

## A Year of Transformational Change: Part IV—Genomics & Telehealth

A little over a year has passed since the World Health Organization declared COVID-19 a global pandemic and some U.S. states implemented lockdown directives. For many, the early days of the coronavirus and stay-at-home orders are etched into our collective memory, but the adverse circumstances also paved the way for the acceleration of trends affecting how we work, take care of our health, and consume and connect.

We have been looking at these trends and the investment opportunities they could represent in a four-part series titled A Year of Transformational Change. Each part covers one of the four themes tracked in ProShares MSCI Transformational Changes ETF (ANEW).

In this fourth and final part of our series, we will take a look at changes in the healthcare industry and revolutionary medical advancements brought about by the COVID-19 pandemic as we examine transformations in **Genomics and Telehealth**.

### Medicine Has Been Transformed Over the Past Year

The COVID-19 pandemic placed significant stress on the medical community as many countries saw high case counts and hospitalizations. As a result, new ways of delivering healthcare— from genomic vaccines to telehealth—may represent significant transformations in the medical industry.<sup>1</sup>

# Genomic Vaccines Are Leading the Fight Against COVID-19—and Paving the Way to Future Advances

The science of genomics combines our knowledge of human biology with the sheer data-crunching power of advanced computers, enabling us to better understand our genetic code and how that impacts our health. Moreover, the

<sup>1</sup> UCLA Health, "The fastest vaccine in history," December 10, 2020

Until now, the fastest vaccine ever developed was in response to the 1960s mumps outbreak, and that took four years to be deployed.<sup>1</sup>

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study of genomics teaches us how to use that code to treat and heal people, advancing medicine in new and exciting ways.<sup>2</sup>

The COVID-19 vaccines from Moderna and Pfizer, for example, use Messenger RNA (mRNA), a gene-based technology. These vaccines mark the first time that mRNA genomic technology is being administered at mass scale, opening the doors for further development of a technology that could someday teach the body to fight off a range of pathogens from cancer to HIV.

Delivering over 200 million vaccine shots in American arms this year is a remarkable achievement.<sup>4</sup> Companies like **CRISPR**, **Invitae** and **Editas** could play an important role in leading the way to this type of preventative care.

#### Molecular Diagnostics Increases Accuracy and Speed of Diagnoses

As more and more institutions such as schools implemented testing programs over the past year, specialized diagnostic terminology such as "Rapid PCR" testing entered the mainstream lexicon, reflecting the growing importance of molecular diagnostics in testing for illnesses.

Hundreds of new diagnostics have been submitted to the World Health Organization for the identification of COVID-19 in the past year, but only a couple dozen of these have been approved for use by major healthcare authorities.<sup>5</sup> Companies like **Abbott Laboratories** and **Roche Diagnostics** have seen their tests approved for use in several countries. Smaller companies, such as **Twist Bioscience**, are also examples of innovators in the field.

### Telehealth Became an Essential Service

The adoption of telemedicine is an excellent example of a transformational change in motion well before the pandemic.

The technology to support telehealth has been in place for years, and the practice had been gaining traction. Prior to the pandemic, there were two impediments to mainstream adoption. The first was related to policies around reimbursement, as both government and private insurers were not sure how to treat telemedicine.<sup>6</sup> The second was doctor and patient behavior, with both hesitant to take the relationship online.

- <sup>2</sup> NEJM, "Human Molecular Genetics and Genomics—Important Advances and Exciting Possibilities," January 2021
- <sup>3</sup> WBUR (Boston NPR affiliate), "Why Some Scientists See 'Unlimited' Possibility In Technology Behind COVID-19 Vaccines," January 2021
- <sup>4</sup> The White House, Remarks by President Biden on the COVID-19 Response and the State of Vaccinations, April 2021
- <sup>5</sup> ABC News, "US warns 3 companies over illegal at-home COVID-19 tests," June 17, 2020
- <sup>6</sup> Brookings Institute "Removing Regulatory Barriers to Telehealth Before and After Covid-19," May 2020

Moderna's co-founder Derrick Rossi was quoted in a January NPR segment saying "Within 10 years' time, we'll see probably dozens of mRNA therapeutics. In maybe 15 years' time, we'll see maybe 50 or 60 mRNA therapeutics."<sup>3</sup>

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During the past year however, COVID-19 served as a catalyst to overcome these issues—at least for the short term—and since March 2020, the use of telemedicine has skyrocketed.<sup>7</sup>

With the ability and convenience of receiving care virtually, how many people will want to return to long waits in crowded doctors' offices during future flu seasons? As a result of the comfort many people have gained with remote interactions over the past year, telehealth may improve healthcare efficiency for everyone.

Many companies potentially stand to gain. For example, **Teladoc**, a virtual healthcare company, has definitely benefited from the shift to telehealth. The company's full-year 2020 revenue came in at \$1.1 billion, almost doubling 2019 revenue. They also set records for the number of tele-visits, which increased 156% year over year to 10.6 million.<sup>8</sup> This period of rapid growth could level as the pandemic recedes, but finding ways to soften the twin impediments of reimbursement policy and consumer behavior means that telehealth may be an important tool going forward.

#### Healthcare Could Be on the Brink of a New Renaissance

A decade from now, we may well find ourselves looking back at latetwentieth-century medicine as a sort of dark age. The past year's combinations of genomic technology, molecular diagnostics and targeted therapeutics could be the seeds of a rebirth in healthcare, opening up new possibilities in preventive and minimally invasive care and optimizing patient outcomes.

The delivery of treatment through genetic material—genomics—and human gene editing hold tremendous potential. Companies like Moderna and Novavax have already made great strides in bringing genomic treatments mainstream, and more companies are waiting in the wings. Editing the human genome is still in its early stages but offers the real possibility of treating diseases and degenerative conditions that were once thought incurable.<sup>9</sup>

The rapid development and deployment of the mRNA COVID-19 vaccines and other developments in genomic and genetic medicine certainly seem to point toward an exciting future. Genomics and telehealth are leading us into a brave new world. 76% of respondents are moderately or highly likely to use telehealth going postpandemic.<sup>8</sup>

<sup>&</sup>lt;sup>7</sup> McKinsey and Company, "Telehealth: A quarter-trillion-dollar post-COVID-19 reality?" May 2020

<sup>&</sup>lt;sup>8</sup> Healthcare Dive, "Teladoc guides to softer 2021, suggesting easing of pandemic boom," Feb 2021

<sup>&</sup>lt;sup>9</sup> Barrons, "With Rare Speed, Gene Editing Emerges as Biotech's New Cutting Edge," Jan 2021

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### Invest in Companies Involved with Transformational Changes

ProShares MSCI Transformational Changes ETF (ANEW) invests in companies that may benefit from transformational changes in how we work, take care of our health, and consume and connect—changes accelerated by COVID-19. ANEW tracks the MSCI Global Transformational Changes Index.

### **IMPORTANT INFORMATION**

Holdings as of 6/30/21: Moderna 1.05%, Novavax 1.17%, CRISPR 0.14%, Editas 0.16%, Invitae 0.12%, Twist Bioscience 0.13%, Abbott Laboratories 0.10%, Roche Diagnostics 1.97% and Teladoc 0.32%.

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