

Understanding Today's High-Cost Participants Through Data Analytics

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Health care costs have increased twice as fast as workers' wages over the last decade, according to the *American Journal of Managed Care*.¹ Although the COVID-19 pandemic resulted in a reprieve from health care cost increases for most plan sponsors, there are clear indications that the long-term trend will continue unabated.

The situation for plan sponsors is complicated by the increasing share of total cost represented by high-cost participants whose total medical and drug costs exceed \$100,000. These participants typically make up less than 1% of plan participants but account for nearly 30% of total spending. Managing expense for high-cost participants and predicting future costs present unique challenges because this spending is extremely volatile.

Drawing on information from a large database² of plan participants, this article will provide insight into the following.

- Who these participants are today
- Who may become high-cost participants
- What strategies may be available to help prevent or mitigate costs, improve population health and reduce volatility within plan budgets

Not all high-cost events are unpredictable "lightning strikes." Plan sponsors can take actions to reduce or mitigate the costs of these events. The more plan sponsors understand the general characteristics and cost drivers, the

better they can align interventions and apply viable management strategies.

Table I summarizes the top five primary diagnoses for high-cost (between \$100,000 and \$1.0 million) and ultra-high-cost (\$1.0 million and above) claims for 2018 and 2019 (i.e., prepandemic) compared with 2020 and 2021 (i.e., pandemic).

AT A GLANCE

- Less than 1% of plan participants account for almost 30% of health care spending. High-cost claimants are the leading cause of volatility in health care expenses, an ever-increasing challenge to setting and meeting plan sponsor budgets.
- Data shows that the majority of high-cost claimants are on the radar prior to the primary high-cost event, often following a progression of increasingly severe disease comorbidities.
- Data analytics and population health management strategies can lower the risk and mitigate the costs related to high-cost participants.
- Understanding the underlying health of a population as well as the types of conditions and services driving high-cost care is the first step in developing upstream intervention strategies to prevent future high-cost events.

TABLE I

How Prepandemic and Pandemic High-Cost and Ultra-High-Cost Claims Compare

Rank	High-Cost (\$100,000 to \$1.0 Million)		Ultra-High-Cost (\$1.0 million+)	
	Prepandemic	Pandemic	Prepandemic	Pandemic
1	Spondylopathies	Septicemia	Leukemia	Chronic kidney disease
2	Breast cancer	Spondylopathies	Chronic kidney disease	Septicemia
3	Chronic kidney disease	Breast cancer	Neonatal/births	Leukemia
4	Septicemia	Chronic kidney disease	Cardiac and circulatory congenital anomalies	Neonatal/births
5	Coronary atherosclerosis and other heart disease	COVID-19	Septicemia	COVID-19

Source: Segal’s SHAPE data warehouse.

The COVID-19 pandemic caused some noticeable shifts among these top diagnoses. For example, it likely contributed to the increase in septicemia and also was the primary diagnosis on high-cost events (mostly intensive care unit (ICU) admissions). Some of the other top diagnoses are fairly intuitive and well-publicized: leukemia, neonatal/births (neonatal intensive care unit (NICU) babies) and heart-related conditions. However, there may be less awareness of the cost significance and general frequency of diagnoses like kidney disease or *spondylopathy* (a term for various forms of arthritis often requiring surgery—particularly spine surgery). This data highlights how important it is to keep a consistent, data-driven focus on the top 1% of plan participants.

Types of Care Driving High-Cost Claims

Over time, several factors may contribute to the prevalence of high-cost events. Some will create upward pressure, such as an aging population, the increasing prevalence of chronic conditions, costly new treatments and technology as well as new high-cost drugs being brought to market. However, it is also important to consider developments that apply downward pressure, like improvements and efficiencies in musculoskeletal surgery resulting in fewer high-cost claims. Many of these surgeries have been transitioning out of the inpatient hospital setting and into the outpatient hospital setting or ambulatory surgical centers. This shift has typically resulted in lower costs with-

out an increased risk of complications. Other developments may result in high costs in the near term yet have potential to create long-term savings and improved quality of life. Examples include some new gene therapies as well as improvements in cancer treatment like precision oncology, targeted immunotherapy and chemotherapy.

As shown in Figure 1, a majority of all expenses associated with high-cost claimants in 2018 were medical costs. Of the remainder, 19% were prescription drug costs covered under the medical benefit (typically drugs for chemotherapy, multiple sclerosis and autoimmune diseases), and 13% were prescription drug costs covered under the pharmacy benefit. By 2021, only 63% of expenses associated with high-cost claimants were medical, as prescription drug costs covered under the pharmacy benefit rose to 18% of the total costs.

The main driver behind this trend is drugs used to treat psoriasis, namely Stelara®, Cosentyx® and Taltz®. These drugs often come with an annual price tag exceeding \$100,000 per participant. This trend is expected to continue as other new drugs—that can come with hefty price tags but promise improved quality of life—enter the market. As prescription drugs take up a larger portion of the treatment spectrum, it’s becoming increasingly important to ensure that participants are being directed to appropriate sites of care for drug infusions and injections as well as to monitor pharmacy benefit manager (PBM) contracts. PBM contracts should be renegotiated every three to five years to ensure competitive pricing and rebates.

Demographics

It's likely no surprise that the greatest demographic risk factor is age, although it should be noted that high-risk newborns are typically responsible for 2-4% of high-cost claimants and 5-10% of ultra-high-cost claimants. Once a participant reaches age one, the risk of a high-cost claim event significantly decreases and follows a more predictable increasing pattern. Females tend to have greater risk of a high-cost event during the reproductive years, and males tend to have greater risk of a high-cost event in older age ranges, as shown in Figure 2.

Underlying Health Conditions

While correlations between demographics and high-cost claims are interesting, it's more important for plan sponsors to understand the role of underlying chronic conditions and the progression of comorbidities in those claims because that information is actionable.

This analysis focuses on five common, progressive, chronic health conditions:

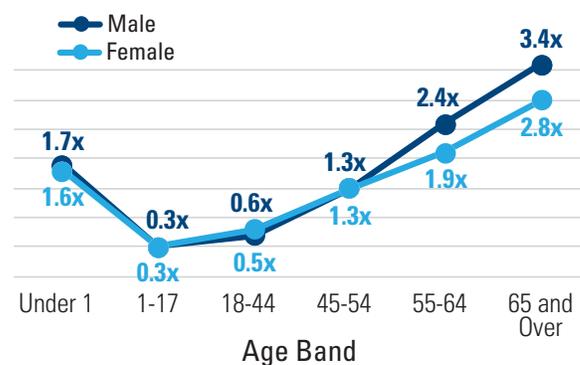
1. Diabetes
2. Hypertension
3. Chronic obstructive pulmonary disease (COPD)
4. Congestive heart failure (CHF)
5. Coronary artery disease (CAD).

Of all high-cost claimants analyzed, more than half had one or more of these underlying conditions, nearly one-quarter were due to cancer and only 20% had neither cancer nor one of these five conditions (Figure 3).

While these are not the ultra-high-cost (\$1 million and higher) cases, the good news from a cost-management perspective is that each of these chronic health conditions has

FIGURE 2

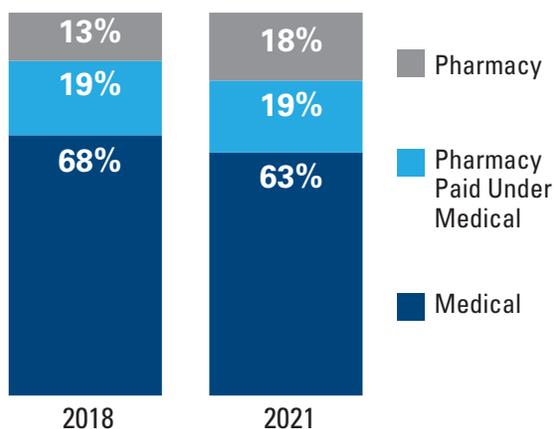
High-Cost Claims Risk by Gender and Age Bands



Source: Segal's SHAPE data warehouse.

FIGURE 1

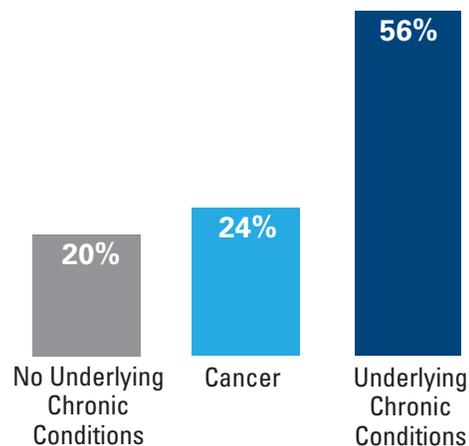
Cost Distribution of High-Cost Claimants



Source: Segal's SHAPE data warehouse.

FIGURE 3

Underlying Health of High-Cost Claimants



Source: Segal's SHAPE data warehouse.

well-established lifestyle components. That means there is potential to improve long-term health and manage the risk with a combination of physician-guided lifestyle habits and sound (and often less acute) medical treatment. Of course, not all potential high-cost events are preventable, and it's not possible to be certain which individuals will have high-cost claims based on any particular set of factors.

Significantly, few people are entirely off the radar prior to incurring high-cost claims. Many experience a progression of worsening health that is at least to some extent influenced by lifestyle habits (i.e., poor diet, lack of exercise, poor sleep, smoking and drinking) and a pattern of avoiding medical care. A common progression is obesity, eventually leading to hypertension, high cholesterol and/or diabetes before ultimately leading to heart disease (CHF and CAD) and, as we saw during the pandemic, increased susceptibility to the worst potential outcomes of contagions or disease more generally.

In terms of cost, obesity on its own (meaning that it has not progressed to anything more severe) is not particularly costly. Individuals with this condition alone were below average for high-cost claims risk (0.6 times the rate of the average plan participant). However, when either diabetes or hypertension is also present, the high-cost risk increases to 1.5 times that of an average participant. When all three conditions are present, the risk increases to 2.1 times the average. By the time an individual develops heart disease, they have become nine times more at risk of

a high-cost event than the average plan participant (Figure 4).

Clearly, the earlier a plan participant's behavior can be influenced—whether that's healthier lifestyle choices, routine engagement with their primary care physician and/or better adherence to recommended treatment—the better their long-term prognosis and the lower their risk of becoming a future high-cost plan participant.

Early diagnosis and treatment can also have a positive impact when it comes to cancer, which, as noted, is related to nearly a quarter of high-cost plan participants. Cancer treatment is possibly the largest component of medical pharmacy spend, which has ballooned over the past decade and makes up an ever-increasing share of overall hospital revenue. The range of treatment costs for a given cancer diagnosis can be very broad since it

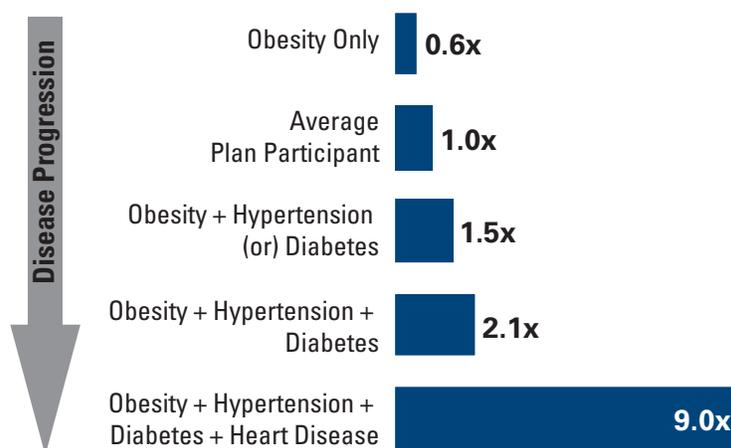
depends on a variety of highly variable factors. Strategies for limiting the impact of cancer claims and improving diagnoses for participants should begin with improving compliance with recommended cancer screenings. As shown in Figure 5, of all the cancers leading to high-cost events, 42% can be detected early through recommended screenings. These include breast, cervical, colorectal, lung, prostate and skin cancer.

The Mental Health Component

While physical conditions dominate the discussion on high-cost claimants, a mental health comorbidity has become increasingly common among high-cost participants. There is also some correlation between mental health and the risk of having a catastrophic event and/or suboptimal recovery after a catastrophic event.

FIGURE 4

Disease Progression and High-Cost Claims Risk



Source: Segal's SHAPE data warehouse.

This is not to say that conditions like depression and anxiety necessarily *cause* worse outcomes, as sometimes they are a direct *result* of worse outcomes. However, evidence exists to make us consider the effect and at least to reject the idea that high-cost events are entirely derived from the physical prognosis.

According to the data illustrated in Figure 6:

- Approximately 56% of high-cost claimants have a diagnosed mental health condition, compared with a rate of 37% among non-high-cost claimants. Depression is both the most common mental health condition present as well as one of the fastest growing conditions in terms of costs for high-cost claimants (both mental and physical).
- Furthermore, and importantly, about 13% of participants had diagnosed depression prior to their catastrophic event, with another 6% being diagnosed after their high-cost event.

The rise in mental health conditions, both the presence of these conditions and the coding frequency, increased significantly during the pandemic, and this trend is expected to continue for the foreseeable future. Given the noted correlations and potential impacts on physical outcomes, treating mental

health should be considered a part of the full scope of care in managing high-cost participants. Plan sponsors need to consider effective treatment strategies for mental health conditions, including how best to assess quality, ensure access and determine what role telebehavioral health ought to play.

What Can Plan Sponsors Do to Manage High-Cost Claims?

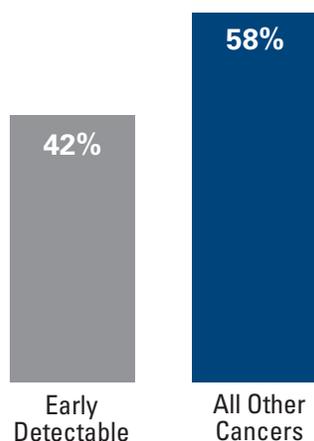
High-cost claims have inherent differences across populations, industries and geographic regions, so the first step should be to understand who the most likely high-cost claimants are within a given population and the prevalence of the risk factors previously discussed. Once a plan sponsor has a better understanding of who its high-cost claimants are, it's time to consider viable prevention and wellness strategies. Once that is understood, plan sponsors should consider the following initiatives.

Develop a Data-Driven Strategy

One cannot manage what cannot be measured. Consequently, having a data-driven strategy is important since it provides answers to key questions and gives plan sponsors the information needed to focus their cost-management

FIGURE 5

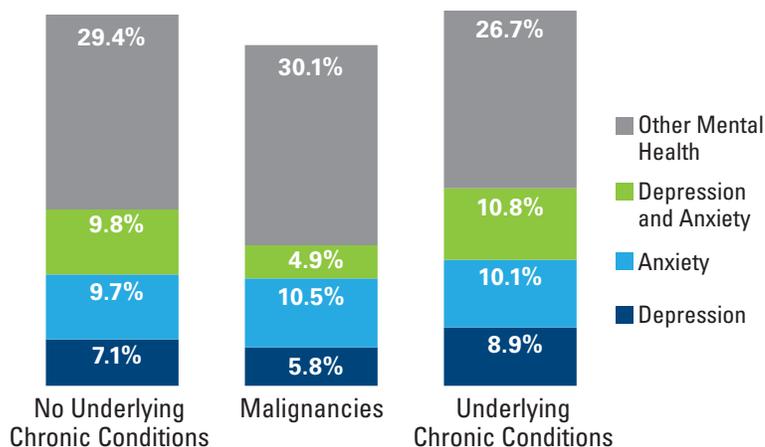
High-Cost Claimants With Cancer



Source: Segal's SHAPE data warehouse.

FIGURE 6

High-Cost Claimants and Mental Health



Source: Segal's SHAPE data warehouse.

strategies and evaluate the success of the initiatives they implement. Consolidated data from all carriers at a patient level (i.e., medical claims, prescription drug claims and other population health management programs, such as biometric screenings, on-site clinics and digital health) has been proven to be invaluable information when building best-practice cost-management programs.

The most effective way to manage costs is by proactively managing health risks. It's a good idea to have a dashboard of both current high-cost claimants and risk characteristics likely to progress to high-cost status and monitor it monthly. The dashboard should include not only the primary diagnosis or highest cost claim for the claimant but also the full scope of demographic info and underlying physical and mental health information.

Focus on Preventing and Managing Chronic Diseases

Most high-cost claimants have one or more major chronic conditions (i.e., diabetes, hypertension, COPD, CAD, CHF). Many programs now exist that give participants the tools they need to manage their condition(s), often through a smartphone app and tracking technology. Choosing the right program will be dependent on the specific population and participants' acceptance of such programs. When contemplating addition of a chronic condition management program, it is important to consider the following.

- Which participants could benefit most from intervention
- The most effective communication method(s) for engaging participants in the population (e.g., email, direct mailing, text messaging, etc.)
- Performance goals and methods for evaluating the program
- The amount of fees at risk for not meeting performance goals
- To what extent mental health professionals are integrated into the program

Aside from programs to manage chronic conditions, plan sponsors can double down on efforts to promote nutritional and heart-healthy lifestyles, improve medication adherence and raise awareness on the benefits of getting recommended cancer screenings. In addition, hearing testimonials from co-

workers can help reduce stigma and raise awareness on effective methods for managing these conditions.

Whenever population health management strategies are implemented, it is important for plan sponsors to take a long-term view. Programs often raise costs in the near term as members become more engaged in their health and more adherent to medications. Further, plan sponsors will not necessarily be aware when a high-cost event has been avoided. Patient plan sponsors should be rewarded with stable or improving population health and may also benefit from increased worker productivity as a result.

Implement Intensive Medical/Case Management

Overall, the goal of medical/case management is to coordinate care for the most complex patients, often those who are facing multiple chronic conditions. From the initial identification of patients in need to coordination of care and communication across settings and providers, as well as evaluation of patient outcomes, care management provides whole-person and patient-oriented care to help high-need patients and their families and caregivers effectively manage their conditions.

As the health care system shifts from a fee-for-service structure to value-based payment programs,³ appropriate provision of services across the care-management continuum can increase value and improve outcomes for patients while effectively reducing unnecessary care and acute-care episodes that require high-cost interventions.

Successful care management should produce the following benefits.

- Reduce the likelihood of a patient receiving duplicative or low-value services in low-quality settings
- Ensure that the support structure is in place to help the patient seek care
- Provide an opportunity to negotiate costs for services, such as outpatient rehab and home health care
- Offer convenient, high-quality care options to participants, such as centers of excellence (COEs), for their particular condition or conditions
- Make available expert medical opinions to ensure the right care at the right time and in the right setting for both the physical and mental conditions present

Establish COEs and Bundled Payment Programs

COEs provide high-value health care, often at lower prices than other medical centers. The COE provider identifies top-quartile hospitals and surgical centers—by practice, procedure and specific physician group—and negotiates with these high-performing surgical teams for episode-of-care case rates, bundling the various charges for each surgery into a single price at a significantly lower cost and avoiding the uncertainty experienced through typical fee-for-service arrangements.

Using COEs for certain elective procedures (e.g., joint replacements), care for other complex conditions (e.g., cancer or cardiac issues) or diagnostics typically results in immediate savings. Spinal disorders, in particular, are one of the leading causes of elective surgeries and high-cost claims, representing approximately 5% of all high-cost claims. The cost of spinal surgeries can vary significantly, especially when complications are introduced. Having a bundled payment arrangement in place can ensure that plans are not subject to the financial uncertainty around these procedures. *Bundled payments* are lump-sum payments made for an episode of care. With bundled payments, the total allowable expenditures (target price) for an episode of care are predetermined. Participant providers share in any losses or savings that result from the difference between this target price and actual costs. One COE vendor recently announced that its contracts cut employer spending for covered services by about half by reducing the cost of surgeries, reducing hospital readmissions and avoiding some procedures entirely. That figure may be an outlier that's partially the result of clever framing, but sizeable savings often exist for most plan sponsors when they are aligned with the right partner.

In addition to elective procedures, oncology care is emerging to be one of the areas where COEs excel. The more familiar the facility/oncology team is with treating certain complex types of cancers, the better they get at providing more efficient care. The new, cutting-edge cancer care infusion treatments are very expensive; thus, precision matters. Having experienced oncology teams will eliminate trial and error and ensure that the right care is delivered the first time. After spinal disorders and septicemia, certain types of cancer—particularly breast and colorectal cancer—are consis-

tently a top-ten cause of a high-cost event. Using value-based COEs for cancer treatment is one of the best tools available to mitigate the financial uncertainty around cancer treatment while improving outcomes for plan participants.

Manage Prescription Drug Utilization

According to data in Segal's SHAPE data warehouse, specialty drugs accounted for less than 2% of prescriptions but 45% of total drug spend in 2021, up from 41% in 2018. Inflammatory conditions, diabetes, oncology, HIV and multiple sclerosis are the top five primary drivers of specialty prescription drug spending.

In general, an emphasis on preventive care and a strong approach to chronic disease management can go a long way in reducing health care spending, including prescription drug spending. Following are some additional strategies for prescription drug cost management.

- Having tighter prescription management and formulary controls in place
- Using programs like prior authorization, split fill, step therapy or drug tiering
- Buying better network provider deals—aggressively pursuing best pricing for a specialty drug PBM contract (trade exclusivity for deeper discounts)
- Deciding which channel (medical plan or PBM) is most cost-effective for delivering specific medications

Consider a Stop-Loss Policy

Plan sponsors may also want to also do a deeper dive into their high-cost claims expenses and consider appropriate stop-loss coverage. Depending on population size and reserve levels, stop-loss coverage may not be appropriate for all plans, but for smaller groups and/or groups with inadequate reserve levels, stop-loss coverage can provide a viable solution for transferring high-cost claims risk to an outside vendor or at least ensuring the plan stays within its desired risk tolerance.

Evolving treatments, such as the glucagon-like peptide-1 (GLP1) receptor agonist drugs for diabetes and obesity as well as gene therapies that can cost more than \$1 million, are becoming more and more common. Many more are in the pipeline, as noted in Table II. As of September 2022, three

new gene therapies were approved in the U.S.: Kymriah®, Luxturna® and Yescarta®.

The gene therapies currently on the market cover very rare conditions and should not affect most populations. However, with 50–100 additional gene therapies in the pipeline that are anticipated to receive Food and Drug Administration (FDA) approval by 2025, plan sponsors should brace for the impact and develop strategies accordingly.

Oncology is the most active therapeutic area being studied, with 20 gene therapies currently in development.

Gene therapies being developed for other conditions, such as hemophilia, will have a much larger pool of potential candidates than the therapies that are currently on the market. When making decisions around coverage of these treatment options, it is important for plans to look at the cost of not only these therapies but also other treatment options on the market that participants will pursue if gene therapies are not attainable.

The marketplace for stop-loss coverage is also evolving to provide specific treatment-related insurance safety nets. If plans have data analytic capabilities

available, they can proactively identify how many plan participants may be eligible for emerging gene therapies and/or other expensive treatments and help structure the appropriate stop-loss policy to have in place.

Stop-loss coverage should be implemented in combination with a robust clinical services program—from simple reporting to comprehensive clinical review and engagement—to address the rising number of high-cost claimants while maintaining competitive stop-loss premiums.

In addition, plan sponsors should investigate the origin of claims to make sure the plan is not paying for other insurer/third-party liabilities (i.e., subrogation). For instance, plan sponsors should make sure they are not paying high amounts for claims that should be covered by auto insurers if the claims result from accidents.

Conclusion

Health care in the U.S. is constantly evolving. New treatments and technologies are being developed, and there are changes in the way care is delivered and compensated. Market demand for services shifts. Those are just a few factors contributing to the evolution of health care.

Likewise, the characteristics of high-cost care are a moving target that is highly variable from plan sponsor to plan sponsor. Fortunately, plan sponsors can develop strategies to reduce or mitigate the effects of high-cost care.

It is critical for these activities to be guided by relevant and up-to-date

TABLE II

Gene Therapies Approved for Use in the United States

Brand	Generic	Year Approved	Disease	Company
Carvykti™	ciltacabtagene autoleucl	2022	R/R multiple myeloma	Janssen Biotech
Zynteglo®	betibeglogene autotemcel	2022	beta thalassemia	bluebird bio
Skysona®	livaldogene autotemcel	2022	cerebral adrenoleukodystrophy	bluebird bio
Zolgensma®	onasemnogene abeparvovec	2019	spinal muscular atrophy	Novartis
Tecartus™	brexucabtagene autoleucl	2020	mantle cell lymphoma	Pharma (Gilead) Kit
Breyanzi®	lisocabtagene maraleucl	2021	DLBCL	Juno (Bristol Myers Squibb)
Abecma®	idecabtagene vicleucl	2021	multiple myeloma	bluebird bio

Source: U.S. Food and Drug Administration, Approved Cellular and Gene Therapy Products, www.fda.gov/vaccines-blood-biologics/cellular-gene-therapy-products/approved-cellular-and-gene-therapy-products.

plan data as well as relevant and current clinical knowledge and market expertise. Just as there are innovations in treatment and care delivery, there are innovations in improving quality and efficiency.

It is also important for plan sponsors to take a long-term view of their high-cost participants and take action to improve participant health—including addressing lifestyle factors, engagement with the health care system and treatment adherence—as early as possible to reduce the risk of progression to more severe comorbidities. 

Endnotes

1. A. Rodriguez (August 5, 2020). “Health-care costs increased twice as fast as worker wages over last decade.” *American Journal of Managed Care*. Retrieved October 4, 2022 from www.ajmc.com/view/healthcare-costs-increased-twice-as-fast-over-last-decade.
2. Segal’s SHAPE data warehouse is a database of over 2.4 million lives spanning the corporate, public and multiemployer markets. Only participants not enrolled in Medicare were included in this article.
3. *Value-based payment programs* are alternate forms of reimbursement that tie some portion of provider payments to outcomes or performance on select quality measures with the goal of improving both effectiveness and efficiency of care.

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