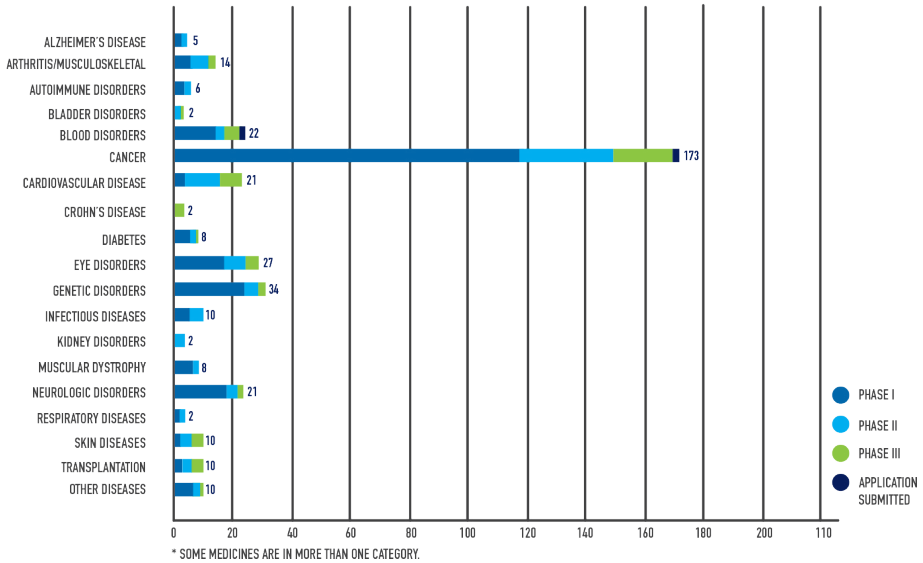
How the U.S. Health Care System Can Better Accommodate Cell and Gene Therapies

Today, treatments previously regarded as science fiction have become a reality. We can now potentially cure childhood blindness through a one-time, gene therapy, and CAR-T therapies are arming the body's own immune system to fight cancers. Cell and gene therapies work by using an individual's cells and genes to treat disease. In gene therapy, a patient's disease-causing genes are replaced, repaired or inactivated to potentially treat, cure or even prevent a disease. In cell therapy, cells are cultivated or modified outside the body before being injected into the patient to treat a condition in which the patient's cells are damaged or diseased. Some therapies are considered both cell and gene therapies. For example, CAR T-cell therapies are immune cells that are taken from the patient and genetically modified before being (re)introduced into the patient to fight cancer. While cell and gene therapies use a range of unique and innovative approaches to target a wide range of diseases, collectively they are regarded as among some of the most significant advances in health care.

Cell and Gene Therapies Offer Tremendous Promise

America's biopharmaceutical companies have invested nearly $1 trillion in research and development over the past two decades, setting the stage for the next frontier of biomedical research and development. Since the first U.S. Food and Drug Administration (FDA) approved cell-based gene therapy in 2017, these new medical technologies have begun to transform treatment for patients with many devastating illnesses and conditions. There are currently five FDA-approved CAR-T cell therapies and two approved gene therapies. There are also nearly 400 potential cell and gene therapies currently in development to treat a range of diseases and conditions, including cancers, genetic disorders, neurological disorders, cardiovascular disease and others.[i] Due to their ability to target the patient's expression of a gene or to alter the biologic properties of living cells for therapeutic use, these therapies have the potential to cure disease in a one-time administration, thereby dramatically offering to change the trajectory of many devastating life-threatening conditions.

Medicines in Development by Disease and Phase



Importantly, due to their potential curative effect, cell and gene therapies also hold remarkable promise in avoiding the tremendous health care costs associated with the previous standard of care for many burdensome illnesses. Consider hemophilia A, which is associated with a high level of treatment burden, particularly for severe patients, who require administration of blood factor replacement therapy 2-3 times per week in order to prevent dangerous bleeding events over the course of a lifetime. Due to this significant treatment burden, the average health care costs for severe hemophilia A patients ranges from $407,752 to $551,645 annually, with the majority of costs attributed to blood factor replacement therapy.[ii] A range of gene therapies currently in development have demonstrated in clinical trials an almost complete reduction in blood factor replacement therapy utilization in the years following just one administration.[iii] Likewise, the potential for these medicines to avoid significant health care costs is truly game changing, both in the short term and potentially over the long term, and underscore the tremendous value cell and gene therapies offer to our health care system.

As we prepare for the introduction of cell and gene therapies in coming years, it is also important to recognize early estimates affirm they will remain largely affordable and manageable to the health care system overall. A recent analysis suggests that an expected total of 1.09 million

patients will be treated by gene therapy from January 2020 to December 2034, and total spending over this period will be $306 billion.[iv] For additional context, the U.S. market for oncology medicines is expected to reach upwards of $100 billion by 2024 this compares to $4 billion for cell and gene therapies for oncology.[v] While these costs are manageable, as these therapies have ushered in a new treatment paradigm they bring challenges that are new to stakeholders and our health care system.

Challenges and Opportunities

It is possible to realize the promise of these therapies and make them accessible and affordable to patients. However, achieving this goal will require a collective effort to advance innovative approaches and move toward a value-driven health care system. As patients may experience long-lasting or potentially curative effects from just one administration of many cell and gene therapies, much of this value may only be fully realized over the lifetime of the patient. As such, the current reimbursement system must adapt and evolve to account for the value and potential long-term benefits these groundbreaking treatments deliver to patients.

To address potential access barriers caused by large up-front payments, payers and manufacturers are exploring new ways to finance these therapies. Innovative contracts that help spread costs or tie payment to outcomes can help payers manage budget impacts while increasing the focus on patient outcomes and access. These flexible payment arrangements include value-based contracts that link payment to patient outcomes and other forms of risk sharing and alternative financing arrangements, like pay-over-time and subscription models, that could help payers and patients by shifting risk onto biopharmaceutical manufacturers. Research shows that these types of contracts can potentially increase patient access to critical medications, improve treatment management and care coordination, reduce health system costs and patient out-of-pocket costs, and improve patient access and health outcomes.[vi, vii]

Payers and insurers are also finding ways to manage budget impacts through reinsurance and stop-loss policies. As the market evolves, insurers, pharmacy benefit managers and specialty pharmacies are offering products that provide diverse approaches to addressing stakeholder needs including contract negotiation and data management, provider contract negotiation, and financial and pharma company warranty services.[viii] State Medicaid programs are also seeking novel solutions for affordability concerns, including modified subscriptions, population-based models and outcomes-based models.

Despite these advancements, outdated government policies can create uncertainty around innovative payment approaches, which may deter biopharmaceutical companies, insurers and other risk-based providers from adopting or further expanding their move toward innovative contracts. This can potentially limit the number, type and scope of these arrangements. For example, uncertainty in the scope and application of the Anti-Kickback Statute (AKS) can inadvertently discourage beneficial low-risk health care arrangements through the threat of civil, criminal and administrative sanctions. Innovative contracts for biopharmaceutical products, including the data sharing and analysis required to fully execute these contracts, should be clearly protected under the Anti-Kickback Statute.

Complex price reporting rules also present a significant barrier. While the Centers for Medicare & Medicaid Services' (CMS) final Medicaid rule of December 31 contains new reporting flexibilities, including the reporting of multiple best prices under value-based purchasing agreements, further efforts and clarity may be required to reduce barriers to innovative contracts across a broader range of therapeutic areas. CMS should continue efforts to modernize price reporting for innovative contracts in response to requests from manufacturers. Updating these federal rules—in a way that maintains strong protections for patients—will help encourage the use of innovative payment arrangements and help ensure patience can access the therapies they need.

As noted by the FDA, some of these therapies "are almost certainly going to change the contours of medical practice, and the destiny of patients with some debilitating diseases." It is critical that we work together to develop a coverage and payment system that ensures timely patient access, manages short-term affordability challenges while continuing to foster the development of these new treatments.

i PhRMA. Medicines in Development: Cell and Gene Therapy, 2020 Update. March 2020.
ii S Croteau et al, Health care resource utilization and costs among adult patients with hemophilia A on factor VIII prophylaxis: an administrative claims analysis, JMCP 2021 27:3, 316-326.
iii Company press releases detailing clinical trial results: Spark, July 2021; BioMarin, January 2021; Bayer/Ultragenyx, January 2021, Pfizer/Sangamo, December 2020.
iv Wong, C. H et al., (2020). Estimating the Financial Impact of Gene Therapy. medRxiv.
v Health Advances interviews and analysis, Evaluate Pharma
vi Verpora. Understanding the Patient and Caregiver Benefit of Value-Based Agreements in the U.S. October 2020.
vii National Pharmaceutical Council. Value-Based Contracts.
viii MIT NEWDIGS, Emerging market solutions for financing and reimbursement of durable cell and gene therapies, June 2021.