatus ticks and mosquitoes in Inner Mongolia. But ticks still carry plenty of diseases in the United States, not least of which is Lyme disease, so be sure to practice precautions outdoors during the warm months to prevent tick bites and find and remove them quickly, and see a doctor immediately if you suddenly experience symptoms like fever and find red, circular marks on your body.

Surgery — A New Definition for Heartburn

You should probably never yell fire in a crowded operating theater—unless there actually is a fire. Fortunately, surgical fires don’t happen all that often: According to the U.S. Food and Drug Administration (FDA), about 600 surgical fires occur each year in the United States. Chest cavity fires are even rarer; only seven chest cavity fires have ever been recorded in medical literature. Which makes what recently happened to a 60-year-old man in Australia one for the history books. During emergency surgery to repair his aortic artery, he experienced a “flash fire” that required his surgeons to think more like firefighters than doctors.

How did this happen? As in most cases of surgical fires, it was a perfect storm of high oxygen levels, which lower the ignition point of a fire; an electrocautery device, which heats tissue with electricity—a perfect ignition source; and surgical gauze, fuel for that fire. All the past incidents of chest cavity fires also involved patients with a lung disease such as chronic obstructive pulmonary disease (COPD), just like the patient in this case. Despite not being trained for such an infrequent occurrence as a fire in the OR, his team acted quickly and put out the fire with saltwater, preventing any harm to the patient. The incident, which was presented recently at the annual meeting of the European Society of Anaesthesiology, now serves as a cautionary tale, and another thing for medical teams to prepare themselves to handle during surgery.
Patients not adhering to medication instructions is certainly a cause for concern from their care providers, but it may be equally important to ask why they aren’t taking their medications and factor that into prescriptions. The National Center for Health Statistics recently asked that question and discovered that for many senior patients, it’s often a matter of cost.

Researchers, using data from the 2016–17 National Health Interview Study, determined that nearly 5% of adults over age 65 have rationed medication, skipped doses, or didn’t fill a prescription; this was especially true of women, seniors under age 74, and patients covered by Medicare alone. (Unlike Medicare Advantage and other health insurance, drug coverage is not included in Medicare, without purchasing a separate plan.) Nearly 18% of seniors in the study said they asked their doctor for a cheaper alternative to the medicine prescribed.

These strategies to cope with high drug costs naturally affect poor seniors (an individual income of $11,880 in 2017) more than those with higher incomes—and they also come with another high cost for patients, namely more emergency department visits and hospitalizations. Unfortunately, lower-cost alternatives for medication are not always available, depending on the patient’s needs.