MARWOOD GROUP

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INNOVATIVE PAYOR CONTRACTING CONSIDERATIONS FOR DURABLE GENE THERAPIES

INTRODUCTION

The potential to directly alter human genes was first recognized nearly 50 years ago, coinciding with advances in recombinant DNA technology. Yet only recently has gene therapy technology evolved from offering modest effects in pilot trials to producing measurable and durable benefits in the clinic. Following several high-profile, limited-dose, durable gene therapy launches in Europe, the FDA in 2017 approved three single-dose gene-therapy products for use in the United States (**FIGURE 1**). Gilead's Yescarta for the treatment of relapsed or refractory large B-cell lymphoma and Novartis' Kymriah for the treatment of acute lymphoblastic leukemia are cell-based (chimeric antigen receptor T-cells [CAR-T]) gene therapies involving the reprogramming of immune cells *ex vivo* for hematological oncology conditions. Spark Therapeutics' Luxturna and Avexis' Zolgensma, indicated for the treatment of retinal dystrophy and spinal muscular atrophy (SMA), respectively, are gene therapy products administered *in vivo*.

FIGURE 1 : Approved Limited-Dose Gene Therapies

Product	Manufacturer	Indication	Delivery	WAC	Year of Approval
Glybera*	Amsterdam Molecular Therapeutics	Lipoprotein lipase deficiency (LPLD)	*in vivo*	$1.6M	2012(EMA)
Strimvelis*	Orchard Therapeutics	Adenosine deaminase deficiency (ADA-SCID)	*ex vivo*	€594k	2016 (EMA)
Kymriah	Novartis	Acute lymphoblastic leukemia (ALL) Diffuse large B-cell lymphoma (DLBCL)	*ex vivo*	$475K	2017 (FDA)
Yescarta	Kite	Diffuse large B-cell lymphoma (DLBCL)	*ex vivo*	$373K	2017 (FDA)
Luxturna	Novartis	Biallelic RPE65 mutation-associated retinal dystrophy	*in vivo*	$850K	2017 (FDA)
Zolgensma	Novartis	Spinal muscular atrophy (SMA)	*in vivo*	$2.125M	2019 (FDA)
Zynteglo*	Bluebird	Beta thalassemia	*in vivo*	€1.575M	2019 (EMA)

WAC (Wholesale Acquisition Cost): An estimate of the manufacturer's list price for a drug to wholesalers or direct purchasers that does not include discounts or rebates; ***European Medical Agency (EMA), but not US Food and Drug Administration (FDA), approved drugs***

While treatment for chronic diseases has previously focused largely on maintenance of palliation through routine dosing, one can envision a day when limited-dose curative therapies, more conservatively described as durable therapies, will become a mainstay of treatment for many chronic diseases. Indeed, the pharma industry trade group, PhRMA, recently estimated that the number of cell and gene therapies held in US pipelines alone has increased 25% in the last year to 362 Phase I-III clinical trial candidates. Durability of these treatments encompassing significant multiyear benefits will raise issues surrounding pricing of the limited or even single dose. Furthermore, these therapies will need to recover substantial costs from a small number of patients. As such, limited dosing across a small population will raise significant consideration over pricing. For example, Yescarta and Kymriah have list prices of $373,000 and $475,000, respectively, with additional medical costs for treatment placing the total costs of clinical treatment closer to $1M per patient. Luxturna has a list price of $850,000 for a one-time treatment of both eyes. Zolgensma has set new precedent with a list price of $2.1M.

To this point, limited-dose durable gene therapies present an immense challenge to the standard triangulation between manufacturer and payor of pricing to degree of clinical benefit amongst a candidate population; a model best suited to large chronic patient volume, which spreads per-unit drug cost, patient and payor burden and resultant revenue over extended periods of time. A number of innovative contracting mechanisms from traditional pharmaceutical pricing are consequently being explored, combined, and adapted to bridge this divide, while other mechanisms are being developed *de novo*. Herein, Marwood begins by delineating payor, manufacturer, provider, and patient pain points in the implementation of innovative contracting schemes. Subsequently we define and delineate current and emerging contracting mechanisms being adapted and developed to address the unique challenges inherent to limited-dose durable gene therapies.

STAKEHOLDER CONSIDERATIONS

Payor Considerations

Payors face challenges to adopting innovative contracting arrangements that vary based on the number of lives covered, the financial strength of their balance sheets, and the regulations that govern their operations.

Actuarial risk: Smaller payors, both public and private, face larger impacts from actuarial risk in comparison to national insurers and traditional Federal Medicare. Due to their size, regional insurers, MCOs for Medicare and Medicaid, and the Medicaid plans of smaller US states face material financial income statement exposure from the variable occurrence of individual gene therapy cases, even if such cases are a small portion of their covered lives. These payors may also be concerned about their perceived over-absorption of costs, based on potential risk clusters within the population they cover and the potential cost of a corresponding durable gene therapy treatment. Finally, durable therapies for previously untreatable conditions raise the potential for an initial bolus of claims from a backlog of patients, creating a challenge – particularly amongst smaller payors – in spreading the initial surge over time.

Patient portability: Portability poses an additional challenge, particularly for smaller regional payors compared to national insurers and traditional Medicare. Patients frequently switch their health insurers, while the benefits of limited-dose durable gene therapies could last years or even a lifetime. Receipt of a transformative durable therapy may actually increase insurance plan switching, due to

improved health, consequent employment, financial mobility of the patient, and/or decreased familial caregiver burden, *e.g.*, if a child's improved quality of life enables a full-time caregiving parent to obtain paid employment and to leave Medicaid for employer-sponsored commercial health coverage. This poses a unique challenge to payment portability; a payor could find itself shouldering the full financial burden of a curative treatment and realizing few of the subsequent benefits if the patient switches to a different insurer that assumes responsibility for the relatively lower costs of care for a healthier patient.

Structural challenges to multi-year, multi-state arrangements (Medicaid): State Medicaid plans are challenged by comparatively limited budgets, stretched even thinner by the COVID-19 pandemic, as well as by more rigid regulatory structures that hinder the multi-year arrangements necessary for innovative cell and gene therapy contracting. Few states have gene therapy reimbursement policies in place, and even fewer are engaging in alternative payment models in the space; most notably among the states that do are Oklahoma, Michigan and Colorado. Taking a historical approach (although not applicable to gene therapies given their cost), state Medicaid programs have sought to include the cost of drugs and therapies in the bundled payments made to treatment centers, so providers are not separately reimbursed for therapies they provide to their patients. This strategy often leaves large gaps in reimbursement to treatment centers bearing the cost of acquiring the therapeutic products, which in turn affects patient access, as some providers may decide they are unable to risk losses associated with purchasing therapies. Furthermore, payors or manufacturers may designate a limited number of providers, namely the "centers of excellence" described in greater detail below, that are authorized to deliver a particular therapy to ensure quality administration. If these centers of excellence are designated exclusively at the will of payors and manufacturers covering a national or regional catchment area, it could be particularly challenging for Medicaid payors that traditionally work with in-state providers. This is particularly true if the nearest center is out of state.

Manufacturer Considerations

The varying financial capacity, administrative capabilities, and risk appetite of pharmaceutical developers may influence which innovative contracting scheme in which they choose to engage.

Revenue timing: Smaller biopharmas may wish to convert complex performance-driven, multi-year annuity arrangements with payors into limited upfront payments from the latter to satisfy financial growth targets or to provide immediate cash to fund ongoing operations. These developers may not have sufficient internal infrastructure, expertise, or administrative capacity to adjudicate the payor- or patient-specific clinical performance guarantees. Third-party mechanisms may offer a solution, drawing parallels to those financial services in the intellectual property space that offer biopharmaceutical royalty payment and that convert the predicted future payment stream into an upfront amount, with some loss due to fees and discounting. Larger pharmas with longer investor time horizons, cash flow cushion, and administrative capacity to consider long-term annuity contracts may be more willing to administer such contracts, or even have the capacity to offer direct or indirect financing to strategic partners.

Administrative challenges: Administrative challenges for milestone-based contracts are significant and are unlikely to be moderated by the FDA or other Federal agencies in the near future. Tracking patients over a longer time horizon associated with an annuity presents challenges, particularly regarding limited-dose durable gene therapies where patients may be less connected to a specific specialist.

Patients may not have incentive to prioritize the ongoing testing and tracking required for performance guarantees. Incentives to undergo periodic evaluation – such as waiving co-pays or refunding a portion of a patient's deductible – may be required to obtain the needed performance data. On the other hand, the longer evaluation period may lead stakeholders to recognize opportunities to reduce data tracking costs by developing collaborative mechanisms that include multiple products in an indication, or that cover broader disease areas served by the same providers. For example, the management of blood disorders – including hemophilia, sickle cell anemia, and beta thalassemia, among others – might benefit from a multi-payor, multi-developer, multi-provider system for tracking patient outcomes. The Center for International Blood and Marrow Transplant Research (CIBMTR) and its outcomes database of every allogenic transplantation and many autologous transplantations may be a model for other areas.

***Rigid reimbursement structures*:** Manufacturers face a federal drug reimbursement structure that challenges their ability to adopt innovative contracting tools.

> ***Medicaid best price (MBP) reporting rules*** leave little flexibility for innovative contracting models. MBP rules were put into effect to ensure that the Medicaid program always receives the lowest price for a given medicine. As currently written, a performance-based contract negotiated with a commercial payor, Medicare, or a managed Medicaid plan that results in a realized average performance rebate greater than the standard mandatory Medicaid rebate of 23.1% would create a new floor that applies to all Medicaid sales for that quarter. This applies regardless of whether Medicaid committed to a performance guarantee contract and irrespective of how well the product performed for Medicaid patients. The price reporting mechanics were established assuming a significant number of patients would obtain a treatment in each quarter, in each reporting geography. Consequently, a rebate offered for a limited-dose durable gene therapy for a rare condition that has a single patient in a plan, or state in a specific quarter, could trigger a unique pricing experience. This would effectively set the price for all Medicaid patients nationally. When viewed from the perspective of refund approaches, if a manufacturer were to offer commercial payors a full rebate in the event of non-performance, and a commercial patient actually triggered the rebate in the same period as the treatment and was the only patient in the reporting state, the Medicaid price reporting system would show the $0 net price as the new MBP. This would potentially obligate the manufacturer to provide the therapy for free to all Medicaid plans, even for those patients in whom the medicine performed well.
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> ***Federal and state anti-kickback laws*** prohibit persons from knowingly and willingly offering, paying, soliciting, or receiving any renumeration in return for referring or recommending an item or service that is reimbursable, in whole or in part, under a federal health care program (*e.g.,* Medicare, Medicaid). Furthermore, it is an open question whether Qualified Health Plans (QHPs) that are eligible for Federal subsidies in state insurance exchanges are subject to anti-kickback statutes. These rules can hinder milestone-based contracts that connect rebates to later outcomes. Current rules do not explicitly place milestone-based rebates in the safe harbor that includes traditional rebates. Milestone-based rebates might therefore be categorized as inappropriate payments, which would result in significant penalties. For example, consider an innovative contracting arrangement between a drug manufacturer and a hospital, wherein the manufacturer agrees to offer a discount that would depend on the satisfaction of specified health outcomes within a five-year timeframe (*i.e.,* relapse of the disease in year three would lead to a 30 percent discount on the full price of the product). This type of value-based arrangement could run afoul of anti-kickback laws because the Office of the Inspector General

(OIG) could consider the promise of a discount based on the occurrence of certain outcomes to be "remuneration," which could induce a provider's purchase of the drug.

Provider Considerations

Limited-dose durable gene therapies pose potential issues for providers, such as new accreditation requirements for administering the therapies and financial risks from inadequate reimbursement for ancillary medical services.

Centers of excellence: The cost and complexity of administering some durable therapies is leading payors and manufacturers to certify which providers may offer the products. Both Gilead/Kite and Novartis have limited patient access of their CAR-T therapies to company-certified centers of excellence. These are programs within a healthcare institution that assemble an exceptionally high concentration of expertise and related resources centered on a particular area of medicine. This allows them to deliver associated care in a comprehensive, interdisciplinary fashion to afford the best patient outcomes possible. Ideally, center of excellence networks will help to ensure a consistent quality of patient care and encourage better clinical outcomes, while creating incentives for cost-effective care with disincentives for waste.

Specialty pharmacy: If durable therapies were to expand into the outpatient setting, physician practices could face increasing inventory risk if reimbursed under a traditional buy-and-bill model. Under this process, a healthcare provider purchases, stores, and then administers the product to a patient. After the patient receives the drug and any other medical care, the provider submits a claim for reimbursement to the payor, both for the procedure and at a markup based on the cost of the drug. This can take 30 days or longer, potentially limiting the pool of providers with enough working capital to assume the reimbursement risk for high-cost gene therapy. Specialty pharmacy arrangements with payors, known as "white bagging," would be necessary in these situations to eliminate financial risk of inventory. Under these arrangements, the physician does not bear any financial risk, as the specialty pharmacy is reimbursed by the payor. However, without any markup on the drug, the physician is limited to procedural reimbursement, potentially lessening their enthusiasm to administer the therapy.

Patient Considerations

Patient choice is influenced by direct healthcare out-of-pocket costs, including co-payments, coinsurance, deductibles, and high annual cost sharing limits. For example, a Kaiser Health News analysis noted that soaring prices for cancer therapies have led many patients to cut back on treatment or skip prescription doses.

Out-of-pocket costs: Upfront out-of-pocket *costs* for years of subsequent benefits from limited-dose durable gene therapies present barriers. In the case of Medicare, if a cell or gene therapy is covered under the medical benefit, Medicare patients will be subject either to an un-capped 20% out-of-pocket cost or to the share of cost dictated by their Medicare Advantage plan or Medigap plan. Should the treatment be covered under the pharmacy benefit, Medicare Part D patients will face an uncapped 5% coinsurance payment after meeting their plan's initial deductibles and coinsurance payments. Additionally, patients have non-medical out-of-pocket costs, including travel and possible loss of

income due to treatment. This would particularly apply in cases in which patients need to seek out relatively distant centers of excellence to access limited-dose durable gene therapies

Limitations to patient support programs: Current manufacturer-administered co-pay support programs for commercially insured populations as well as 501I(3) organizations for the commercially insured are only a partial solution, particularly given the cost of limited-dose durable gene therapies. Furthermore, Medicare benefit recipients are excluded from participation in these programs.

EMERGING INNOVATIVE CONTRACTING SCHEMES IN THE LIMITED-DOSE DURABLE GENE THERAPY SPACE

Innovative contracting mechanisms have been designed and iterated toward mitigating the concerns of payors, providers, patients, and manufacturers across a spectrum of therapies. Contracting models and their applicability to limited-dose durable gene therapies are delineated in **FIGURE 2,** with examples of executed schemes in **FIGURE 3**. Based on their structure, optimization toward cost, population, and dose frequency, a variety of their components are applicable to limited-dose durable gene therapies. Below Marwood describes emerging payment models for limited-dose durable gene therapies that provide hybrids of these individual components and how they attempt to address the challenges delineated above. The predominant components across which these innovative contracting mechanisms have been built are derived from subscription, annuity, and value-based models. Core challenges – addressed to different extents within each payment model – include price-reporting requirements (Medicaid "best price"), program administration considerations, patient portability (*i.e.,* movement of patients between health plans), and the Federal anti-kickback statute.

FIGURE 2: Contracting Models

Model	Description	Contract Type	Key Risk	Applicable to Gene Therapy
Re-Insurance	The payor pays a re-insurer a fixed per-member price for unlimited access to its members for a single drug or portfolio of drugs, potentially across manufacturers. The re-insurer pays the manufacturer and/or pharmacy	Subscription	• Reinsurer undersubscription ratio of healthy to therapy-requiring lives	√
"Netflix Model"/ Tendering	The payor pays the manufacturer a fixed per-member price for unlimited access to its members for a single drug or the manufacturer's select portfolio of drugs	Subscription	• Per-member price is undervalued • Administrative burden	√
Annuity	The payor pays a fixed price upfront for the treatment, with payment spread over many installments	Annuity	• Portability of annuity with patient as switches plan • Continued payment for unsuccessful high cost therapy	√
Outcomes-based payment	Patient receives the drug for free. If the product achieves prespecified outcomes, the patient pays for subsequent doses	Value-Based	• Medicaid best price rule applied to "free" drugs or average cost of drug therein within a quarter	X *Multiple dosing*
Two-sided outcomes based rebate/copay	Patient copay is reduced as part of contract (ex. Potential tier change); manufacturer/payor cost sharing depends on outcomes	Value-Based	• Anti-kickback rules	X *Multiple dosing*
Outcomes-based refund	The payor pays the full price of the drug up front but receives a refund if the drug does not achieve prespecified outcomes	Value-Based	• Medicaid best price rule applied to "free" drugs or average cost of drug therein within a quarter	√
Outcomes-based rebate	The payor pays the full price of the drug up front but receives a rebate if the drug does not achieve prespecified outcomes	Value-Based	• Medicaid best price rule applied to "free" drugs or average cost of drug therein within a quarter • Anti-kickback rules	√
Outcomes-based derestriction	The payor initially places a prior authorization on the product. If the product achieves prespecified outcomes, the payor lifts the prior authorization for the patient	Value-Based	• Anti-kickback rules for covering hospitalization	X *Multiple dosing*
Outcomes-based hospital repayment	The payor pays the full price up front. If the therapy does not achieve the prespecified outcomes, the payor pays the hospital bill	Value-Based	• Anti-kickback rules for covering relapse hospitalization	√
Outcomes-based annuity	The payor pays a fixed price, with payments spread over many installments, but only if the drug continues to meet certain prespecified outcomes	Value-Based	• MBP	√

FIGURE 3: Examples of Executed Contracting Schemes						
Model	**Disease**	**Drug**	**Manufacturer**	**Payor**	**Outcomes Metric**	**Cost Savings Structure**
Re-Insurance	Retinal Dystrophy and Spinal Muscular Atrophy (SMA)	Luxturna Zolgensma	Novartis	Cigna, Express Scripts	Health plans that adopt Embarc will pay a per-member, per-month fee to participate in a gene therapy network. Physicians will be required to submit prior authorization for the drugs, but once they're approved a patient will not be charged a copay at the pharmacy counter.	
Netflix Model	Hepatitis C	Sovaldi and Harvoni	Gilead Sciences	United Health/ OptumRx Catamaran Cigna	Total cost to payor of treating patients, which takes into account clinical outcomes	Additional rebates based on total cost to payor of treating patients
Outcomes-based payment	Multiple Sclerosis	Ampyra	Acorda Therapeutics	All Insurers	Continuation after second month on the therapy	First 2 months of drug are free. Price applies starting with the 3rd month on the medicine
Two-sided outcomes based rebate/copay	Heart Attack or Stroke	Brilinta	AstraZeneca	UPMC Health Plan	Rate of heart attacks	Reduces out-of-pocket costs for UPMC for Life Medicare members by offering Brilinta at a generic drug tier; Clinical outcome will determine shared cost
Outcomes-based refund	Acute Lymphoblastic Leukemia	Kymriah	Novartis	CMS	Patient response at the end of the first month	Full refund if patient does not respond by the end of the first month
Outcomes-based rebate	Blindness	Luxturna	Spark Therapeutics	Harvard Pilgrim Express Scripts	Full-field light sensitivity threshold (FST) testing scores	Additional rebate given if sight improvement does not meet threshold after 30-day interval, 90-day interval, and 30-month mark
Outcomes-based derestriction	Bacterial Skin Infections	Orbativ	Melinta	Oklahoma Medicaid	Total health care costs (including hospitalization) to payor of treating patients	Manufacturer receives preferred status on the formulary and no longer requires prior authorization
Outcomes-based hospital repayment	Multiple Sclerosis	Betaferon	Bayer	Health Alliance	Relapses	Covers hospitalization costs for relapses
Outcomes-based annuity	Spinal Muscular Atrophy (SMA)	Zolgensma	Novartis	Harvard Pilgrim	Continued performance of the drug	The amount of the later payments will depend on how well the patient has responded to the treatment—and, if the treatment stops working, insurers will pay less than the full amount

Outcomes-based annuities with mobility contracts are structured whereby the payor pays a fixed price, with payments spread over many installments, but only if the drug continues to meet certain prespecified outcomes; furthermore, the payment is mobile with the patient, following them if they switch payors. Zolgensma (onasemnogene abeparvovec-xioi) by AveXis, a Novartis subsidiary, was approved by the FDA in May 2019 as a single-dose gene therapy for children less than two years old with spinal muscular atrophy (SMA). The current alternative to Zolgensma is Biogen's Spinraza, which patients take for the duration of their lifetime at cost of approximately $4 million per decade. Zolgensma has been priced at $2.1 million for the one-time treatment, making it the most expensive drug to date. A pilot program for the performance-based-annuity approach to paying for Zolgensma is expected to include Harvard Pilgrim and other Massachusetts payors. It will have three innovative features: 1) Payors will make an initial payment – for example, 20% of the total price – when the therapy is delivered, and annual payments thereafter until the treatment is paid in full; 2) Installment payment amounts will depend on how well the patient has responded to the treatment, and if the treatment stops working, insurers will pay less than the full list price; 3) The payors will use a "mobility" agreement to address patient portability issues, which allows the pay-over-time concept to continue if a patient moves from one insurer to another. Each payor will negotiate its own Zolgensma contract price with AveXis.

Similarly, Bluebird Bio has told investors it is seeking installment plan contracts to reimburse its LentiGlobin treatment for transfusion-dependent beta-thalassemia. After an initial charge of ~20%, Bluebird Bio would be reimbursed the remaining ~80% over a period of up to five years, if the one-time infusion demonstrates treatment success while being measured and tracked in patient registries maintained by payors.

Medicaid best-price (MBP) regulations challenge both Avexis' (Zolgensma) pay-over-time scheme and Bluebird Bio's (LentiGlobin) pay-for-performance scheme. Under MBP, if AveXis accepted a deeply discounted price for an insurer's only SMA patient for whom the drug performed poorly (as opposed to a potential averaged higher cost), it could trigger that same deep discount for all Medicaid sales in the entire country. Due to the rarity of SMA, this situation of a single patient in a quarter at any given insurer will likely arise often. Similarly, Bluebird Bio is seeking ways to bypass Medicaid best price rules (*e.g.,* waivers to establish an exemption). The company is also pursuing a resolution to the issue of insurance portability by way of a "mutual recognition strategy across payors."

Outcomes-based rebates administered through pharmacy benefit managers (PBMs) are also structured, whereby the payor agrees to the full price of the drug upfront but receives a rebate if the drug does not achieve prespecified outcomes. The PBM provides solutions to the technical, legal, and regulatory challenges created by historical reimbursement approaches, such as patient monitoring, data tracking, and issues surrounding patient portability. Spark Therapeutics and Express Scripts Holding have pursued such an arrangement for Luxturna and are in conversations with additional cell and gene therapy manufacturers in the space.

Traditionally, PBMs draw profit from three sources: rebates, administrative fees, and "spread" on paid pharmacy claims. In this innovative contracting scheme, manufacturers enter into partnership with a PBM, and potentially, its associated specialty pharmacy, whereby the PBM would agree to buy a gene therapy and act as its distributor. The intention would be for the PBM to be able to agree on new payment structures with other payors, such as in the annuity or outcomes-based models described earlier, or a model that allows payment to "follow the patient" if they switch insurers. The PBM would, in effect, assume the risk of the payor. The arrangement would initially generate fees for the specialty pharmacy for dispensing the product. Over time, however, the PBM would gather patient-outcome

data, which would help value the product. This arrangement has the benefit of simplifying contracting for the manufacturer; it receives fixed terms from a single entity.

Reinsurance with mobility addresses the challenges of actuarial risk and patient mobility. Reinsurance is a product typically purchased by insurance companies in order to mitigate risk. Essentially, reinsurance can limit the amount of loss an insurer can potentially suffer, protecting insurance companies from financial ruin and protecting their customers from uncovered losses. Reinsurers account for about 7% of total U.S. property/casualty insurance premiums written, but they've had limited involvement in the healthcare space to date.

While not as readily applicable to more prevalent diseases, rare diseases, such as those targeted by high-cost durable gene therapies, may be amenable to the tenants of reinsurance. In this regard, an orphan reinsurer benefit manager (ORBM) can serve as an intermediary and provide some of the benefits of reinsurance or risk pools and some of the benefits of operational management **(FIGURE 4)**. This strategy is useful for smaller payors that may not have the expertise or resources to manage patients with rare diseases. ORBM participants would pay a per-member-per-month fee. The amount would depend on the agreed-upon scope of diseases covered and services provided, but it would need the scale to manage the overall overhead costs associated with assembling the system. The ORBM model may also help to solve the patient portability problem of patients moving in and out of health plans. If a therapy is paid for under a performance-based contract, the ORBM would track patients as they moved across plans.

The Embarc Benefit Protection program has served as a model for groups attempting to develop ORBM and recast the role of the PBM in the process. Embarc, which was introduced by Cigna in September, is initially intended to cover Zolgensma and Luxturna. More gene therapies may be added in the future. Health plans, employers, and unions participating in the program would pay per-member-per-month for a gene therapy network. Physicians would submit a prior authorization and patients would receive the treatment with no out-of-pocket expenses. Pharmacies and sites of care would then be reimbursed for the therapy through Embarc. Express Scripts is currently working to build operations around the program and to offer it to plans.

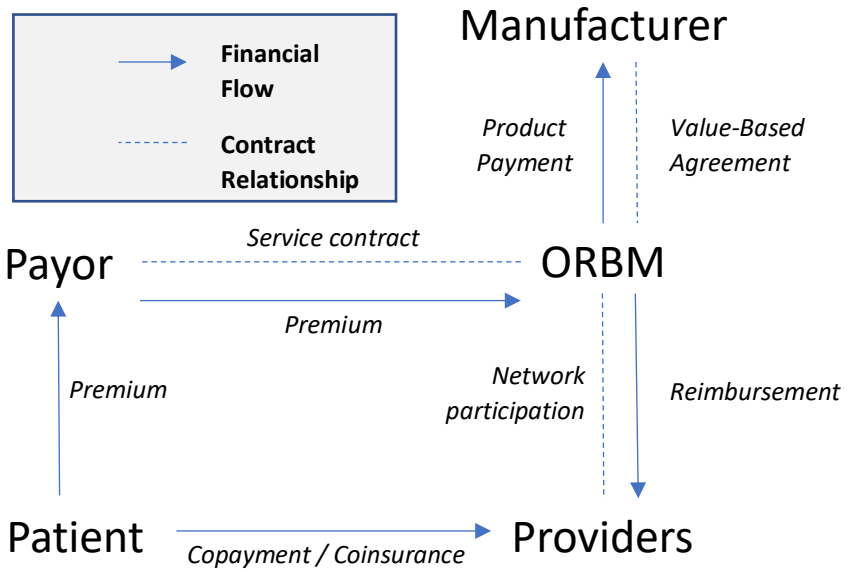

FIGURE 4: Example of Innovative Contracting ORBM Design

CLOSING REMARKS

As limited-dose durable gene therapies become the mainstay of treatment for many diseases, a growing array of value-based contracts are emerging to bridge the gap between cost and value. Due diligence of these therapies and potential ramifications of price, population size, and contracting structures will require not only strategic analysis, but future-focused regulatory awareness as well. As a leading healthcare-focused advisory firm, Marwood advises biopharma, diagnostics, device companies, and healthcare investors in conducting market diligence, developing market access strategies, and managing product life cycles, leveraging our insight into Federal and state policy, financial markets, and the intra-institutional dynamics of the health care sector.

About the Author

Mark Slomiany PhD MBA MPA is a Senior Vice President of Advisory at The Marwood Group and a former faculty member of the Department of Cardiothoracic Surgery at New York University Langone Health, as well as former research associate at the Mossavar-Rahmani Center for Business and Government at the Harvard Kennedy School of Government.

Marwood Group is a healthcare advisory firm offering strategic consulting services, with expertise in the U.S., E.U., and Asian markets. Marwood advises investors and life sciences companies on growth strategies and new business models, product lifecycle management, commercialization, market access and pricing strategies, and legislative and regulatory concerns.

Contact Information: For more information on the content in this publication or to learn more about Marwood Group Advisory's capabilities, we encourage you to contact us:

Nayan Ghosh, Vice President, Life Sciences
Office: 212-532-3651
nghosh@marwoodgroup.com

Lee Alvarez, Senior Managing Director
Office: 212-532-3651
lalvarez@marwoodgroup.com