

2023

TRENDS SHAPING THE
Health Economy

VALUE FOR
MONEY

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EXCLUSIVE



APPLYING THE LAWS OF ECONOMICS TO SECULAR TRENDS IN THE HEALTH ECONOMY

The \$4.3T health economy creates more data than any other part of the U.S. economy. New findings emerge daily, from MedPAC's payment rate recommendations, Kaiser Family Foundation's surveys and Rock Health's digital health funding numbers, to name a few. The challenge for health economy stakeholders is to synthesize seemingly unrelated — and sometimes misconstrued — data to understand their strategic and tactical implications.

As a health economist, I study healthcare through the lens of demand, supply and yield. Even though markets for healthcare products and services deviate from what economists would call the ideal market, the core principles offer a valuable framework for examining secular trends in the health economy.

As a long-time admirer of Mary Meeker's annual *Internet Trends Report*, I have always thought our industry lacked an analogous, data-driven view of emerging healthcare trends. This longstanding idea became reality with the debut of the first annual *Trends Shaping the Health Economy Report* ("Health Economy Trends Report") in 2021. Previous editions of the *Health Economy Trends Report* concluded that:

- (1) healthcare is a **negative-sum game**;
- (2) every part of the health economy — from payers and providers to life sciences and new entrants — will be impacted by **reduced yield**.

The 2023 *Health Economy Trends Report* offers insight into ten data-driven secular trends that are either intensifying or emerging, revealing the importance of delivering **value for money**.

Supporting each highlighted trend are a handful of data stories grounded in facts about the past, along with projections about the future based upon sophisticated machine learning models applied to nationally representative data, with minimal reliance on surveys. While you may already be familiar with some of the data stories, the *Health Economy Trends Reports* are designed to synthesize these seemingly different data to provide greater context for every stakeholder. While each trend will resonate differently based on your vantage point, the *Health Economy Trends Reports* offer something for everyone who seeks to play a role in developing and implementing solutions that the U.S. healthcare system so desperately needs.

I hope this *Health Economy Trends Report* will cause you to reflect on the future of the U.S. health economy and think critically about what each trend means for your organization. While this *Health Economy Trends Report* is not intended to provide all the answers, you should use it as a tool to ask the right questions. What trends have you not considered, and how will they impact the markets that your business serves? How well prepared are you relative to your current (and future) competitors? How can understanding these trends improve your organization's capital allocation decisions? How will you deliver value for money to the individuals you serve?



Sanjula

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INTRODUCTION

The Status Quo is Unsustainable



The \$4.3T U.S. health economy is the largest sector of the world's largest economy, and it is approaching 20% of the gross domestic product. Meanwhile, an increasing number of Fortune 100 companies with little experience in healthcare services, such as consumer electronics giant Best Buy, are beginning to offer at-home care services to capitalize on the opportunities in the lucrative health economy.

The healthcare consumer has more care options today than ever before, many of which are also lower cost, yet the healthcare cost curve has been “up and to the right” since WWII. Moreover, two commercially insured patients in the same market with the same healthcare care delivery journey for the same clinical needs often pay vastly different amounts for the same basket of services. In the words of economist Herb Stein, “if something cannot go on forever, it will stop.”

Note: ED denotes emergency department.

INTRODUCTION

Value Competition in the New Health Economy

The U.S. health economy continues to defy the laws of economics — demand, supply and yield. Our thesis is that any health economy stakeholder whose business depends on commercially insured patients can no longer afford to overlook these foundational economic principles. Why? Because the healthcare system is what game theorists call a “negative-sum game,” whereby the costs invested into the system largely outpace the actual value or benefits received by patients or consumers.

Operating in a negative-sum game means that every stakeholder will still lose in comparison to what they currently have or really need. In a health economy defined by reduced yield, the only way to “lose less” is to compete on value.

In this third installment of our annual *Trends Shaping the Health Economy* series, we hope to persuade stakeholders that despite significant investments and initiatives to “transform” the healthcare system, little has changed to date — even with newcomers like Amazon, Walmart and Best Buy. **The status quo is unsustainable for the health of Americans, and it is time for all health economy stakeholders to start playing by the immutable rules of a negative-sum game.**

INTRODUCTION

Trends Representative of ~300M Lives and 2.7M Providers

This report is a fact-based, data-driven national analysis of the trends that will define the landscape, and subsequent challenges, for all players in the health economy. While most research in healthcare, whether it be in industry publications or academic literature, is focused on a very specific question or a single topic such as digital health investments or prescribing patterns, the *Health Economy Trends Report* is the only study of its breadth and depth, to our knowledge.

The *Health Economy Trends Report* is the first study to provide longitudinal and timely insights representative of the healthcare utilization patterns of ~300M American lives and 2.7M practicing healthcare providers. Note that while this open-access report features data trends primarily through 2022, more recent data through 2023 and ongoing tracking is available to Trilliant Health premium research subscribers.

The original research findings featured in this annual series are gleaned from proprietary Trilliant Health datasets and analytic models that measure various dimensions of demand, supply and yield across the health economy. To study healthcare demand we leveraged our national all-payer medical and pharmacy claims database and Demand Forecast. The Trilliant Health Provider Directory was used to study the supply of 2.7M healthcare physicians and allied health providers across the country. The intersection of supply and demand informs expected yield. To measure yield we leveraged our Health Plan Price Transparency dataset, which provides negotiated rate data for services by market across large national and regional health plans. In addition to the primary data analyses conducted using Trilliant Health assets and other publicly available information (e.g., financial statements), we also leveraged select secondary sources (e.g., American Hospital Association, Centers for Disease Control and Prevention).

HEALTH ECONOMY TRENDS REPORT ANALYTIC FRAMEWORK



DEMAND refers to both the exogenous and endogenous factors that influence consumer preferences, need for and utilization of healthcare services.

PRIMARY DATA SOURCE

National All-Payer Medical & Pharmacy Claims
Demand Forecast



SUPPLY refers to the various providers of health services ranging from hospitals and physician practices to retail pharmacies, new entrants (e.g., Amazon) and virtual care platforms.

PRIMARY DATA SOURCE

Provider Directory



YIELD refers to the intersection of demand and supply (i.e., price) and is also influenced by market factors such as policy regulations and reimbursement incentives.

PRIMARY DATA SOURCE

Health Plan Price Transparency dataset

2023 Trends Shaping the Health Economy

1	The Commercially Insured Market Continues To Erode
2	The Physical and Mental Health of Americans Is Unraveling
3	Drug and Diagnostic Investments Signal Emerging Patient Needs
4	The Tepid Demand Trajectory for Healthcare Services Persists
5	Consumer Behaviors Are Starting To Manifest in Patient Decision Making
6	The Traditional Care Pathway Is Becoming Disintermediated
7	New Models of Care Are Further Constraining Provider Supply
8	The Monopolistic Effects of Provider M&A Are Overstated
9	Employers Are Paying More for Less
10	The Market Rate Has Been Revealed, and It Is Lower Than You Think

The Winners in Healthcare's Negative-Sum Game Will Be Those Who Deliver Value for Money



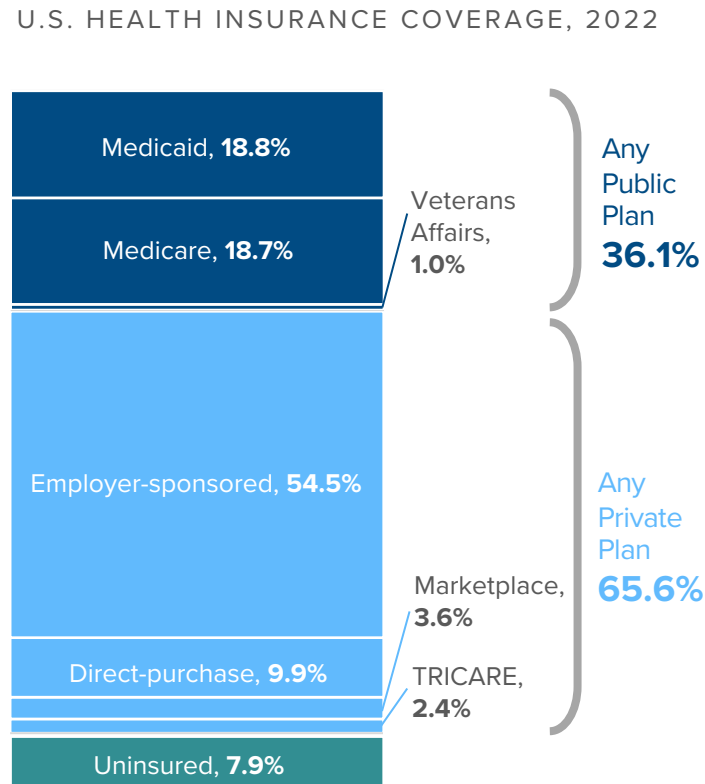
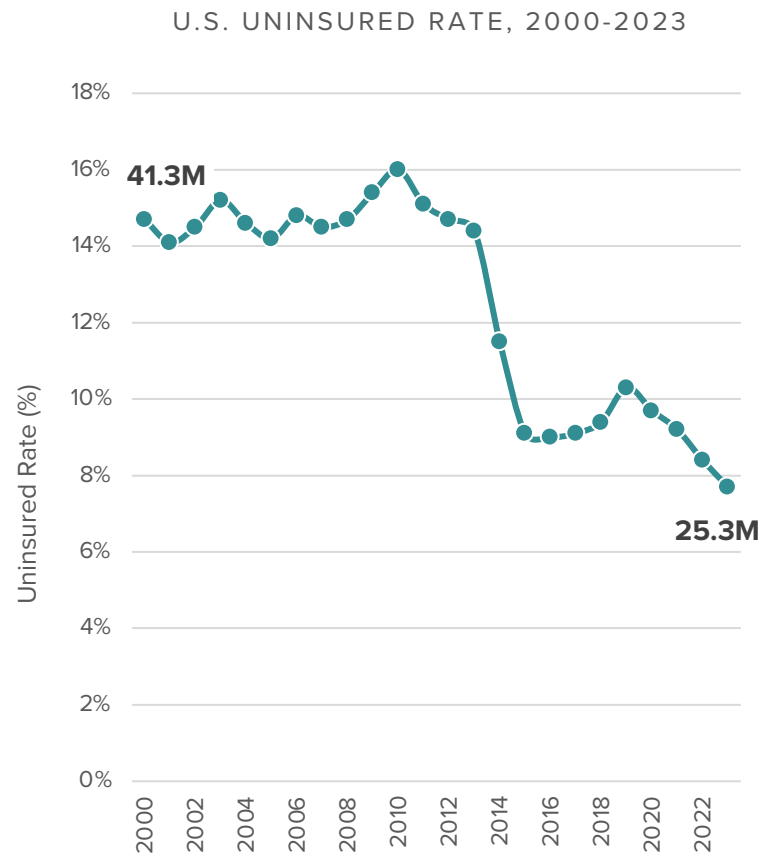
TREND 1

The Commercially Insured Market Continues To Erode

TREND 1: ERODING COMMERCIAL MARKET

Per Census Bureau, Most Americans Have Commercial Insurance

Following the implementation of the Affordable Care Act and the flexibilities enacted during the COVID-19 pandemic, the uninsured rate trended down to an all-time low of 7.7% as of early 2023.



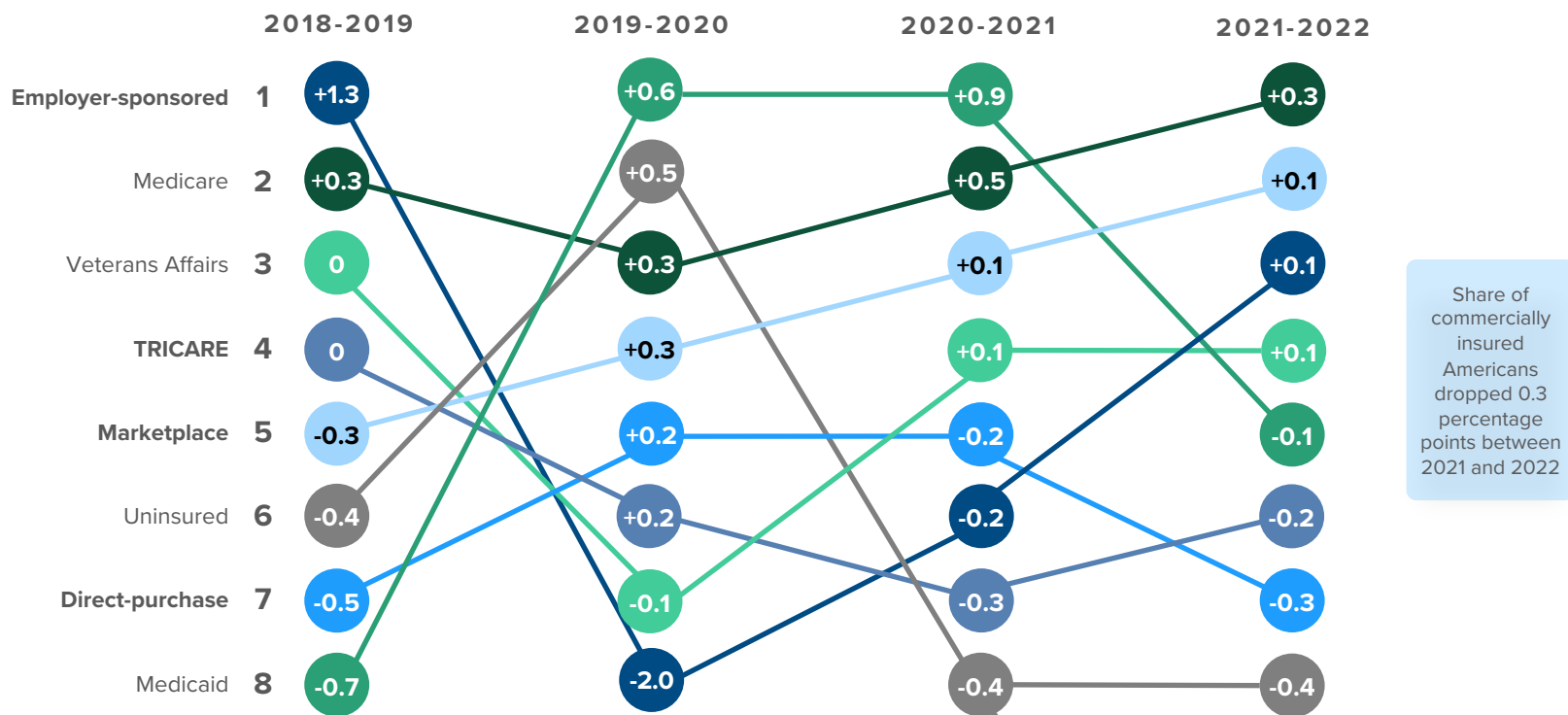
Note: Percentages do not sum to 100% due to dual enrollment and other supplemental plans. 2023 uninsured rate is limited to Q1 2023.
Source: Assistant Secretary for Planning and Evaluation Data Point, *National Uninsured Rate Reaches an All-Time Low in Early 2023 After the Close of the ACA Open Enrollment Period*; U.S. Census Bureau, Current Population Survey, 2022 Annual Social and Economic Supplements (CPS ASEC).

TREND 1: ERODING COMMERCIAL MARKET

...But the Number of Commercially Insured Americans Continues To Steadily Decline

Commercially insured Americans account for the majority of profitable revenue across the health economy. However, the share of commercially insured Americans — including employer-sponsored, Marketplace, direct-purchase and TRICARE — dropped 0.3 percentage points from 2021 to 2022.

YEAR-OVER-YEAR PERCENTAGE POINT CHANGE IN PROPORTION OF INSURANCE BY TYPE, 2018-2022



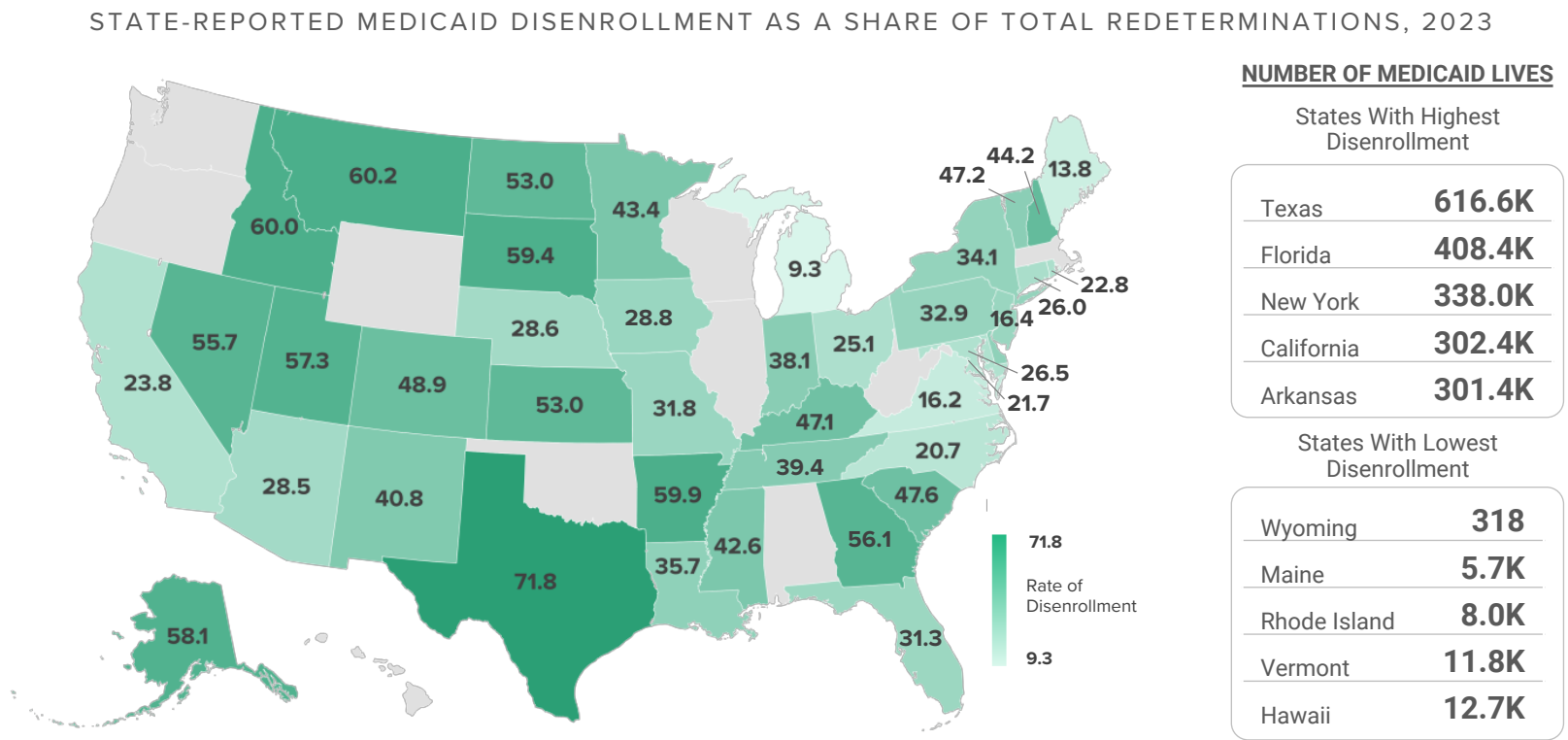
Note: Bold lettering indicates commercial insurance sources.

Source: U.S. Census Bureau, Current Population Survey, 2018, 2019, 2020, 2021 and 2022 Annual Social and Economic Supplements (CPS ASEC).

TREND 1: ERODING COMMERCIAL MARKET

Medicaid Redeterminations Will Result in Coverage Churn

With millions of Americans losing Medicaid coverage during the 2023 redetermination process due to employment status and/or procedural disenrollment (e.g., missing forms, address changes), CMS halted redeterminations in several states. The magnitude of disenrolled Medicaid lives ranges from 318 (Wyoming) to 616.6K (Texas). The extent to which the disenrolled become uninsured or gain marketplace or employer-sponsored coverage will affect the payer mix of almost every healthcare provider and access to healthcare services for millions of Americans.

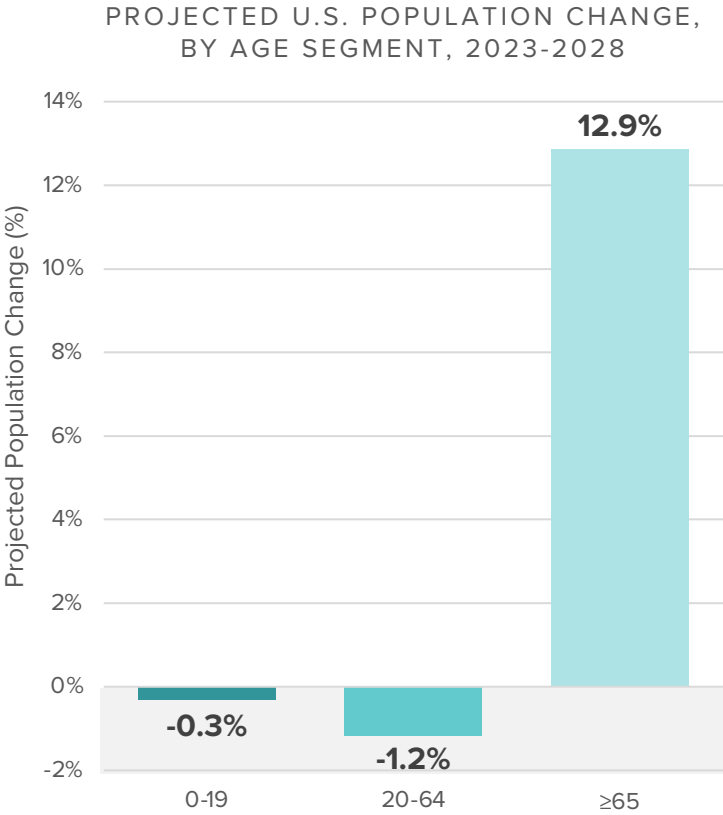
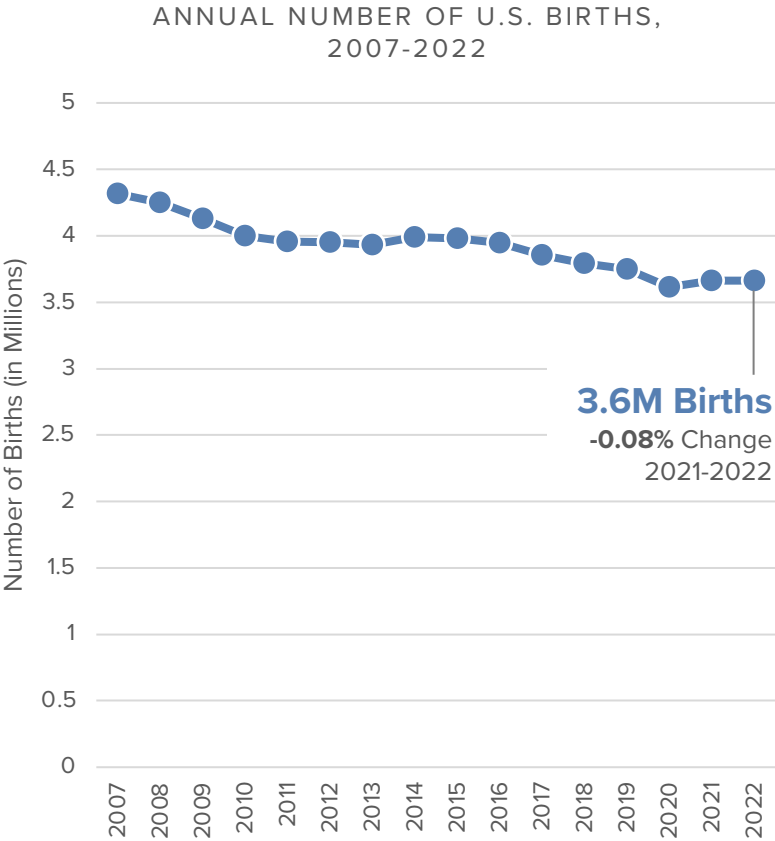


Note: CMS denotes Centers for Medicare and Medicaid Services; rates are calculated as procedural disenrollments divided by total redeterminations. Data for the states shaded in grey are not available.
Source: Kaiser Family Foundation; Centers for Medicare and Medicaid Services.

TREND 1: ERODING COMMERCIAL MARKET

Number of U.S. Births Does Not Offset Those Aging Into Medicare

The U.S. birth rate has been declining for over a decade (-15.1% from 2007 to 2022), falling to a two-decade low amid the COVID-19 “baby bust”. The birth rate rebounded slightly in 2021 but fell again in 2022, signaling a return to previously observed trends where the number of births is not offsetting those aging into Medicare.

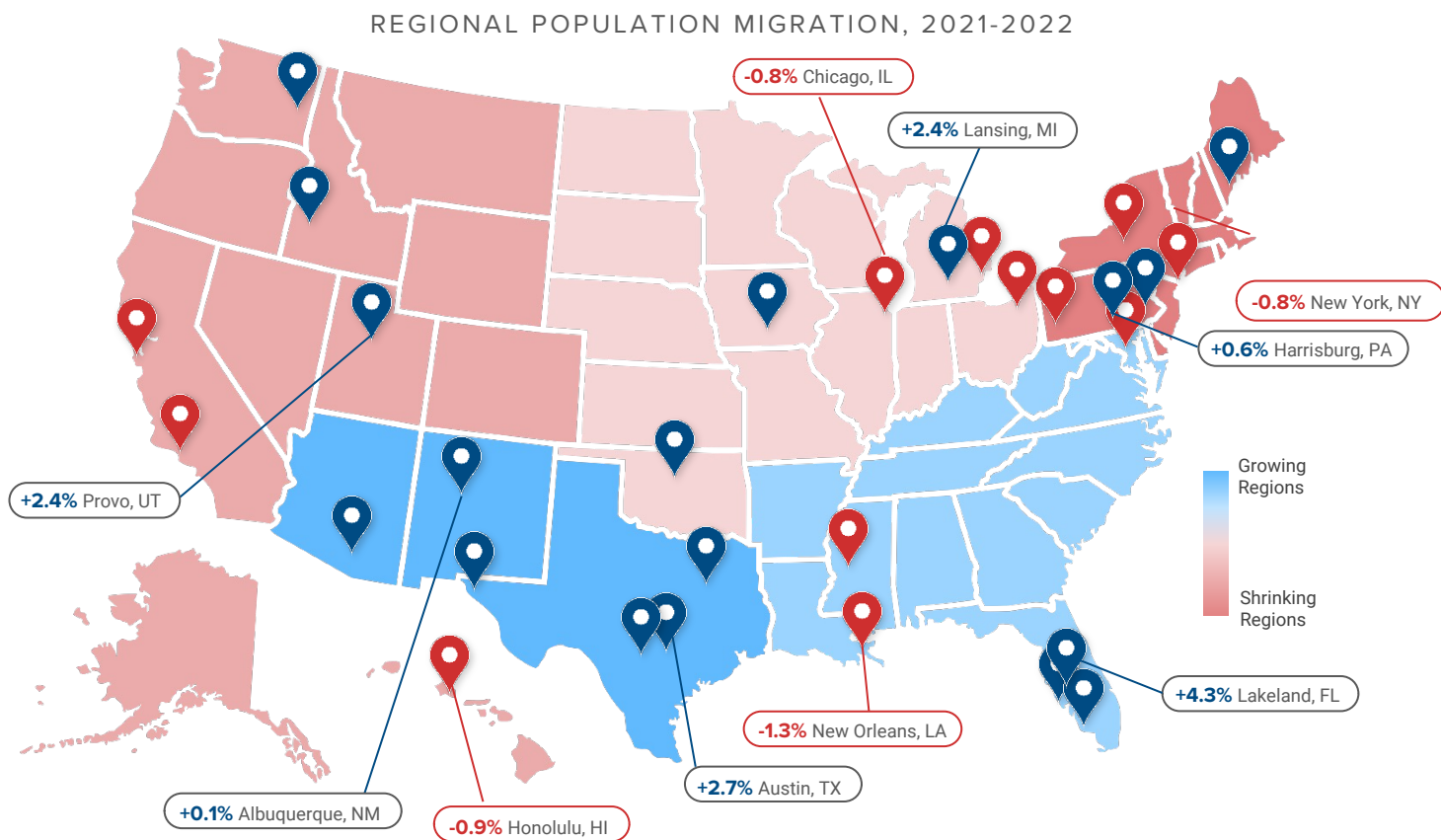


Note: 2022 data for annual number of U.S. births are provisional.
Source: Trilliant Health national consumer database; Centers for Disease Control and Prevention’s National Center for Health Statistics, *Births: Provisional Data for 2022*.

TREND 1: ERODING COMMERCIAL MARKET

Northeast and West Continue to Shrink, While the Sunbelt Grows

Between 2021 and 2022, Americans continued to migrate from large coastal cities to the Sunbelt. During this time, the Southwest (1.7%) and Southeast (1.1%) grew, while the Northeast (-0.4%) and West (-0.1%) shrank. Inevitably, the proportion of commercially insured individuals within both growing and shrinking regions will change.



Note: Analysis includes CBSAs with 2020 populations greater than or equal to 500K. Blue pins represent select growing CBSAs within each region and red pins represent select shrinking CBSAs within each region. In each region, only the CBSAs that are growing or shrinking most have been directly labeled.

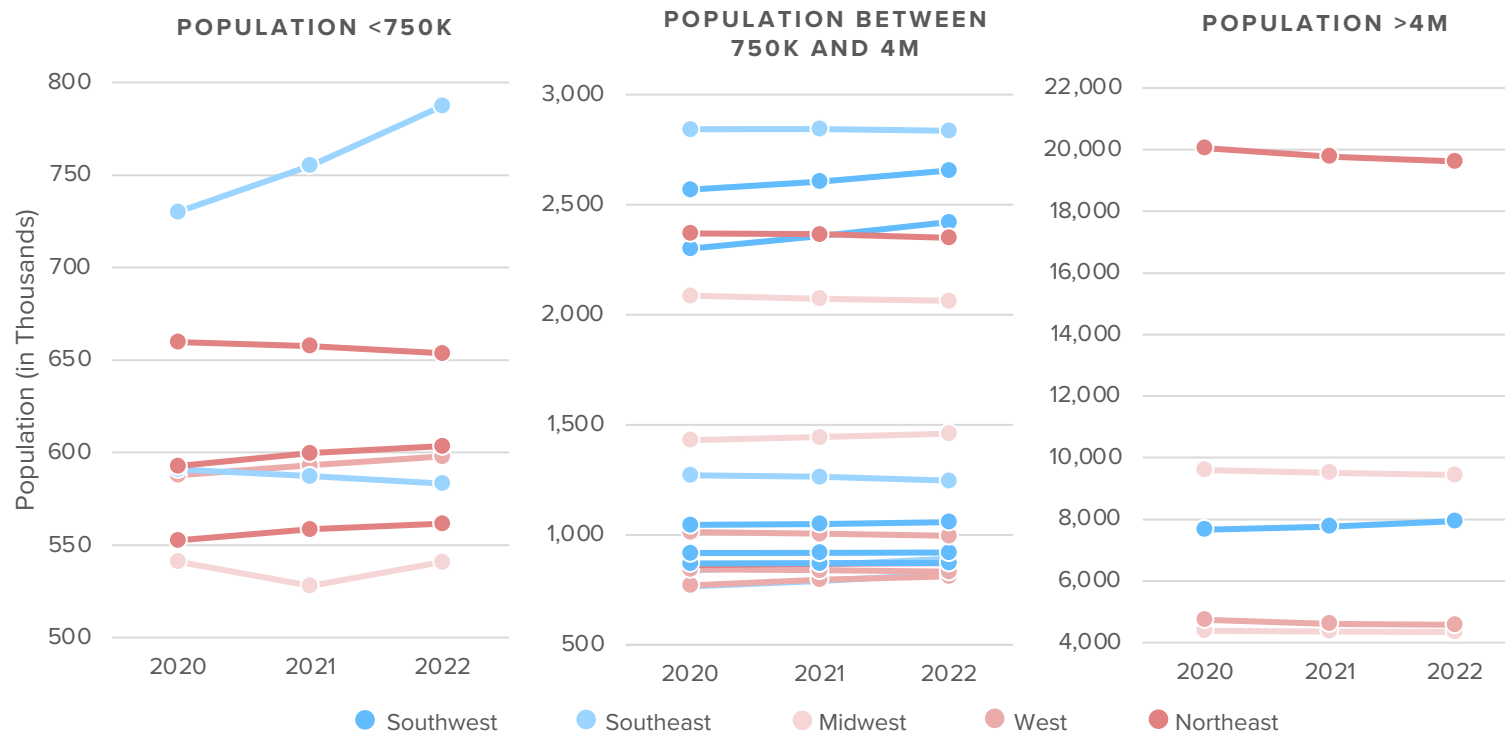
Source: U.S. Census Bureau Annual Resident Population Estimates for Metropolitan and Micropolitan Statistical Areas.

TREND 1: ERODING COMMERCIAL MARKET

Growth Trajectory of Major Cities Is Mostly Unchanged

The CBSAs that saw continuous growth between 2020 and 2022 were concentrated in the Southeast and Southwest. Large cities like Chicago, San Francisco and Cleveland did not grow overall, but shrank less in 2022 than in 2021.

POPULATION CHANGE IN SELECT CBSAs, 2020-2022



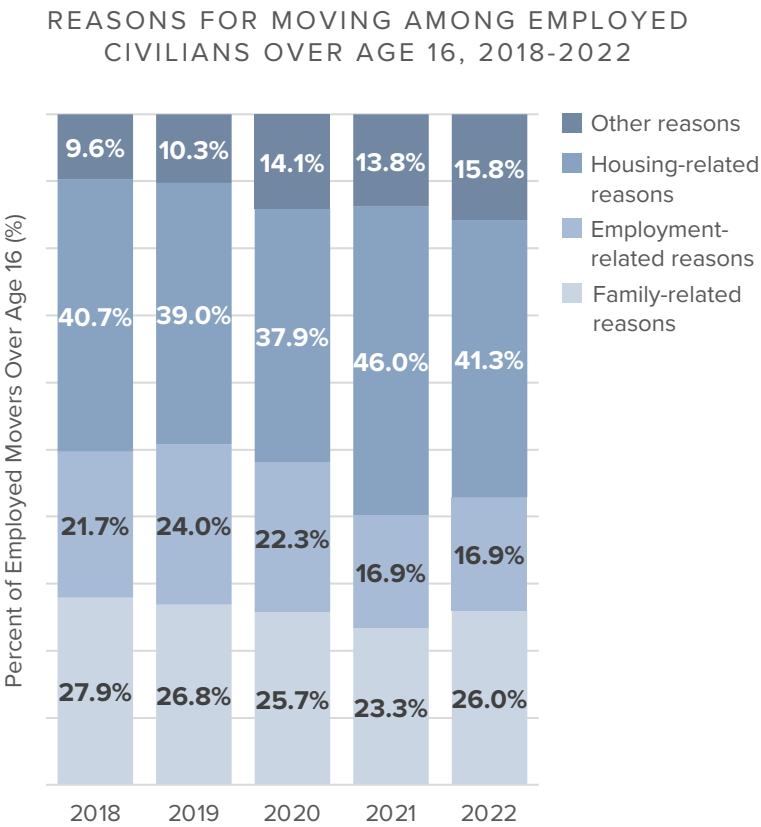
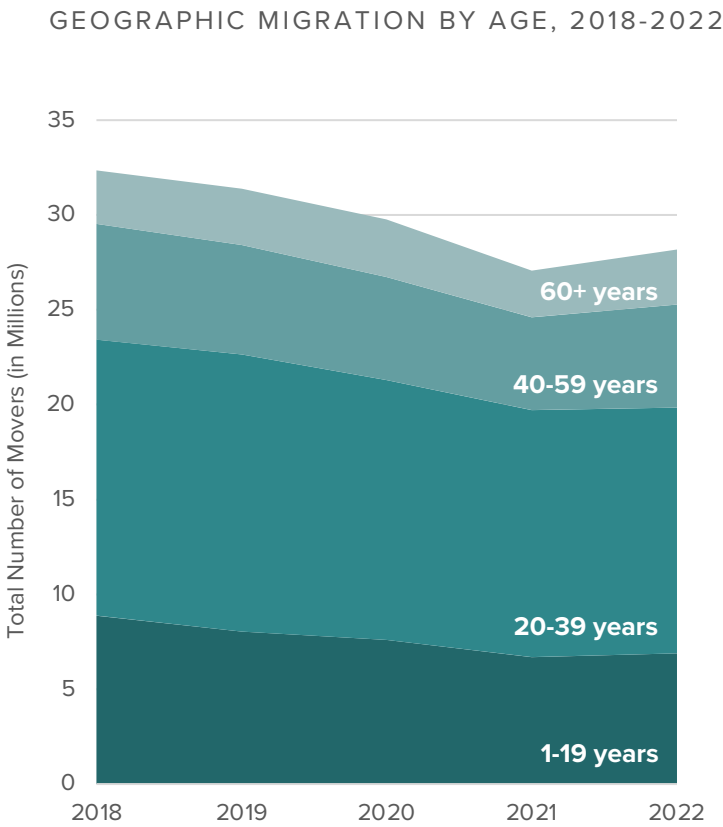
Note: Analysis includes CBSAs with 2020 populations greater than or equal to 500K.

Source: U.S. Census Bureau Annual Resident Population Estimates for Metropolitan and Micropolitan Statistical Areas.

TREND 1: ERODING COMMERCIAL MARKET

After Years of Limited Migration, More Americans Are Moving

In 2022, more Americans moved following years of declining geographic migration — primarily adults ages 20-39 (46%). Among employed Americans ages 16 or older who moved in 2022, 17% did so for employment reasons — moves that will impact the commercially insured share in those markets.



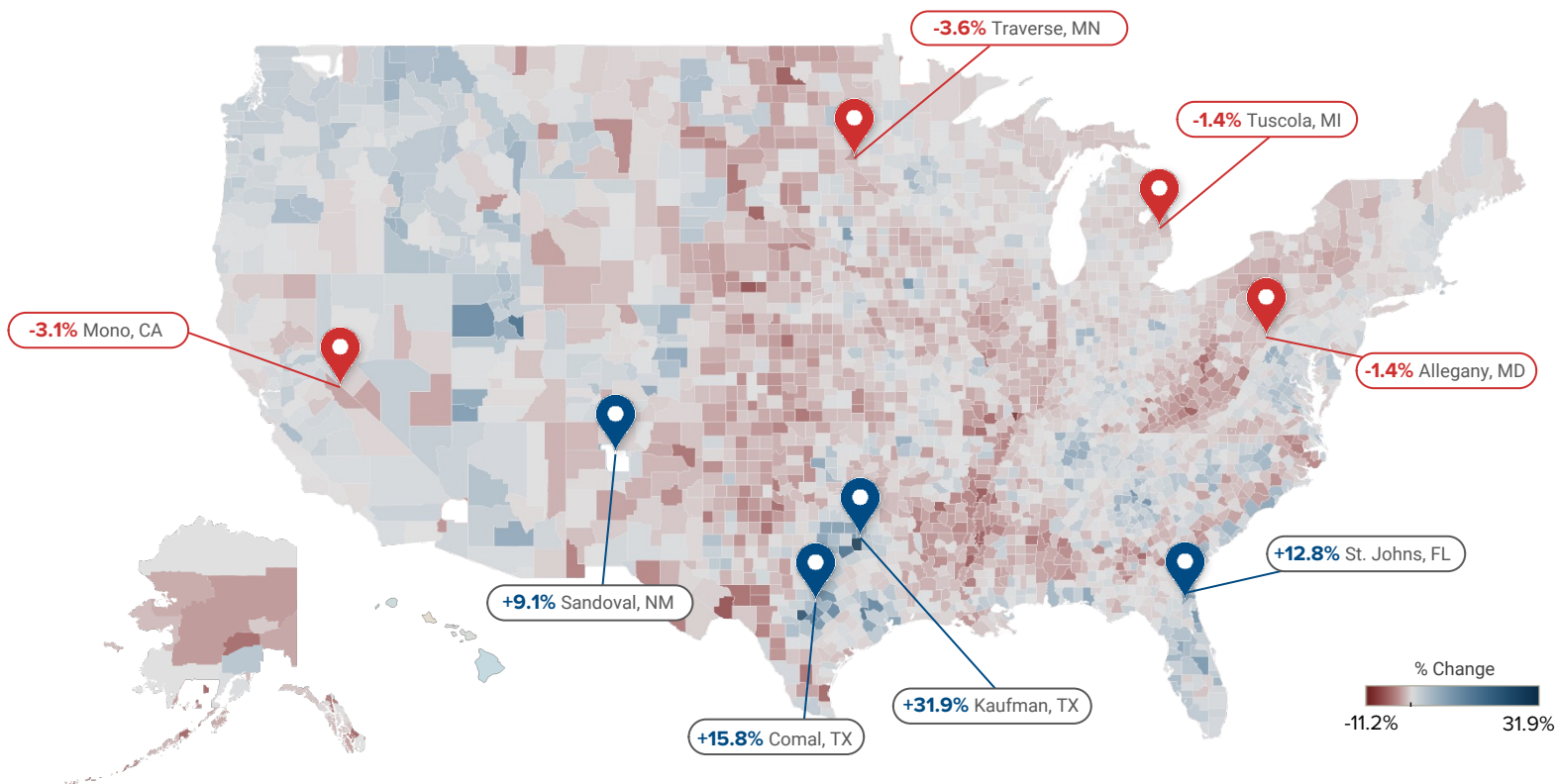
Note: Percentages may not add to 100% due to rounding.
Source: U.S. Census Bureau Annual Migration/Geographic Mobility Surveys.

TREND 1: ERODING COMMERCIAL MARKET

Migration Patterns Will Influence Healthcare Demand

By 2028, even more Americans are projected to live in the Sunbelt, with high growth expected in Florida and Texas, as well as Utah. The age distribution of the individuals moving and their associated clinical needs, payer mix and consumer preferences, in tandem with available provider supply, will impact the amount and type of demand for healthcare services within each market.

PROJECTED FIVE-YEAR POPULATION PERCENT CHANGE BY COUNTY, 2023-2028



Note: Select counties with populations over 10,000 with high and low projected population growth are highlighted.
Source: Trilliant Health national consumer database.

TREND 1: ERODING COMMERCIAL MARKET

Highest-Growth Counties Are Concentrated in the Sunbelt

More than half of the highest-growth counties with over 50K population are located in Texas, underscoring the concentrated growth in the Southeast and Southwest.

PROJECTED FIVE-YEAR POPULATION PERCENT CHANGE,
COUNTIES WITH OVER 50K POPULATION, 2023-2028

TOP 20 GROWING COUNTIES

COUNTY, STATE	PERCENT CHANGE 2023-2028
Kaufman, TX	+31.9%
Ellis, TX	+18.8%
Waller, TX	+18.2%
Comal, TX	+15.8%
Montgomery, TX	+15.2%
Bastrop, TX	+14.8%
Tooele, UT	+14.2%
Hays, TX	+14.0%
Jackson, GA	+13.5%
Rockwall, TX	+13.3%
Williamson, TX	+13.2%
St. Johns, FL	+12.8%
Guadalupe, TX	+12.6%
Dallas, IA	+12.3%
Lincoln, SD	+12.2%
Bryan, GA	+12.1%
Osceola, FL	+12.0%
Washington, UT	+11.1%
Chambers, TX	+10.6%
Denton, TX	+10.6%

TOP 20 SHRINKING COUNTIES

COUNTY, STATE	PERCENT CHANGE 2023-2028
Jefferson, AR	-4.5%
Pike, KY	-3.8%
Vermilion, IL	-3.4%
Caddo Parish, LA	-3.0%
Lauderdale, MS	-2.9%
Orangeburg, SC	-2.8%
Hinds, MS	-2.8%
Otsego, NY	-2.7%
Lawrence, OH	-2.6%
Kanawha, WV	-2.5%
Macon, IL	-2.5%
Cattaraugus, NY	-2.4%
Fayette, PA	-2.4%
Herkimer, NY	-2.4%
Apache, AZ	-2.4%
Dougherty, GA	-2.3%
Iberia Parish, LA	-2.3%
Chautauqua, NY	-2.3%
Pittsylvania, VA	-2.3%
Madison, NY	-2.2%

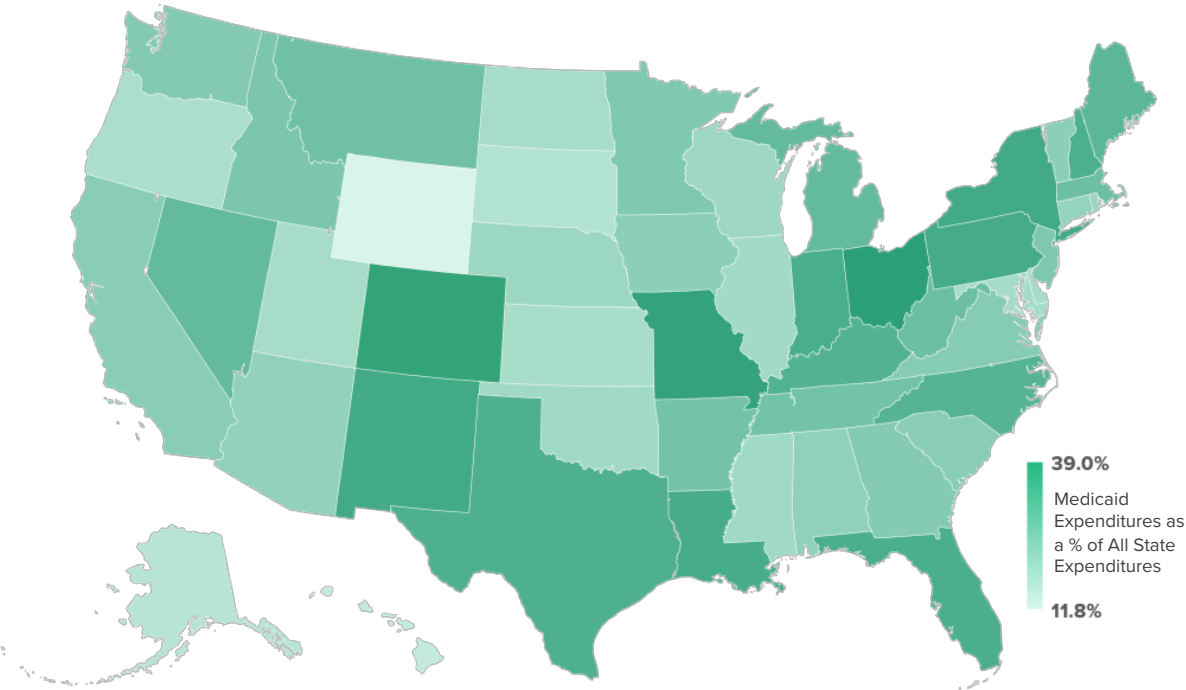
Source: Trilliant Health national consumer database.

TREND 1: ERODING COMMERCIAL MARKET

Medicaid Spending Is The Largest Expense in Most States and Growing

In FY 2022, Medicaid spending represented more than 25% of total spending in 27 states, up from 24 states in FY 2021. Nationally, 27.6% of state expenditures went towards Medicaid – 1.4 percentage points higher than in FY 2021.

MEDICAID SPENDING AS A PERCENT OF STATE BUDGETS, FY 2022



States with Largest Increase/Decrease from 2021 to 2022

Montana	↑ 37.9%
Hawaii	↑ 33.2%
South Dakota	↑ 30.8%
Tennessee	↓ 14.1%
Mississippi	↓ 14.7%
Louisiana	↓ 22.1%

States with Highest Share of Spending

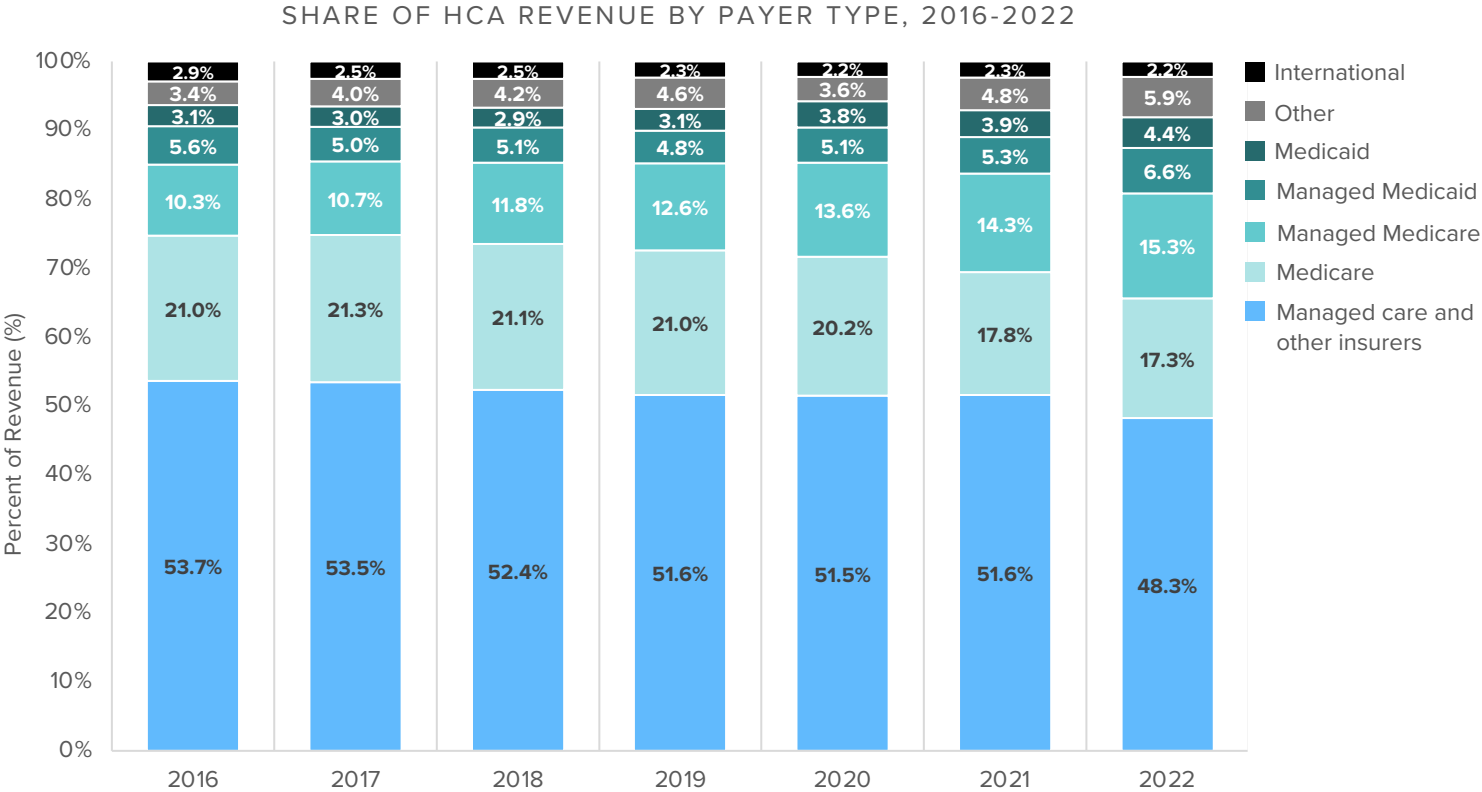
Ohio	
13.3% below FPL	39%
Colorado	
9.9% below FPL	38%
Missouri	
12.7% below FPL	38%
New Mexico	
18.7% below FPL	35%
New York	
13.9% below FPL	35%
Louisiana	
19.6% below FPL	35%

Note: As of September 2023, Florida, Georgia, Kansas, Mississippi, South Carolina, Wisconsin and Wyoming have not yet expanded Medicaid; FY denotes fiscal year; FPL denotes Federal Poverty Level.
Source: National Association for State Budget Officers, State Expenditure Report 2020-2022.

TREND 1: ERODING COMMERCIAL MARKET

Every Provider Is Impacted by Eroding Payer Mix

Even HCA, the nation’s largest and most profitable health system, has experienced a 5.4 percentage point decrease in commercially insured revenue between 2016 and 2022. The most significant year-to-year payer mix erosion occurred between 2021 and 2022, with a 3.3 percentage point reduction.



Source: HCA Healthcare 10-K filing, 2023.



TREND 2

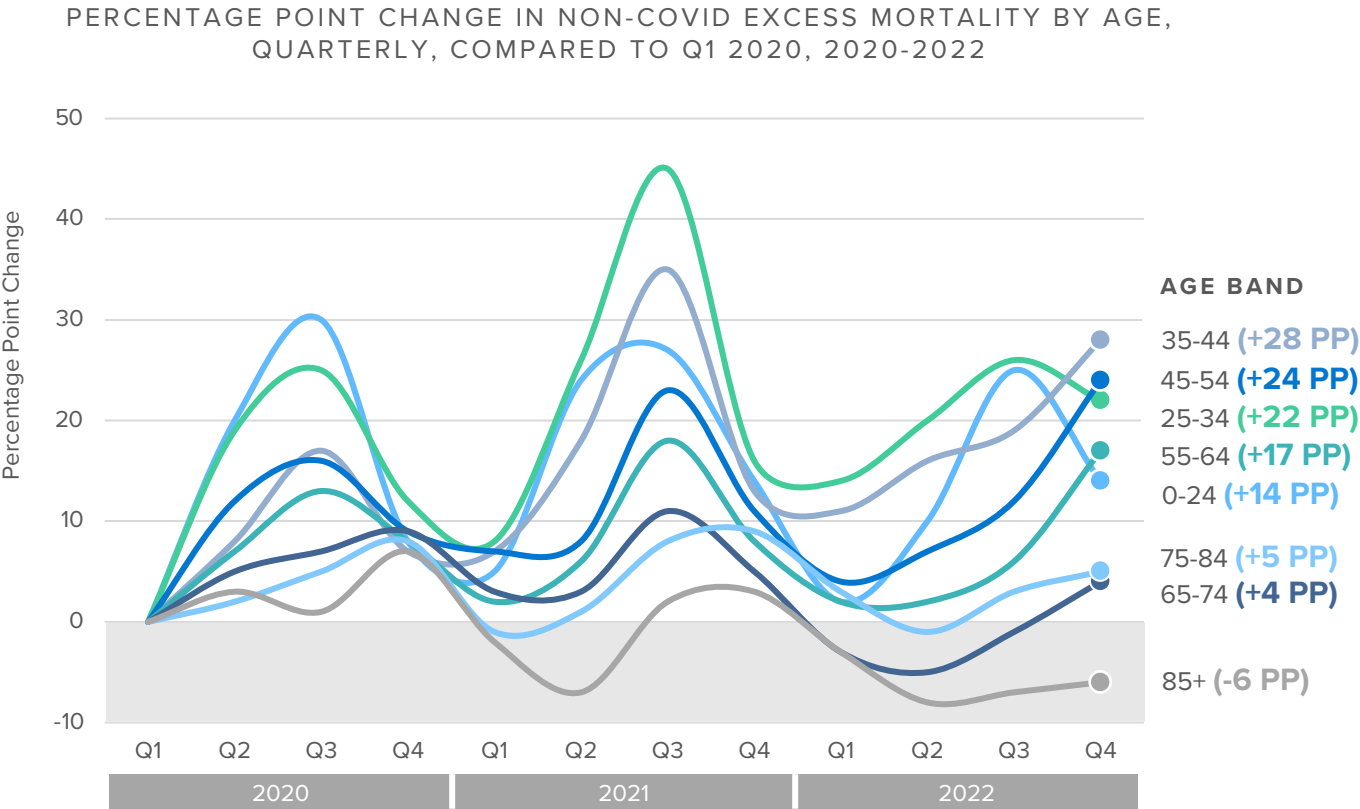
The Physical and Mental Health of Americans Is Unraveling



TREND 2: UNRAVELING HEALTH

Non-COVID Mortality Is Increasing in Younger Populations

Excess mortality among younger Americans — who represent most of the commercially insured market — is increasing. Between Q1 2020 and Q4 2022, non-COVID excess mortality for Americans aged 35-44 increased by 28 percentage points, peaking in Q3 2021 with a 35 percentage point increase above the baseline.



Note: PP denotes percentage point.
Source: Society of Actuaries Research Institute Group Life COVID-19 Mortality Survey Report.

Mortality Rate For Americans Under Age 40 Is Rising

PERCENT CHANGE IN HIGHEST CAUSE OF MORTALITY FOR
AMERICANS UNDER AGE 40, 2018-2022



2022 Most Common Cause of Death, by Number of States

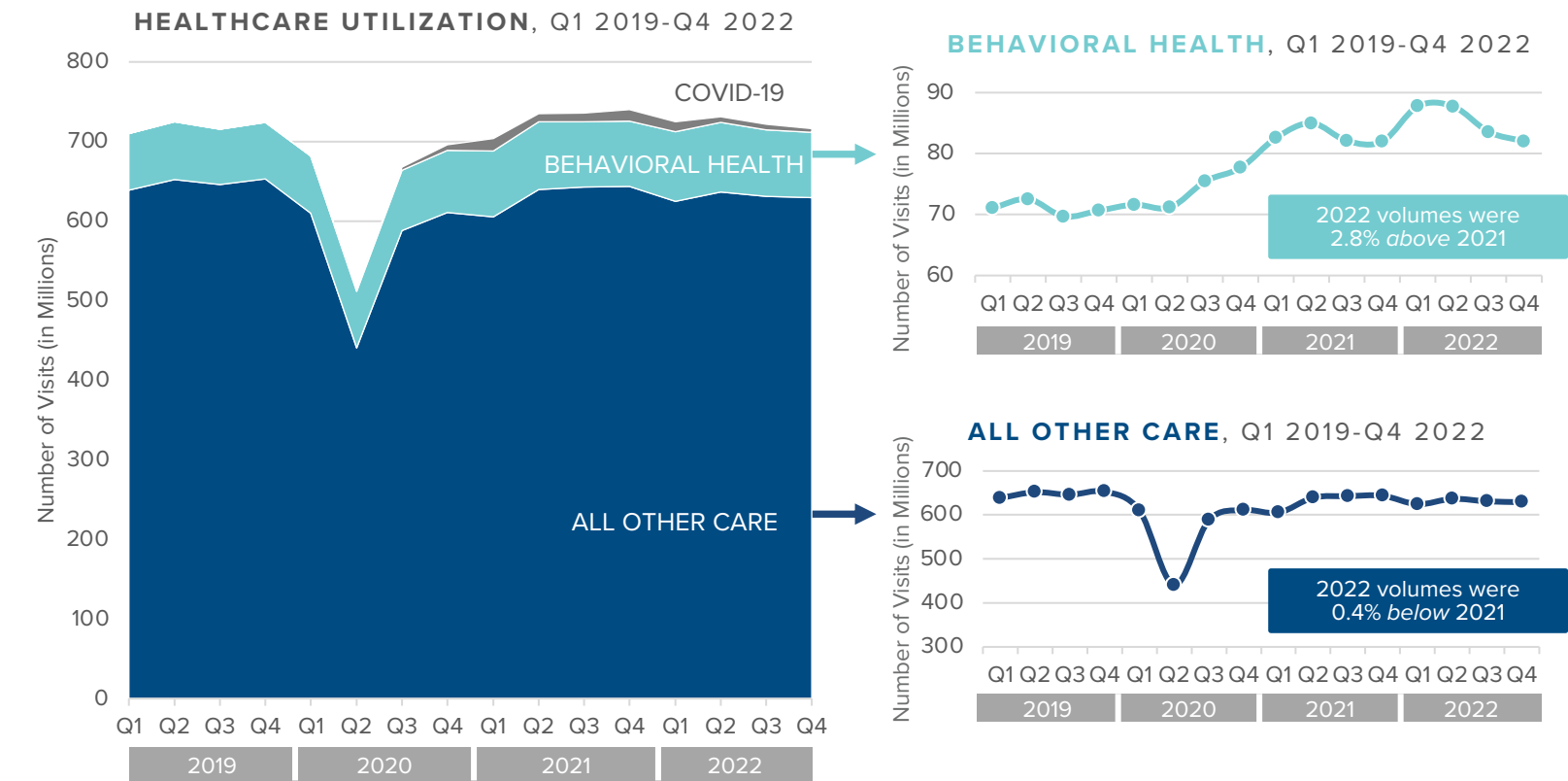
Accidental Overdose	37
Suicide	8
Vehicle Accidents	3
Homicide	2
Gun Homicide	1

22

TREND 2: UNRAVELING HEALTH

Pandemic-Era Changes in Healthcare Utilization Patterns Persist

In separating COVID-19 and behavioral health, "all other" care volumes decreased by 0.4% in 2022 compared to 2021. However, there was a 2.8% increase in demand for behavioral health care during the same period.



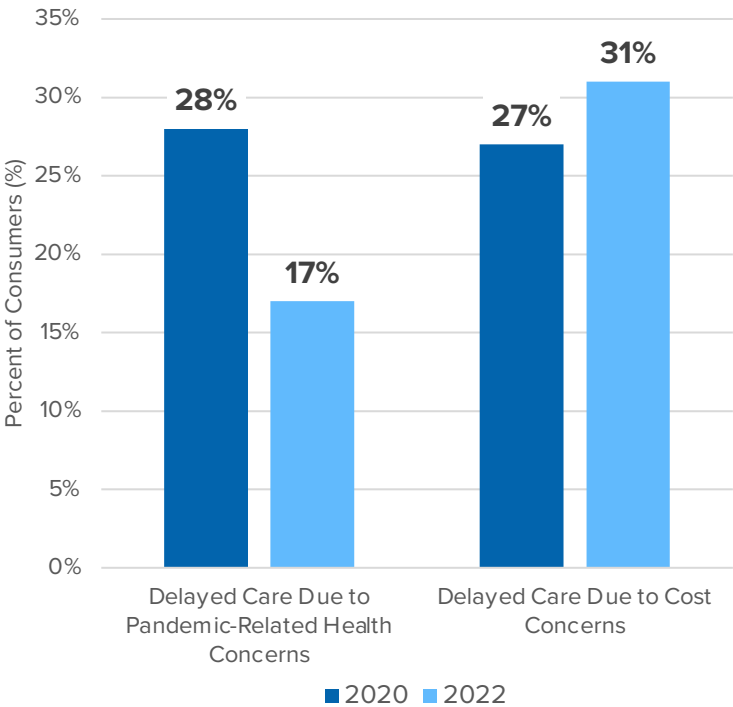
Note: The "All Other Care" category represents any healthcare visit in the timeframe unrelated to behavioral health or COVID-19-related care. The COVID-19 category is likely underrepresented due to the prevalence of at-home testing, self-pay encounters and non-specific coding of COVID-19 encounters.
Source: Trilliant Health national all-payer claims database.

TREND 2: UNRAVELING HEALTH

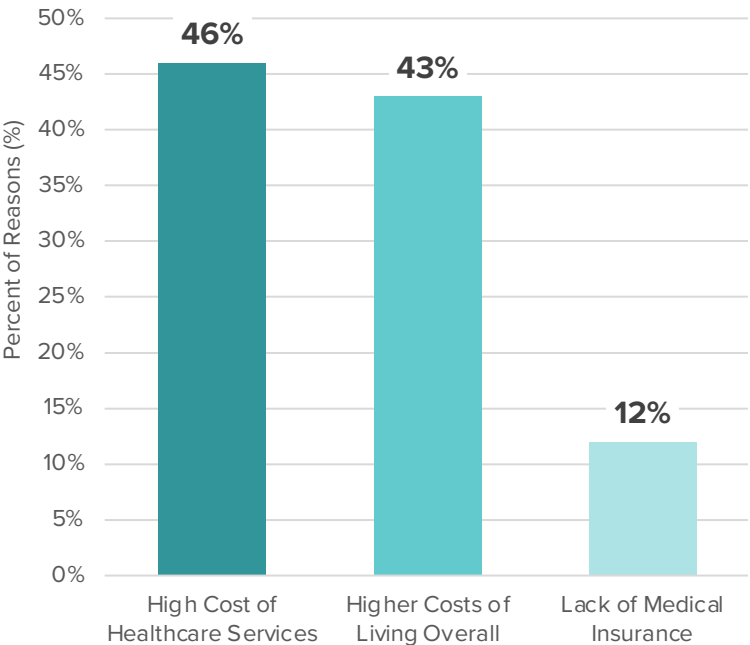
Cost Overtakes COVID-19 as Primary Driver of Forgone Care

In 2020, a greater share of consumers deferred care due to concerns about the pandemic than cost. However, in 2022, this trend reversed, and the share of consumers who deferred care due to COVID-19 fell by 11 percentage points. Cost — both of overall living and of healthcare services — has returned as the primary reason for deferring care. Continued avoidance of care over an extended period of time (over three years) will further exacerbate the declining health status of Americans.

SHARE OF CONSUMERS WHO REPORT DEFERRING CARE DUE TO COVID-19 VERSUS COST, 2020-2022



MOST COMMON REASONS CONSUMERS CHOSE TO DEFER CARE, 2022

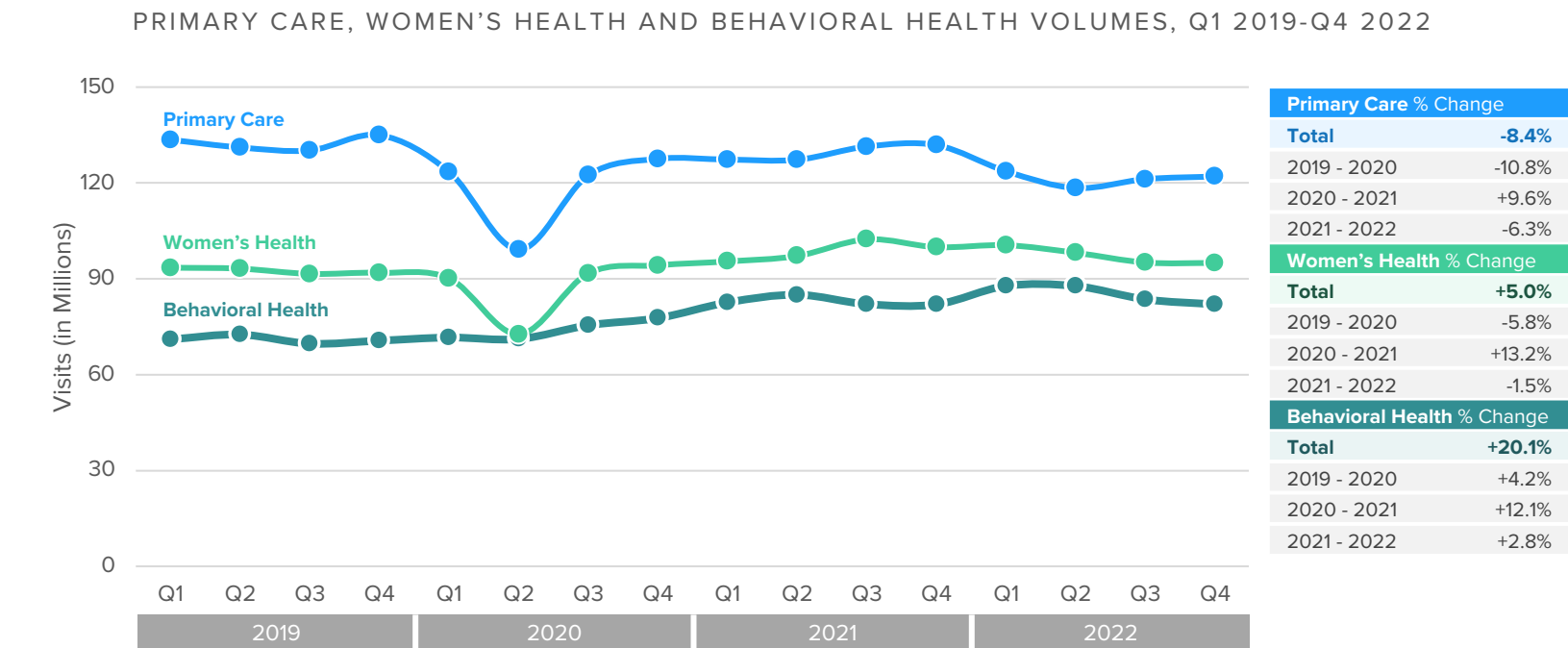


Source: QualtricsXM, *Rising Costs Replace Pandemic Concerns As Top Reason Americans Defer Healthcare*.

TREND 2: UNRAVELING HEALTH

Primary Care Volumes Have Not Returned to Pre-Pandemic Levels

From 2019 to 2022, primary care volumes (-8.4%) declined, while women’s health volumes (+5.0%) and behavioral health volumes (+20.1%) increased. The reduction in preventive care compounded by the increase in behavioral health demand and constrained behavioral health provider supply will inevitably result in greater morbidity and mortality, as already evidenced by increasing mortality in younger adults.

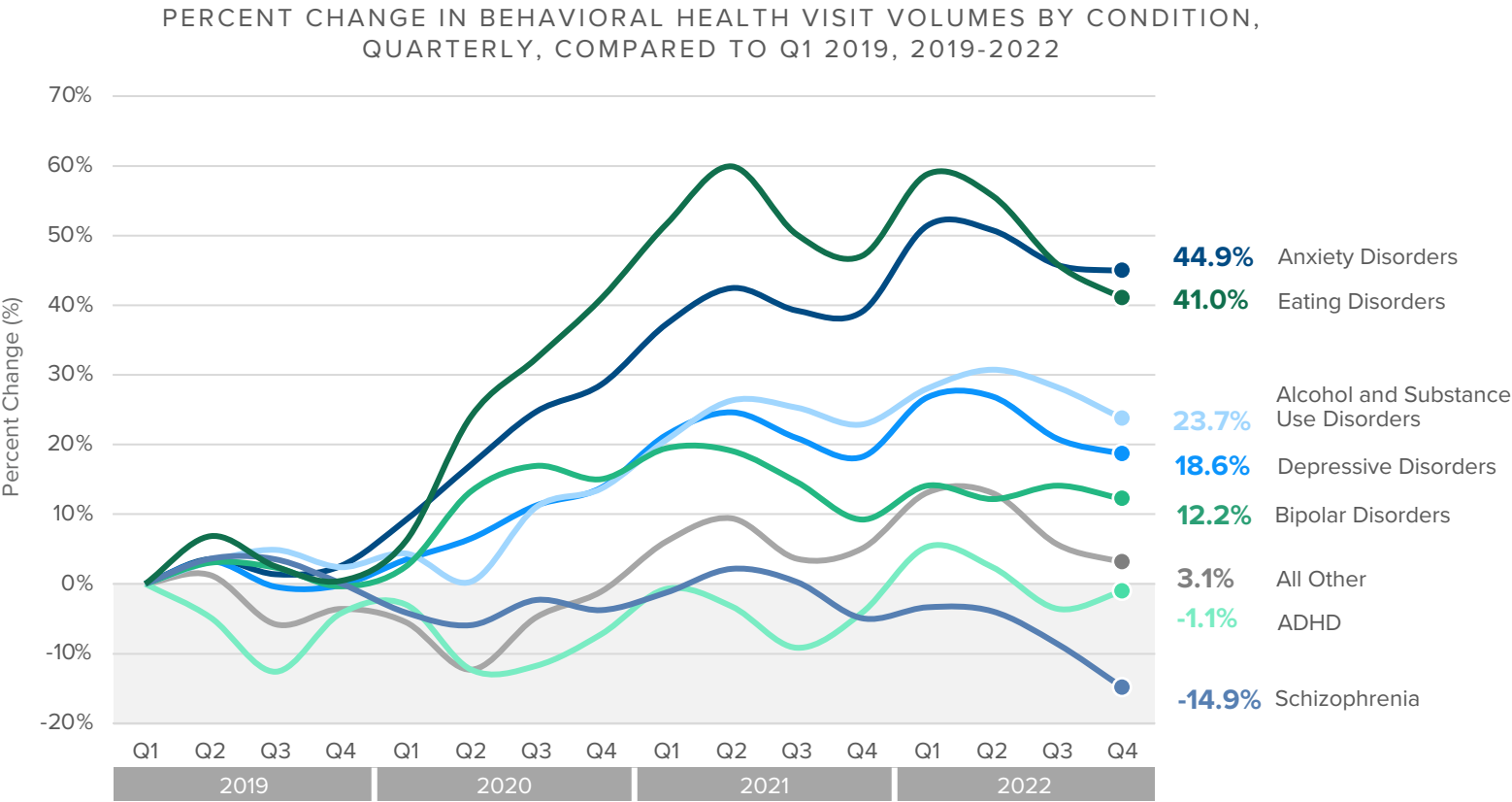


Source: Trilliant Health national all-payer claims database.

TREND 2: UNRAVELING HEALTH

Behavioral Health Demand Varies by Condition, With Most Trending Upwards

Q4 2022 visit volumes for anxiety disorders (+44.9%), eating disorders (+41.0%), alcohol and substance use disorders (+23.7%), depressive disorders (+18.6%) and bipolar disorders (+12.2%) have all consistently trended upwards since Q1 2019.

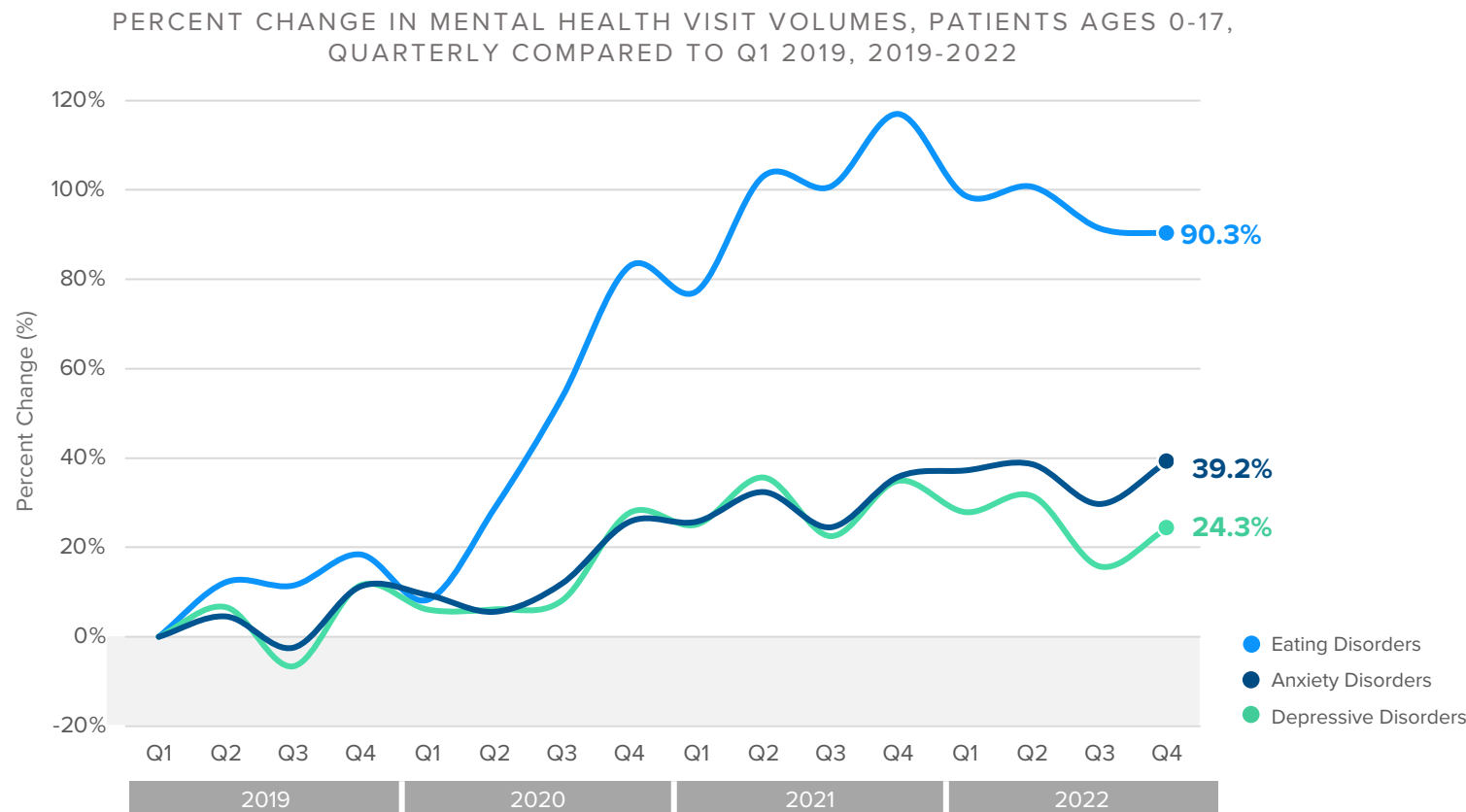


Source: Trilliant Health national all-payer claims database.

TREND 2: UNRAVELING HEALTH

Select Behavioral Health Indications Are Increasing Disproportionately in Youth

Since the onset of the pandemic, visits for eating disorders (+90.3%), anxiety disorders (+39.2%) and depressive disorders (+24.3%) among patients below age 18 increased at rates higher than the overall population.



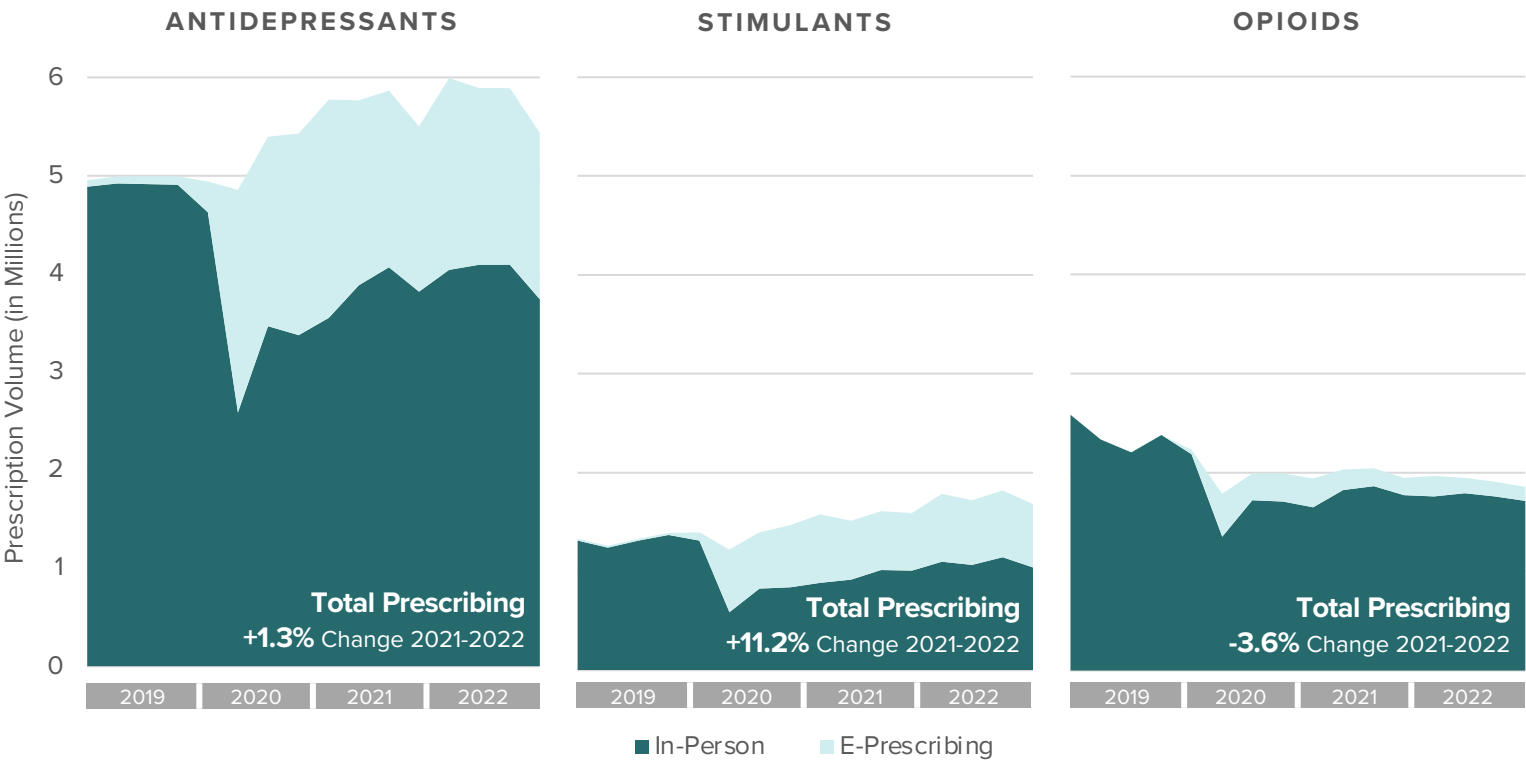
Source: Trilliant Health national all-payer claims database.

TREND 2: UNRAVELING HEALTH

Prescribing Volume for Certain Drug Classes Has Increased

As a result of the COVID-19 pandemic, e-prescribing for a broader set of prescription drugs was permitted due to regulatory flexibilities. While e-prescribing of antidepressants (-4.5%), stimulants (7.4%) and opioids (-24.3%) changed in 2022 from 2021, the share of total prescribing was higher for antidepressants (1.3%) and stimulants (11.2%) but lower for opioids (-3.6%).

PRESCRIBING VOLUME AND SHARE OF E-PRESCRIBING FOR SELECT DRUG CATEGORIES, 2019-2022



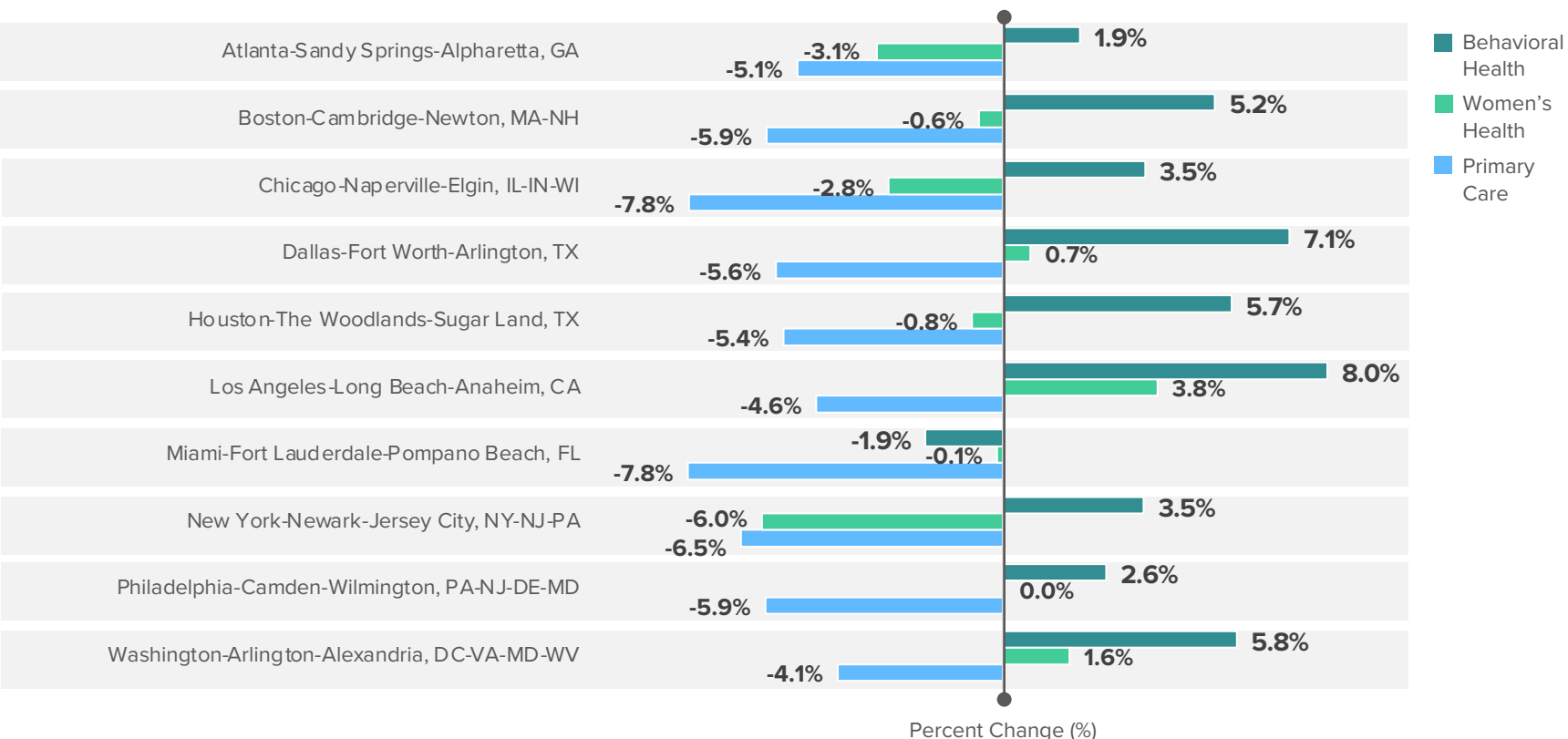
Source: Trilliant Health national all-payer claims database.

TREND 2: UNRAVELING HEALTH

Decline in Primary and Preventive Care Is Consistent Across Markets

Across large CBSAs, primary care utilization declined from 2021 to 2022, ranging from -7.8% (Miami, Chicago) to -4.1% (Washington, DC). This trend persists despite large metropolitan markets having a larger footprint of new entrants (e.g., CVS) offering access to select primary care services. Conversely, behavioral health utilization increased in nine of the ten markets, ranging from -1.9% (Miami) to 8.0% (Los Angeles).

MARKET-LEVEL CARE VOLUMES, PERCENT CHANGE 2021-2022



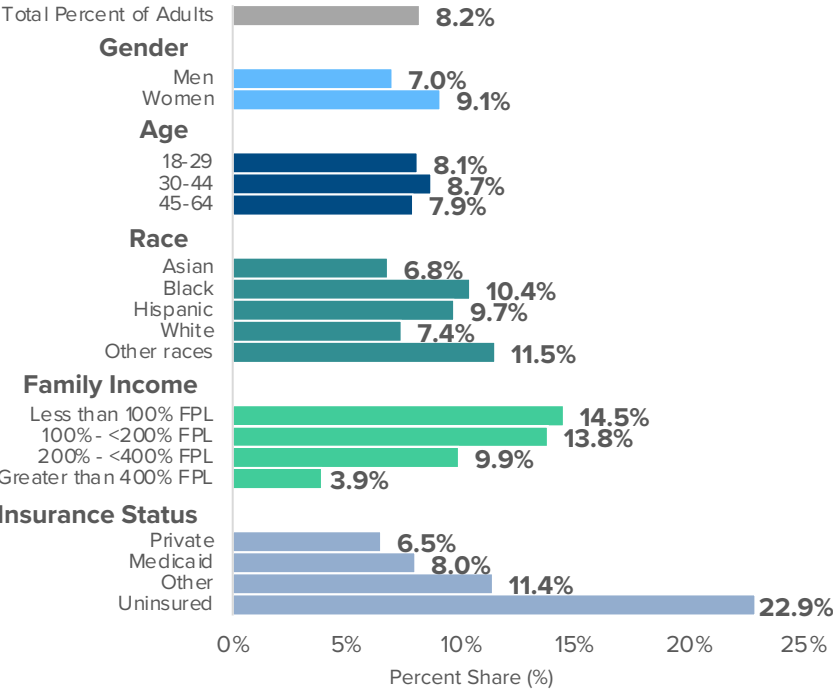
Source: Trilliant Health national all-payer claims database.

TREND 2: UNRAVELING HEALTH

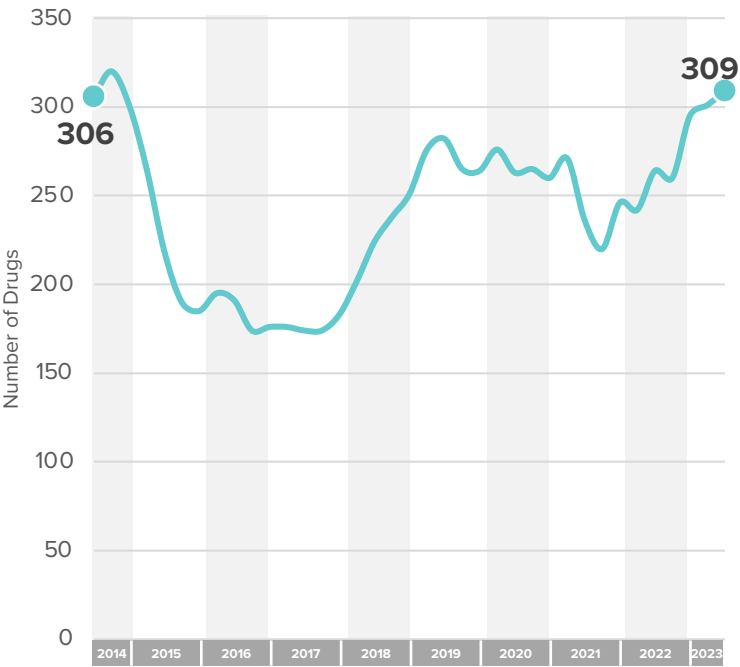
Amid Rising Prices and Drug Shortages, Adherence is Declining

In 2021, 9.2M U.S. adults reported non-adherence with prescription medications due to cost, with more women, minority groups, low-income adults and the uninsured disproportionately affected. Additionally, the number of national drug shortages reached a ten-year high in Q2 2023 at 309 drugs. Regardless of the cause, the trend of declining prescription adherence mirrors the declining health status of Americans.

PERCENT OF ADULTS AGES 18–64 WHO USED PRESCRIPTION MEDICATION IN THE PAST YEAR BUT DID NOT ADHERE TO THEIR PRESCRIBED DOSAGE TO SAVE ON COSTS, 2021



ACTIVE NATIONAL DRUG SHORTAGES BY QUARTER, Q2 2014-Q2 2023



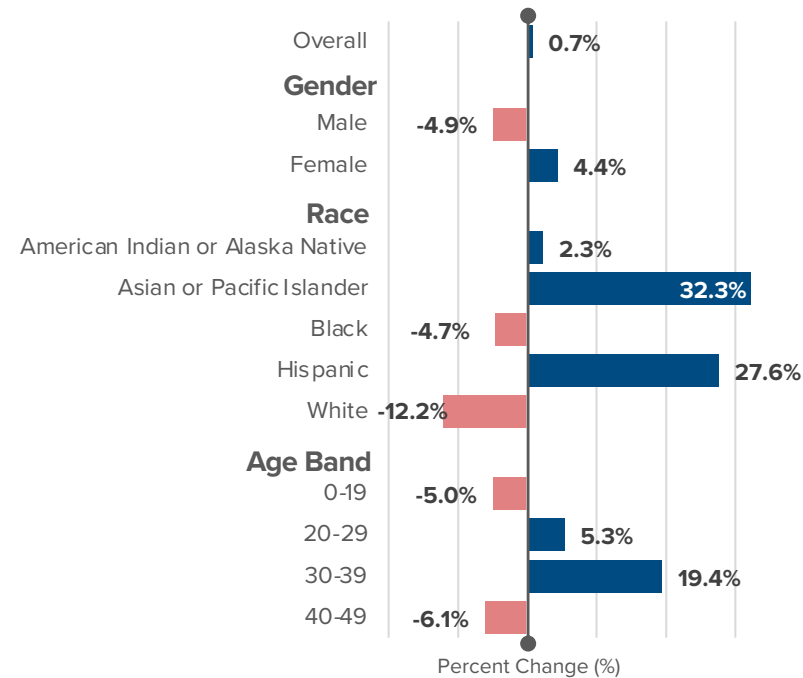
Note: FPL denotes Federal Poverty Level.
Source: Centers for Disease Control and Prevention NCHS Data Brief; American Society of Health-System Pharmacists, *Drug Shortage Statistics*.

TREND 2: UNRAVELING HEALTH

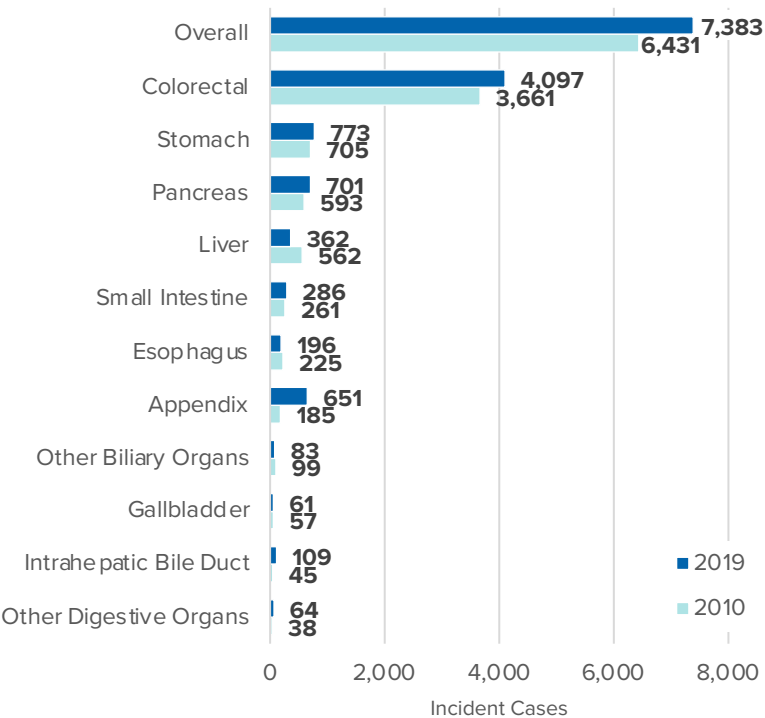
The Incidence of Early-Onset Cancer Has Been, and Will Likely Continue, Increasing

Rates of early-onset cancers are growing, especially for adults ages 30-39, for whom incidence increased by almost 20% between 2010 and 2019. Given that primary care — where most screening is coordinated — volumes declined by 6.3% from 2021 to 2022, the likelihood of diagnosing early-onset cancer has dropped and will likely manifest in later stage diagnosis and increased mortality.

PERCENT CHANGE IN INCIDENCE OF EARLY-ONSET CANCERS BETWEEN 2010 AND 2019, BY DEMOGRAPHICS



INCIDENT CASES OF EARLY-ONSET CANCER IN 2010 AND 2019, BY ORGAN

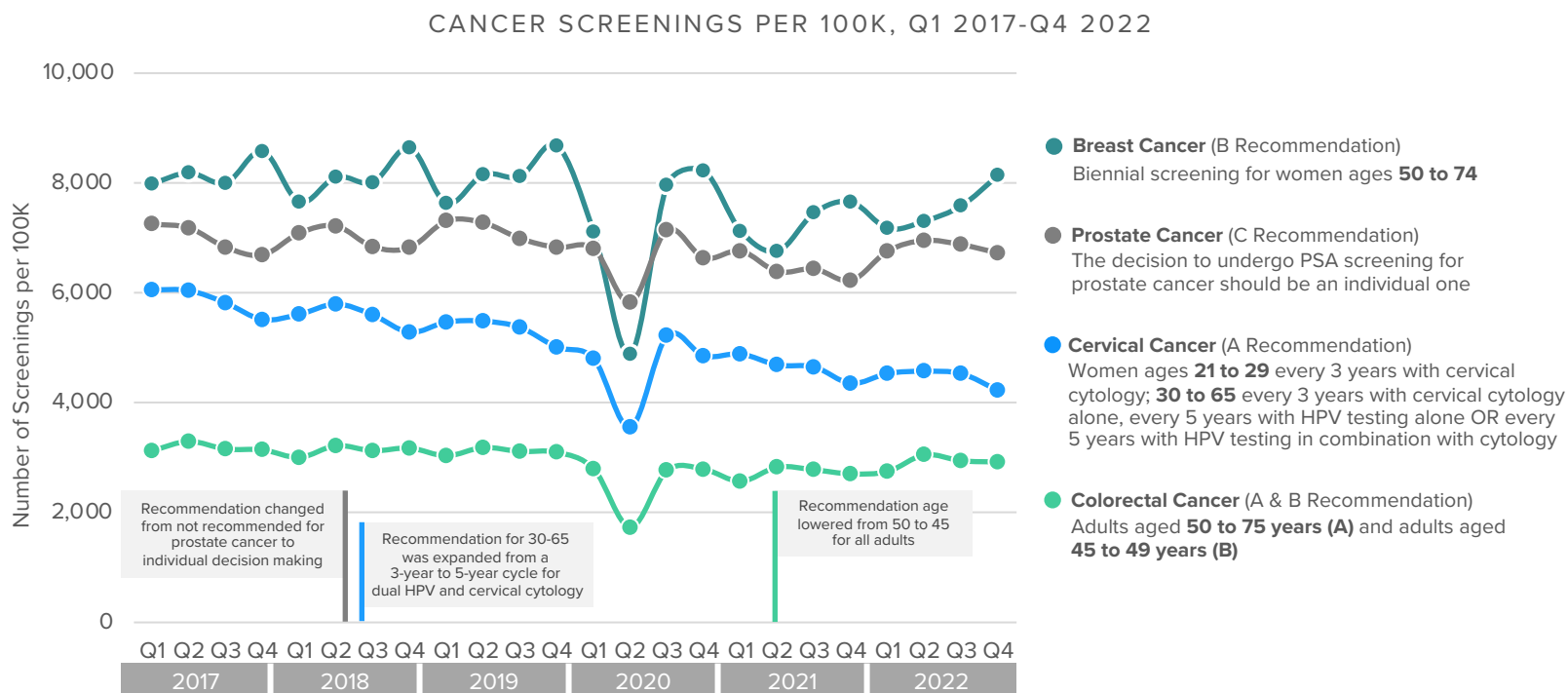


Source: Koh et al, Patterns in Cancer Incidence Among People Younger Than 50 Years in the US, 2010 to 2019, JAMA, 2023.

TREND 2: UNRAVELING HEALTH

Cancer Screening Is Not Necessarily Concordant With Evidence-Based Guidelines

The U.S. Preventive Services Task Force has made guideline changes to certain cancer screenings with A or B grades in recent years. For example, adjustments to cervical cancer screening guidelines to add a five-year screening period was followed by expected lower screening rates, while lowering the colorectal screening recommendation age to 45 has not yet changed the volume trajectory. Conversely, prostate cancer screening is *not* broadly recommended, but screening rates have remained consistently high. To what extent are providers adjusting their practice patterns to treat patients using the latest screening guidelines? Or are physicians relying on patients to keep up with the nuances of individual screening recommendation changes?

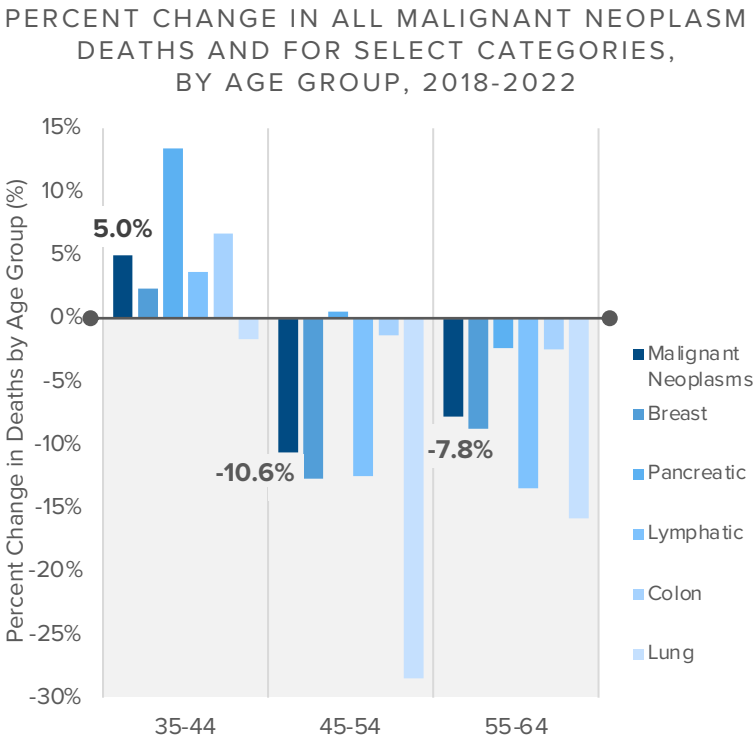
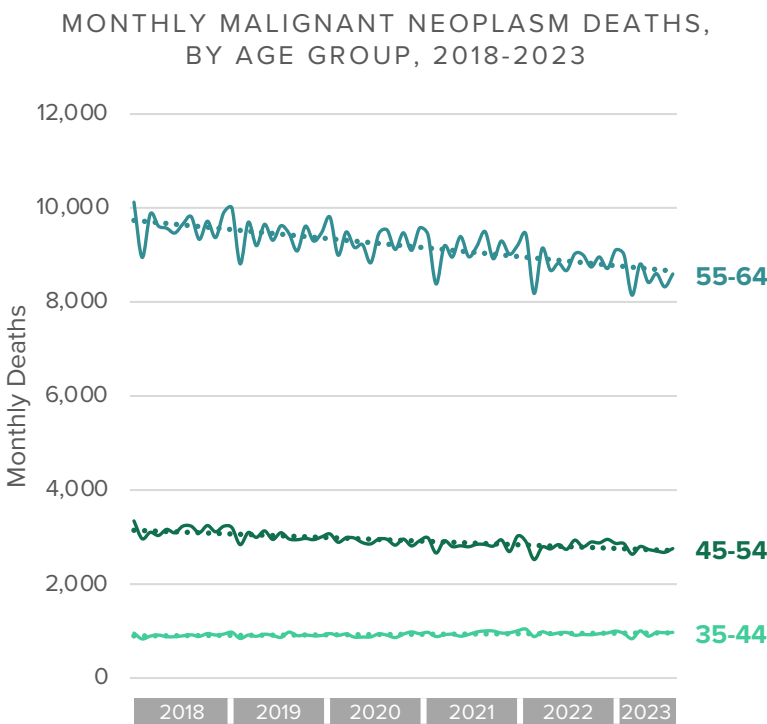


Note: In May 2023, the U.S. Preventive Services Task Force issued a draft recommendation statement that would lower the breast cancer screening age from 50 to 40.
Source: Trilliant Health national all-payer claims database; U.S. Preventive Services Task Force.

TREND 2: UNRAVELING HEALTH

Cancer Mortality Increasing for Americans Ages 35-44, While Decreasing for Older Age Groups

While national cancer mortality rates have been declining for many years, the variation in rate by age has changed in more recent years. From 2018 to 2022, malignant neoplasm deaths were up 5.0% for ages 35-44 – an age cohort that historically is less affected by many cancers as reflected in current screening guidelines. Conversely, malignant neoplasm deaths have declined year-over-year for older age groups – ages 45-54 and 55-64.

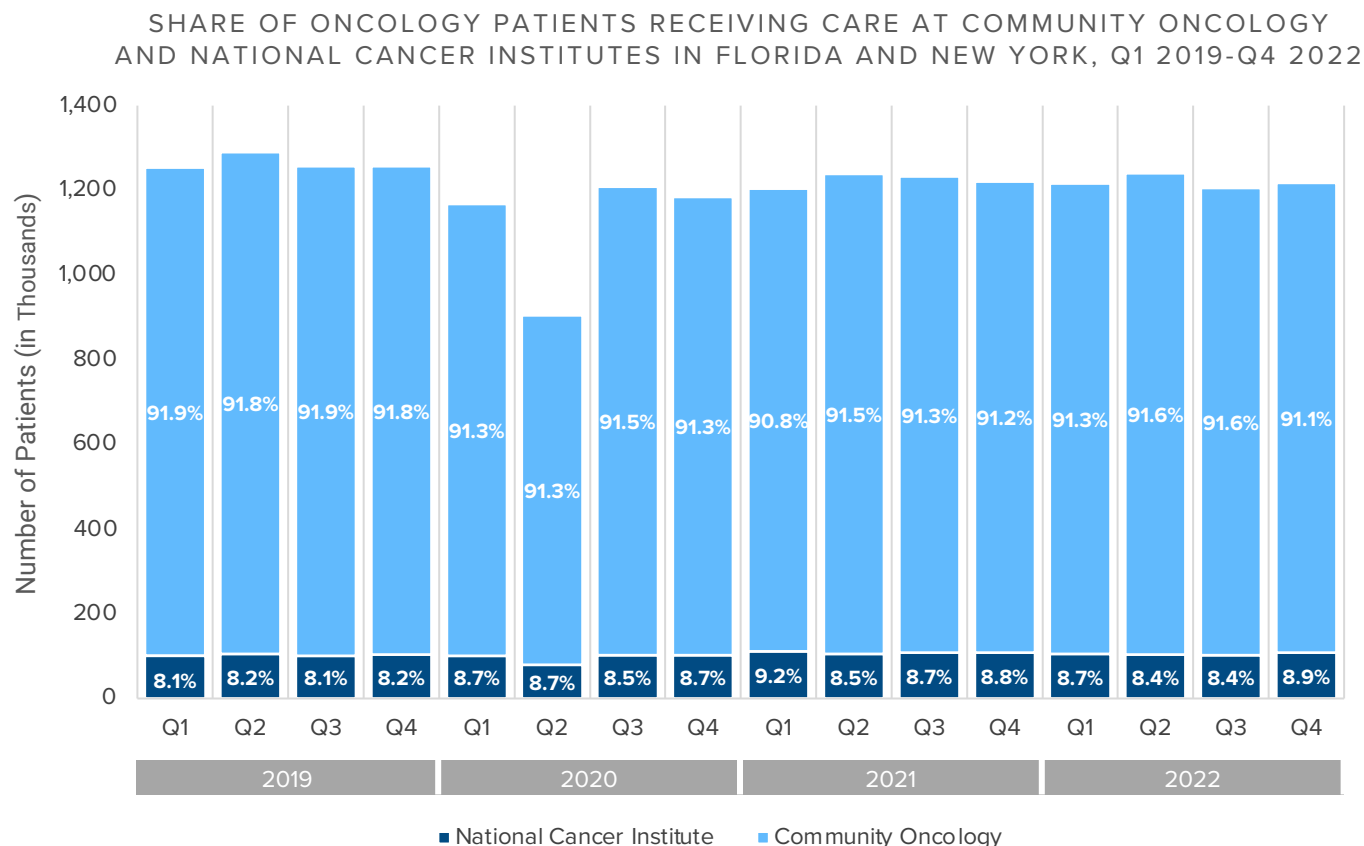


Source: Centers for Disease Control and Prevention WONDER database.

TREND 2: UNRAVELING HEALTH

Share of Care Delivered at NCIs Is Growing Slightly

Despite signals of increasing prevalence of early-onset cancer, the share of oncology patients receiving care from NCIs in Florida and New York compared to community oncology sites has remained mostly flat but increased slightly from a 2019 quarterly average of 8.1% to a 2022 quarterly average of 8.6%.



Note: NCI denotes National Cancer Institute. Florida and New York were selected as two large, geographically diverse states for the analysis. Patients can receive care at both National Cancer Institutes and community oncology providers.

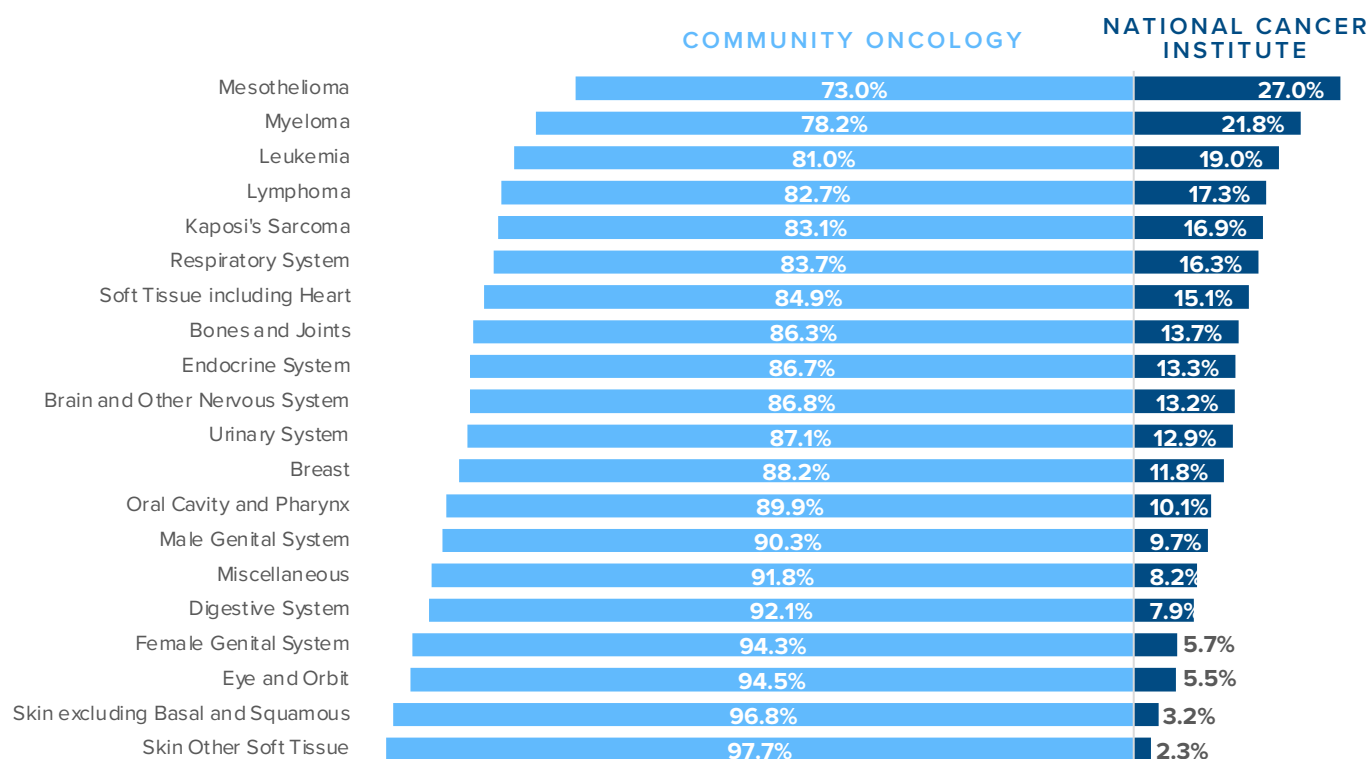
Source: Trilliant Health national all-payer claims database.

TREND 2: UNRAVELING HEALTH

Care at NCIs Is Greatest for Blood Cancers and Mesothelioma

The share of oncology patients receiving care from NCIs in Florida and New York compared to community oncology sites was highest for mesothelioma (27.0%), myeloma (21.8%), leukemia (19.0%) and lymphoma (17.3%). In contrast, eye and skin cancers had the lowest share of care at NCIs.

SHARE OF ONCOLOGY PATIENTS RECEIVING CARE AT COMMUNITY ONCOLOGY
AND NATIONAL CANCER INSTITUTES IN FLORIDA AND NEW YORK BY CANCER TYPE, Q4 2022



Note: NCI denotes National Cancer Institute. Florida and New York were selected as two large, geographic diverse states for the analysis.

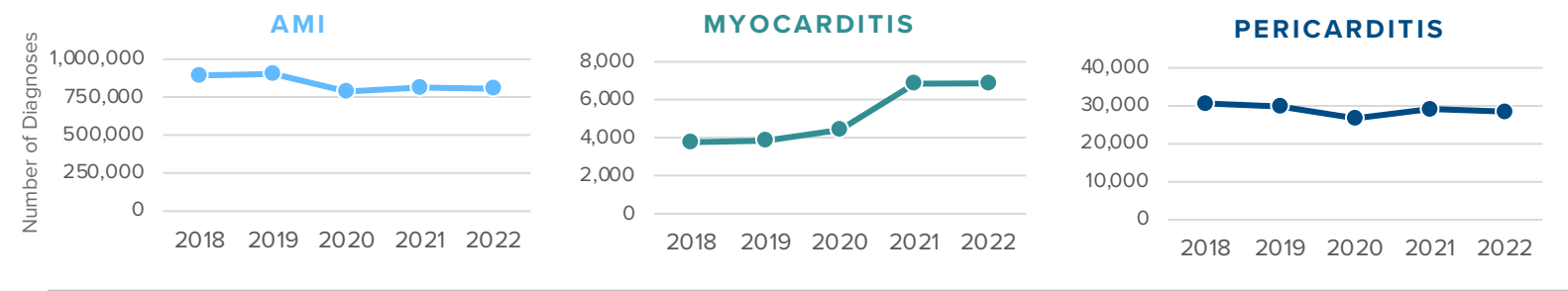
Source: Trilliant Health national all-payer claims database.

TREND 2: UNRAVELING HEALTH

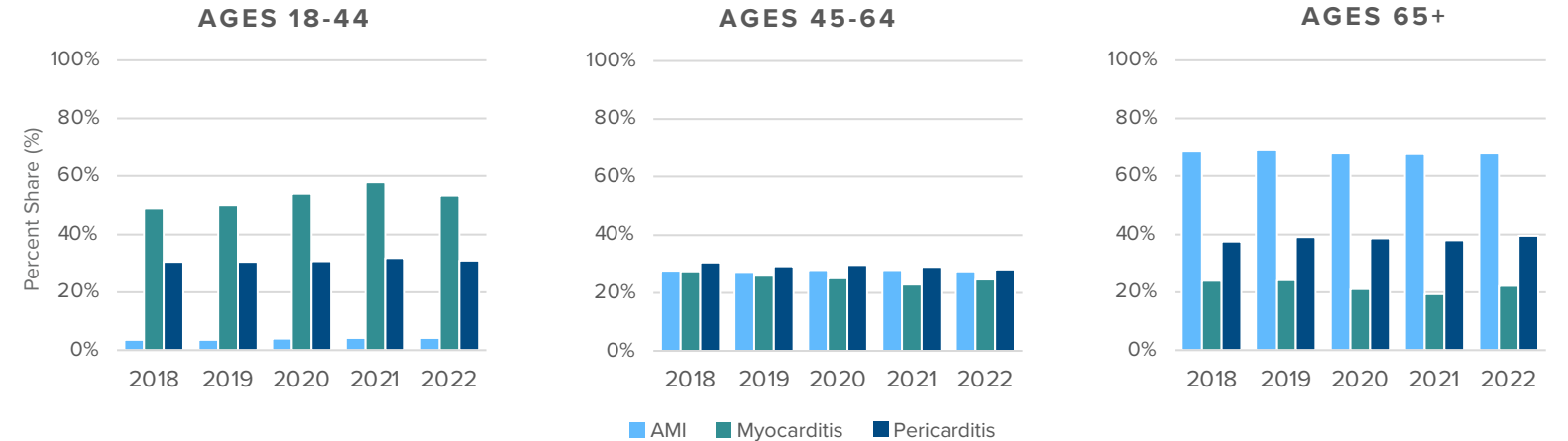
Myocarditis Is Occurring More Frequently in Younger Age Groups

While volumes for acute myocardial infarction and pericarditis have remained relatively steady since 2018, there has been an observed increase for myocarditis. Of all myocarditis cases in the 18 and older population, the percentage of myocarditis in the 18-44 age cohort increased from 48.8% in 2018 to 53.2% in 2022.

VOLUME OF SELECT CARDIAC DIAGNOSES, PATIENTS AGES 18 AND OLDER, 2018-2022



SHARE OF SELECT CARDIAC DIAGNOSES, BY AGE BAND, 2018-2022



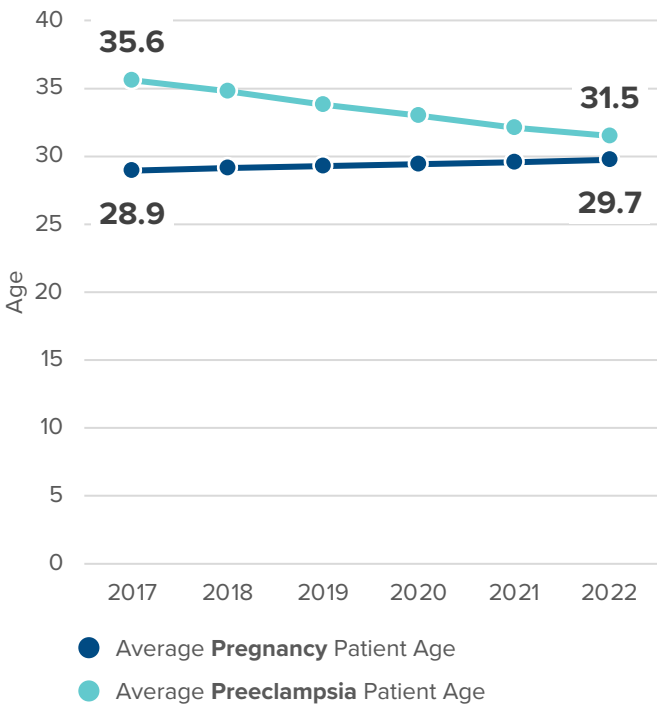
Note: AMI denotes acute myocardial infarction.
Source: Trilliant Health national all-payer claims database.

TREND 2: UNRAVELING HEALTH

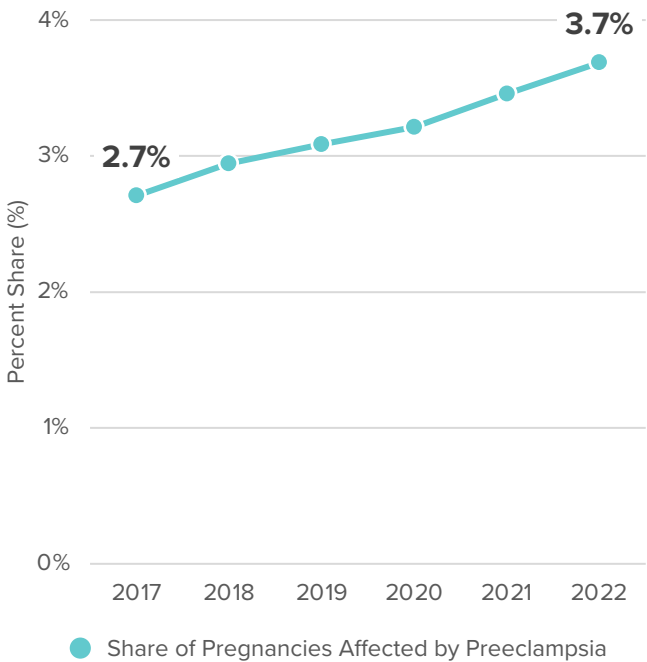
Share of Pregnancies with Preeclampsia Is Increasing, Particularly in Younger Women

The average pregnancy age increased by 2.8% from 2017 to 2022. However, during the same period, the average age of patients affected by preeclampsia decreased by 11.5%. Additionally, there was a 1.0 percentage point increase in the share of pregnancies with preeclampsia among all pregnancies from 2017 to 2022.

AVERAGE PATIENT AGE, ALL PREGNANCY AND PATIENTS WITH PREECLAMPSIA, 2017-2022



SHARE OF PREGNANCIES WITH PREECLAMPSIA, 2017-2022



Source: Trilliant Health national all-payer claims database.

TREND 3

Drug and Diagnostic Investments Signal Emerging Patient Needs

TREND 3: DRUGS AND DIAGNOSTICS

Most Recently Approved Drugs Target Genetic Diseases and Cancer

The field of cellular and genetic therapies is rapidly progressing. Since the start of 2023, many novel medications have received FDA approval, including treatments for solid tumors and hematologic malignancies, as well as rare genetic disorders.

FDA NOVEL DRUG APPROVALS, Q1-Q3 2023

Q1	<div><p>LEQEMBI (lecanemab-irmb) 100 mg/mL injection for intravenous use</p></div> <div><p>ORSERDU elacestrant</p></div>	<div><p>SKYCLARYS (omaveloxolone) 50 mg capsules</p></div> <div><p>ZNYZ retifanlimab-xxxx injection 500 mg</p></div>	<div><p>Brenzavvy (bexagliflozin) 20 mg tablets</p></div> <div><p><i>Now Approved</i> REZZAYO (rezafungin for injection) <small>Available Summer 2023</small></p></div>	<div><p>Zavzpret (zavvegesartan) 10 mg tablets</p></div> <div><p>Jesduvrog (daprodustat) tablets 1 mg • 2 mg • 4 mg • 6 mg • 8 mg</p></div>	<div><p>Jaypirca pirtobrutinib 150 mg tablets</p></div> <div><p>Joenja leniolisib</p></div>	<div><p>Daybue (trofinetide)</p></div> <div><p>Lamzede Velmanase Alfa</p></div>	<div><p>FILSPARI (sparsentan) 200 mg/400 mg tablets</p></div>
Q2	<div><p>QALSODY (tofersen) 100mg/15mL injection</p></div> <div><p><i>NEW!</i> Miebo (perfluorooctane ophthalmic solution)</p></div>	<div><p>POSLUMA flotufolastat F 18 injection</p></div> <div><p>epkinly epcoritamab-bysp SUBCUTANEOUS INJECTION 40mg/40mg</p></div>	<div><p>ELFABRIO (pegunigalsidase alfa-irwi)</p></div> <div><p>RYSTIGGO (rozanolixizumab-noli) Injection For Subcutaneous Use</p></div>	<div><p>inpefa sotagliflozin tablets</p></div> <div><p>ngenla (somatropin) injection</p></div>	<div><p>COLUMVI glofitamab-gxbm injection for intravenous use 2.5 mg/10 mg</p></div> <div><p>XACDURO (sulbactam for injection; durlobactam for injection), co-packaged for intravenous use</p></div>	<div><p>Litfulto (ritilecitinib) capsules 50mg</p></div> <div><p>Paxlovid (nirmatrelvir 200mg / ritonavir 100mg)</p></div>	<div><p>VEOZAH (fezolinetant) tablets 45mg</p></div>
Q3	<div><p>Beyfortus</p></div> <div><p>xdemvu</p></div>	<div><p>TALVEY (talquetamab-tgvs) injection for subcutaneous use 2 mg/mL and 40 mg/mL</p></div> <div><p>ZURZUVAE</p></div>	<div><p>VANFLYTA (quizartinib) tablets</p></div> <div><p>Veopoz (pozelimab-bbfg) injection</p></div>	<div><p>ELREXFIO (elranatamab-bcmm) injection for subcutaneous use 44 mg/1 mL, 70 mg/1.8 mL</p></div> <div><p>izervay (avacincaptad pegol intravitreal solution)</p></div>	<div><p>sohonos palovarotene capsules</p></div>		

DRUG TYPES FOR APPROVED DRUGS

GENETIC	ONCOLOGY	CHRONIC	INFECTIOUS DISEASE	OTHER
8	9	8	4	6

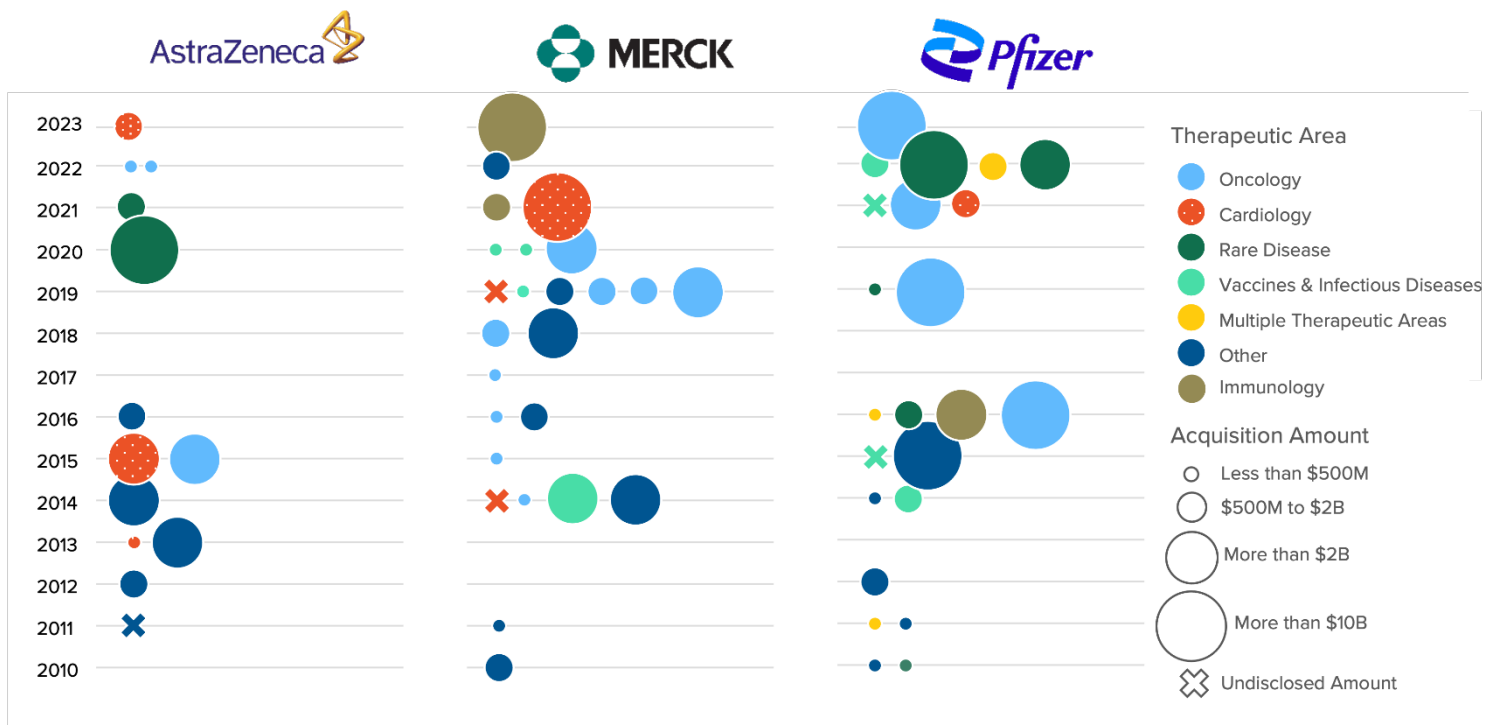
Note: FDA denotes U.S. Food and Drug Administration.
Source: U.S Food and Drug Administration.

TREND 3: DRUGS AND DIAGNOSTICS

Oncology and Rare Disease Dominate Life Sciences M&A

Since 2021, Pfizer has significantly invested in building their footprint in immunology, oncology and rare disease, with investments totaling \$62.3B. In 2023, Pfizer invested \$43B in oncology through its acquisition of Seagen, and Merck invested \$10.8B in immunology by acquiring Prometheus Biosciences. To what extent are these M&A decisions based on signals suggesting an increase in patient need — or demand — for cancer care versus improving existing treatments?

M&A ACTIVITY BY THERAPEUTIC AREA FOR
THREE MAJOR BIOPHARMACEUTICAL MANUFACTURERS, 2010-2023



Note: "Multiple" indicates the acquired company specialized in more than one featured therapeutic area. "Other" includes areas such as pain, respiratory, ophthalmology, neurology, biosimilars, etc.

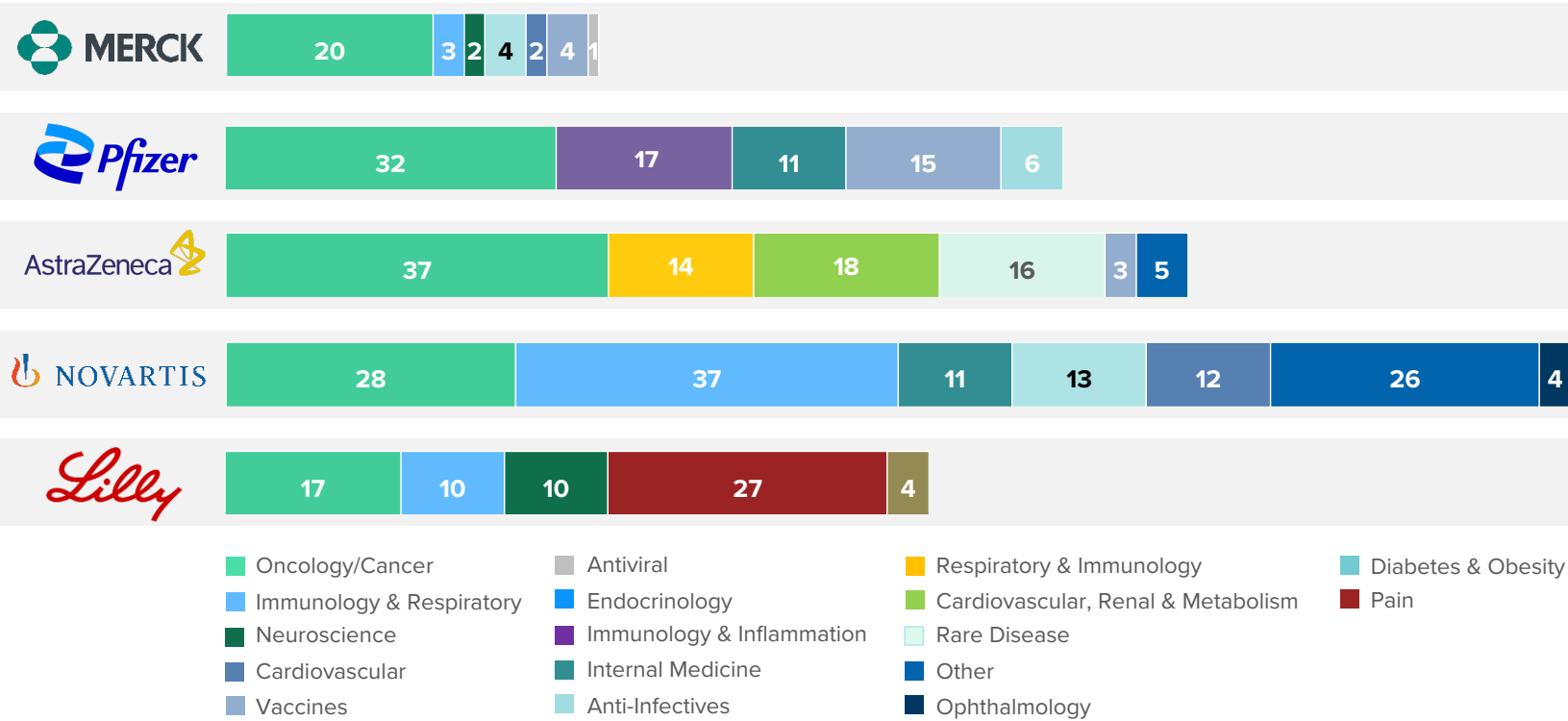
Source: Company press releases.

TREND 3: DRUGS AND DIAGNOSTICS

Manufacturer Pipelines Reinforce the Focus on Oncology, Immunology and Rare Disease

Merck, Pfizer and AstraZeneca are focusing on oncology, with cancer treatments accounting for over 39% of Pfizer’s and AstraZeneca’s clinical development pipelines and over 55% of Merck’s pipeline. Novartis and Eli Lilly are also investing heavily in the oncology market but are focusing more on immunology and pain.

CLINICAL DEVELOPMENT PIPELINES OF MAJOR BIOPHARMACEUTICAL MANUFACTURERS
AS OF AUGUST 2023



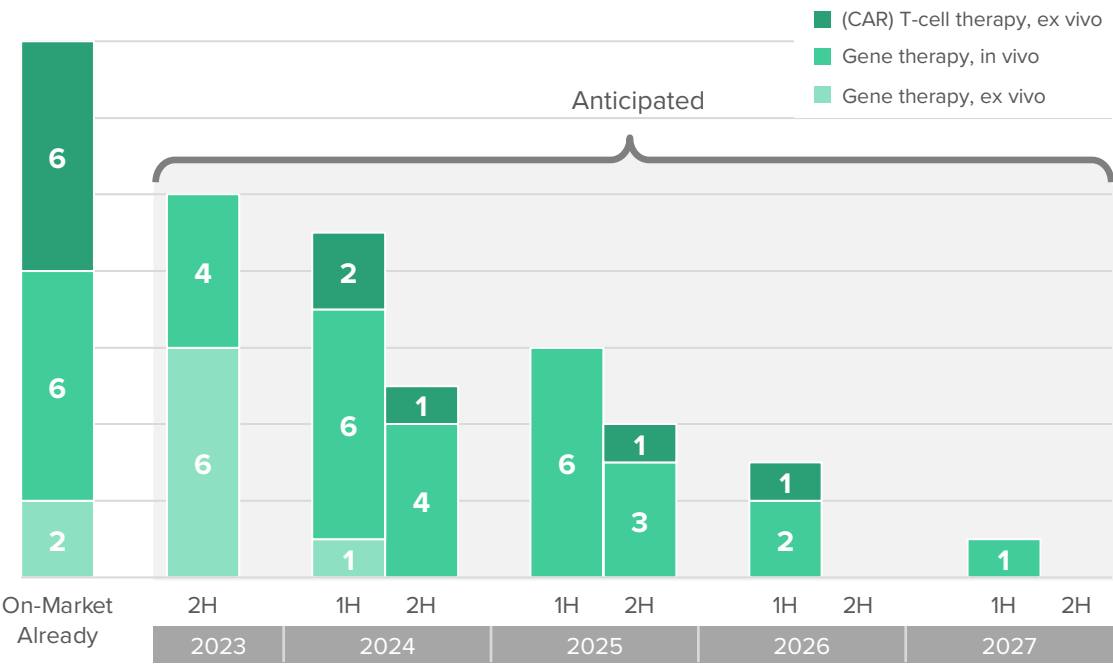
Note: Some products and projects in these pipelines are new molecular entities, other are indications and different formulations for marketed products.
Source: Company clinical development pipelines.

TREND 3: DRUGS AND DIAGNOSTICS

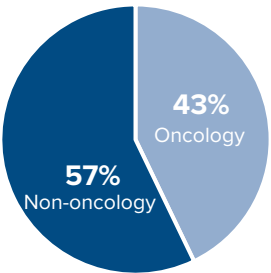
Non-Oncology Cell and Gene Therapies Predominate the Near-Term Pipeline

As CGT manufacturers increasingly focus on rare disease instead of cancer, the first gene therapy for sickle cell disease and treatments for Wilson disease and age-related macular degeneration could soon be approved. An estimated 56M U.S. patients are candidates for the 33 CGTs (26 non-oncology drugs and seven oncology drugs) projected to launch by 2027.

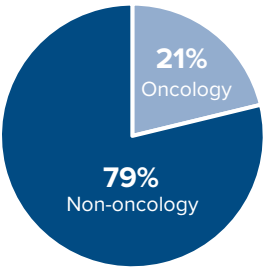
CELL AND GENE THERAPIES ALREADY ON MARKET OR WITH PROJECTED U.S. LAUNCH YEARS BETWEEN 2023 AND 2027



ON-MARKET THERAPIES, BY INDICATION



ANTIPACTED THERAPIES, BY INDICATION

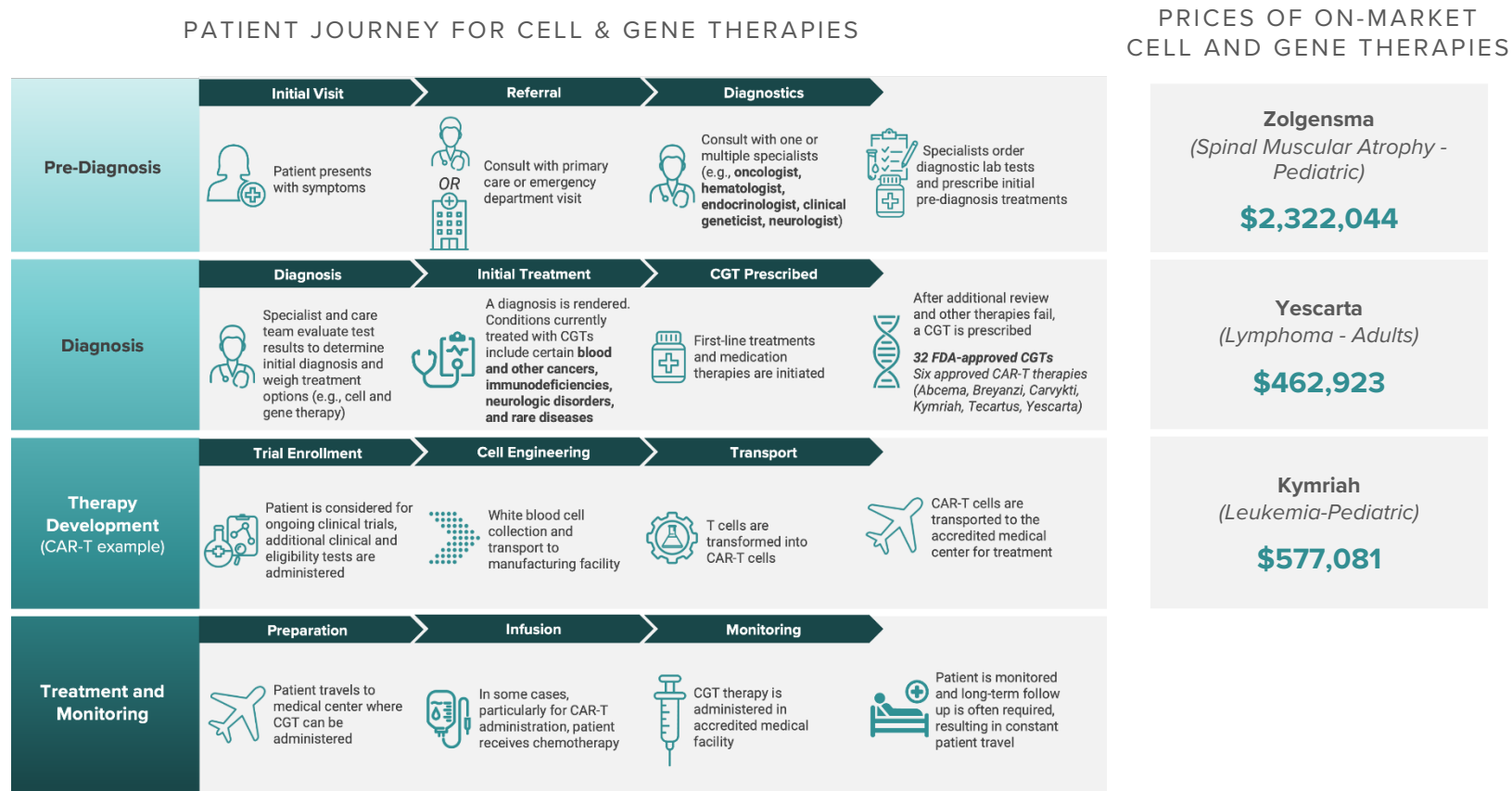


Note: CGT denotes cell and gene therapy.
Source: CVS, Gene Therapy Pipeline, Q4 2022 – Q1 2027; Prime Therapeutics; Institute for Clinical and Economic Review Report on Gene Therapy.

TREND 3: DRUGS AND DIAGNOSTICS

The Complex and Expensive Patient Journey for Cell and Gene Therapy Is Slowing the Adoption of New Treatments

Patients needing CGTs must overcome numerous barriers to receive care, including high costs, supply shortages, administration challenges and a very involved patient journey. While CGTs could potentially revolutionize treatment of cancer and rare diseases, these obstacles continue to impact the pace at which these therapies are adopted.



Note: CGT denotes cell and gene therapy.
Source: Food & Drug Administration, American Society of Gene & Cell Therapy, Avalere Health.

TREND 3: DRUGS AND DIAGNOSTICS

The Market for Early Cancer Detection Is Expanding

Two of the largest cancer-related funding rounds in 2022 were for diagnostic test makers, procuring a combined \$515M. Over the next ten years, the global market for breast cancer liquid biopsy is projected to grow at a CAGR of 22.5%, with the North American region representing a 35% share of the total global market.

FIVE LARGEST CANCER-RELATED FUNDING ROUNDS IN 2022, BY COMPANY FOCUS

freonoma \$290M

TREELINE BIOSCIENCES \$261.3M

DELFI \$225M

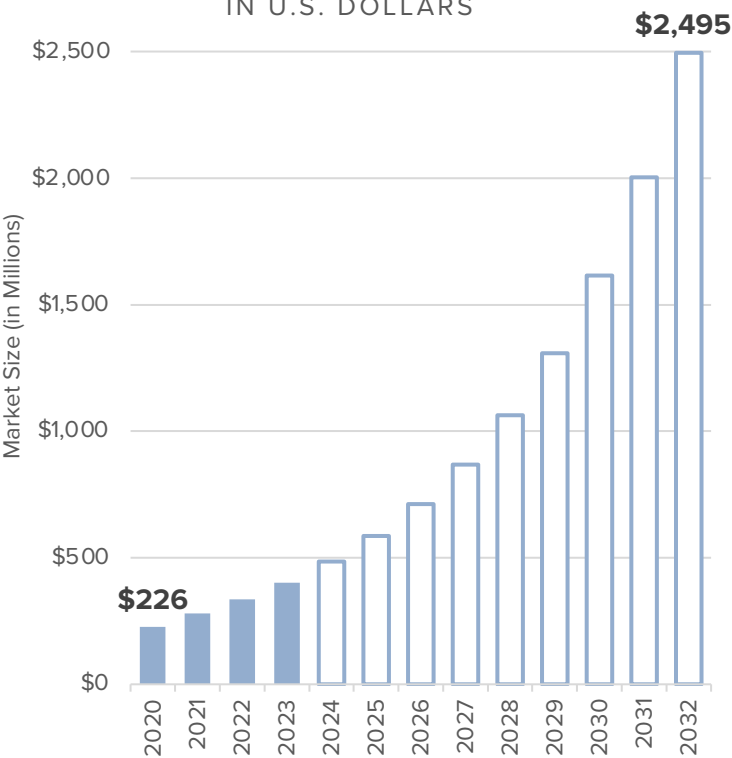
ArsenalBio \$220.8M

PRECISION BIOSCIENCES \$19.1B

■ Diagnostic company ■ Non-diagnostic company

Note: CAGR denotes compound annual growth rate.
Source: Crunchbase; Acumen Report on Breast Cancer Liquid Biopsy Market.

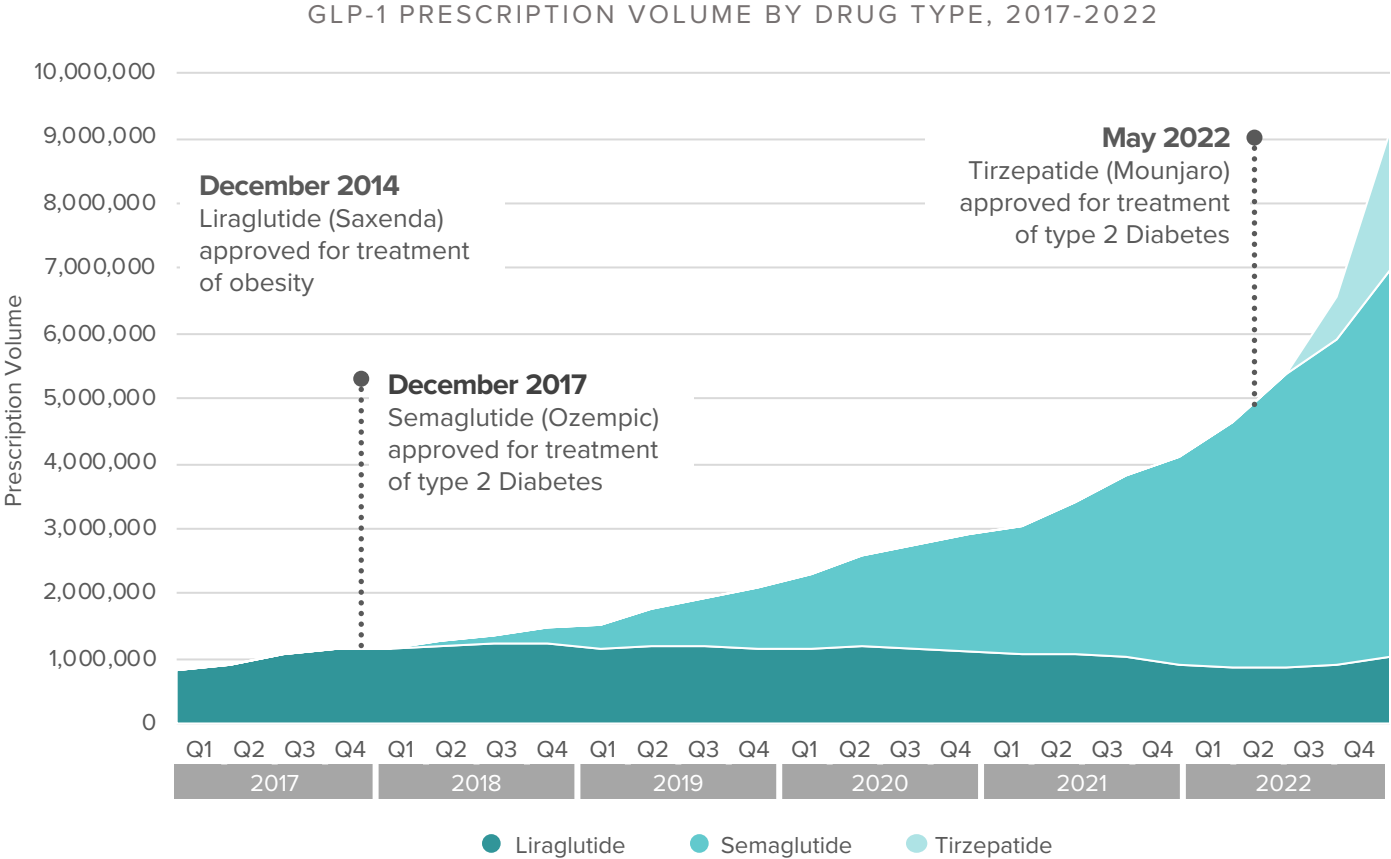
GLOBAL BREAST CANCER LIQUID BIOPSY MARKET, 2020-2032, IN U.S. DOLLARS



TREND 3: DRUGS AND DIAGNOSTICS

Ozempic® Is the Most Prescribed GLP-1

National spending for semaglutide, the peptide name for brand drugs like Ozempic® and Wegovy®, totaled \$10.7B in 2021, the fourth highest across drug classes. Between Q1 2020 and Q4 2022, prescription volumes for GLP-1 medications have increased 300%. Since its approval in Q4 2017, Ozempic® (semaglutide) has grown to account for 65.4% of all GLP-1 prescription volume.

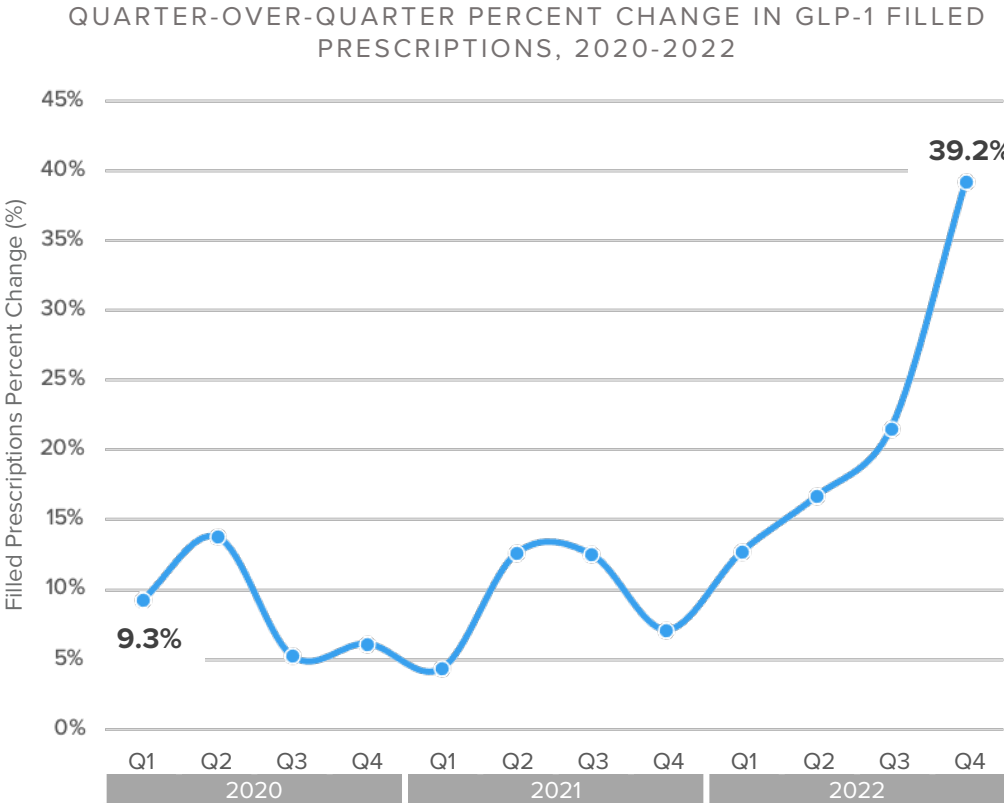


Note: GLP-1 denotes glucagon-like peptide-1 receptor agonists. Analysis includes injectable drugs only.
Source: Trilliant Health national all-payer claims database; Tichy et. al., National trends in prescription drug expenditures and projections for 2022, *American Journal of Health-System Pharmacy*, 2022.

TREND 3: DRUGS AND DIAGNOSTICS

Increase in GLP-1 Use Is Not Correlated With Clinical Indication

From 2020 to 2022, the quarter-over-quarter percent change for GLP-1 prescriptions has increased but the rate of future utilization will depend on manufacturer supply, cost and prioritization of on- and off-label use. Notably, just over half of patients taking these medications have a history of type 2 diabetes or have an associated medical visit with their prescription.



53.8%

The proportion of patients on a GLP-1 medication in 2022 with a history of type 2 diabetes

52.6%

The proportion of patients that had a traditional medical visit associated with their 2022 GLP-1 prescription

Note: A traditional medical visit is defined as a medical visit that occurs within three days of a written GLP-1 prescription; GLP-1 denotes glucagon-like peptide-1 receptor agonists. Analysis includes injectable drugs only.
Source: Trilliant Health national all-payer claims database.

TREND 3: DRUGS AND DIAGNOSTICS

Majority of GLP-1 Patients Are Female, Ages 45-64

In 2022, 62.2% of Ozempic® patients were female, while 80.1% of Wegovy® patients were female. A higher share of Wegovy® patients (40.4%) were ages 19-44 than Ozempic® patients (20.0%).

GLP-1 PATIENT DEMOGRAPHICS, 2022

	OZEMPIC®	WEGOVY®
MALE (%)	37.8%	19.9%
FEMALE (%)	62.2%	80.1%
AGES <18	0.1%	0.1%
AGES 19-44	20.0%	40.4%
AGES 45-64	55.2%	55.3%
AGES 65-84	24.3%	4.2%
AGES 85+	0.4%	0.0%

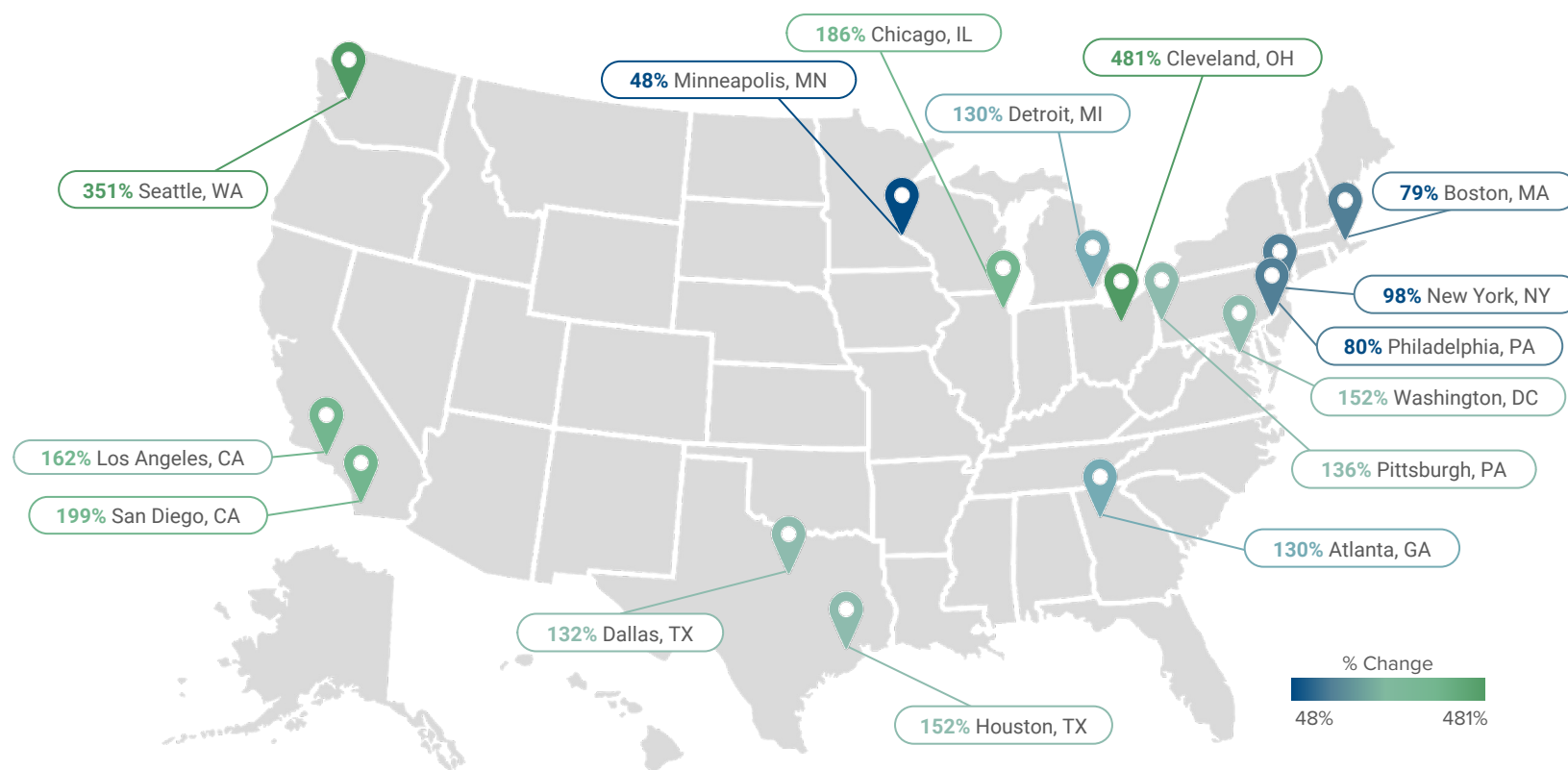
Note: Percentages may not add to 100 due to rounding. Analysis includes injectable drugs only.
Source: Trilliant Health national all-payer claims database.

TREND 3: DRUGS AND DIAGNOSTICS

Rate of Ozempic® Uptake Varies by Market and Is Often Disproportionate to Diabetes Prevalence

Across major markets, there has been an increase in the number of unique patients taking Ozempic® (semaglutide) who have a history of overweight, obesity and other hyperalimentation. This increase ranges from +48% in Minneapolis to +481% in Cleveland. The rate of on- and off-label use also varies by market.

PERCENT CHANGE IN **OZEMPIC**® PATIENT VOLUMES FOR SELECT MARKETS, Q3 2021 TO Q3 2022



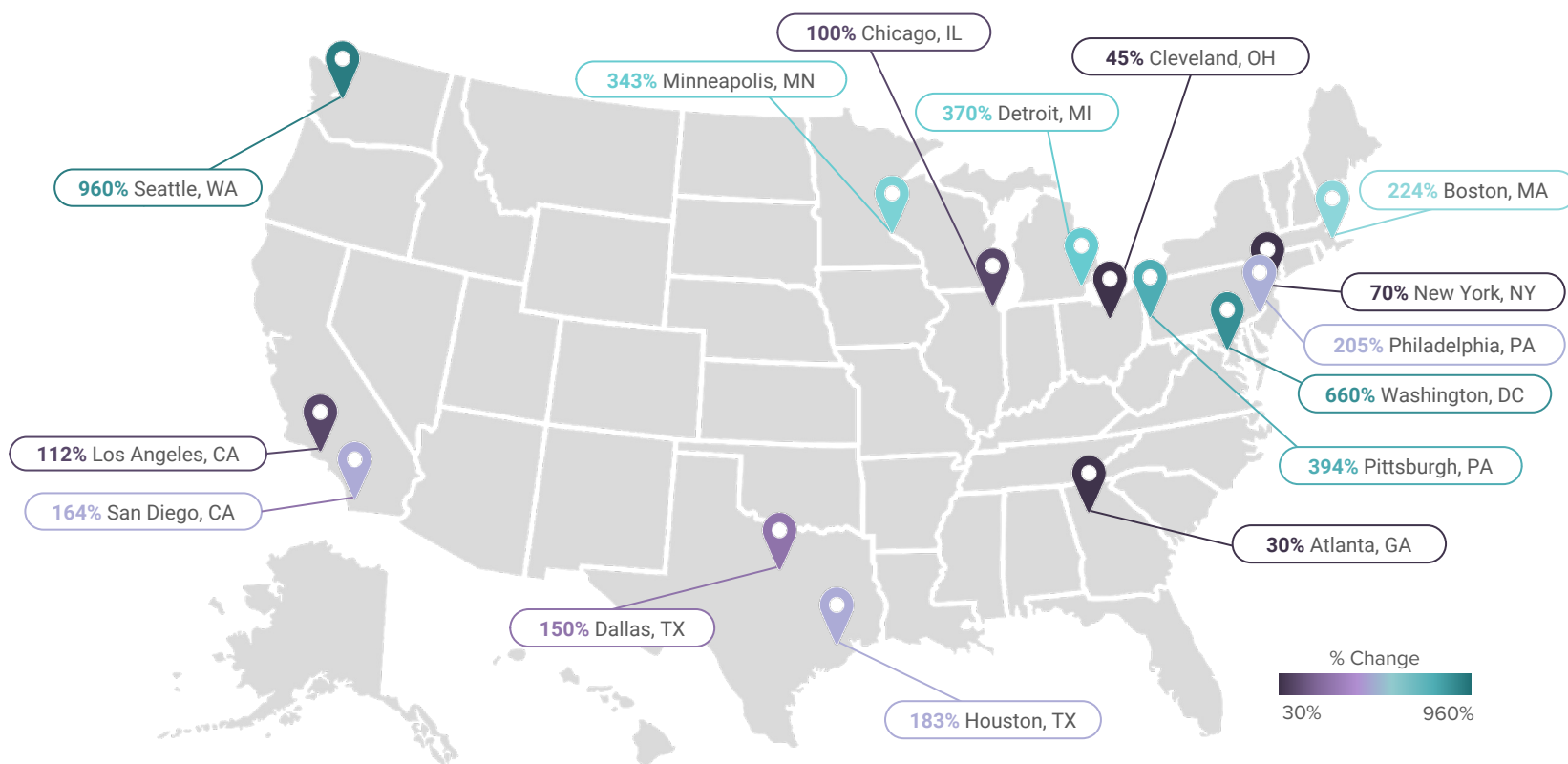
Note: Select large U.S. CBSAs were analyzed. Analysis includes injectable drugs only.
Source: Trilliant Health national all-payer claims database.

TREND 3: DRUGS AND DIAGNOSTICS

Rate of Wegovy® Uptake Also Varies by Market and Is Contingent on Drug Supply

Across major markets, there has been an increase in the number of unique patients prescribed Wegovy® who have a history of overweight, obesity and other hyperalimentation. This increase ranges from +30% in Atlanta to +960% in Seattle. The rate of on- and off-label use also varies by market.

PERCENT CHANGE IN **WEGOVY**® PATIENT VOLUMES FOR SELECT MARKETS, Q3 2021 TO Q3 2022



Note: Select large U.S. CBSAs were analyzed. Analysis includes injectable drugs only.
Source: Trilliant Health national all-payer claims database.

TREND 3: DRUGS AND DIAGNOSTICS

Share of Ozempic® Patients Without Diabetes Has Increased 2X

Of the 50 largest CBSAs, the median prevalence of Ozempic® utilization was 0.7%. From Q1 2021 to Q1 2023, the median share of Ozempic® patients without a diabetes diagnosis increased 20.1 percentage points from 16.9% to 37.0%.

OZEMPIC® UTILIZATION AND PATIENT HISTORY FOR 50 LARGEST METROPOLITAN CBSAS
BY POPULATION, Q1 2021-Q1 2023

	Prevalence of Ozempic Utilization (2022)	Q1 2021 % Without Diabetes	Q1 2023 % Without Diabetes
MINIMUM	0.3%	4.2%	21.1%
FIRST QUARTILE	0.5%	13.7%	33.6%
MEDIAN	0.7%	16.9%	37.0%
AVERAGE	0.7%	16.1%	36.2%
THIRD QUARTILE	0.8%	18.8%	39.0%
MAXIMUM	2.5%	26.8%	50.9%

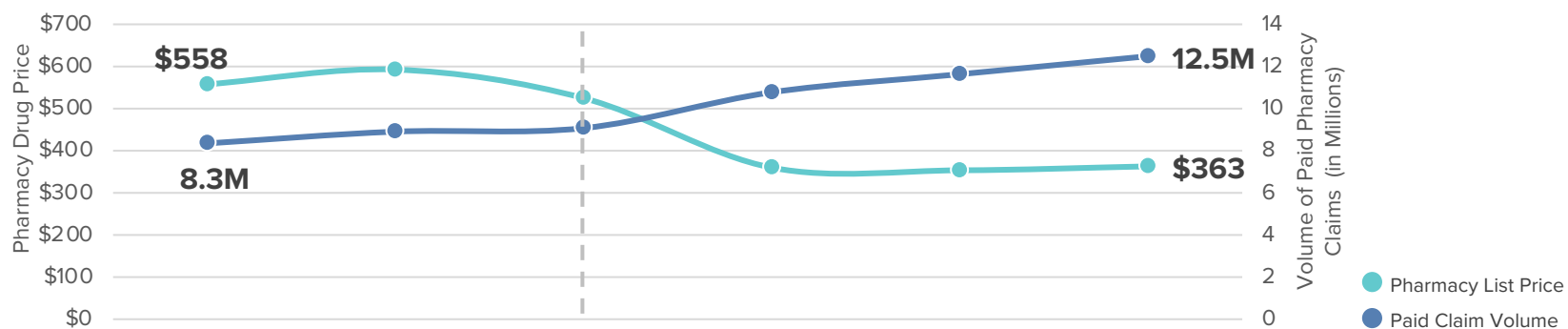
Note: Analysis was limited to the 50 largest CBSAs by population. Analysis includes injectable drugs only.
Source: Trilliant Health national all-payer claims database.

TREND 3: DRUGS AND DIAGNOSTICS

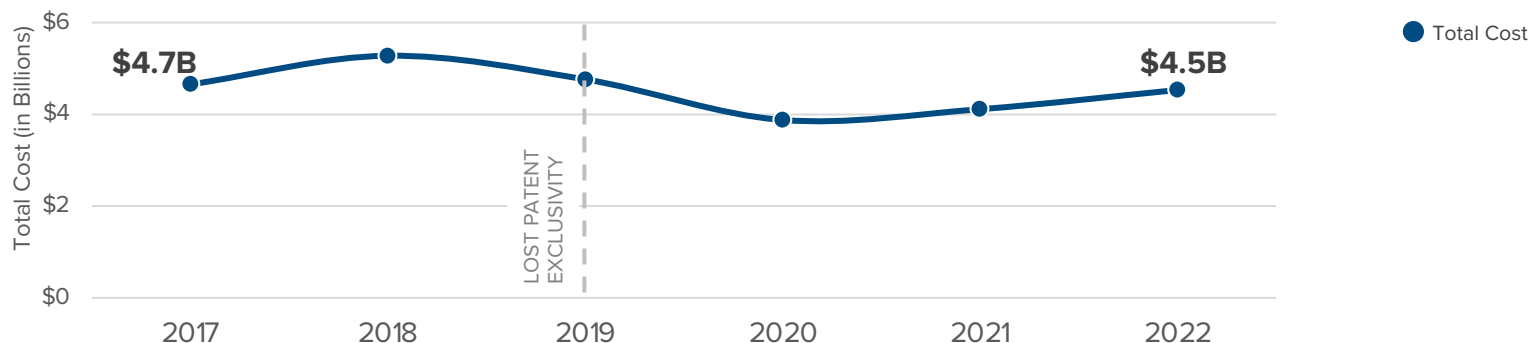
Losing Patent Exclusivity Brings Down Drug Price, But Price Reductions Are Mostly Offset by Increased Utilization

In this example, Lyrica lost patent exclusivity in 2019, which resulted in a decrease of 34.9% in pharmacy drug costs in 2022 from 2017. However, with more generic alternatives available and at a more accessible price, prescription volume increased and aggregate costs (i.e., volume X pharmacy cost) remained flat.

PHARMACY PRICE AND PAID CLAIM VOLUME OF LYRICA (PREGABALIN) ANNUALLY, 2017-2022



ANNUAL TOTAL U.S. COST OF LYRICA (PREGABALIN), 2017-2022



Source: Trilliant Health national all-payer claims database.



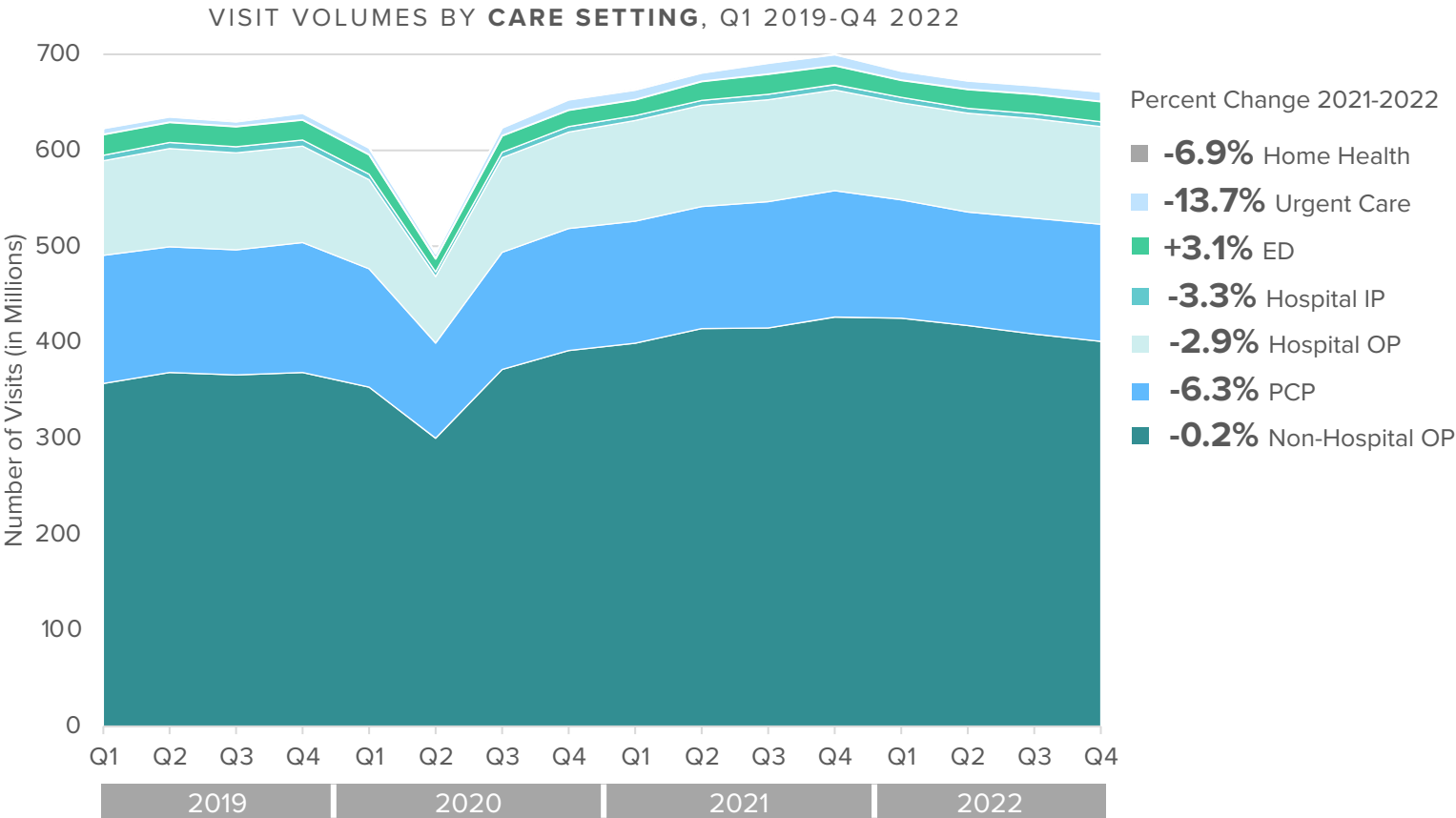
TREND 4

The Tepid Demand Trajectory for Healthcare Services Persists

TREND 4: DEMAND TRAJECTORY

Utilization Across Most Care Settings Declined From 2021 to 2022

In 2022, volumes declined across every care setting except ED. The "rebound" of healthcare observed in 2021 was partially inflated due to increased testing and treatment for COVID-19, which largely explains both the decline in primary care (-6.3%) and urgent care (-13.7%) visits from 2021 to 2022, as Americans have yet to return to preventive care at pre-pandemic levels.

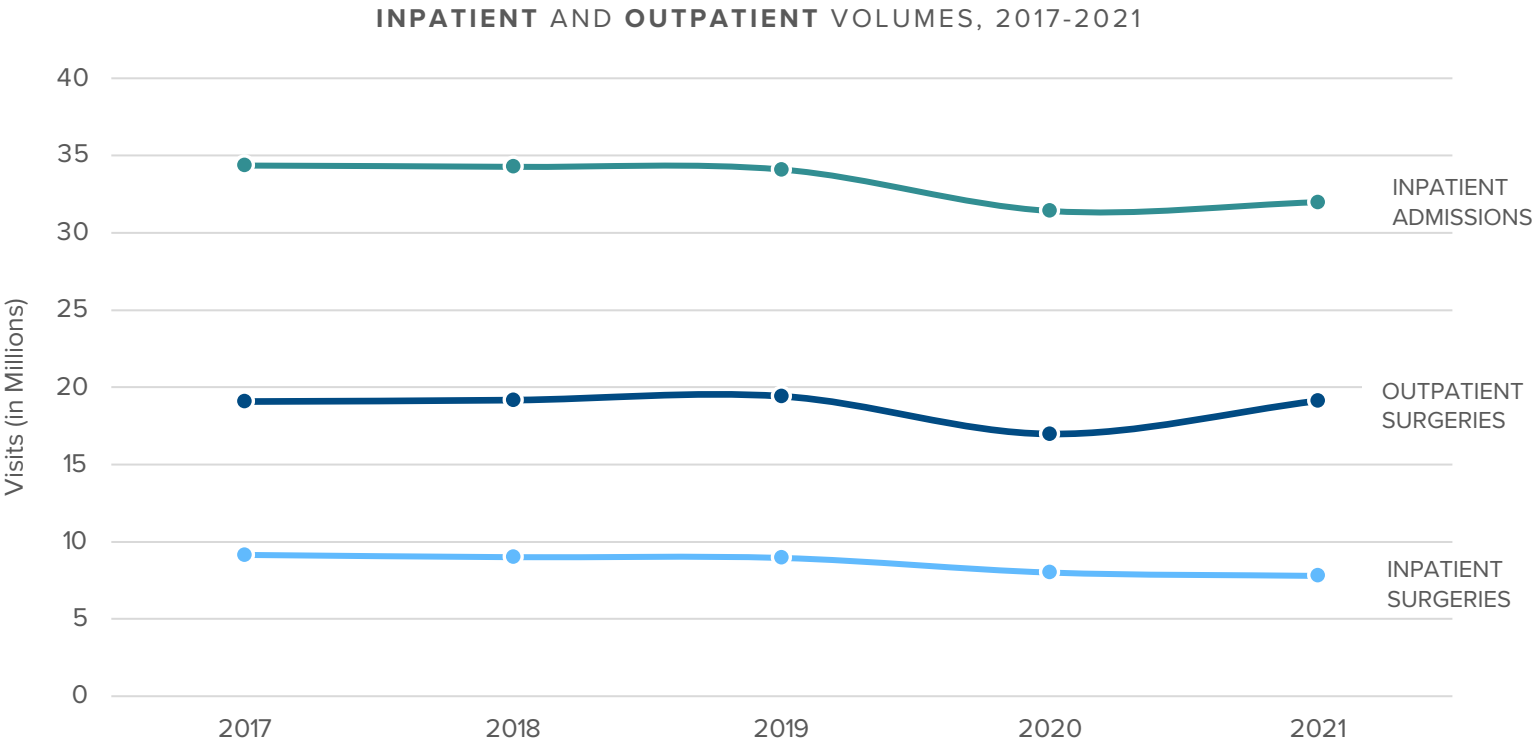


Note: IP denotes inpatient; OP denotes outpatient; PCP denotes Primary Care Provider; ED denotes Emergency Department.
Source: Trilliant Health national all-payer claims database.

TREND 4: DEMAND TRAJECTORY

The Pandemic Accelerated Pre-Existing Trends in Flat to Declining Demand

Inpatient admissions declined from 2017 to 2021, a trend that began in 2008. Inpatient surgeries (-14.9%) and admissions (-6.8%) have declined since 2017, while outpatient surgeries have remained flat (0.3%). Although the pandemic increased care avoidance, the overall demand trajectory is consistent with pre-pandemic norms.

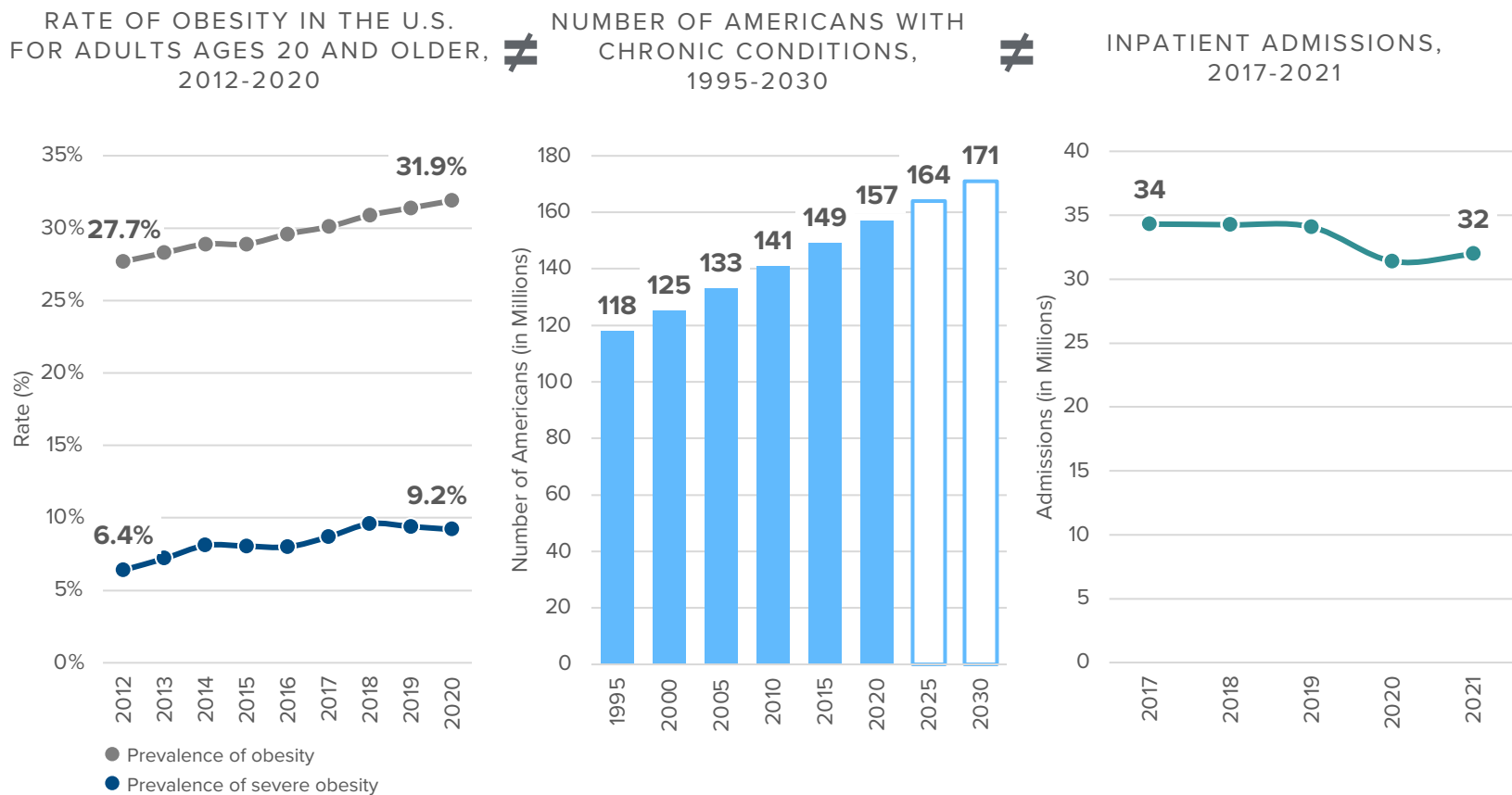


Note: Inpatient admissions are for nonfederal short-term general hospitals and other special hospitals; Outpatient surgeries and inpatient surgeries are for all U.S. community hospitals.
Source: 2023 American Hospital Association Hospital Statistics.

TREND 4: DEMAND TRAJECTORY

Disease Burden Is Not Directly Correlated With Demand

Although the national prevalence of chronic disease and comorbidities is continuing to rise, total hospital admissions have declined 10.6% from 2008 to 2021. This suggests that there is not a linear relationship between the number of comorbidities an individual has and the respective amount of healthcare services they consume.

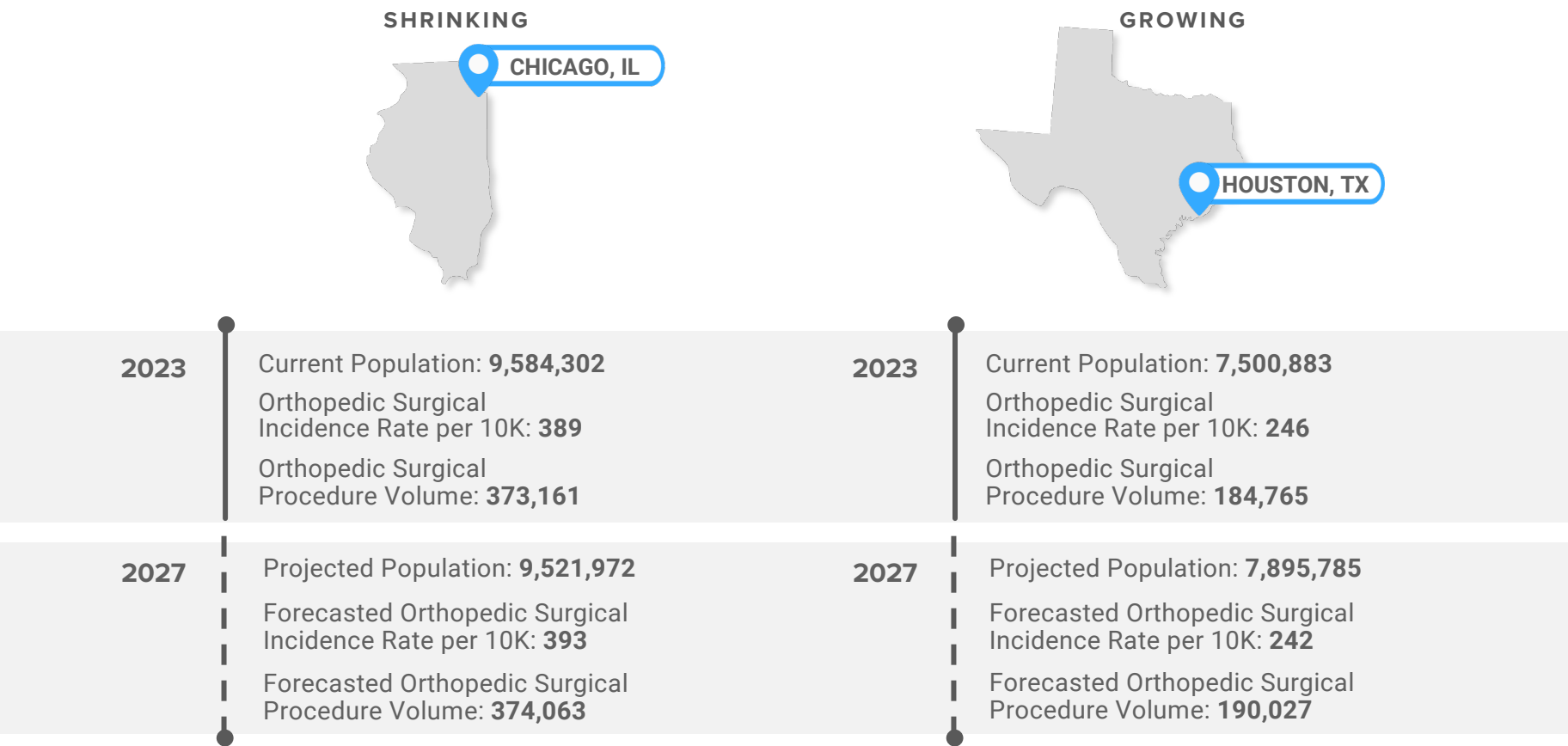


Note: Inpatient admission data for 2008-2016 are not shown and are for nonfederal short-term general hospitals and other special hospitals.
Source: Centers for Disease Control and Prevention National Center for Health Statistics; RAND Corporation; 2023 American Hospital Association Hospital Statistics.

TREND 4: DEMAND TRAJECTORY

Demand Is a Function of Disease Burden, Demographics, Consumer Preferences and Access

Because healthcare, and therefore demand for services, is local, markets with a similar population size can have widely divergent demand for healthcare services. For example, while Chicago’s population is projected to shrink between 2023 and 2027, demand for orthopedic surgeries is projected to increase. However, the inverse is true in Houston.

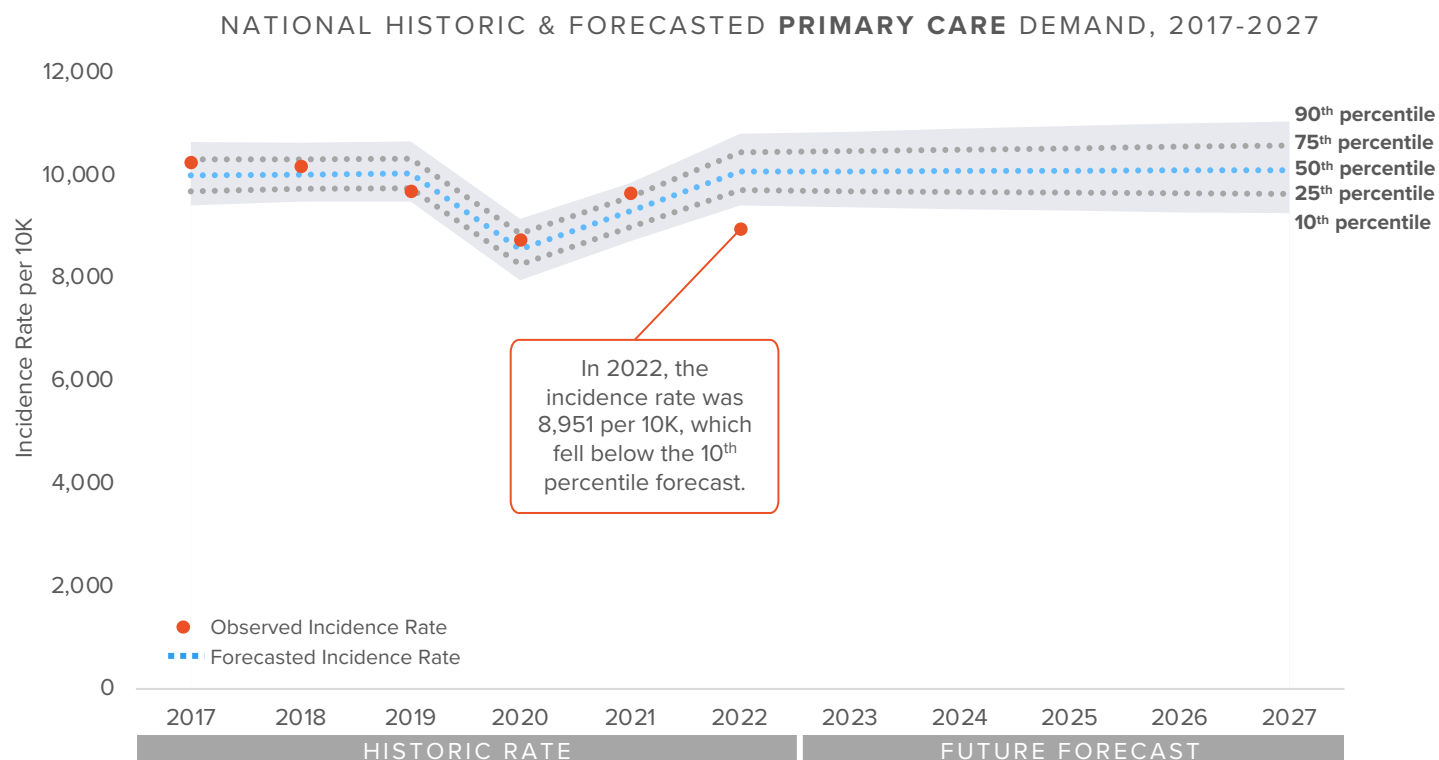


Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Recent Declines in Primary Care Utilization Will Be Compounded by Tepid Growth in Future Demand

The national median incidence rate for primary care is projected to increase at 0.04% CAGR between 2023 and 2027 as compared to projected population growth of 0.3% CAGR over the same period. In 2027, Americans are expected to need 1.0 primary care visits per year. By 2027, the incidence rate per 10K is forecasted to be between 9,258 (10th percentile) and 11,047 (90th percentile).

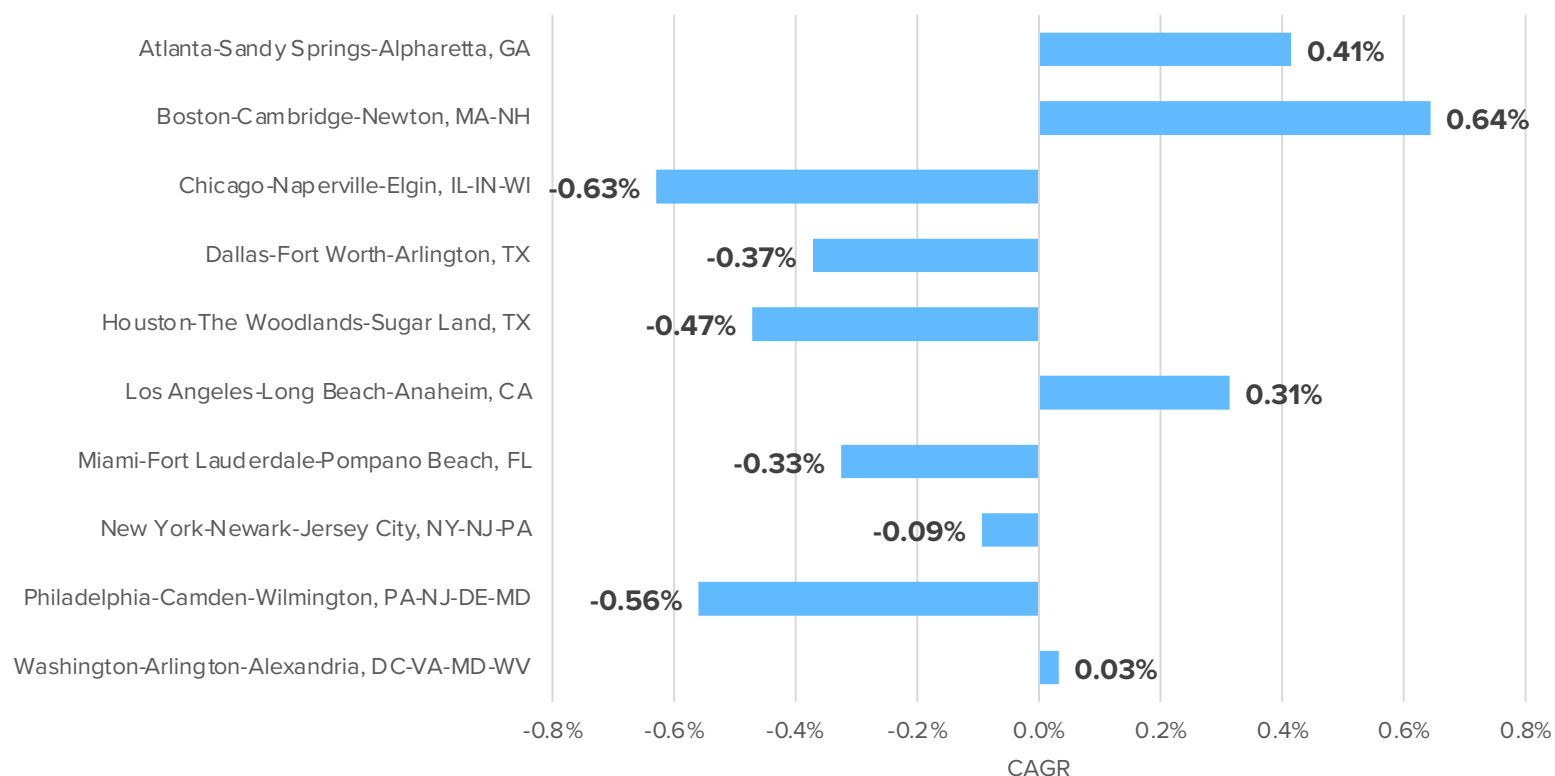


Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Primary Care Demand Projected To Remain Tepid Across Markets

Although the differences between markets are slight, some markets will experience slight growth, while others are projected to experience a decline in demand, ranging from -0.63% CAGR to 0.64% CAGR.

MARKET-LEVEL FORECASTED **PRIMARY CARE** DEMAND, 2023-2027 CAGR

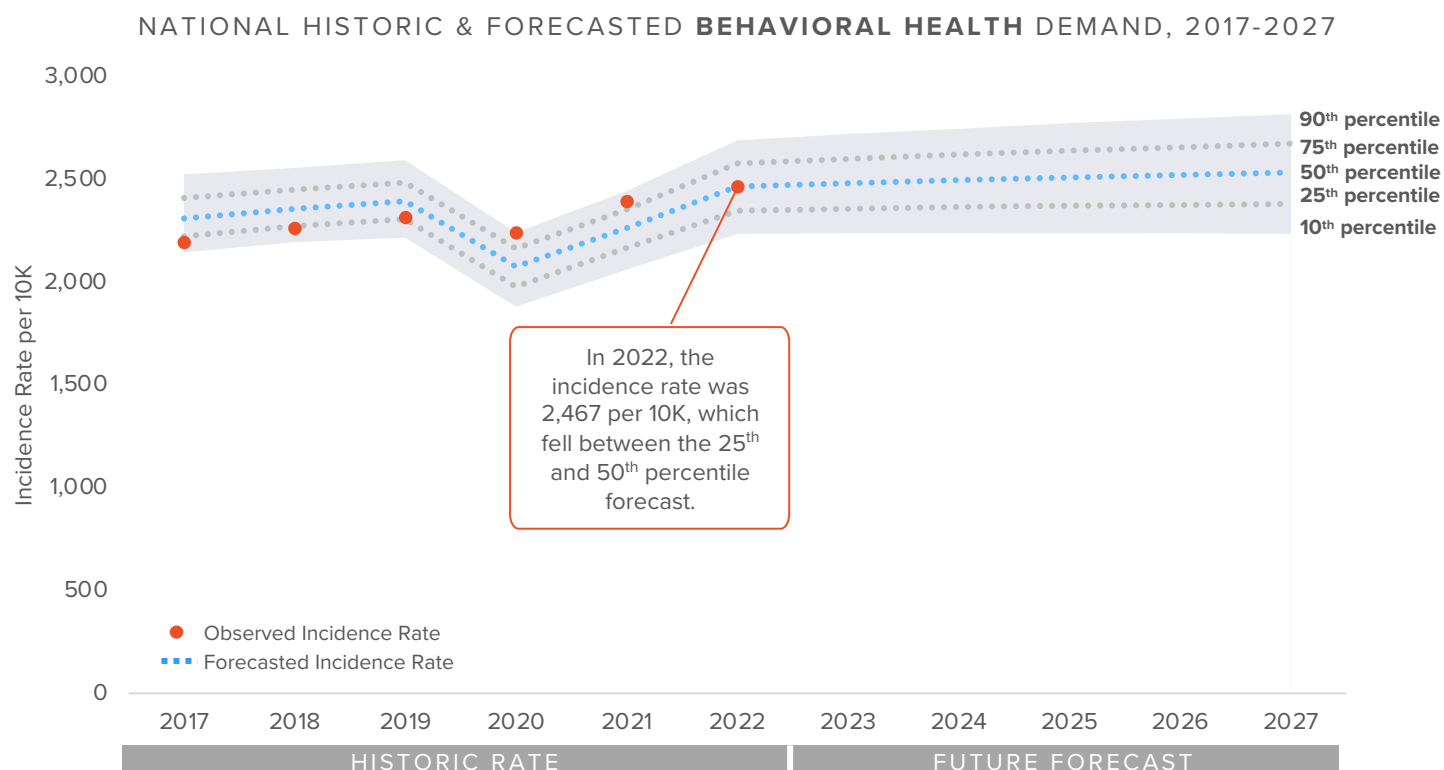
Note: CAGR denotes compound annual growth rate.

Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Behavioral Health Demand Growth Is Projected at 0.5% CAGR

The national median incidence rate for behavioral health services is projected to increase at 0.5% CAGR between 2023 and 2027. In 2027, 25.4% of the U.S. population are predicted to utilize behavioral health services. By 2027, the incidence rate per 10K is forecasted to be between 2,237 (10th percentile) and 2,818 (90th percentile). At the same time, this demand projection does not account for the potential that recommended preventive screening might increase utilization above historical trends.

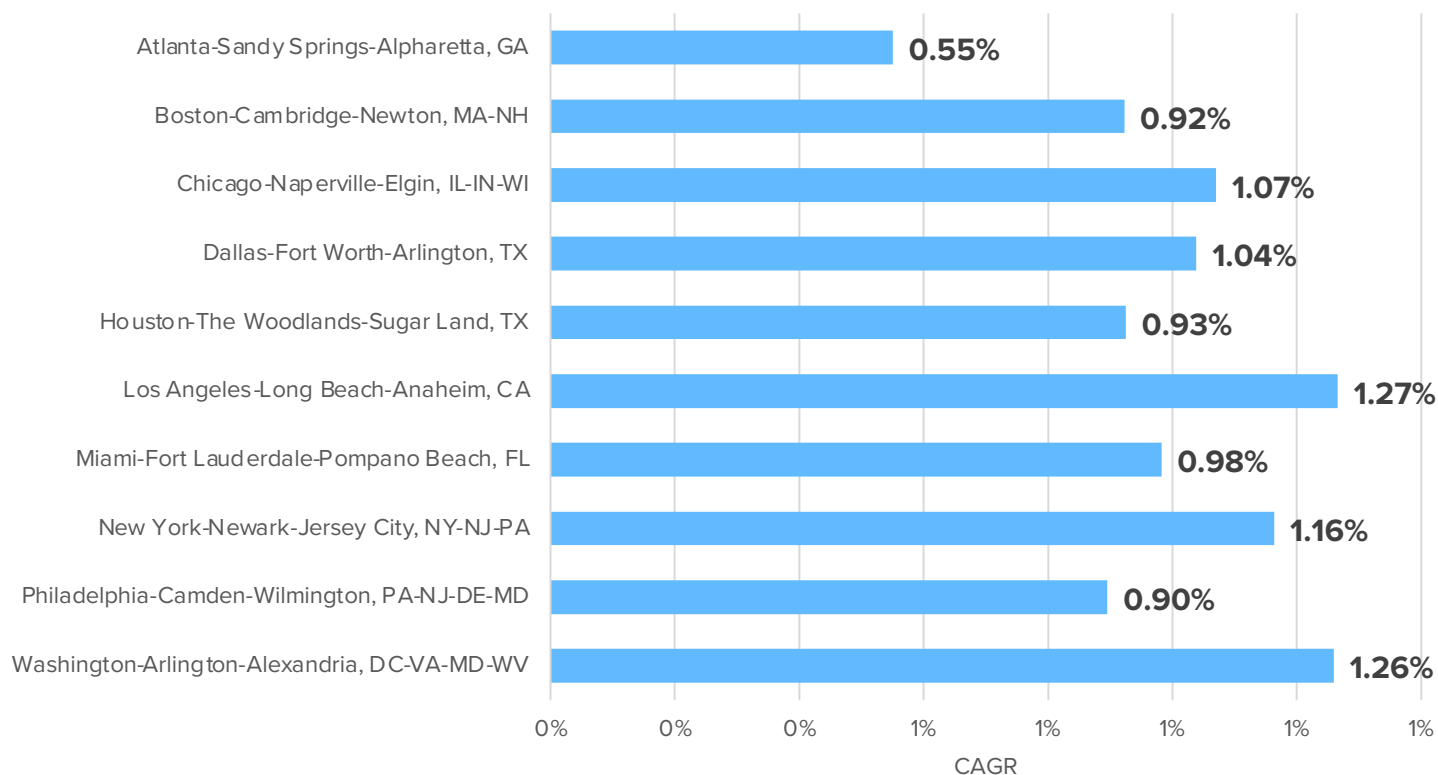


Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Behavioral Health Demand Projected to Grow in Major Markets

At the market level, the projected five-year CAGR for behavioral health services ranges from 0.55% to 1.27%.

MARKET-LEVEL FORECASTED **BEHAVIORAL HEALTH** DEMAND, 2023-2027 CAGR

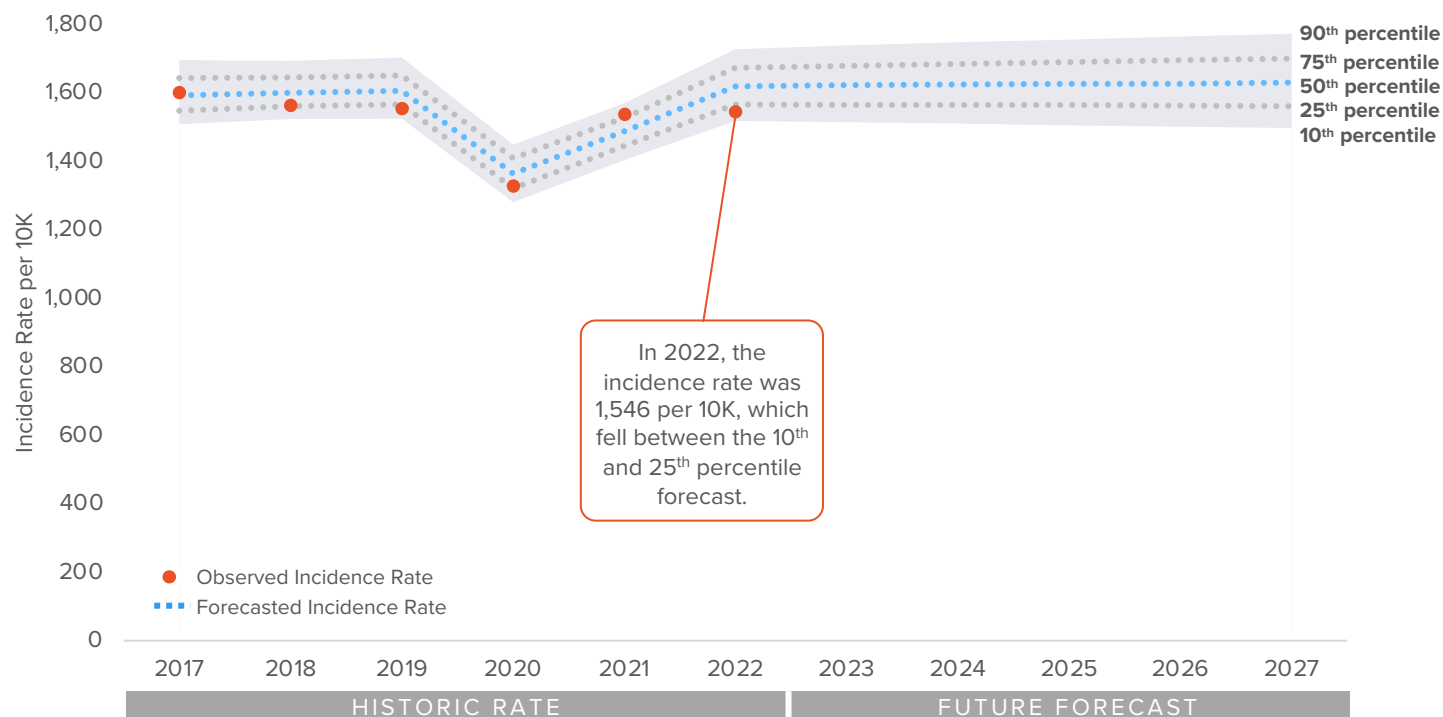
Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Major Surgical Demand Is Projected To Decline By 0.1% CAGR

The national median incidence rate for major surgical services is projected to decrease by 0.1% CAGR between 2023 and 2027. In 2027, 16.3% of the U.S. population are predicted to require major surgical services. By 2027, the incidence rate per 10K is forecasted to be between 1,497 (10th percentile) and 1,772 (90th percentile).

NATIONAL HISTORIC & FORECASTED MAJOR SURGICAL DEMAND, 2017-2027



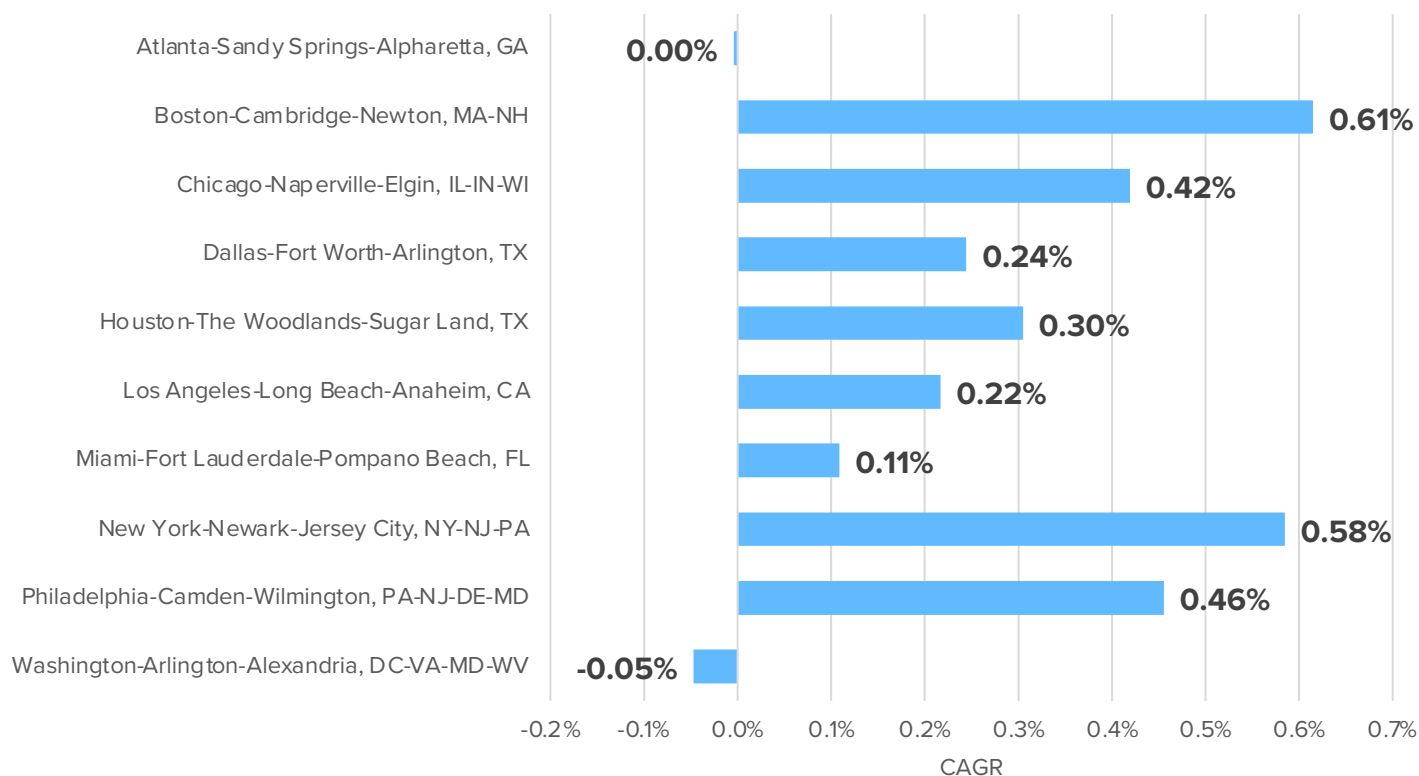
Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Projected Surgical Growth Varies by Market

At the market level, the projected five-year CAGR for surgical services ranges from -0.05% to 0.61%. Among the selected markets, even the highest growth does not exceed 1.0% CAGR.

MARKET-LEVEL FORECASTED MAJOR SURGICAL DEMAND, 2023-2027 CAGR



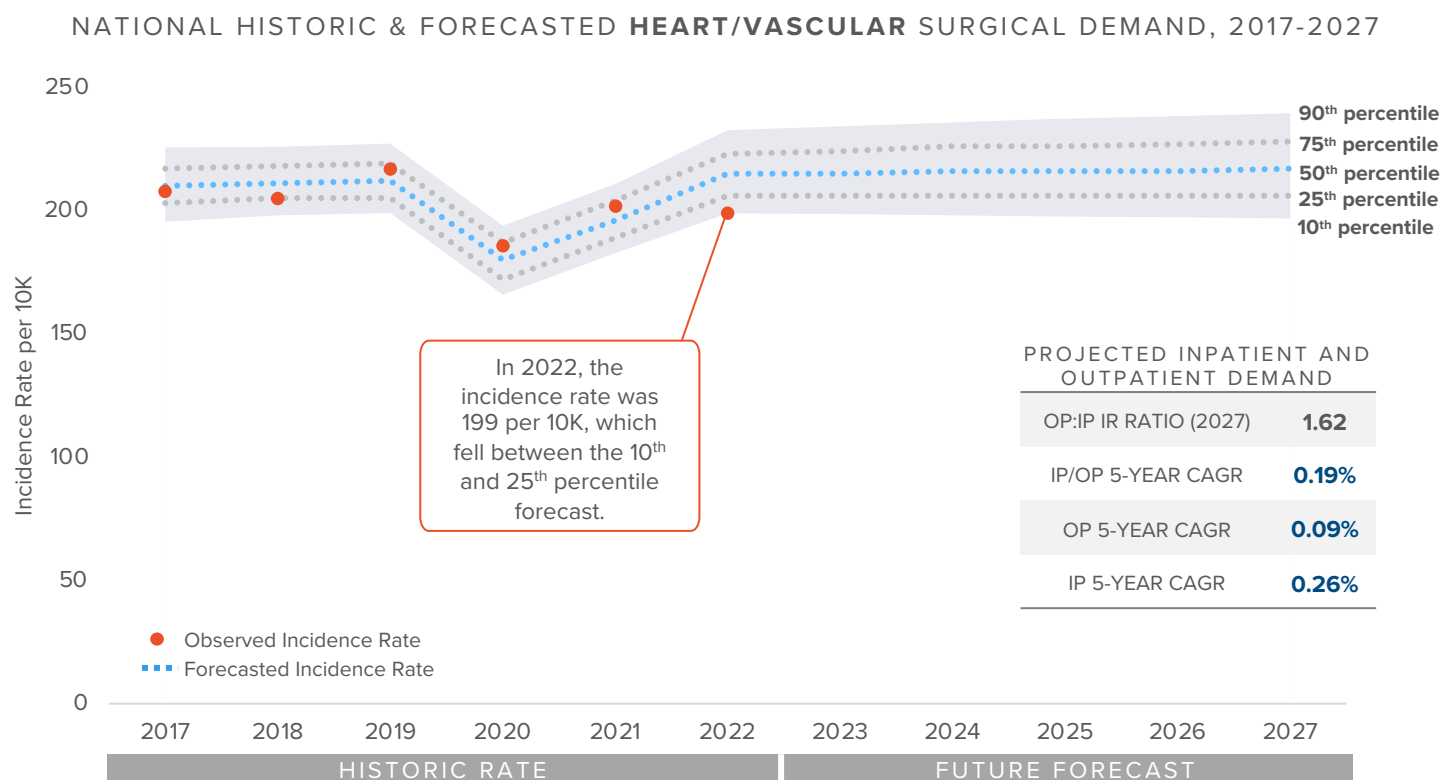
Note: CAGR denotes compound annual growth rate.

Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Heart/Vascular Surgical Demand Growth Is Projected at 0.2% CAGR

The national median incidence rate for heart/vascular surgical services is projected to increase at 0.2% CAGR between 2023 and 2027. In 2027, 2.2% of the U.S. population are predicted to require a heart/vascular surgical service. By 2027, the incidence rate per 10K is forecasted to be between 197 (10th percentile) and 240 (90th percentile). Projected inpatient growth (0.26% CAGR) is outpacing projected outpatient growth (0.09% CAGR).



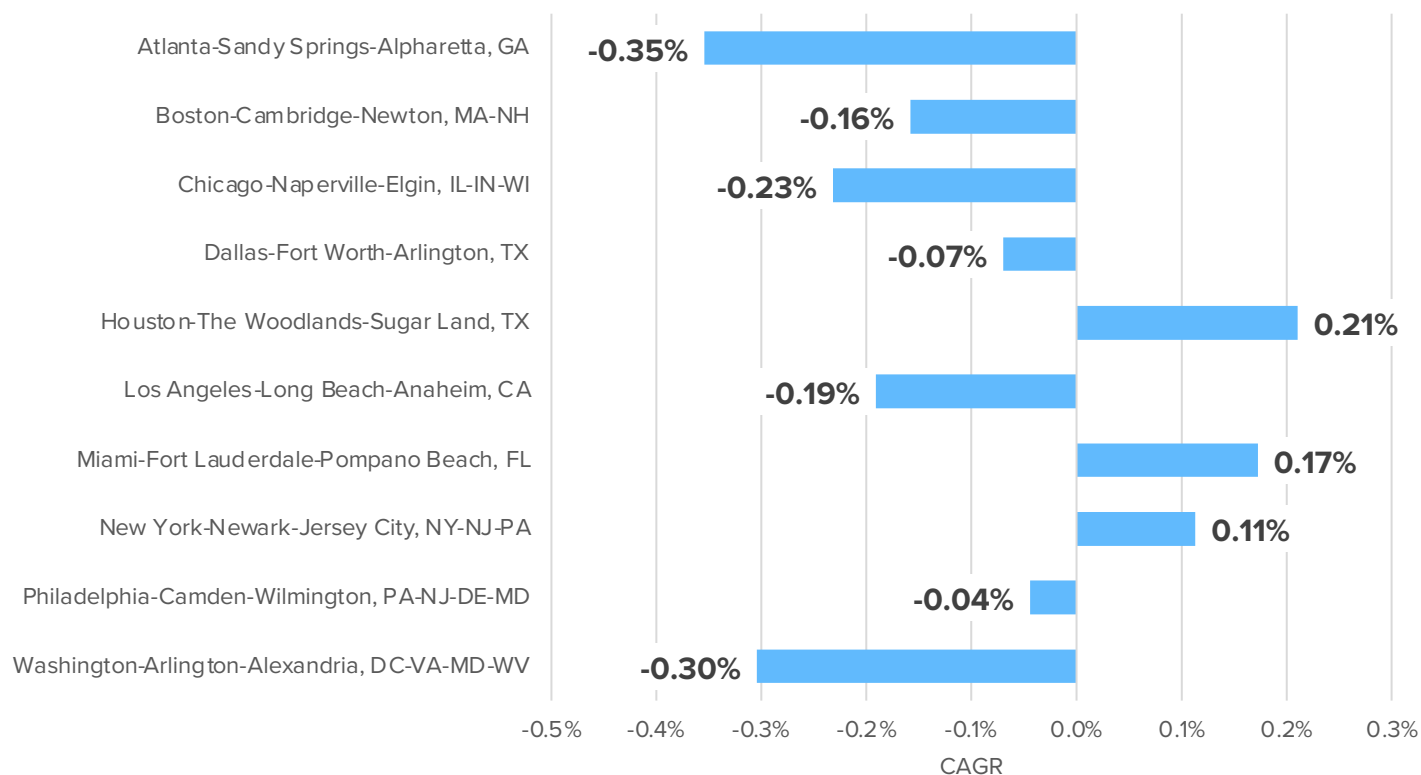
Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Projected Heart/Vascular Surgical Demand Varies Geographically

At the market level, the projected five-year CAGR for heart/vascular surgical services ranges from -0.35% to 0.21%. Among the selected markets, even the highest growth does not exceed 1.0% CAGR.

MARKET-LEVEL FORECASTED HEART/VASCULAR SURGICAL DEMAND, 2023-2027 CAGR

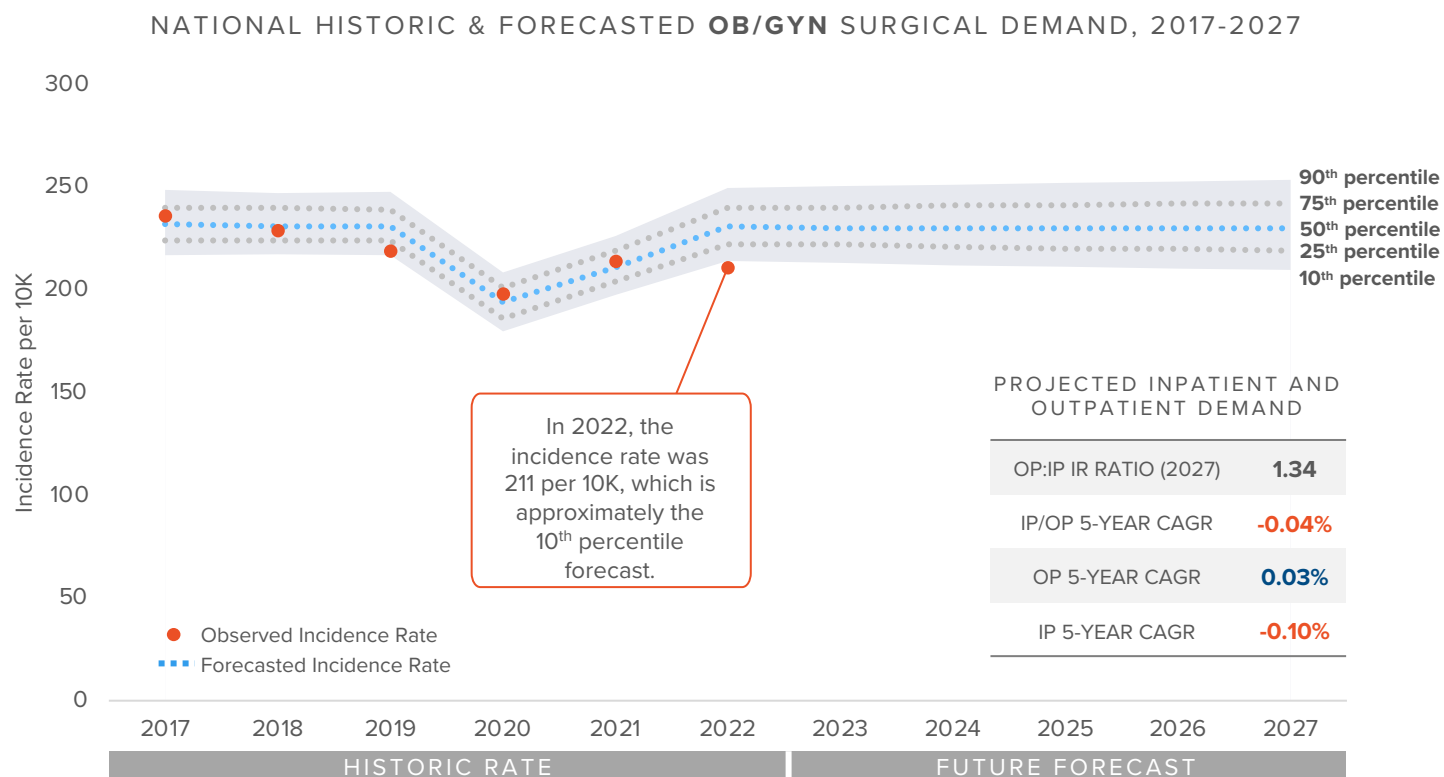


Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Projected OB/GYN Surgical Demand Growth Is Flat

The national median incidence rate for OB/GYN surgical services is projected to remain stable at -0.04% CAGR between 2023 and 2027. In 2027, 2.3% of Americans are predicted to require OB/GYN surgical services. By 2027, the incidence rate per 10K is forecasted to be between 210 (10th percentile) and 254 (90th percentile). Projected outpatient growth (0.03% CAGR) is outpacing projected inpatient growth (-0.10% CAGR).



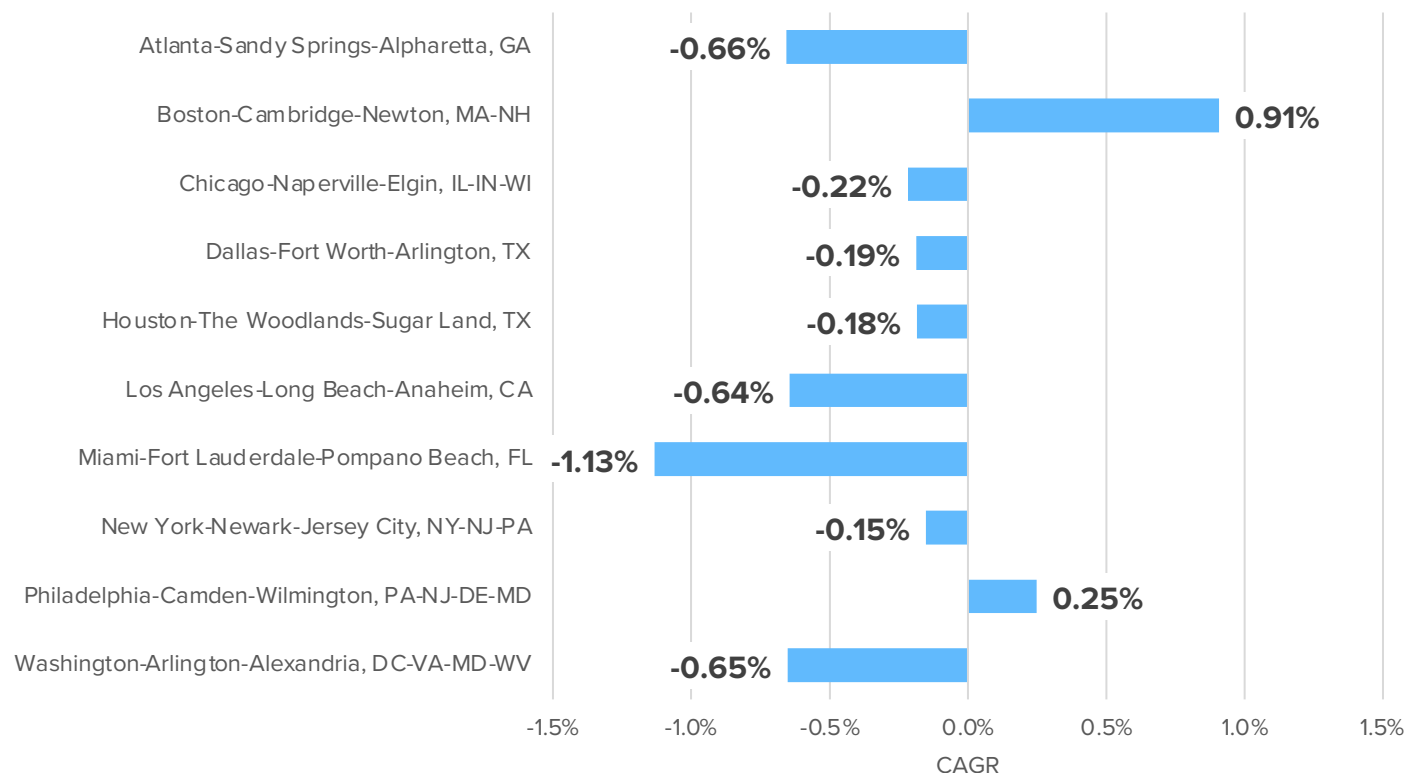
Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

OB/GYN Surgical Demand Projected to Decrease Slightly in Most Markets

At the market level, the projected five-year CAGR for OB/GYN surgical services ranges from -1.13% to 0.91%. Among the selected markets, even the highest growth does not exceed 1.0% CAGR.

MARKET-LEVEL FORECASTED OB/GYN SURGICAL DEMAND, 2023-2027 CAGR



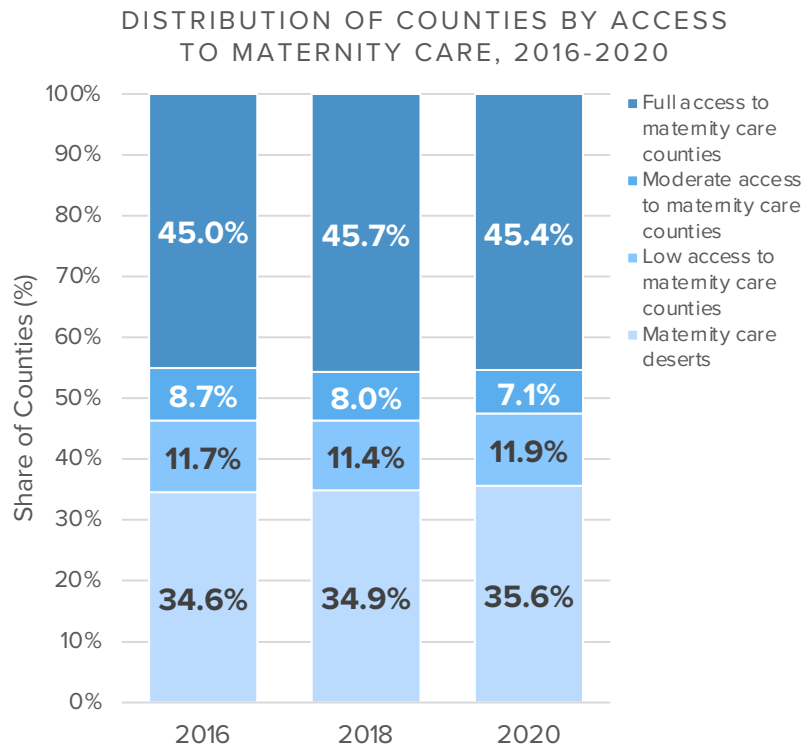
Note: CAGR denotes compound annual growth rate.

Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Maternity Care Closures Reflect Declining U.S. Births and Flat OB/GYN Surgical Demand

As the number of U.S. births declines, a growing number of hospitals are ending obstetrics services. The percent of counties with fewer than two providers increased by 1.0 percentage points from 2016 to 2020, while the percent of counties with moderate access to maternity care decreased by 1.6 percentage points over the same period. With flat demand for surgical OB/GYN services projected between now and 2027, unit closures are likely to continue.



SELECT HEALTH SYSTEMS CLOSING OB/GYN DEPARTMENTS IN 2023

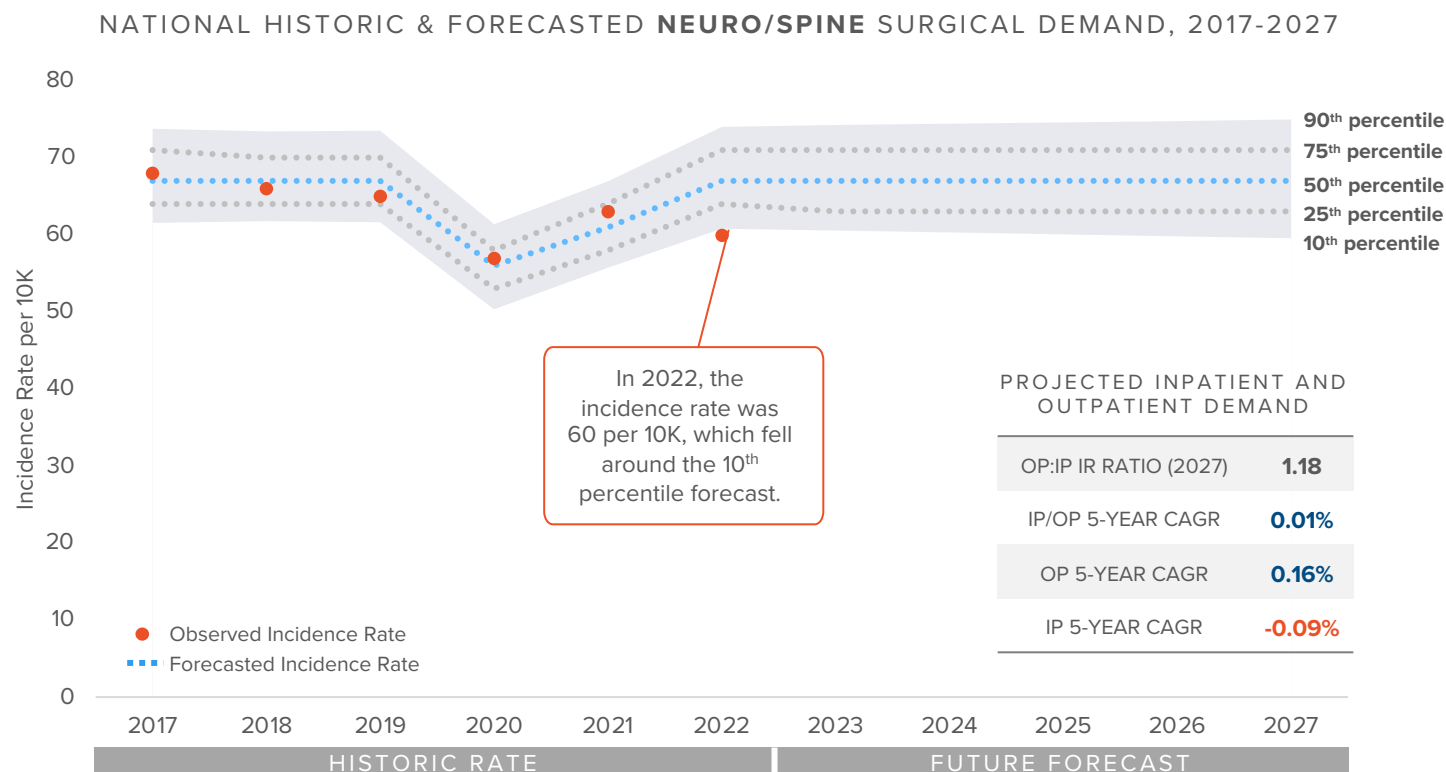


Note: March of Dimes defines maternity care deserts as counties without a hospital offering obstetric care, moderate and low access counties as counties with less than two hospitals offering OB care but differing levels of access to providers offering OB care, and full access counties as counties with more than two hospitals with OB care. Source: March of Dimes Maternity Care Desert Reports; Becker's Hospital CFO Report; publicly available news releases.

TREND 4: DEMAND TRAJECTORY

Projected Neuro/Spine Surgical Demand Growth Is Flat

The national median incidence rate for neuro/spine surgical services is projected to remain stable at 0.01% CAGR between 2023 and 2027. In 2027, 0.7% of the U.S. population are predicted to require neuro/spine surgical services. By 2027, the incidence rate per 10K is forecasted to be between 60 (10th percentile) and 75 (90th percentile). Projected outpatient growth (0.16% CAGR) is outpacing projected inpatient growth (-0.09% CAGR).

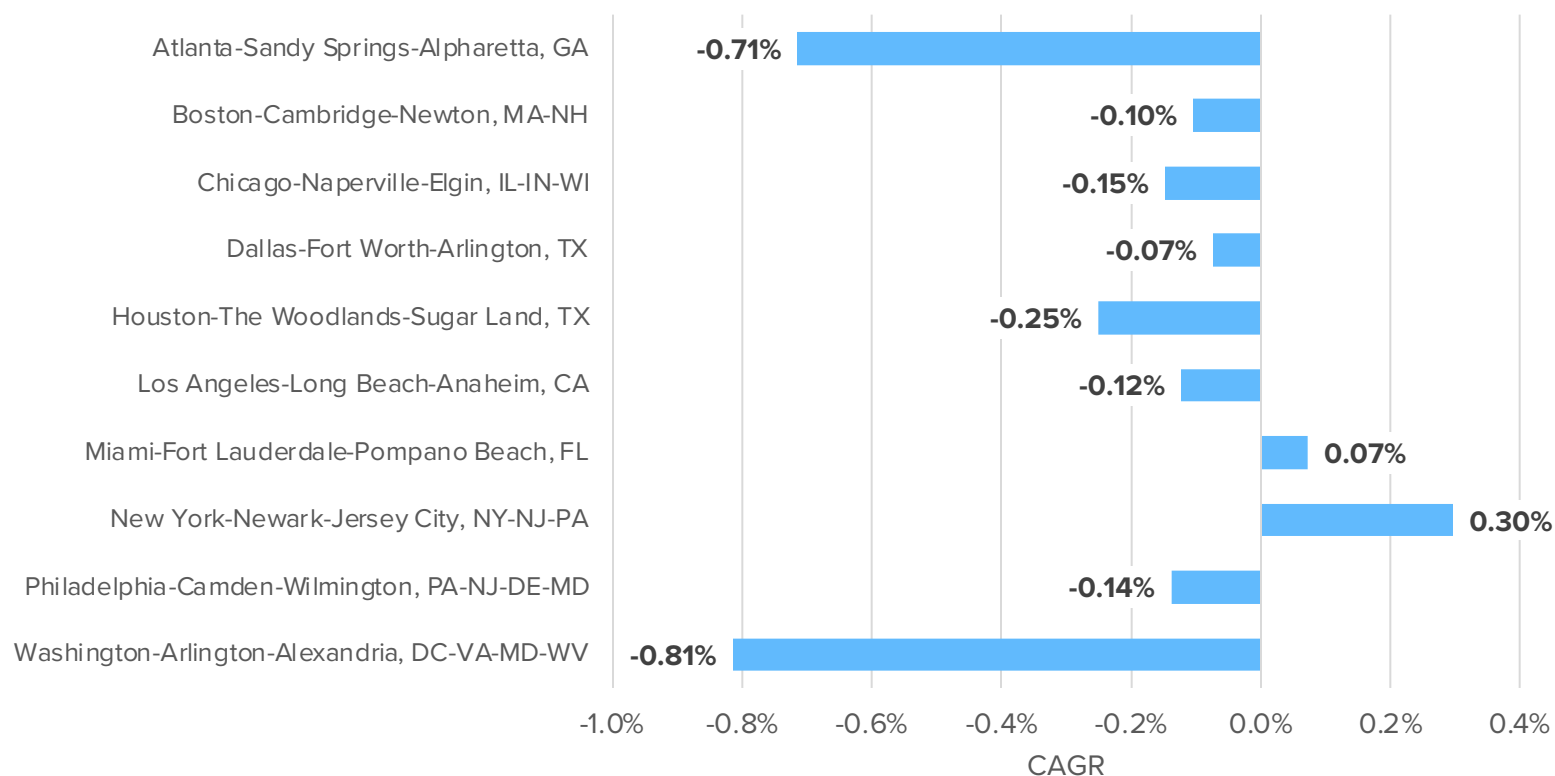


Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Neuro/Spine Surgical Demand Projected to Decline in Most Markets

At the market level, the projected five-year CAGR for neuro/spine surgical services ranges from -0.81% to 0.30%. Among the selected markets, even the highest growth does not exceed 1.0% CAGR.

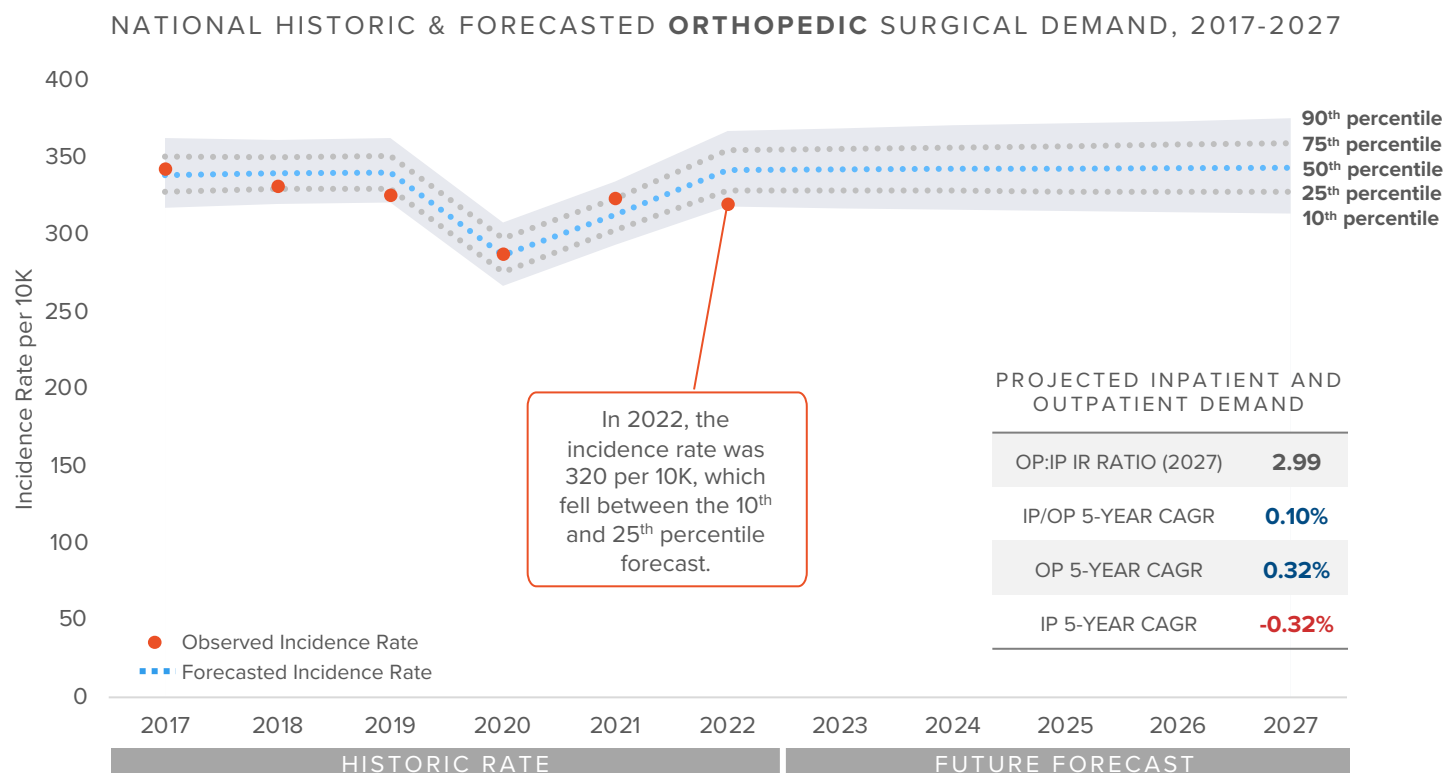
MARKET-LEVEL FORECASTED **NEURO/SPINE** SURGICAL DEMAND, 2023-2027 CAGR

Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Orthopedic Surgical Demand Growth Is Projected at 0.1% CAGR

The national median incidence rate for orthopedic surgical services is projected to increase at 0.1% CAGR between 2023 and 2027. In 2027, 3.4% of the U.S. population are predicted to require orthopedic surgical services. By 2027, the incidence rate per 10K is forecasted to be between 314 (10th percentile) and 376 (90th percentile). Projected outpatient growth (0.32% CAGR) is outpacing projected inpatient growth (-0.32% CAGR).

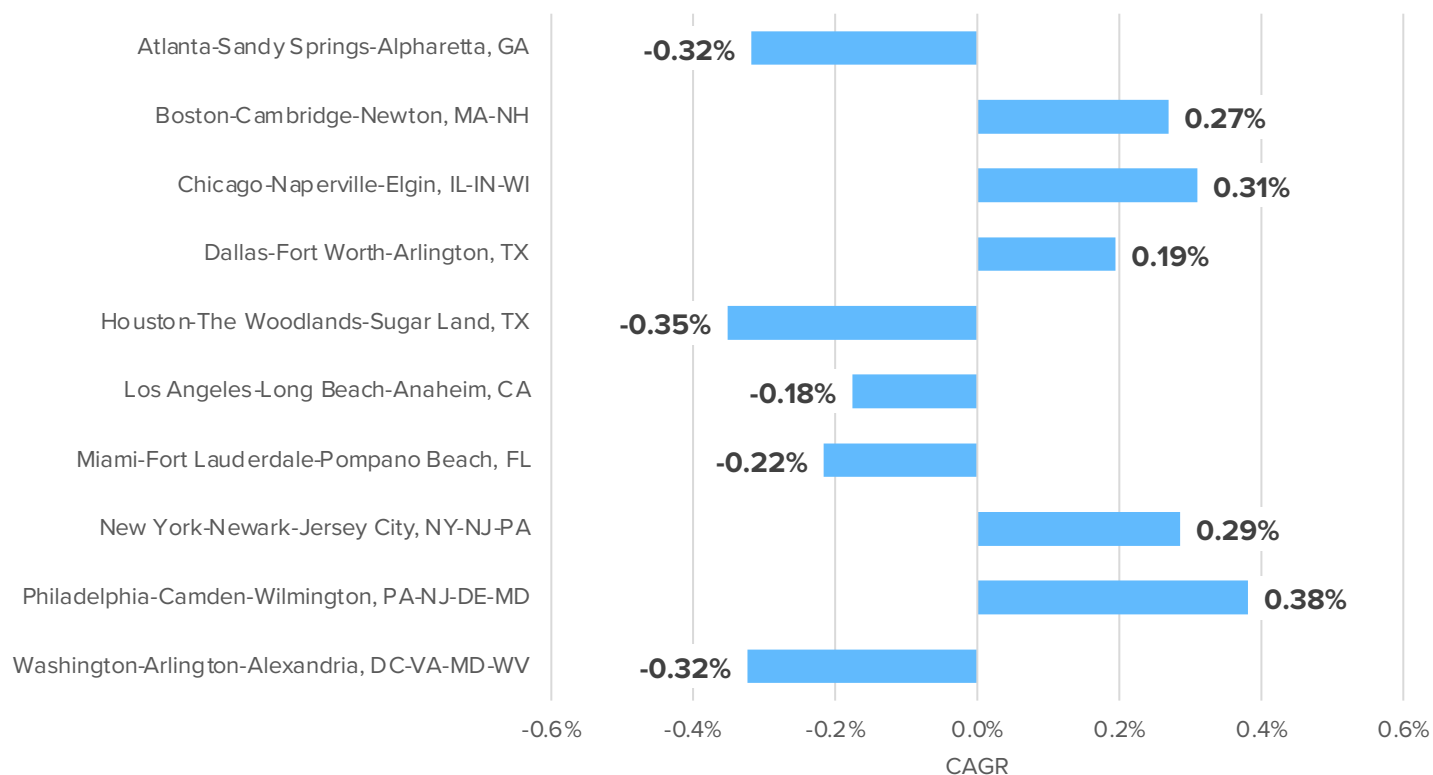


Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Projected Orthopedic Surgical Demand Growth Is Market Specific

At the market level, the projected five-year CAGR for orthopedic surgical services ranges from -0.35% to 0.38%. Among the selected markets, even the highest growth does not exceed 1.0% CAGR.

MARKET-LEVEL FORECASTED **ORTHOPEDIC** SURGICAL DEMAND, 2023-2027 CAGR

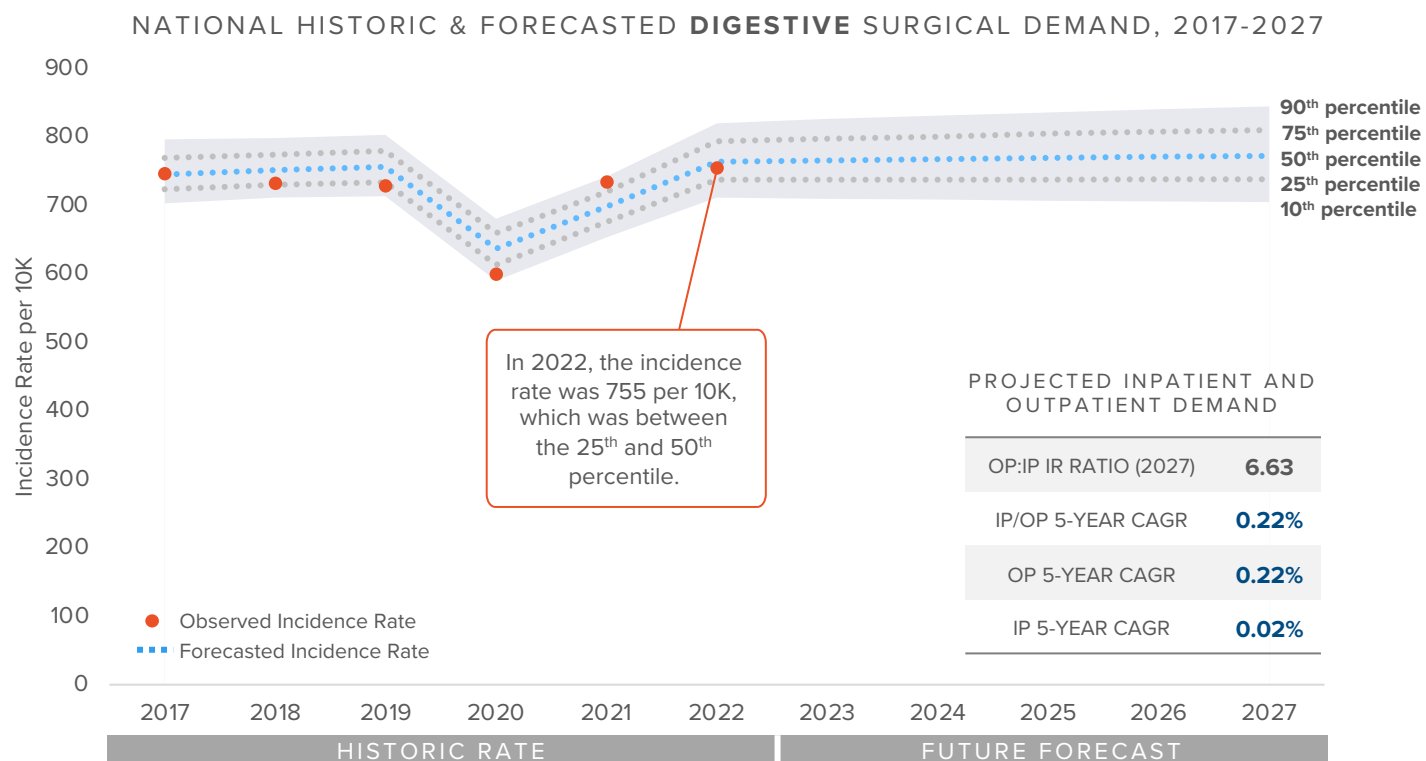
Note: CAGR denotes compound annual growth rate.

Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Digestive Surgical Demand Growth Is Projected at 0.2% CAGR

The national median incidence rate for digestive surgical services is projected at 0.2% CAGR between 2023 and 2027. In 2027, 7.7% of the U.S. population are predicted to require digestive surgical services. By 2027, the incidence rate is forecasted to be between 705 (10th percentile) and 844 (90th percentile). Projected outpatient growth (0.22% CAGR) is outpacing projected inpatient growth (0.02% CAGR).

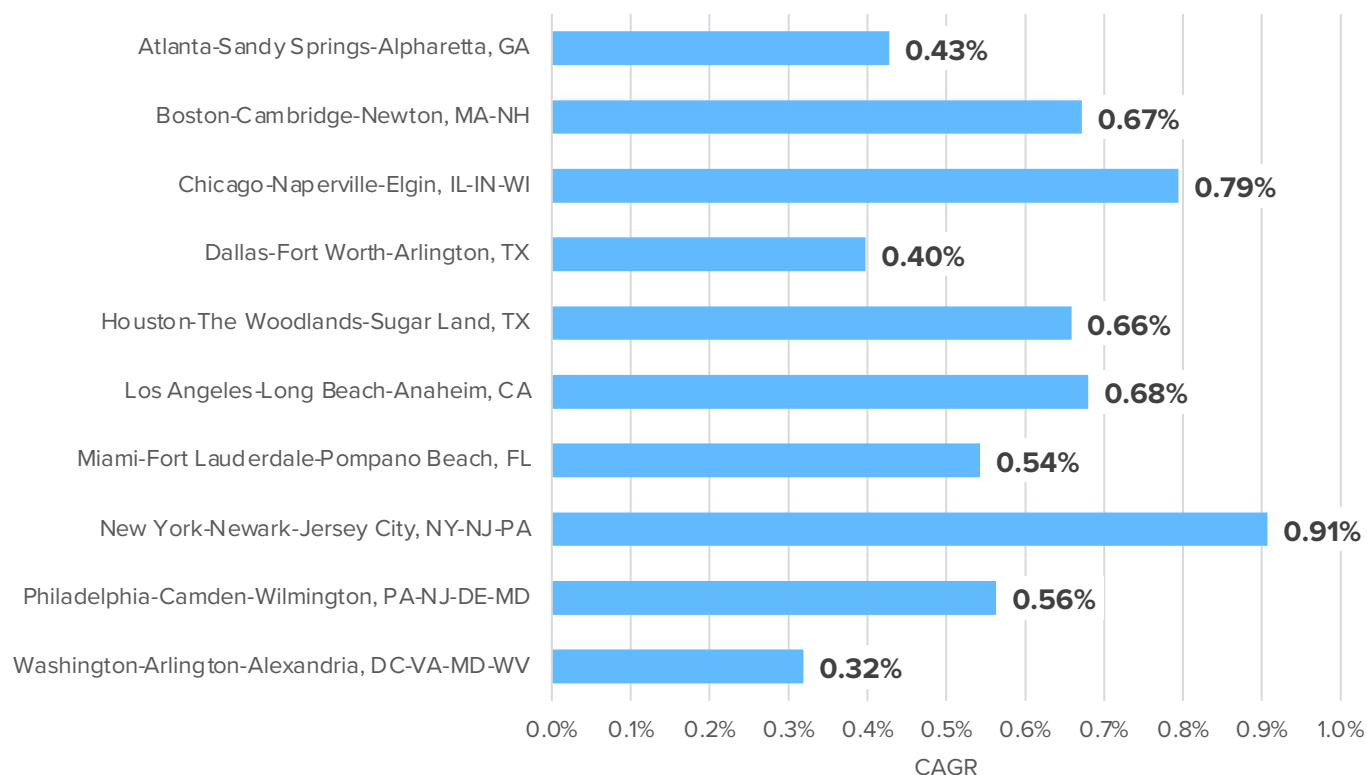


Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Digestive Surgical Demand Projected to Grow Across Markets

At the market level, the projected five-year CAGR for digestive surgical services ranges from 0.32%, to 0.91%. Among the selected markets, even the highest growth does not exceed 1.0% CAGR.

MARKET-LEVEL FORECASTED **DIGESTIVE** SURGICAL DEMAND, 2023-2027 CAGR

Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

How Many Surgical Procedures Are Imperiled by New Therapeutics?

As new therapies come to market and emerging evidence translates into clinical guideline changes (e.g., screening recommendations), it is likely that some high-margin surgical procedures will be replaced with less invasive, patient preferred interventions. Are providers prepared for the potential volume declines and corresponding revenue losses associated with replacement therapies?

CURRENT AND FUTURE SCENARIOS FOR SELECT SURGICAL PROCEDURES WITH LESS INVASIVE ALTERNATIVES

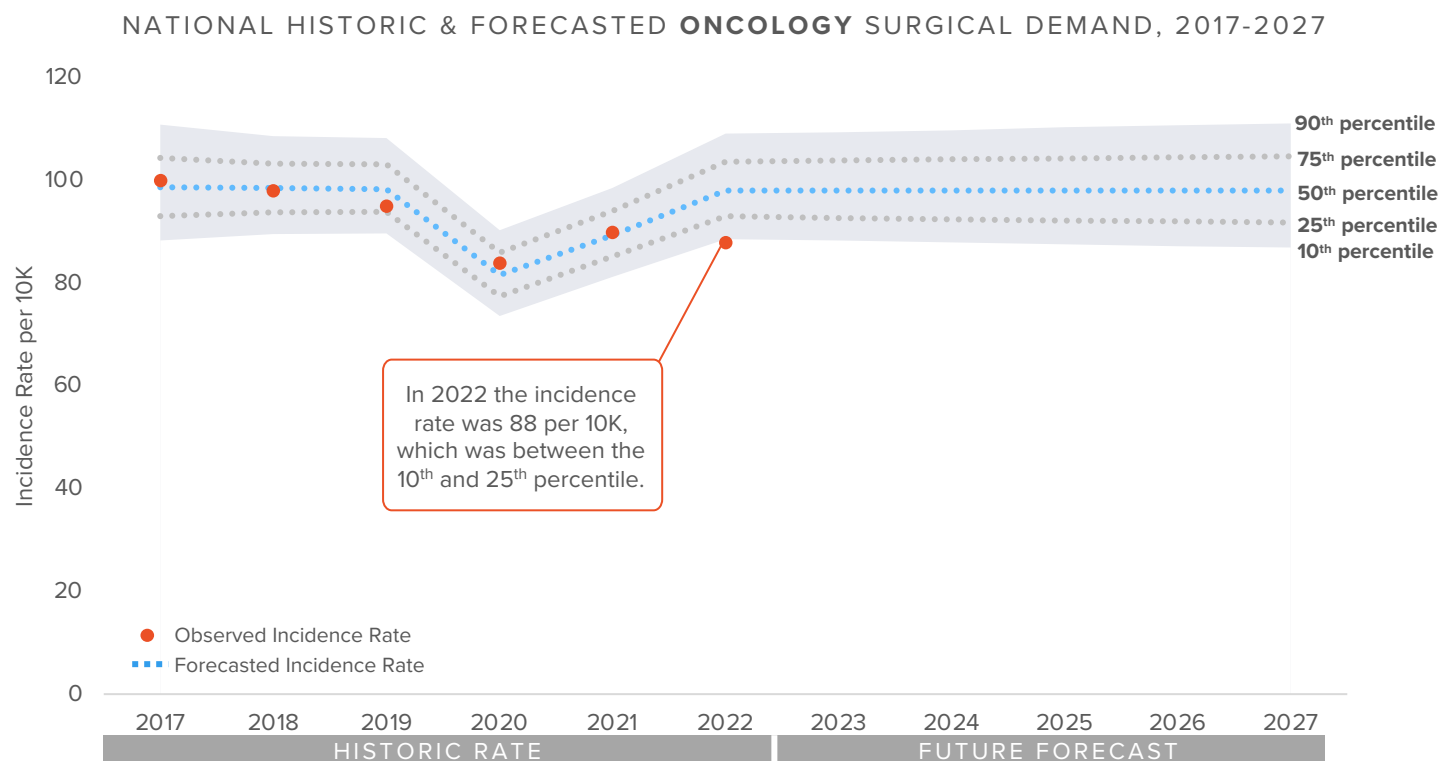
PRESENT <i>Traditional Care Delivery Standard</i>				<div>Replace with medication management</div> <div>➤➤➤</div>	FUTURE <i>Potential New Standard</i>		
PROCEDURE OR INTERVENTION	APPROXIMATE ANNUAL U.S. VOLUME	AVERAGE INPATIENT MEDICARE RATE	MINIMUM ANNUAL PROVIDER REVENUE		LESS INVASIVE INTERVENTION	REPLACEMENT RATE SCENARIOS	POTENTIAL PROVIDER REVENUE LOSS
Bariatric Surgery	250K	\$10,667	\$2.67B		GLP-1 agonists	5%	-\$133.33M
						10%	-\$266.68M
						20%	-\$533.35M
Cardiac Catheterization	1M	\$40,737	\$40.74B		PCSK9/SGLT2 inhibitors	5%	-\$2.04B
						10%	-\$4.07B
						20%	-\$8.15B
Screening Colonoscopy	15M	\$11,722	\$175.83B		Fecal occult blood tests, flexible sigmoidoscopy, fecal DNA testing	5%	-\$8.79B
						10%	-\$17.58B
				20%		-\$35.17B	

Note: The approximate annual procedure volumes are based upon national projections. These scenarios represent the potential outcomes of changes in volume due to alternate treatments becoming available or recommended practice patterns changing. Replacement rate scenarios are merely illustrative and could be higher or lower depending on the specific procedure. GLP-1 denotes glucagon-like peptide-1 receptor.
Source: Centers for Medicare and Medicaid Services Inpatient Prospective Payment System.

TREND 4: DEMAND TRAJECTORY

Projected Oncology Surgical Demand Growth Is Flat

The national median incidence rate for oncology surgical services is projected to remain flat at 0.0% CAGR between 2023 and 2027. This indicates that by 2027, 0.9% of the U.S. population will require oncology surgical services. By 2027, the incidence rate is forecasted to be between 87 (10th percentile) and 111 (90th percentile). While cancer incidence is on the rise, the impact of other factors such as new therapeutics and treatment paradigms could result in differences between surgical and medical oncology demand.



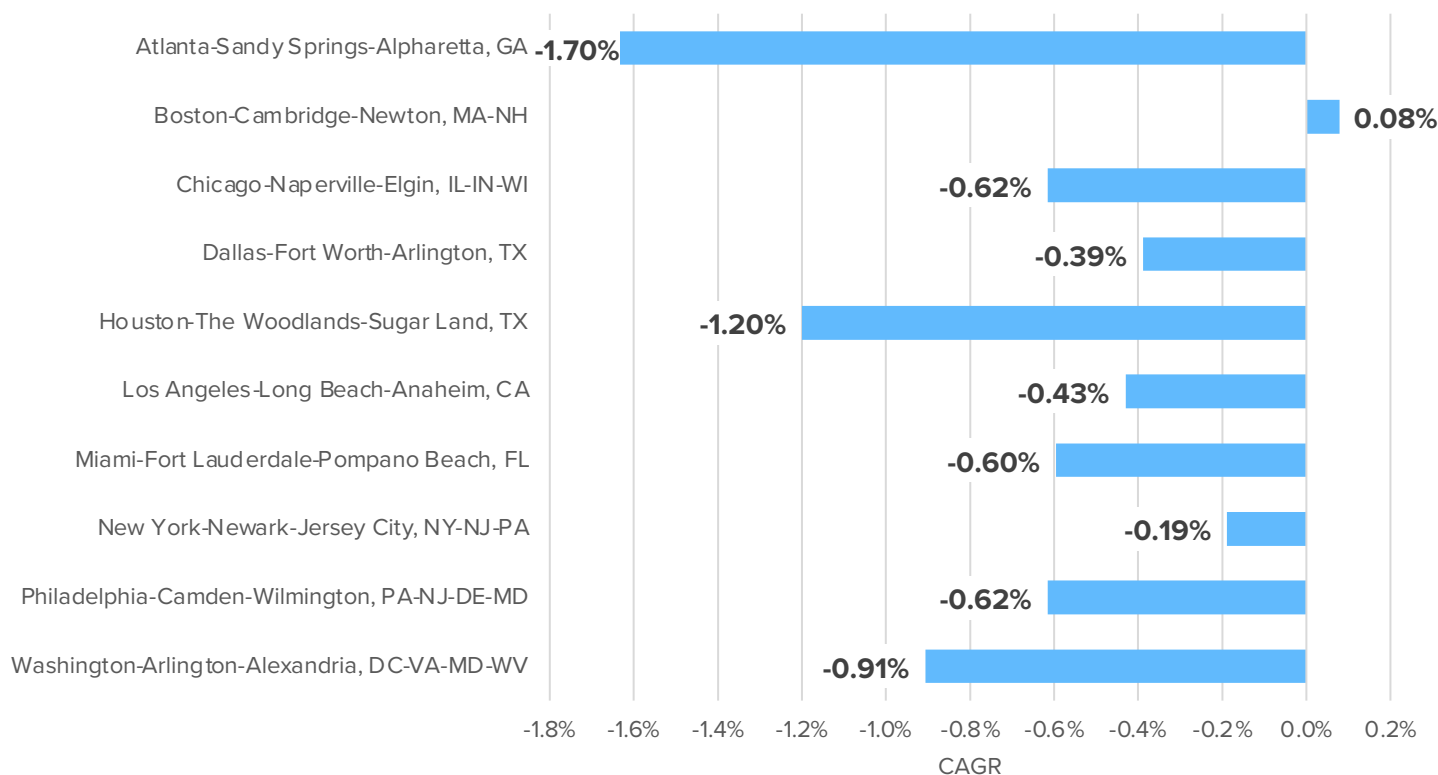
Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Projected Oncology Surgical Demand Varies By Market

At the market level, the projected five-year CAGR for oncology surgical services ranges from -1.70% to 0.08%. Among the selected markets, even the highest growth does not exceed 1.0% CAGR.

MARKET-LEVEL FORECASTED **ONCOLOGY** SURGICAL DEMAND, 2023-2027 CAGR

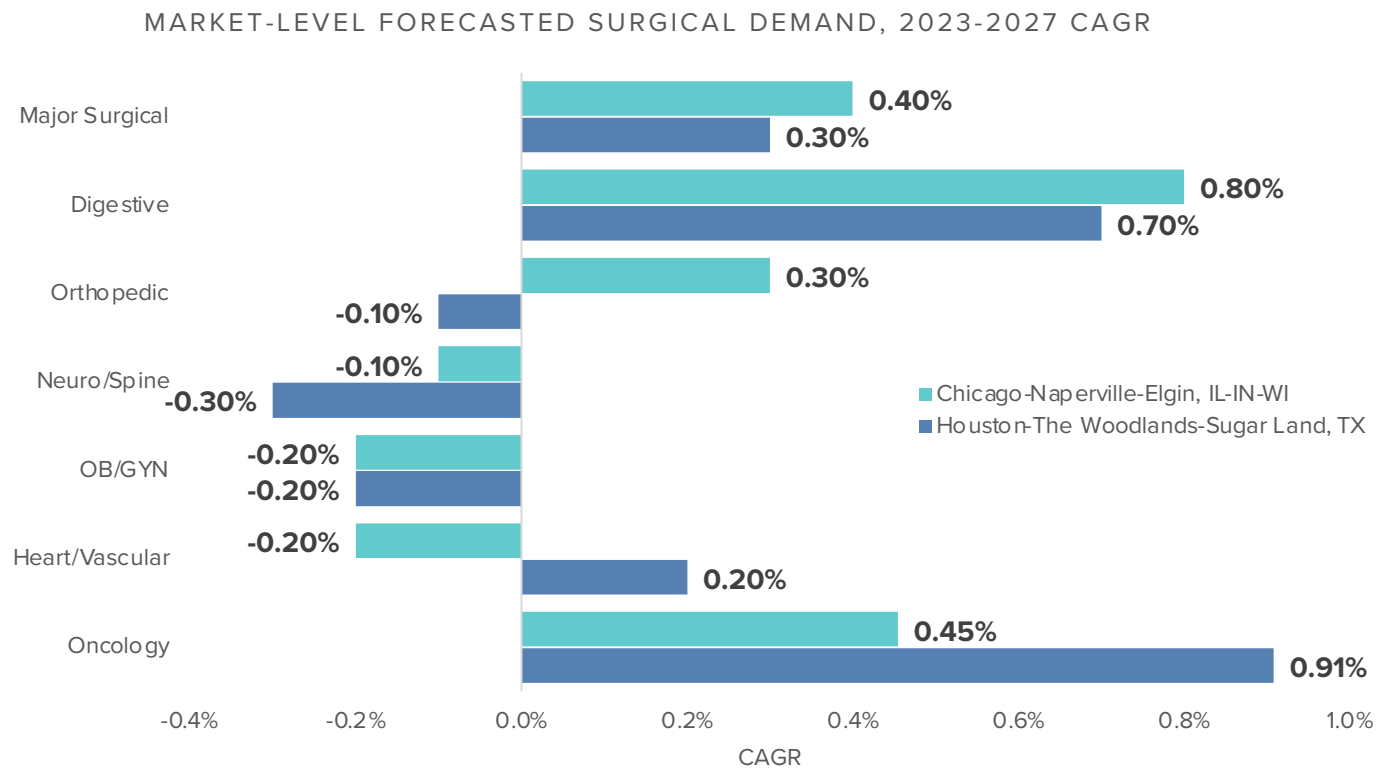


Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Healthcare Is Local...And So Is Demand for Services

Analysis of two large CBSAs — Houston and Chicago — reveals that demand for healthcare services is highly dependent on market characteristics. While Chicago has a declining population, the projected demand for surgical services is higher overall than Houston, which is the second fastest growing metro area in the U.S. Notably, even the fastest growing service line does not exceed 1.0% CAGR in either market.



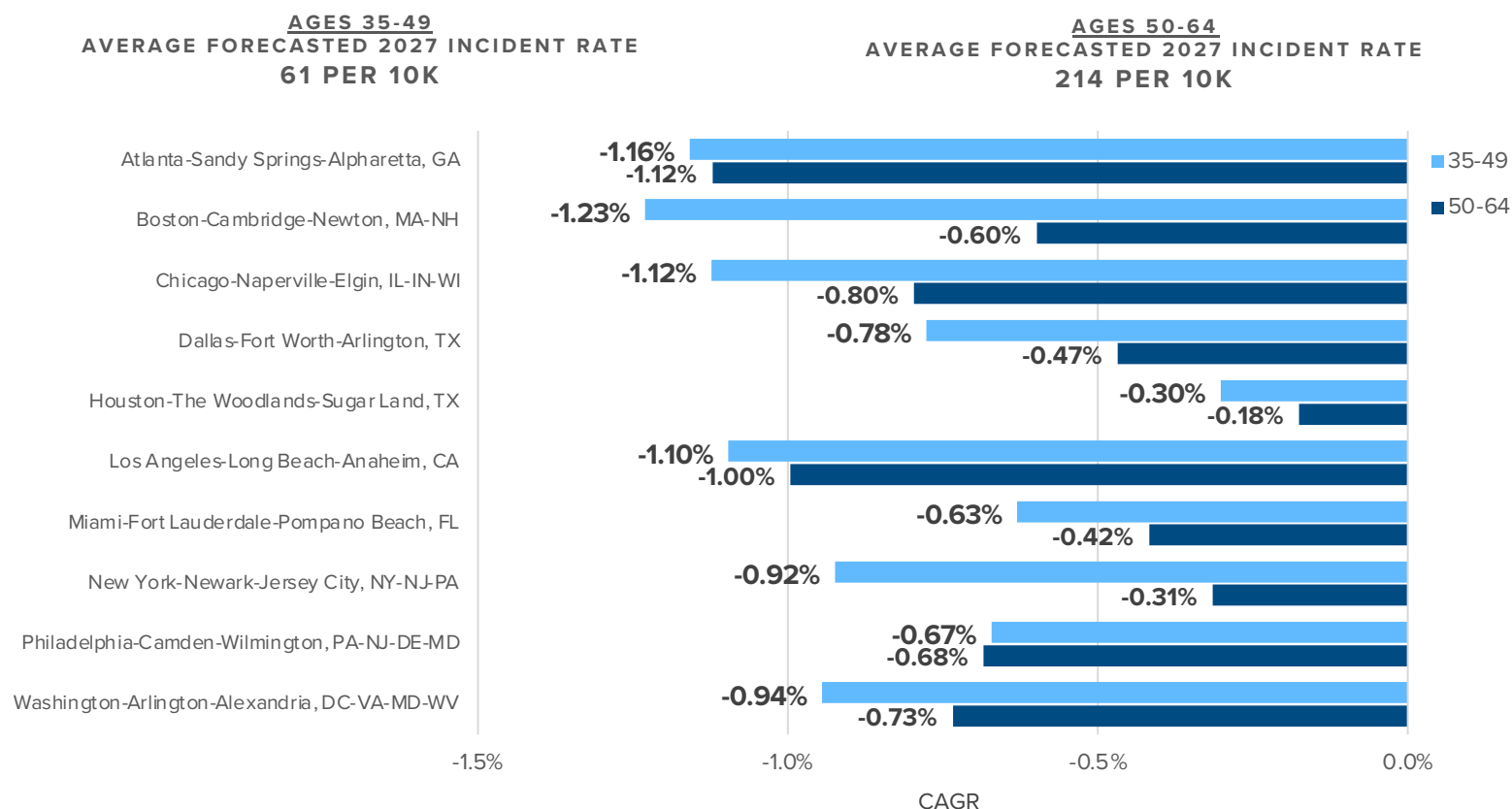
Note: CAGR denotes compound annual growth rate. Major Surgical includes Heart/Vascular, OB/GYN, Orthopedic, Neuro/Spine, and Digestive service lines.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Projected Heart/Vascular Surgical Demand Varies by Age

At the market level, the projected five-year CAGR for heart/vascular surgical services for patients ages 35-49 ranges from -1.23% to -0.30% and -1.12% to -0.18% for patients ages 50-64. By 2027, the median incidence rate is forecasted to be 214 per 10K, on average, for patients ages 50-64 and 61 per 10K for patients ages 35-49.

MARKET-LEVEL FORECASTED HEART/VASCULAR SURGICAL DEMAND, PATIENTS AGES 35-49 AND 50-64, 2023-2027 CAGR



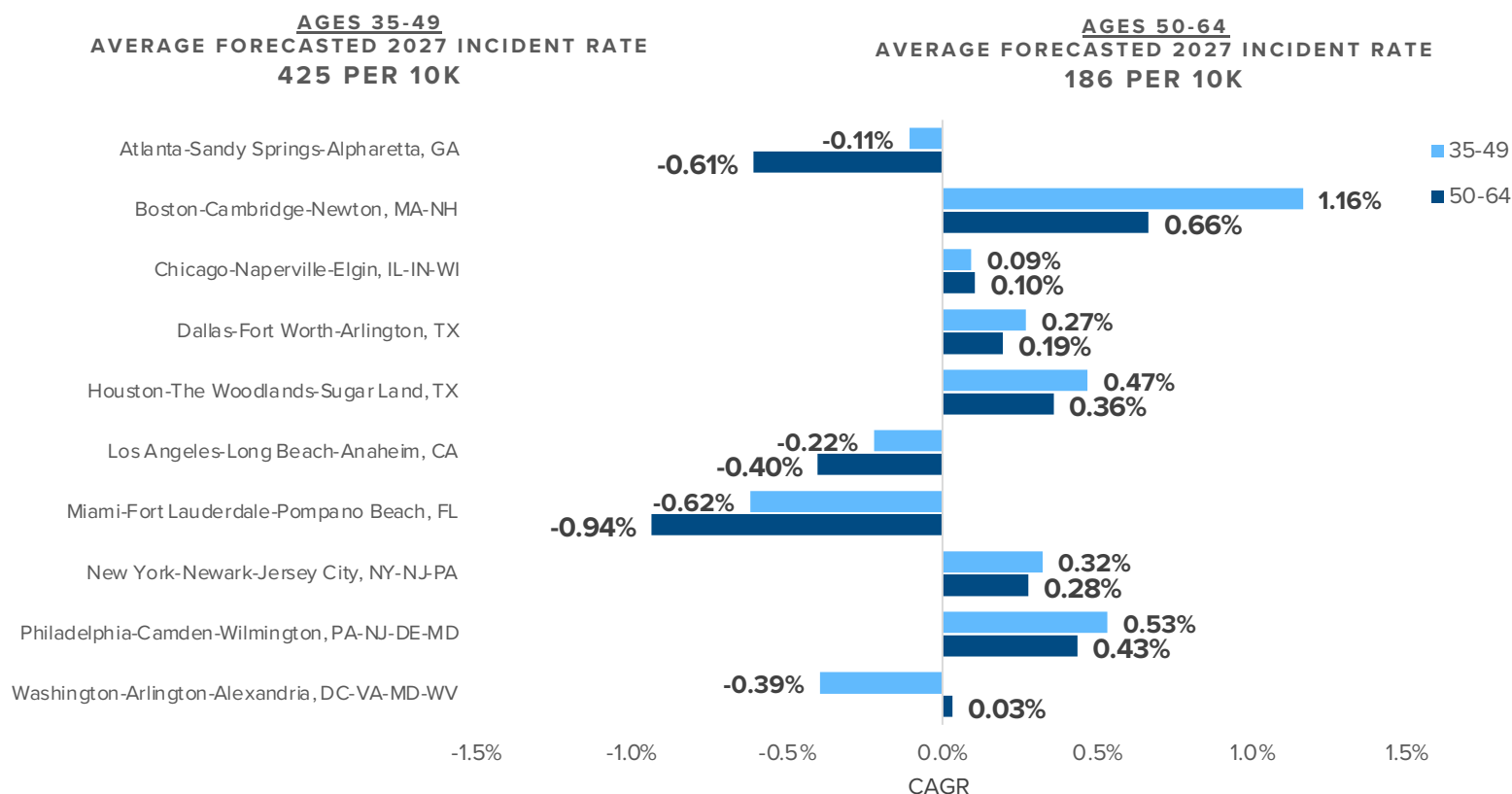
Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Projected OB/GYN Surgical Demand Varies by Age

At the market level, the projected five-year CAGR for OB/GYN surgical services for patients ages 35-49 ranges from -0.62% to 1.16% and -0.94% to 0.66% for patients ages 50-64. By 2027, the median incidence rate is forecasted to be 186 per 10K, on average, for patients ages 50-64 and 425 per 10K for patients ages 35-49.

MARKET-LEVEL FORECASTED **OB/GYN** SURGICAL DEMAND, PATIENTS AGES 35-49 AND 50-64, 2023-2027 CAGR



Note: CAGR denotes compound annual growth rate.

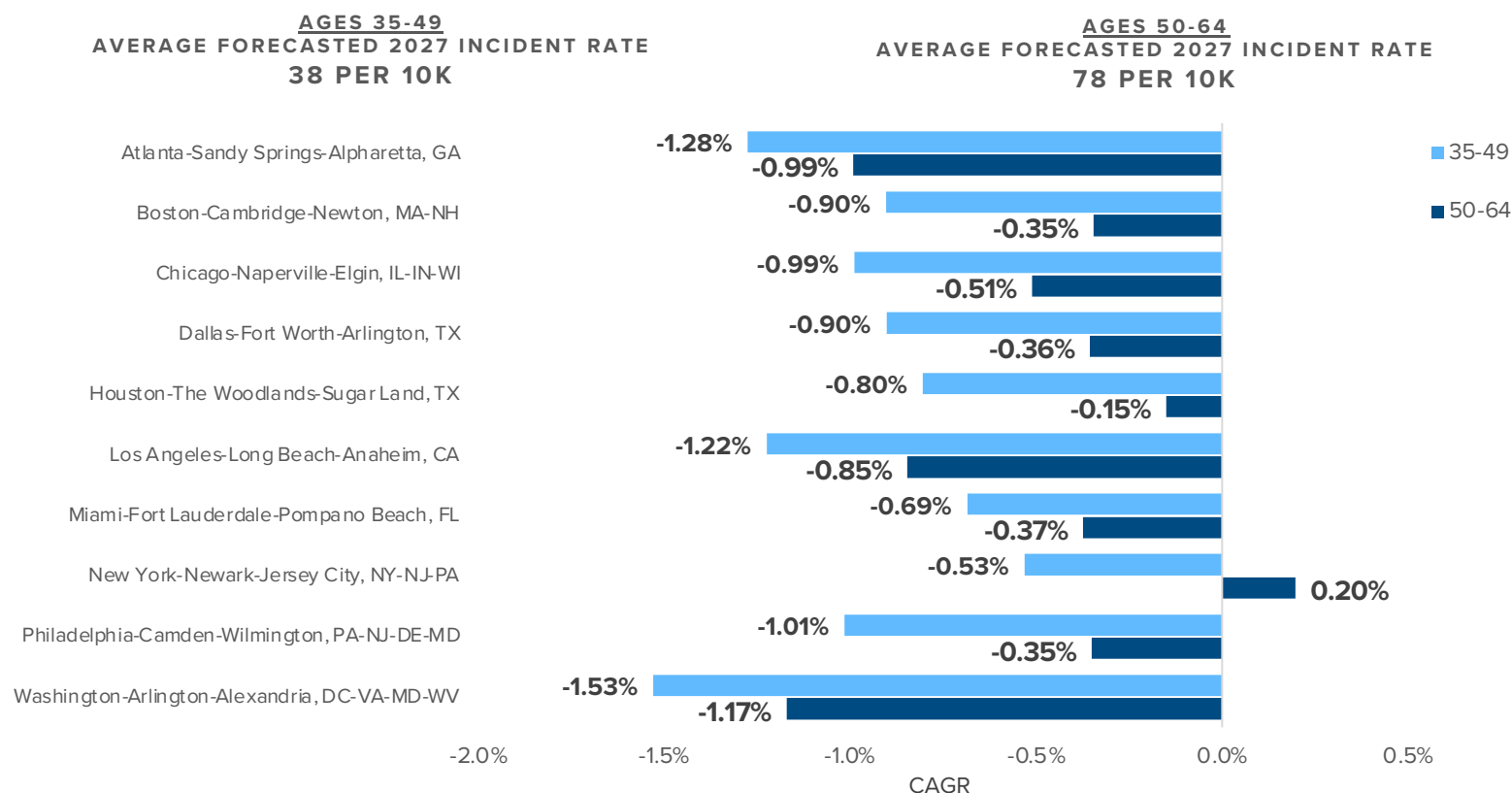
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Projected Neuro/Spine Surgical Demand Varies by Age

At the market level, the projected five-year CAGR for neuro/spine surgical services for patients ages 35-49 ranges from -1.53% to -0.53% and -1.17% to 0.20% for patients ages 50-64. By 2027, the median incidence rate is forecasted to be 78 per 10K, on average, for patients ages 50-64 and 38 per 10K for patients ages 35-49.

MARKET-LEVEL FORECASTED **NEURO/SPINE** SURGICAL DEMAND, PATIENTS AGES 35-49 AND 50-64, 2023-2027 CAGR



Note: CAGR denotes compound annual growth rate.

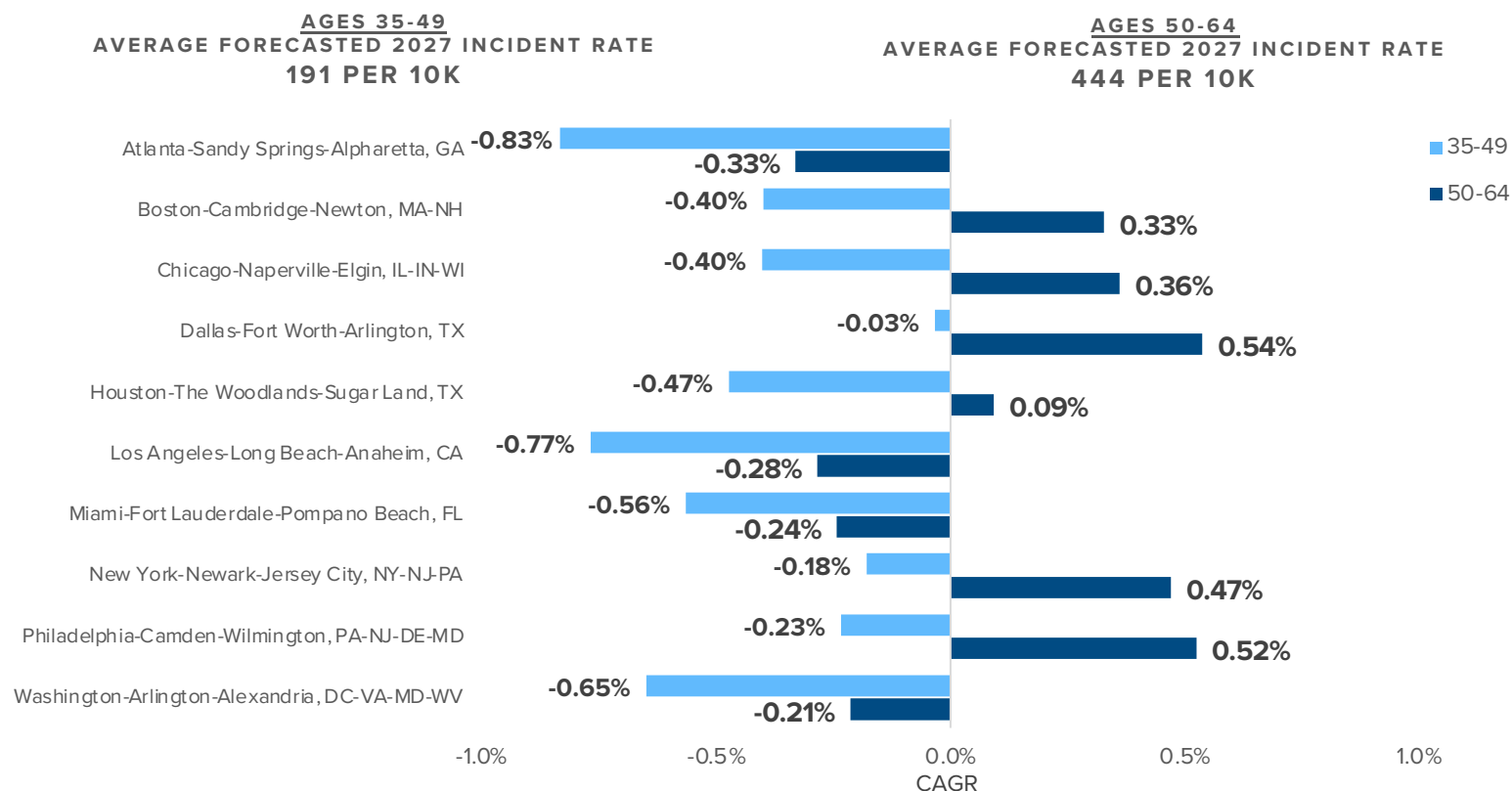
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Projected Orthopedic Surgical Demand Varies by Age

At the market level, the projected five-year CAGR for orthopedic surgical services for patients ages 35-49 ranges from -0.83% to -0.03% and -0.33% to 0.54% for patients ages 50-64. By 2027, the median incidence rate is forecasted to be 444 per 10K, on average, for patients ages 50-64 and 191 per 10K for patients ages 35-49.

MARKET-LEVEL FORECASTED **ORTHOPEDIC** SURGICAL DEMAND, PATIENTS AGES 35-49 AND 50-64, 2023-2027 CAGR



Note: CAGR denotes compound annual growth rate.

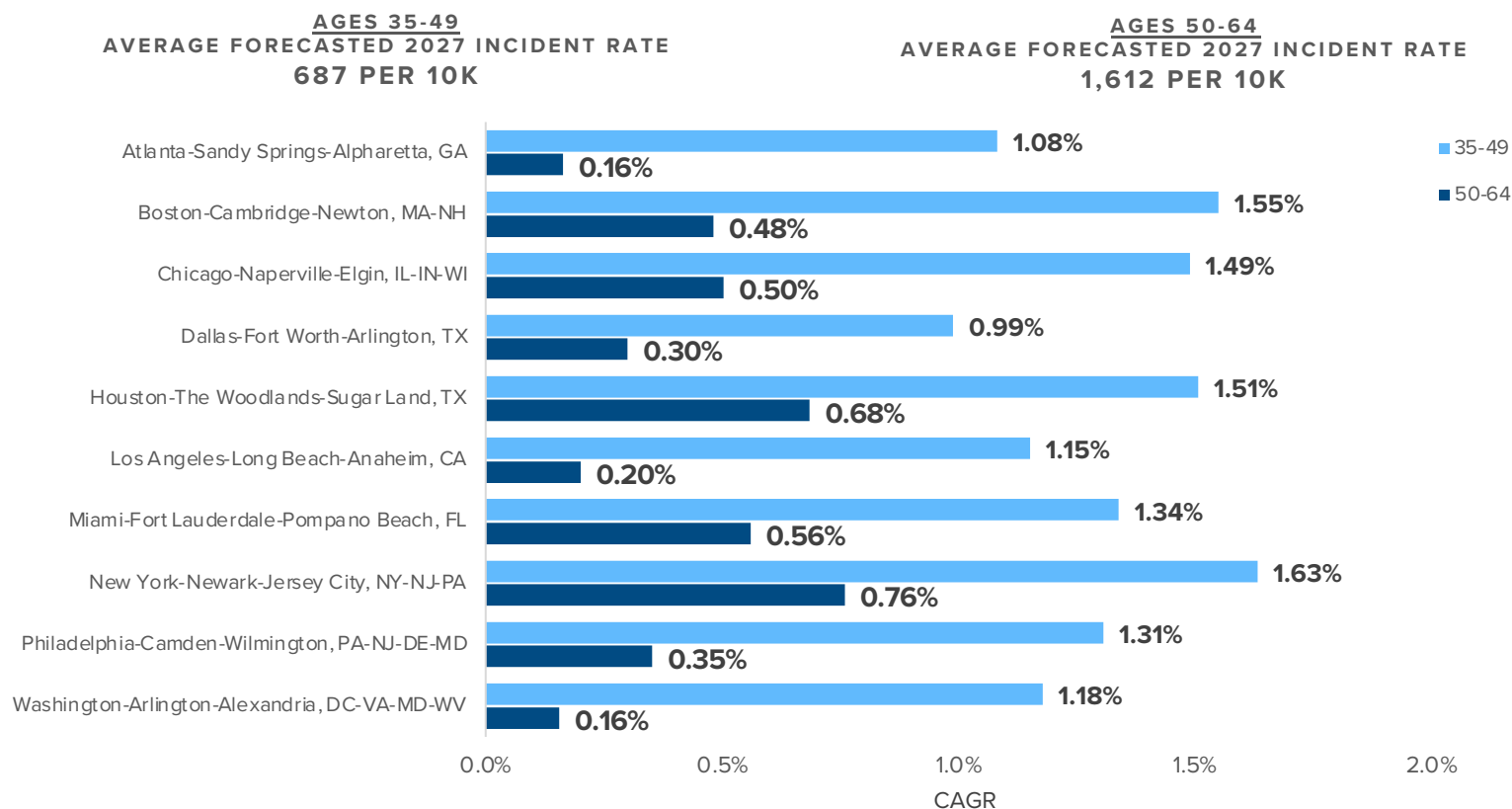
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Projected Digestive Surgical Demand Varies by Age

At the market level, the projected five-year CAGR for digestive surgical services for patients ages 35-49 ranges from 0.99% to 1.63% and 0.16% to 0.76% for patients ages 50-64. By 2027, the median incidence rate is forecasted to be 1,612 per 10K, on average, for patients ages 50-64 and 687 per 10K for patients ages 35-49.

MARKET-LEVEL FORECASTED **DIGESTIVE** SURGICAL DEMAND, PATIENTS AGES 35-49 AND 50-64, 2023-2027 CAGR



Note: CAGR denotes compound annual growth rate.

Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Projected Demand Growth Is Below Historical Industry Expectations

With historical industry expectations of surgical growth spanning anywhere between 3% and 6% nationally depending on the service line, projected demand growth at the national and local market level tells a different story. Between 2023-2027, the projected CAGR for major surgical service lines nationally ranges from -0.04 (OB/GYN) to 0.2% (Heart/Vascular and Digestive), with the highest and lowest growth markets varying by service line.

SUMMARY OF FIVE-YEAR SURGICAL DEMAND FORECAST, 2023-2027

CATEGORY	CAGR (2023-2027)	RATIO OF OP:IP	CBSA WITH HIGHEST CAGR	CBSA WITH LOWEST CAGR	TOP OP PROCEDURE DRIVING DEMAND
HEART/ VASCULAR	0.2%	1.62	Houston-The Woodlands- Sugar Land, TX	Atlanta-Sandy Springs- Alpharetta, GA	Cardiac Catheterization
OB/GYN	-0.04%	1.34	Boston-Cambridge- Newton, MA-NH	Miami-Fort Lauderdale- Pompano Beach, FL	Hysterectomy
NEURO/ SPINE	0.01%	1.18	New York-Newark- Jersey City, NY-NJ-PA	Washington-Arlington- Alexandria, DC-VA-MD-WV	Surgery on Nerves and Nervous System
ORTHOPEDIC	0.1%	2.99	Philadelphia-Camden- Wilmington, PA-NJ-DE-MD	Houston-The Woodlands- Sugar Land, TX	Endoscopy/Arthroscopy Procedures on the Musculoskeletal System
DIGESTIVE	0.2%	6.63	New York-Newark- Jersey City, NY-NJ-PA	Washington-Arlington- Alexandria, DC-VA-MD-WV	Colonoscopy

Note: CAGR denotes compound annual growth rate; IP denotes inpatient; OP denotes outpatient. Historical industry expectation percentages were determined based on various news articles and qualitative input from health system and hospital operators responsible for strategic and financial planning decision.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Most Top Inpatient Procedures Driving Demand Are Not Commonly Delivered Outpatient

Several inpatient procedures driving inpatient demand (e.g., vaginal delivery, spine surgeries) are not often delivered outpatient, and thus will have a greater impact on inpatient trajectory.

TOP FIVE SURGICAL PROCEDURES DRIVING PROJECTED **INPATIENT** DEMAND, 2023-2027

	HEART/ VASCULAR	OB/GYN	NEURO/ SPINE	ORTHOPEDIC	DIGESTIVE
1	Cardiac Catheterization	Vaginal Delivery	Spinal Fusion	Joint Replacement of Knee or Hip	Upper GI Endoscopy
2	Other Vascular Procedures	Cesarean Delivery Procedures	Surgery of Spine and Spinal Cord	Repair Revision and/or Reconstruction Procedures on the Femur (Thigh Region)	Colonoscopy
3	Percutaneous Cardiovascular Procedures	Surgical Procedures on the Corpus Uteri	Craniectomy or Craniotomy	Amputation of Limb	Procedures on the Abdomen Peritoneum and Omentum
4	Pacemaker or Pacing Cardioverter-Defibrillator Procedures	Surgical Procedures on the Cervix Uteri	Surgery of Brain and Skull	General Surgical Procedures on the Musculoskeletal System	Major Small and Large Bowel Procedures
5	Coronary Bypass	Surgical Procedures on the Oviduct/Ovary	Surgery on Nerves and Nervous System	Fracture and/or Dislocation Procedures on the Pelvis and Hip Joint	Cholecystectomy

Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Several Procedures Driving Inpatient Demand Are Also Driving Outpatient Growth

With more care shifting from inpatient to outpatient settings each year, several procedures are being delivered in both settings. Some of the top procedures driving outpatient and inpatient growth are cardiac catheterizations and colonoscopies.

TOP FIVE SURGICAL PROCEDURES DRIVING PROJECTED **OUTPATIENT** DEMAND, 2023-2027

	HEART/ VASCULAR	OB/GYN	NEURO/ SPINE	ORTHOPEDIC	DIGESTIVE
1	Cardiac Catheterization	Surgical Procedures on the Corpus Uteri	Surgery on Nerves and Nervous System	Endoscopy/Arthroscopy Procedures on the Musculoskeletal System	Colonoscopy
2	Arterial Procedures	Surgical Procedures on the Cervix Uteri	Surgery of Spine and Spinal Cord	Joint Replacement of Knee or Hip	Upper GI Endoscopy
3	Percutaneous Cardiovascular Procedures	Surgical Procedures on the Vagina	Surgery of Brain and Skull	Fracture and/or Dislocation Procedures on the Forearm and Wrist	Procedures on the Abdomen Peritoneum and Omentum
4	Pacemaker or Pacing Cardioverter-Defibrillator Procedures	Abortion Procedures	Spinal Fusion	Other Surgical Procedures on the Hand and Fingers	Anal and Stomal Procedures
5	Other Therapeutic Cardiovascular Services and Procedures	Surgical Procedures on the Oviduct/Ovary	Ventricular Shunt Procedures	Fracture and/or Dislocation Procedures on the Hand and Fingers	Hernia Procedures

Source: Trilliant Health Demand Forecast.

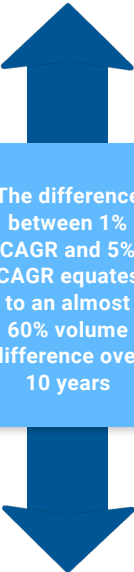
TREND 4: DEMAND TRAJECTORY

The Magnitude of a 1% CAGR Difference Is Significant

Incremental percent differences in a service demand forecast based on compound annual growth rates (CAGR) result in significantly different projections. The difference between a 1% CAGR and a 5% CAGR equates to an almost 60% difference in volume over ten years.

SCENARIOS FOR DIFFERENT FORECASTED CAGR

SCENARIO		2022 FORECASTED MAJOR SURGICAL VOLUME	10-YEAR CAGR	2031 FORECASTED MAJOR SURGICAL VOLUME
1	Major surgical service lines will grow at a CAGR of 1% (HYPOTHETICAL)	38,000,000	1%	+10.5%
2	Major surgical service lines will grow at a CAGR of 2% (ACTUAL 50 TH PERCENTILE FORECAST)	38,000,000	2%	+21.9%
3	Major surgical service lines will grow at a CAGR of 3% (HYPOTHETICAL)	38,000,000	3%	+34.4%
4	Major surgical service lines will grow at a CAGR of 4% (HYPOTHETICAL)	38,000,000	4%	+48.0%
5	Major surgical service lines will grow at a CAGR of 5% (HYPOTHETICAL)	38,000,000	5%	+69.2%



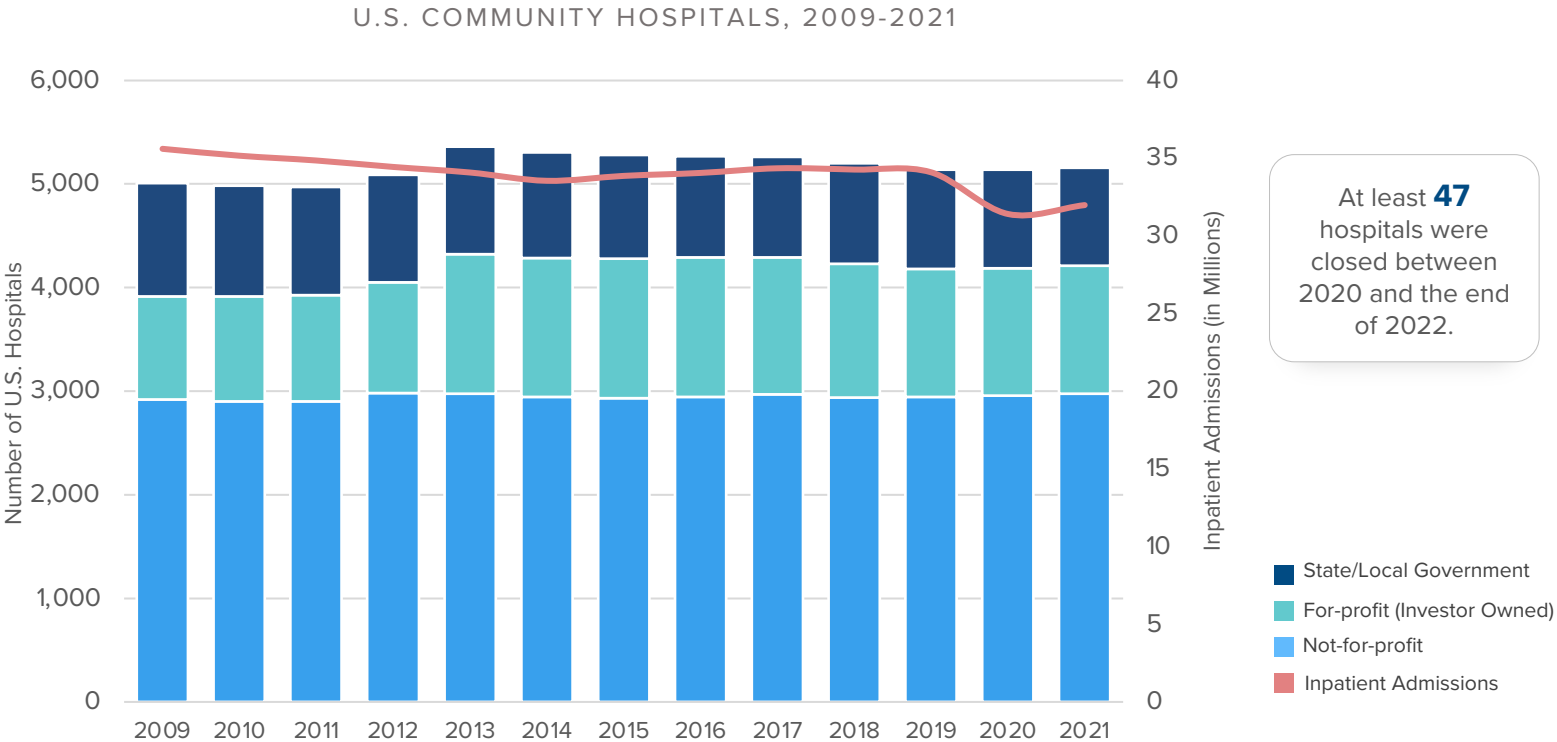
The difference between 1% CAGR and 5% CAGR equates to an almost 60% volume difference over 10 years

Note: CAGR denotes compound annual growth rate.
Source: Trilliant Health Demand Forecast.

TREND 4: DEMAND TRAJECTORY

Despite the Laws of Economics, the Number of Hospitals Has Remained Relatively Stable Amid Declining Demand

Despite years of declining hospital admissions, the supply of hospitals remains stable.



Note: Inpatient admissions are for nonfederal short-term general hospitals and other special hospitals; 2023 American Hospital Association Hospital Statistics includes data through 2021.

Source: 2023 American Hospital Association Hospital Statistics; The Cecil G. Sheps Center for Health Services Research; Becker's Hospital CFO Reports; The Wall Street Journal, *Hospital Distress Worsens Amid Labor Scarcity and Inflation*.



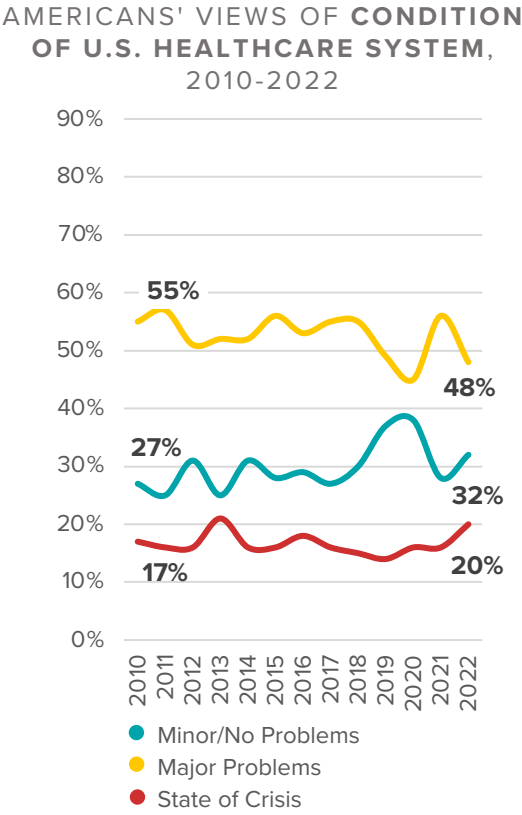
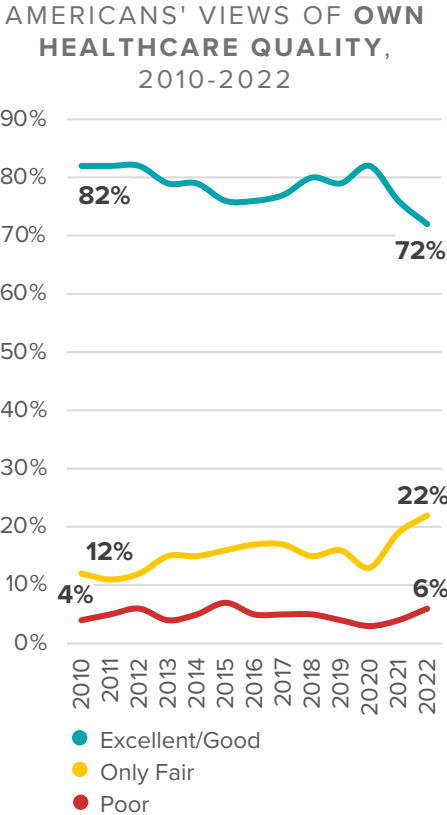
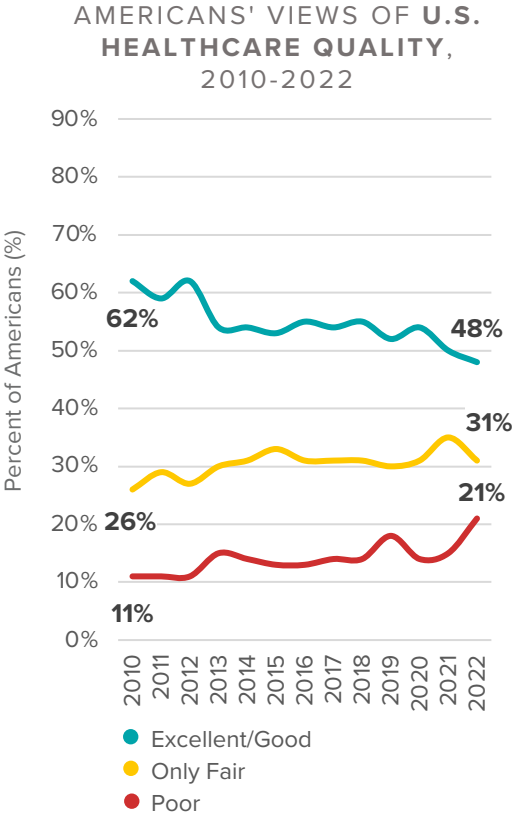
TREND 5

Consumer Behaviors Are Starting To
Manifest in Patient Decision Making

TREND 5: CONSUMER DECISIONS

Public Dissatisfaction with the Healthcare System Is Growing

Americans are increasingly discontented with the healthcare system. For the first time in 20 years, the majority of Americans (52%) believe the overall healthcare system is substandard, and fewer Americans each year are rating the quality of their own care experiences as high.

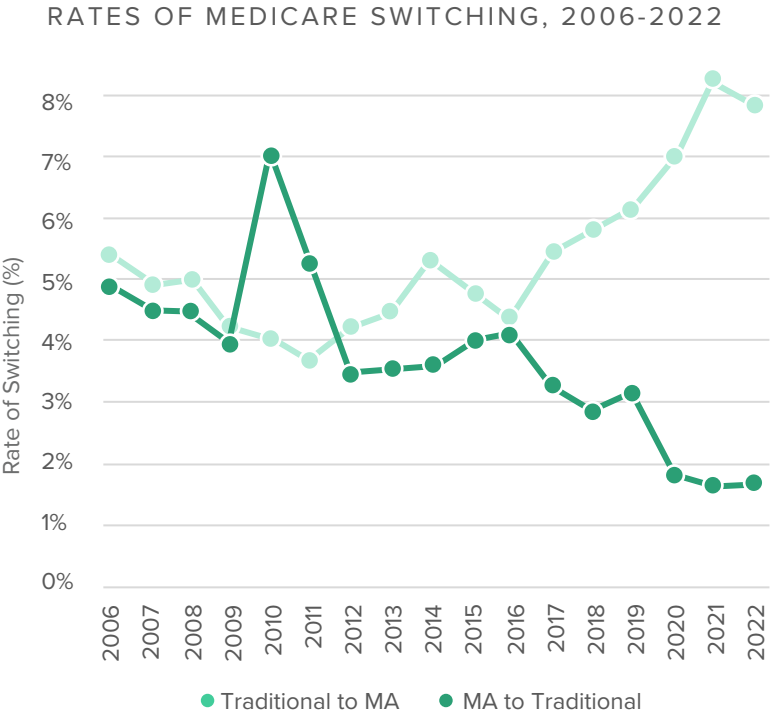
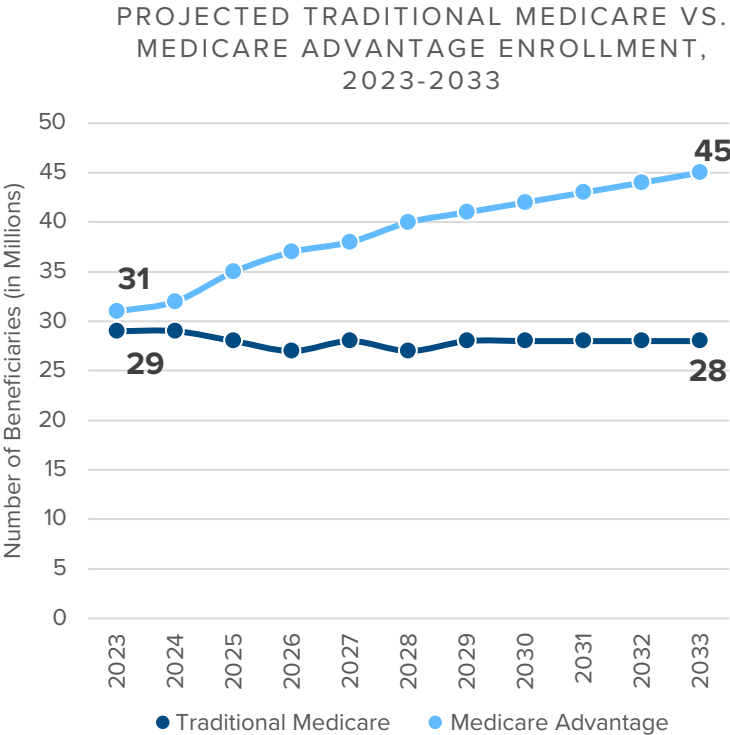


Source: Gallup, Americans Sour on U.S. Healthcare Quality.

TREND 5: CONSUMER DECISIONS

Consumer Choice in Public Programs Is Also Evident As Beneficiaries Increasingly Switch To Medicare Advantage

While total Medicare enrollment is projected to grow 21.7% by 2033, MA is expected to account for 61.6% of enrollment. Switching from Traditional Medicare to MA is increasing over time, with the highest increase observed in 2021. In 2021, the switching rate from Traditional Medicare to MA (7.8% percent) was 6.5X higher than the switching rate from MA to Traditional Medicare (1.2%).

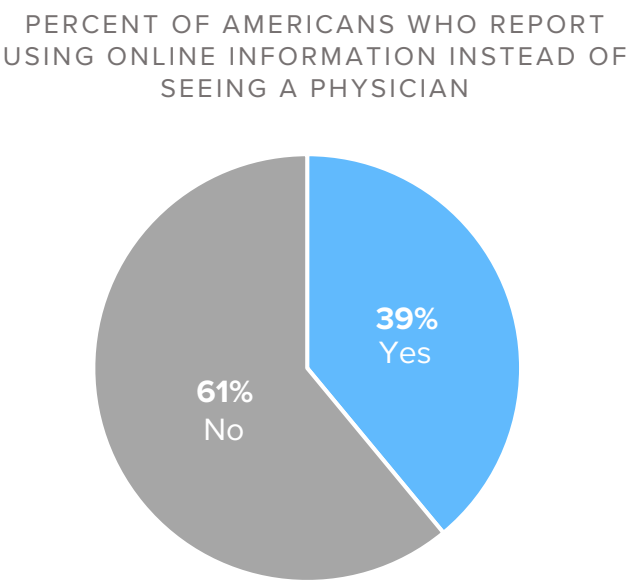
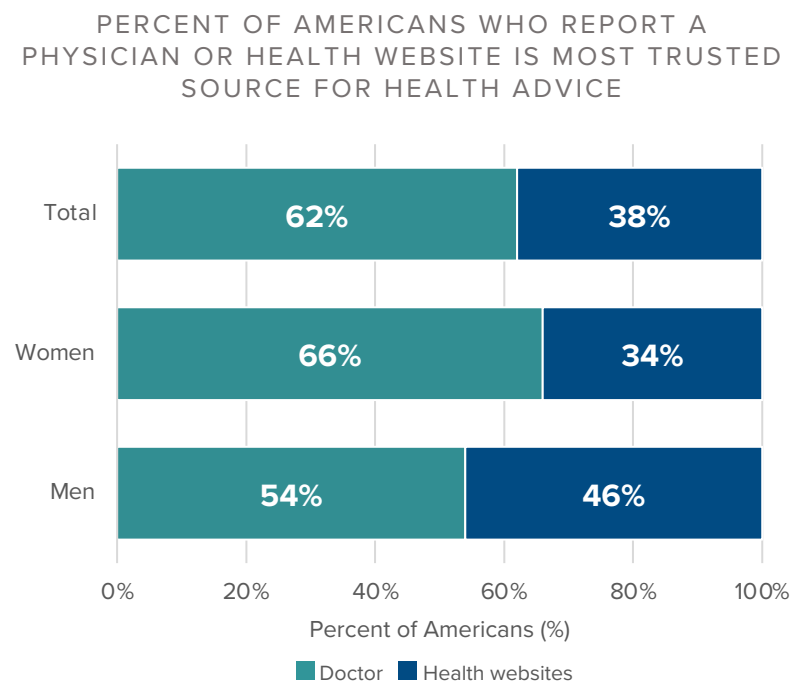


Note: MA denotes Medicare Advantage.
Source: Congressional Budget Office; Xu et. al., Medicare Switching: Patterns Of Enrollment Growth In Medicare Advantage, 2006–22, *Health Affairs*, 2023.

TREND 5: CONSUMER DECISIONS

Americans Exhibit High Trust in “Dr. Google”

While most Americans cite a physician as their most trusted source for health advice, a sizeable share (38%) report that health websites are their most trusted source. Perhaps unsurprisingly, nearly four in ten Americans report using online information to self-diagnose instead of seeing a physician. Are these behaviors also contributing to reduced primary care utilization?



Source: OnePoll and Bayer Poll for American Heart Month, 2023.

TREND 5: CONSUMER DECISIONS

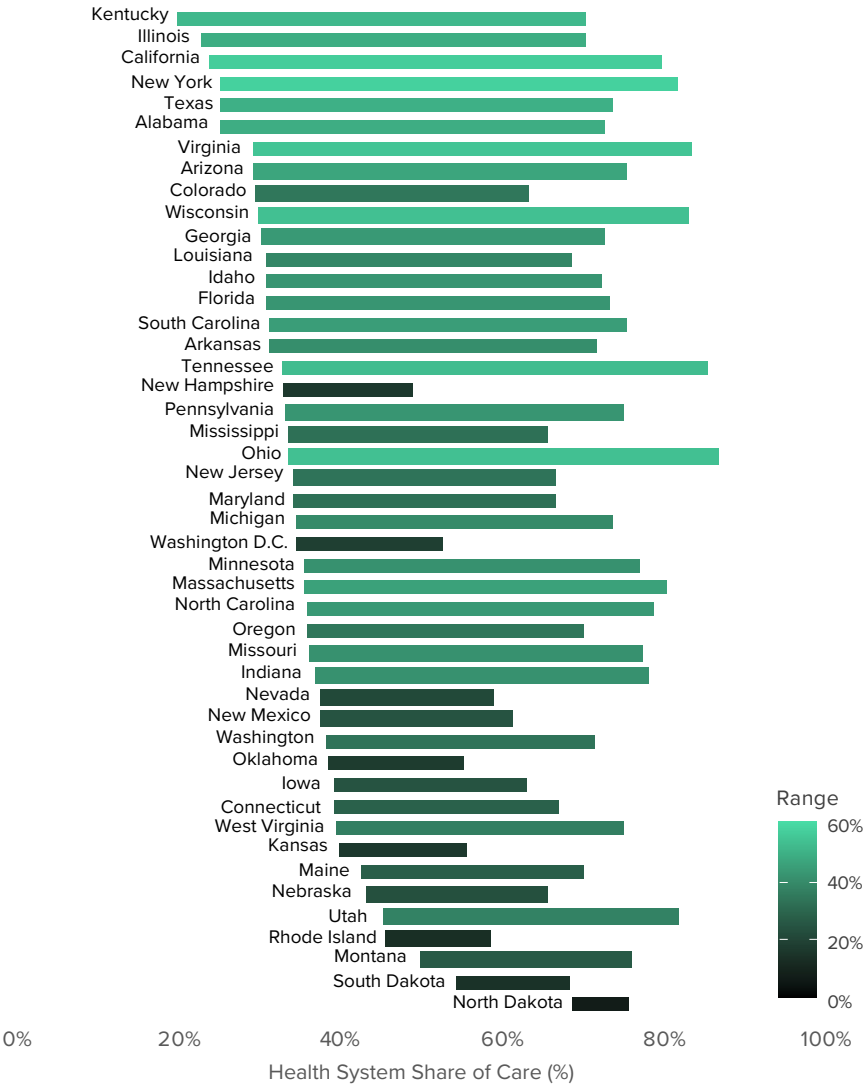
With More Options Available to Consumers, Measuring Share of Care Is Essential

Nationally, health system share of care varies widely, spanning from 19.9% to 86.9%. At the state level, North Dakota demonstrates the most narrow range in share of care, with values ranging from 68.8% to 75.9%. New York exhibits the broadest range in share of care, with values ranging from 25.1% to 81.6%. The varying degrees of share of care is in part attributed to available supply of providers – traditional and new entrants – and individual access to care.

Note: Hospitals with a minimum size of 200 beds were included in the analysis. Data is not shown for the five states with two or fewer hospitals meeting criteria. System share of care is defined as following: for patients that have had at least two encounters at a short-term acute care hospital between Q4 2020 and Q3 2022, the percent of visits that occur at a hospital within the same system.

Source: Trilliant Health national all-payer claims database.

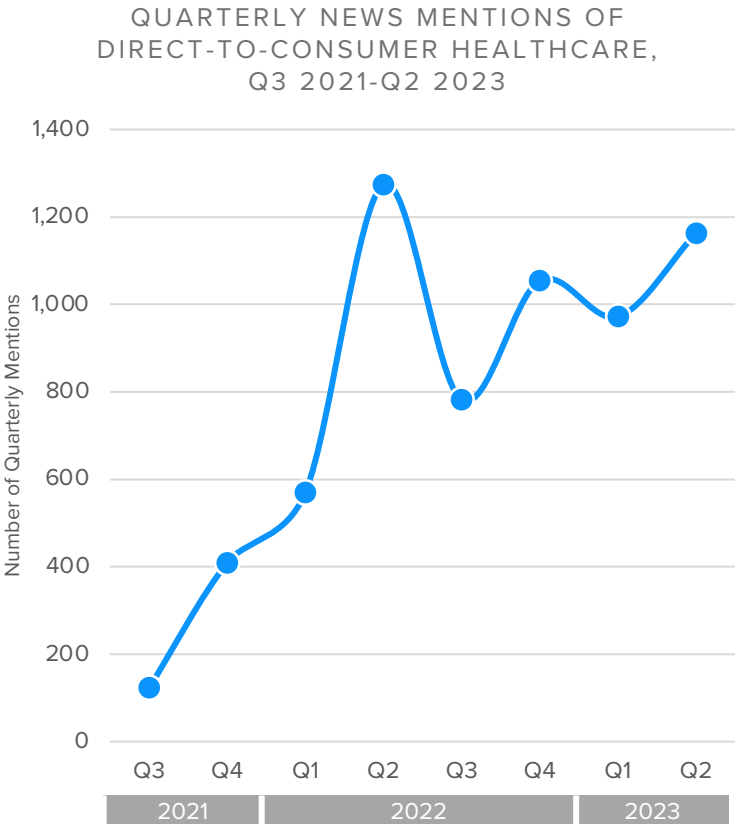
RANGE OF HEALTH SYSTEM SHARE OF CARE, BY STATE Q4 2020-Q2 2022



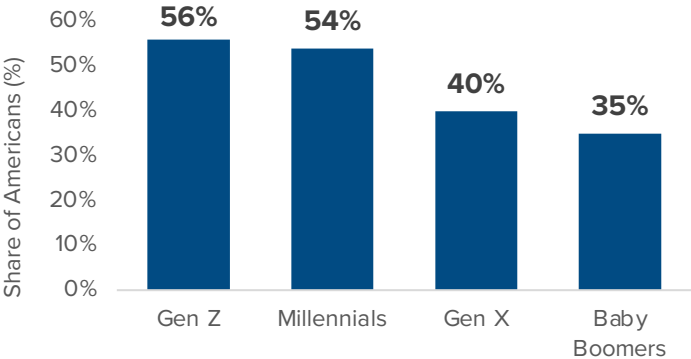
TREND 5: CONSUMER DECISIONS

Younger Patient Cohorts Exhibit More Consumer-Like Decisions in Accessing Care

Patients are people, and people are consumers, and consumers make choices based on numerous factors. As retailers, technology companies and omni-channel providers flood the healthcare delivery market, patients have more care options than ever. Notably, 58% of Americans reported that they are likely to seek non-emergent care from a retail pharmacy.



SHARE OF AMERICANS WHO REPORTED VISITING A PHARMACY FOR MEDICAL CARE IN 2022, BY GENERATION



58%

Americans who are likely to visit a retail pharmacy as a first step for seeking non-emergent medical care (i.e., urgent care services)

83%

Americans who would still go to a traditional physician's office for an annual physical (i.e., preventive primary care services)

1 in 3

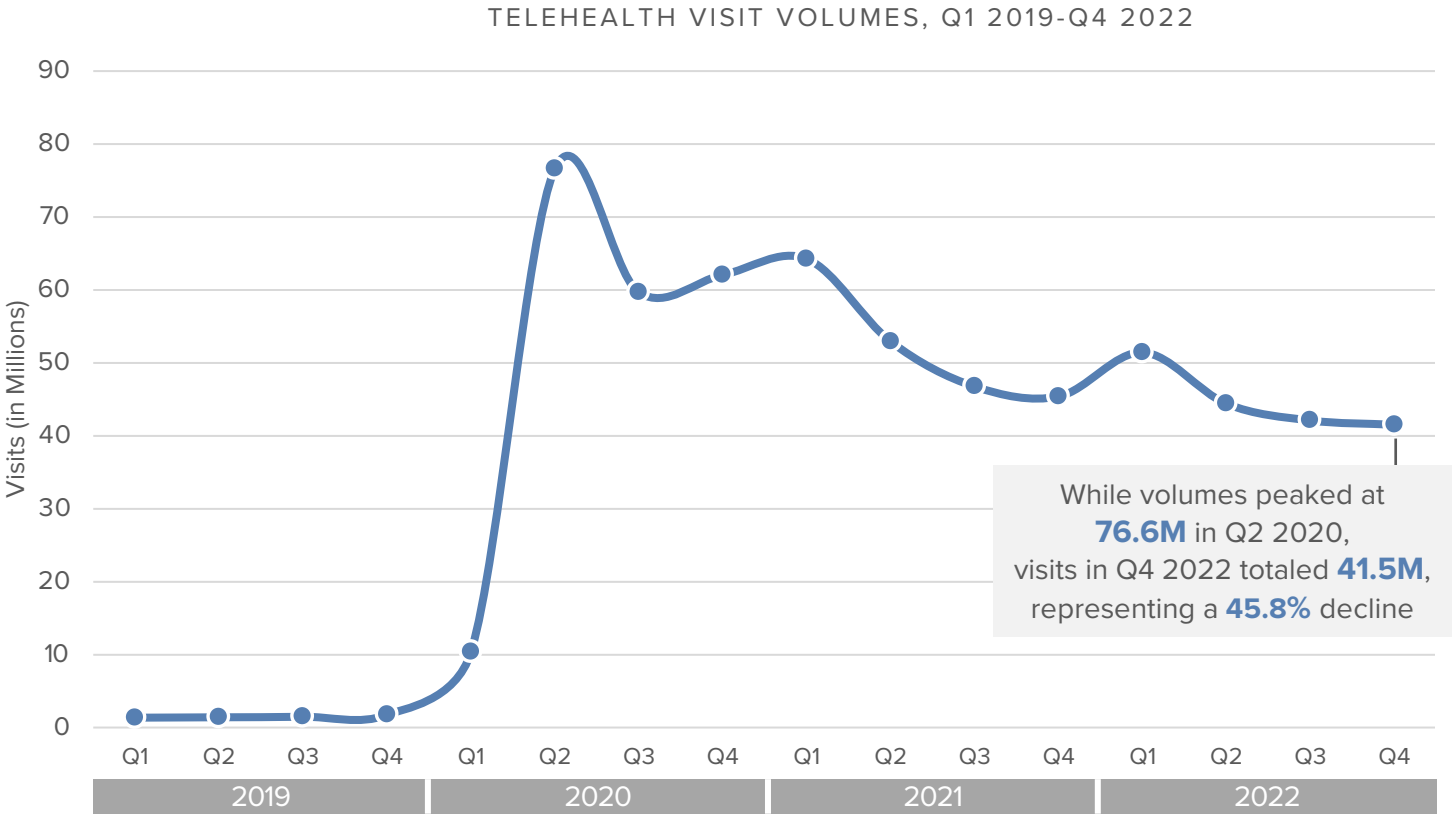
Americans who say convenience is more important for non-emergent scenarios

Source: Publicly available news sources; Wolters Kluwer *Pharmacy Next: Consumer Care and Cost Trends* survey.

TREND 5: CONSUMER DECISIONS

When Given the Choice, Fewer Consumers Choose Telehealth

The 45.8% decline in telehealth visit volumes from a peak in Q2 2020 to Q4 2022 reflects how the expanded availability of virtual care options has not shifted widespread consumer preference. Tapering demand suggests that continued telehealth use is concentrated to niche, discrete applications and consumer segments.



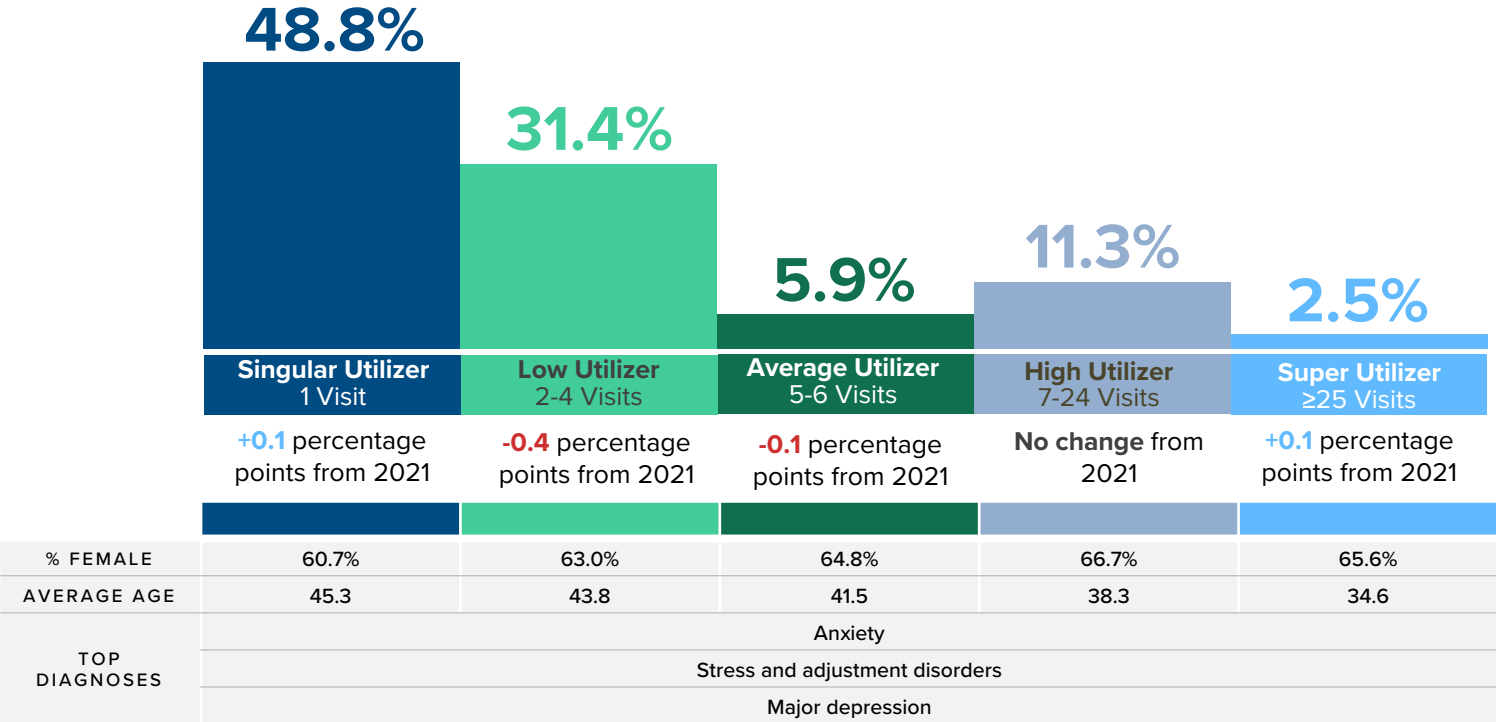
Source: Trilliant Health national all-payer claims database.

TREND 5: CONSUMER DECISIONS

Half of Telehealth Users Only Used It Once

In 2022, 80.2% of telehealth users had four or fewer visits. Super Utilizers, who utilized telehealth 25+ times, tend to be younger (average age 34.6) and female (65.6%). In contrast, Singular Utilizers, who used telehealth once, are slightly older (average age 45.3) and mostly female (60.7%). What does the high proportion of single telehealth users indicate about consumer preferences for or satisfaction with virtual care?

ANNUAL UTILIZATION PATTERNS OF TELEHEALTH USERS, 2022



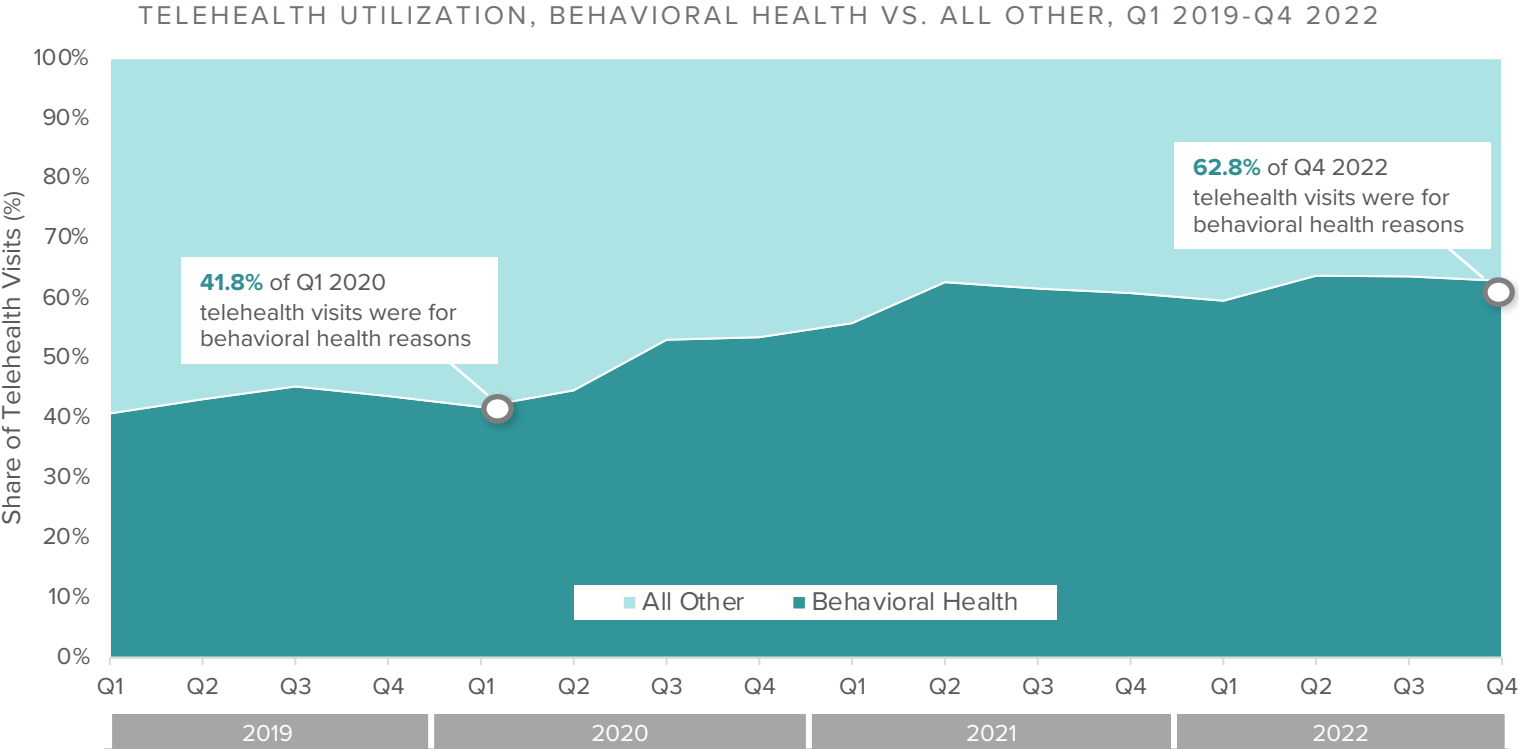
Note: Percentages may not add up to 100% due to rounding. As a reference point, previous findings from Trilliant Health research focused exclusively on telehealth trends suggest that approximately a quarter of Americans used telehealth during the first two years of the pandemic. Utilization patterns of telehealth users should therefore be interpreted from the lens that the total number of users is still a relatively small population segment, which is comparable to the common “80/20 rule” also known as the Pareto principle.

Source: Trilliant Health national all-payer claims database.

TREND 5: CONSUMER DECISIONS

Consumers Use Telehealth Primarily for Behavioral Health Needs

Telehealth for the treatment and management of behavioral health conditions has increased consistently since 2019, a trend not seen in any other clinical application of virtual care. Compared to Q1 2020, the share of telehealth for behavioral health reasons increased from 41.8% to 62.8% in Q4 2022. This further validates that consumers largely view telehealth as an appropriate substitute for low-acuity in-person behavioral health care, and likely for not much else (e.g., chronic condition management).

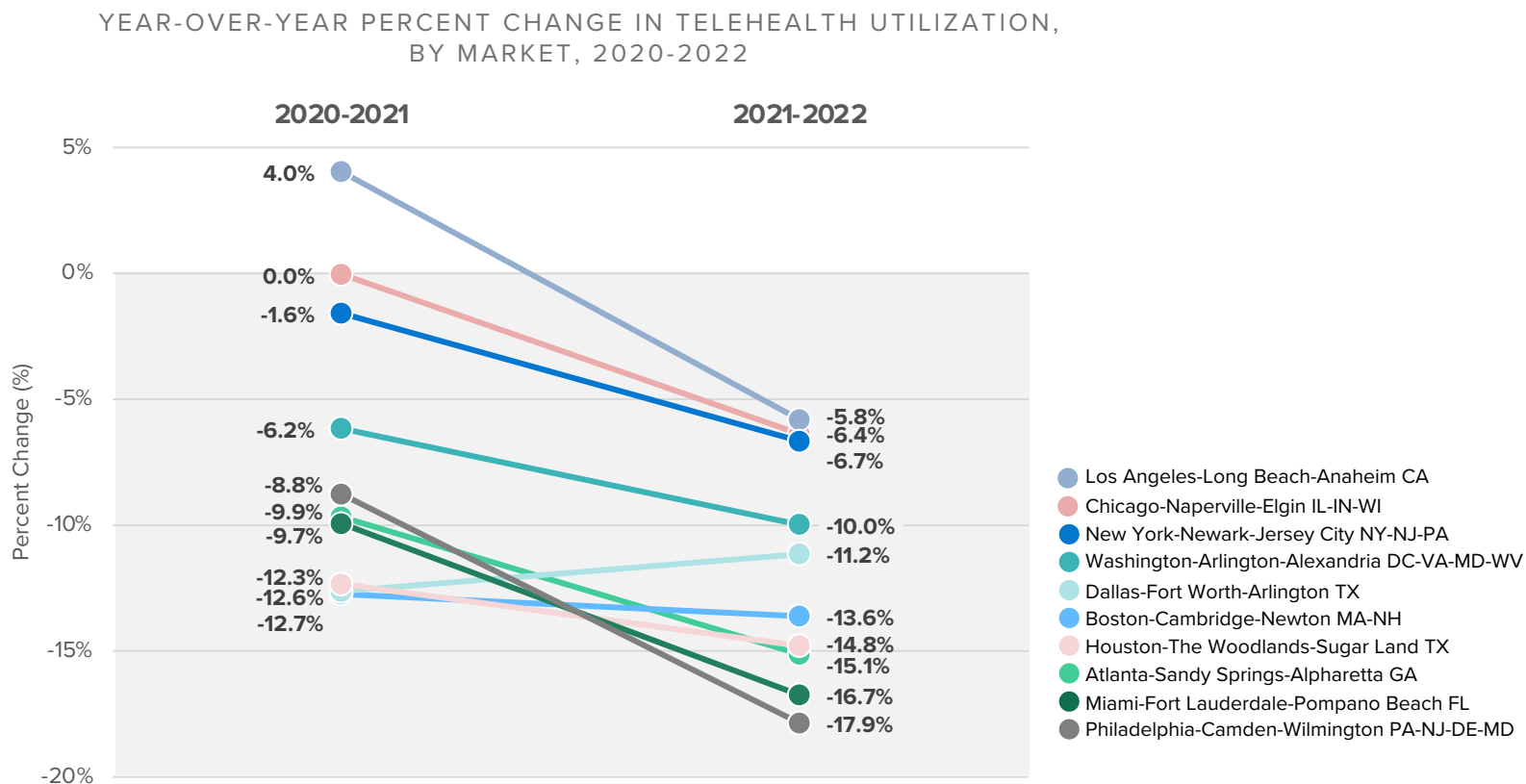


Source: Trilliant Health national all-payer claims database.

TREND 5: CONSUMER DECISIONS

Telehealth Utilization Slowing in Most Major Markets

Of the top ten CBSAs by population, year-over-year growth in telehealth utilization slowed from 2020 to 2022 in all but one market. The only market with positive growth in the time period was Los Angeles, where utilization increased by 4.0% from 2020 to 2021, but declined by 5.8% from 2021 to 2022.



Source: Trilliant Health national all-payer claims database.



TREND 6

The Traditional Care Pathway Is Becoming Disintermediated

TREND 6: DISINTERMEDIATION

Alternative Delivery Models Are Largely Transactional in Nature

As new models of care and new players enter the health economy, healthcare is becoming more disintermediated. The focus of consumer interactions will be increasingly transactional and disconnected from the broader healthcare system. For example, while retail players meet a healthcare consumer's need for convenient care for low-acuity conditions (e.g., sinusitis), the lack of relationship between the consumer and retail provider makes it even more challenging for the individual to navigate the system for the broader set of medical services they should receive (e.g., preventive screening).

ALTERNATIVE HEALTHCARE DELIVERY MODELS

STRATEGY	REVENUE MODEL		CONSUMER INTERACTION		EXAMPLES
	FFS	RISK	TRANSACTIONAL	LONGITUDINAL	
Urgent Care	✓		✓		CareNow EXPRESS MED URGENT CARE
Digital Health	✓	✓	✓	✓	Teladoc HEALTH one medical
Retail	✓		✓		Walmart Walgreens
Value-Based Primary Care	✓	✓		✓	agilon health MILLENNIUM PHYSICIAN GROUP OPRIA HEALTH
Ambulatory Surgery Centers	✓	✓	✓		AMSURG United Surgical Partners INTERNATIONAL SURGERY PARTNERS
Freestanding ED	✓		✓		EMERUS HCA Healthcare
Payvider	✓	✓	✓	✓	CVS Optum Elevance Health

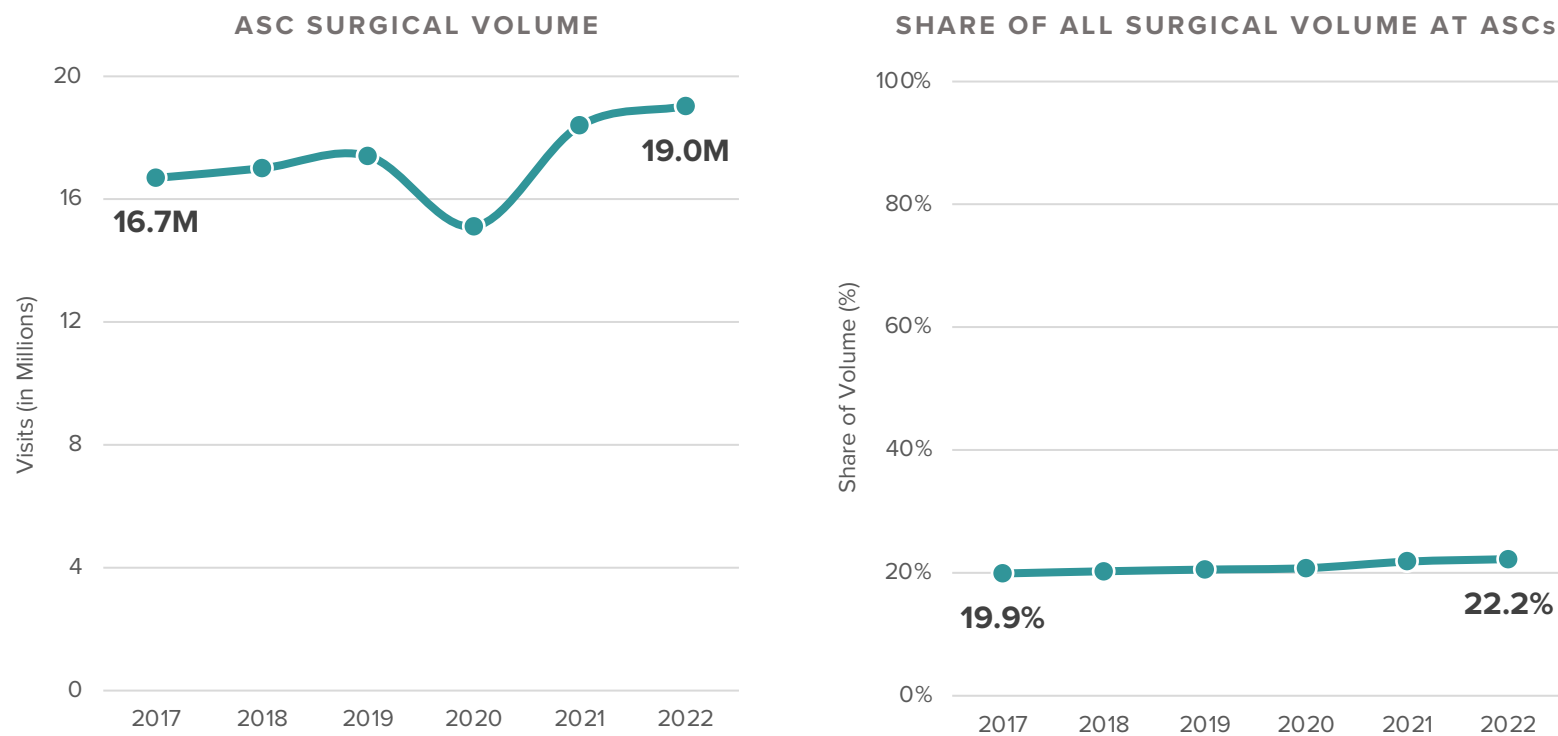
Note: FFS denotes fee-for-service; ED denotes emergency department.

TREND 6: DISINTERMEDIATION

Surgical Care Is Gradually Moving Into ASCs

For years, surgical care has increasingly been shifting into the outpatient setting, such as HOPDs and ASCs. From 2021 to 2022, the share of surgical care delivered specifically at ASCs increased from 21.8% to 22.2%, representing approximately 19M surgical procedures in 2022.

SURGICAL VOLUME AT AMBULATORY SURGERY CENTERS, 2017-2022



Note: ASC denotes ambulatory surgery center; HOPD denotes hospital outpatient department. ASC surgical volumes are not fully inclusive of Traditional Medicare.
Source: Trilliant Health national all-payer claims database.

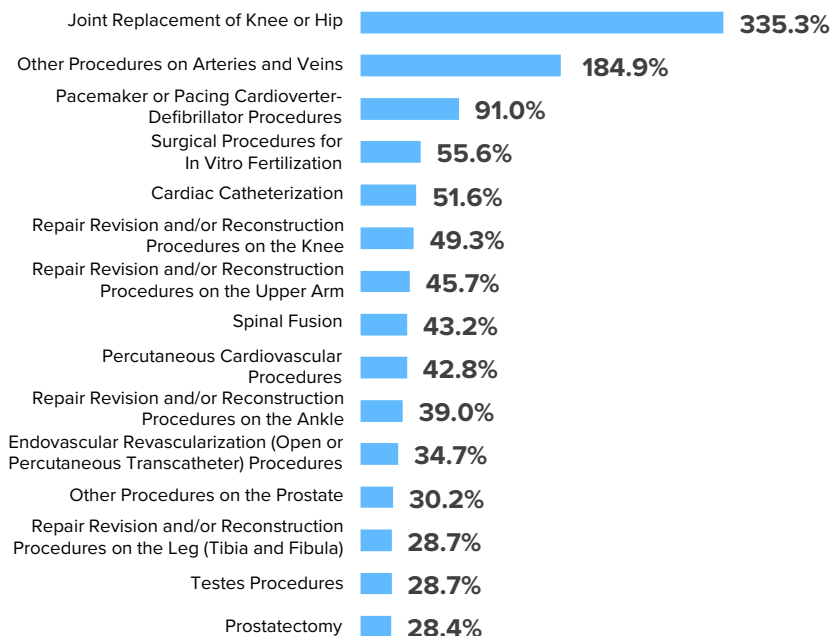
TREND 6: DISINTERMEDIATION

Lower Extremity Joint Replacements Grew Over 300% at ASCs

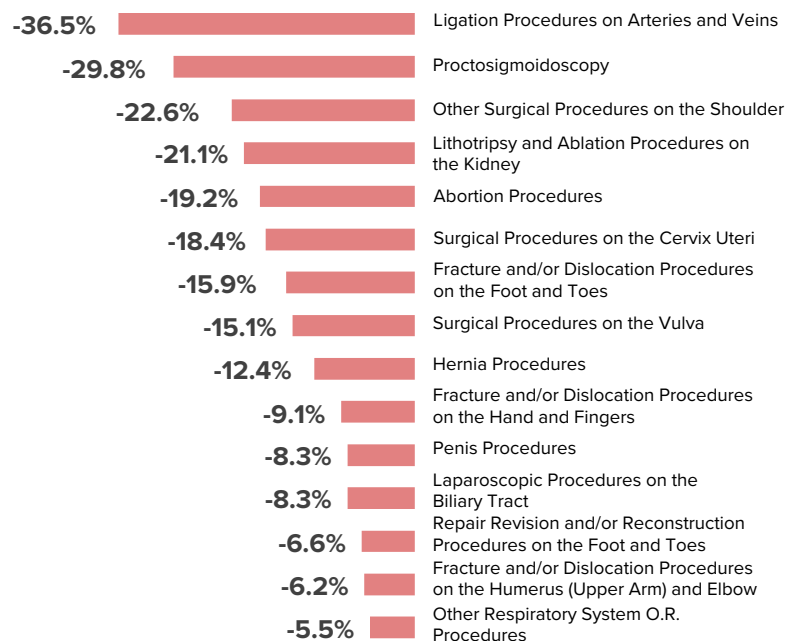
From 2017 to 2022, the surgical procedures with the highest volume growth at ASCs were total knee or hip replacements (335.3%) and arterial and venous procedures (+184.9%), while arterial and venous ligation procedures (-36.5%) and proctoscopies (-29.8%) decreased most. However, the highest *growth* procedures do not represent the highest *volume* ASC procedures (e.g., only 12.4% of total knee or hip replacements were delivered at ASCs).

PERCENT CHANGE IN SURGICAL VOLUME AT AMBULATORY SURGERY CENTERS,
BY PROCEDURE TYPE, 2017-2022

HIGHEST GROWTH PROCEDURES



LOWEST GROWTH PROCEDURES



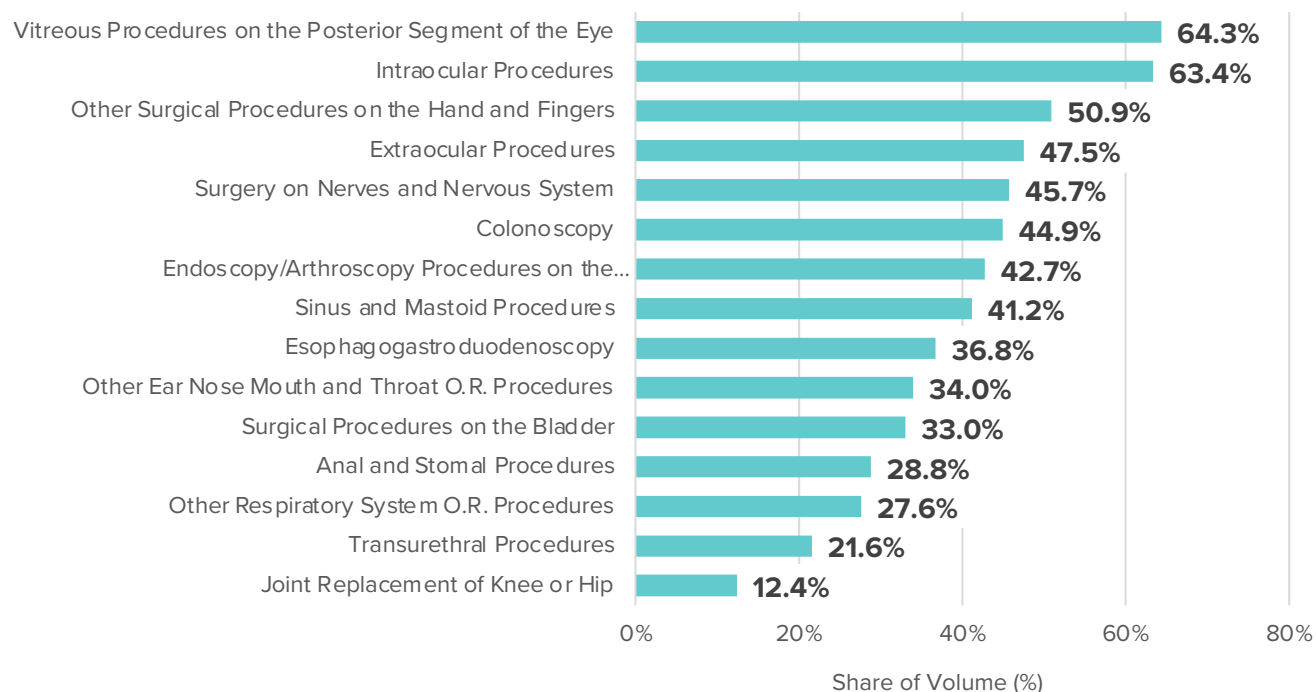
Note: ASC denotes ambulatory surgery center.
Source: Trilliant Health national all-payer claims database.

TREND 6: DISINTERMEDIATION

Share of Eye and Hand Procedures Exceed 50% at ASCs

In 2022, the surgical procedures with the highest volume share at ASCs were vitreous procedures on the posterior segment of the eye (64.3%) and intraocular procedures (63.4%). While only 12.4% of total knee or hip replacements were delivered at ASCs, an increasing share of those procedures are shifting from inpatient to outpatient.

SHARE OF SURGICAL VOLUME AT AMBULATORY SURGERY CENTERS FOR THE HIGHEST-VOLUME PROCEDURES, BY PROCEDURE TYPE, 2022



Note: ASC denotes ambulatory surgery center.

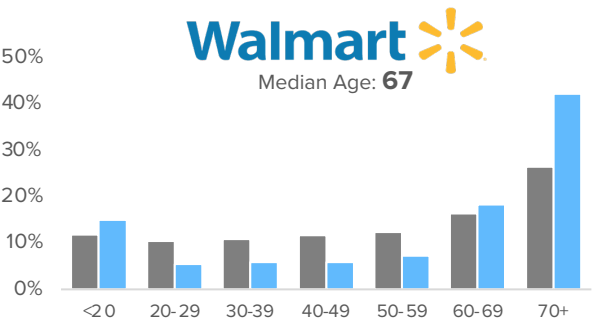
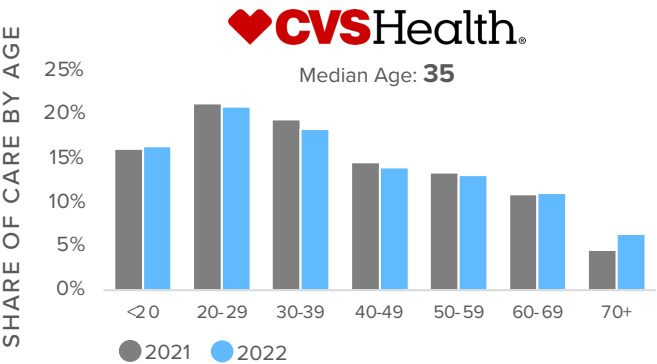
Source: Trilliant Health national all-payer claims database.

TREND 6: DISINTERMEDIATION

Retailers Are Primarily Limited to Delivery of Low-Acuity Services

The average patient “profile” seen by CVS and Walmart varies substantially, with CVS serving a primarily younger population (median age 35) and Walmart (median age 67) serving a primarily older population. Relative to CVS, Walmart appears to deliver more chronic condition management.

SHARE OF CARE BY AGE AND MOST COMMON DIAGNOSES AT SELECT RETAILERS, 2021-2022



COMMON DIAGNOSES	REASON FOR VISIT
	Contact with/exposure to communicable disease
	Observation for suspected disease
	Encounter for screening for infectious disease
	COVID-19
	Acute pharyngitis
	Other general symptoms and signs
	Chronic kidney disease
	Acute sinusitis
	Otitis media

REASON FOR VISIT
Other general symptoms and signs
Type 2 diabetes
Special examination without complaint
Contact with/exposure to communicable disease
Primary hypertension
Adjustment disorders
Chronic obstructive pulmonary disease
General examination without complaint
Type 1 diabetes

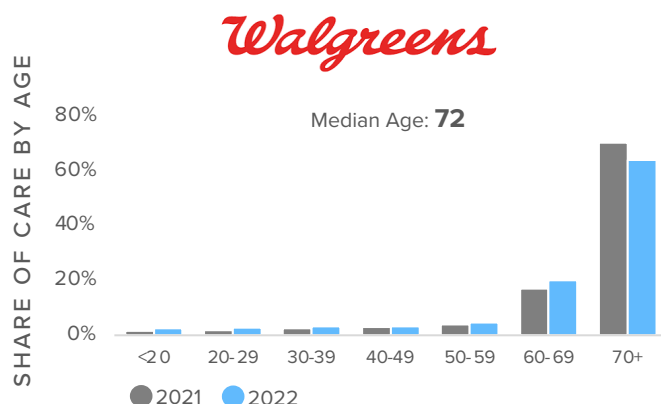
Note: Volume for immunizations not shown. Data is only shown for a select number of high-volume clinical reasons.
Source: Trilliant Health national all-payer claims database.

TREND 6: DISINTERMEDIATION

Walgreens and VillageMD Delivering a Mix of Low-Acuity and Chronic Care Management

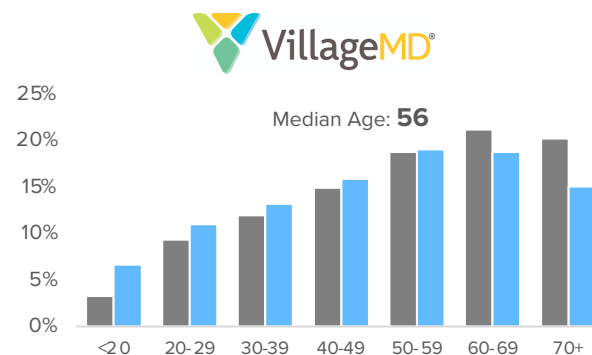
The average patient “profile” seen by Walgreens and VillageMD — which is owned by Walgreens — skews older, with a median Walgreens patient age of 72 and median VillageMD patient age of 56. Relative to VillageMD, Walgreens delivers a much higher volume of low-acuity services.

SHARE OF CARE BY AGE AND MOST COMMON DIAGNOSES AT SELECT RETAILERS, 2021-2022



COMMON DIAGNOSES

REASON FOR VISIT	
Contact with/exposure to communicable disease	
Type 2 diabetes	
Other general symptoms and signs	
Special examination without complaint	
Major depressive disorder, recurrent	
Type 1 diabetes	
Other anxiety disorders	
Contraceptive management	



REASON FOR VISIT	
General examination without complaint	
Primary hypertension	
Type 2 diabetes	
Contact with/exposure to communicable disease	
Attention-deficit hyperactivity disorders	
COVID-19	
Other anxiety disorders	
Acute upper respiratory infections	

Note: Volume for immunizations not shown. Data is only shown for a select number of high-volume clinical reasons.

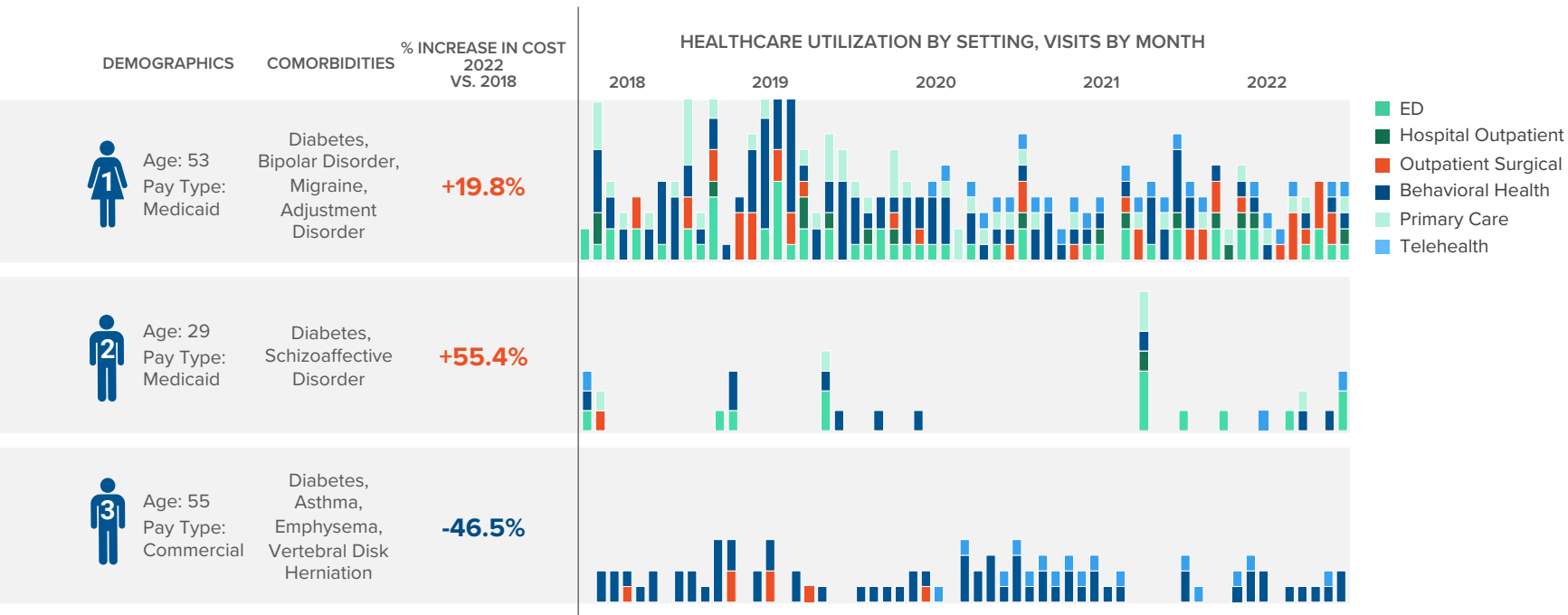
Source: Trilliant Health national all-payer claims database.

TREND 6: DISINTERMEDIATION

Patient Journeys Can Vary in Terms of Cost and Utilization, Even When Using Lower Cost Care Settings

A behavioral health condition can exacerbate other physical comorbidities (e.g., diabetes), thereby increasing a patient’s total cost of care. Splitting care across multiple settings can also result in costs being higher or lower, depending on where a patient is seeking care, which declined by 46.5% for Patient 3 but increased by 19.8% for Patient 1.

PATIENT JOURNEYS AND TOTAL COST OF CARE FOR THREE MAJOR DEPRESSION PATIENTS, 2018-2022



Note: ED denotes emergency department. Examples are illustrative but represent data from actual deidentified patient journeys. Total cost of care is inclusive of medical costs incurred within the scope of a patient’s insurance benefit in the following settings: emergency department, hospital inpatient, outpatient surgical, behavioral health, primary care and telehealth.
Source: Trilliant Health national all-payer claims database.

TREND 6: DISINTERMEDIATION

Telehealth TAM Will Be Constrained by Increasing Supply, Decreasing Demand and Decreasing Marginal Cost of Delivery

As telehealth price declines, the TAM will slowly approach \$0 in the commercially insured market. In addition to UnitedHealthcare's decision to provide telehealth at no cost to the consumer, Walmart has in the last 12 months reduced the price per virtual visit from \$67 to \$49 — equivalent to a \$7B decrease in the TAM.

TELEHEALTH TOTAL ADDRESSABLE MARKET SCENARIOS

SCENARIO	PATIENT VISIT PRICE	TELEHEALTH PATIENTS	TAM FOR TELEHEALTH
1 The current price-setter in a market where <i>all</i> 2020 and 2021 telehealth patients continue telehealth use	\$49	77M	$\$49 \times 77M \times 5$ visits = \$19B
2 Walmart is the price-setter in a market where <i>only</i> Average, High and Super Utilizers continue telehealth use	\$49	12M	$\$49 \times 12M \times 5$ visits = \$3B
3 Access to telehealth services becomes part of an Amazon Prime membership (hypothetical)	\$12/month	148M	$\$12 \times 12 \times 148M =$ \$21B
4* Commercial health plans (e.g., UnitedHealthcare) offer telehealth for enrollees at no cost, bringing the effective marginal cost down to \$0 in a market where <i>all</i> commercially insured individuals could use that benefit	~\$0*	176M	$\$0 \times 176M \times 5$ visits = \$0

PUBLISHED BY TRILLIANT HEALTH
IN FEBRUARY 2022

*ANNOUNCED JULY 2023

UnitedHealthcare began offering its low-acuity telehealth service at \$0 as a benefit in certain fully insured plans — including HDHPs

Note: TAM denotes total addressable market; HDHP denotes high deductible health plan. Figure does not account for monthly enrollee premiums. The original table was published as part of Trilliant Health's Telehealth Trends Report published in February 2022.

Source: Trilliant Health national all-payer claims database; UnitedHealthcare press releases.

TREND 6: DISINTERMEDIATION

Retailers Evidently View Low-Acuity Care as a Loss Leader

Given the sizeable share of retail-based low-acuity care services, heightened competition among new entrants, and effectively zero marginal cost of delivery for retailers, how will large retailers compete on price? With retail pharmacy revenue ranging from \$24.1B to \$140.1B, retailers have the scale to treat primary care delivery as a loss leader.

	<div>Walmart</div>	<div>CVS Health. minute clinic</div>	<div>aetna Oak St. Health</div>	<div>Walgreens</div>	<div>VillageMD</div>	<div>amazon one medical</div>
Touchpoints with Americans	<div>Market Price Setter</div> <div>37M per day</div>	<div>74M CVS Loyalty Members</div> <div>39M Aetna Members</div>		<div>10M per day</div>		<div>175M Amazon Prime members over age 18</div>
Employs Physicians?	Yes	Yes		Yes		Yes
Retail Pharmacy?	Yes Revenue \$24.1B	Yes Revenue \$140.1B		Yes Revenue \$85.2B		Yes Revenue undisclosed

Note: Touchpoint numbers are likely underestimates and are intended to illustrate the disproportionate share of U.S. consumers that large retailers have relative to traditional providers (e.g., health systems). The question posed is in relation to the fact that margins on primary care businesses are very low for traditional providers and negative for health systems.
Source: Publicly available company information as of September 2023; Drug Channels Institute.

TREND 6: DISINTERMEDIATION

Retailers Are Creating a Closed Loop System for Low-Acuity Care

Retailers like CVS and Walgreens and other newer entrants like Amazon have disintermediated aspects of low-acuity healthcare by offering healthcare services that often result in prescriptions, which can be filled in their own pharmacies. While retailers claim their model is not intended to replace traditional primary care providers, psychographics reveals that some consumers select healthcare solely on convenience. What are the implications for traditional providers if large numbers of consumers prefer transactional models?

“

MinuteClinic, located in select CVS Pharmacy® locations, provides a convenient, accessible option between primary care and urgent care. “We perform most of the types of services that a primary care doctor would perform in the community,” says Dr. Creagh Milford, SVP of CVS Retail Health, including sick care, prevention and wellness services, and management for chronic conditions like diabetes or heart disease.

While retail health clinics are not designed to replace primary care providers, they've grown to better support the primary care-based health system, expanding their services to include preventive care like school physicals, well-woman exams and **care of common chronic conditions like diabetes and high blood pressure.**

“We are more than flu shots and sore throats.”

- CVS PRESS RELEASE, JUNE 20, 2023

“

“Signify Health and Oak Street Health...bring core capabilities to our multi-payor value-based care platform that **drive optimal patient engagement with health services across multiple channels.** In the short time since we closed these transactions, we've launched efforts to **drive high patient engagement by leveraging our CVS Health assets.**”

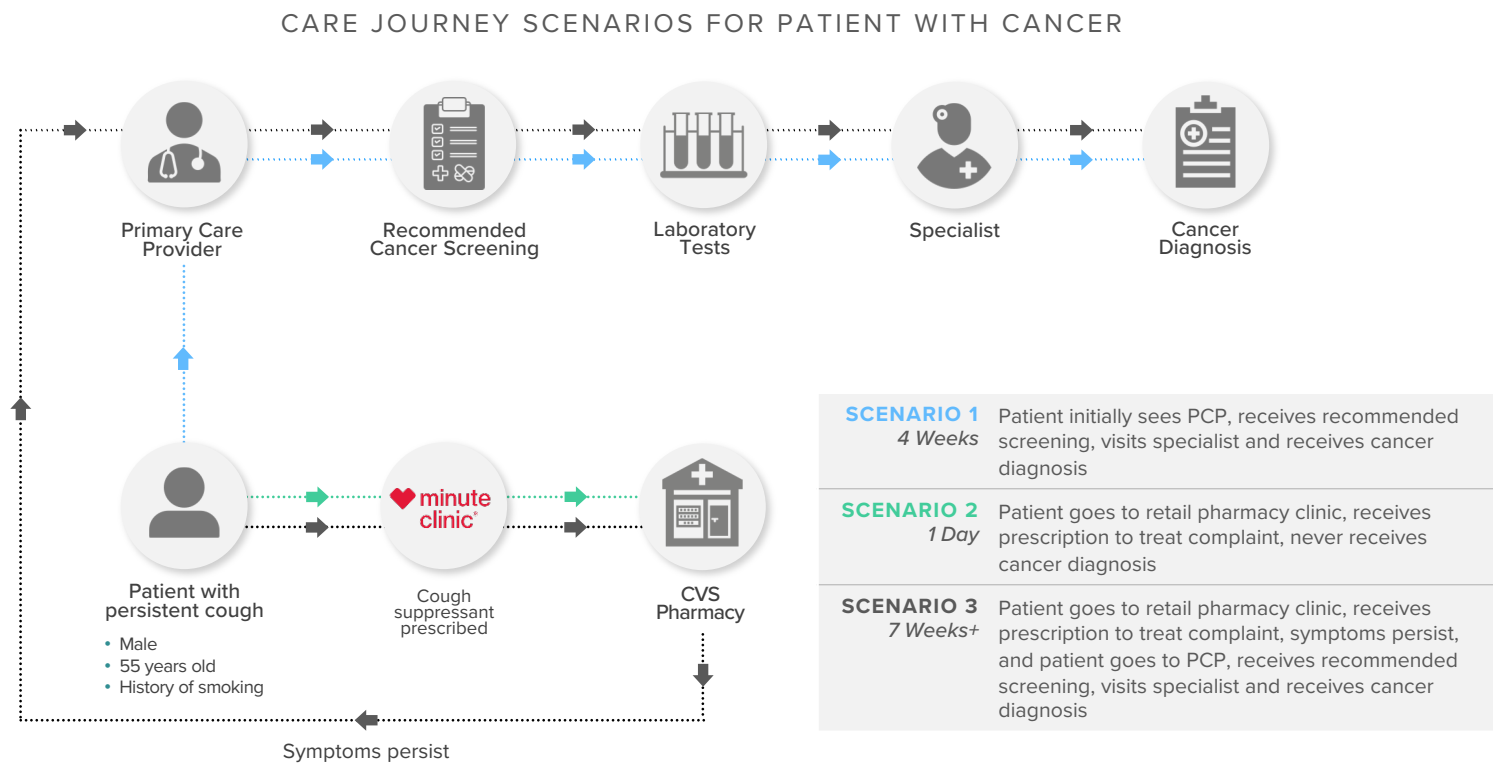
“By the end of 2023, we expect to have Oak Street clinics in 25 states, up from 21 at the close of the transaction. We will also **open new Oak Street clinics co-located with CVS Pharmacies this year** and have already identified additional locations for 2024.”

- CVS PRESIDENT, CEO, AND DIRECTOR
KAREN LYNCH ON Q2 2023 EARNINGS CALL

TREND 6: DISINTERMEDIATION

Different Care Journeys Reveal Disintermediation in Healthcare

These three scenarios show that while patients can leverage the faster time to treatment for certain low-acuity conditions afforded by retailers, the transactional retail model is not designed to match patients with preventive or higher-acuity care. Such care is typically rendered by a provider with which the patient has an established relationship. When a patient has care needs outside of a retailer’s “closed loop” system, the patient has to “restart” or find other options, resulting in “friction costs” of time and money.

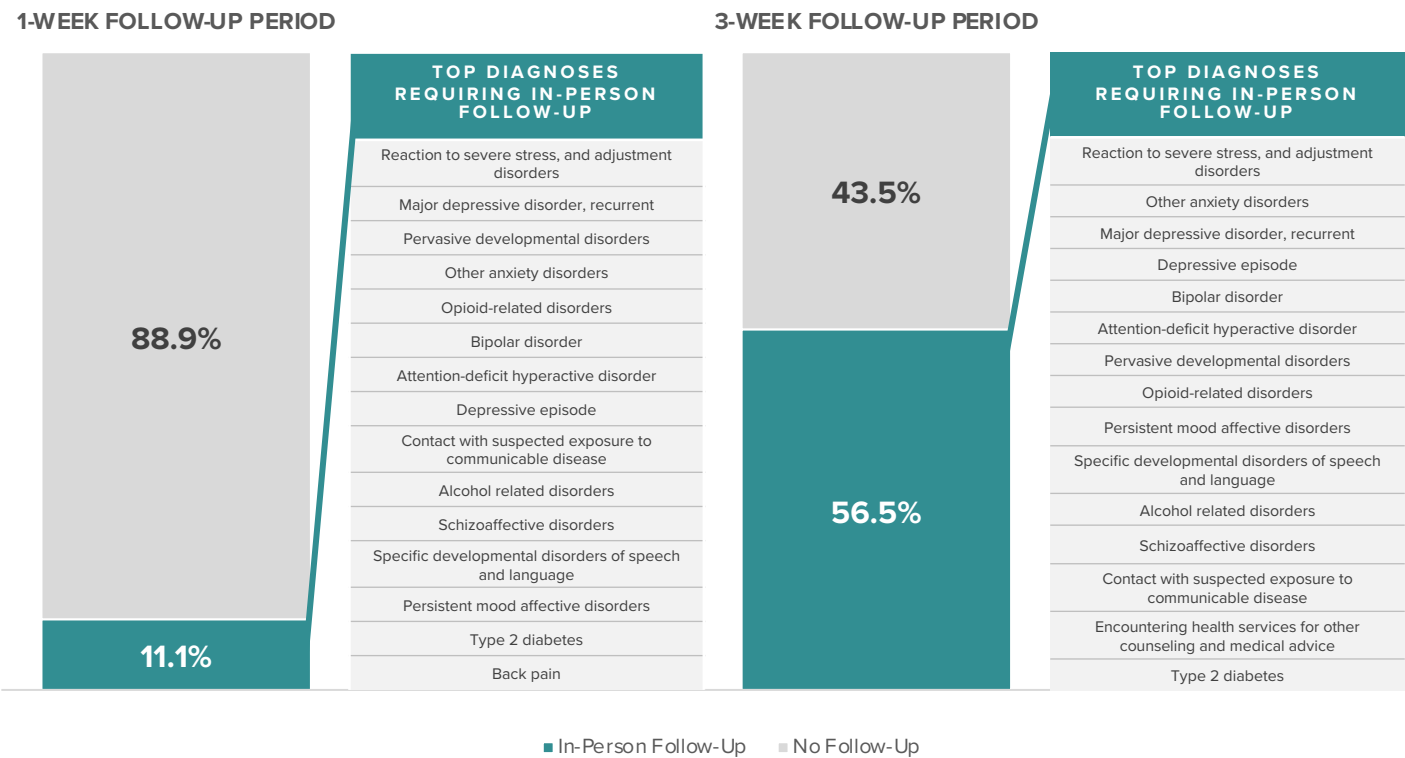


TREND 6: DISINTERMEDIATION

Even Tele-Behavioral Health, Which Is a Viable Substitute for In-Person Care, Is Still Coupled With Follow-Up

Within one week, 11.1% of all telehealth visits nationally resulted in an in-person follow-up visit for the same clinical reason. However, with that timeframe expanded to three weeks, the share of in-person follow-up visits increases to 56.5%, with behavioral health diagnoses accounting for the majority of follow-up care, also reflecting omni-channel use.

SHARE OF ALL TELEHEALTH VISITS INCLUDING BEHAVIORAL HEALTH WITH CORRESPONDING IN-PERSON VISIT WITHIN ONE AND THREE WEEKS, 2021-2022



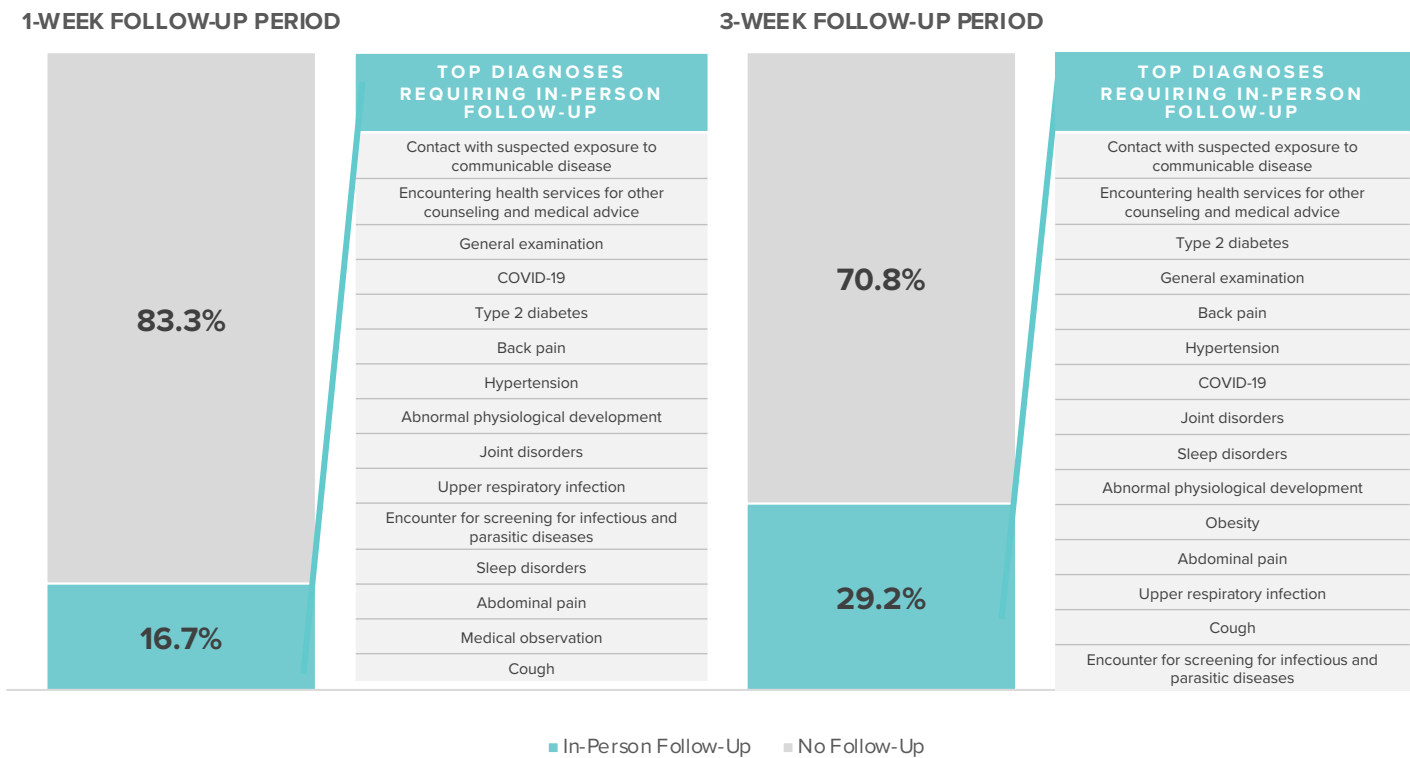
Note: The analysis considered two time periods to account for potential scheduling delays.
Source: Trilliant Health national all-payer claims database.

TREND 6: DISINTERMEDIATION

To What Extent Is Telehealth Increasing Access vs. Creating Duplication of Service?

When behavioral health is excluded, 16.7% of telehealth visits nationally in 2021 and 2022 resulted in an in-person follow-up visit for the same clinical reason after one week. This percentage increased to 29.2% for an appointment within three weeks, most commonly for general encounters and chronic condition management.

SHARE OF TELEHEALTH VISITS **EXCLUDING BEHAVIORAL HEALTH** WITH CORRESPONDING IN-PERSON VISIT WITHIN ONE AND THREE WEEKS, 2021-2022



Note: The analysis considered two time periods to account for potential scheduling delays.
Source: Trilliant Health national all-payer claims database.

TREND 6: DISINTERMEDIATION

Most Physicians Perceive Quality of Video Telehealth as Inferior to In-Person Care

Given the care disintermediation inherent to telehealth, it is unsurprising that over half (61%) of physicians and 33% of patients perceive video telehealth to be lower quality than in-person healthcare visits. These views are driven by concerns related to the inability to conduct physical examinations, technical difficulties and communication difficulties.

PHYSICIAN AND PATIENT PERCEPTIONS QUALITY OF CARE OF VIDEO TELEHEALTH VS. IN-PERSON VISITS

	Much Worse	A Little Worse	About the Same	A Little Better	Much Better
Physicians who conducted video visits (weighted %)	12%	49%	29%	4%	2%
Patients who attended video visits (weighted %)	7%	26%	51%	10%	6%

PHYSICIANS’ REASONS FOR PERCEIVED POORER QUALITY BY VIDEO

<input checked="" type="checkbox"/> Conducting a physical exam by video is cumbersome or inaccurate	<input checked="" type="checkbox"/> Coordinating any test or lab results becomes difficult
<input checked="" type="checkbox"/> It is difficult to obtain a patient’s vital signs by video	<input checked="" type="checkbox"/> It is difficult to develop effective rapport by video
<input checked="" type="checkbox"/> Technical difficulties, such as internet connectivity, interfere with the appointment	<input checked="" type="checkbox"/> Collecting a patient history by video is cumbersome or inaccurate

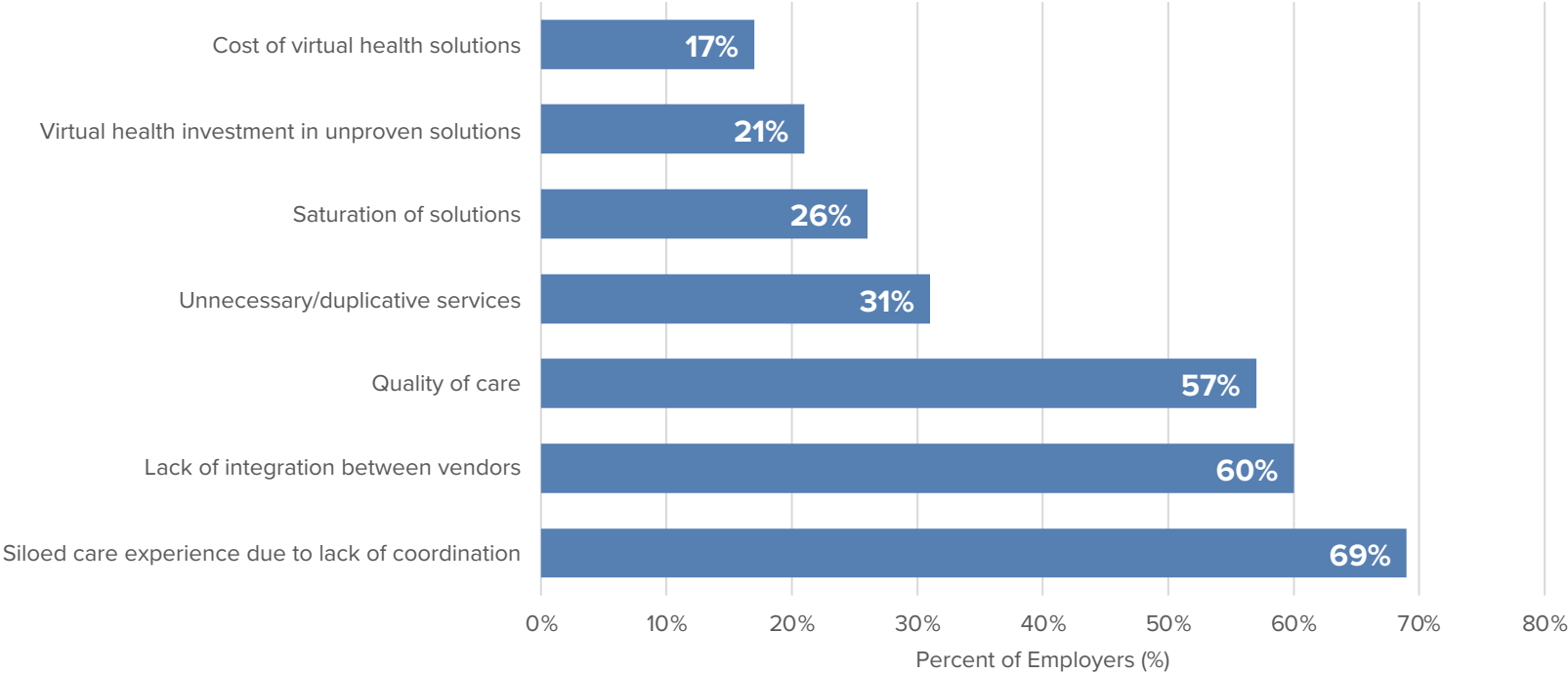
Source: Steelfisher, et al., Video Telemedicine Experiences In COVID-19 Were Positive, But Physicians And Patients Prefer In-Person Care For The Future, *Health Affairs*, 2023.

TREND 6: DISINTERMEDIATION

Employers Also See More Fragmentation of Care Experience

Employer confidence that virtual care will impact care delivery dropped from 85% to 74% in 2023. The majority of large firms are concerned about siloed virtual care platforms and the lack of integration between virtual care vendors and the broader healthcare system, potentially worsening care quality and outcomes for employees.

PERCENT OF LARGE EMPLOYERS CONCERNED ABOUT SELECT ASPECTS OF VIRTUAL CARE

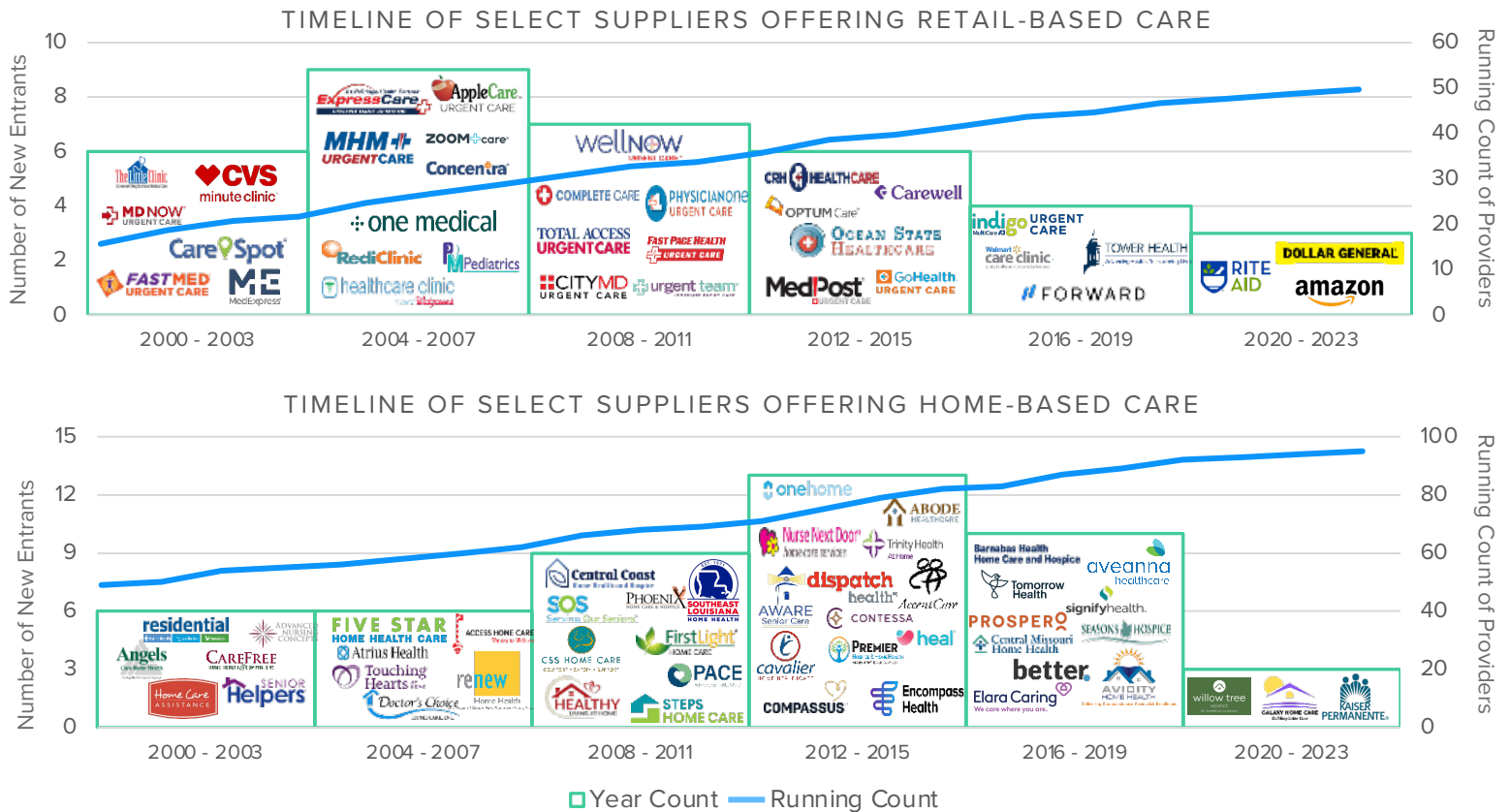


Source: Business Group on Health’s 2023 Large Employers’ Health Care Strategy Survey.

TREND 6: DISINTERMEDIATION

The Number of Retail- and Home-Based Care Providers Has Steadily Grown

Since they first launched in the 1980s, the number of retail clinic operators has steadily increased to capitalize on the transition to outpatient care delivery and demand, growing by over 2,000% between 1981 and 2023. The home-based care market has also grown since beginning in 1960s, averaging more than one new entrant per year.



Note: Prior to 2000, there were at least 16 retail-based providers operating in the market but their logos have not been included. Prior to 2000, there were at least 59 home-based care providers but their logos have not been included.

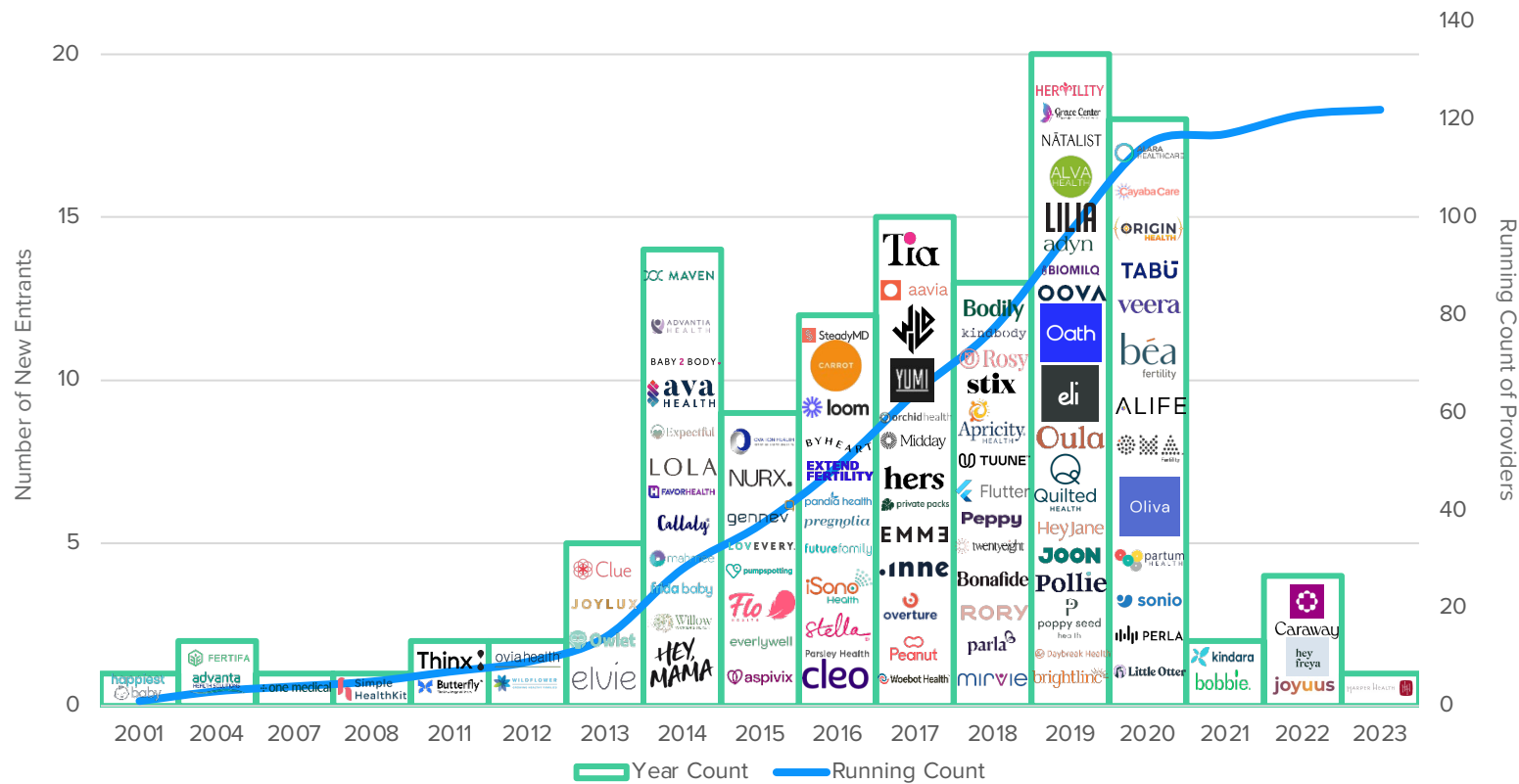
Source: Publicly available company information.

TREND 6: DISINTERMEDIATION

The Number of Women’s Health Care Providers Has Steadily Grown

Since 2014, the market for women’s healthcare providers has skyrocketed, with an average of 14 new entrants joining the market annually. The number of new entrants slowed starting in 2021. How will these women’s health providers fare in a health economy where more traditional providers are shuttering OB/GYN services and demand is projected to decline?

TIMELINE OF SELECT SUPPLIERS OFFERING WOMEN’S HEALTH SERVICES



Source: Publicly available company information.

TREND 7

New Models of Care Are Further Constraining Provider Supply

TREND 7: CONSTRAINING SUPPLY

UHC and Kaiser Permanente Control Almost 10% of U.S. Physicians

While health systems as a collective stakeholder remain the largest employer of physicians, two large "payviders" — Optum and Kaiser Permanente — are the two largest employers of U.S physicians.

TOP EMPLOYERS OF U.S. PHYSICIANS



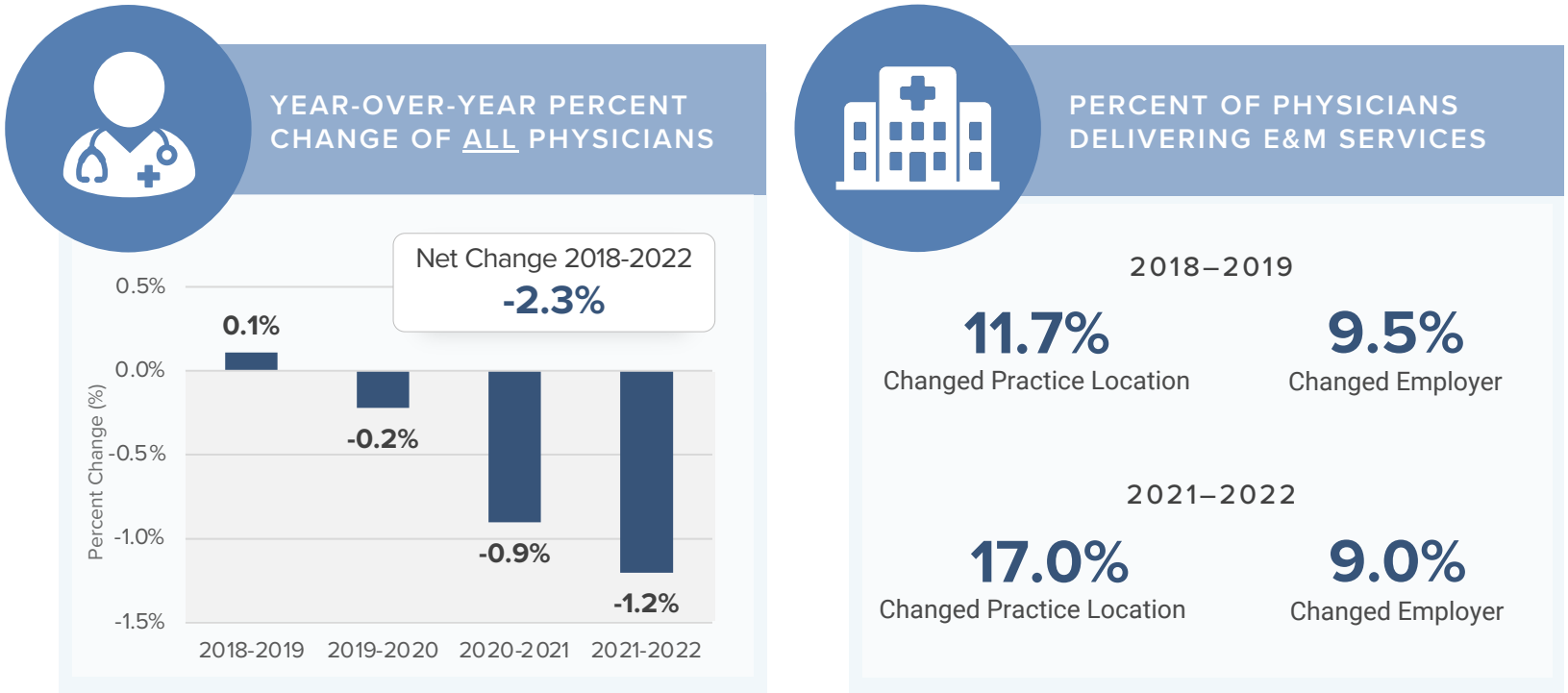
Note: UHC denotes UnitedHealthcare.
Source: Trilliant Health Provider Directory; Publicly available company information.

TREND 7: CONSTRAINING SUPPLY

More Organizations Are Competing for an Even Smaller Number of Care Providers

The net number of physicians that started and stopped practicing between 2018 and 2022 resulted in a -2.3% workforce reduction. With the variety of employment options growing (e.g., new entrants), competition is growing for employing the shrinking supply of physicians. Notably, 9.0% of physicians that deliver E&M services changed employers from 2021 to 2022.

CHANGES IN U.S. PHYSICIAN WORKFORCE, 2018-2022



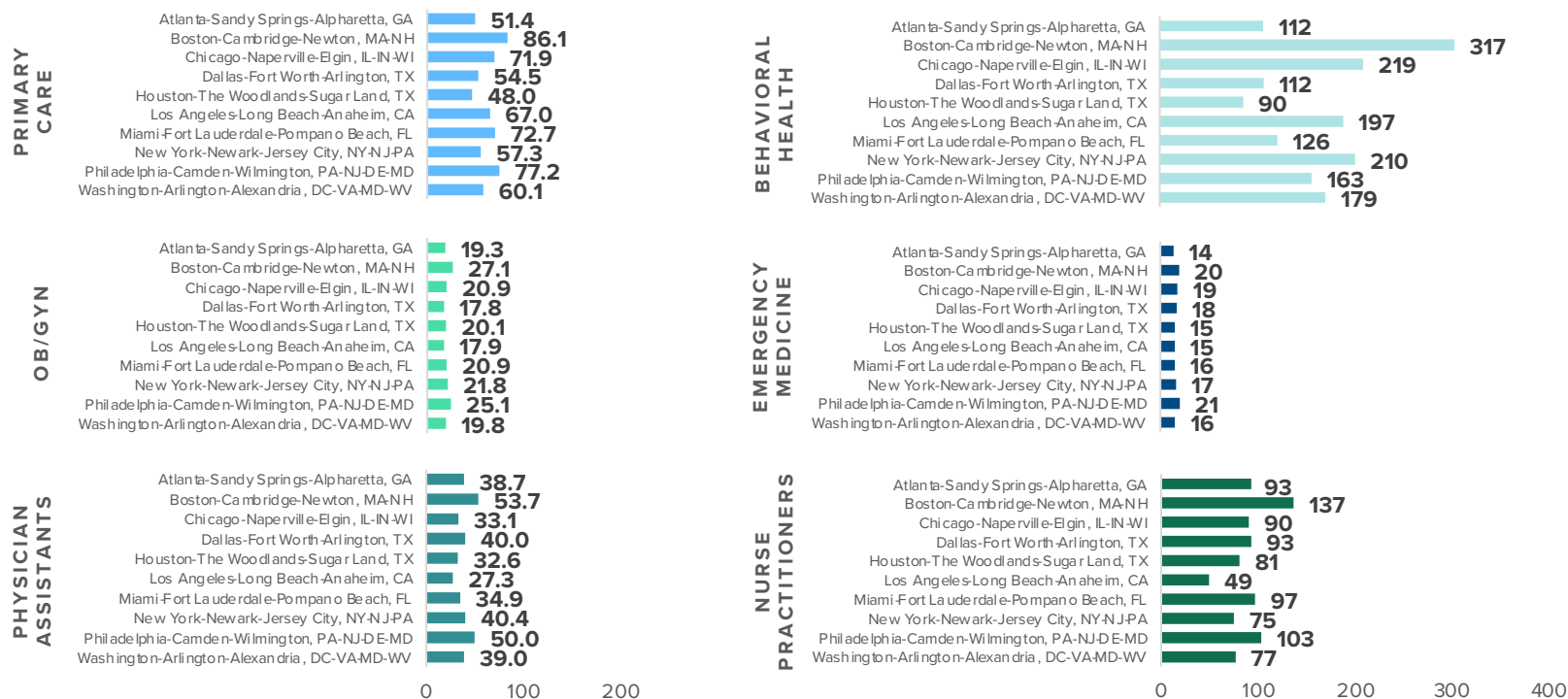
Note: Physicians denote both MD and DO; E&M denotes evaluation and management. Analysis of practice location changes was limited to physicians delivering office-based E&M services with a visit threshold of 100 to glean a more conservative estimate. Changes in physician employer is inclusive of those that changed employer due to M&A activities (e.g., Iora Health to One Medical).
Source: Trilliant Health Provider Directory.

TREND 7: CONSTRAINING SUPPLY

Supply of Physicians and Allied Health Providers Varies Across Large U.S. Markets

Remediating the workforce shortage will require changes to residency programs, incentives from employers and actions to improve working conditions for healthcare providers at all levels of specialization. The rate of primary care physician availability ranges from 48 per 100K (Houston, TX) to 86 per 100K (Boston, MA), averaging 63.7 per 100K among the ten largest CBSAs.

HEALTHCARE PROVIDERS PER 100K IN SELECT CBSAs, 2022



Note: Providers are defined as primary care physicians (MD, DO), OB/GYN physicians (MD, DO), emergency medicine physicians (MD, DO) behavioral health providers (BHPs), physician assistants, and nurse practitioners per 100K population in the ten largest metropolitan CBSAs by population. The definition of BHPs includes board-certified psychiatrists, psychologists, behavioral therapists, social workers, psychiatric nurse practitioners, etc.

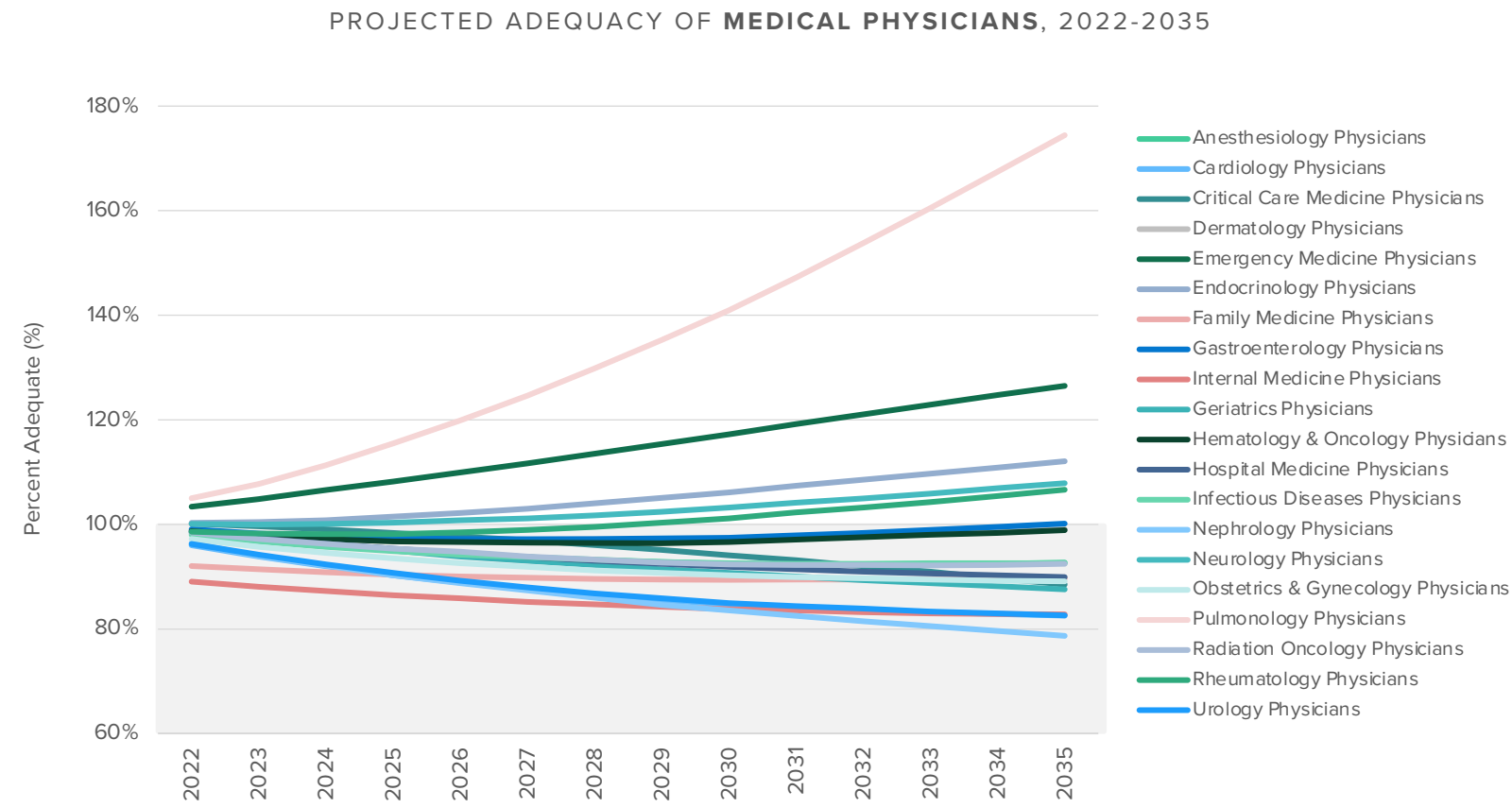
Source: Trilliant Health Provider Directory.

Providers per 100K

TREND 7 : CONSTRAINING SUPPLY

Not All Medical Specialties Are Projected To Meet Demand

Between 2022 and 2035, the national projected adequacy of most medical physicians is declining and below 100%. Projected 2035 adequacy is lowest for nephrologists (78.7%) and highest for pulmonologists (174.4%).

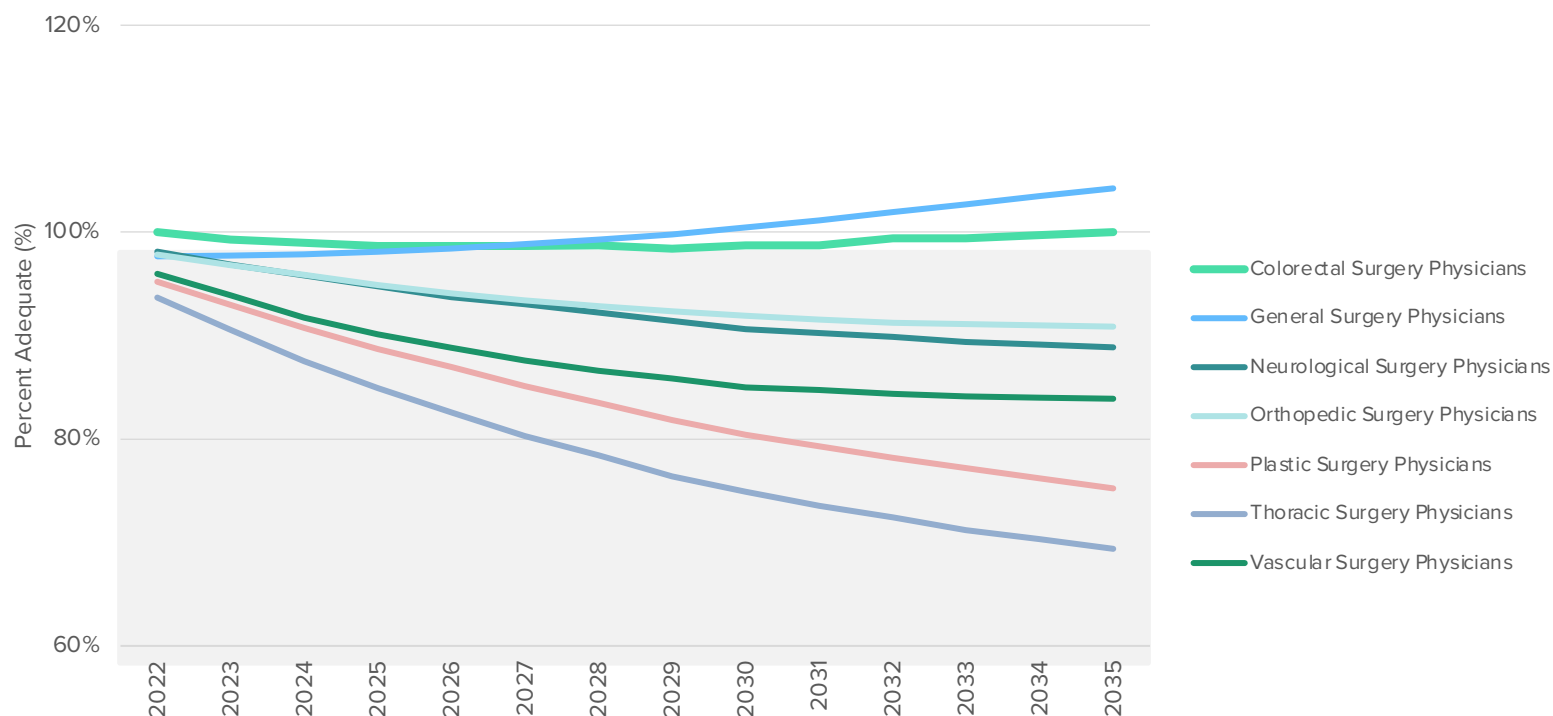


Source: Health Resources & Services Administration Workforce Projections.

TREND 7 : CONSTRAINING SUPPLY

Projected Surgical Supply Is Insufficient

Between 2022 and 2035, the national projected adequacy of most surgical provider types is declining and below 100%. Projected surgical adequacy is lowest for thoracic surgeons by 2035 (69.4%) and highest for general surgeons (104.2%).

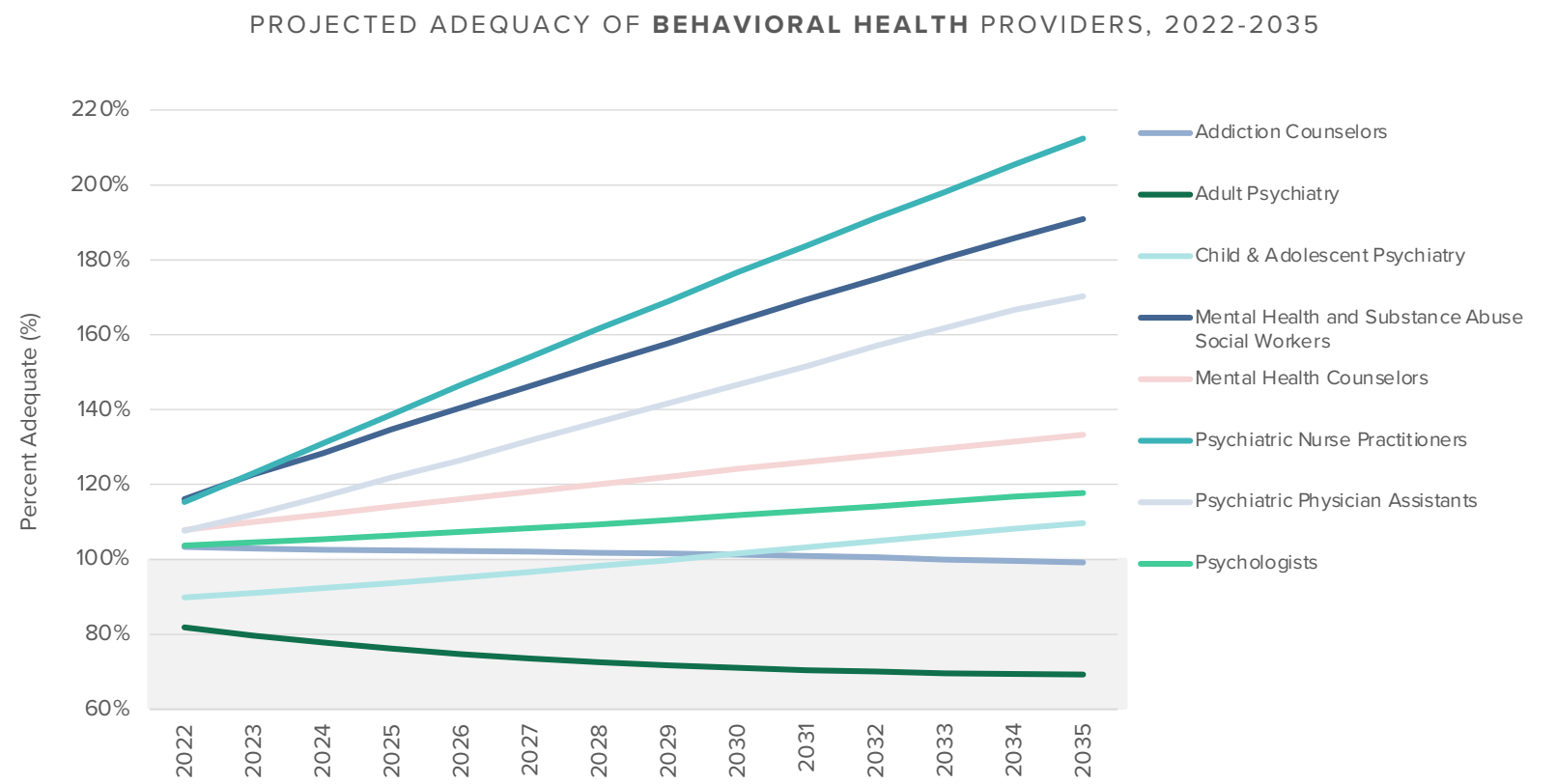
PROJECTED ADEQUACY OF **SURGEONS**, 2022-2035

Source: Health Resources & Services Administration Workforce Projections.

TREND 7: CONSTRAINING SUPPLY

Projected Specialized Psychiatrist Supply Is Not Adequate

The national median incidence rate for behavioral health services is projected to increase at 0.5% CAGR between 2023 and 2027. Between 2022 and 2035, the national projected adequacy of most behavioral health providers is increasing and above 100%. Projected adequacy by 2035 is lowest for adult psychiatry (69.3%) and highest for psychiatric nurse practitioners (212.4%). However, behavioral health provider supply may become more constrained if Federal mandates for preventive screenings are implemented.

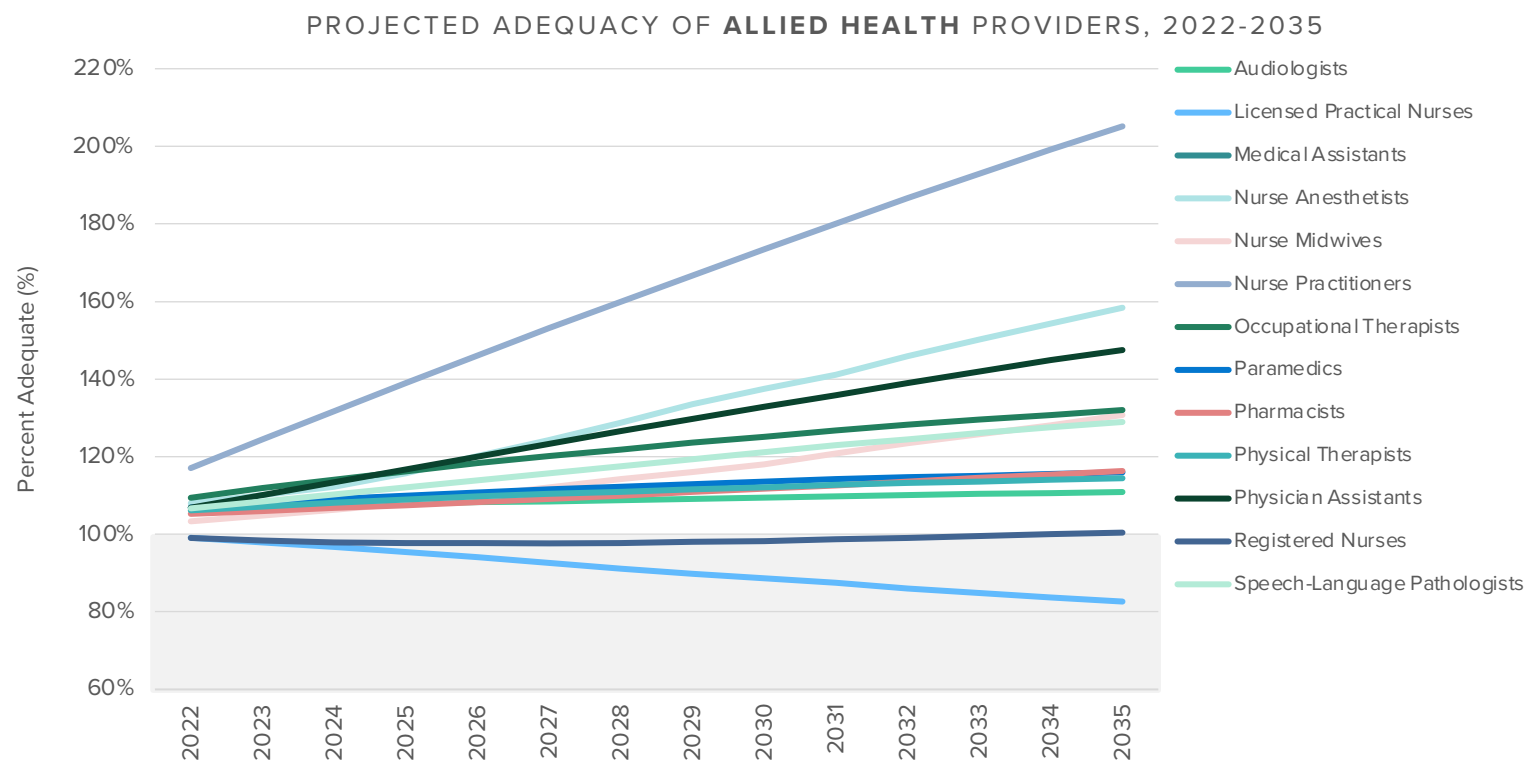


Source: Health Resources & Services Administration Workforce Projections.

TREND 7: CONSTRAINING SUPPLY

Projected Allied Health Supply Positive for Offsetting Gaps

Between 2022 and 2035, the national projected adequacy of most allied health providers is increasing and above 100%. Projected 2035 adequacy is lowest for licensed practical nurses (82.6%) and highest for nurse practitioners (205.1%). However, given the differences in patient needs and clinical offerings between non-traditional providers (e.g., retail) and traditional (e.g., hospital), these gaps may widen over time.

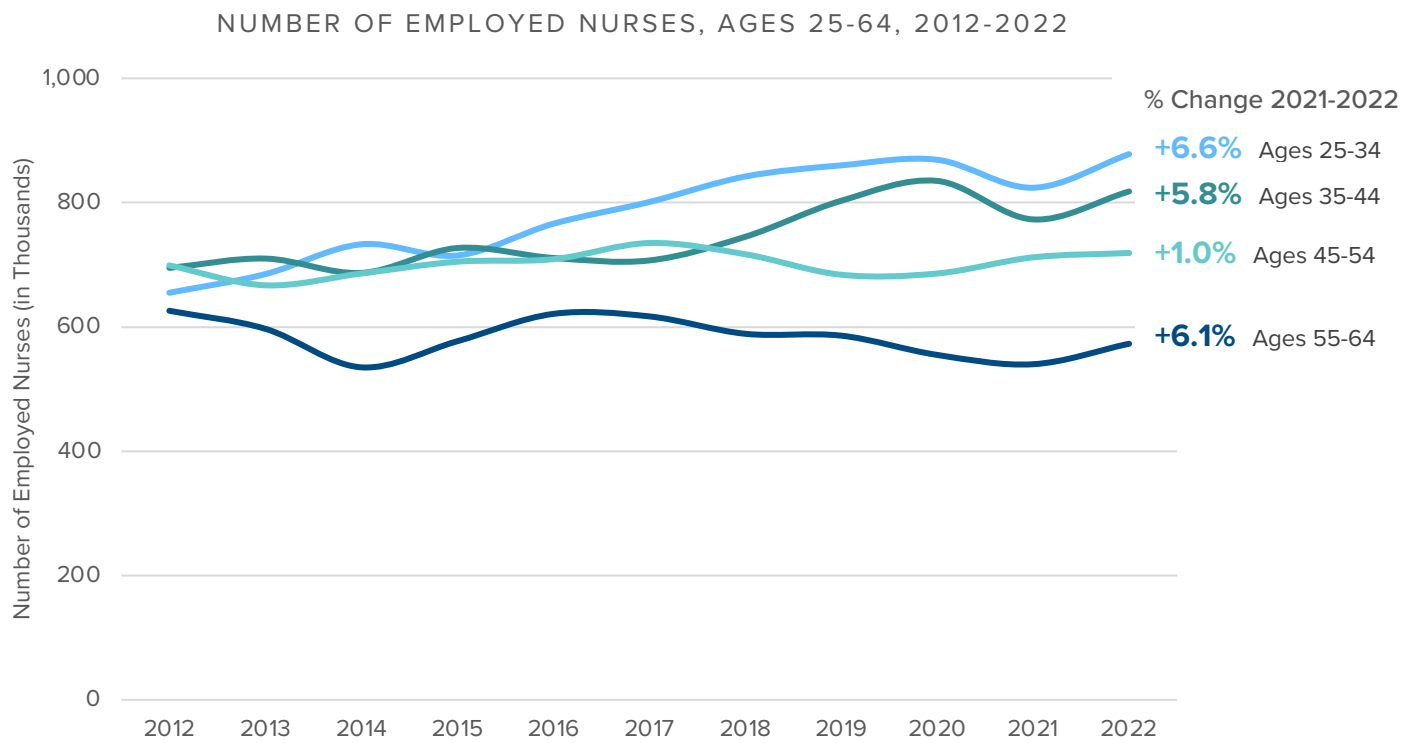


Source: Health Resources & Services Administration Workforce Projections.

TREND 7: CONSTRAINING SUPPLY

Nursing Supply Rebounds in 2022 Following Decline in 2021

Following almost ten years of consistent growth in the number of employed nurses ages 25-44, supply initially declined the most for nurses ages 24-34 and 35-44 by 5.2% and 7.4%, respectively, from 2020 to 2021. However, as of 2022, supply in the younger nurse workforce segment has rebounded.



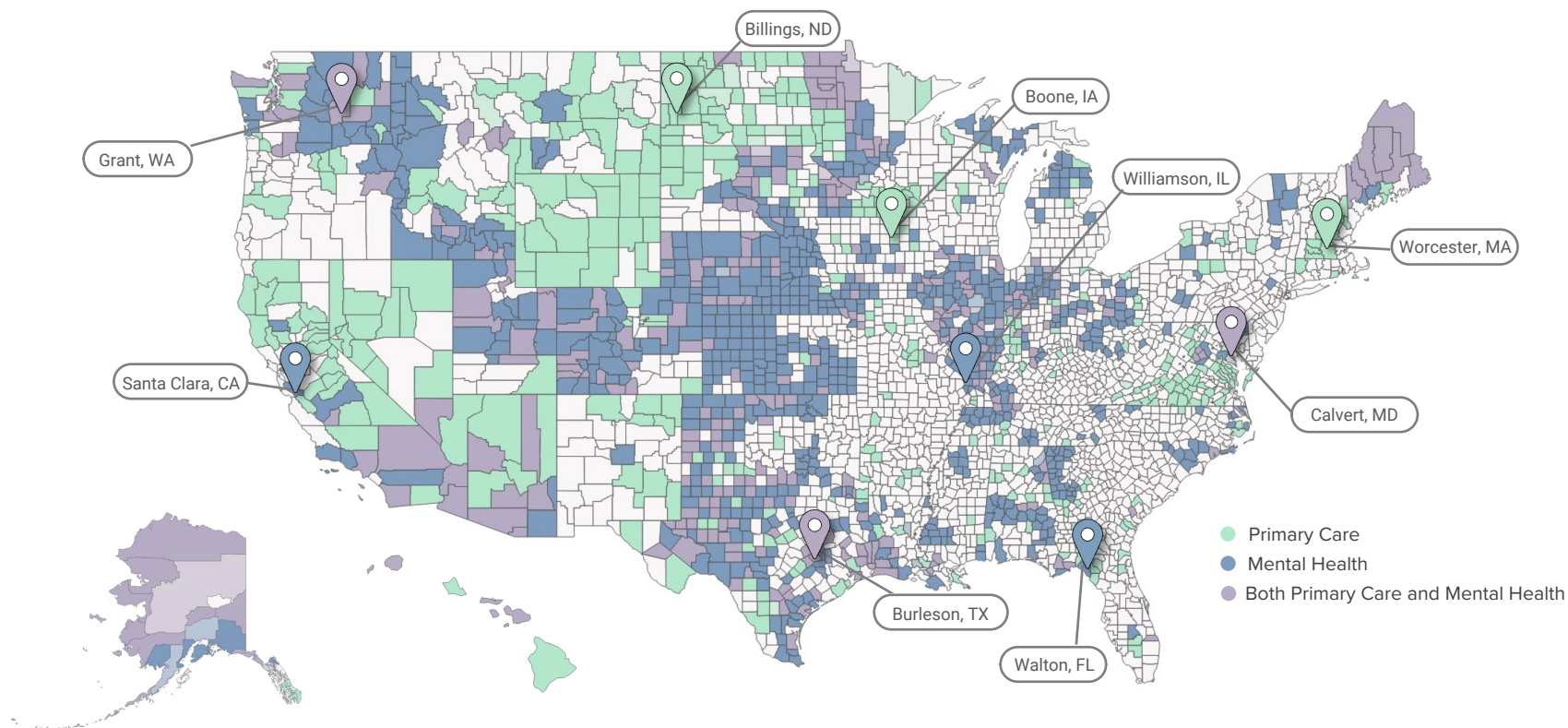
Source: Bureau of Labor Statistics.

TREND 7: CONSTRAINING SUPPLY

As Expected, Behavioral Health and Primary Care Workforce Shortage Areas Are Concentrated in Rural Areas

The Health Resources & Services Administration designates regions with insufficient primary care and behavioral health supply. Nationally, areas designated as both primary care and behavioral health shortage areas are concentrated in rural areas throughout the Midwest and Northwest.

MENTAL HEALTH AND PRIMARY CARE PROFESSIONAL SHORTAGE AREAS, BY COUNTY, 2023



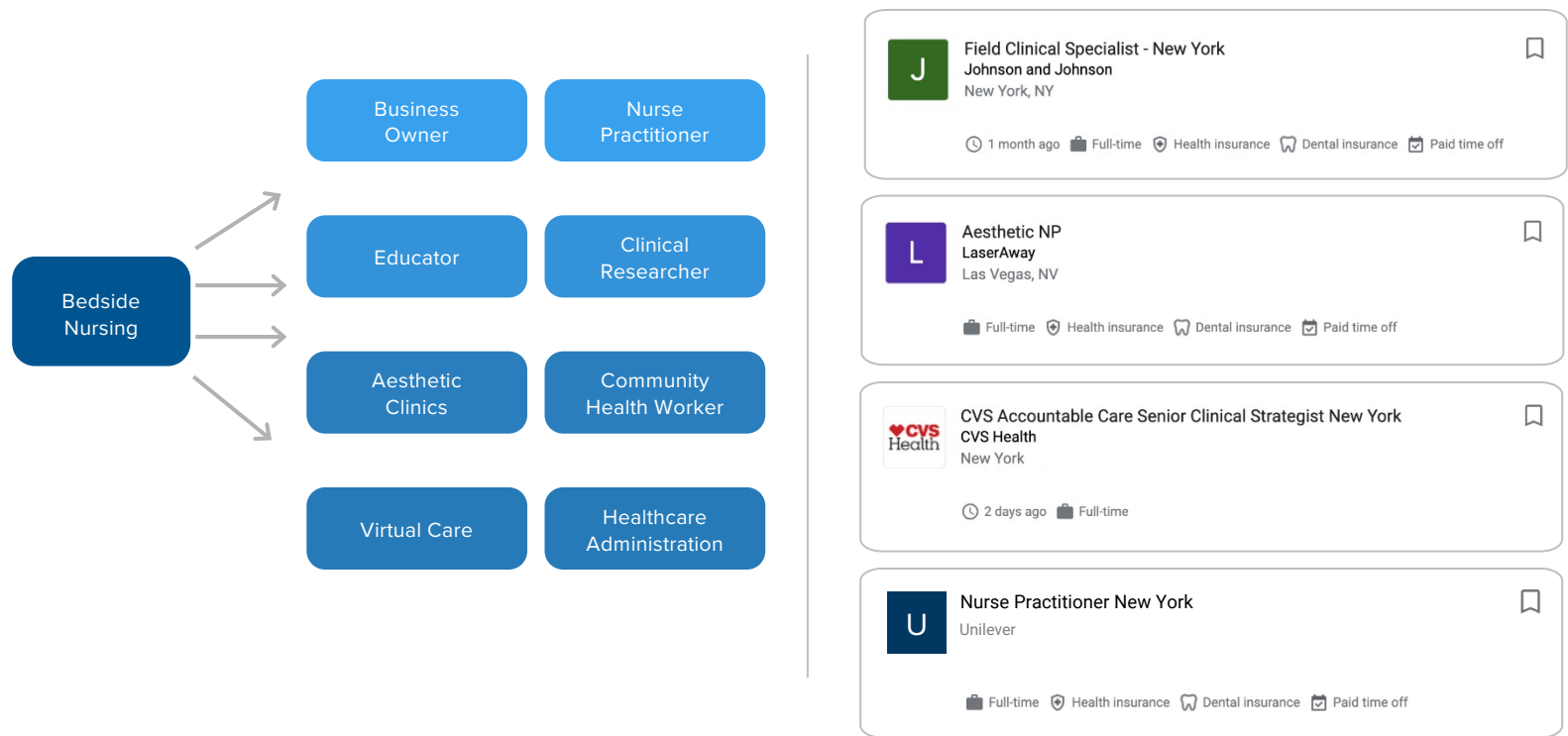
Source: Health Resources & Services Administration.

TREND 7: CONSTRAINING SUPPLY

Competition for the Shrinking Provider Supply Is Intensifying

The range of employment opportunities for medical providers — ranging from physicians and nurses to allied health professionals — has broadened over time. Health systems and traditional provider organizations must compete for the shrinking pool of talent against life sciences organizations, payers, consulting firms, cosmetic companies, etc.

NURSING EMPLOYMENT OPTIONS BEYOND TRADITIONAL BEDSIDE NURSING



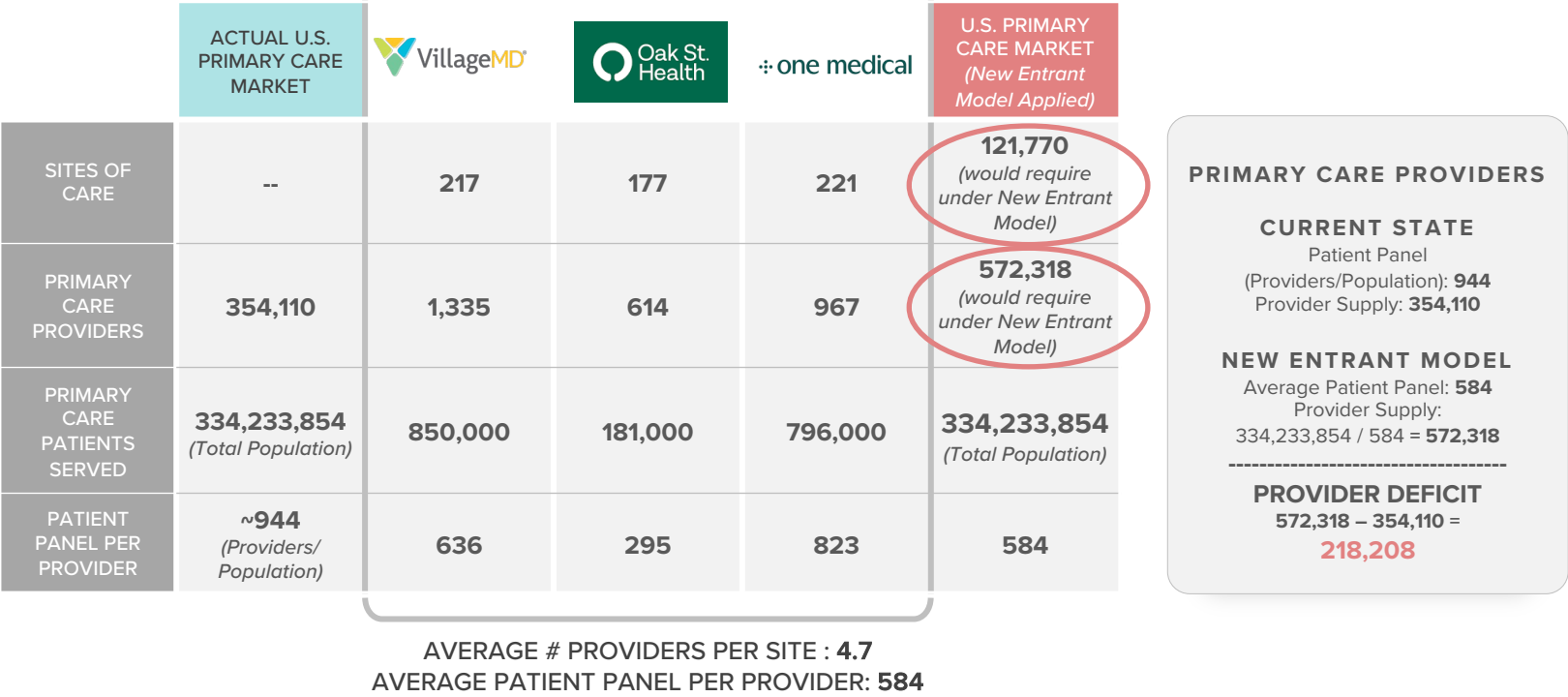
Note: Visual is merely an illustrative example and does not include the full range of non-traditional employment opportunities.
Source: SimplyHired; Company job postings.

TREND 7: CONSTRAINING SUPPLY

As New Primary Care Models Continue To Scale, National Provider Supply Will Become Even More Constrained

The patient panel size for new primary care entrants averages 584 patients per provider, suggesting that the U.S. would need an additional 218K primary care providers to meet the needs of every American under this model. Scaled nationally, the primary care provider shortage would total 44.8% since the current patient to provider ratio is 944.

REPORTED INFORMATION FOR NEW PRIMARY CARE ENTRANTS COMPARED TO U.S. PRIMARY CARE MARKET



Note: Primary care providers are inclusive of MD/DO physicians, nurse practitioners and physician assistants specialized in primary care.
Source: Company financial filings; Health Resources & Services Administration Primary Care Workforce Projections.

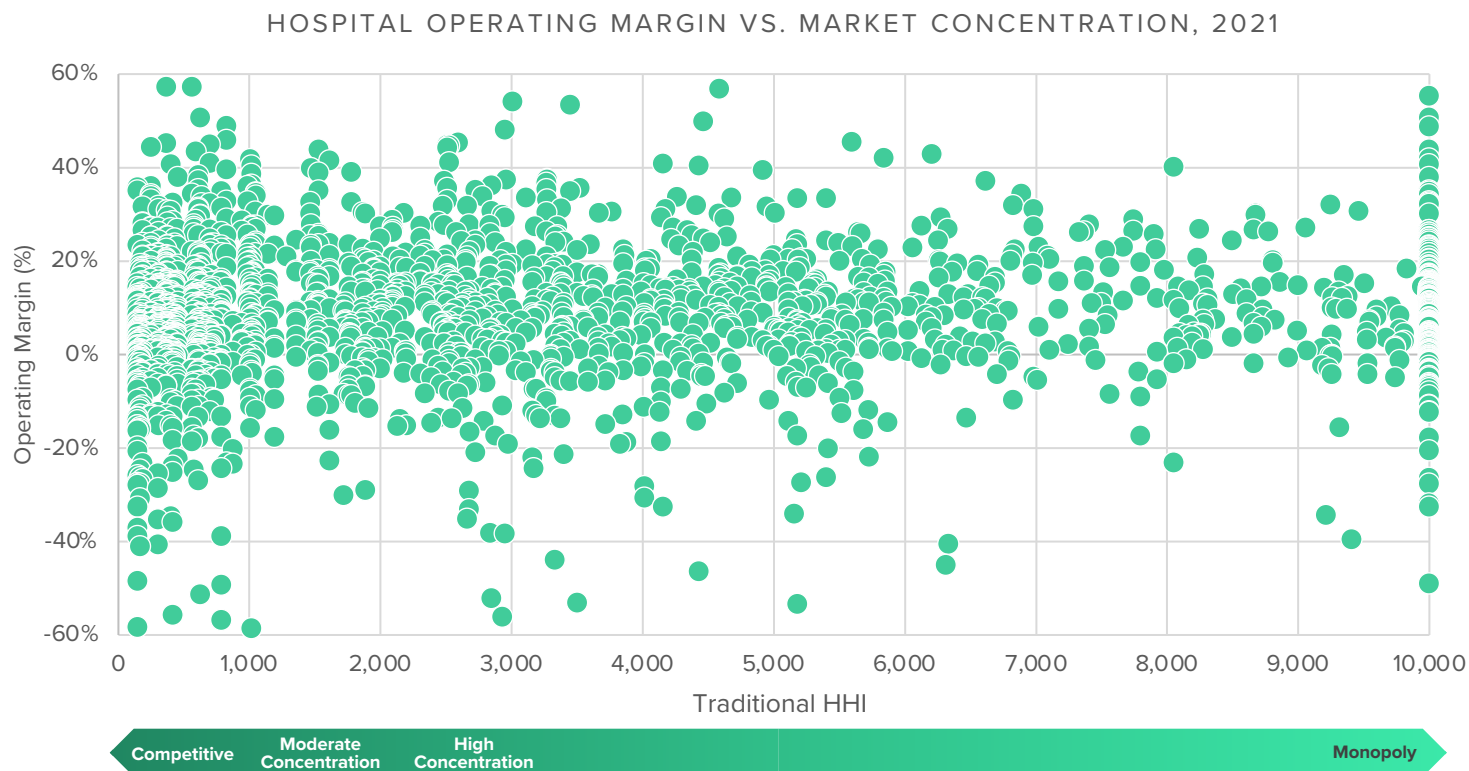
TREND 8

The Monopolistic Effects of Provider M&A Are Overstated

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

Some Markets Have a Price Problem; Every Market Has a Cost Problem

Market concentration, as measured by the Federal government definition, is not correlated with financial metrics for hospitals. In 2021, over 20% of hospitals – regardless of market concentration – generated negative operating margins.



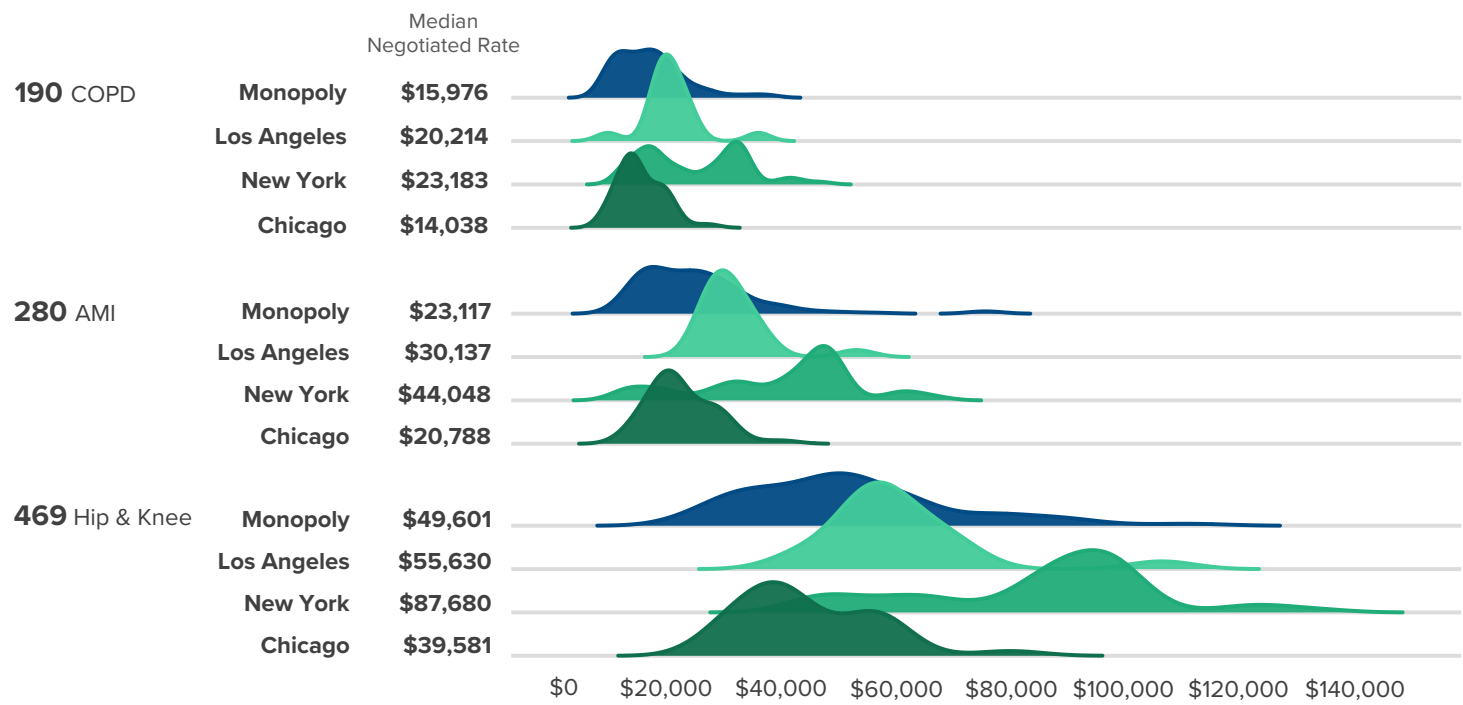
Note: Comparison of the operating margin of 2,157 short-term acute hospitals with their respective market's Herfindahl-Hirschman Index (HHI) score. An HHI below 1,500 indicates a competitive market; between 1,500 and 2,500 indicates a moderately concentrated market, whereas a value greater than 2,500 indicates a highly concentrated market. Traditional HHI refers to the standard measure of market concentration, inclusive only of inpatient settings. Hospital operating margins are from 2021. Source: Healthcare Cost Report Information System; Trilliant Health national all-payer claims database.

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

Median Rates for the Same Service Are Often *Lower* in Monopoly Markets

Whatever the explanation is for the startling spread in pricing for healthcare services, it is not attributable alone to whether a market is considered a monopoly. In fact, the negotiated rate for healthcare services is often lower in monopoly markets than in the three most competitive U.S. markets.

NEGOTIATED RATE DISTRIBUTION FOR SELECT MS-DRGs: MONOPOLY VS. HIGHLY COMPETITIVE CBSAS



Note: Traditional HHI refers to the standard measure of market concentration, inclusive only of inpatient settings. Competitive markets are defined as markets with an HHI below 1,500, whereas a monopoly market has an HHI of 10,000. MS-DRG 469 indicates Major Hip and Knee Joint Replacement or Reattachment of Lower Extremity; MS-DRG 190 indicates Chronic Obstructive Pulmonary Disease; MS-DRG 280 indicates Acute Myocardial Infarction. Source: Trilliant Health national all-payer claims database; Health Plan Price Transparency dataset.

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

Life Sciences and Health Systems Face Increased Scrutiny, While Optum Acquisitions Span the Healthcare Industry

Given the vertical nature of their transactions, industry participants like Optum are often treated differently than other providers. Optum reported a 17% annual increase in revenue in 2022, totaling \$182.8B. As of the first half of 2023, Optum’s revenue was \$110.4B. However, regulatory agencies continue to express concerns regarding anti-competitive impacts of various hospital/health system deals despite continued financial losses and risk of hospital closures.

COMPLETED OPTUM DEALS, 2015-2022

COMPANY	YEAR	INDUSTRY	ACQUISITION (\$)
RALLY®	2015	Digital Health	Undisclosed
ME MedExpress	2015	Urgent Care	\$1.5B
SCA Surgical Care Affiliates®	2017	Ambulatory Surgery Centers	\$2.3B
Advisory Board	2017	Healthcare Analytics, Advisory Services	\$1.3B
Davita Medical Group	2017	Independent Medical Group	\$4.9B
THE POLYCLINIC	2018	Primary and Specialty Care Services	\$4.9B
naviHealth	2020	Post-Acute Healthcare Services	\$1B
CHANGE HEALTHCARE	2021	Healthcare Analytics, Advisory Services	\$13B
R REFRESH Mental Health	2022	Mental Health	\$700M
Kelsey-Seybold Clinic	2022	Private Medical Group	\$2B
emis group	2022	Healthcare Software	\$1.4B
LHC GROUP	2022	Home Health	\$5.5B

SELECT HEALTHCARE TRANSACTIONS UNDER REVIEW BY THE FTC, 2021-2023

Life Sciences

AMGEN + HORIZON

Bristol Myers Squibb + Celgene

Hospital/Health System

RWJBarnabas HEALTH + SAINT PETER'S HEALTHCARE SYSTEM

Haekenaack Meridian Health + ENGLEWOOD HEALTH

HCA Healthcare + Sunland

Pharmacy

surescripts

GoodRx

Diagnostics

illumina + GRAIL

















Note: FTC denotes Federal Trade Commission. Optum is a subsidiary of UnitedHealthcare, one of the largest national payers. Source: Publicly available Optum press releases.

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

Completed Healthcare Mega Deals Primarily Horizontal Integration

With increased regulatory pressures on healthcare transactions, several pending M&A deals were abandoned within the last year. Federal antitrust agencies have proposed updates to U.S. merger guidelines that, if finalized, would allow regulators to more easily address consolidation in the healthcare industry.

SELECT CLOSED HEALTHCARE MEGA DEALS (>\$1B), 2022-2023

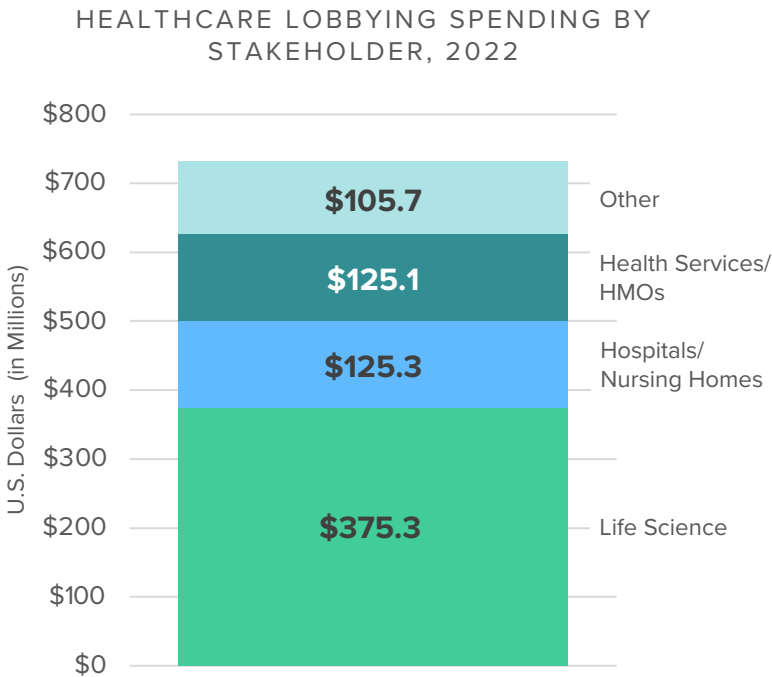
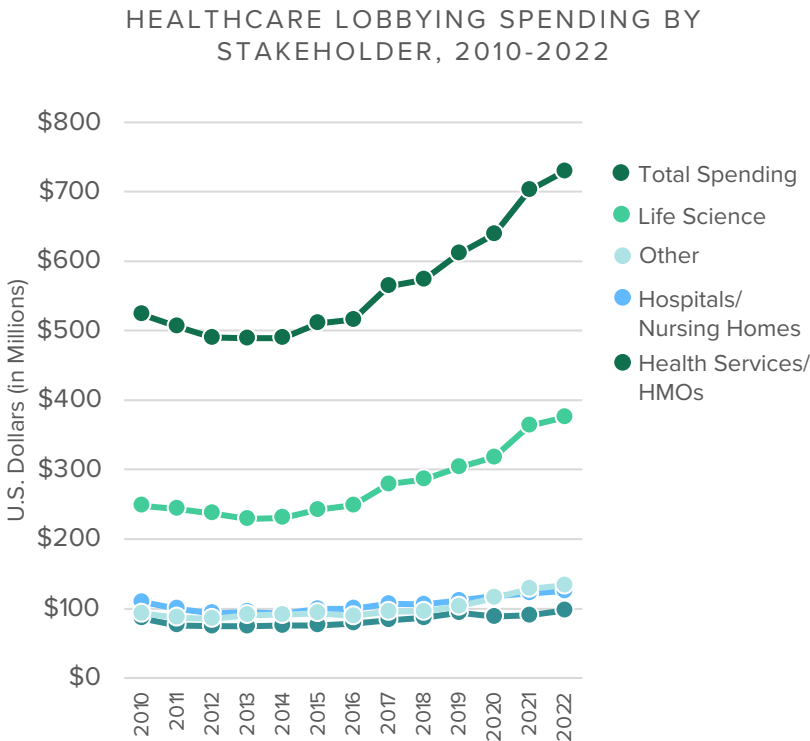
	2H 2022	1H 2023
HOSPITALS	<div><div></div><div> \$27B</div><div> Atrium Health</div></div>	<div><div></div><div> \$7B</div><div></div></div>
HOME HEALTH		<div><div></div><div> \$5.1B</div><div></div></div> <div><div></div><div> \$8B</div><div></div></div>
NEW ENTRANTS		<div><div></div><div> \$3.9B</div><div></div></div>
MANAGED CARE	<div><div></div><div> \$13B</div><div></div></div>	
LIFE SCIENCES	<div><div></div><div> \$5.4B</div><div></div></div>	<div><div></div><div> \$11.6B</div><div></div></div> <div><div></div><div> \$10.8B</div><div></div></div>
PHARMACY	<div><div></div><div> \$1.4B</div><div></div></div>	<div><div></div><div> \$1.3B</div><div></div></div>

Source: Company press releases.

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

Healthcare Lobbying Continues To Increase With an Focus on M&A

All stakeholders in the healthcare industry are ramping up spending on lobbying, with life science companies spending almost three times as much as hospitals. Physician groups and associations, with a focus on influencing Federal policy covering mergers and acquisitions, increased their spending by 3.4% between 2021 and 2022.

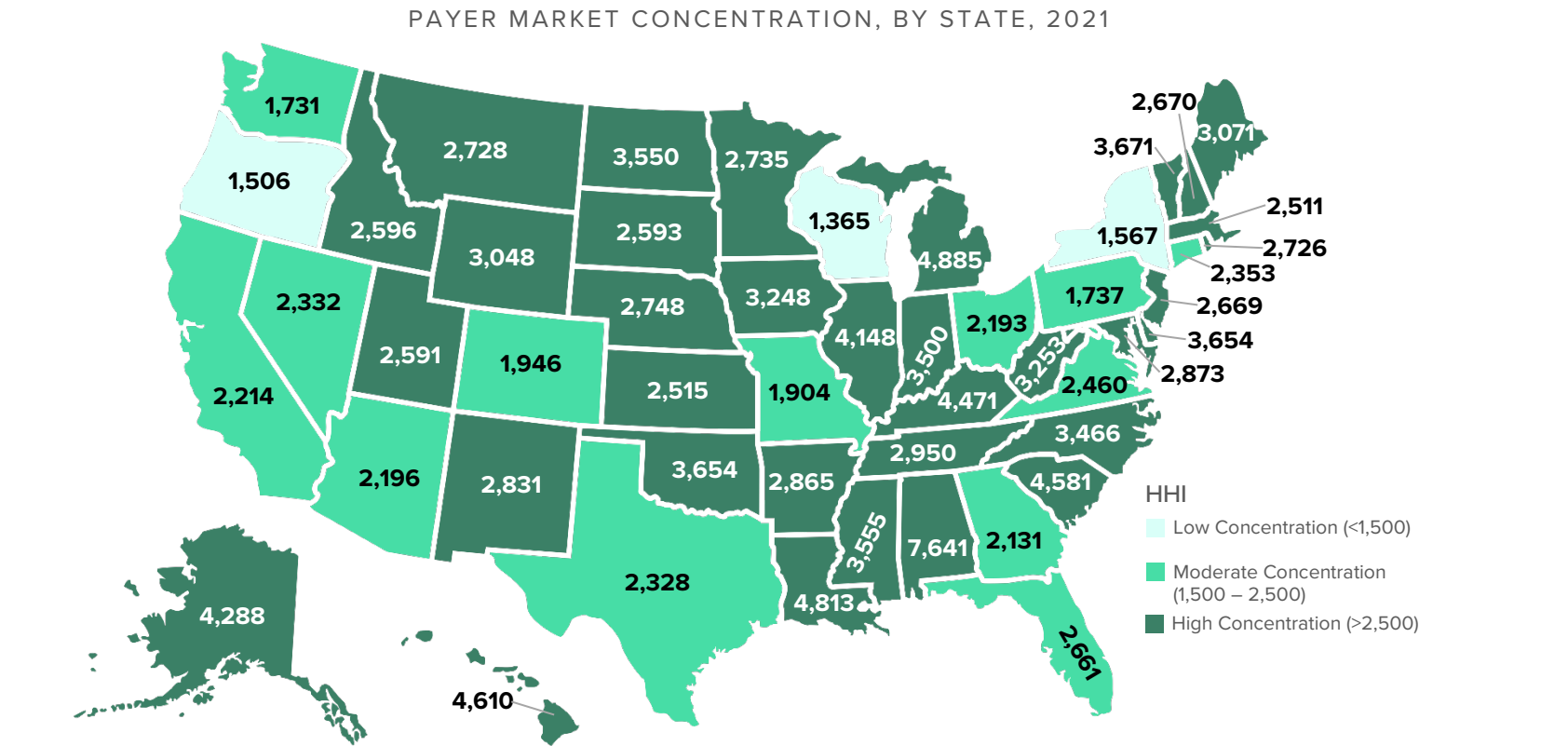


Note: HMO denotes health maintenance organization.
Source: The Senate Office of Public Records Lobbying Disclosure Act Reports.

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

The Discrepancy Between Payer Concentration Relative to Providers Is Inconsistent With the Government’s Focus on M&A Deals

The Herfindahl-Hirschman Index indicates that the payer market is moderately or highly concentrated in 49 out of 50 states. At the Metropolitan Statistical Area level, 75% of markets were highly concentrated. In 48% of markets, an individual insurer had more than 50% of the total market share.



Note: An HHI below 1,500 indicates a competitive market; between 1,500 and 2,500 indicates a moderately concentrated market, whereas a value greater than 2,500 indicates a highly concentrated market.
Source: American Medical Association.

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

Thirteen States Have a Payer With >50% Market Share

While 49% of U.S. CBSAs have a dominant payer with greater than 50% market share, only 13 states do – with the highest market share in Alabama (87%), Michigan (68%) and Louisiana (67%).

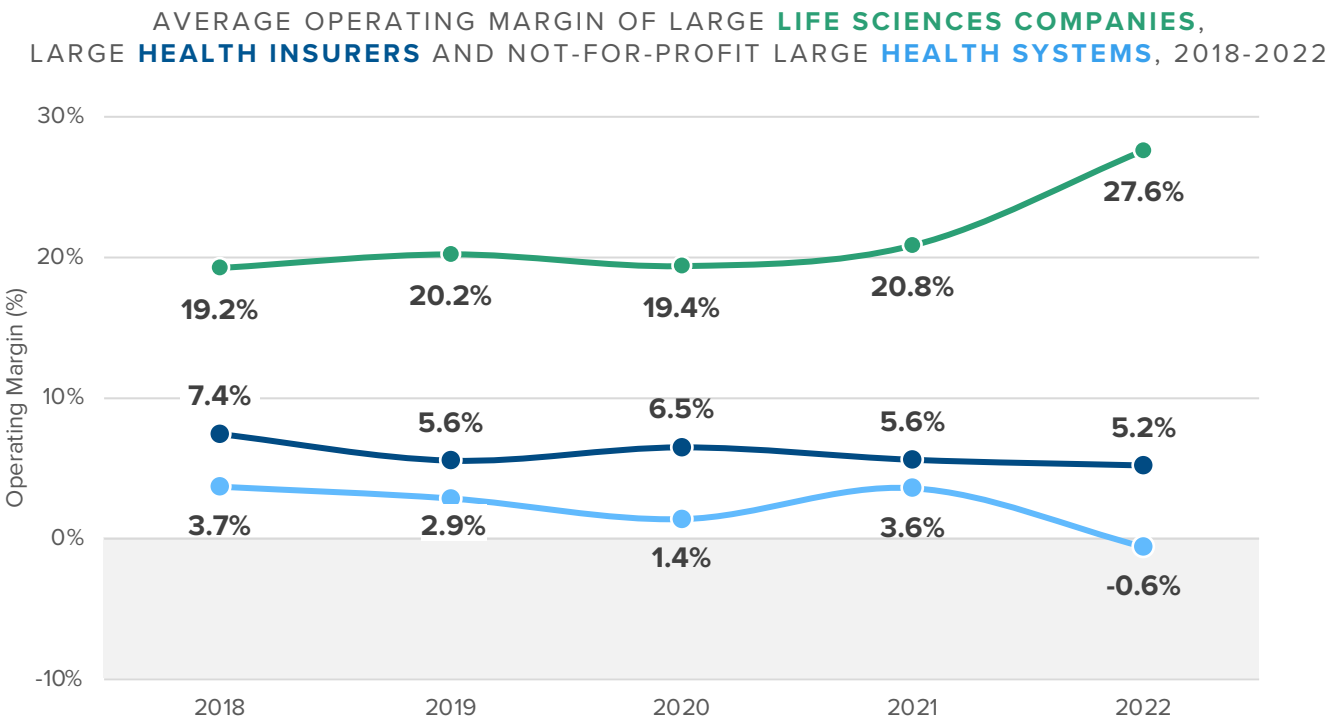
STATE	DOMINANT PAYER (MARKET SHARE)	STATE	DOMINANT PAYER (MARKET SHARE)
Alabama	BCBS Alabama (87%)	Montana	HCSC (BCBS) (41%)
Alaska	CVS Health/Aetna (47%)	Nebraska	BCBS Nebraska (42%)
Arizona	UnitedHealth Group (29%)	Nevada	UnitedHealth Group (37%)
Arkansas	BCBS Arkansas (46%)	New Hampshire	Anthem (43%)
California	Kaiser (37%)	New Jersey	Horizon BCBS (41%)
Colorado	UnitedHealth Group (24%)	New Mexico	HCSC (BCBS) (47%)
Connecticut	Anthem (37%)	New York	UnitedHealth Group (28%)
Delaware	Highmark (49%)	North Carolina	BCBS North Carolina (53%)
Washington, DC	CareFirst (32%)	North Dakota	BCBS North Dakota (50%)
Florida	BCBS Florida (38%)	Ohio	Anthem (34%)
Georgia	Anthem (38%)	Oklahoma	HCSC (BCBS) (57%)
Hawaii	BCBS Hawaii (64%)	Oregon	Cambia (23%)
Idaho	BlueCross of Idaho (46%)	Pennsylvania	Highmark (29%)
Illinois	HCSC (BCBS) (61%)	Rhode Island	BCBS Rhode Island (42%)
Indiana	Anthem (56%)	South Carolina	BCBS South Carolina (65%)
Iowa	Wellmark (BCBS) (48%)	South Dakota	Avera Health (35%)
Kansas	BCBS Kansas (43%)	Tennessee	BCBS Tennessee (43%)
Kentucky	Anthem (65%)	Texas	HCSC (BCBS) (38%)
Louisiana	BCBS (67%)	Utah	Intermountain (44%)
Maine	Anthem (50%)	Vermont	BCBS Vermont (53%)
Maryland	CareFirst (47%)	Virginia	Anthem (43%)
Massachusetts	BCBS Massachusetts (35%)	Washington	Kaiser (23%)
Michigan	BCBS Michigan (68%)	West Virginia	Highmark (53%)
Minnesota	BCBS Minnesota (46%)	Wisconsin	UnitedHealth Group (25%)
Mississippi	BCBS Mississippi (55%)	Wyoming	Cigna (45%)
Missouri	Anthem (27%)		

Note: BCBS denotes BlueCross BlueShield; HCSC denotes Health Care Service Corporation.
Source: American Medical Association.

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

Health System Margins Are Significantly Lower Than Payer and Life Sciences Operating Margins

While both health systems and health insurers have seen declines in average operating margin, even some of the largest nonprofit health systems have negative margins. Meanwhile, life sciences companies have seen operating margins increase by 8.4 percentage points since 2018, while also averaging above 19% year-over-year.

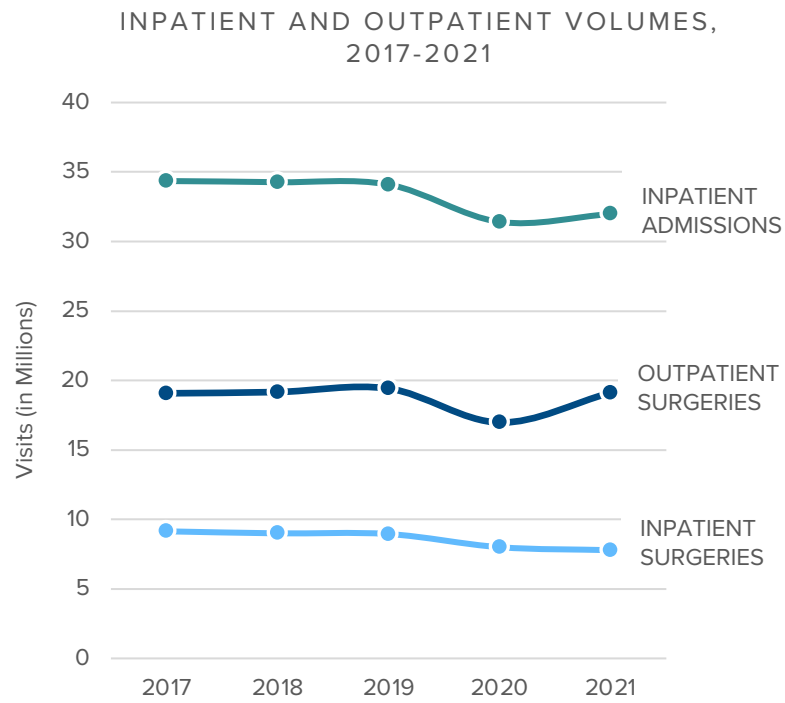


Note: Health insurers average operating margins were calculated using the average of Aetna, Elevance Health (formerly Anthem), UnitedHealthcare, Cigna and Humana operating margins from 2018 to 2022. Health system margins were calculated using data provided by a representative sample of large not-for-profit health system senior executives and their financial statements. Biopharmaceutical operating margins using the average of Eli Lilly, Merck, Pfizer and Johnson & Johnson operating margins from 2018 to 2022. The margins are likely to be on the higher end given the sample leans towards larger organizations. Source: Financial statements of health insurers, health systems and life sciences companies.

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

The Federal Government’s Measures of Market Concentration Do Not Reflect the Current Landscape of Care Delivery

While the proportion of care delivered in the inpatient setting is decreasing, the Federal government’s traditional measure of market concentration is limited to inpatient utilization. More accurate measures of market concentration – to reflect both inpatient and outpatient care – can lead to different conclusions about the same market.



HHI FOR SELECT CBSAs, INPATIENT AND OUTPATIENT

CBSA	Inpatient	Outpatient
NATIONAL MEDIAN	4,652	4,394
New York-Newark-Jersey City, NY-NJ-PA	166	218
Pittsburgh, PA	611	614
Portland-South Portland, ME	3,665	1,932
Madison, WI	2,560	1,987
Oxnard-Thousand Oaks-Ventura, CA	1,806	2,154
Springfield, MA	3,304	2,229
San Jose-Sunnyvale-Santa Clara, CA	1,286	2,210
Memphis, TN-MS-AR	1,885	1,755
Durham-Chapel Hill, NC	3,329	3,113
Staunton, VA	7,887	10,000
Bellingham, WA	10,000	10,000

Low Concentration (<1,500) Moderate Concentration (1,500 – 2,500)
High Concentration (>2,500) Monopoly (10,000)

Note: An HHI below 1,500 indicates a competitive market; between 1,500 and 2,500 indicates a moderately concentrated market, whereas a value greater than 2,500 indicates a highly concentrated market. For example, Portland-South Portland, ME is considered highly concentrated for inpatient care, with an HHI of 3,665, but moderately concentrated for outpatient care, with an HHI of 1,932. While traditional HHI refers to the standard measure of market concentration, inclusive only of inpatient settings, this analysis provides a comparison of inpatient HHI and outpatient HHI. Inpatient admissions are for nonfederal short-term general hospitals and other special hospitals; outpatient surgeries and inpatient surgeries are for all U.S. community hospitals.

Source: Healthcare Cost Report Information System; 2023 American Hospital Association Hospital Statistics.

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

Not All Metropolitan Areas Are Competitive

The three most competitive markets in the U.S. are Los Angeles, New York and Chicago, which have an inpatient HHI of 148, 167 and 186, respectively.

HHI FOR SELECT METROPOLITAN CBSAs, INPATIENT AND OUTPATIENT

LOW CONCENTRATION (<1,500)

CBSA	Inpatient	Outpatient
NATIONAL MEDIAN	4,652	4,394
Los Angeles-Long Beach-Anaheim, CA	148	233
New York-Newark-Jersey City, NY-NJ-PA	167	218
Chicago-Naperville-Elgin, IL-IN-WI	186	212
Dallas-Fort Worth-Arlington, TX	253	342
Philadelphia-Camden-Wilmington, PA-NJ-DE	305	335
Miami-Fort Lauderdale-Pompano Beach, FL	311	388
Houston-The Woodlands-Sugar Land, TX	369	475
Phoenix-Mesa-Chandler, AZ	371	387

HIGH CONCENTRATION (>2,500)

CBSA	Inpatient	Outpatient
NATIONAL MEDIAN	4,652	4,394
Durham-Chapel Hill, NC	3,329	3,114
Hilton Head Island-Bluffton, SC	3,350	4,394
San Luis Obispo-Paso Robles, CA	3,374	3,427
Greeley, CO	3,377	3,404
Beaumont-Port Arthur, TX	3,386	3,540
Monroe, LA	3,388	2,583
Rockford, IL	3,395	4,120
Panama City, FL	3,401	3,429

MODERATE CONCENTRATION (1,500 – 2,500)

Memphis, TN-MS-AR	1,885	1,756
Scranton-Wilkes-Barre, PA	1,911	2,402
Dayton-Kettering, OH	1,949	1,546
Salisbury, MD-DE	1,955	2,056
Worcester, MA-CT	1,980	1,512
Orlando-Kissimmee-Sanford, FL	1,998	2,002
North Port-Sarasota-Bradenton, FL	2,151	2,093
Urban Honolulu, HI	2,194	2,238

MONOPOLY (10,000)

Fairbanks, AK	10,000	10,000
Pine Bluff, AR	10,000	10,000
Cheyenne, WY	10,000	10,000
Harrisonburg, VA	10,000	10,000
Cleveland, TN	10,000	10,000
Midland, MI	10,000	10,000
Owensboro, KY	10,000	10,000
Lawrence, KS	10,000	10,000

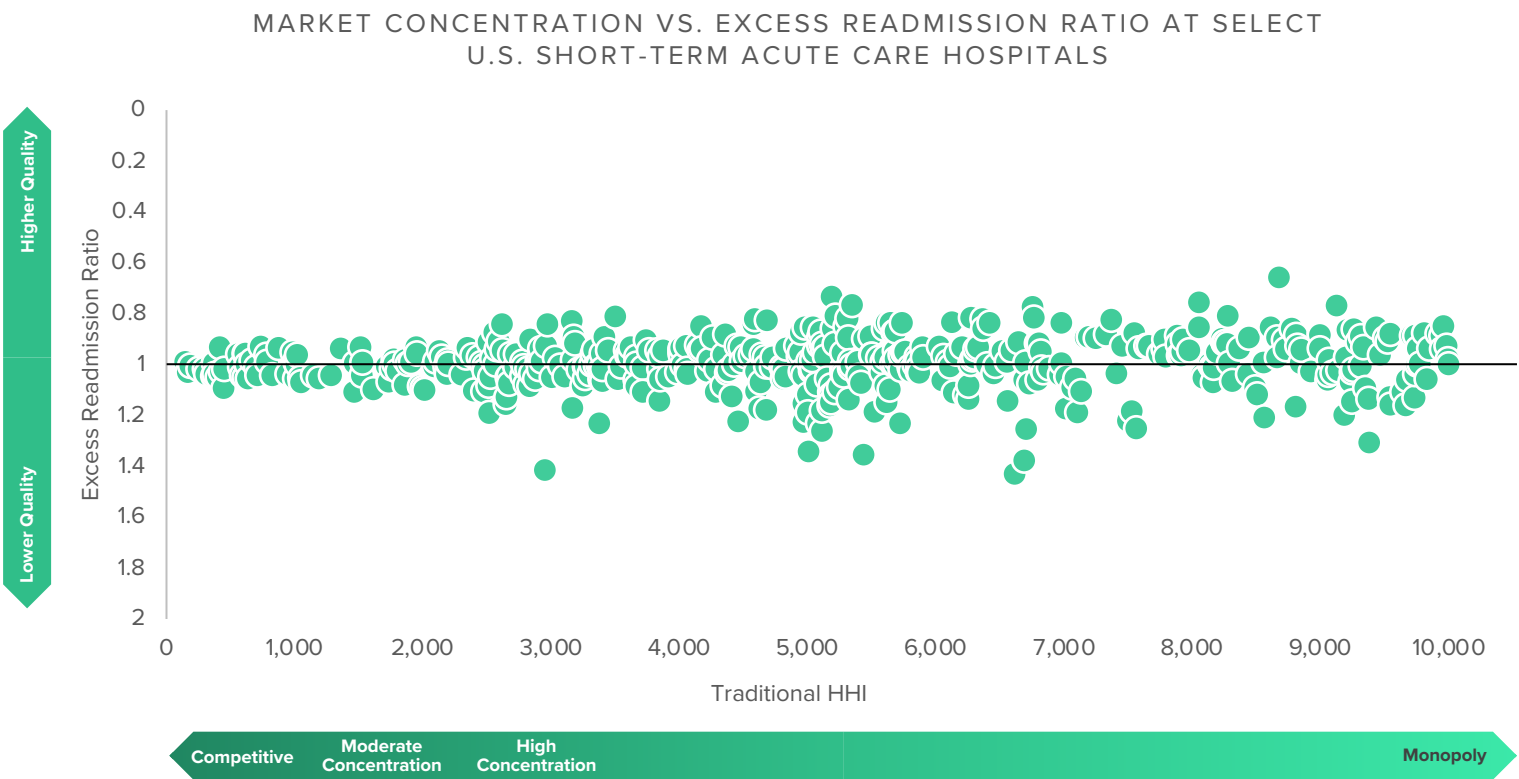
Note: An HHI below 1,500 indicates a competitive market; between 1,500 and 2,500 indicates a moderately concentrated market, whereas a value greater than 2,500 indicates a highly concentrated market. While traditional HHI refers to the standard measure of market concentration, inclusive only of inpatient settings, this analysis provides a comparison of inpatient HHI and outpatient HHI. IP denotes inpatient; OP denotes outpatient.

Source: Healthcare Cost Report Information System; 2023 American Hospital Association Hospital Statistics.

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

Market Concentration Is Not a Clear Driver of Quality

Whether a market is competitive or concentrated is not indicative of the quality of care delivered in that market. Therefore, the claim that consolidation worsens quality outcomes should be re-evaluated from the lens of the relationship between all hospitals across their respective markets.

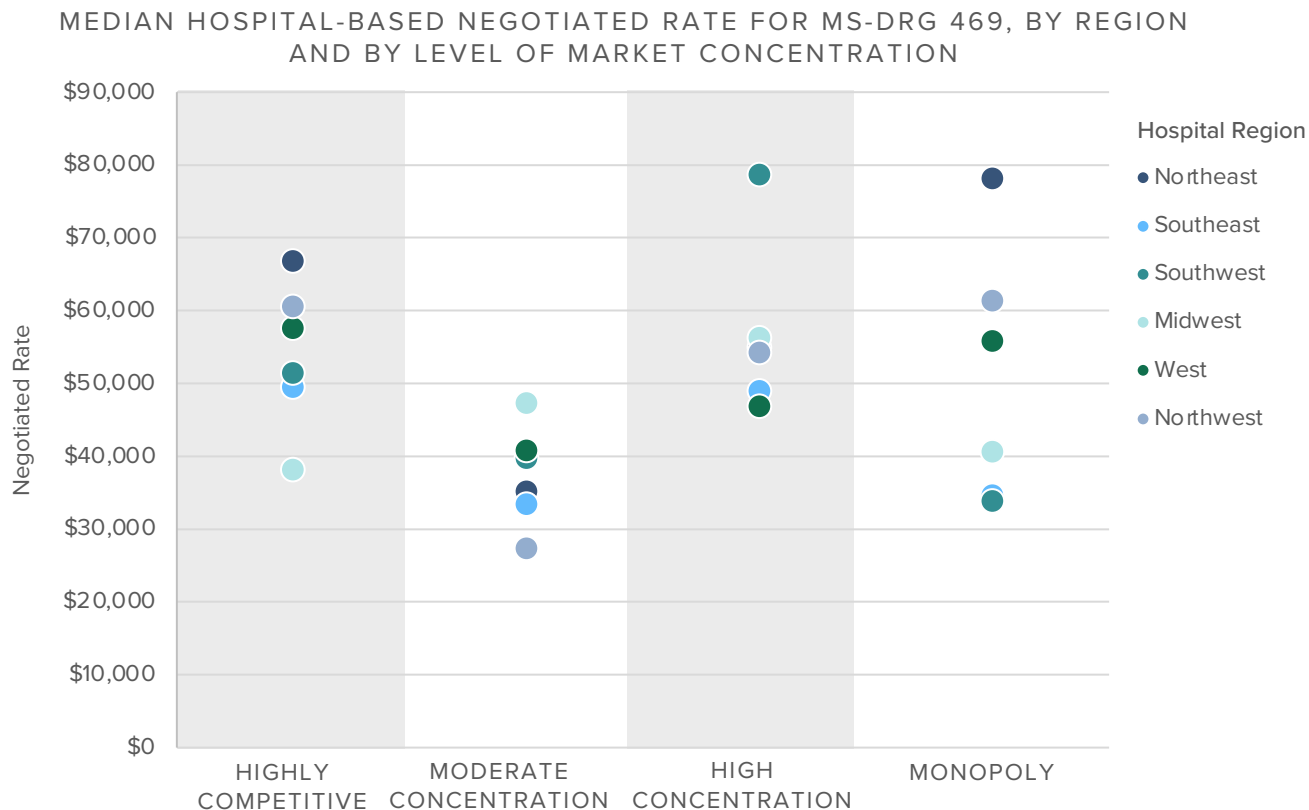


Note: An HHI below 1,500 indicates a competitive market; between 1,500 and 2,500 indicates a moderately concentrated market, whereas a value greater than 2,500 indicates a highly concentrated market. Traditional HHI refers to the standard measure of market concentration, inclusive only of inpatient settings. The excess readmission ratio values shown are for hip and knee replacement procedures.
Source: Healthcare Cost Report Information System; Centers for Medicare and Medicaid Services.

TREND 8: OVERSTATED MONOPOLISTIC EFFECTS

Market Concentration and Region Do Not Correlate With Price

There is not only a lack of correlation between market concentration and price, but also a substantial variation in the prices of markets with similar concentration levels. Specifically, the median price for MS-DRG 469 in markets with high concentration ranged from \$27.3K in the Southeast to \$78.6K in the West.



Note: Traditional HHI refers to the standard measure of market concentration, inclusive only of inpatient settings. An HHI below 1,500 indicates a competitive market; between 1,500 and 2,500 indicates a moderately concentrated market, whereas a value greater than 2,500 indicates a highly concentrated market. An HHI of 10,000 indicates a monopoly. Analysis was conducted using negotiated rates for a single national payer – UnitedHealthcare. MS-DRG 469 indicates Major Hip and Knee Joint Replacement or Reattachment of Lower Extremity With Major Complication or Comorbidity.

Source: Trilliant Health national all-payer claims database; Health Plan Price Transparency dataset.



TREND 9

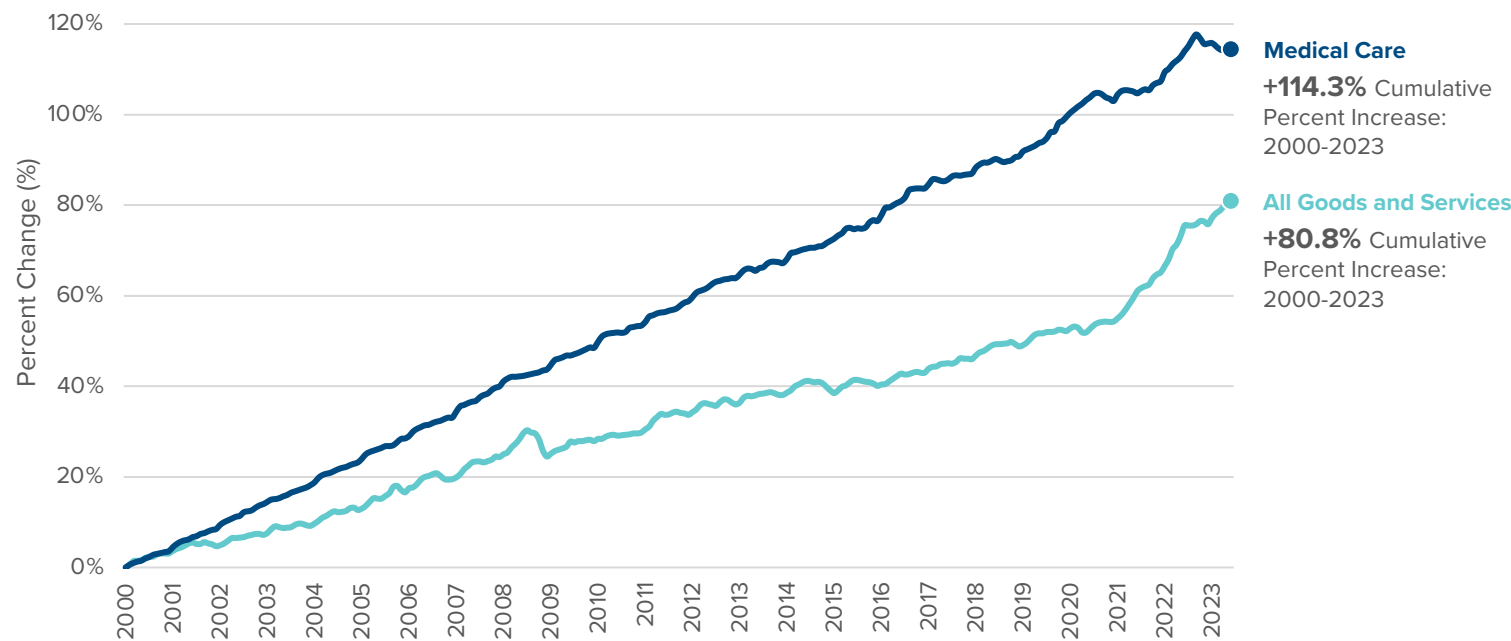
Employers Are Paying More for Less

TREND 9: PAYING MORE FOR LESS

Growth in Medical Care Prices Outpaces Overall Consumer Prices

The prices for all consumer goods and services have risen by 80.8% since 2000, but prices for medical care — including treatment, insurance, medical equipment and prescription drugs — have increased by 114.3%. Despite markedly higher overall inflation between January 2021 and June 2023, the gap between medical care inflation and overall inflation remains large.

CUMULATIVE PERCENT CHANGE IN CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS FOR MEDICAL CARE VS. ALL GOODS AND SERVICES, 2000-2023

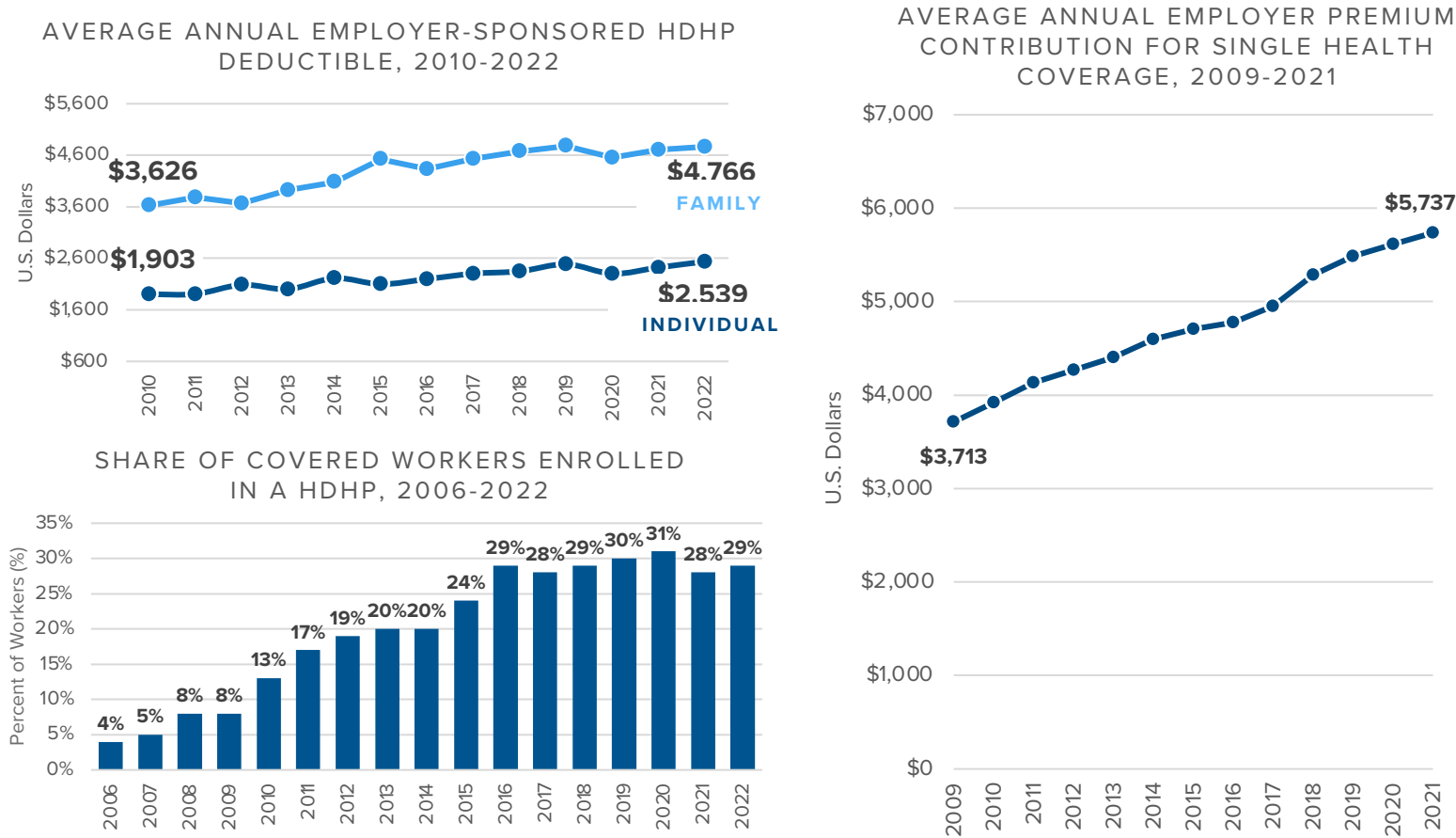


Source: Bureau of Labor Statistics Consumer Price Index.

TREND 9: PAYING MORE FOR LESS

Employer-Sponsored Insurance Costs Continue to Rise

The share of employer-sponsored lives covered by a high-deductible health plan in 2022 was more than six times higher than it was in 2006. Since 2010, family and individual deductibles have increased by 31.4% and 33.4%, respectively. In parallel, the amount that employers are contributing to employee premiums has continuously increased for more than a decade.

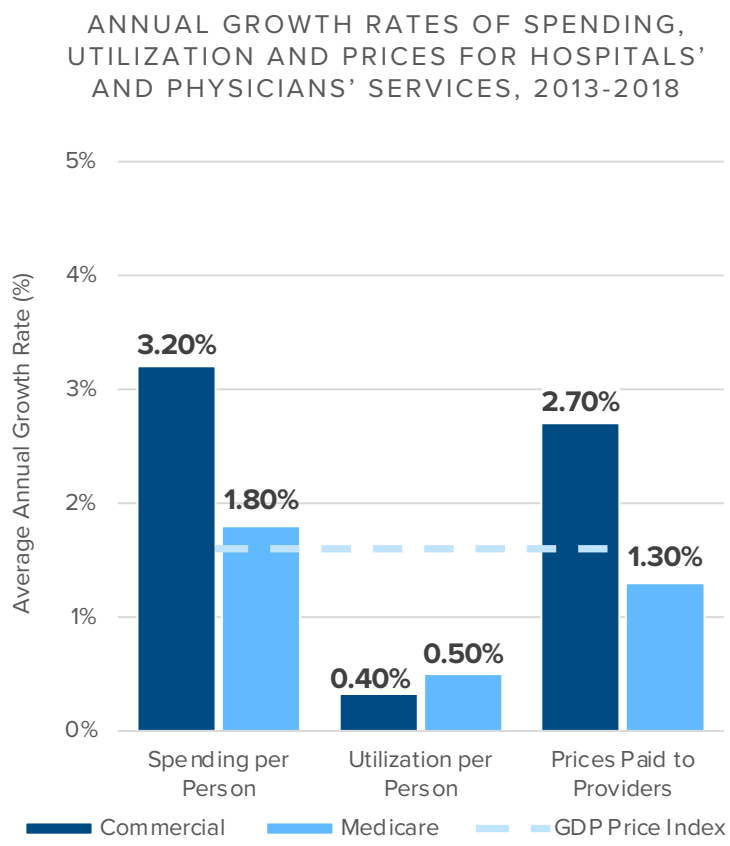
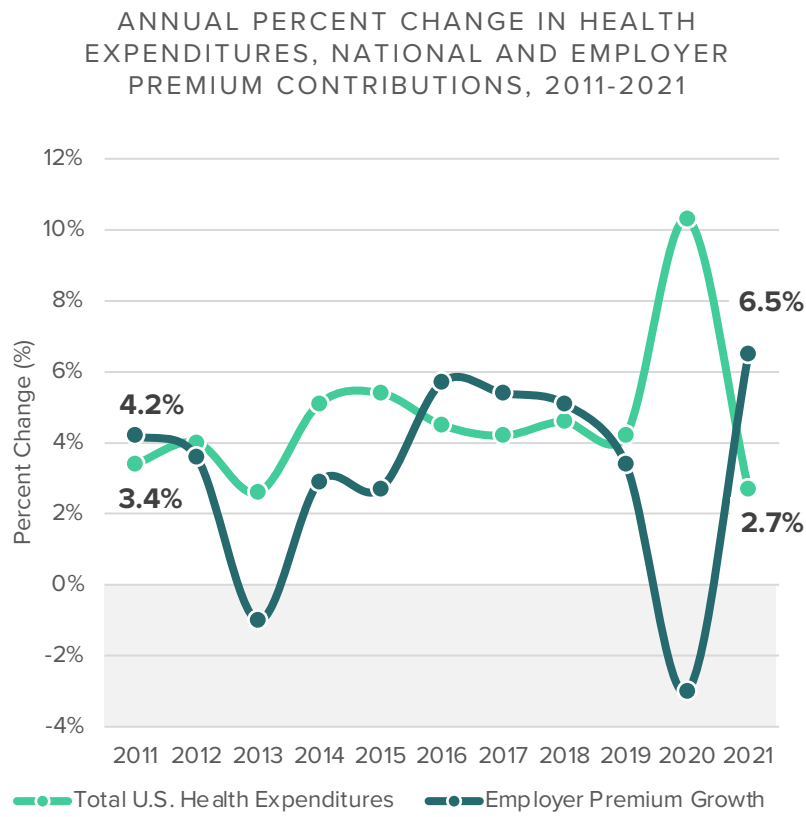


Note: HDHP denotes high-deductible health plan.
Source: Kaiser Family Foundation Employer Health Benefits 2022 Survey; Medical Expenditure Panel 2022 Survey; U.S Department of Labor, Bureau of Labor Statistics.

TREND 9: PAYING MORE FOR LESS

Growth in Employer Spending Could Outpace Overall Growth Rate

Growth in employer expenditures for health insurance premiums surpassed year-over-year growth in total U.S. health expenditures in 2021 – potentially driven by faster growth rates in the prices paid by commercial insurers, as compared to Medicare and inflation.



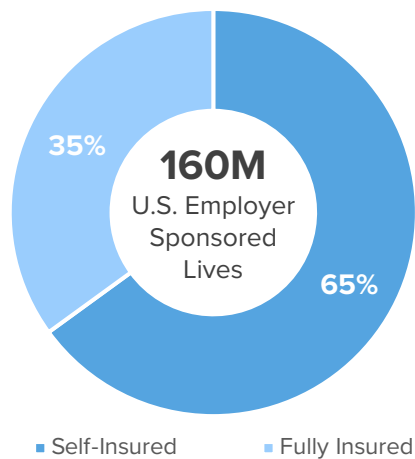
Note: GDP denotes gross domestic product.
Source: Centers for Medicare and Medicaid Services 2021 National Health Expenditures; Congressional Budget Office Analysis of The Prices That Commercial Health Insurers and Medicare Pay for Hospitals' and Physicians' Services.

TREND 9: PAYING MORE FOR LESS

The Self-Insured Employer Market Is Growing

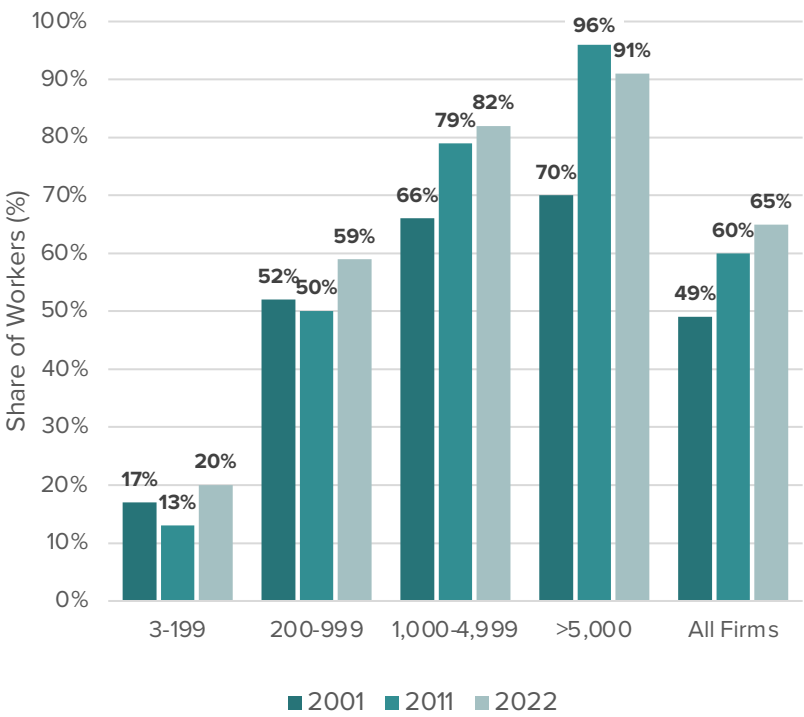
Employers are increasingly adopting self-insured health plans as another mechanism to lower expenses. Since 2001, the share of self-insured coverage has increased 16 percentage points, and 91% of employers with more than 5,000 employees are self-insured.

EMPLOYER-SPONSORED INSURANCE MARKET BY COVERAGE TYPE, 2023



Self-insured coverage is a form of ESI wherein the employer pays for incurred beneficiary claims and outsources benefit administration to a third-party administrator.

ESTIMATED WORKERS COVERED IN SELF-INSURED PLANS BY FIRM SIZE, 2001-2022

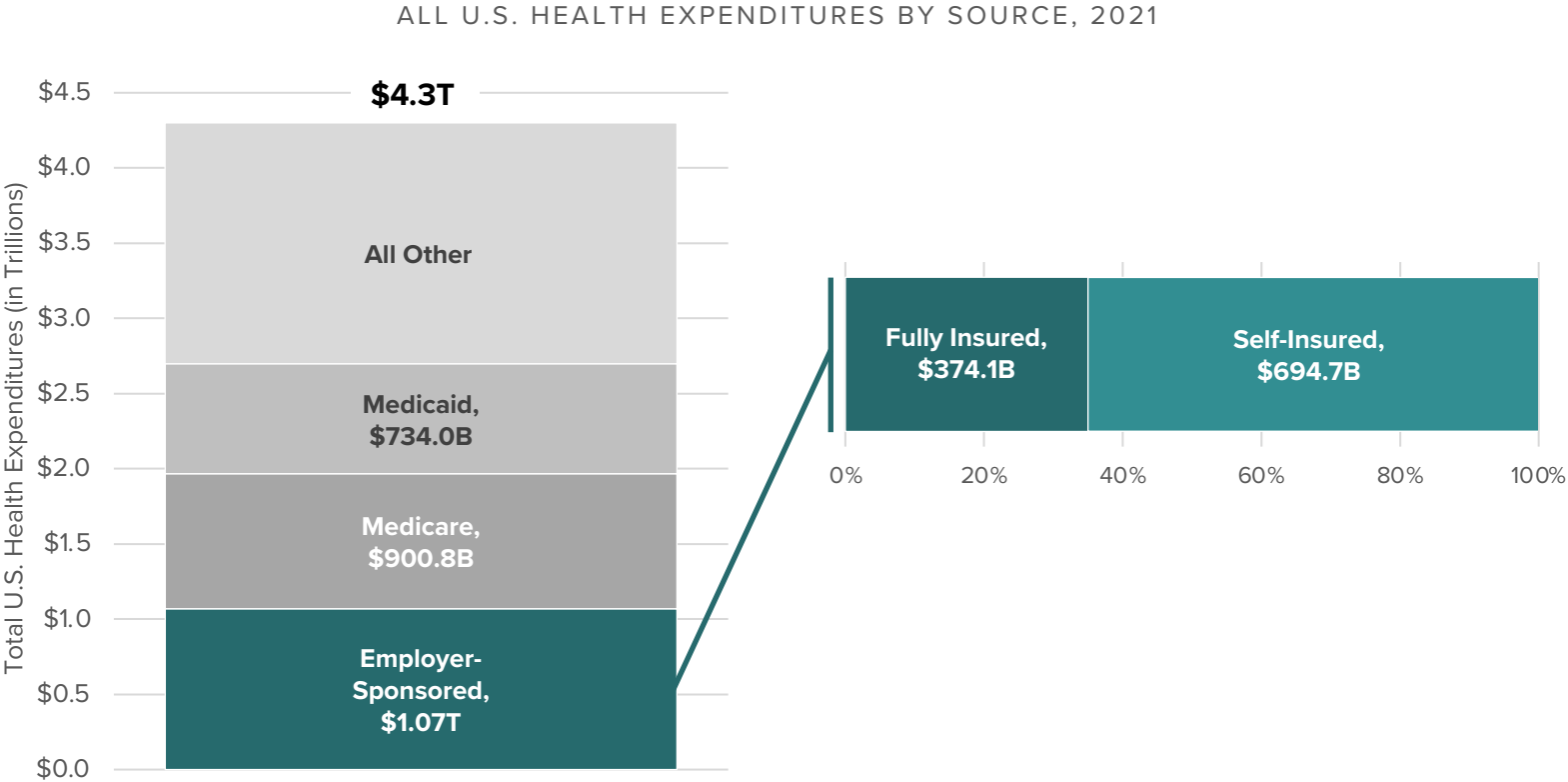


Note: ESI denotes employer-sponsored insurance.
Source: Houlihan Lokey Employer-Sponsored Healthcare TPAS and Benefit Solution Providers Sector Spotlight.

TREND 9: PAYING MORE FOR LESS

Self-Insured Employer Expenditures Alone Account for 16% of Total U.S. Healthcare Expenditures

In 2021, employer-sponsored health insurance expenditures totaled \$1.07T, or 25% of all U.S. health expenditures. The self-insured portion of employer spending totaled \$694.7B, or 16% of all spending.

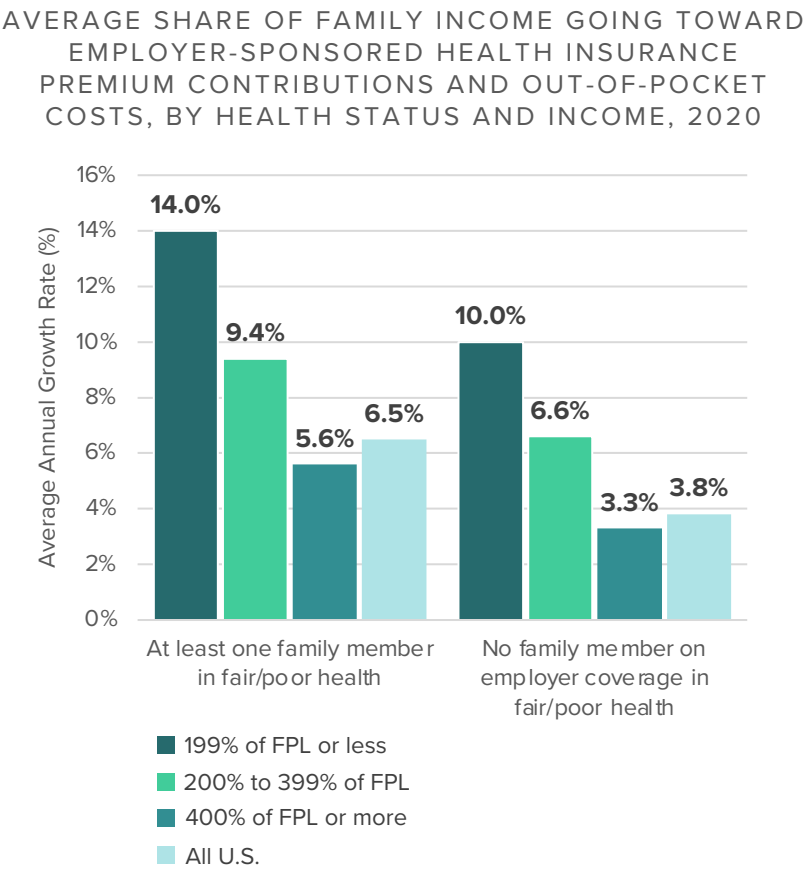
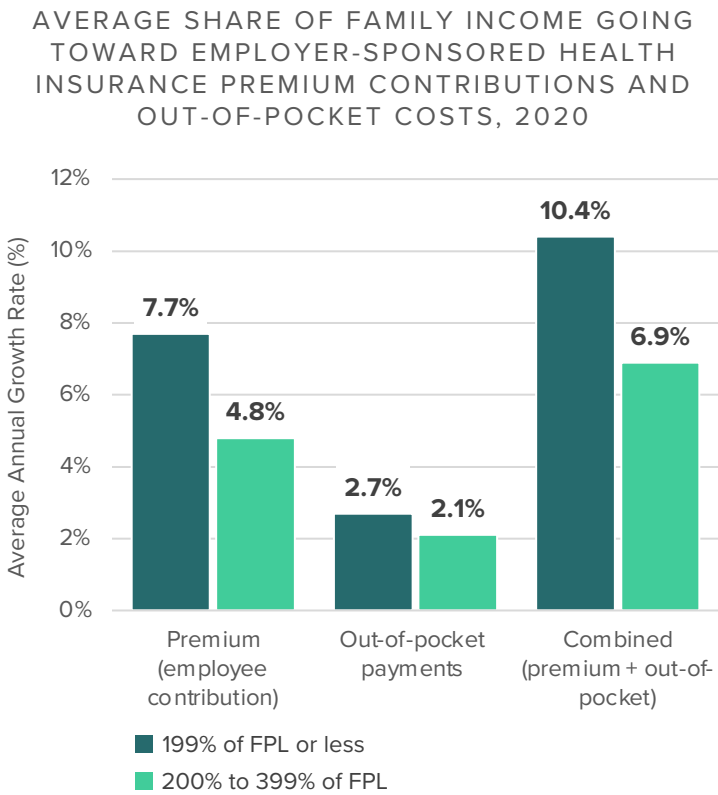


Source: Centers for Medicare and Medicaid Services 2021 National Health Expenditures; Houlihan Lokey Employer-Sponsored Healthcare TPAS and Benefit Solution Providers Sector Spotlight.

TREND 9: PAYING MORE FOR LESS

Employee Responsibility for Employer-Sponsored Insurance Often Exceeds 10% of Income

Lower-income families with employer-sponsored insurance spend around 10.4% of their income on health costs, and families with at least one member in fair/poor health spend 6.5% of their income on premium contributions – more than those with higher incomes.

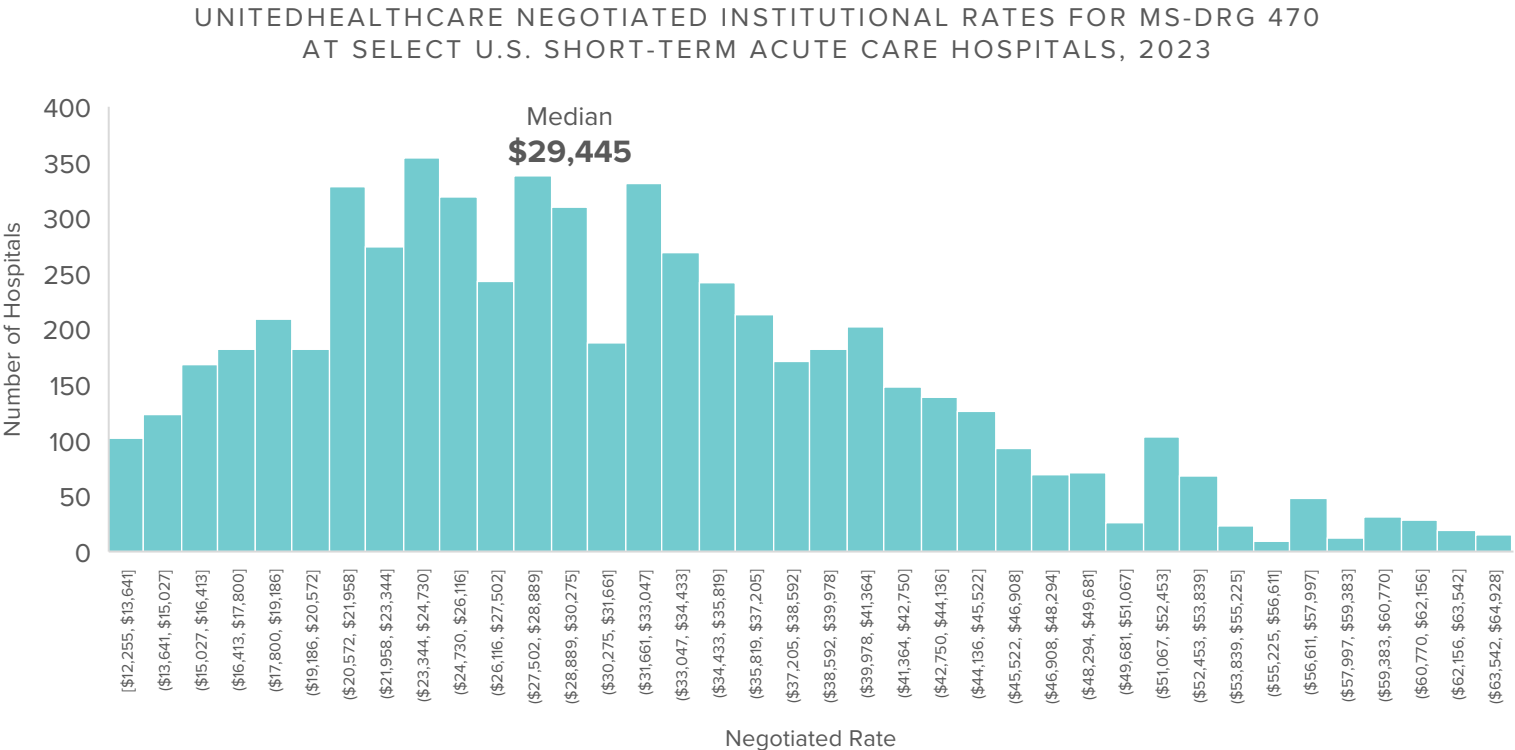


Note: FPL denotes Federal Poverty Level.
Source: Peterson-Kaiser Family Foundation Health System Tracker.

TREND 9: PAYING MORE FOR LESS

Negotiated Rates From a Single Payer Vary Substantially for the Same Service

Using MS-DRG 470 as an example, there is substantial variation in the negotiated institutional rates for this service is paid by UnitedHealthcare at U.S. short-term acute care hospitals. The rates range from \$12,255 to \$64,928. While the median rate is \$29,445, the most common rate is \$23,524. Will employers continue paying a 5X difference for the same service across their employee populations?



Note: Analysis was conducted using negotiated rates for one national payer — UnitedHealthcare. MS-DRG 470 indicates Major Hip and Knee Joint Replacement or Reattachment of Lower Extremity Without Major Complication or Comorbidity.
Source: Trilliant Health Health Plan Price Transparency dataset.

TREND 9: PAYING MORE FOR LESS

Even in the Outpatient Setting, There Is Wide Variance in Published Negotiated Rates

For outpatient services, which are traditionally reimbursed at lower rates than inpatient, there is wide variance in negotiated rates paid by different payers – and even by the same payer – for the same service in the same market. Looking at St. Louis, MO as an example, negotiated rates across all procedures for both payers were higher at SSM Health Medical Group.

PROFESSIONAL OUTPATIENT MEDICAL GROUP RATES IN ST. LOUIS – ANTHEM BLUECROSS BLUESHIELD VS. UNITEDHEALTHCARE, 2023

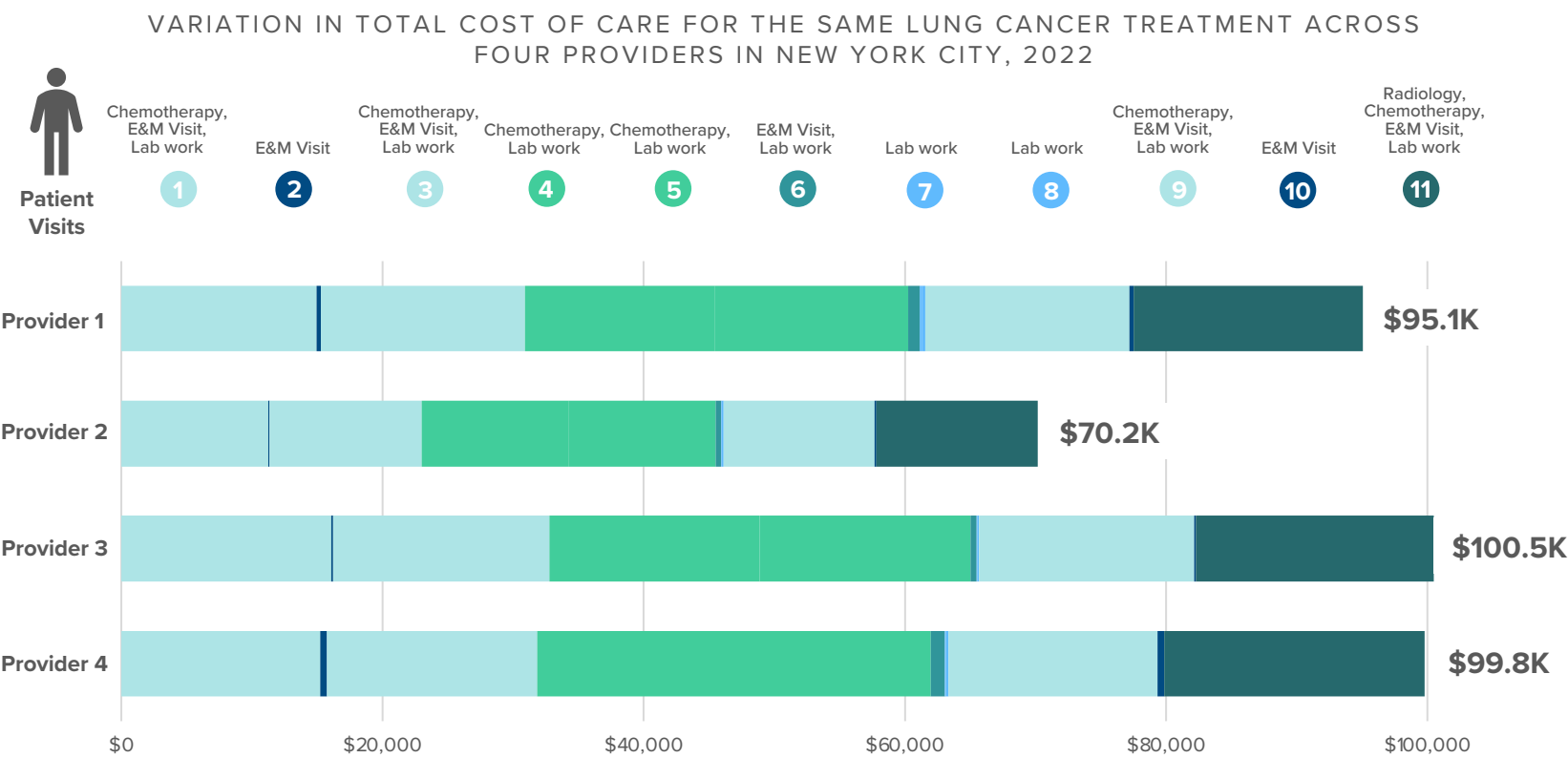
		SSM Health Medical Group	Mercy Surgical Specialists	Signature Medical Group, Inc.	Average Reimbursement Rate
CPT 27130	UnitedHealthcare	\$2,046	\$1,909	\$1,627	\$1,861
	Anthem BCBS	\$2,311	\$2,245	\$2,254	\$2,270
CPT 27447	UnitedHealthcare	\$2,101	\$1,907	\$1,603	\$1,870
	Anthem BCBS	\$2,296	\$2,282	\$2,254	\$2,277
CPT 58558	UnitedHealthcare	\$1,953	\$1,733	\$1,444	\$1,710
	Anthem BCBS	\$2,085	\$2,069	\$1,969	\$2,041

Note: Analysis was conducted using negotiated professional rates for two national payers – UnitedHealthcare and Anthem BlueCross BlueShield. CPT 27130 denotes total hip arthroplasty with or without autograft or allograft; CPT 27447 denotes total knee arthroplasty; CPT 58558 denotes hysterectomy. Source: Trilliant Health national all-payer claims database; Health Plan Price Transparency dataset.

TREND 9: PAYING MORE FOR LESS

A Payer’s Total Cost of Care Varies Widely for an Identical Patient Journey...in the Same Market

Analyzing the same 11 healthcare encounters for a single lung cancer patient journey in New York City (a highly competitive market) across four different oncology providers – as if the patient went to all four providers – reveals a total care cost ranging from \$70.2K to \$100.5K. While total cost of care was highest at Provider 3, the cost of E&M visits at that provider was lowest among the four providers.



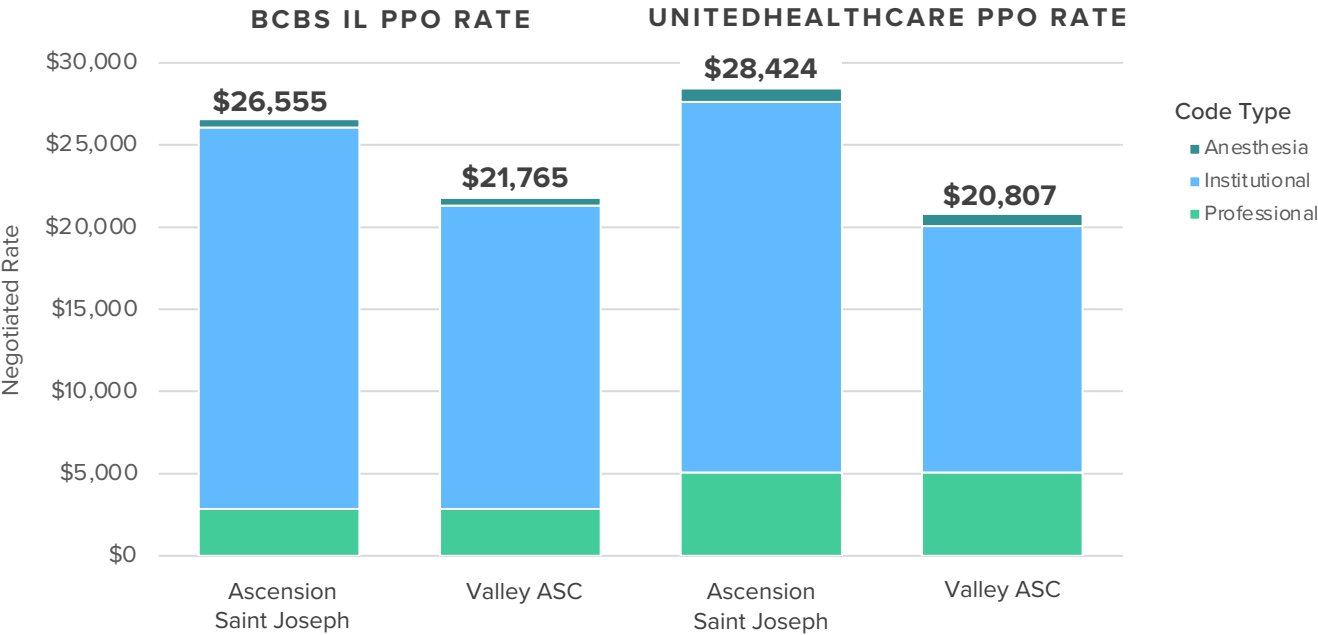
Note: Analysis was conducted for one national payer – Anthem BlueCross BlueShield; E&M denotes evaluation and management.
Source: Trilliant Health national all-payer claims database.

TREND 9: PAYING MORE FOR LESS

Negotiated Rates for a Single Provider Can Be Substantially Different Across Payers

Different payers routinely pay significantly different amounts to the same provider for the same service. Employers could bend the cost curve substantially merely by steering “away” from a handful of providers who are outliers on price or quality for a particular set of services.

ANTHEM BLUECROSS BLUESHIELD OF ILLINOIS VS. UNITEDHEALTHCARE
NEGOTIATED RATES FOR MS-DRG 470 FOR A SINGLE PROVIDER AT TWO LOCATIONS
– INPATIENT AND OUTPATIENT – IN CHICAGO, 2023



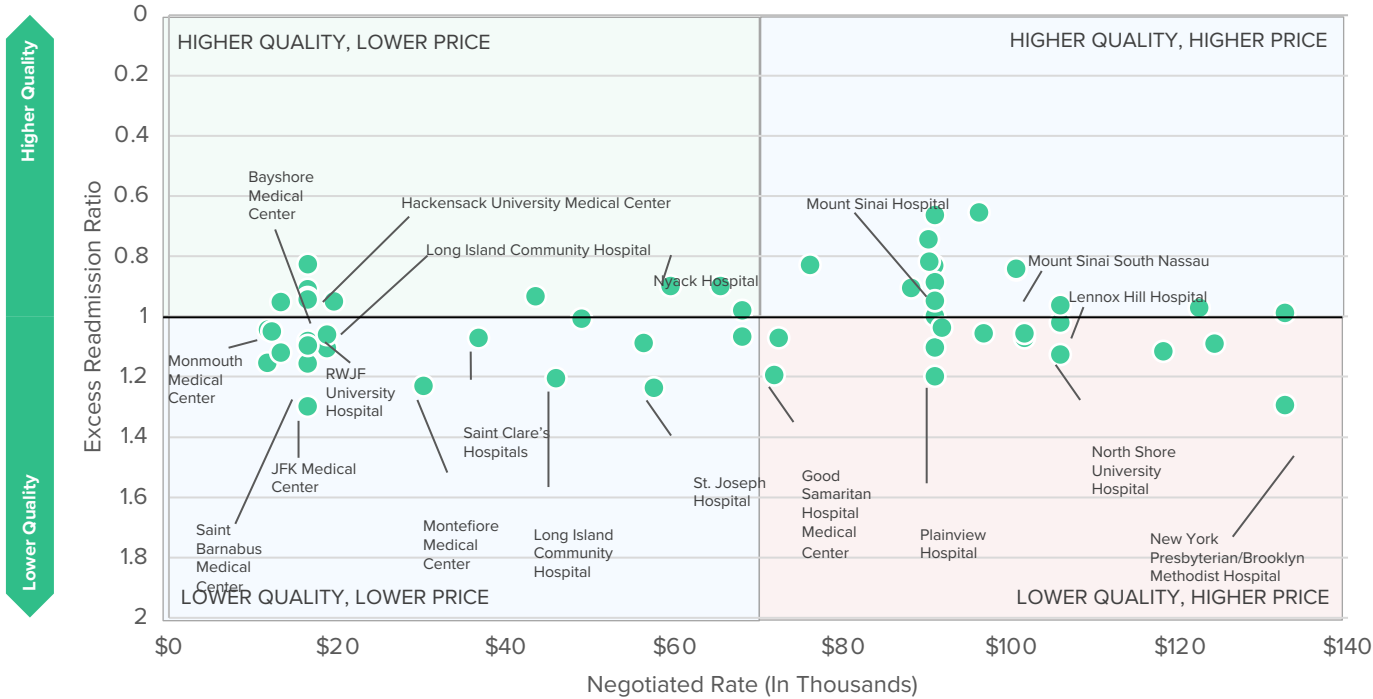
Note: Analysis was conducted using negotiated rates for two payers – UnitedHealthcare and Anthem BlueCross BlueShield of Illinois. MS-DRG 470 indicates Major Hip and Knee Joint Replacement or Reattachment of Lower Extremity Without Major Complication or Comorbidity; CPT 27447 denotes total knee arthroplasty. These two facilities were chosen as an illustrative example but if repeated for any number of facilities across markets and codes, the same finding of variation exists. ASC denotes ambulatory surgery center; PPO denotes preferred provider organization.
Source: Trilliant Health Health Plan Price Transparency dataset.

TREND 9: PAYING MORE FOR LESS

Price and Quality Are Not Correlated in Highly Competitive Markets Like New York...

While the median negotiated rate for hip and knee replacements in New York City is \$71,944, the provider receiving the highest rate of almost \$140,000 has one of the highest excess readmission ratios compared to all other hospitals. Equipped with this insight, how could employers design employee health benefit networks that more specifically direct employees to the appropriate high-quality, lower-price provider?

QUALITY VS. NEGOTIATED RATE FOR DRG-469 IN NEW YORK-NEWARK-JERSEY CITY, NY-NJ-PA, 2023



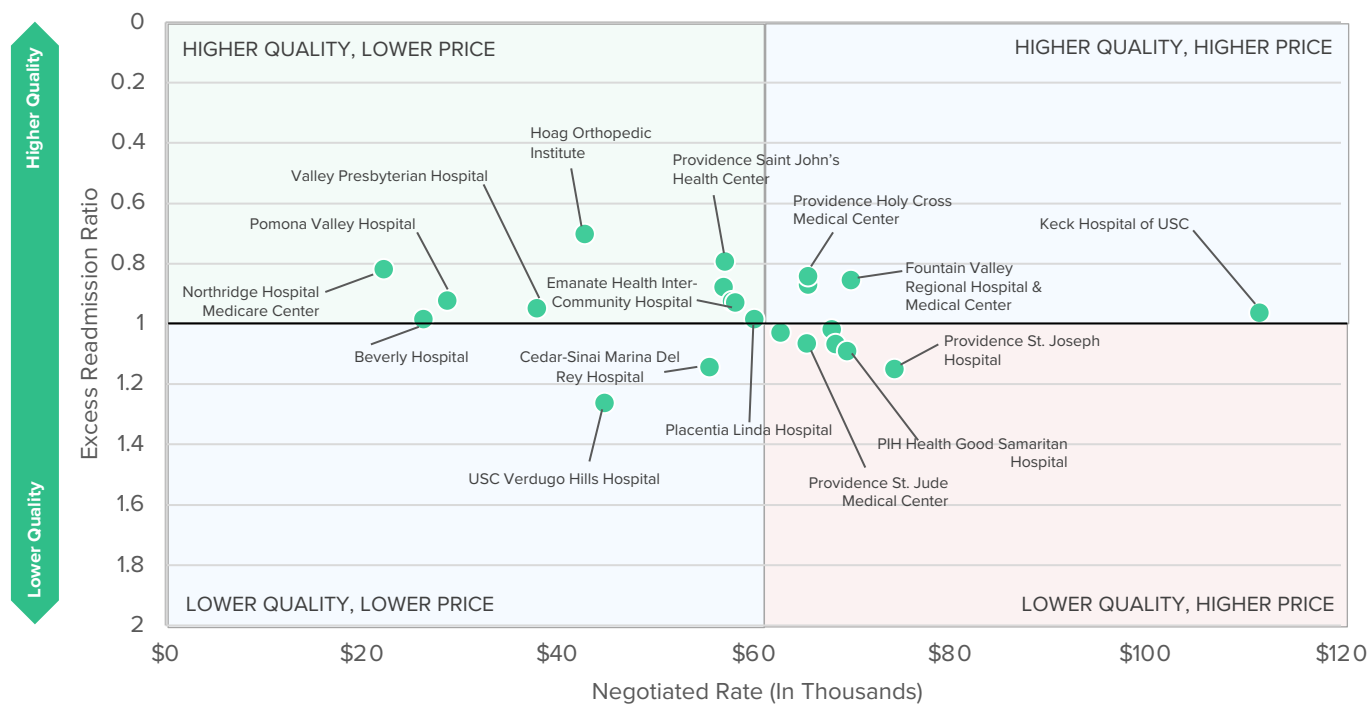
Note: Analysis was conducted using negotiated rates for a single national payer – UnitedHealthcare. MS-DRG 469 indicates Major Hip and Knee Joint Replacement or Reattachment of Lower Extremity.
Source: Trilliant Health national all-payer claims database; Provider Directory; Health Plan Price Transparency dataset; Hospital Readmissions Reduction Program data.

TREND 9: PAYING MORE FOR LESS

...Or Los Angeles (or Anywhere Else)

Across U.S. markets, many hospitals that are considered “renowned” can also be associated with higher quality services. However, in looking at the distribution of rates and quality metrics for hip and knee replacements, there are multiple hospitals receiving lower payments with equal or higher quality scores as compared to renowned hospitals. Will employers continue to pay a premium for employees to access a “brand name?” Are employers more willing to pay a premium for some services than for others?

QUALITY VS. NEGOTIATED RATE FOR DRG-469 IN LOS ANGELES-LONG BEACH-ANAHEIM, CA, 2023



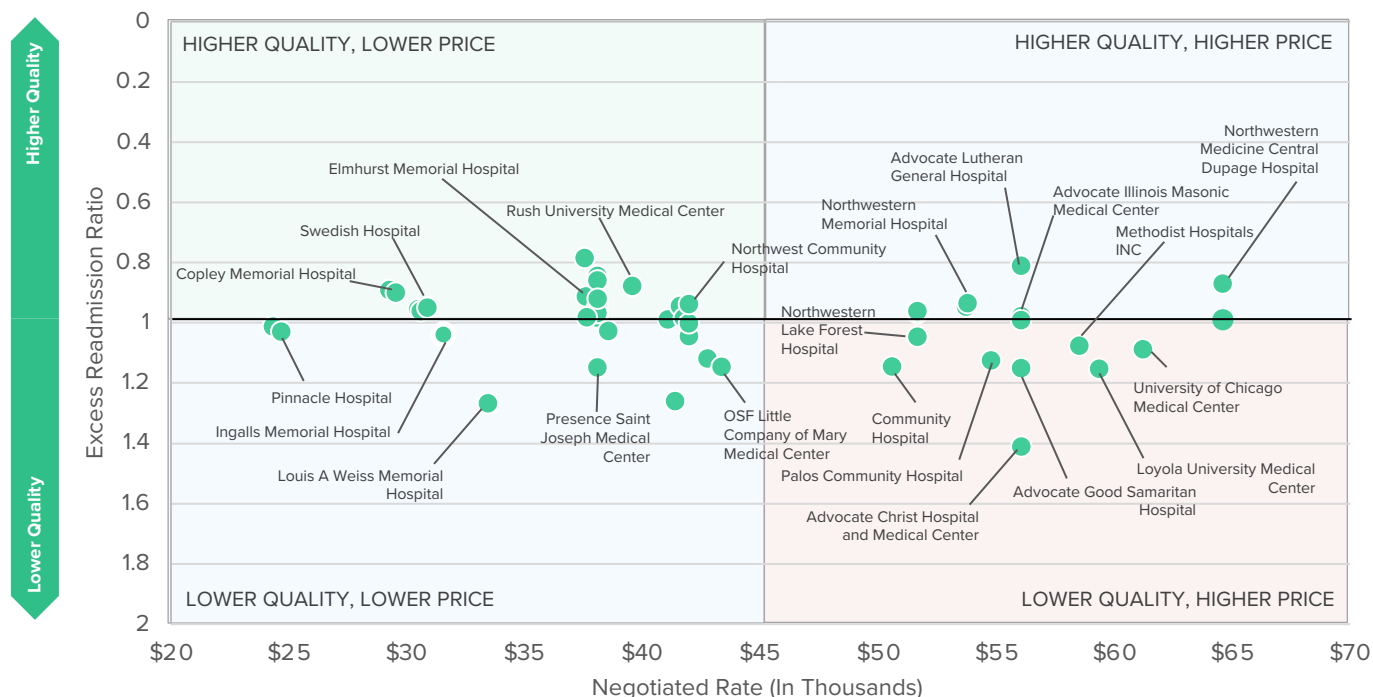
Note: Analysis was conducted using negotiated rates for a single national payer – UnitedHealthcare. MS-DRG 469 indicates Major Hip and Knee Joint Replacement or Reattachment of Lower Extremity.
Source: Trilliant Health national all-payer claims database; Provider Directory; Health Plan Price Transparency dataset; Hospital Readmissions Reduction Program data.

TREND 9: PAYING MORE FOR LESS

Chicago's "Market Rate" For Hip and Knee Replacement Is Apparent

While negotiated UnitedHealthcare rates for this single service vary widely across the Chicago market, the concentration of hospitals with rates between \$33K and \$43K reveal the true market rate for hip and knee replacements for Chicago hospitals.

QUALITY VS. NEGOTIATED RATE FOR **DRG-469** IN **CHICAGO-NAPERVILLE-ELGIN, IL-IN-WI, 2023**



Note: Analysis was conducted using negotiated rates for a single national payer – UnitedHealthcare. MS-DRG 469 indicates Major Hip and Knee Joint Replacement or Reattachment of Lower Extremity.

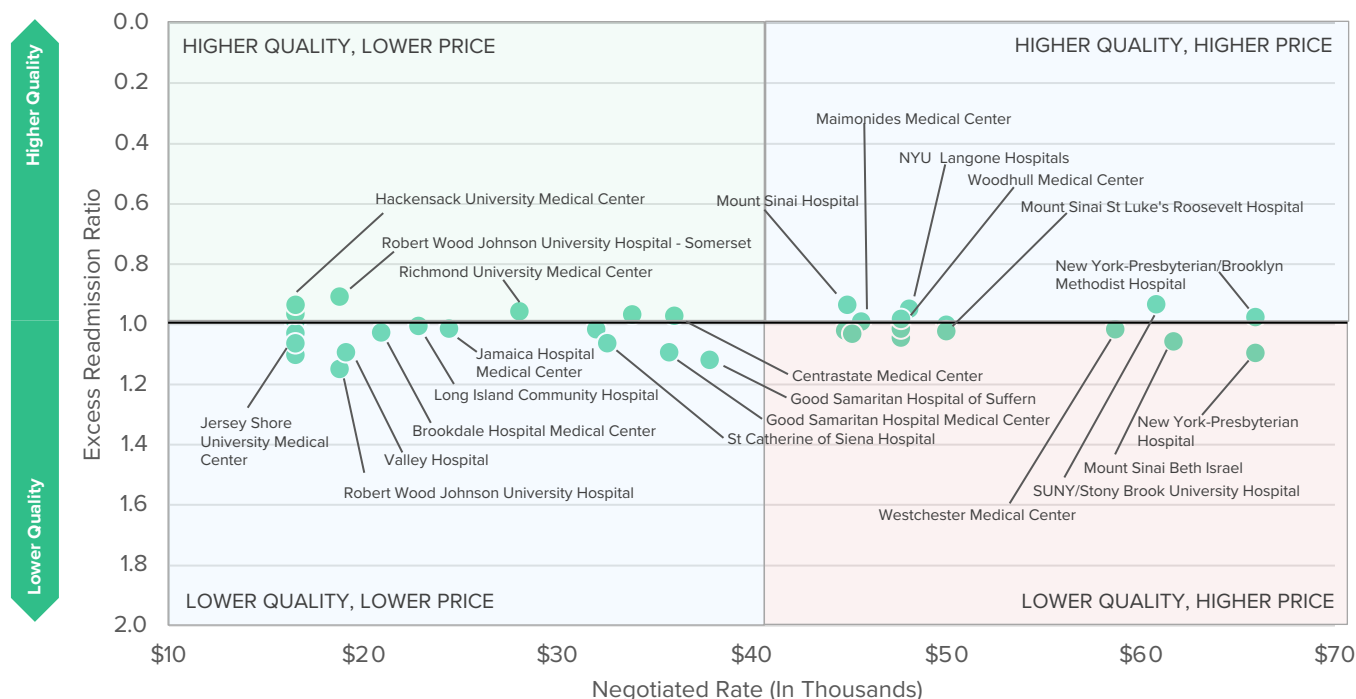
Source: Trilliant Health national all-payer claims database; Provider Directory; Health Plan Price Transparency dataset; Hospital Readmissions Reduction Program data.

TREND 9: PAYING MORE FOR LESS

Negotiated Rates for Unplanned Procedures Also Vary

Negotiated rates for a single payer for services rendered due to DRG 280 – Acute Myocardial Infarction (i.e., heart attack) – range 4X in the New York City market.

QUALITY VS. NEGOTIATED RATE FOR **DRG-280** IN **NEW YORK-NEWARK-JERSEY CITY, NY-NJ-PA**, 2023



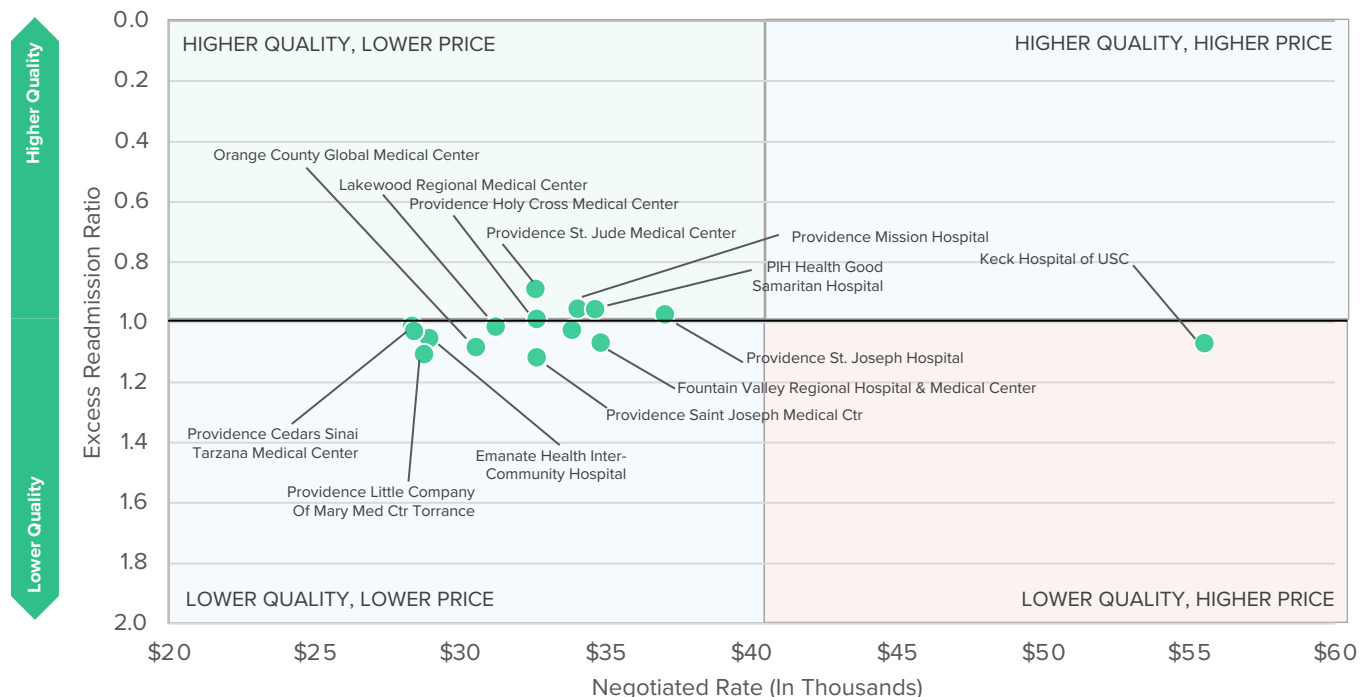
Note: Analysis was conducted using negotiated rates for a single national payer – UnitedHealthcare. MS-DRG 280 denotes Acute Myocardial Infarction.
Source: Trilliant Health national all-payer claims database; Provider Directory; Health Plan Price Transparency dataset; Hospital Readmissions Reduction Program data.

TREND 9: PAYING MORE FOR LESS

While LA's "Market Rate" for AMI is Clear, Outliers Remain

The concentration of hospitals with rates between \$28K and \$34K reveal the true market rate for DRG 280 – Acute Myocardial Infarction (i.e., heart attack) – in Los Angeles, though the associated quality is not consistent across hospitals.

QUALITY VS. NEGOTIATED RATE FOR **DRG-280** IN **LOS ANGELES-LONG BEACH-ANAHEIM, CA, 2023**

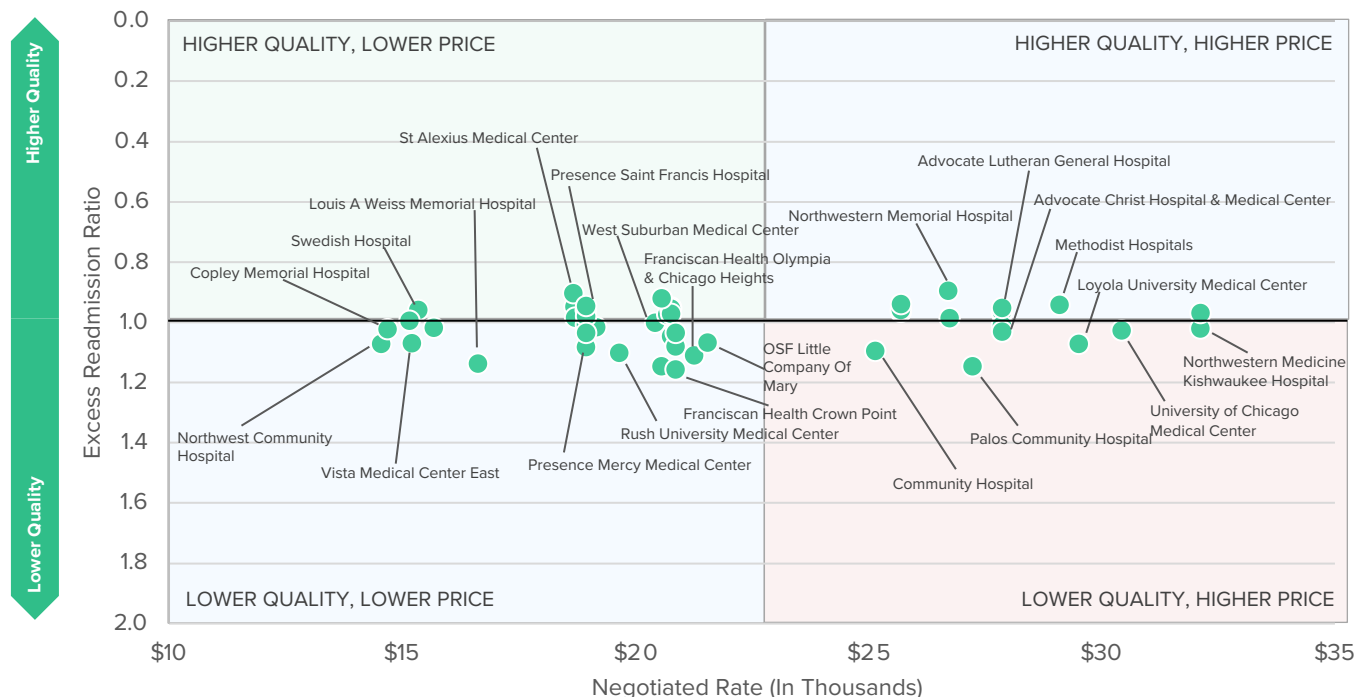


Note: Analysis was conducted using negotiated rates for a single national payer – UnitedHealthcare. MS-DRG 280 denotes Acute Myocardial Infarction (AMI).
Source: Trilliant Health national all-payer claims database; Provider Directory; Health Plan Price Transparency dataset; Hospital Readmissions Reduction Program data.

TREND 9: PAYING MORE FOR LESS

Chicago's "Market Rate" For AMI Is Also Apparent

While negotiated UnitedHealthcare rates for this single service range 2.4X in the Chicago market, the concentration of hospitals with rates between \$18K and \$21K reveal the true market rate for DRG 280 – Acute Myocardial Infarction (i.e., heart attack) – for Chicago.

QUALITY VS. NEGOTIATED RATE FOR **DRG-280** IN **CHICAGO-NAPERVILLE-ELGIN, IL-IN-WI**, 2023

Note: Analysis was conducted using negotiated rates for a single national payer – UnitedHealthcare. MS-DRG 280 denotes Acute Myocardial Infarction.
Source: Trilliant Health national all-payer claims database; Provider Directory; Health Plan Price Transparency dataset; Hospital Readmissions Reduction Program data.

TREND 9: PAYING MORE FOR LESS

Payers and Employers Are Partnering to Lower Healthcare Costs

Health insurers and large employers are investing significantly in high-profile public affairs campaigns against hospitals, alleging monopolistic behaviors to charge higher prices to patients, i.e., their employees. As health plan price transparency data reveals the monopolistic effects of provider M&A are overstated — and often demonstrably false — what responsibility will insurers and brokers take for their part in steering employers to networks with widely variable rates for undifferentiated quality?

COMPOSITION OF BETTER SOLUTIONS FOR HEALTHCARE™ ALLIANCE



Source: Better Solutions for Healthcare.

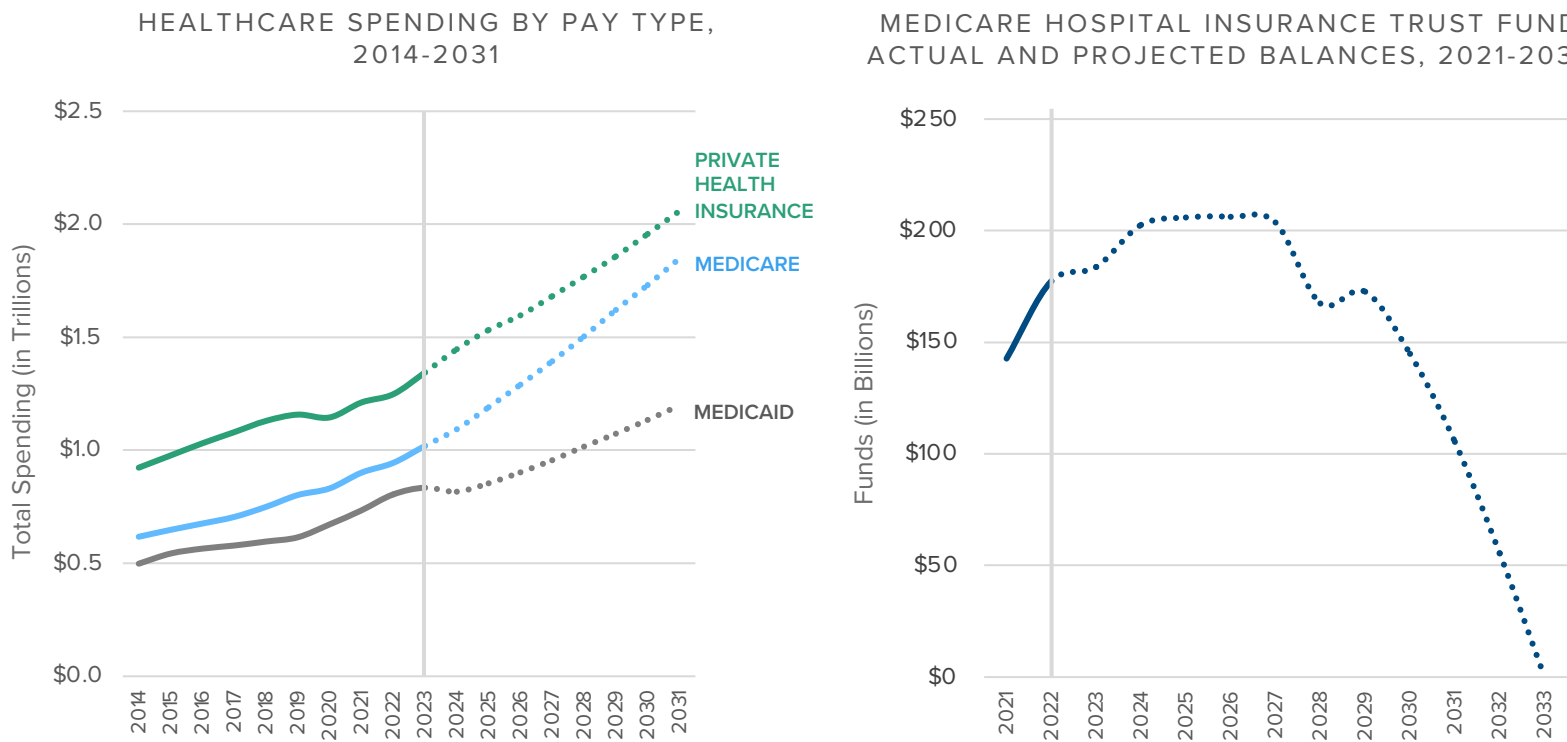
TREND 10

The Market Rate Has Been Revealed, and
It Is Lower Than You Think

TREND 10: LOWER MARKET RATE

U.S. Healthcare Spending Is Unsustainable and, with Health Plan Price Transparency, Indefensible

Healthcare spending is expected to maintain its upward trajectory through 2026, affecting public and private payers. As a result, every health economy stakeholder will likely receive more pressure to reduce rates to the “market rate,” which is now widely apparent with health plan price transparency data. While the Medicare Hospital Insurance Trust Fund is projected to be depleted by 2033, this threat has receded for the immediate future due to exogenous and not well-understood factors.



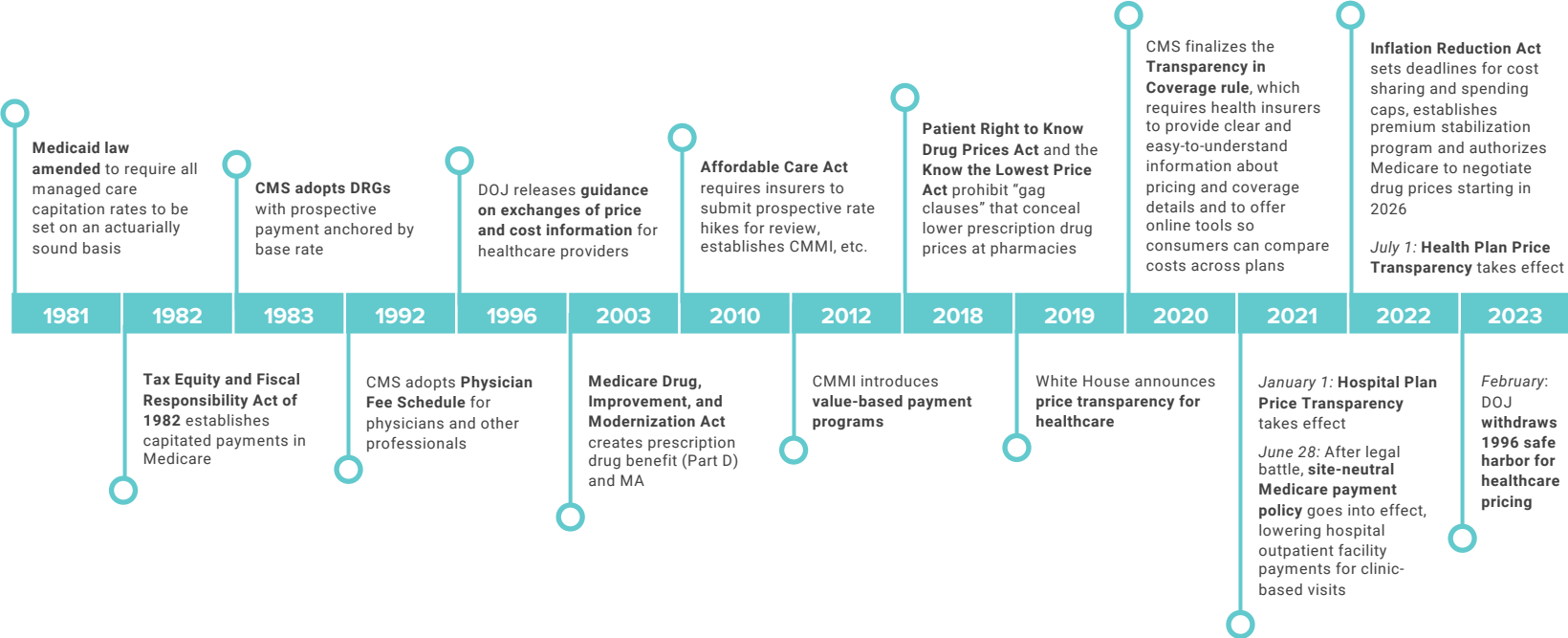
Source: Centers for Medicare and Medicaid Services 2021 National Health Expenditures Projections; The New York Times, *A Huge Threat to the U.S. Budget Has Receded. And No One Is Sure Why.*

TREND 10: LOWER MARKET RATE

Cost Containment Efforts Span Decades, but Transparency of Health Plan Rates May Finally Force Stakeholders To Play by the Rules

Over the past 40 years, the Federal government has undertaken various measures to balance affordability, quality and consumer choice while lowering costs. More recently, these efforts have included mandating price transparency for hospitals and health plans and reducing costs and premiums within the Medicare program – initiatives that signal a growing focus on increasing patient and taxpayer power amid sharply rising healthcare costs. Health plan price transparency, which is required pursuant to CMS’s Transparency in Coverage initiative, eliminates longstanding opacity of negotiated rates and is a potential catalyst for employers to bend the healthcare cost curve.

TIMELINE OF SELECT FEDERAL EFFORTS TO LOWER HEALTHCARE COSTS

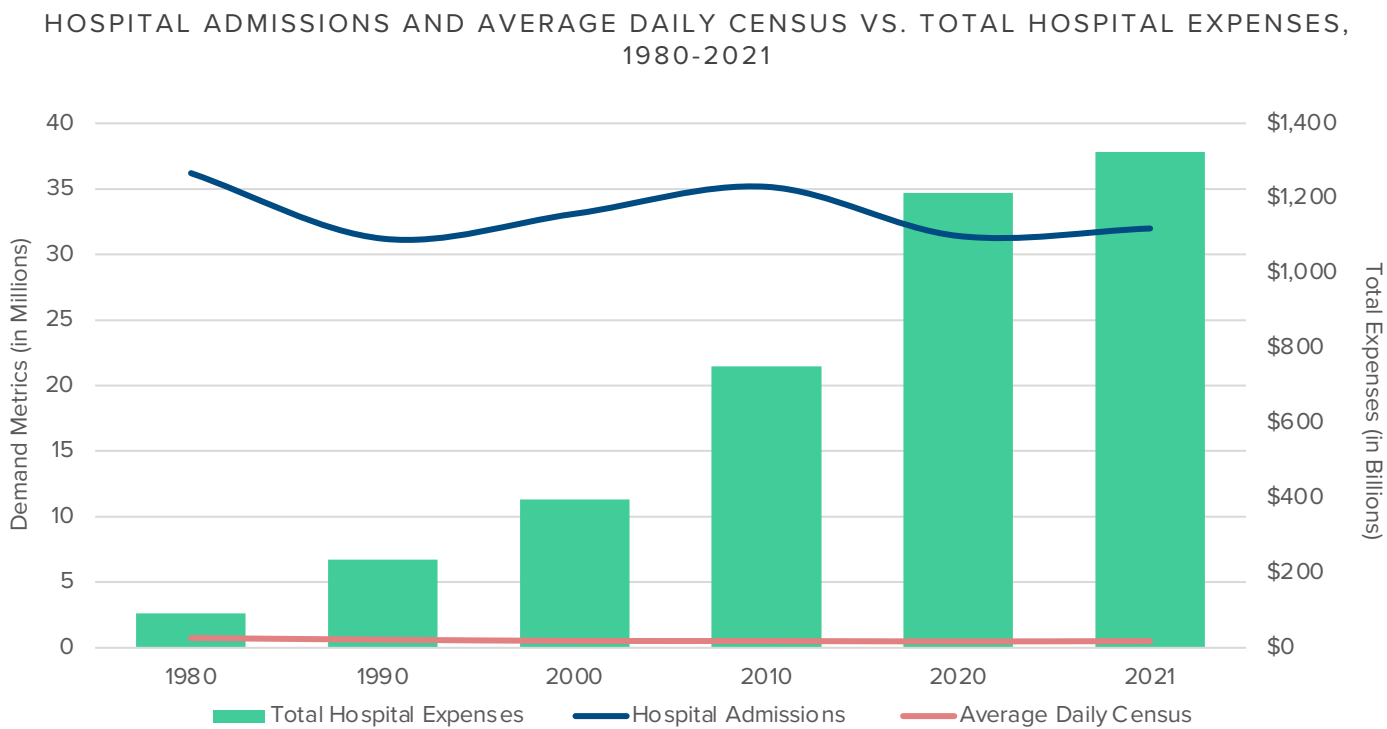


Note: CMS denotes Centers for Medicare and Medicaid Services; DRGs denotes Diagnostic Related Groups; DOJ denotes Department of Justice; CMMI denotes CMS Innovation Center; MA denotes Medicare Advantage; OOP denotes out-of-pocket.
Source: Centers for Medicare and Medicaid Services.

TREND 10: LOWER MARKET RATE

Hospital Admissions Declining While Expenses Are Rising

Defying the laws of economics, demand for acute medical care is declining, and yet, hospital expenses are continuing to grow. Employers will increasingly demand that every health economy stakeholder—payers, brokers, providers, biopharmaceutical companies — defend their prices that are higher than “market rate.”



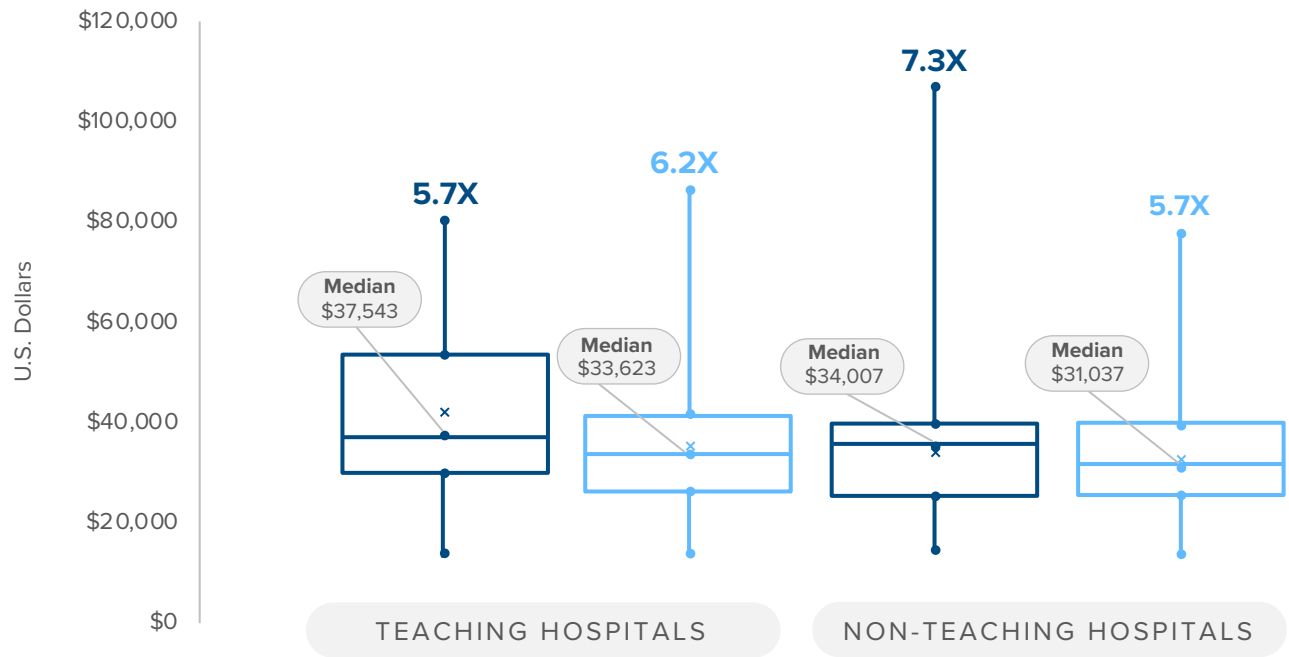
Note: Hospital admissions are for nonfederal short-term general hospitals and other special hospitals.
Source: American Hospital Association; Centers for Medicare and Medicaid Services.

TREND 10: LOWER MARKET RATE

Negotiated Rates for the Same Service Are Higher, on Average, at Teaching Hospitals

For MS-DRG 871: Septicemia, the median negotiated rate for two major payers is \$37,543 and \$33,623, respectively, at teaching hospitals and \$34,007 and \$31,037, respectively, at non-teaching hospitals. Nationally, the range of negotiated rates for MS-DRG 871: Septicemia is as high as 7.3X.

DISTRIBUTION OF UNITEDHEALTHCARE AND ANTHEM BLUECROSS BLUESHIELD
NEGOTIATED RATES FOR MS-DRG-871 AT TEACHING AND NON-TEACHING SHORT-TERM
ACUTE CARE HOSPITALS, 2023



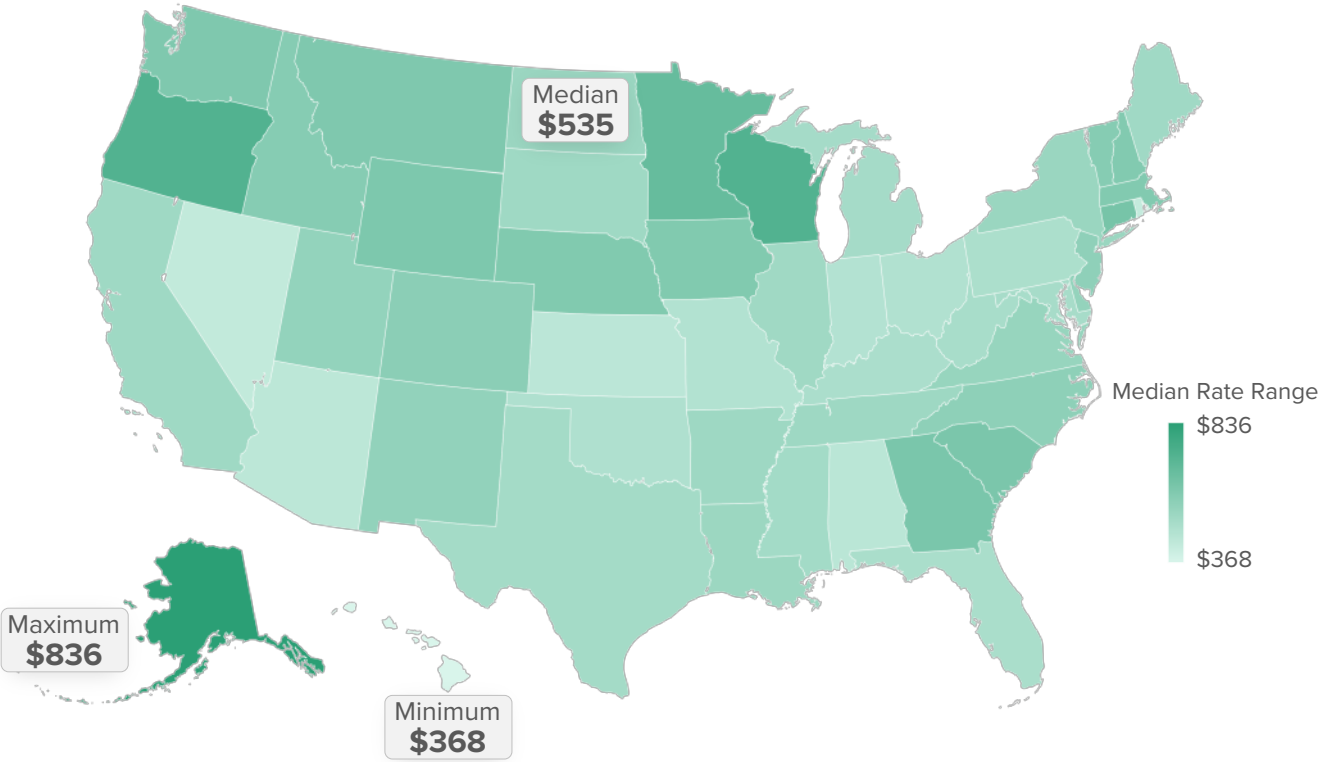
Note: Analysis was conducted using negotiated rates for two national payers — UnitedHealthcare and Anthem BlueCross BlueShield. The states included in the analysis were limited to geographies where both payers have a presence. MS-DRG 871 indicates Septicemia or Severe Sepsis. Teaching hospitals are defined as hospitals with an intern FTE greater than 0.1.
Source: Trilliant Health Health Plan Price Transparency dataset.

TREND 10: LOWER MARKET RATE

Rates for Common Evaluation Procedures Like Screening Colonoscopies Range 2.3X Nationally

Even for a common procedure that is preventive and traditionally delivered in the outpatient setting, the state-level median negotiated rate ranges from \$368 to \$836, with a median rate of \$535. Within any given state, the negotiated rates for colonoscopy vary greatly. How will payers and providers continue to justify the large price variation in a routine, preventive service, particularly in light of recent studies that question its efficacy?

UNITEDHEALTHCARE STATE-LEVEL MEDIAN NEGOTIATED RATES FOR CPT 45378, 2023



Note: Analysis was conducted using negotiated professional rates for one national payer — UnitedHealthcare. CPT 45378 denotes Colonoscopy, Flexible Diagnostic.
Source: Trilliant Health Health Plan Price Transparency dataset.

TREND 10: LOWER MARKET RATE

State Median Screening Colonoscopy Rates Range \$368 to \$836

Even for a common procedure that is preventive and traditionally delivered in the outpatient setting, the state-level median negotiated rate ranges from \$368 to \$836, with a median rate of \$535.

UNITEDHEALTHCARE STATE-LEVEL MEDIAN NEGOTIATED RATES FOR CPT 45378, 2023

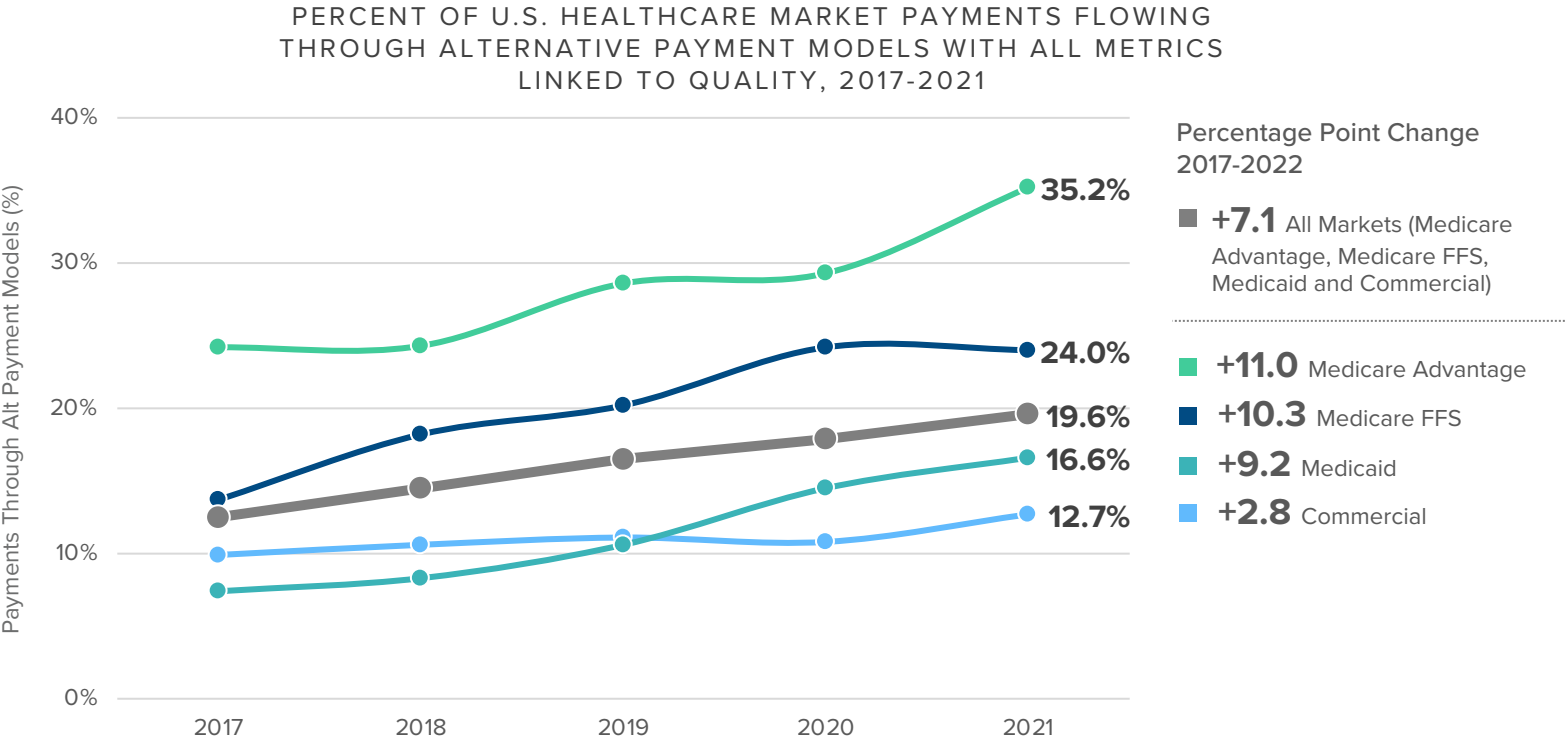
STATE	MEDIAN CPT 45378 RATE	STATE	MEDIAN CPT 45378 RATE
Alabama	\$452	Montana	\$611
Alaska	\$837	Nebraska	\$605
Arizona	\$446	Nevada	\$430
Arkansas	\$527	New Hampshire	\$602
California	\$523	New Jersey	\$568
Colorado	\$579	New Mexico	\$560
Connecticut	\$633	New York	\$537
Delaware	\$554	North Carolina	\$570
Florida	\$495	North Dakota	\$536
Georgia	\$624	Ohio	\$475
Hawaii	\$368	Oklahoma	\$481
Idaho	\$591	Oregon	\$731
Illinois	\$522	Pennsylvania	\$490
Indiana	\$469	Rhode Island	\$424
Iowa	\$605	South Carolina	\$622
Kansas	\$448	South Dakota	\$523
Kentucky	\$491	Tennessee	\$526
Louisiana	\$533	Texas	\$511
Maine	\$521	Utah	\$556
Maryland	\$504	Vermont	\$592
Massachusetts	\$602	Virginia	\$545
Michigan	\$507	Washington	\$611
Minnesota	\$678	West Virginia	\$501
Mississippi	\$512	Wisconsin	\$731
Missouri	\$473	Wyoming	\$616

Note: Analysis was conducted using negotiated professional rates for one national payer — UnitedHealthcare. CPT 45378 denotes Colonoscopy, Flexible Diagnostic.
Source: Trilliant Health Health Plan Price Transparency dataset.

TREND 10: LOWER MARKET RATE

Value-Based Payments Do Not Equal Value for Money

Despite over a decade of experimenting with value- and risk-based payments, results have been mixed, with limited uptake. As of 2021, only 19.6% of U.S. healthcare payments for all markets (Medicare Advantage, Medicare FFS, Medicaid, and commercial insurance) flowed through alternative payment models. If employers leverage their purchasing power to force providers and payers to defend their rates, will the health economy be more likely to reduce costs without sacrificing quality?



Note: The Health Care Payment Learning and Action Network categorizes payments into four types: fee for service (FFS) with no link to quality and value (1), FFS with a link to quality and value (2), alternative payment models (APM) built on FFS architecture (3) and population-based payments (4). Within category 3, subcategory A includes APMs with shared savings and subcategory B includes APMs with shared savings and downside risk. Data are inclusive of only categories 3B and 4. This framework was refreshed in 2017, therefore data from before then is not included.
Source: Health Care Payment Learning and Action Network Measurement reports.

TREND 10: LOWER MARKET RATE

Federal Policy Options Signal Eventual Changing Tide

CBO's 2022 analysis signals a broader interest in bending the cost curve beyond public programs alone. The notion of "capped rates" paired with new insights revealed by health plan price transparency data could signal a regression to the mean of negotiated rates, where commercial premium rates for the same or lower quality will no longer be acceptable to patients or employers.

		CHANGE IN AVERAGE HOSPITAL PRICE PAID BY PRIVATE PLANS (%)	CHANGE IN HOSPITAL SPENDING (\$ BILLIONS)	CHANGE IN NATIONAL HEALTH SPENDING (%)
PRICE TRANSPARENCY – VERY SMALL PRICE REDUCTIONS				
34% Shoppable Services	Patient-Driven	-1.7%	-8.7B	-0.2%
43% Shoppable Services		-1.4%	-11.1B	-0.3%
75th Percentile Price	Employer-Driven	-2.2%	-13.2B	-0.4%
Median Price		-4.7%	-26.6B	-0.7%
INCREASED COMPETITION – SMALL PRICE REDUCTIONS				
Small Price Response	HHI decrease to 1,500	-1.6%	-9.9B	-0.3%
Medium Price Response		-3.1%	-19.7B	-0.5%
Large Price Response		-11.2%	-68.9B	-1.9%
CAPPED RATES IN ALL PRIVATE PLANS – MODERATE				
100	% of Medicare Rates	-43.2%	-246.4B	-6.8%
125		-30.8%	-178.5B	-4.9%
150		-20.5%	-119.1B	-3.3%
175		-12.7%	-72.8B	-2.0%
200		-7.6%	-42.7B	-1.2%

CBO estimates that 1% decrease in prices could lead to a **DECLINE** in total spending on commercial health insurance premiums by \$13B by 2032.

Source: Congressional Budget Office, Policy Approaches to Reduce What Commercial Insurers Pay for Hospitals' and Physicians' Services, 2022; RAND Corporation *Impact of Policy Options for Reducing Hospital Prices Paid by Private Health Plans*.

TREND 10: LOWER MARKET RATE

Site-Neutral Payments in Medicare Could Reduce Payments by Over \$1B for a Single, Simple Office Procedure

MedPAC recommends aligning payment rates across ambulatory care settings – HOPDs, ASCs and freestanding offices – which would reduce spending without impacting patient care. In the below example, Medicare site-neutral payment for a lumbar epidural injection provided in a hospital outpatient department would reduce payments by \$1.1B.

ACTUAL 2023 AND SITE-NEUTRAL PAYMENT RATES FOR EPIDURAL INJECTION RATES IN MEDICARE

ACTUAL 2023 PAYMENT RATES		PAYMENT RATES UNDER SITE-NEUTRAL POLICY	
Service in Physician's Office		Service in Physician's Office	
Physician work	\$59.91	Physician work	\$59.51
Non-facility practice expense	\$190.43	Non-facility practice expense	\$190.43
Professional liability insurance	+ \$5.95	Professional liability insurance	+ \$5.95
Total payment	\$255.89	Total payment	\$255.89
Service in Hospital Outpatient Department (HOPD)		Service in Hospital Outpatient Department (HOPD)	
Physician work	\$59.91	Physician work	\$59.51
Facility practice expense	\$31.08	Facility practice expense	\$31.08
Professional liability insurance	+ \$5.95	Professional liability insurance	+ \$5.95
Payment to physician	\$96.54	Payment to physician	\$96.54
Payment to HOPD	+ \$644.34	Payment to HOPD (non-facility PE – facility PE)	+ \$159.35
Total payment	\$740.88	Total payment	\$255.89

HOPD Payment Scenario (Current State)

Procedure Volume: 2.2M
Payment Rate: \$740.88
Total Payment: \$1.6B

Site-Neutral Payment Scenario (Potential Future State)

Procedure Volume: 2.2M
Payment Rate: \$255.89
Total Payment: \$562.9M

REDUCED MEDICARE PAYMENT: **-\$1.1B**

Note: HOPD denotes hospital outpatient department; ASC denotes ambulatory surgery center.
Source: Medicare Payment Advisory Commission June 2023 Report to Congress.

TREND 10: LOWER MARKET RATE

Medicare Inpatient Reimbursement is 3.6X Higher Than Medicare HOPD Reimbursement for Certain High-Volume Surgeries

Reimbursement for the same healthcare service varies significantly by payer, geography and care setting. Within these four high-volume Medicare procedures, inpatient reimbursement is 1.4X higher than hospital outpatient for total joint replacement and hysterectomy, and 3.6X higher for spinal fusion.

MEDICARE REIMBURSEMENT RATES FOR HIGH-VOLUME SURGICAL PROCEDURES

PROCEDURE CATEGORY	AVERAGE IP REIMBURSEMENT	AVERAGE HOPD REIMBURSEMENT	IP : OP RATIO
CARDIAC PROCEDURES WITH CARDIAC CATHETERIZATION	\$9,910	\$2,956	3.4X
SPINAL FUSION	\$23,169	\$6,369	3.6X
TOTAL JOINT REPLACEMENT KNEE/HIP	\$18,171	\$12,559	1.4X
HYSTERECTOMY	\$13,095	\$9,042	1.4X

Note: HOPD denotes hospital outpatient department; IP denotes inpatient; OP denotes outpatient.
Source: Trilliant Health national all-payer claims database; Health Plan Price Transparency dataset.

TREND 10: LOWER MARKET RATE

Theoretical Financial Implications of Shifting High-Volume Surgical Services From Inpatient to Outpatient Setting Are Substantial

Although CMS reversed its decision to eliminate the inpatient-only list after President Biden’s election, the migration of care from inpatient to outpatient settings persists. In the hypothetical scenario below, applying median commercial negotiated inpatient rates for projected 2023 surgical volumes and ASC rates to projected 2027 surgical volumes would result in reduced payment of almost \$16B for this single common service.

MEDICARE AND COMMERCIAL RATES FOR HIGH-VOLUME SURGICAL PROCEDURE ACROSS SETTINGS, 2023

HIGH-VOLUME PROCEDURE	MEDIAN COMMERCIAL IP RATE	MEDIAN COMMERCIAL HOPD RATE	MEDIAN COMMERCIAL ASC RATE	MEDICARE IP RATE	MEDICARE HOPD RATE	MEDICARE ASC RATE	2023 PROJECTED PROCEDURE VOLUME	2027 PROJECTED PROCEDURE VOLUME
Joint Replacement of Knee or Hip (DRG-470)	\$29,865	\$26,096	\$17,750	\$18,171	\$12,559	\$8,818	1,285,137	1,286,452

KNEE/HIP REPLACEMENT

CURRENT SCENARIO (INPATIENT)

2023 Procedure Volume: **1,285,137**

Median Commercial Inpatient Negotiated Rate: **\$29,865**

Total Reimbursement: **\$38.4B**

POTENTIAL FUTURE SCENARIO (OUTPATIENT)

2027 Procedure Volume : **1,286,452**

Median Commercial ASC Negotiated Rate: **\$17,750**

Total Reimbursement: **\$22.8B**

REDUCED PAYMENT

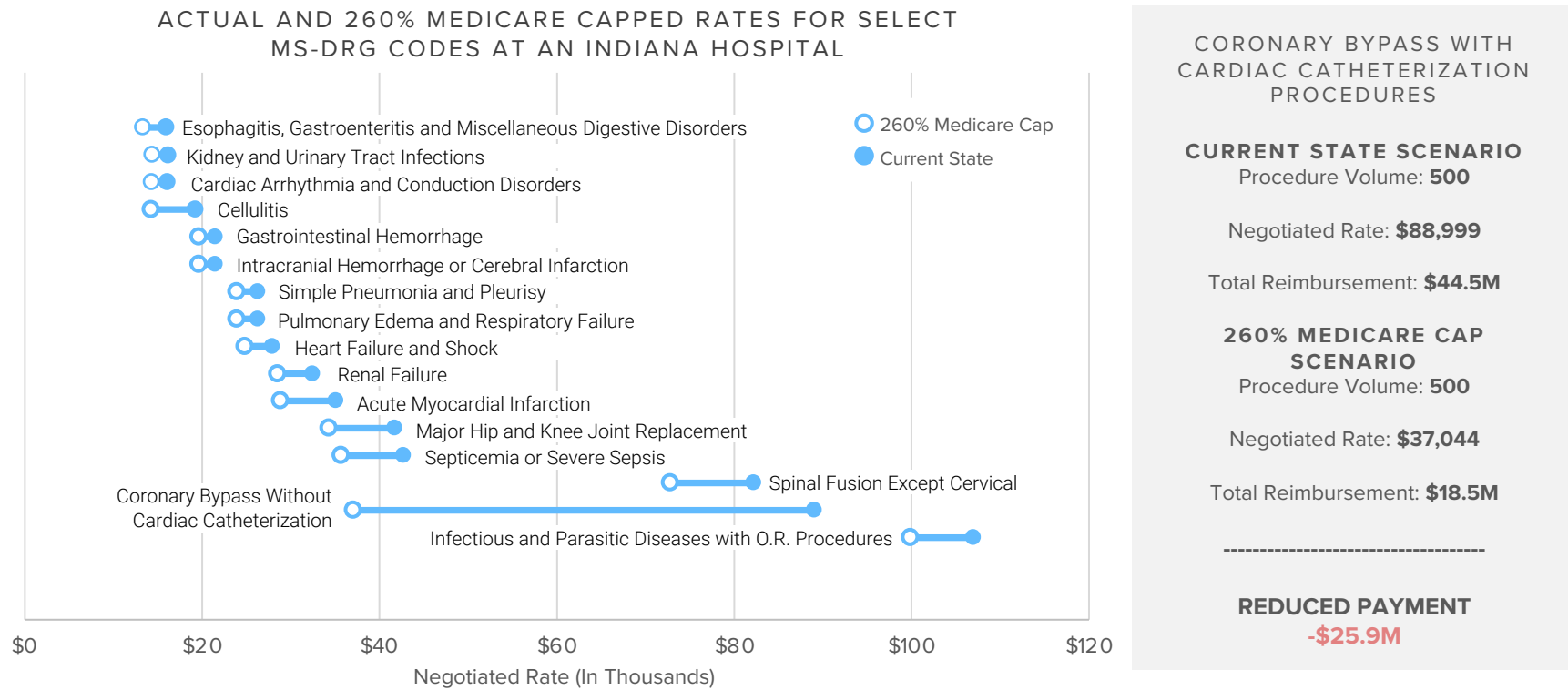
-\$15.6B

Note: ASC denotes ambulatory surgery center, HOPD denotes hospital outpatient department; IP notes inpatient.
Source: Trilliant Health Demand Forecast; Health Plan Price Transparency dataset.

TREND 10: LOWER MARKET RATE

Under a Medicare-Based Price Cap, Reduction in Reimbursement Would Vary by Service

Several state legislatures have considered proposals to set or cap commercial prices at various levels — typically a percentage of Medicare reimbursement rates. While the reduced reimbursement for some services would be less impactful, in this hypothetical example, the reimbursement for coronary bypass with cardiac catheterization procedures would decline by \$51.9K per case. In a scenario where that 260% Medicare cap was in place, a hospital performing 500 procedures would lose \$26M in revenue.

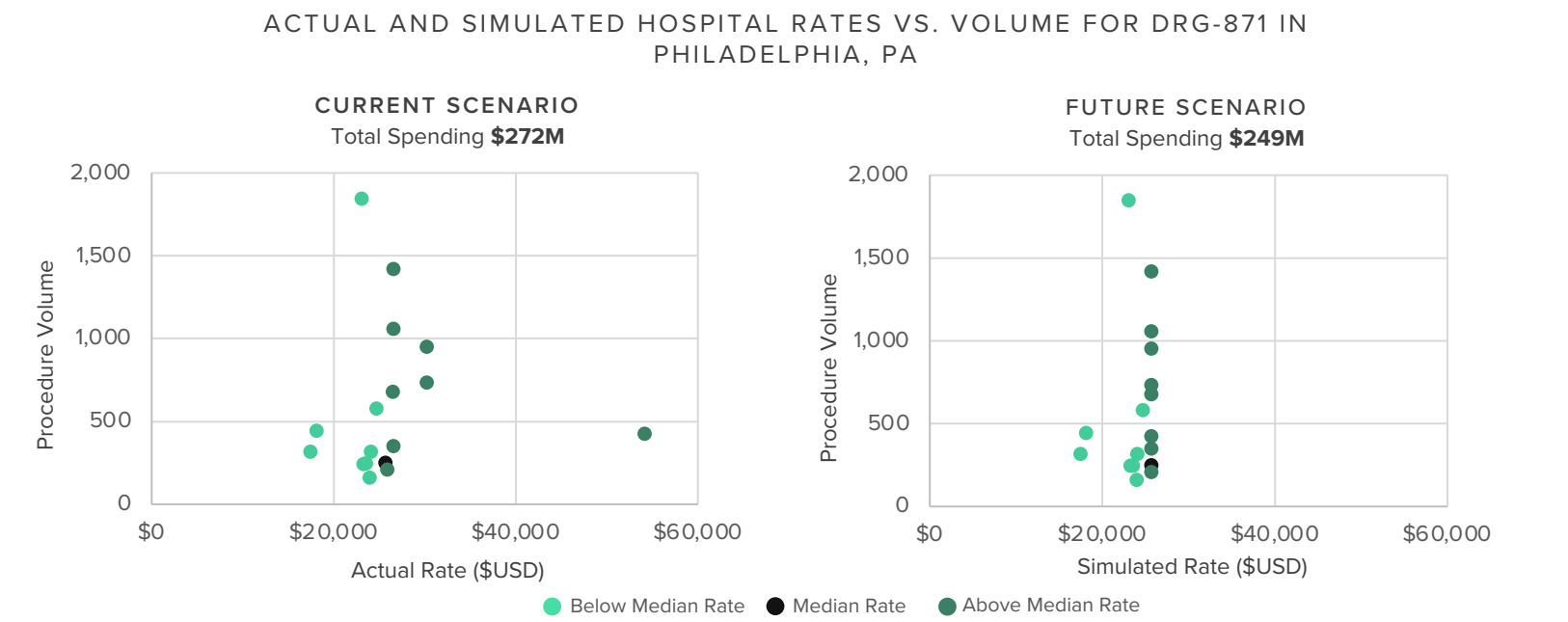


Note: Analysis was conducted using negotiated rates for a single payer — Anthem BlueCross BlueShield. Indiana was chosen as an illustrative example given its state legislature considered a proposal related to a Medicare price cap at hospitals in the state during the 2023 legislative session.
Source: Trilliant Health’s national all-payer claims database; Provider Directory; Health Plan Price Transparency dataset.

TREND 10: LOWER MARKET RATE

Unwarranted Price Variation Contributes to Waste, Often Tens of Millions of Dollars for a Single Service in a Single Market

Unlike hospital price transparency, health plan price transparency data reveals the variation in negotiated rates for the same procedure, in the same market, for every provider in the market. If the principle of “regression to the mean” manifests in healthcare as it has in other industries, total spending could be reduced without impacting quality or patient choice.



*If hospitals with a negotiated rate for sepsis above the 50th percentile reduced their rate to the median negotiated rate in the market, this would result in a **\$23M** reduction in spending for the exact same number of procedures, provided by the exact same providers.*

Note: Analysis was conducted using negotiated rates for a single national payer — UnitedHealthcare — in the Philadelphia-Camden-Wilmington, PA-NJ-DE-MD CBSA. MS-DRG 871 indicates Septicemia.
Source: Trilliant Health’s national all-payer claims database; Provider Directory; Health Plan Price Transparency dataset.

TREND 10: LOWER MARKET RATE

Unwarranted Price Variation Contributes to Waste, Up to \$75M for a Single Service in a Single Market

Unlike hospital price transparency, health plan price transparency data reveals the variation in negotiated rates for the same procedure, in the same market, for every provider in the market. If the principle of “regression to the mean” manifests in healthcare as it has in other industries, total spending could be reduced without impacting quality or patient choice.

ACTUAL AND SIMULATED HOSPITAL RATES VS VOLUME FOR DRG-469 IN PHILADELPHIA, PA



*If hospitals with a negotiated rate for a hip/knee replacement above the 50th percentile reduced their rate to the median negotiated rate in the market, this would result in a **\$76M** reduction in spending for the exact same number of procedures, provided by the exact same providers.*

Note: Analysis was conducted using negotiated rates for a single national payer — UnitedHealthcare — in the Philadelphia-Camden-Wilmington, PA-NJ-DE-MD CBSA. MS-DRG 469 indicates Major Hip and Knee Joint Replacement or Reattachment of Lower Extremity with Major Complications or Comorbidities; volume data is simulated.
Source: Trilliant Health national all-payer claims database, Provider Directory and Health Plan Price Transparency dataset.

TREND 10: LOWER MARKET RATE

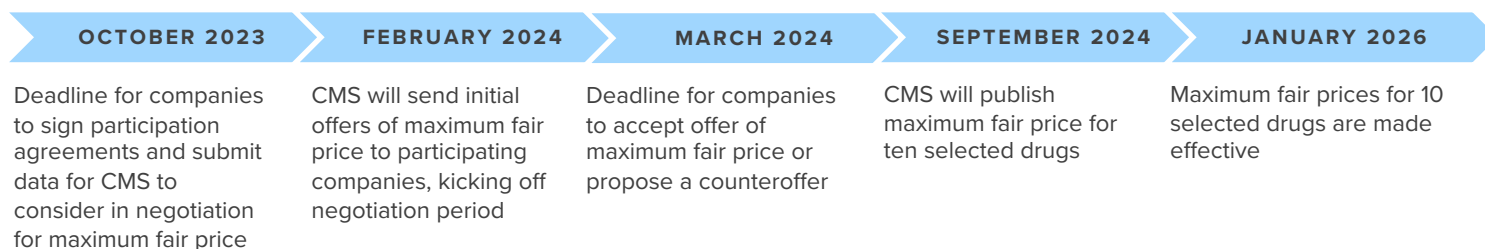
Will Medicare Negotiations Set the Market Rate for Drugs?

Starting in 2026, Medicare will set rates for ten drugs based on negotiations for fair price with the manufacturers and will add more drugs to this group each year. Will these negotiations establish a market rate for some of the most expensive drugs, or will life science companies, which account for over half of all lobbying spending, be able to maintain current prices?

FIRST 10 PART B DRUGS SUBJECT TO NEGOTIATION

BRAND NAME	MANUFACTURER	COMMON INDICATION(S)	MEDICARE SPENDING IN 2021
Eliquis	Pfizer	Stroke Prevention	\$16.5B
Jardiance	Boehringer	Diabetes Treatment; Heart Failure	\$7.1B
Xarelto	Janssen	Stroke Prevention	\$6B
Januvia	Merck	Diabetes Treatment	\$4.1B
Farxiga	AstraZeneca	Diabetes Treatment; Heart Failure; Chronic Kidney Disease	\$3.3B
Entresto	Novartis	Heart Failure	\$2.9B
Enbrel	Amgen	Autoimmune Disorder Treatment	\$2.8B
Imbruvica	Pharmacyclics	Cancer Treatment	\$2.7B
Stelara	Janssen	Immunosuppressants	\$2.6B
Fiasp; Fiasp FlexTouch; Fiasp PenFill; NovoLog; NovoLog FlexPen; NovoLog PenFill	Novo Nordisk	Diabetes Treatment	\$2.6B

TIMELINE FOR MEDICARE DRUG PRICE NEGOTIATIONS

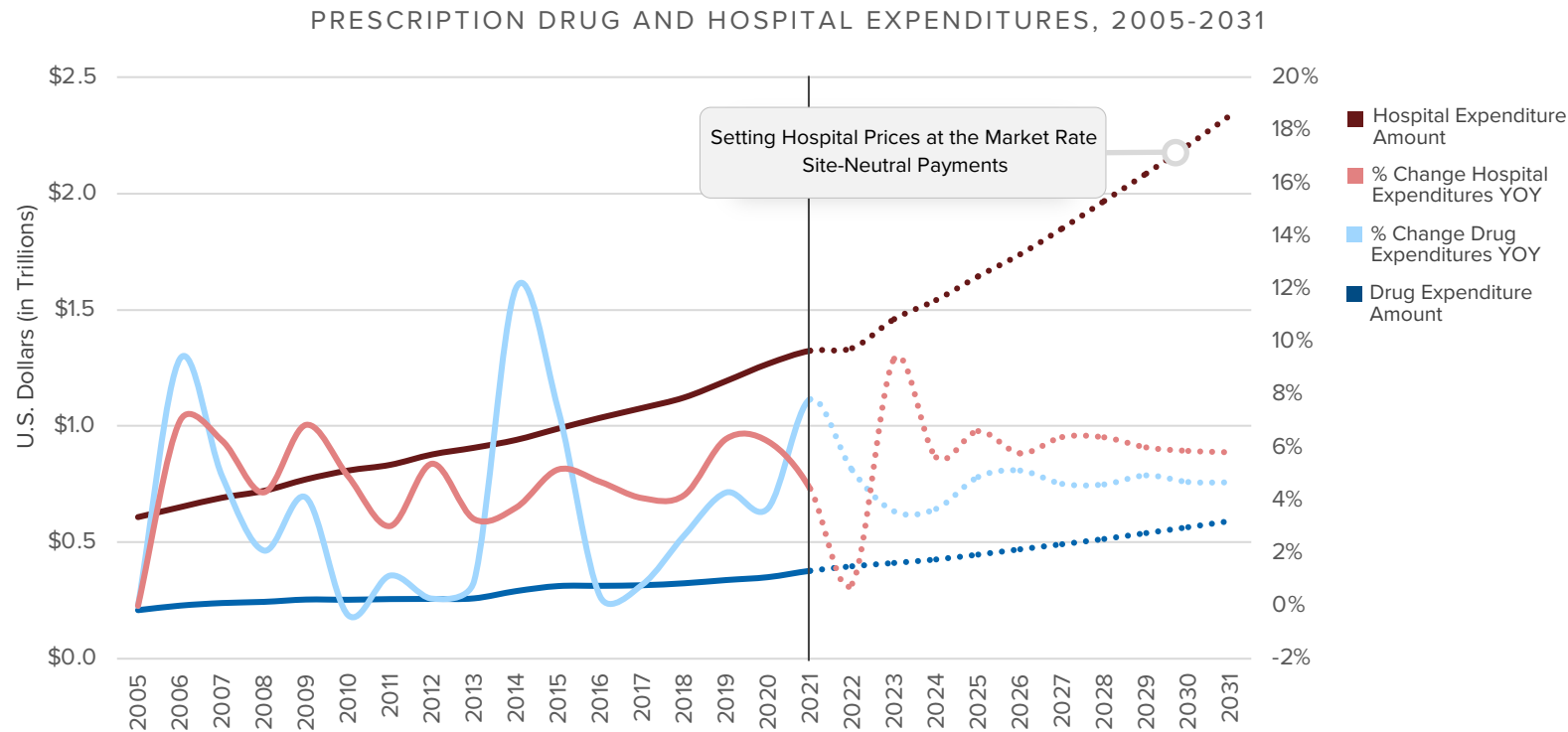


Source: Centers for Medicare and Medicaid Services Drug Price Negotiation Program; Centers for Medicare and Medicaid Services, *Medicare Part D Spending by Drug*.

TREND 10: LOWER MARKET RATE

What Would Regression to the Mean Entail for the Life Sciences Industry Relative to Providers?

Between 2022 and 2031, the difference between year-over-year growth in hospital expenditures and drug expenditures is expected to reach 1.1 percentage points – down from 3.4 percentage points in 2021. Depending on the factors driving down prices (e.g., employer pressure leading to regression to the mean for prices, wide adoption of site-neutral payments, drug savings from the 2022 Inflation Reduction Act), growth in drug spending could outpace growth for hospital spending.



Note: YOY denotes year-over-year.
Source: Centers for Medicare and Medicaid Services 2021 National Health Expenditures Projections.

CONCLUSION

The Winners in Healthcare's Negative-Sum Game Will Be Those Who Deliver
Value for Money

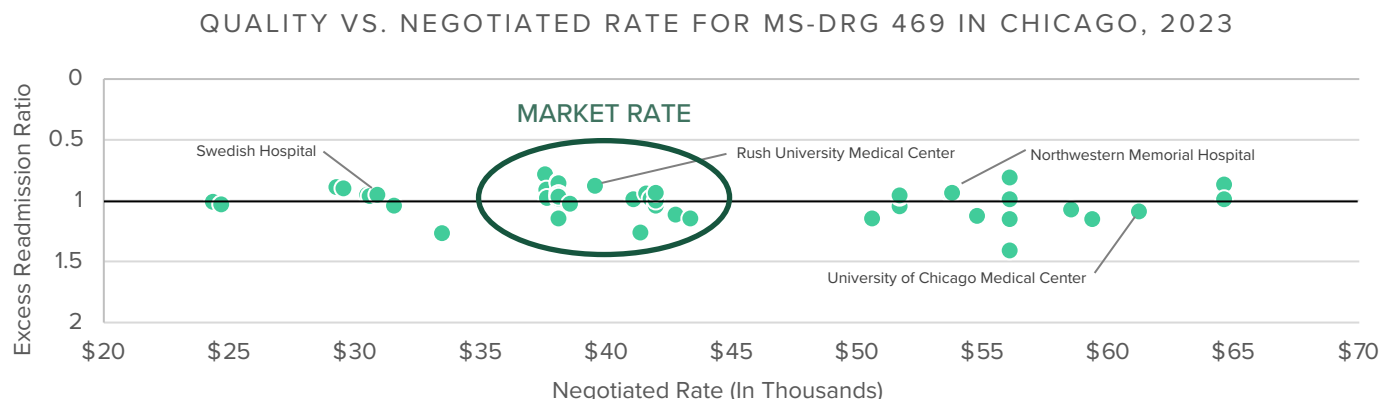
CONCLUSION

Price Transparency -> Price Discovery-> Setting the Market Rate

In 2001, HHS and CMS first introduced quality measures “to assure quality health care for all Americans through accountability and public disclosure.” Over the last 20 years, the **dispersion** of quality performance among hospitals and physicians has decreased, even if the **level** of performance is somewhat lacking, as evidenced by the fact that for FY 2023 CMS penalized 2,273 hospitals for higher-than-expected readmission rates. Statistically speaking, hospital quality performance has a low standard deviation, with a tight clustering of thousands of hospitals around a mean.

In 2019, the White House issued an executive order to improve price and quality transparency to help consumers “find low-cost, high-quality care,” which CMS has implemented pursuant to its Transparency in Coverage initiative. The health plan data that is now public under the Transparency in Coverage initiative offers a clear view of the negotiated rates that healthcare providers receive for their services. Because of the limited empirical difference in the **quality** that providers deliver, health plan price transparency reveals that the **value** derived from any healthcare service is predominantly dependent on the negotiated **rate** that is paid for the service.

This new era of price transparency reveals the vast discrepancies that **currently** exist in rates across different markets, service categories and providers.



The question for every health economy stakeholder is this: will negotiated rates migrate to the maximum price in a market, as the American Hospital Association argued, or instead regress to the mean price in a market, as typically happens with transparency in other industries and as has happened with quality measures.

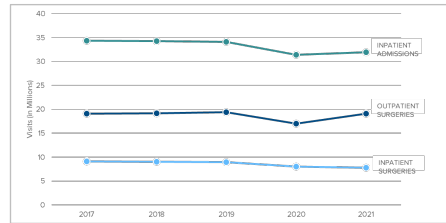
CONCLUSION

Price Transparency -> Price Discovery-> Setting the Market Rate, cont.

If the latter, providers charging premium rates must justify why they receive "Lamborghini rates" for "Buick quality." Conversely, payers must explain the broad range of rates they pay for identical services, especially in cases where they reimburse high-quality providers with lower rates and low-quality providers with higher rates.

If employers, and possibly CMS, utilized health plan price transparency to leverage their purchasing power to demand **value for money**, market rates in the health economy could narrow significantly, as happened with airfares after deregulation of the airline industry.

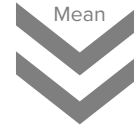
DEMAND = FLAT TO DECLINING



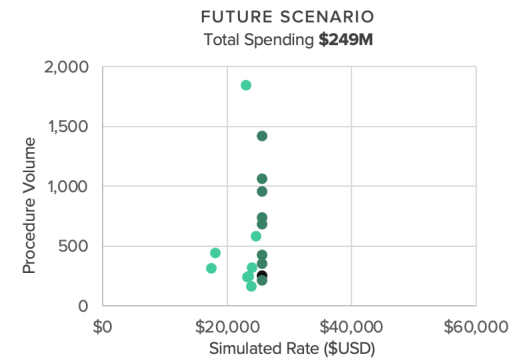
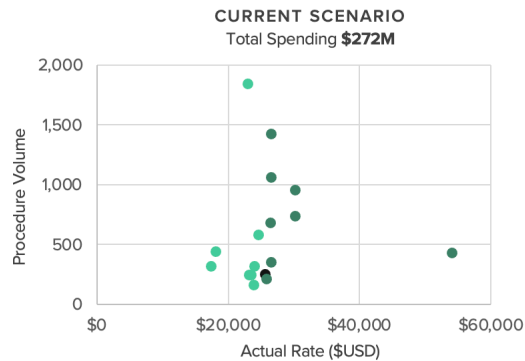
PRICE \neq QUALITY



Regression
to the
Mean



ALIGNMENT WITH THE MARKET RATE



CONCLUSION

The Winners in Healthcare's Negative-Sum Game Will Be Those Who Deliver Value for Money

According to the laws of economics, when supply exceeds demand or demand is flat or declining relative to supply, price (and therefore yield) goes down. The inverse has been true in healthcare for decades.

Analyzing negotiated rates at the market level reveals the true “market price,” and providers whose rates or quality are outliers will likely be forced to meet that market price to maintain their market share.

The combination of regression to the lower market price with other policy initiatives like site-neutral payments and price caps would further reduce yield.

Hence, health plan price transparency **should** catalyze unprecedented and frenzied competition to win the hearts and minds of the consumer and the payer that keeps the current U.S. healthcare system afloat: the employer. If it does, the winners in healthcare's negative sum game will be those who deliver **value for money**.

CONCLUSION: KEY INSIGHTS

1

The Commercially Insured Market Continues To Erode

- The share of commercially insured Americans — including employer-sponsored, Marketplace, direct-purchase and TRICARE — dropped 0.3 percentage points from 2021 to 2022.
- The extent to which millions of Americans losing Medicaid coverage during the 2023 redetermination process become uninsured or gain marketplace or employer-sponsored coverage will affect the payer mix of almost every healthcare provider and access to healthcare services for millions of Americans.
- Even HCA, the nation's largest and most profitable health system, has experienced a 5.4 percentage point decrease in commercially insured revenue between 2016 and 2022.

2

The Physical and Mental Health of Americans Is Unraveling

- Between Q1 2020 and Q4 2022, non-COVID excess mortality for Americans aged 35-44 increased by 28 percentage points.
- In separating COVID-19 and behavioral health, "all other" care volumes decreased by 0.4% in 2022 compared to 2021. From 2019 to 2022, primary care volumes (-8.4%) declined, while women's health volumes (+5.0%) and behavioral health volumes (+20.1%) increased.
- While e-prescribing of antidepressants (-4.5%), stimulants (7.4%) and opioids (-24.3%) changed in 2022 from 2021, the share of total prescribing was higher for antidepressants (1.3%) and stimulants (11.2%) but lower for opioids (-3.6%).
- While national cancer mortality rates have been declining for many years, from 2018 to 2022, malignant neoplasm deaths increased 5.0% for ages 35-44 — an age cohort that historically is less affected by many cancers as reflected in current screening guidelines.

3

Drug and Diagnostic Investments Signal Emerging Patient Needs

- The field of cellular and genetic therapies is rapidly progressing. Since the start of 2023, many novel medications have received FDA approval, including treatments for solid tumors and hematologic malignancies, as well as rare genetic disorders.
- An estimated 56M U.S. patients are candidates for the 33 cell and gene therapies (26 non-oncology drugs and seven oncology drugs) projected to launch by 2027.
- Between Q1 2020 and Q4 2022, prescription volumes for GLP-1 medications have increased 300%. Since its approval in Q4 2017, Ozempic® (semaglutide) has grown to account for 65.4% of all GLP-1 prescription volume.

CONCLUSION: KEY INSIGHTS

4

The Tepid Demand Trajectory for Healthcare Services Persists

- The "rebound" of healthcare observed in 2021 was partially inflated due to increased testing and treatment for COVID-19, which largely explains both the decline in primary care (-6.3%) and urgent care (-13.7%) visits from 2021 to 2022, as Americans have yet to return to preventive care at pre-pandemic levels.
- Because healthcare, and therefore demand for services, is local, markets with a similar population size can have widely divergent demand for healthcare services. For example, while Chicago's population is projected to shrink between 2023 and 2027, demand for orthopedic surgeries is projected to increase. However, the inverse is true in Houston.
- Between 2023-2027, the projected CAGR for major surgical service lines nationally ranges from -0.04% (OB/GYN) to 0.2% (Heart/Vascular and Digestive), with the highest and lowest growth markets varying by service line.

5

Consumer Behaviors Are Starting To Manifest in Patient Decision Making

- A majority of Americans (52%) believe the overall healthcare system is substandard, and fewer Americans each year are rating the quality of their own care experiences as high.
- As retailers, technology companies and omni-channel providers flood the healthcare delivery market, patients have more care options than ever. Notably, 58% of Americans reported that they are likely to seek non-emergent care from a retail pharmacy.
- The 45.8% decline in telehealth visit volumes from a peak in Q2 2020 to Q4 2022 reflects how the expanded availability of virtual care options has not changed widespread consumer preference. Tapering demand suggests that continued telehealth use is concentrated to niche, discrete applications and consumer segments.

6

The Traditional Care Pathway Is Becoming Disintermediated

- As new models of care and new players enter the health economy, healthcare is becoming more disintermediated. The focus of consumer interactions will be increasingly transactional and disconnected from the broader healthcare system.
- For years, surgical care has increasingly been shifting into the outpatient setting, such as HOPDs and ASCs. From 2021 to 2022, the share of surgical care delivered specifically at ASCs increased from 21.8% to 22.2%, representing approximately 19M surgical procedures in 2022.
- Given the sizeable share of retail-based low-acuity care services, heightened competition among new entrants, and effectively zero marginal cost of delivery for retailers, how will large retailers compete on price? With retail pharmacy revenue ranging from \$24.1B to \$140.1B, retailers have the scale to treat primary care delivery as a loss leader.

CONCLUSION: KEY INSIGHTS

7

New Models of Care Are Further Constraining Provider Supply

- While health systems as a collective stakeholder remain the largest employer of physicians, two large "payviders" — Optum and Kaiser Permanente — are the two largest employers of U.S physicians.
- The net number of physicians that started and stopped practicing between 2018 and 2022 resulted in a -2.3% workforce reduction. With the variety of employment options growing (e.g., new entrants), competition is growing for employing the shrinking supply of physicians. Notably, 9.0% of physicians that deliver E&M services changed employers from 2021 to 2022.
- The patient panel size for new primary care entrants averages 584 patients per provider, suggesting that the U.S. would need an additional 218K primary care providers to meet the needs of every American under this model. Scaled nationally, the primary care provider shortage would total 44.8% since the current patient to provider ratio is 944.

8

The Monopolistic Effects of Provider M&A Are Overstated

- Market concentration, calculated using the Federal government definition, is not correlated with financial metrics for hospitals. In 2021, over 20% of hospitals — regardless of market concentration — generated negative operating margins.
- While both health systems and health insurers have seen declines in average operating margin, even some of the largest nonprofit health systems have negative margins. Meanwhile, life sciences companies have seen operating margins increase by 8.4 percentage points since 2018, while also averaging above 19% year-over-year.
- While the proportion of care delivered in the inpatient setting is decreasing, the Federal government's traditional measure of market concentration is limited to inpatient utilization. More accurate measures of market concentration — to reflect both inpatient and outpatient care — can lead to different conclusions about the same market.

9

Employers Are Paying More for Less

- The prices for all consumer goods and services have risen by 80.8% since 2000, but prices for medical care — including treatment, insurance, medical equipment and prescription drugs — have increased by 114.3%.
- In 2021, employer-sponsored health insurance expenditures totaled \$1.07T, or 25% of all U.S. health expenditures. The self-insured portion of employer spending totaled \$694.7B, or 16% of all spending.
- Different payers routinely pay significantly different amounts to the same provider for the same service. Employers could bend the cost curve substantially merely by steering "away" from a handful of providers who are outliers on price or quality for a particular set of services.

CONCLUSION: KEY INSIGHTS

10

The Market Rate Has Been Revealed, and It Is Lower Than You Think

- Healthcare spending is expected to maintain its upward trajectory through 2026, affecting public and private payers. As a result, every health economy stakeholder will likely receive more pressure to reduce rates to the “market rate,” which is now widely apparent with health plan price transparency data.
- Despite over a decade of experimenting with value- and risk-based payments, results have been mixed, with limited uptake. As of 2021, only 19.6% of U.S. healthcare payments for all markets (Medicare Advantage, Medicare FFS, Medicaid, and commercial insurance) flowed through alternative payment models.
- Although CMS reversed its decision to eliminate the inpatient-only list, the migration of care from inpatient to outpatient settings persists. In the hypothetical scenario below, applying median commercial negotiated inpatient rates for projected 2023 surgical volumes and ASC rates to projected 2027 surgical volumes would result in reduced payment of almost \$16B for this single common service.
- Starting in 2026, Medicare will set rates for ten drugs based on negotiations for fair price with the manufacturers and will add more drugs to this group each year. Will these negotiations establish a market rate for some of the most expensive drugs, or will life science companies, which account for over half of all lobbying spending, be able to maintain current prices?

METHODOLOGY

Study Data

A variety of data sources were leveraged as part of this research, with most insights gleaned from Trilliant Health's proprietary datasets with visibility into patients and providers across the country. Trilliant Health's national all-payer claims dataset combines commercial, Medicare Advantage, traditional Medicare, and Medicaid claims, which provides a nationally representative sample accounting for more than 300M American lives on a deidentified basis. Trilliant Health's consumer dataset includes a range of psychographic (e.g., behaviors, preferences), demographic, social determinants (e.g., broadband) and lifestyle (e.g., wearable) data, inclusive of variables sourced from a variety of third-party datasets.

Trilliant Health's Demand Forecast leverages General Linear Mixed Models (GLMMs) in combination with more than 100B rows of claims data to project future demand for healthcare services over a 5- and 10-year horizon. Forecasts factor in incidence rates and demographic changes at the county level. Trilliant Health's Provider Directory enables a direct view into providers and their practice patterns. Trilliant Health's Health Plan Price Transparency dataset is comprised of health plan machine-readable files that have been parsed. Trilliant Health leverages its Provider Directory and claims data against the Health Plan Price Transparency dataset to reveal the negotiated reimbursement rate between any health plan and any provider for any service rendered at any location.

Additional data were obtained from a variety of publicly available sources (and are noted in respective source notes), including individual health system, health plan and company financial statements, Census Bureau, Kaiser Family Foundation, the Congressional Budget Office, American Hospital Association, American Medical Association, Centers for Disease Control and Prevention, Healthcare Cost Report Information System and the Bureau of Labor Statistics.

Most data are presented with a national view, while some were exclusively focused on counties or the largest markets – defined as the Core-Based Statistical Areas (CBSAs) – to illustrate local variation. This research does not include data from self-pay encounters or encounters provided at no cost through commercial insurers.

METHODOLOGY

Analytic Approach

DATA SOURCE	FEATURE	CATEGORY	DESCRIPTION
TRILLIANT HEALTH NATIONAL ALL-PAYER CLAIMS DATABASE	Volume	Inpatient	Visits associated with medical and surgical care delivered inpatient on the campus of a hospital, reflective of all payers.
		Outpatient	Visits associated with medical and surgical care delivered in the outpatient setting, separating care delivered on the campus of a hospital and in non-hospital settings, reflective of all payers.
		Primary Care	Visits with providers characterized as general practice, family, internal, geriatric, adolescent and pediatric medicine, excluding hospitalists, reflective of all payers.
		Behavioral Health	Visits categorized into the Major Diagnostic Categories 19 (Mental Diseases and Disorders) and 20 (Alcohol/Drug Use & Alcohol/Drug Induced Organic Mental Disorders), reflective of all payers.
		Urgent Care	Visits delivered at medical facilities where the site of service was identified as urgent care, reflective of all payers.
		Women's Health	Office-based evaluation and management visits for the purposes of preventive and/or acute women's healthcare, reflective of all payers.
		Telehealth	Synchronous audio-video, audio-only, chat-based and asynchronous chat-based and store-and-forward encounters, delivered off the campus of a hospital, reflective of all payers.
		Home Health	Visits delivered at a patient's home with the place of service categorized as home health, reflective of all payers.
		COVID-19	Visits associated with the prevention, testing, treatment or immunization of COVID-19.
	Competition	Herfindahl-Hirschman Index (HHI)	The Federal government utilizes the HHI as the standard measure of market concentration. HHI is calculated by squaring the market share of each firm competing in a market and then summing the resulting numbers. It approaches zero when a market is occupied by several firms of relatively equal size and reaches its maximum value (10,000) when a market is controlled by a single firm (i.e., monopoly). HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. The U.S. Department of Justice (DOJ) and Federal Trade Commission (FTC) generally consider markets in which the HHI is between 1,500 and 2,500 points to be moderately concentrated and consider markets in which the HHI is in excess of 2,500 points to be highly concentrated. Traditional HHI, which refers to the standard measure of market concentration, inclusive only of inpatient settings, is used throughout the report unless stated otherwise.
	Pharmacy	Tele-Prescribing	Prescriptions resulting from a telehealth visit within three days of an encounter, where the prescribing provider is also the telehealth provider.

METHODOLOGY

Analytic Approach, cont.

DATA SOURCE	CATEGORY	DESCRIPTION
TRILLIANT HEALTH DEMAND FORECAST	Service Lines	As a proxy for total demand, the Demand Forecast analysis was limited to the most common surgical service lines (Heart/Vascular, OB/GYN, Neuro/Spine, Orthopedic, Oncology and Digestive), primary care and behavioral health given the contributory impact (in terms of volume and revenues) for providers. Surgical service lines are either shown as a combination of inpatient and outpatient, inpatient alone or outpatient alone.
	Confidence Intervals	Forecast outputs for the 25th and 75th incidence rate percentiles are shown to provide a broader understanding of potential outcomes. Forecast projections account for the impact of COVID-19.
	Five-Year CAGR	Forecasted compound annual growth rate of median incidence rate between 2023 and 2027. Surgical service lines are either shown as a combination of inpatient and outpatient, inpatient alone or outpatient alone.
TRILLIANT HEALTH PROVIDER DIRECTORY	Net Provider Change	The year-over-year delta between providers that stopped practicing and providers that started practicing compared to the total board-certified physician count between 2018 and 2022.
	Changed Practice Location	The primary address that a provider performed E&M services in 2021 was different than the primary address where the provider performed these services in 2022, excluding telehealth visits.
	Changed Provider Organization	Instances where the billing organization is different for a provider in 2021 compared to 2022 for E&M services.
TRILLIANT HEALTH PLAN PRICE TRANSPARENCY DATASET	Negotiated Rates	Minimum, median, average or maximum in-network negotiated rates for one or multiple national payers — UnitedHealthcare or Anthem BlueCross BlueShield. Whether the negotiated rates are for professional or institutional services are specified on individual analyses. The MS-DRG or CPT service is specified on individual analyses.

METHODOLOGY

Commonly Used Acronyms

ACA: Affordable Care Act

ASC: Ambulatory Surgery Center

AMI: Acute Myocardial Infarction

CAGR: Compound Annual Growth Rate

CBSA: Core-Based Statistical Area

CBO: Congressional Budget Office

CDC: Centers for Disease Control and Prevention

CGT: Cell and Gene Therapy

CMMI: CMS Innovation Center

CMS: Centers for Medicare and Medicaid Services

DOJ: Department of Justice

ESI: Employer-Sponsored Insurance

E&M: Evaluation & Management

ED: Emergency Department

FDA: Food & Drug Administration

FPL: Federal Poverty Level

FTC: Federal Trade Commission

FY: Fiscal Year

GLP-1: Glucagon-like peptide-1 receptor agonists

GDP: Gross Domestic Product

HDHP: High-Deductible Health Plan

HHI: Herfindahl-Hirschman Index

HOPD: Hospital Outpatient Department

ICD-10: International Statistical Classification of Diseases and
Related Health Problems

IP: Inpatient

M&A: Mergers and Acquisitions

MA: Medicare Advantage

MedPAC: Medicare Payment Advisory Commission

MS-DRG: Medicare Severity Diagnosis Related Groups

OP: Outpatient

OOP: Out-of-Pocket Costs

PCP: Primary Care Provider

Rx: Prescription

TAM: Total Addressable Market

Acknowledgements

Authors

- **Sanjula Jain, Ph.D.**, Chief Research Officer
- **Katie Patton**, Research Manager
- **Austin Miller**, Senior Research Analyst
- **Colin Macon**, Data Analyst
- **Sarah Millender**, Senior Research Associate
- **Maggie Jackson**, Director of Data Visualization
- **Allison Oakes, Ph.D.**, Director of Research

Gratitude

The third annual collection of emerging and evolving health economy trends, informed by both primary and secondary data sources, would not have been possible without the significant contributions of our Trilliant Health colleagues who carved out time for this research in addition to their primary responsibilities.

Distilling more than 100B medical and pharmacy claim lines — which account for more than 300M lives — into longitudinal data insights, and ingesting, cleaning and analyzing thousands of newly released machine-readable files from national health plans and self-insured employers, is no easy feat. The tremendous efforts of our colleagues in data science and engineering built the foundation upon which we could conduct an analysis of this scale with precision and speed.

We greatly appreciate the expertise and assistance of Jim Browne, Amanda Cole, Ellen Lindsay, Dean McKee, Matt Fili, Matt Ikard, Chris Rash and Lindsey Swearingen in navigating the intricacies of the data.

A special thanks to Matt Eby, Jeff Goldsmith, Ph.D., Anna Jordan, Allaire Kirk, Matt O'Neill, Nancy Organ, Hannah Pike, Cindy Revol, Kendra Rodgers and Kelsey Thomas for their instrumental input and review.

Finally, Hal Andrews, Jason Nardella and David Taylor were invaluable thought partners throughout the entire process from the initial conceptualization of this series in 2021 to pinpointing the trends that will have the most significant impact on health economy stakeholders.

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