

Using Data Analytics to Understand High-Cost Participants

**Eric Miller,
FSA, CERA, MAAA**

Vice President and
Consulting Actuary

Segal
Austin, Texas

**Sadhna Paralkar,
M.D., M.P.H., M.B.A.**

Senior Vice President and
National Medical Director

Segal
Chicago, Illinois

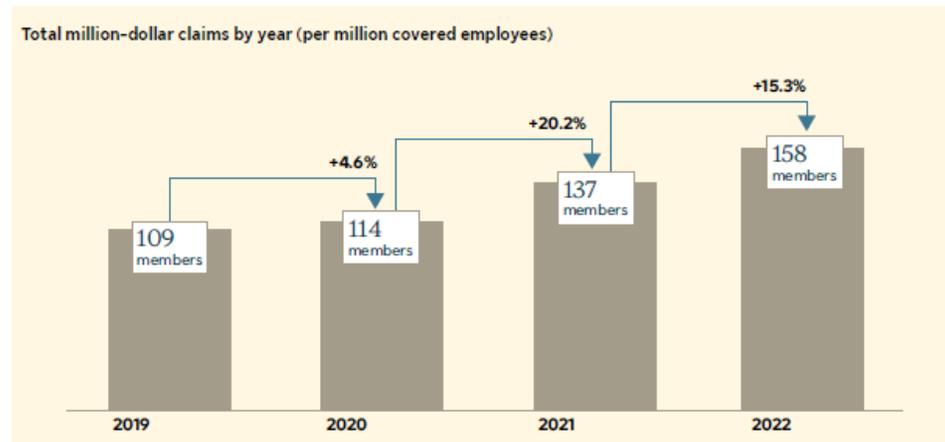


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International Foundation
OF EMPLOYEE BENEFIT PLANS 

Million-Dollar Claims Are Up

- Million-dollar claims are becoming increasingly common, both as a result of new treatment options becoming available and the rising cost of care.
- During the past four years, the Sun Life book of business saw a 45% increase in the number of million-dollar claims, from 109 claims per million covered members to 158 claims per million covered members.
- There was a 15% increase in million-dollar claims from 2021 to 2022.



Source: Sun Life book of business data including first-dollar claims from 2019-2022.

Cost ranges and medical vs. Rx spend

4 Year rank	Condition/Disease/Disorder	Average cost	Highest cost*	% Medical vs. Rx
5	Newborn/Infant Care	\$371.8K	\$4.9M	100%
17	Hemophilia/Bleeding	\$341.8K	\$2.3M	20%
2	Leukemia, Lymphoma, Multiple Myeloma	\$254.7K	\$2.1M	68%
13	COVID-19	\$234.0K	\$2.3M	98%
11	Congenital Anomaly (structural)	\$218.8K	\$3.4M	94%
7	Sepsis	\$214.2K	\$2.3M	97%
19	Malnutrition	\$203.8K	\$2.4M	24%
1	Malignant Neoplasm	\$195.3K	\$2.4M	64%
15	Cerebrovascular	\$154.1K	\$1.2M	96%
14	Transplant	\$152.2K	\$2.5M	90%
3	Cardiovascular	\$130.5K	\$4.2M	94%
18	Immune System	\$125.0K	\$1.8M	31%
10	Urinary/Renal	\$115.9K	\$1.7M	86%
20	Blood and Blood Forming Organs	\$106.9K	\$3.3M	64%
8	Neurological	\$97.5K	\$2.9M	73%
4	Orthopedics/Musculoskeletal	\$90.0K	\$4.5M	74%
9	Gastrointestinal /Abdominal	\$89.6K	\$2.0M	63%
6	Respiratory	\$87.0K	\$1.8M	82%
16	Mental and Behavioral Health	\$76.3K	\$1.1M	82%
12	Physician Treatment	\$34.1K	\$3.8M	73%

■ % Medical Spend
 ■ % Rx Spend

Source: Sun Life book of business data including first-dollar claims and stop-loss reimbursements, 2022.

- Majority of these high-cost claims were driven by medical costs
- Neonatal care had 100% medical costs
- Treatment for hemophilia had most of the costs in Rx, with only 20% in medical



Conditions and Treatments That Drive Costs

Summary of High-Cost Claims

Conditions with the highest number of million-dollar claims by year

Rank	2019	2020	2021	2022
1	Newborn/Infant Care	Leukemia, Lymphoma, Multiple Myeloma	Leukemia, Lymphoma, Multiple Myeloma	Malignant Neoplasm
2	Leukemia, Lymphoma, Multiple Myeloma	Newborn/Infant Care	Malignant Neoplasm	Leukemia, Lymphoma, Multiple Myeloma
3	Cardiovascular	Malignant Neoplasm	Newborn/Infant Care	Tied: Newborn/Infant Care and Cardiovascular
4	Transplant	Cardiovascular	Tied: COVID-19 and Congenital Anomaly	
5	Tied: Hemophilia, Malignant Neoplasm	Respiratory		Sepsis

Majority condition for each claimant was used.

Sun-life 2023 high-cost claims and injectable drug trends analysis

Cancer

- One of the top cost drivers is cancer
- The female population has 52% higher prevalence than the male population—Driven largely by breast cancer
- What makes cancer so expensive
 - Chemotherapy (Specialty drug therapies)—About 18-20% of cancer costs
 - Radiation therapy
 - Diagnostic tests
 - Follow-up scans
 - Hospital admissions
 - Outpatient procedures
 - Prescriptions

Source: Health Care Cost Institute Report, July 2023

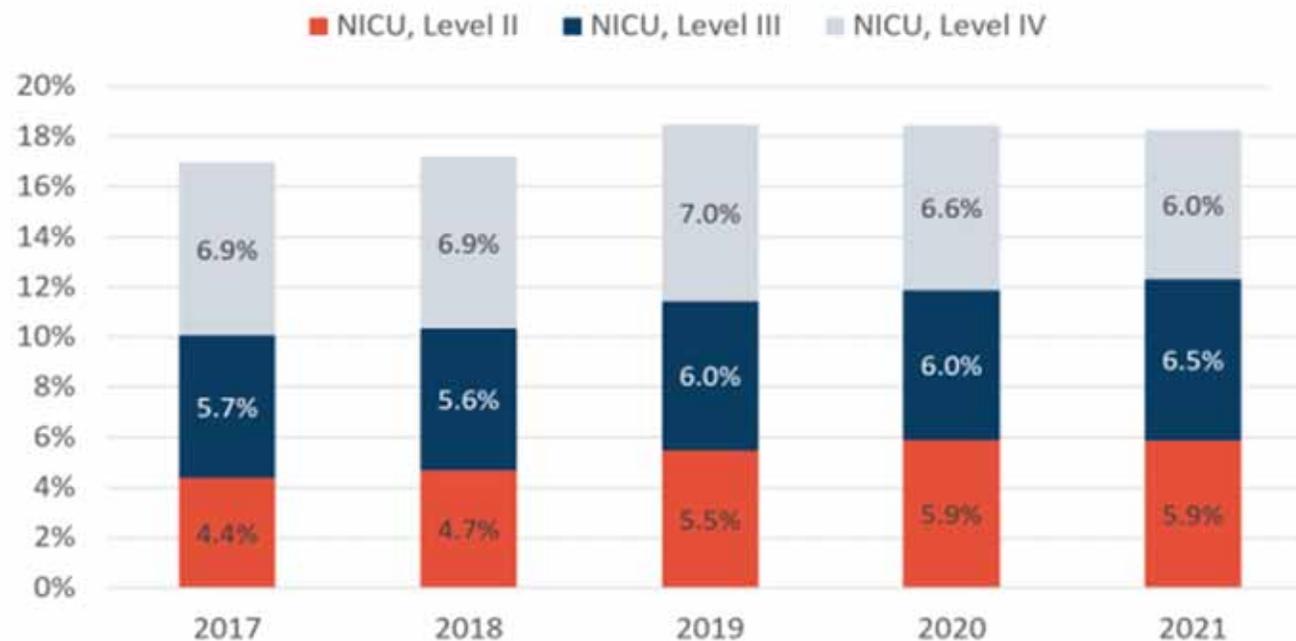
NICU (Neonatal Intensive Care Unit) Claims

- NICU claims can be high cost due to:
 - Premature infants, especially those born before 26 weeks or weighing less than 1 lb., 12 oz, can have high medical costs. A baby born at 24 weeks or sooner has a typical medical bill of \$600,000 to \$1 million
 - Multiple babies: Premature twins and triplets can have NICU costs that are up to 300% higher than a single baby
 - Other complications that can increase NICU costs include birth defects, breathing problems, jaundice, and rare skin conditions.
 - A NICU stay can range from a few days to several weeks, and the cost per day can be thousands of dollars. Prolonged stays or multiple surgeries can lead to total costs in the hundreds of thousands or even millions of dollars.
 - The complexity of care and range of services provided can contribute to the cost of a NICU stay.

Source: Health Care Cost Institute Report, July 2023

NICU Admissions Have Been Growing Steadily

Share of Newborns Receiving NICU Care, by Level of Care (2017-2021)

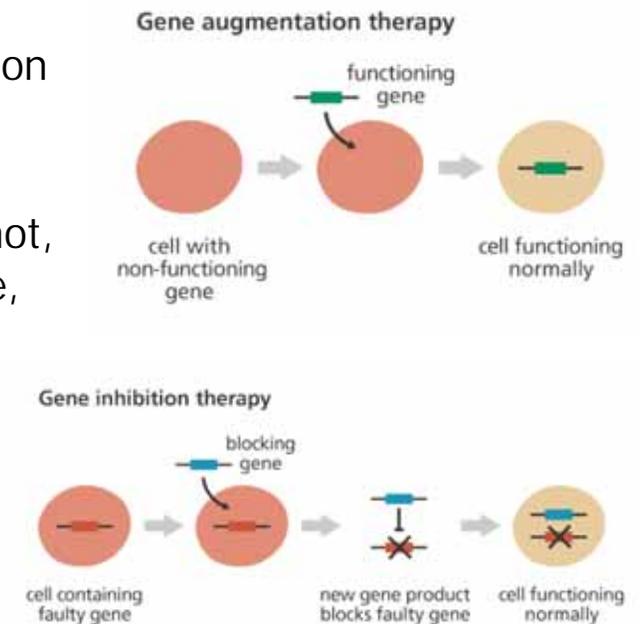


Source: Health Care Cost Institute Report, July 2023

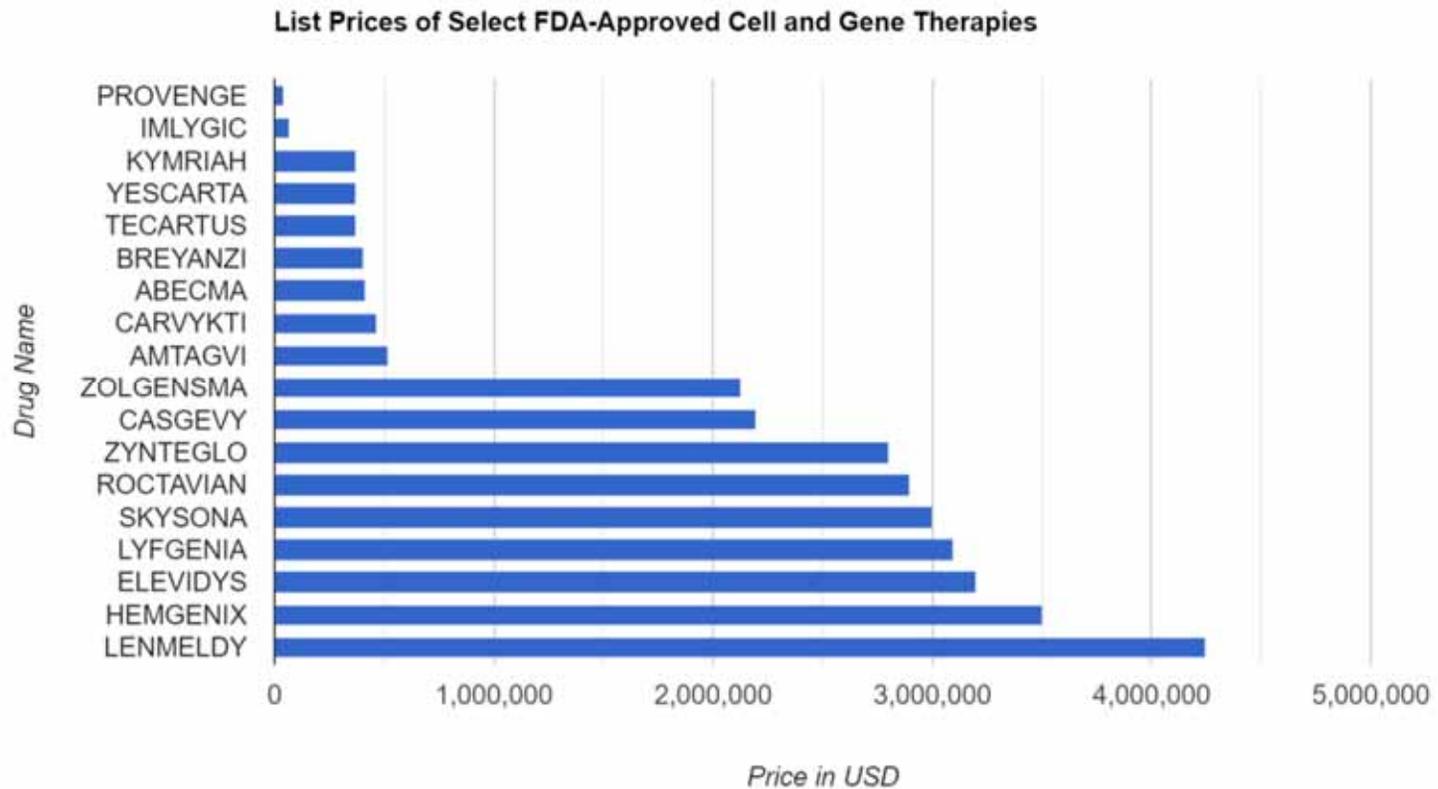
Gene Therapy

What to know about gene therapy

- Gene therapy is a novel approach to treat, cure, or ultimately prevent disease by changing the expression of a person's genes.
- In general, gene therapy involves replacing a gene that causes a medical problem with one that does not, adding genes to help the body fight or treat disease, or turning off genes that cause medical problems.
- Cost of treatment can range from about \$400K to \$4M per patient
- Typically for rare diseases like spinal muscular atrophy and sickle cell disease but are expanding into more common diseases like cancer such as lymphoma and melanoma.



Gene Therapies and Their Costs



Source: Buntz B., Drug Discovery and Development, April 2024

Approved Gene Therapies, Their Indications and Costs

Drug Name	Type	Indication	Efficacy	Price (USD)	Approval Regions	FDA Approval Year
BEQVEZ	Gene therapy	Hemophilia B	Significant reduction in annualized bleeding rate compared to pre-treatment period	\$3,500,000	U.S.	2024
LENMELDY	Gene therapy	Metachromatic leukodystrophy	Significant reduction in risk of severe motor impairment or death	\$4,250,000	U.S. and EU	2024
ROCTAVIAN	Gene therapy	Hemophilia A	96% reduction in annual bleeding rates in severe hemophilia A patients	\$2,900,000	U.S. and EU	2023
VYJUVEK	Gene therapy	Dystrophic epidermolysis bullosa	65% of treated wounds achieved complete healing at 6 months	\$25,545 per dose*	U.S.	2023
CARVYKTI	CAR T-cell therapy	Multiple myeloma	98% overall response rate, 80% stringent complete response in heavily pretreated multiple myeloma	\$465,000	U.S., Europe, and Japan	2022
HEMGENIX	Gene therapy	Hemophilia B	64% reduction in mean annual bleeding rate	\$3,500,000	U.S., EU, Canada	2022
ZYNTEGLO	Gene therapy	Beta-thalassemia	High rates of transfusion independence	\$2,800,000	U.S. and EU	2022
SKYSONA	Gene therapy	Cerebral adrenoleukodystrophy	Early expression of transgene with ALDP expression in CD14+ cells	\$3,000,000	U.S.	2022
BREYANZI	CAR T-cell therapy	LBCL, CLL, SLL	73% overall response rate, 54% complete response in relapsed/refractory LBCL	\$410,300	U.S., Europe, Canada, Japan	2021
ABECMA	CAR T-cell therapy	Multiple myeloma	72% overall response rate, 93% minimal residual disease negativity in ≥VGPR	\$419,500	U.S., EU, and Japan	2021
TECARTUS	CAR T-cell therapy	Mantle cell lymphoma, B-ALL	87% overall response rate, 62% complete response in relapsed/refractory mantle cell lymphoma	\$373,000	U.S. and EU	2020
ZOLGENSMA	Gene therapy	Spinal muscular atrophy	Sustained efficacy up to 7.5 years	\$2,125,000	U.S., EU, Japan	2019
KYMRIAH	CAR T-cell therapy	B-cell ALL, certain lymphoma types	81.3% best overall response in pediatric ALL, 52% overall response rate in DLBCL	\$373,000	U.S. and EU	2017
YESCARTA	CAR T-cell therapy	Large B-cell lymphoma	83% overall response rate, 58% complete response in refractory LBCL	\$373,000	U.S. and EU	2017
LUXTURNA	Gene therapy	Inherited retinal dystrophy	Significant improvement in sight and quality of life	\$425,000	U.S. and EU	2017

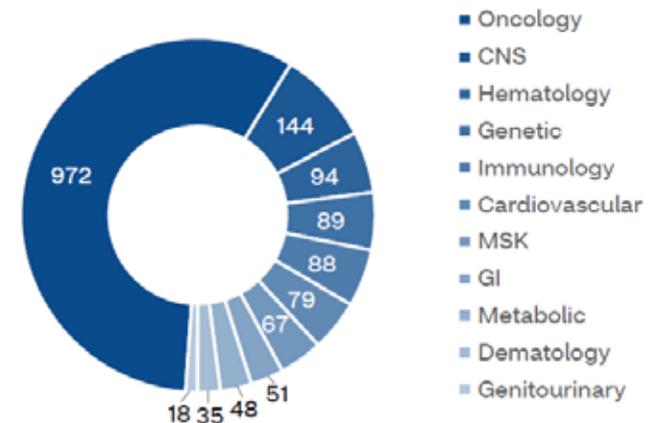
*Lifetime cost of Vyjuvek could be as high as \$15-\$22 million per patient

Source: Buntz B., Drug Discovery and Development, April 2024

Gene Therapy Pipeline

- There are about 3,633, gene therapies in development in the pipeline, up from 1,800 a year ago.
- 10-20 gene and genetically modified cellular therapies are expected to be approved every year starting in 2025
- Oncology is the most active therapeutic area, and rare disease is the next most studied area targeted by gene therapy
- By 2027, the cost of gene and cellular therapies is expected to reach more than \$74B

Number of Clinical Trials in the Pipeline
by Therapeutic Area



[Regenerative Medicine: The Pipeline Momentum Builds - Alliance for Regenerative Medicine \(alliancerm.org\)](https://alliancerm.org)

Source: American Society of Gene and Cell Therapy . July 2024

Cardiovascular

- Cardiovascular disease (CVD) is usually among the top 5 high-cost claims
- CVD accounted for 12% of total U.S. health expenditures in 2018 to 2019, more than any major diagnostic group.
- \$407.3B direct and indirect costs of total CVD between 2018 and 2019.
- Heart failure is the top cardiovascular subcategory, followed by heart attack.
- Current national research supports a connection between COVID-19 and increased risks of heart injury/disease.



Cardiovascular disease includes:

- Heart disease
- Heart attack
- Heart failure
- Stroke
- Cardiac dysrhythmias

Sources: [March of Dimes 2022 Report Card](#), November 15, 2022, March of Dimes.org

More Data Analysis

What Does the Data Show?

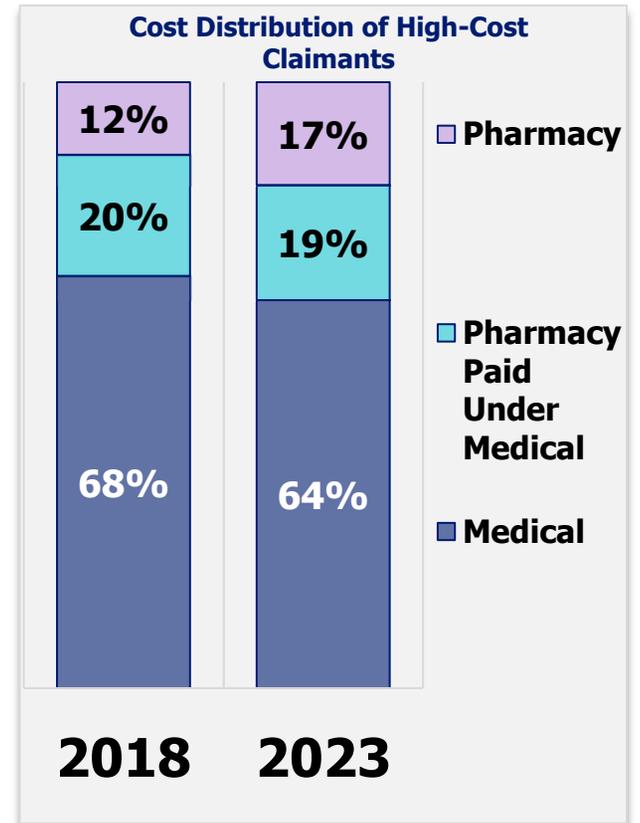
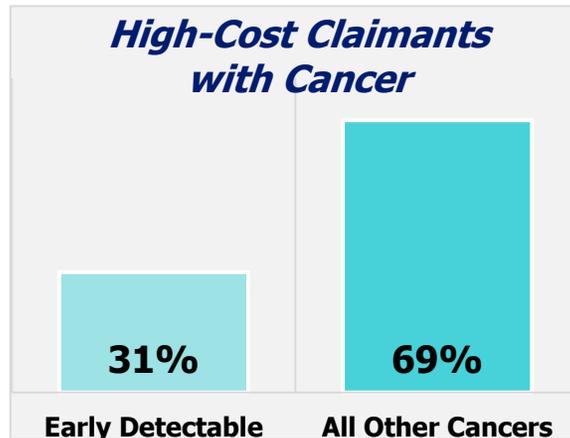
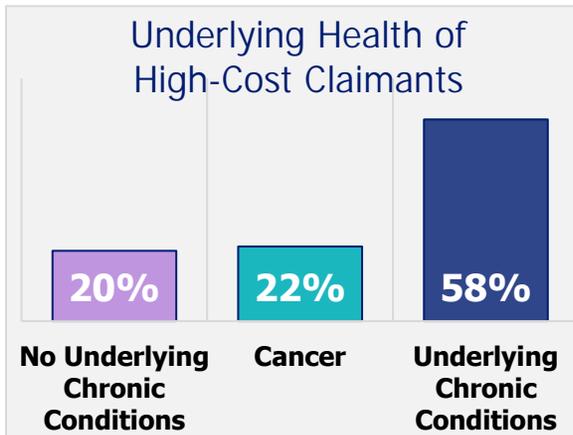
- If you stratify members by total annual spend (medical + Rx):
 - The **top 20%** will make up more than *80%* of the total plan spend
 - The **top 5%** will make up *around half* of total plan spend
 - The **top 1.2%** will make up *around 30%* of total plan spend



This point roughly corresponds to **\$100K** in annual expenses, which we'll use as the basis for "high-cost"

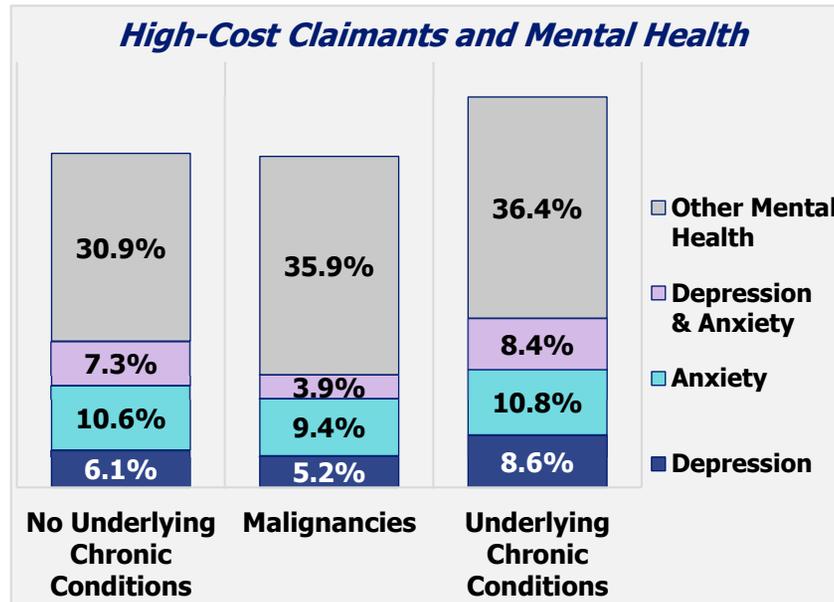
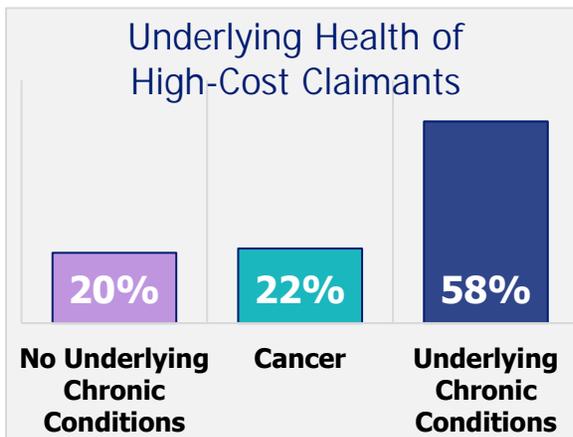
What Does the Data Show?

- Pharmacy is making up an increasing share of HCCs
- Most HCCs had previously diagnosed conditions
- 22% of HCCs are cancer patients
- Of those cancers, roughly a third are early detectable



What Does the Data Show?

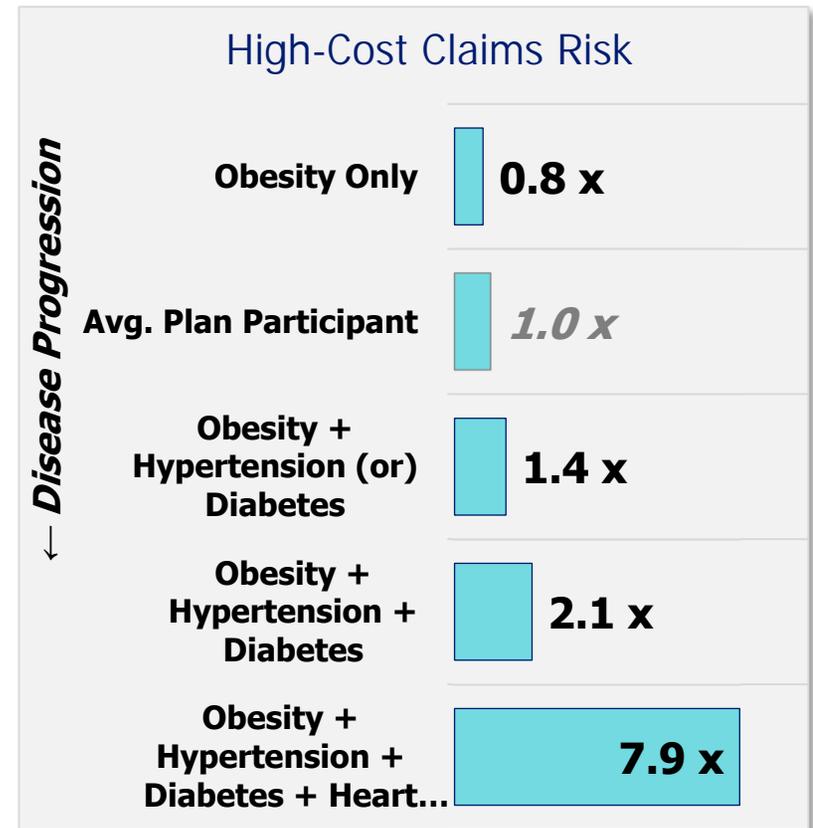
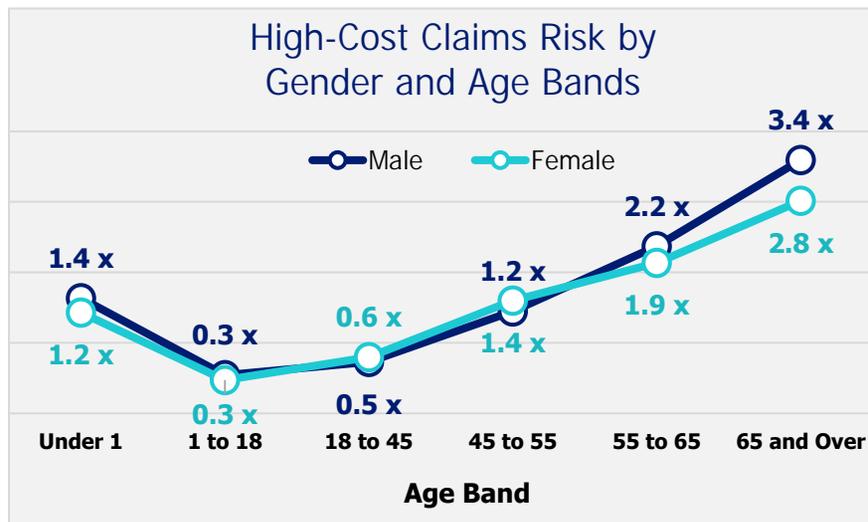
- Mental Health is a common co-morbidity
 - Often develops as chronic conditions worsen
- Important component of achieving good outcomes



Programs targeting improved Mental Health are also targeting HCCs!

What Does the Data Show?

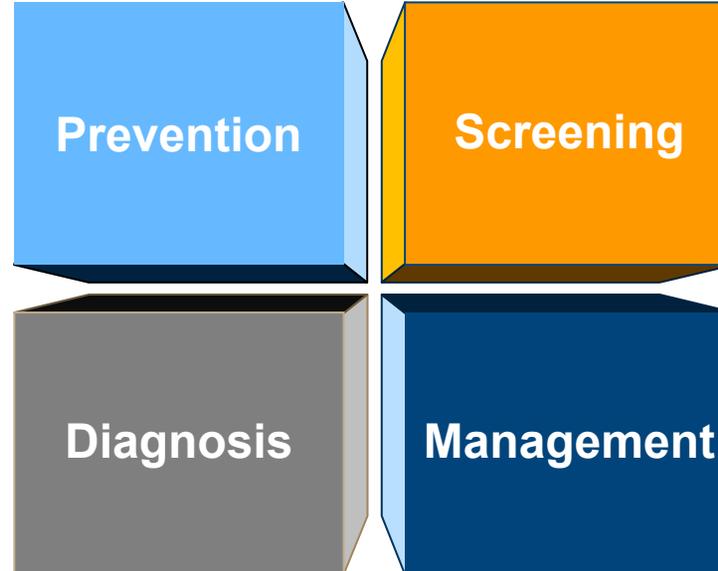
- Risk of severe events increases with age
- Risk of becoming an HCC develops on a continuum of co-morbid conditions
- Intervening early in that continuum is in everyone's best interest



What Can Be Done?

High Cost Claims, What Can Be Done?

Four Pillars of Management
Goals, Strategies, Clinical Programs and Plan Design



All outcomes hinge on early identification and early engagement.

Four Initiatives That Could Help Manage the High-Cost Claims

- Intensive medical/case management
- Using centers of excellence (COEs) and bundled payment programs
- Tight prescription drug management
- Having a good catastrophic insurance/stop-loss plan in place

Recommendation: High-Cost Claims

- Close monitoring of claims
- Ensure tight medical management that includes:
 - Utilization and clinical review
 - Case management
 - Negotiation services to assist with ongoing medical management of high-cost claims and complex conditions, such as cancer and complicated pregnancies and births.

Care Management

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

Source: Advisory Board Research Paper: May 2024

Recommendations: Injectable Drugs

- Analyze medication utilization, including current use of specialty medications.
- Review your plan language to make sure it supports care delivery in the setting that will result in the best outcomes. For example, delivering drug infusions or dialysis at home rather than in a medical facility can reduce costs while also increasing comfort and convenience for the patient.
- Monitor the introduction and expansion of gene and cellular therapies.

Recommendations: Injectable Drugs

- 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 specialty drug PBM contracts (trade exclusivity for deeper discounts)
 - Deciding which channel (medical or PBM) is most cost-effective for delivering specific medications

Early Intervention by Condition

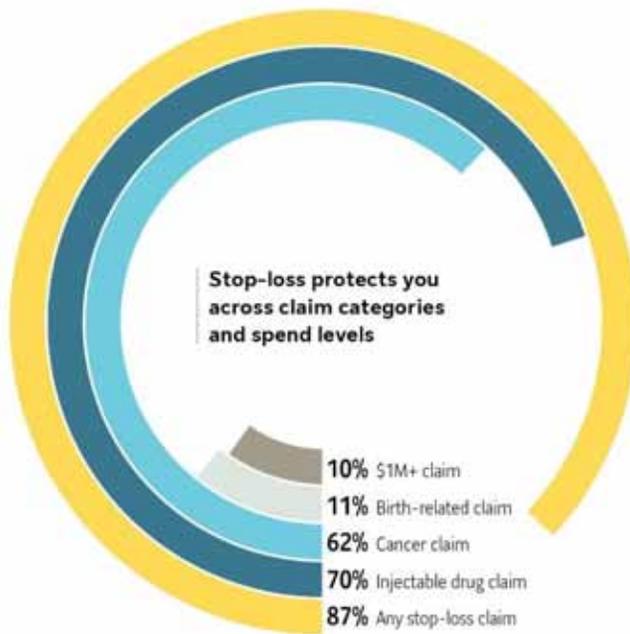
- Cardiovascular
 - Explore the benefits of a multidisciplinary approach to care, such as adding dietician and nutritionist support for patients whose diet or weight may cause or complicate a serious health condition
- Cancer
 - Encourage screenings that are USPSTF recommended
- Maternity and newborn
 - Design fertility benefits that allow members to make empowered decisions about family planning and prioritize achieving the best health outcomes
- Musculoskeletal
 - Utilize pre-habilitation, such as physical therapy before a musculoskeletal surgery to help improve outcomes by increasing strength and flexibility before the surgery occurs

Supporting Better Health and Optimizing Care

- Provide your members help with navigating the complex healthcare system so they can access the right care at the right time.
- Encourage your members to seek expert second opinions to confirm that diagnoses and treatment plans are accurate to give them increased confidence and peace of mind.
- Provide and incentivize use of preventive care benefits to identify health issues earlier and improve health outcomes.
- Consider engaging your employees in programs that focus on general health improvement such as management of weight, blood pressure and blood sugar, to decrease the likelihood of a serious health condition and improve the outcomes for members.

Importance of Stop-Loss Coverage

Percentage of employers who have a stop-loss claim



Source: Percentages are the likelihood in a given benefit year of having a stop-loss claim. The calculation uses data from 2018-2021 benefit years.

Stop-Loss reimbursements increase along with total cost



Source: Sun Life book of business data, stop-loss reimbursements from 2019-2022.

Selecting a Stop-Loss Deductible

- The choice of stop-loss deductible is generally based on the employer's risk tolerance and cash flow position.
- Deductible levels tend to be closely tied to the number of employees at the company.
- There are also trade-offs to consider between stop-loss premium and claim risk.



Source: Sun Life book of business data from 2019-2022.

Gene Therapy Subscription Models

- Gene therapy subscription models seek to aggregate vast pools of covered lives and “carve out” coverage for gene therapies so that smaller plan sponsors and payers can join and pay a relatively small per-member per month (PMPM) fee to gain coverage for any needed gene therapy treatments.
- These programs, also known as gene therapy “financial protection programs” are now offered by many large payers with a vertically integrated pharmacy benefit manager, including:
 - Aetna/CVS (Gene Therapy Stop Loss)
 - Cigna/Evernorth (Embarc Benefit Protection)
 - United Healthcare/Optum (Optum Gene Therapy Risk Protection).

Source: Emerging market solutions for financing and reimbursement of durable cell and gene therapies (white paper by Tufts Medical Center:). Published June 2021

Gene Therapy: Potential Solution

- This doesn't exist today, but state or federal-sponsored insurance for gene therapy will alleviate the burden of expensive treatments from a single employer
- Think of it as a natural disaster relief fund from the state or federal government
- Advantages
 - Single pool provides scale and broader cost-sharing
 - Creates universal access that prevents private market risk of lasering or of some employers opting out of coverage entirely
 - May support price negotiation/setting that achieves lower prices in return for guaranteed broad access
 - May provide alternative funding tools such as mandatory fees or tax funds

Source: Institute for Clinical and Economic Review, 2024, created in collaboration with Page 28 NEWDIGS at Tufts Medical Center

Key Takeaways

Vendor management and vigilant oversight are critical

Reporting



- Vendors can provide weekly, monthly, quarterly, and full-year reports
- Focus on conditions driving the highest trend
- Reporting can be flexible, challenge the vendors based on the needs of your client
- Clinical consultants can join vendor presentations to evaluate the data being presented

Implementation and Clinical Oversight



- During negotiations, **ask for vendor allowances for clinical implementation, oversight, and audits** (Note this in addition to a claims or PBM audit)
- Request implementation credits to support oversight and transition
- Larger clients may benefit from monthly high-cost claimant review with a clinician from Segal

Clinical Audit



- A clinical audit, funded by the vendor, can be conducted every 2–3 years
- Clinical audits can provide checks and balances
- Potential to claim missed PGs and provide negotiation leverage
- Client specific program enhancements
- Leverage results for contract negotiations (potential for additional programs at no cost)
- Improve vendor relationship or justify bidding the business

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