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June 23, 2021

Humana Sued Over Wrongful Records Access Data Breach

"Louisville, Ky.-based Humana is being sued over a data breach last fall that exposed the personal information of about 65,000 of its health plan members, according to court documents."

Why this is important: In October 2020, an employee of a Humana subcontractor's subcontractor (yes, you read that right) posted private information to a public Google Drive as part of a medical coding training business endeavor. Despite allegedly learning of the breach in December 2020, Humana waited to give notice to its health plan members until March 2021. This delay, combined with the lack of details provided by Humana in the March 2021 notices to plan members, has led to the filing of a federal lawsuit in the Western District of Kentucky. While matters connected to heath record privacy and security are generally regulated by the U.S. Department of Health and Human Services Office of Civil Rights, lawsuits like this one highlight the potential for further-reaching consequences for mishandled breach responses. --- Risa S. Katz-Albert

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Biotechnology is Replacing Petrochemicals with Identical, Sustainable Materials

"Genomatica, a biology company that is remaking everyday products through clean manufacturing, announced that a second commercial plant will be powered by its technology."

Why this is important: There is a serious concern, unknown to most, about the current push to eliminate fossil fuels. So many things are made with fossil fuels/petrochemicals. Spandex, polyesters, other plastics, possibly even the outside of the pill you took this morning, the glasses on your head, the buttons on your shirt, part of your shirt! -- petrochemicals help to make them all. If we can't get those compounds, what do we do? A German company is altering the DNA in high carbohydrate staples, such as corn, sugar beets and sugarcane, developing possible replacements for the thousands of manufacturing uses for petrochemicals. --- Hugh B. Wellons

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No, the Federal Seizure of Colonial Pipeline Ransomware Payments Did Not 'Break' Bitcoin

"But while cryptocurrency might make ransomware payments easier, it also often leaves criminals more open to capture."

Why this is important: The recent publicized ransomware attack on the Colonial Pipeline has led some to question the security of Bitcoin. However, it was the FBI's actions, and not the hackers, that caused the concern. The hackers required payment in Bitcoin, and Colonial Pipeline made that payment. The FBI then used blockchain analysis to trace the ransomware payment and recover the Bitcoin. None of this is new; law enforcement officials have frequently used these techniques to capture criminals. The fact that the FBI had the private key necessary to recover the payment leads people to believe that Bitcoin was hacked by the FBI. Bitcoin requires a private key to move money, and the key is almost impossible to guess. In order to recover the payment, the FBI would have needed to gain access to the private key. How they accomplished this is an open question. "It is still unclear whether the agents went to a third-party service or knocked on an individual's door and got the means to move the funds digitally." Until criminals can obtain the private key from the individual holding it, Bitcoin remains as safe as it has been in the past. --- Kellen M. Shearin

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Judge Approves Nebraska Medicine Data Breach Lawsuit Settlement

"A preliminary settlement has been reached in the data breach lawsuit against Nebraska Medicine, filed by some of the 219,000 patients affected by a 2020 ransomware and data theft incident."

Why this is important: Following a ransomware attack on Nebraska Medicine reported in both September 2020 and February 2021, patients sued in the U.S. District Court of Nebraska in early 2021. Last week, a preliminary settlement agreement was approved by the judge and has been sealed to preserve the contemplated actions to reverse the actual harm suffered by the plaintiffs and to protect the identities of the affected individuals. The settlement likely willbe finalized in a September 2021 hearing. The hospital systems linked with Nebraska Medicine had to manage without access to patient records during the attack, postponing non-urgent procedures and issues with patient portals. This caused actual harm to patients, a critical component evaluated by courts in these lawsuits. --- Risa S. Katz-Albert

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Nanotechnology Breakthrough May Help Curb Dicamba Drift

"Up to 70 million pounds of herbicides are lost to the environment each year in the United States, according to Environmental Protection Agency estimates."

Why this is important: Herbicides increase crop yield. Many herbicides are specific to certain crops and harmful to others. Herbicides, however, can be applied sloppily or just carried by the wind. This both wastes an expensive asset and puts in danger crops next door. In the last issue of *Decoded*, we talked about how such products endanger honeybees. Two researchers at the University of Arkansas have demonstrated the use of nanoparticles to reduce both the drift of a particular herbicide and its effect on other crops. --- Hugh B. Wellons

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New Approach to Gene Therapy Uses Common Pain Reliever to Fight Against Genetic Diseases

"Researchers have developed a new approach to gene therapy that leans on the common pain reliever acetaminophen to force a variety of genetic diseases into remission."

Why this is important: This gets into the weeds a bit, but it is interesting. One problem with gene therapy is that it is not 100 percent effective. Some cells are altered, but some are not. If you are treating a genetic problem that is limited to a major organ, you may fix most of the organ, but as cells die and are replaced, the new cells may or may not favor the cells that work best. The process described demonstrates a brilliant indirect approach to that problem. This genetic problem affected the liver. The

genetic "fix" also included a gene that made the liver immune to the toxic effects of acetaminophen (Tylenol). Typically, high doses of acetaminophen damage a liver. After giving the therapy and allowing time for it to work, the "patients" (in this case, mice) were given high doses of acetaminophen. That killed the non-affected liver cells, so that when the liver repaired itself over time, the best working cells were left to replace the others. Human trials will be difficult to design, since the treatment includes killing non-treated liver cells. Still, it is a creative approach to a difficult problem. --- Hugh B. Wellons

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A Global First: Bitcoin as National Currency

"El Salvador puts the digital money on par with the U.S. dollar for all public and private debts."

Why this is important: El Salvador has made Bitcoin the national currency. El Salvador is beating to the punch other countries, including the U.S., that are working to create a central bank digital currency. In addition to beating other countries, El Salvador's adoption of Bitcoin is different from those countries' work to create a CBDC in that its adoption can be seen as denationalizing money in that country. El Salvador uses the U.S. dollar as its currency, and the adoption of Bitcoin isn't scrapping the dollar. Rather, its people can hold their savings in either currency. However, entities that are technologically able to accept Bitcoin are required to do so. El Salvador's adoption of Bitcoin is another step toward a future where digital currencies play a significant role. The open question is whether the adoption of a cryptocurrency, instead of the development of a CBDC, was the right move. --- Nicholas P. Mooney II

Will Gene Therapy Change the Treatment of Muscular Dystrophy? and CRISPR, with New Partner, to Develop Gene Editing Therapies for ALS, Nerve Disorder

"Thanks to decades of research, new treatments for muscular dystrophy that address the disease at the generic level may soon change the course of the disease and help more people."

"The partners plan to rely on Capsida's technology to better target tissues in the central nervous system."

Why this is important: Muscular dystrophy, multiple sclerosis, and amyotrophic lateral sclerosis ("ALS") all are distinct (unrelated) neurodegenerative diseases. All afflict millions worldwide, have no cure, and often (always in the case of ALS) result in death. Many labs are exploring using gene editing in different ways to attack these diseases. More traditional pharmaceuticals also present promise for treating these diseases. Eventually, researchers may arrive at a combination of gene therapy and pharmaceuticals to reduce the impact of these diseases. --- Hugh B. Wellons

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Thank you for reading this issue of *Decoded*! We hope you found the information timely and useful. If you have topics you would like us to cover or would like to add someone to our distribution list, please email us.

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