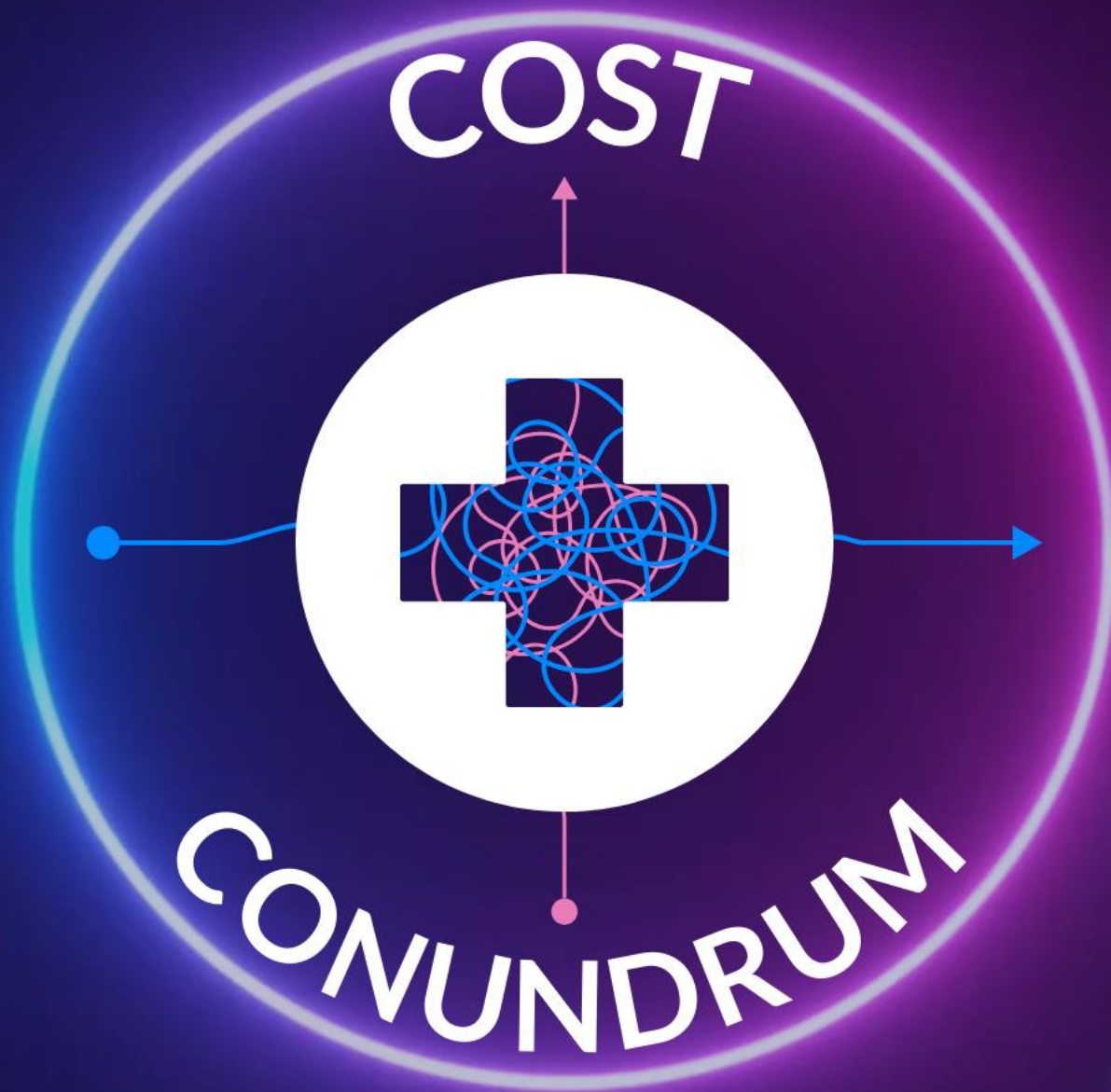


The Cost Conundrum: How Medical Utilization Shapes Future Costs

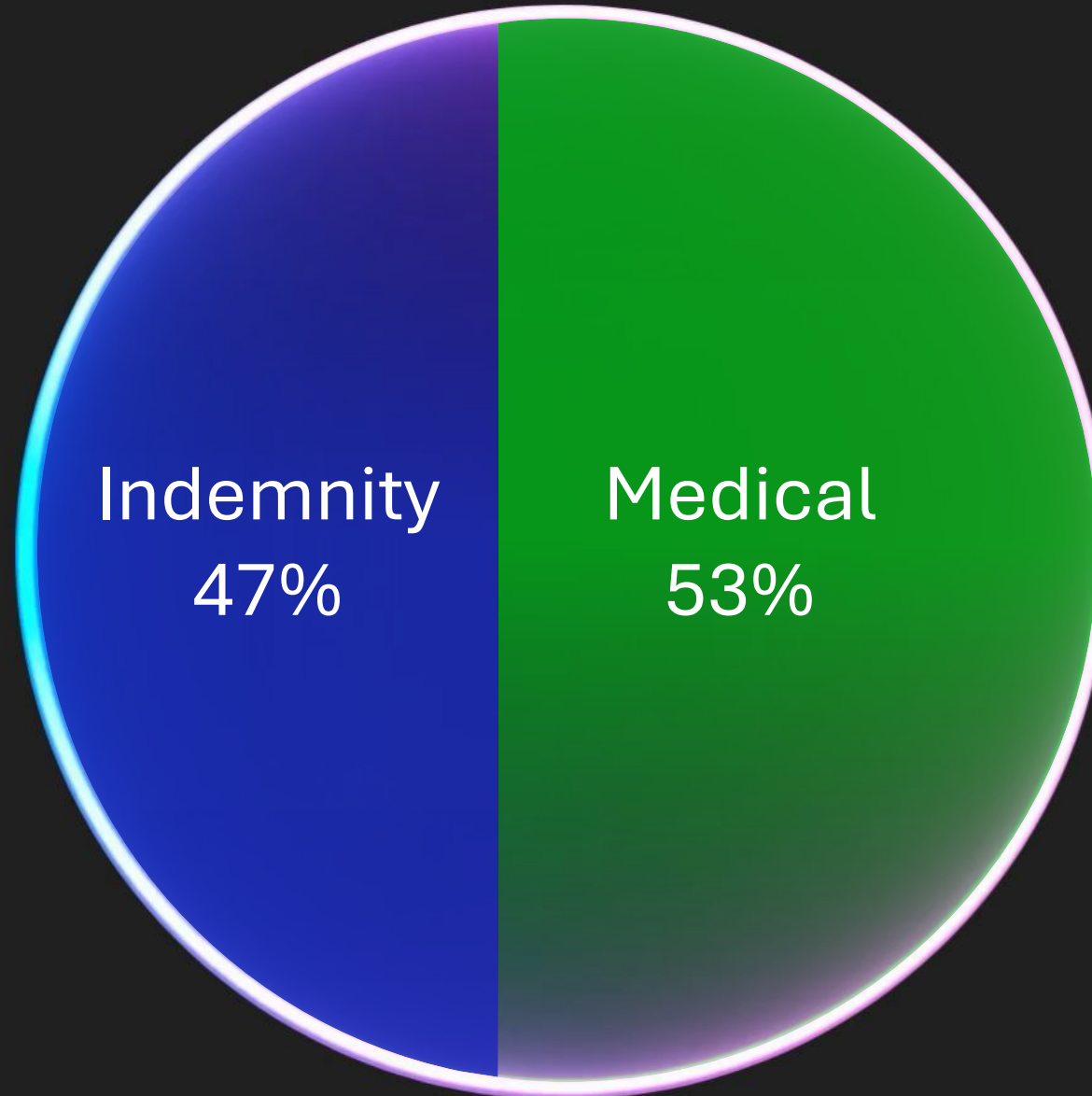
Raji H. Chadarevian

Executive Director—Actuarial Research
NCCI



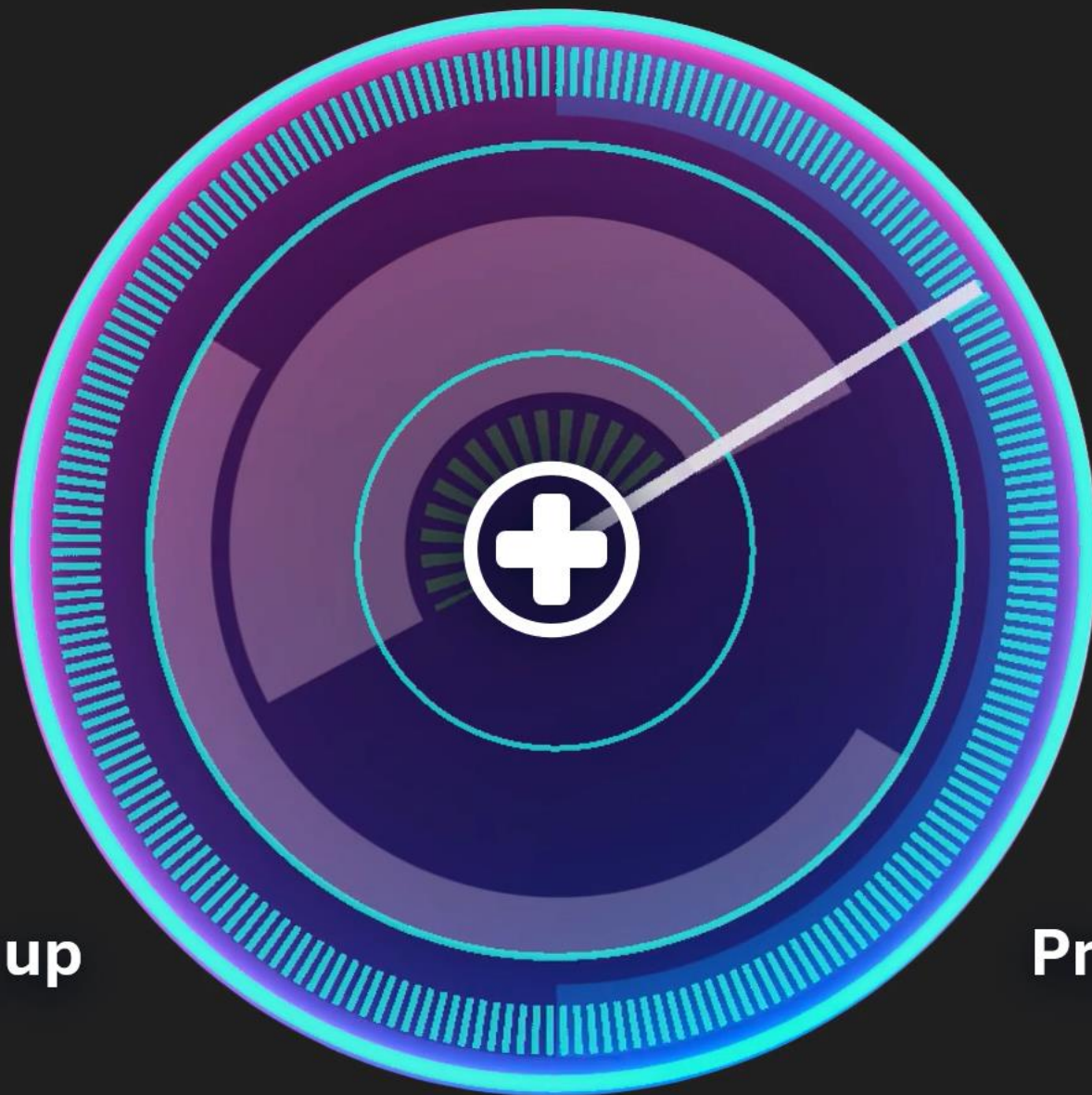


More Than Half of Total Benefit Costs Are for Medical Services



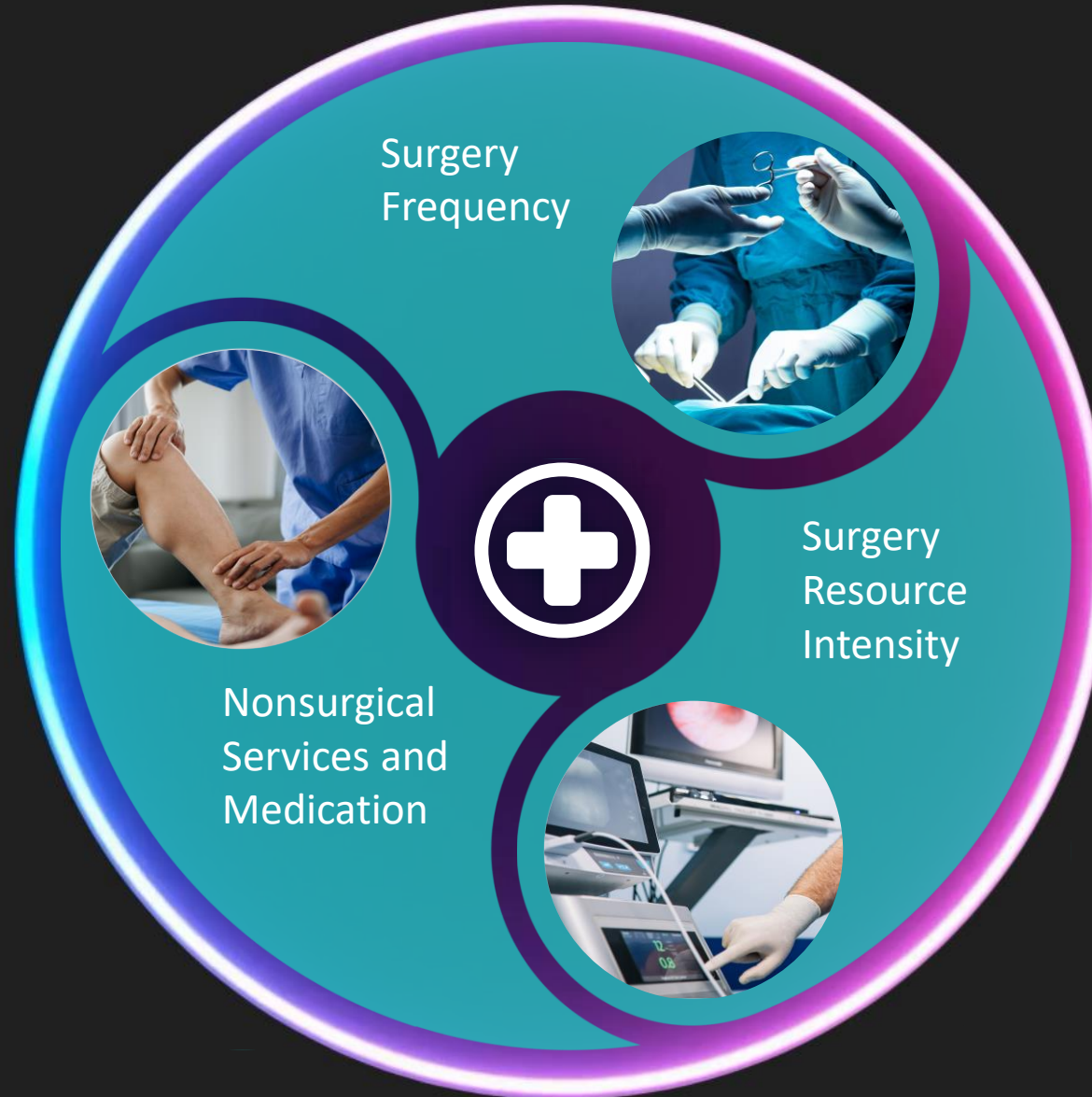


**Medical
Severity is up**



**Medical
Prices are up**

Three Key Facets of Medical Experience

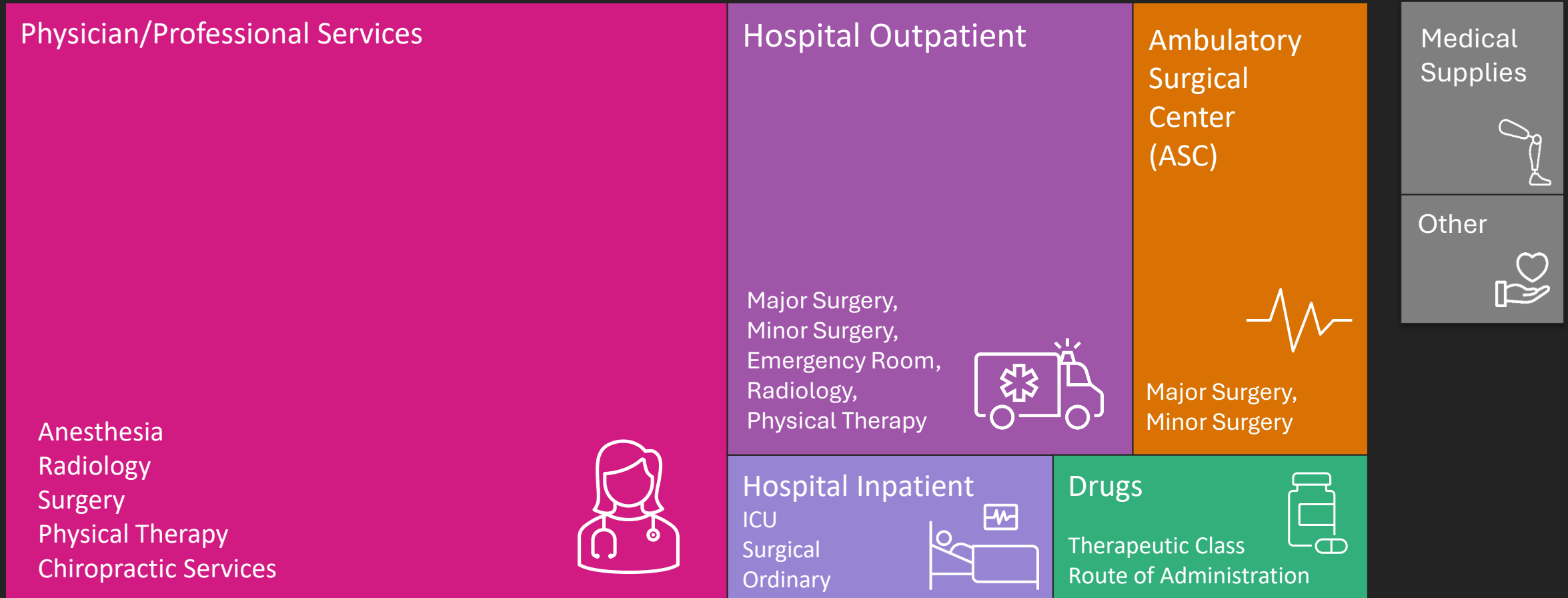


A large circular graphic with a rainbow gradient, transitioning from blue on the left to red on the right. The circle is filled with various white line-art medical icons, including a microscope, a hand holding a pulse oximeter, a first aid kit, a stethoscope, a clipboard, a person in a wheelchair, a microscope, a heart rate monitor, a tooth, a magnifying glass over a heart, a stethoscope, a pill bottle, a syringe, a person in a wheelchair, a heart rate monitor, a magnifying glass over a heart, a stethoscope, a pill bottle, a syringe, and a person in a wheelchair. The word "Utilization" is written in a large, white, sans-serif font across the center of the circle.

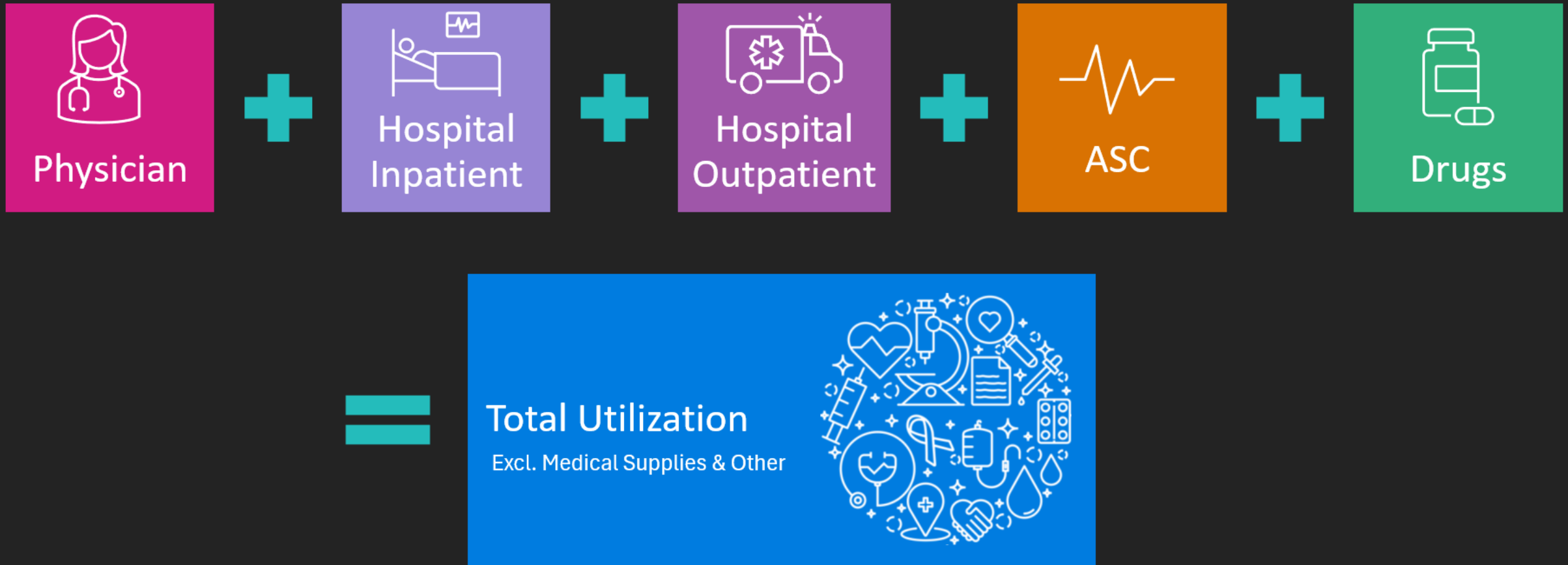
Utilization

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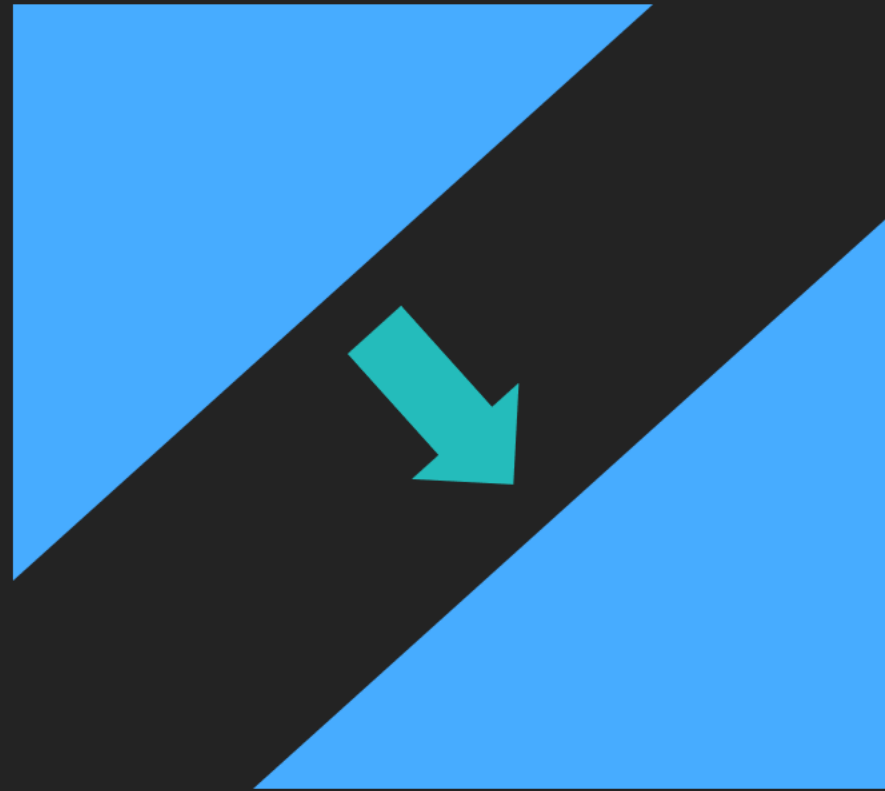
Covered Services Encompass **86%** of Medical Cost



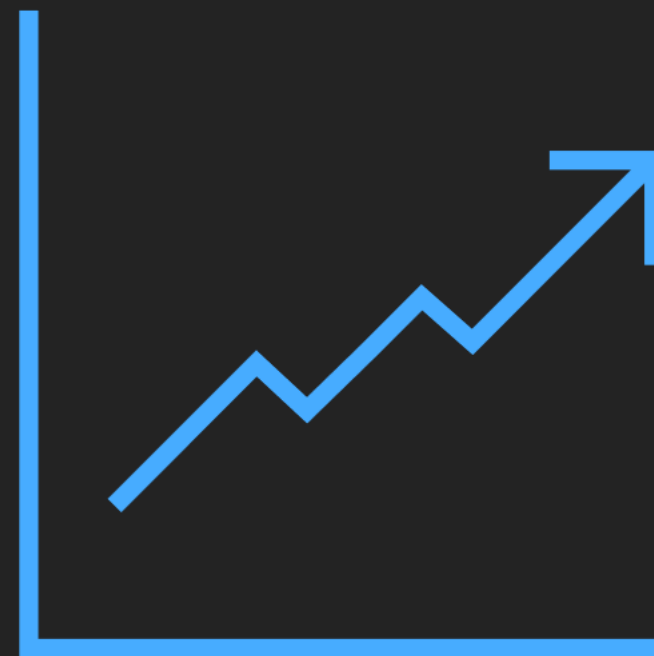
Additive Utilization Metric



Utilization Measures for Forecasting



Trend Projections



Workers Compensation Price Indices

- Total service
- By state
- Surgery claims
- By industry
- And a lot more



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MAJOR SURGERY FREQUENCY

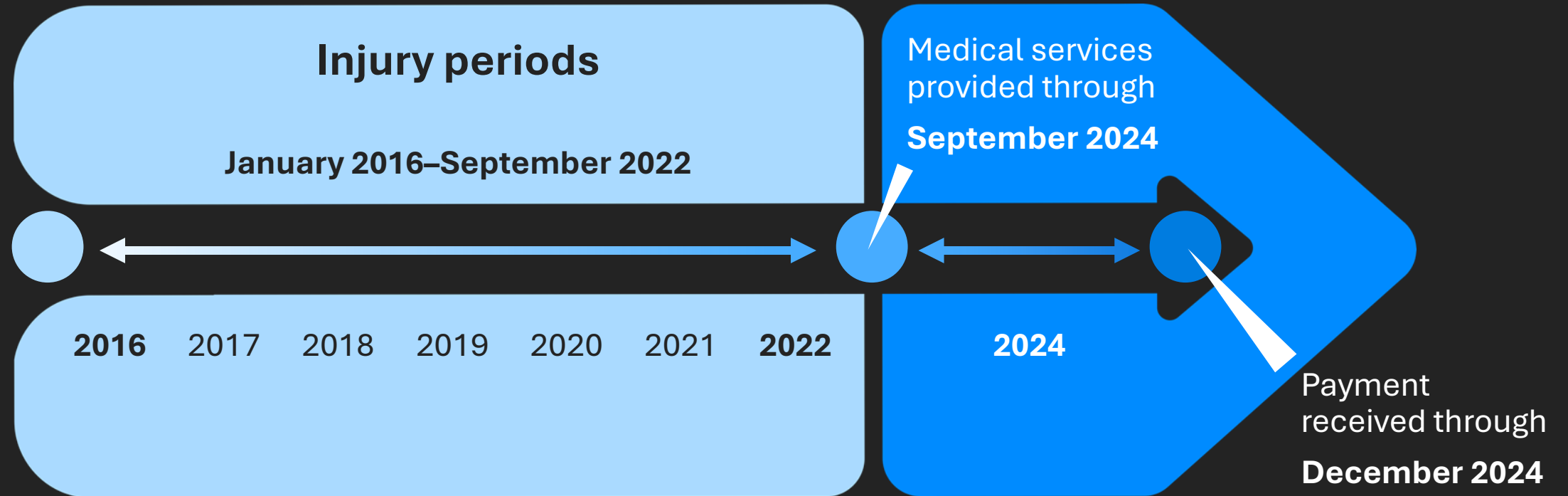


Data

- Information is derived from NCCI's multistate Medical Data Call
- Transactional medical bills
- 5 million claims
- \$21 billion in payments
- Spanning 41 medical conditions

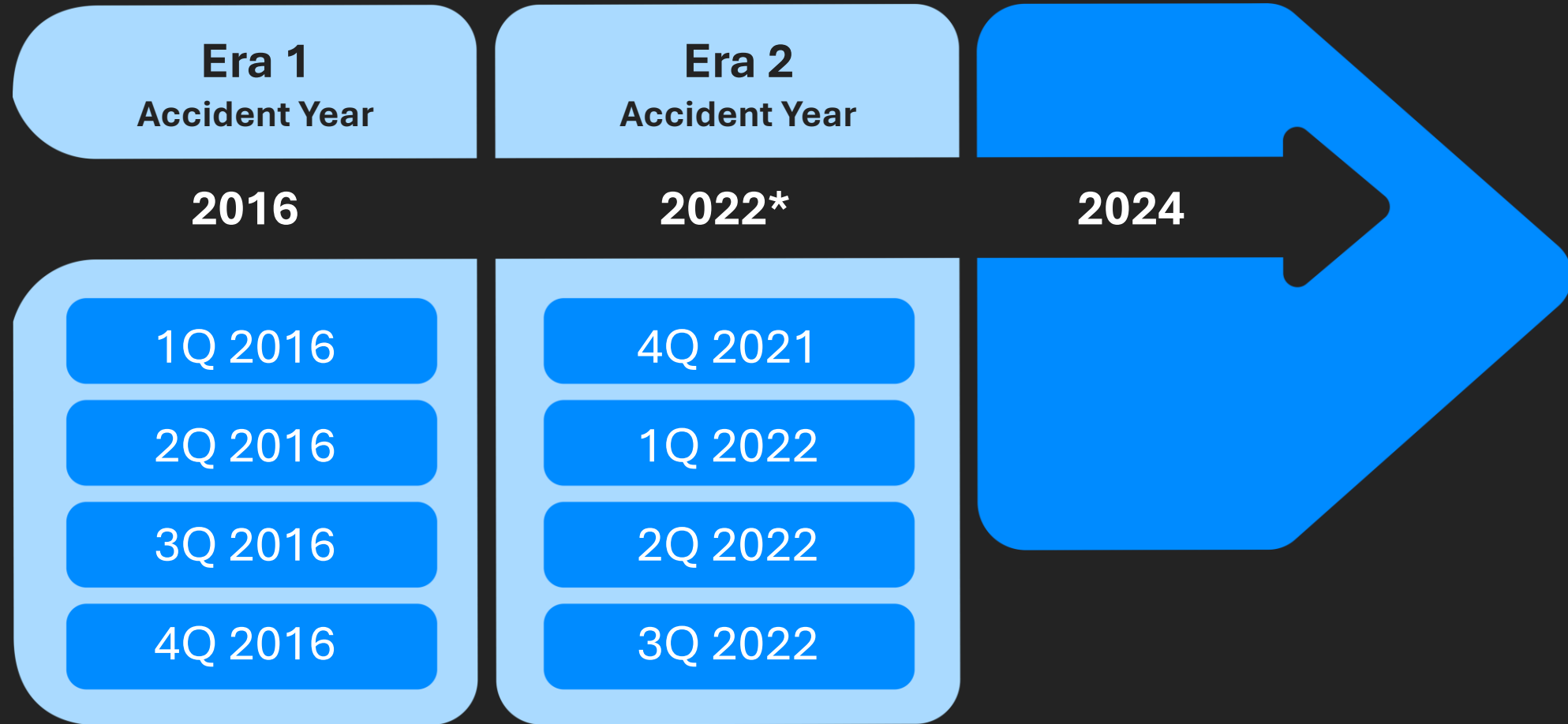


Data



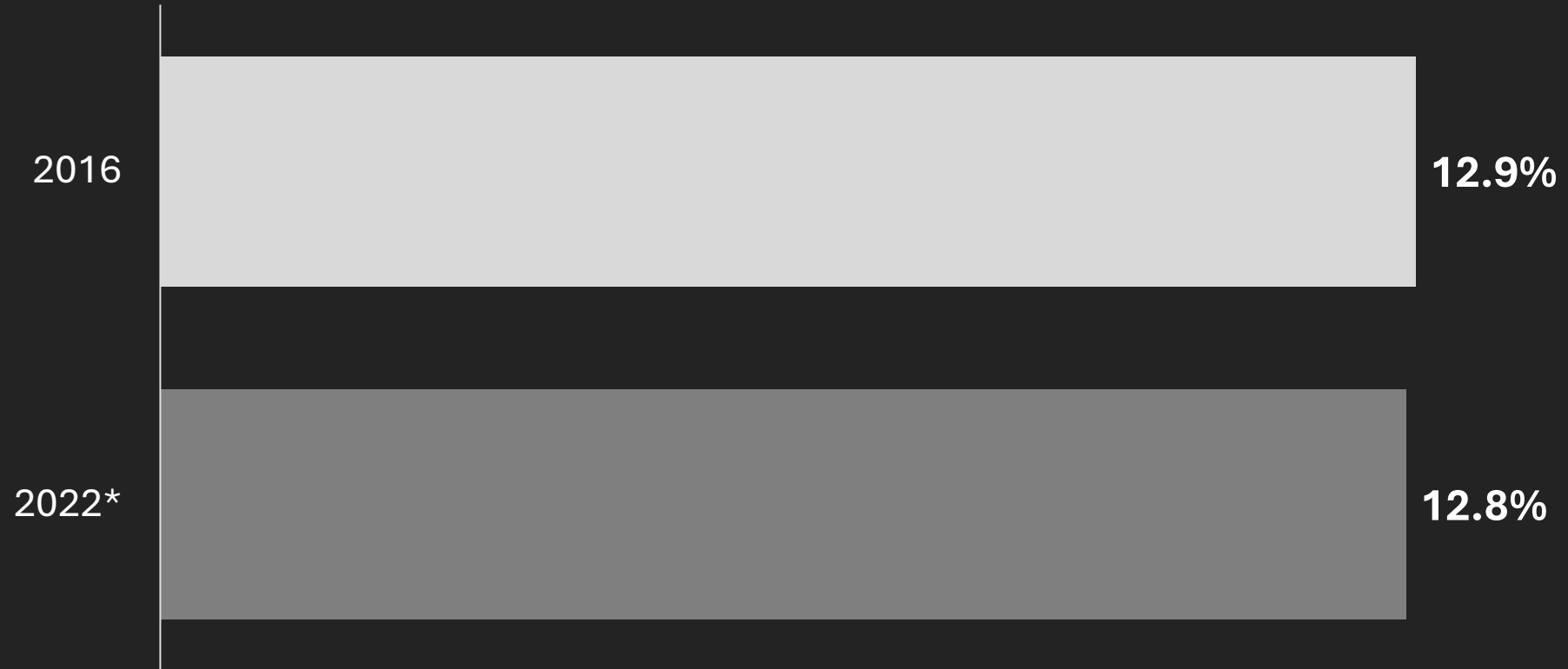
Comparing Two Periods

Each Accident Quarter Contains 8 Quarters of Post-Injury Experience, Claims With 2 Years of Maturity



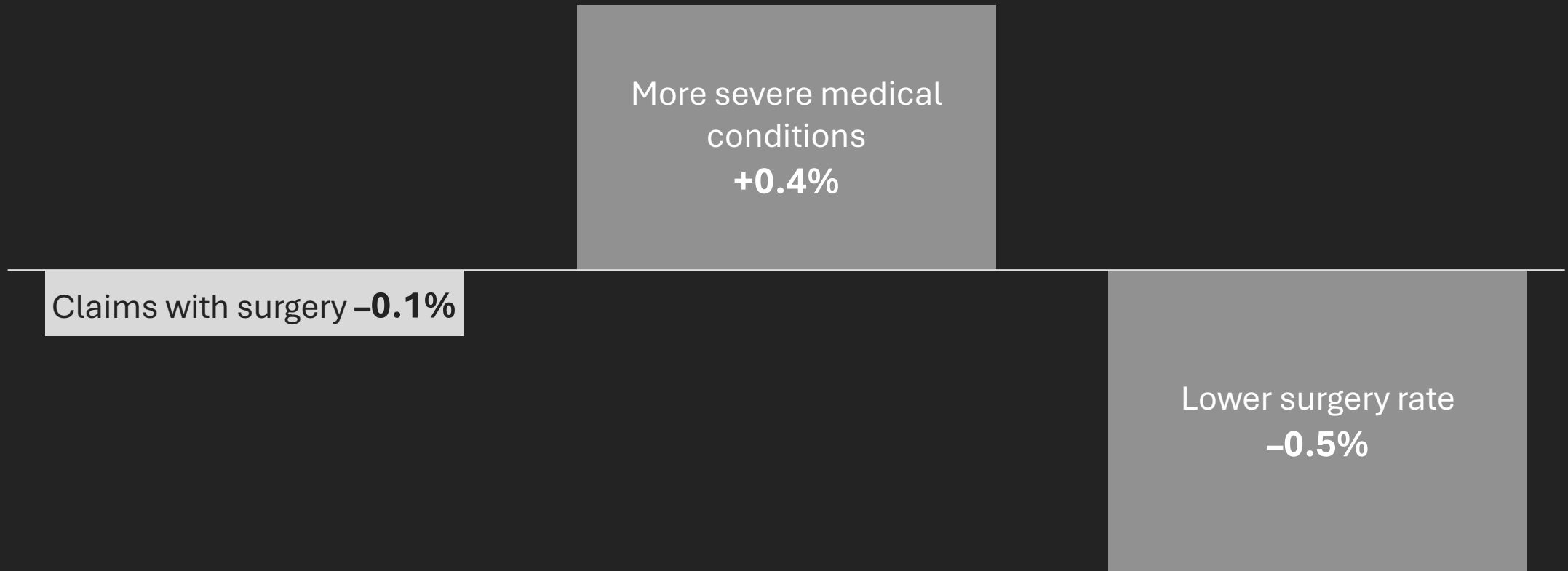
1 in 8 Injured Workers Undergo a Major Surgery

Share of Claims With Major Surgery in 2016 and 2022*



Counteracting Trends Stabilize Surgery Frequency

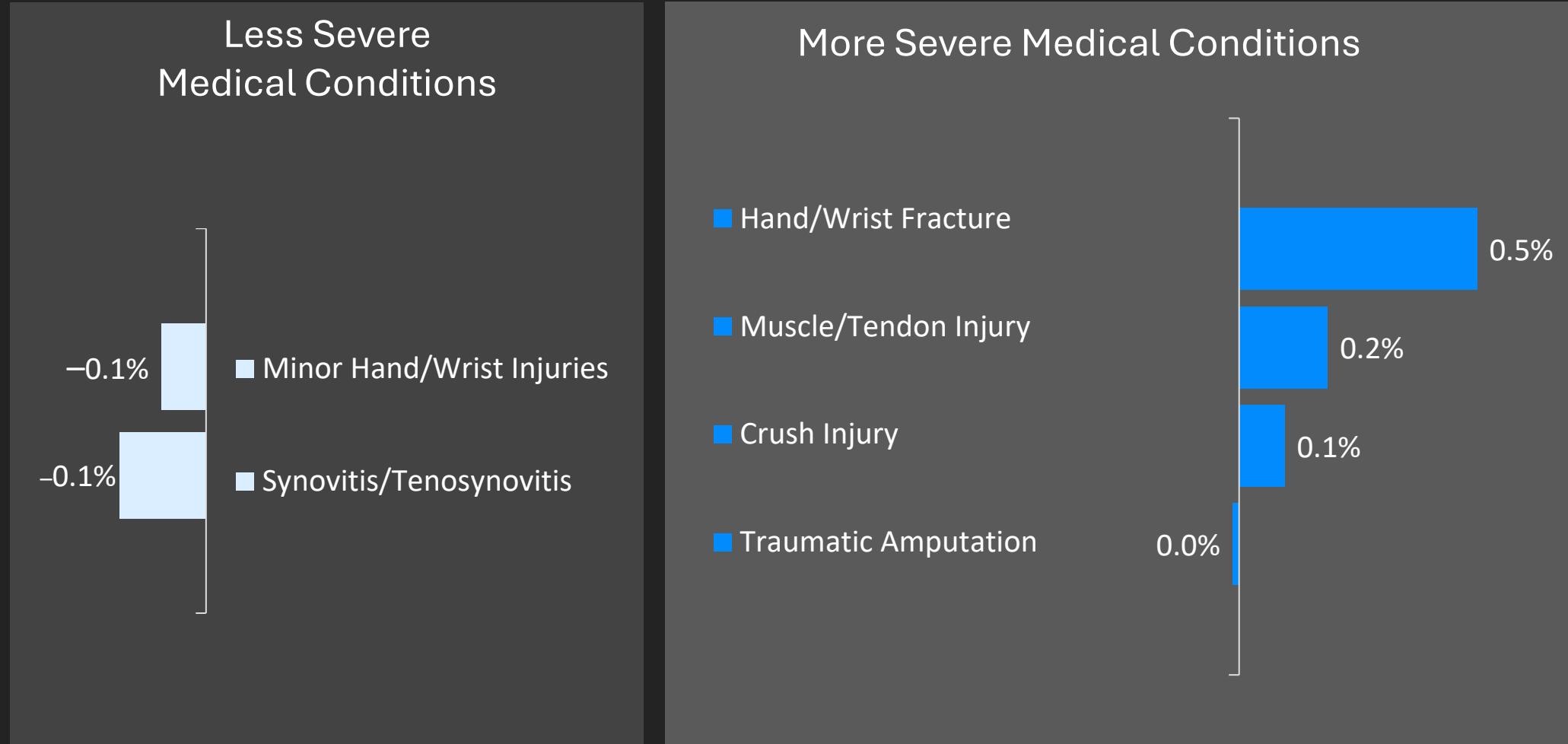
Change in Share of Claims With Major Surgery





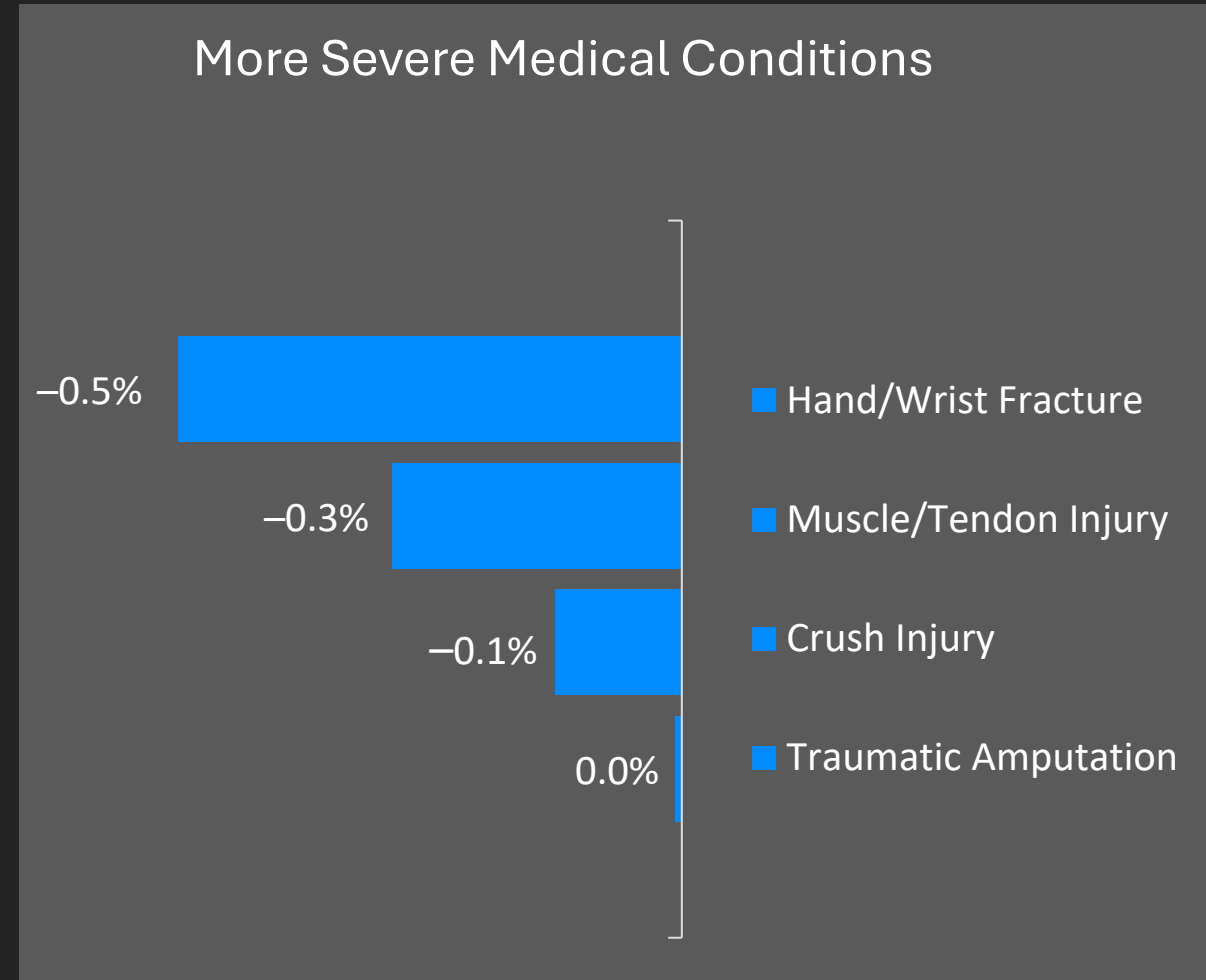
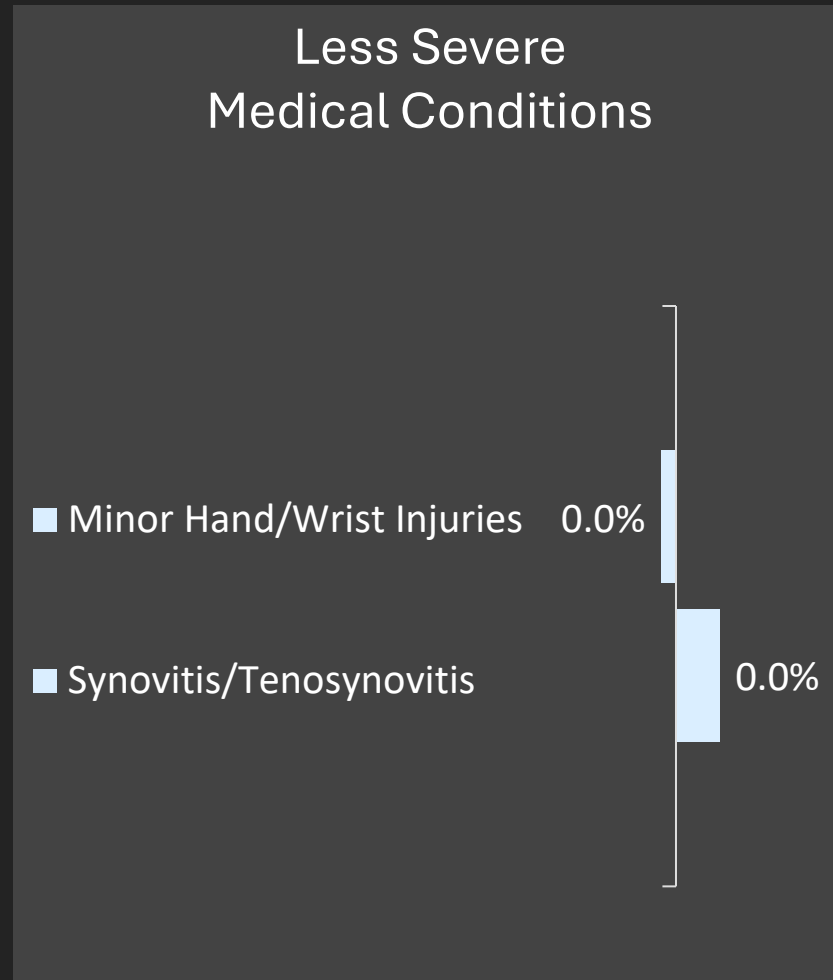
A Shift Toward More Severe Medical Conditions

Contribution to Surgery Claim Share Change From Shift in Medical Conditions: Hand/Wrist Injuries



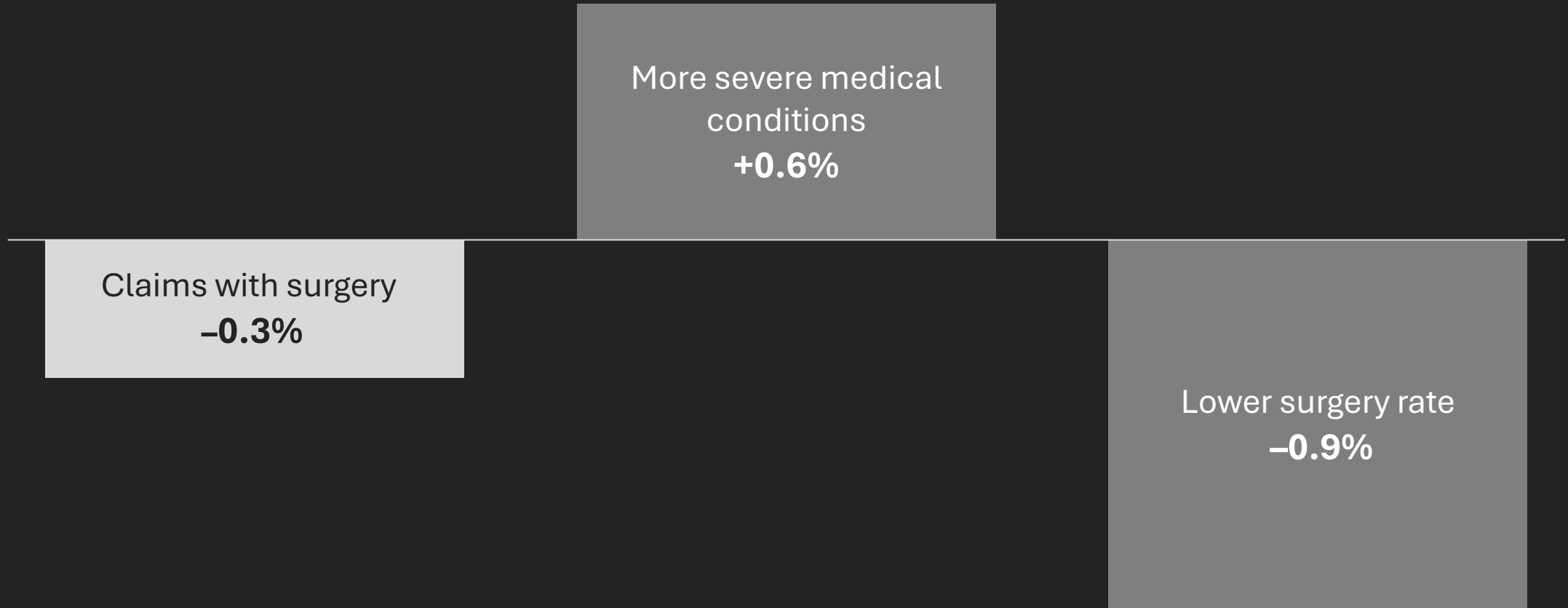
Surgery Rate Falling for Most Medical Conditions

Contribution to Surgery Claim Share Change From Surgery Rate: Hand/Wrist Injuries



Example: Counteracting Trends in Hand/Wrist Injuries

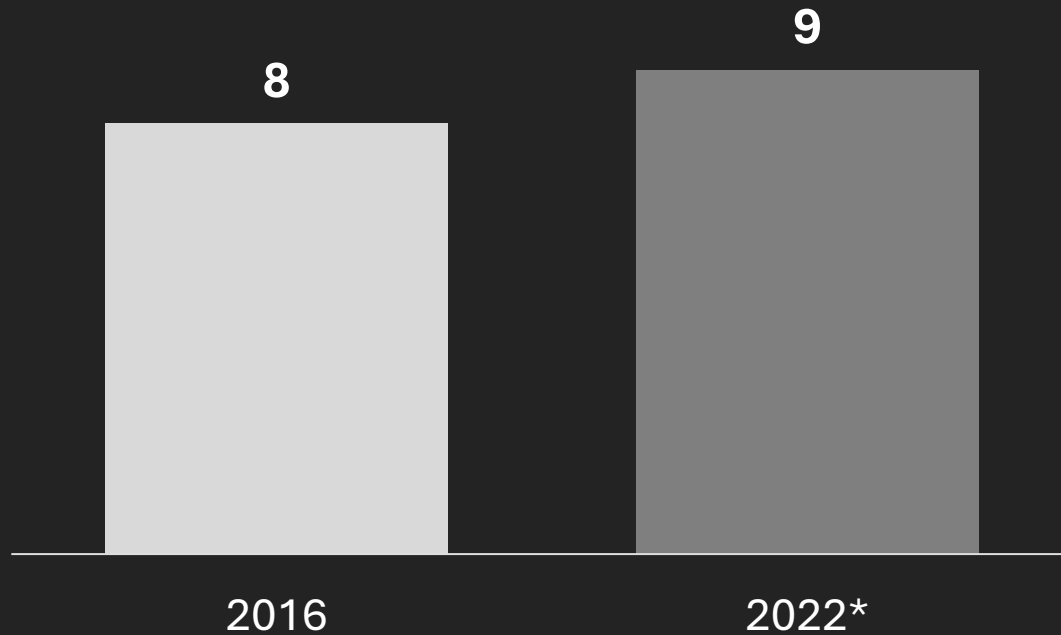
Change in Share of Claims With Major Surgery



Example: Knee Degenerative/Overuse

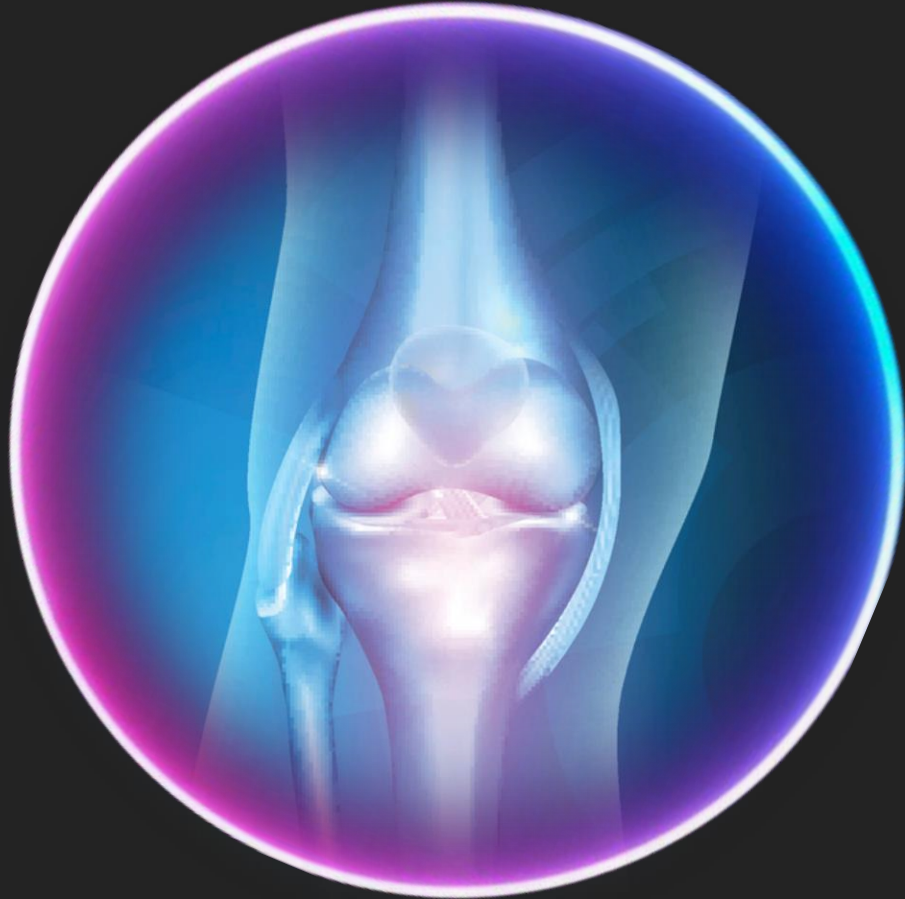
Number of Claims With Major Surgery per 1,000 Claims

An Increase in the Number of Claims

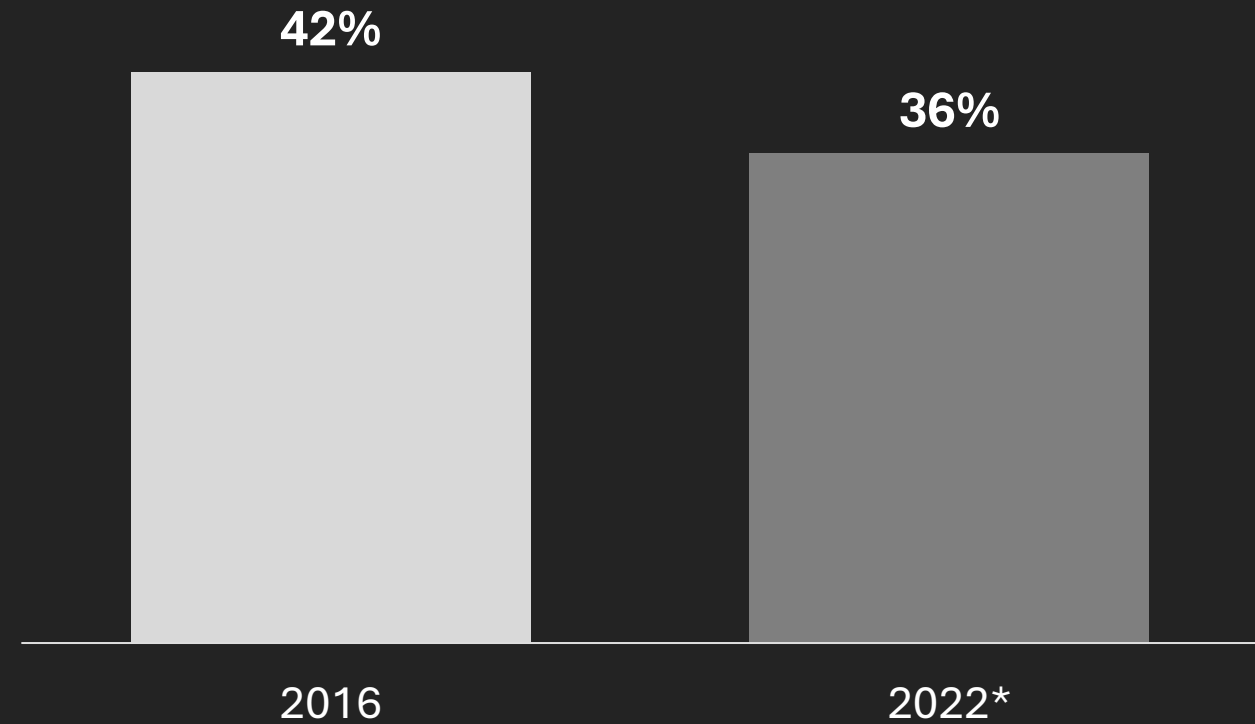


Example: Knee Degenerative/Overuse

Share of Claims With Major Surgery



A Decline in the Likelihood of Surgery

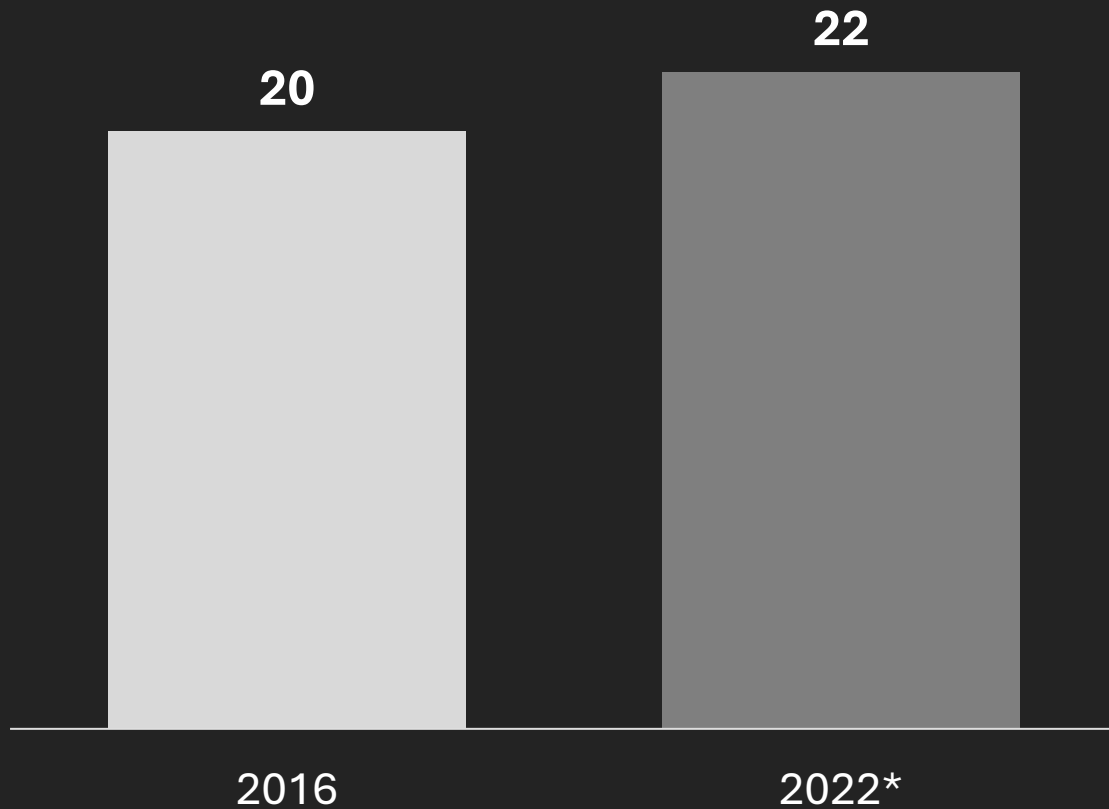


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Example: Rotator Cuff Tear

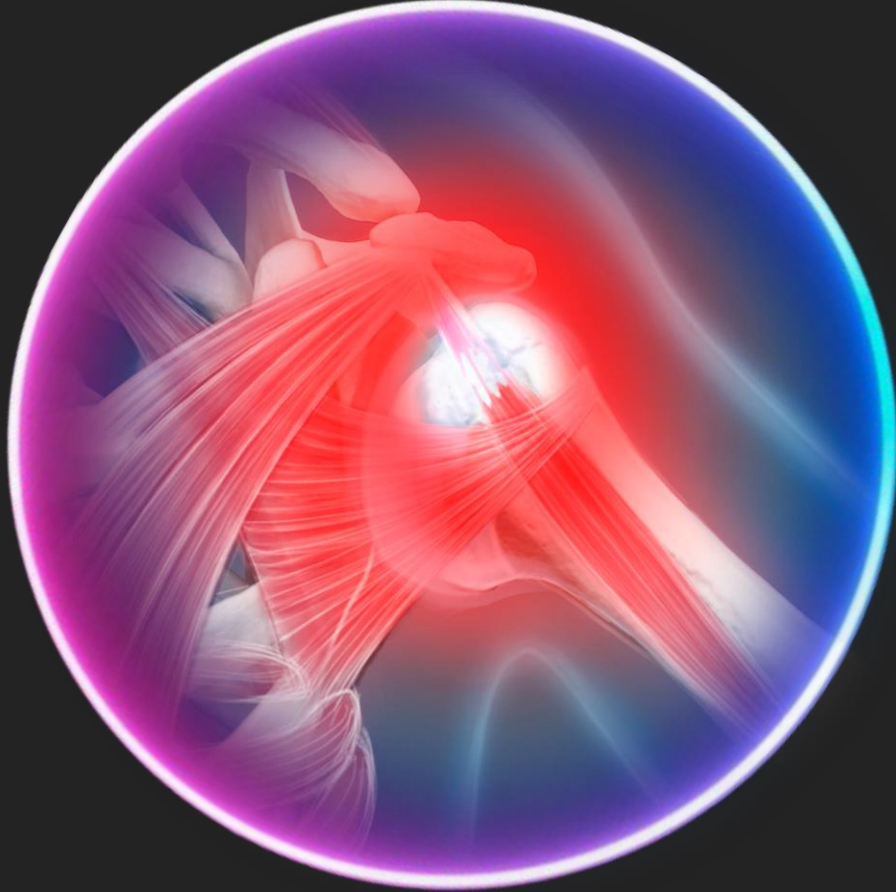
Number of Claims With Major Surgery per 1,000 Claims

An Increase in the Number of Claims

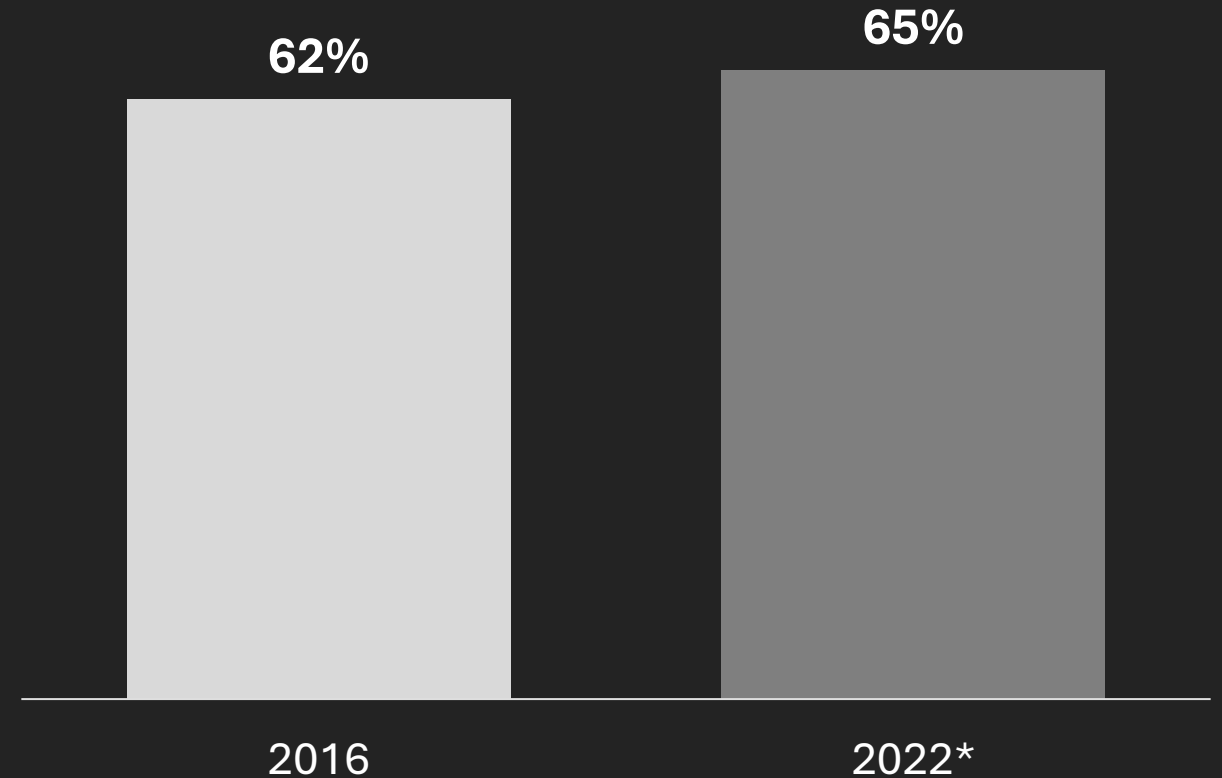


Example: Rotator Cuff Tear

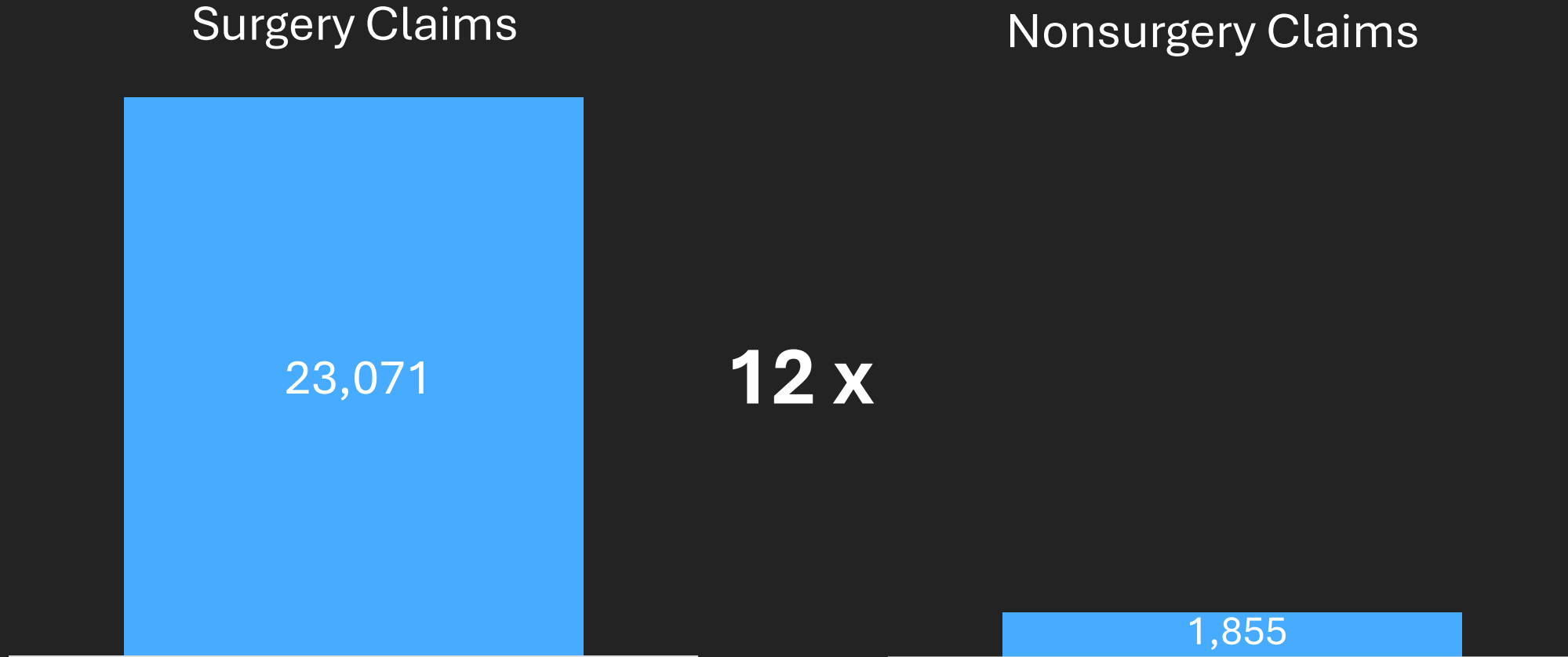
Share of Claims With Major Surgery



An Increase in the Likelihood of Surgery



Average Utilization per Claim in 2022*



Surgery Claims Contribute 2/3 of Utilization

Utilization Shares in 2022*

Surgery

65%



Nonsurgery

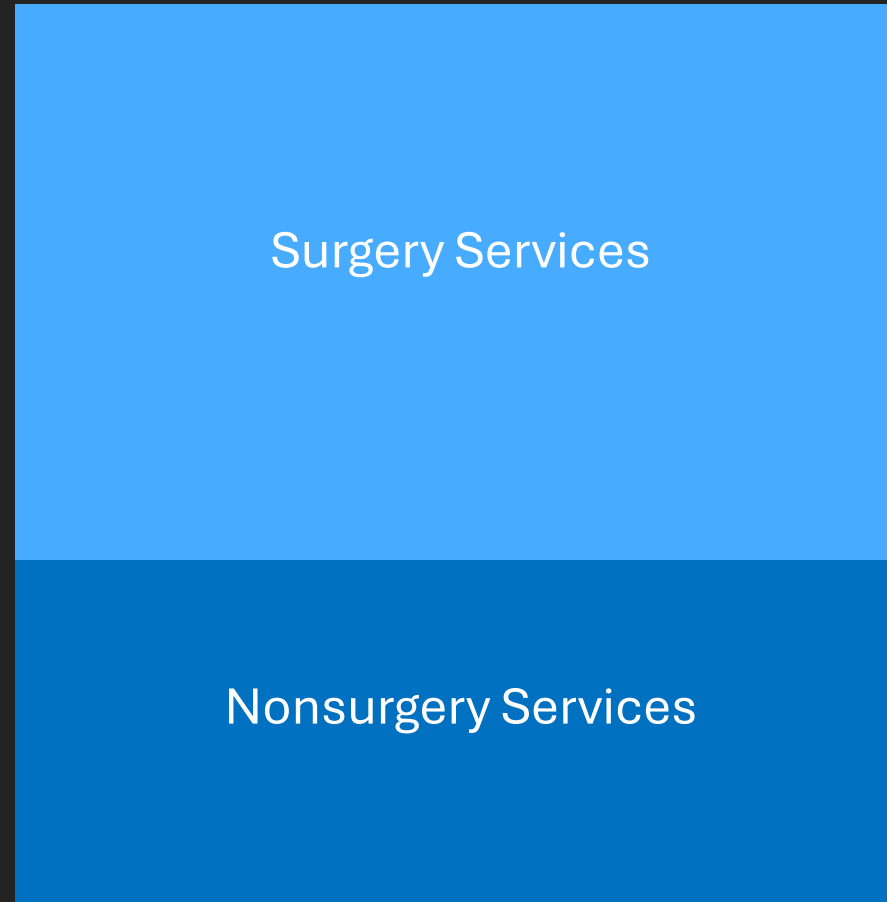
35%



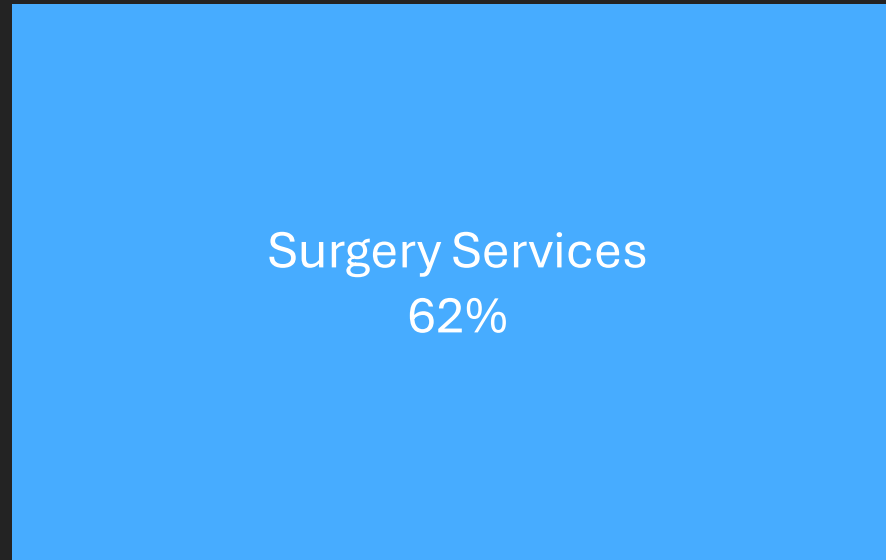
MAJOR SURGERY EPISODE UTILIZATION



Average Utilization per Surgery Claim in 2022*

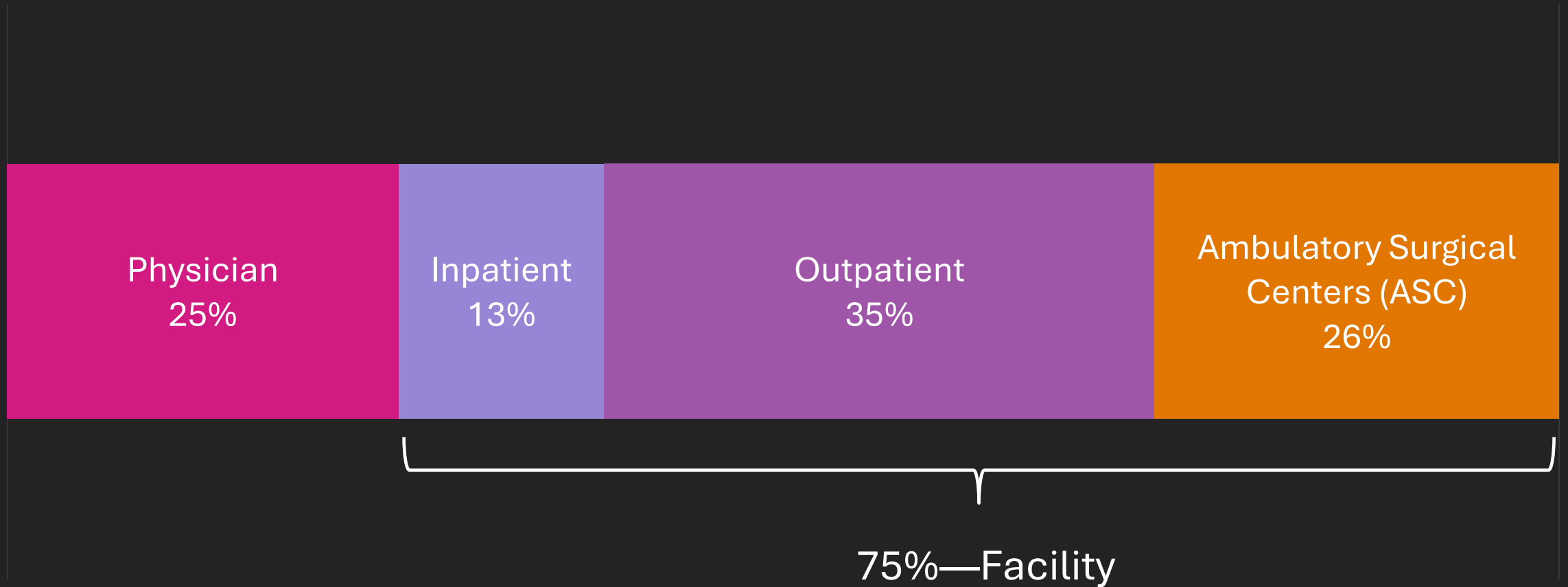


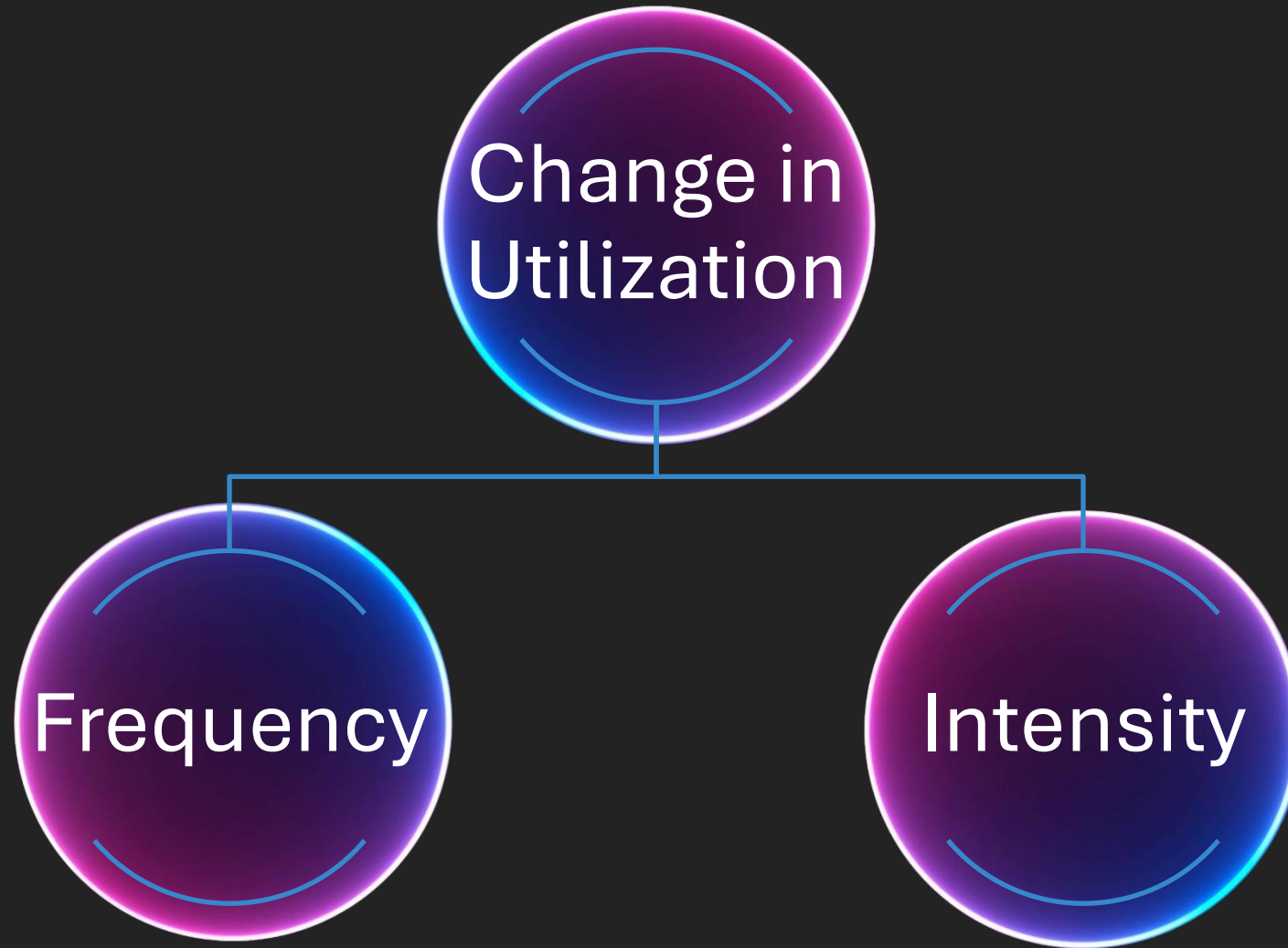
Average Utilization per Surgery Claim in 2022*



Surgery Services in Surgery Claims

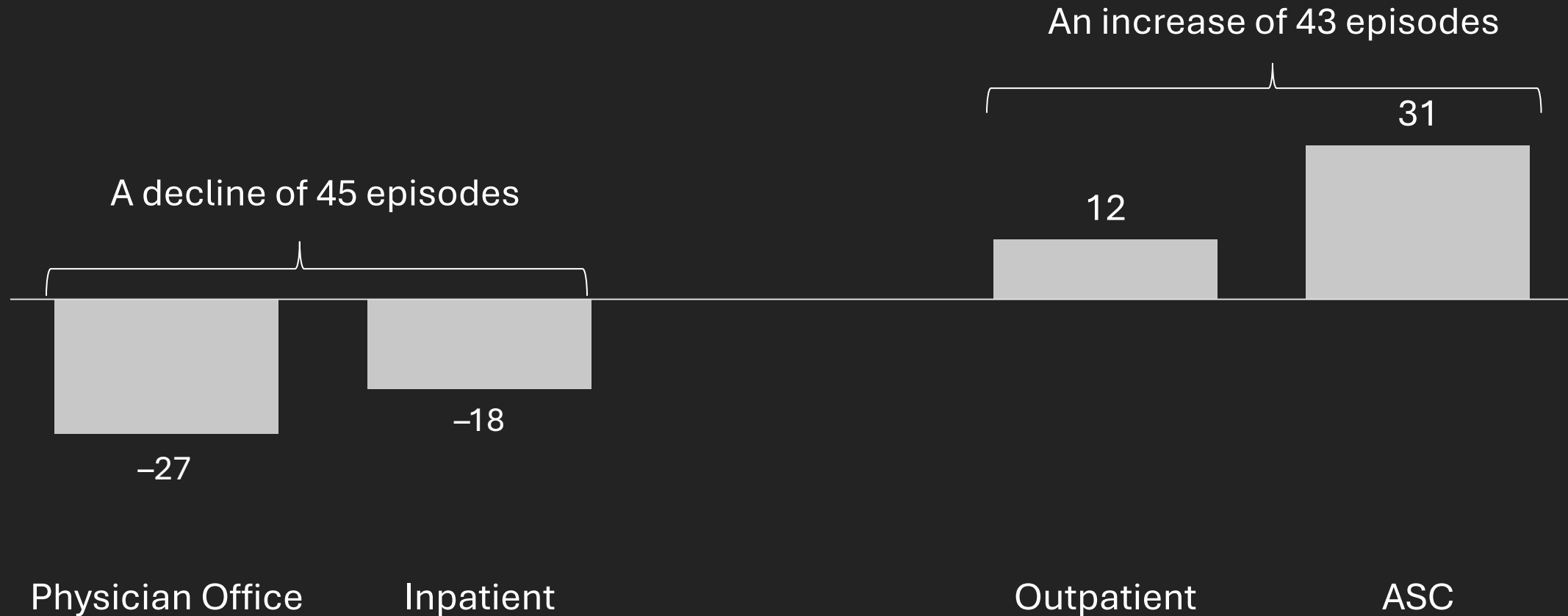
Utilization Shares in 2022*





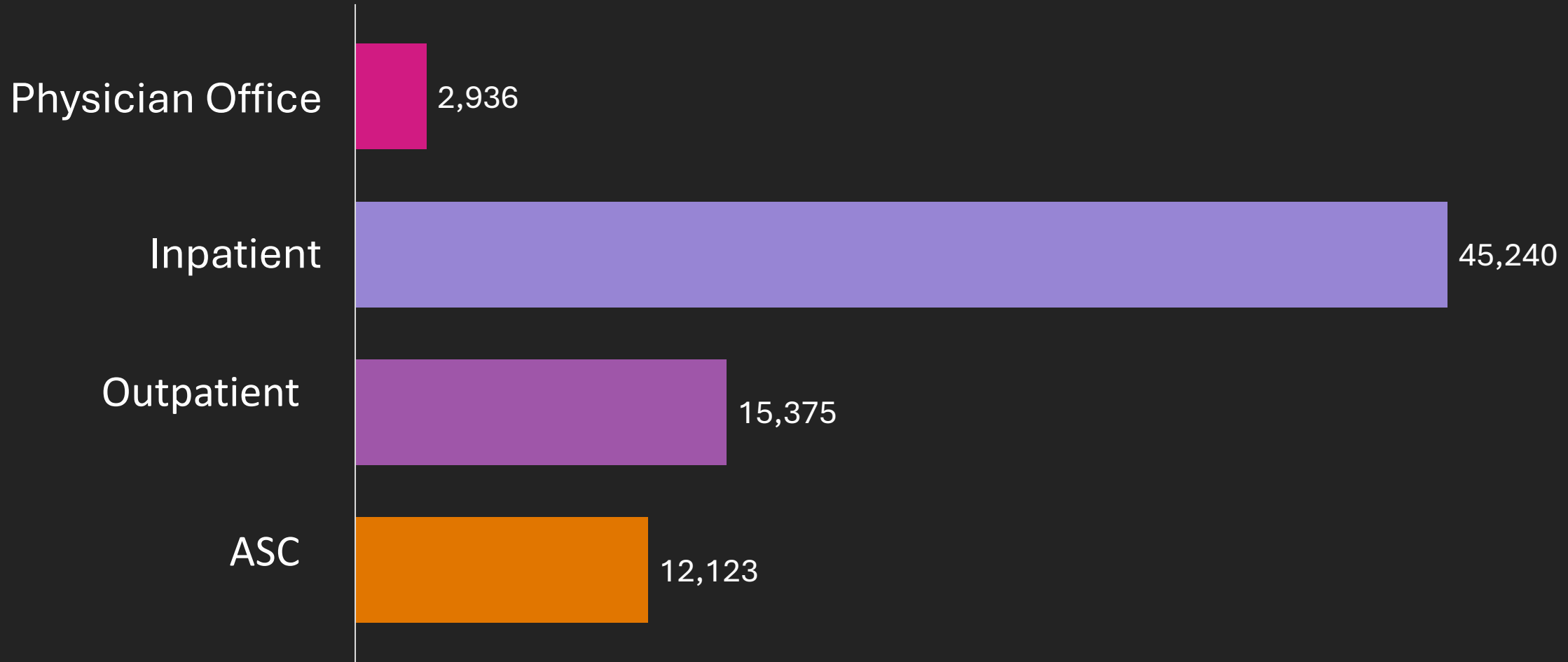
Fewer Physician Office and Inpatient Episodes, but More Outpatient/ASC Episodes

Change in the Number of Episodes per 1,000 Surgery Claims From 2016 to 2022*



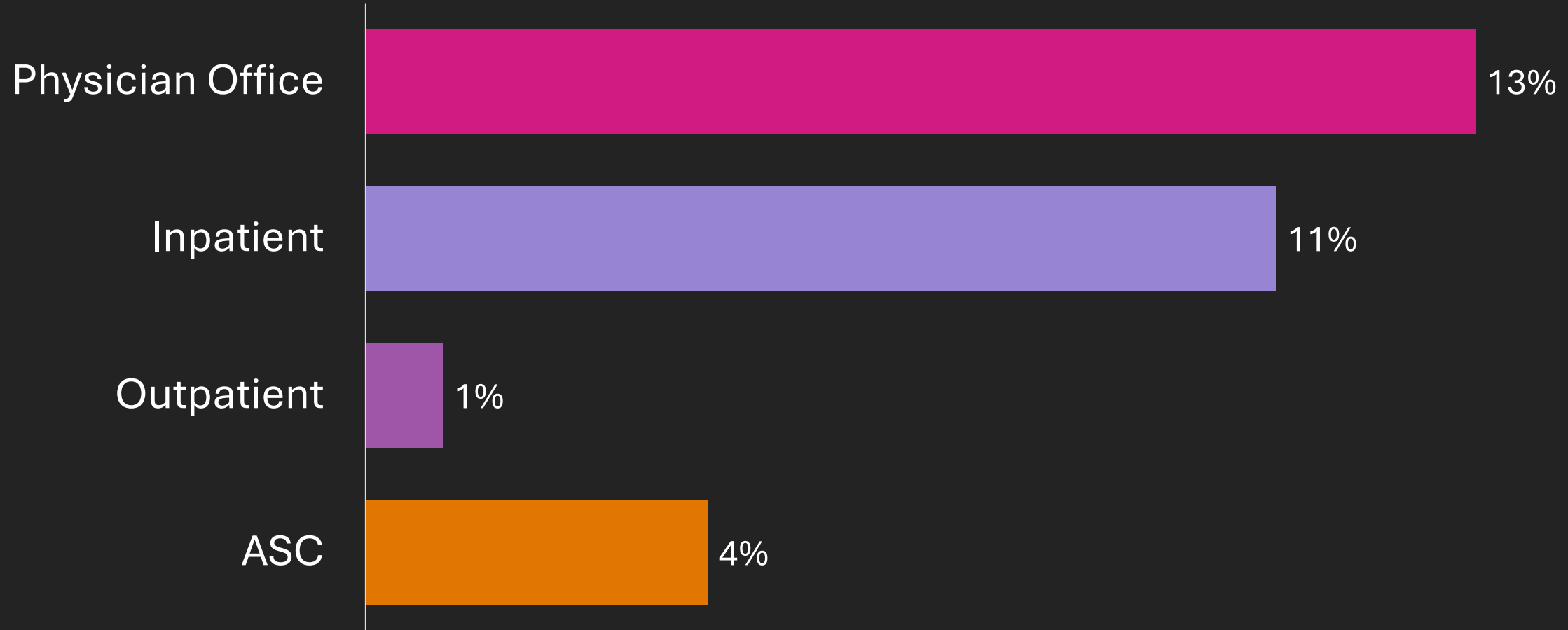
Inpatient Surgical Utilization Is 3x to 4x That of Outpatient/ASC

Average Utilization per Episode in 2022* by Medical Venue in Surgery Claims



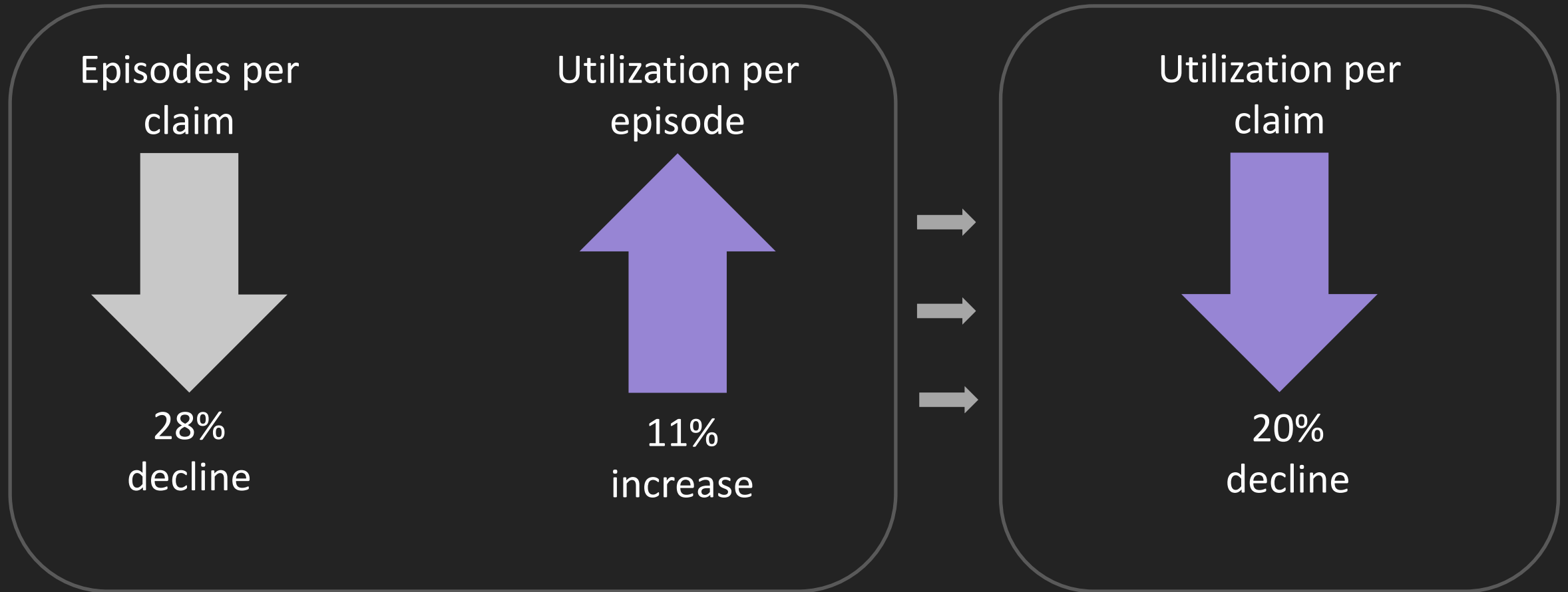
Inpatient Utilization Is Rising Faster Than Outpatient or ASC

Change in Utilization per Episode From 2016 to 2022*



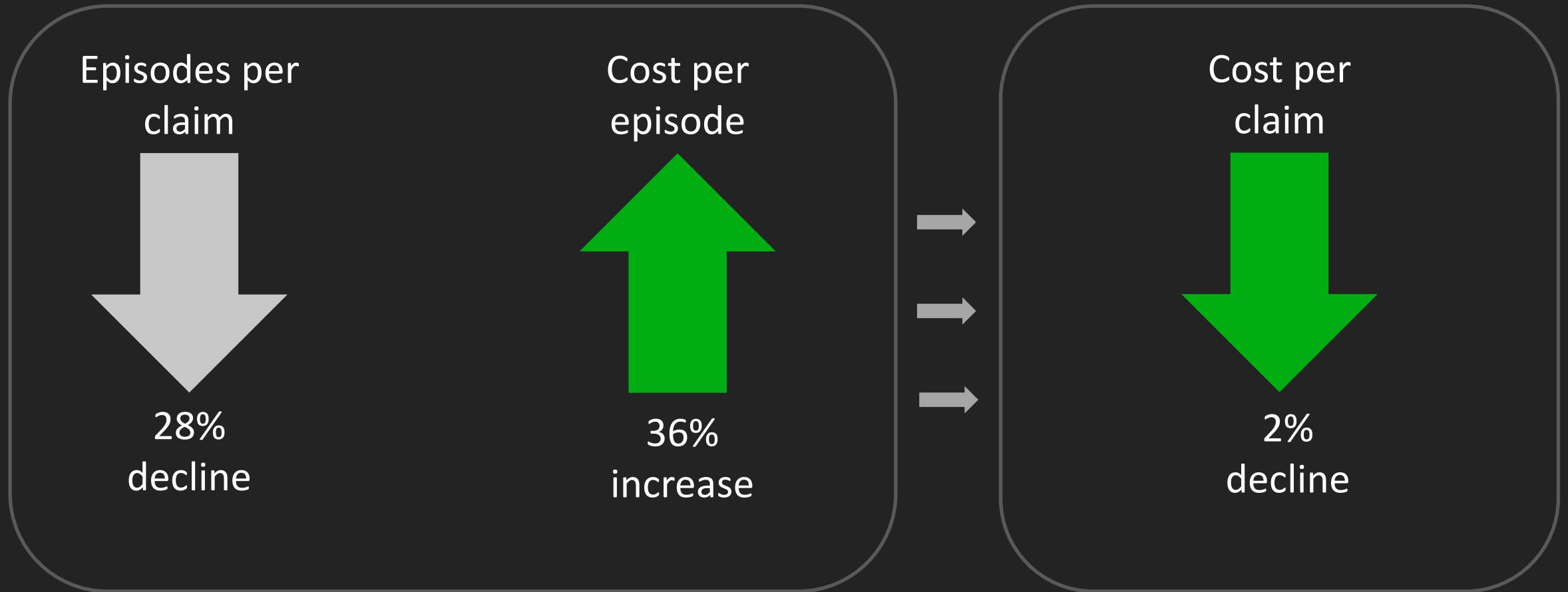
Inpatient Utilization Is Falling

2016 to 2022*



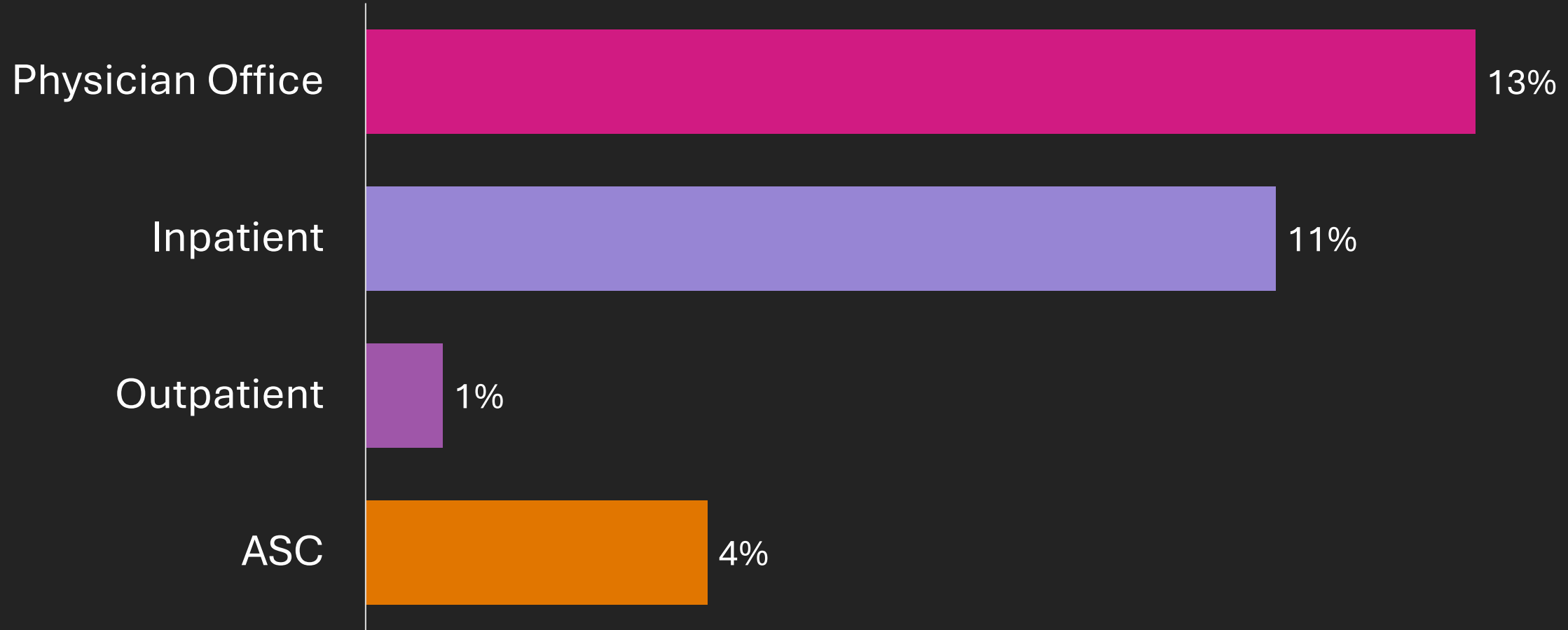
Inpatient **Cost** Is Slightly Declining

2016 to 2022*



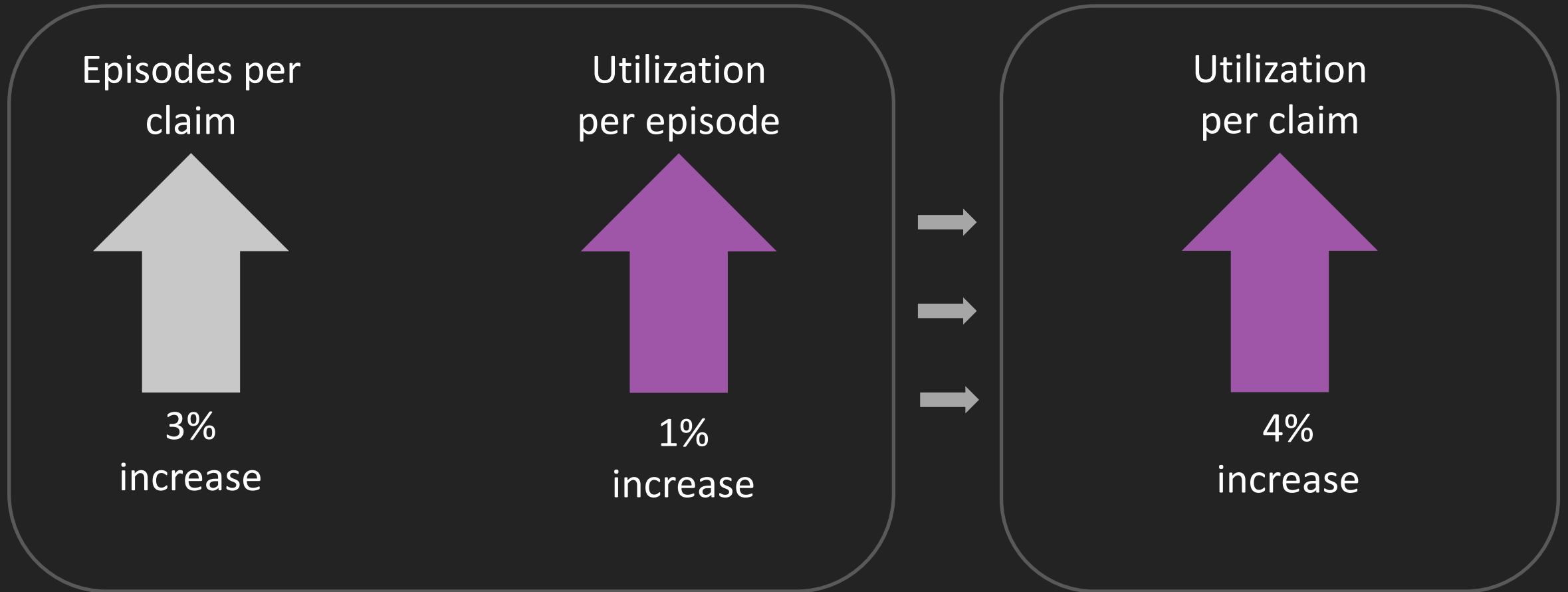
Inpatient Utilization Is Rising Faster Than Outpatient or ASC

Change in Utilization per Episode From 2016 to 2022*



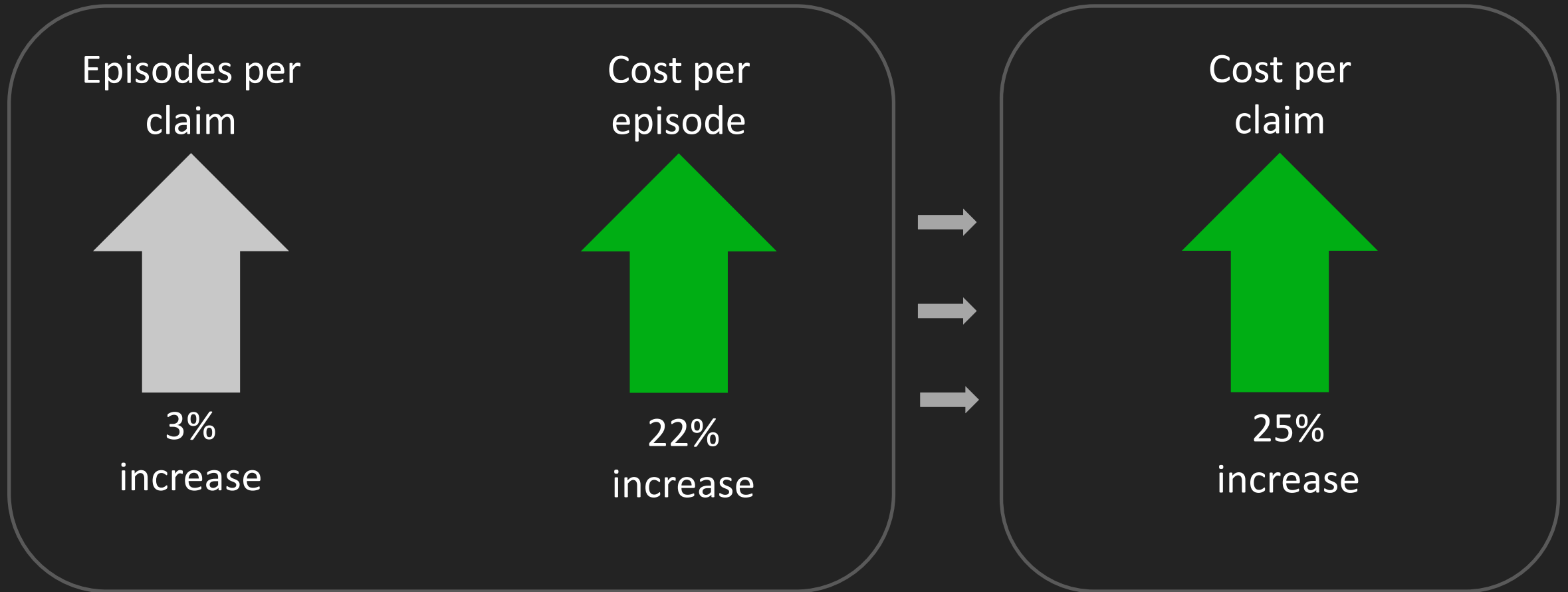
Outpatient Utilization Slightly Increased

2016 to 2022*



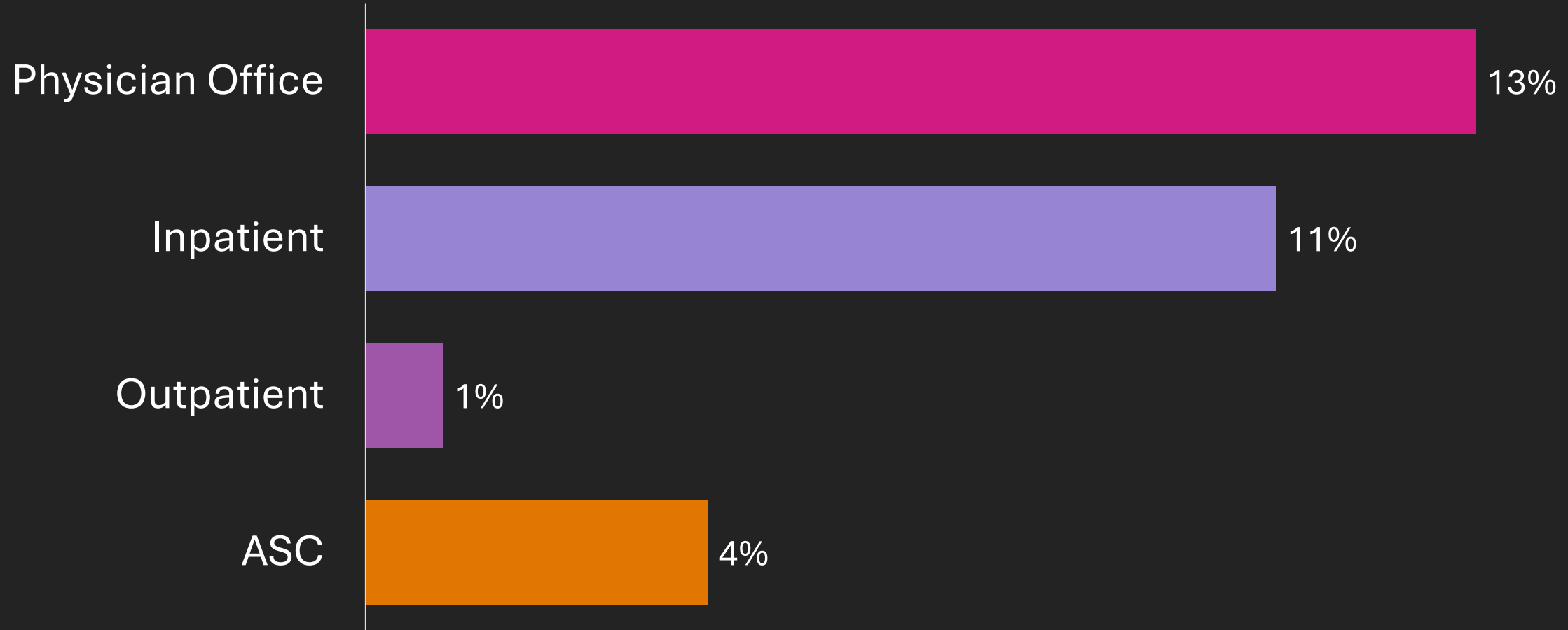
Outpatient **Cost** Is Rising

2016 to 2022*



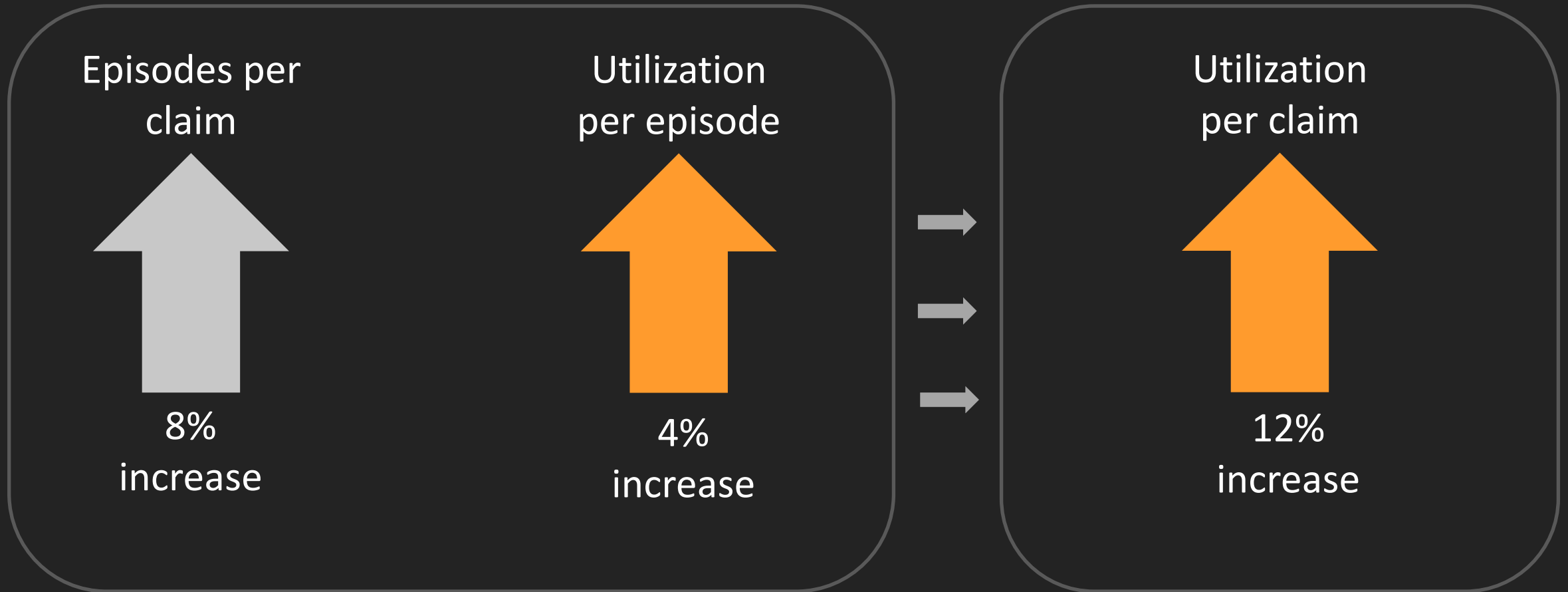
Inpatient Utilization Is Rising Faster Than Outpatient or ASC

Change in Utilization per Episode From 2016 to 2022*



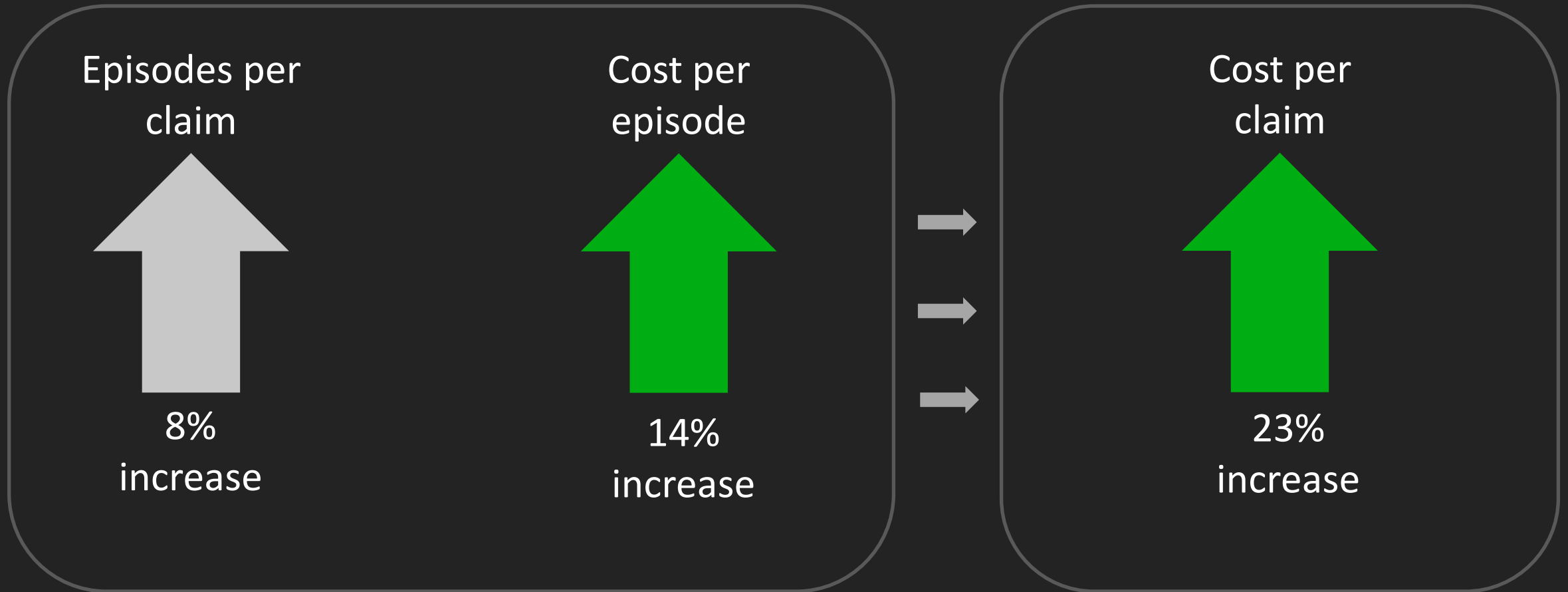
ASC Utilization Increased More

2016 to 2022*



ASC **Cost** Is Rising

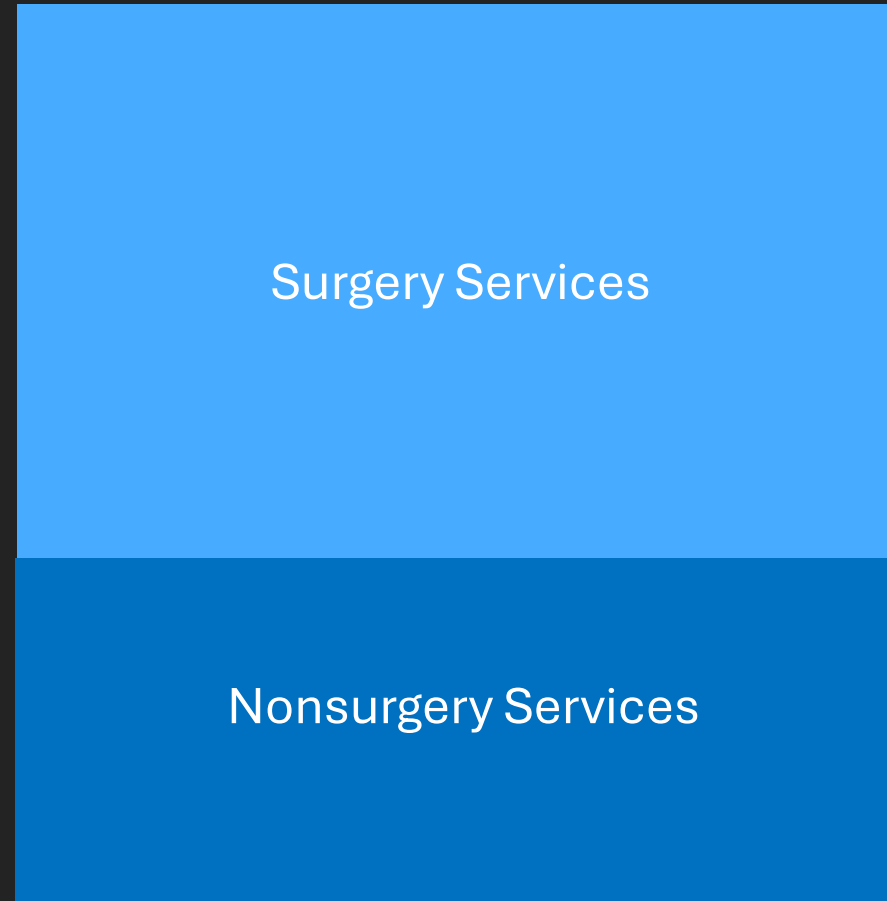
2016 to 2022*



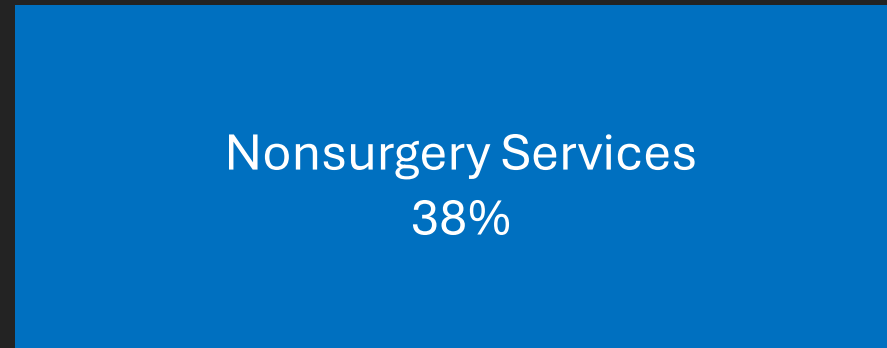
SURGERY CLAIMS: LOOKING BEYOND THE SURGERY EPISODE



Average Utilization per Surgery Claim in 2022*

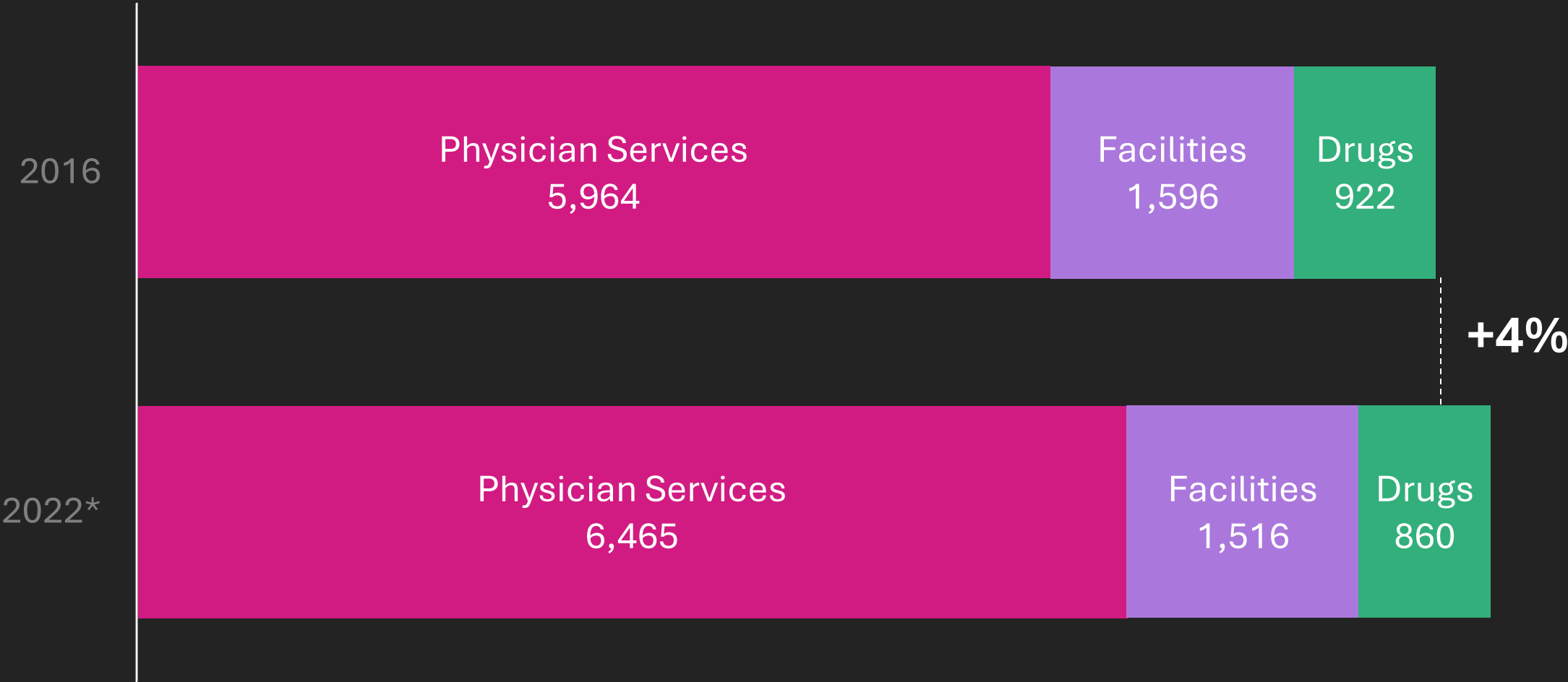


Average Utilization per Surgery Claim in 2022*



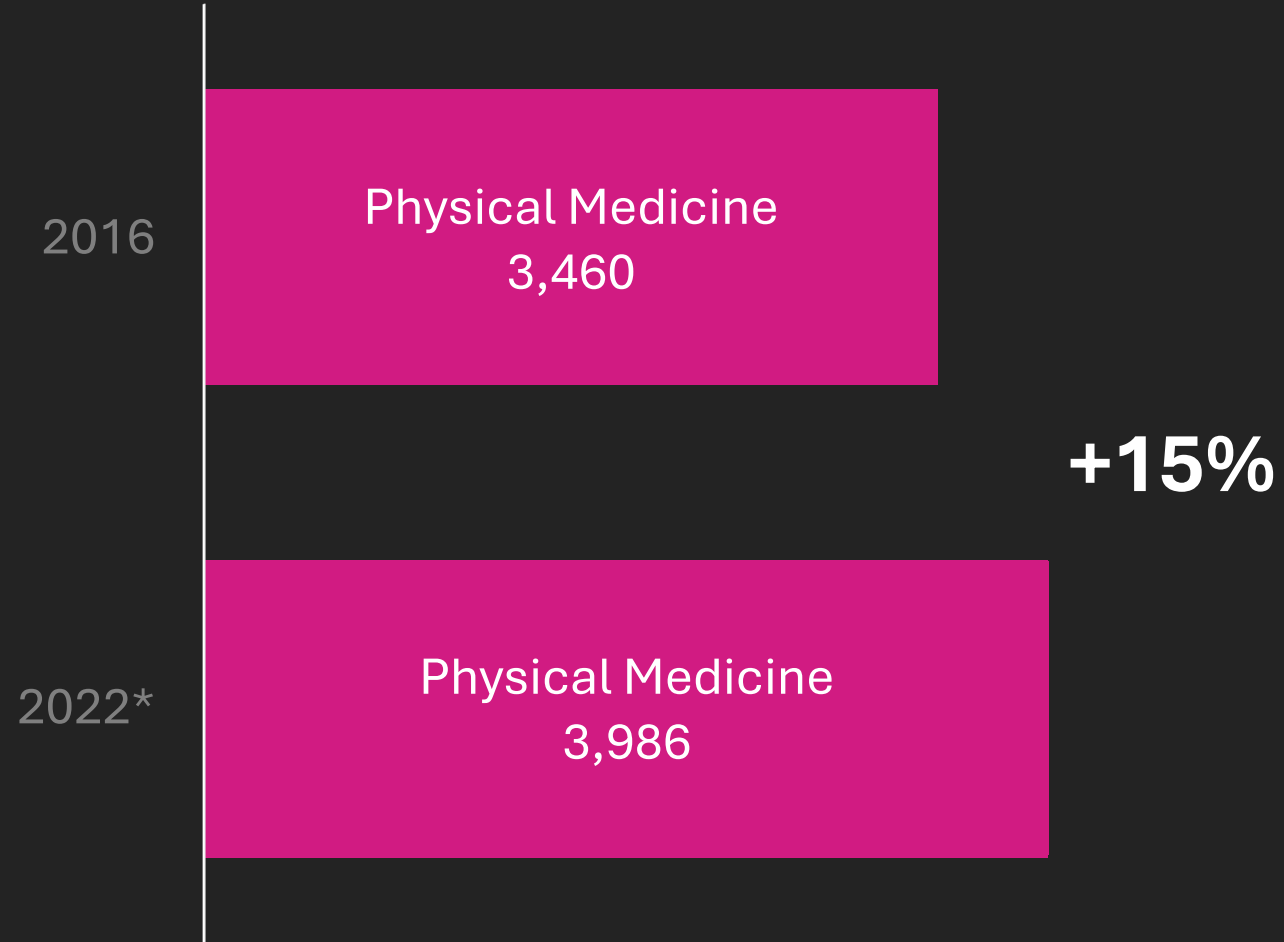
Nonsurgery Utilization Is Driven by **Physician Services**

Utilization of Nonsurgery Services per Surgery Claim



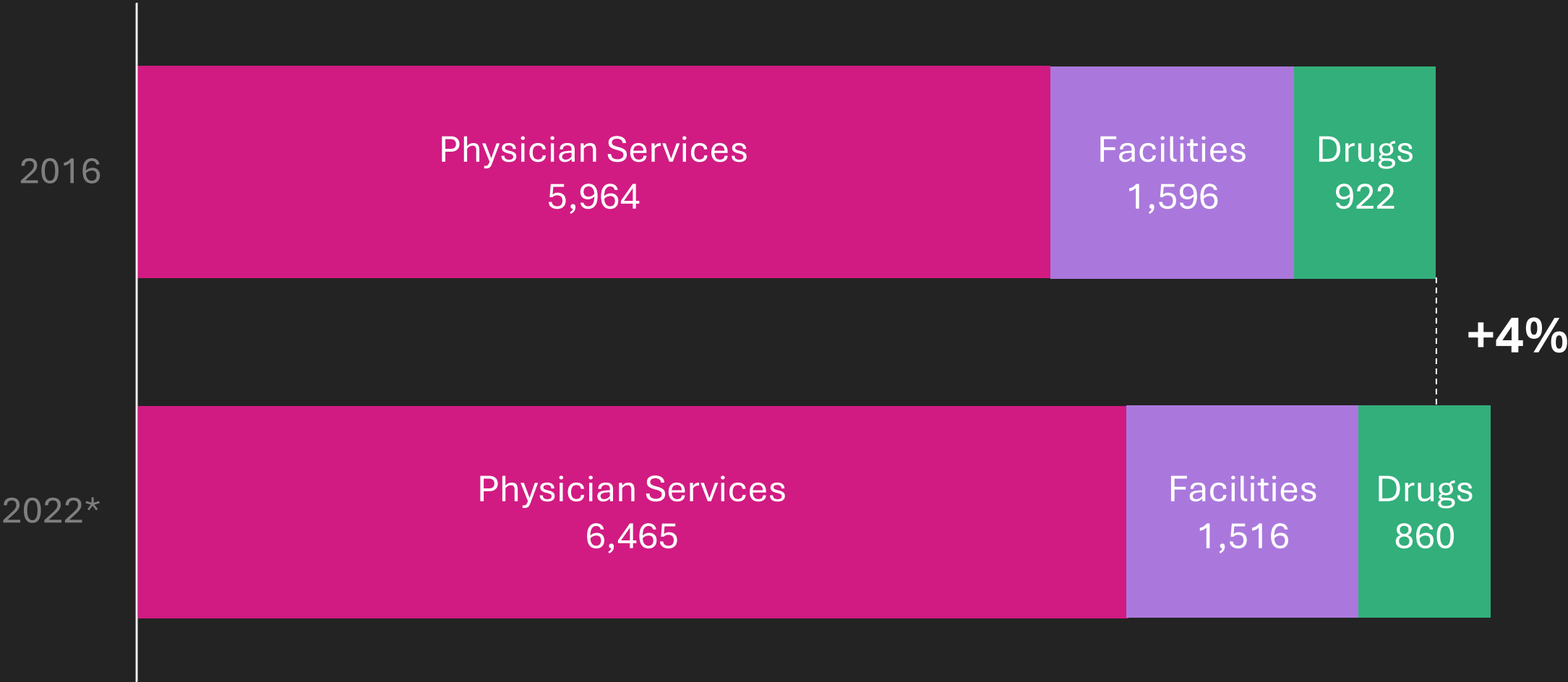
Physical Medicine Is Driving Physician Services

Physical Medicine Utilization per Surgery Claim



Nonsurgery Utilization Is Driven by **Physician Services**

Utilization of Nonsurgery Services per Surgery Claim



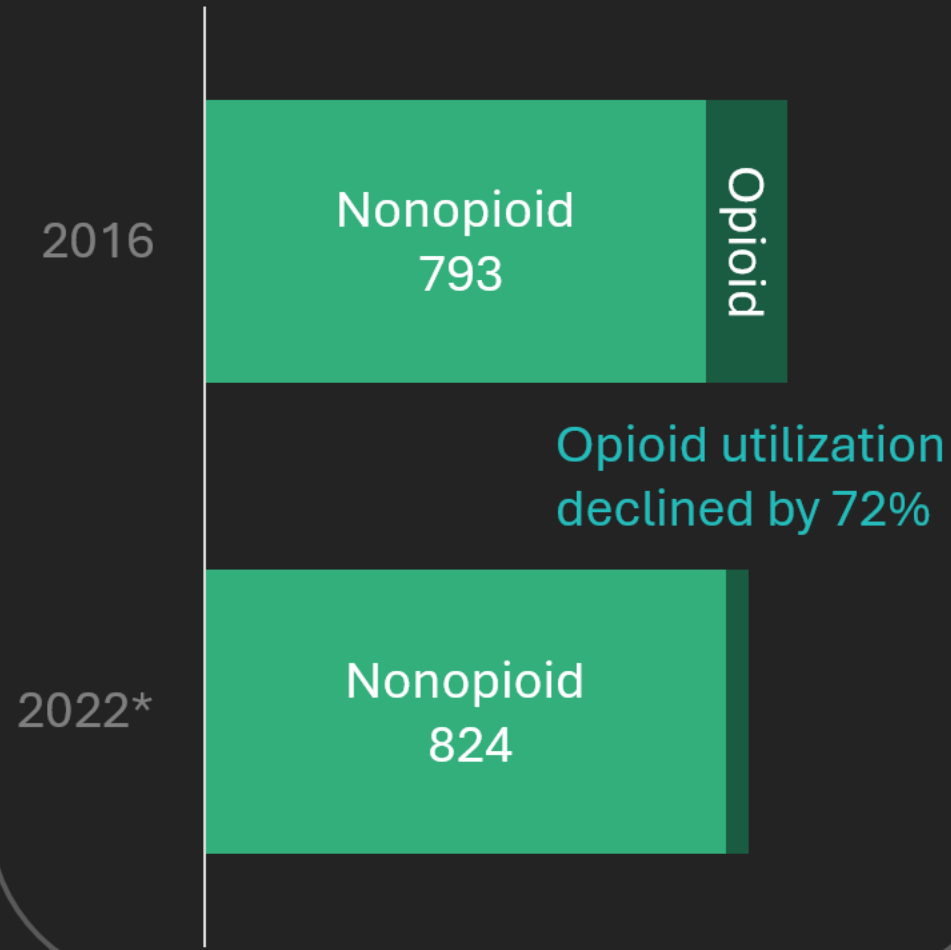
Drug Utilization Is Down by 7%

Utilization of Drugs per Surgery Claim

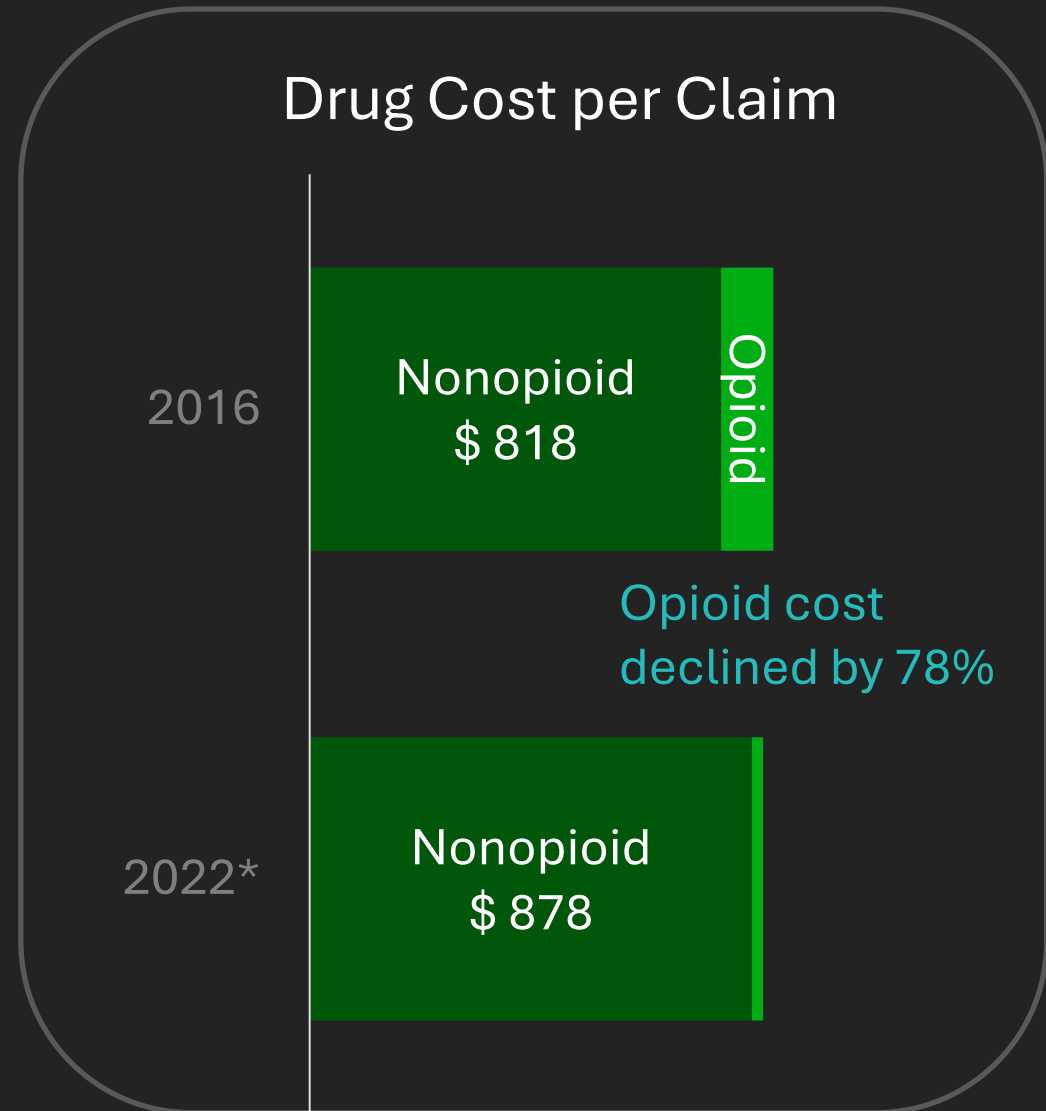


Opioids Are Down, Nonopioids Are Up for Surgery Claims

Drug Utilization per Claim



Opioids Are Down, Nonopioids Are Up for Surgery Claims



Injured Workers Undergoing Major Surgery

Surgery

1 in 8 claims,
but 2/3 of
utilization and
cost

Venue

Fewer
surgeries in
inpatient and
more in ASCs

Post-Surgery

Physical
medicine
drives
increased
utilization

Drugs

Decline in
opioids
reduces drug
utilization

CLAIMS WITH NO MAJOR SURGERY

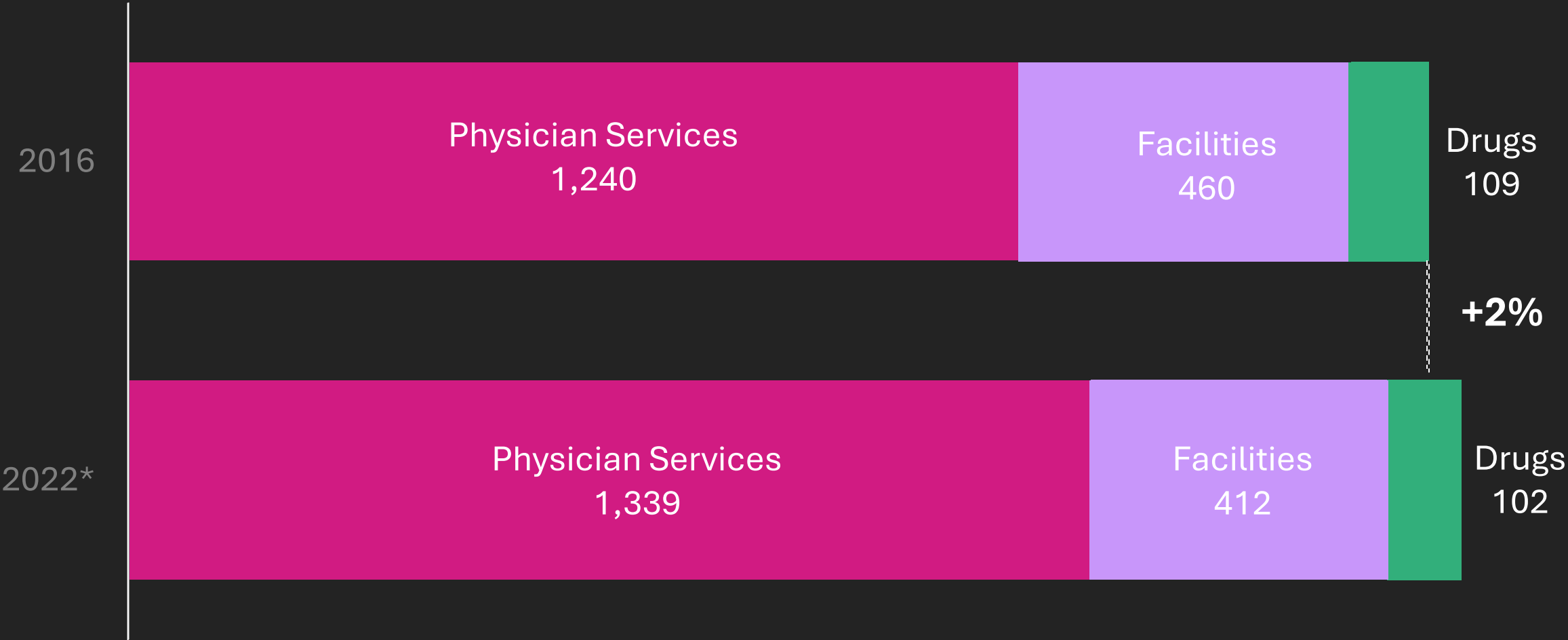


Most Injured Workers Have No Major Surgery



Utilization Is Almost Flat

Utilization in Claims With No Surgery



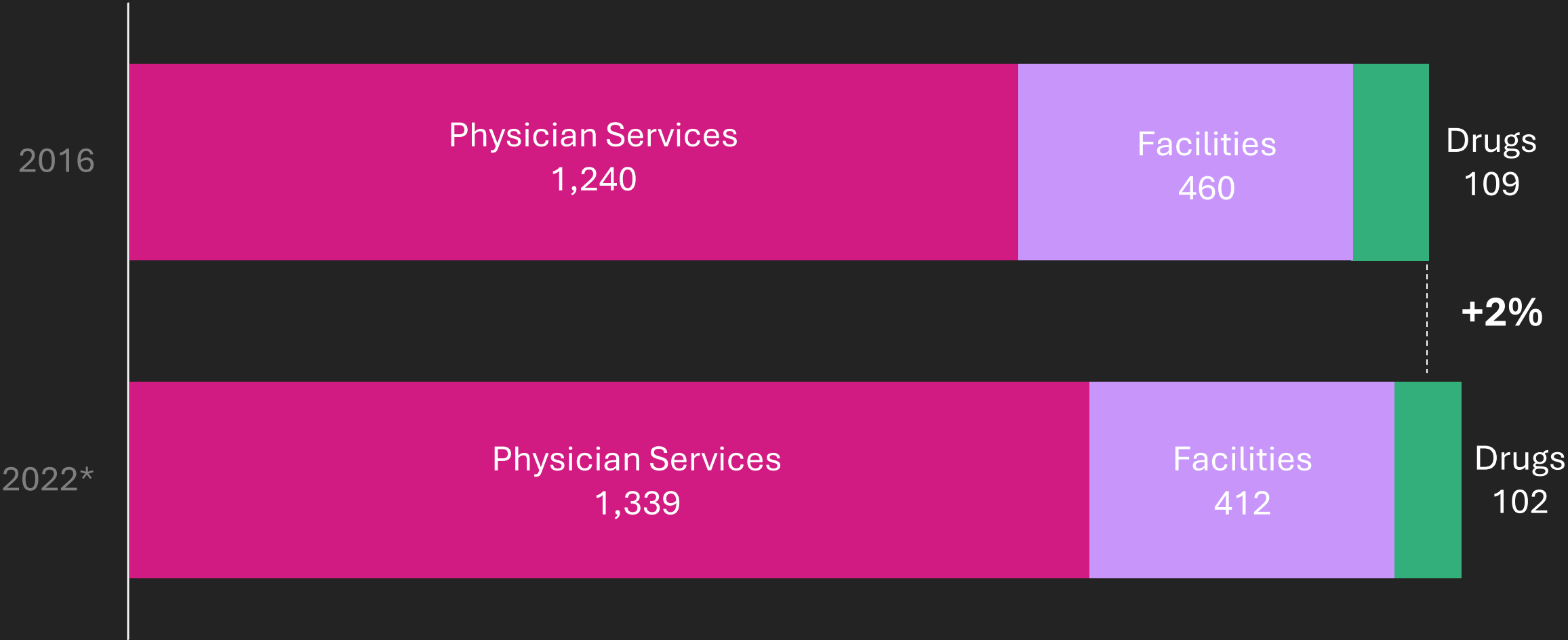
Emergency Room Utilization Is Falling

Physician and Facility



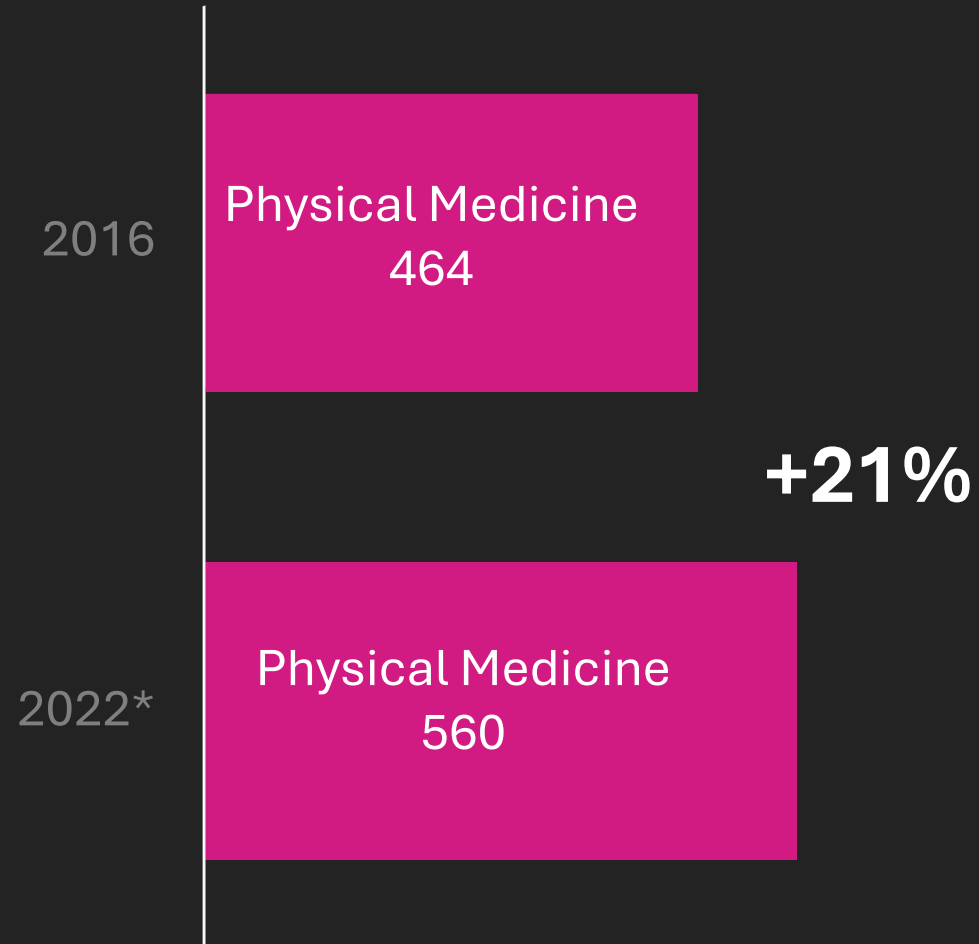
Utilization Is Almost Flat

Utilization in Claims With No Surgery



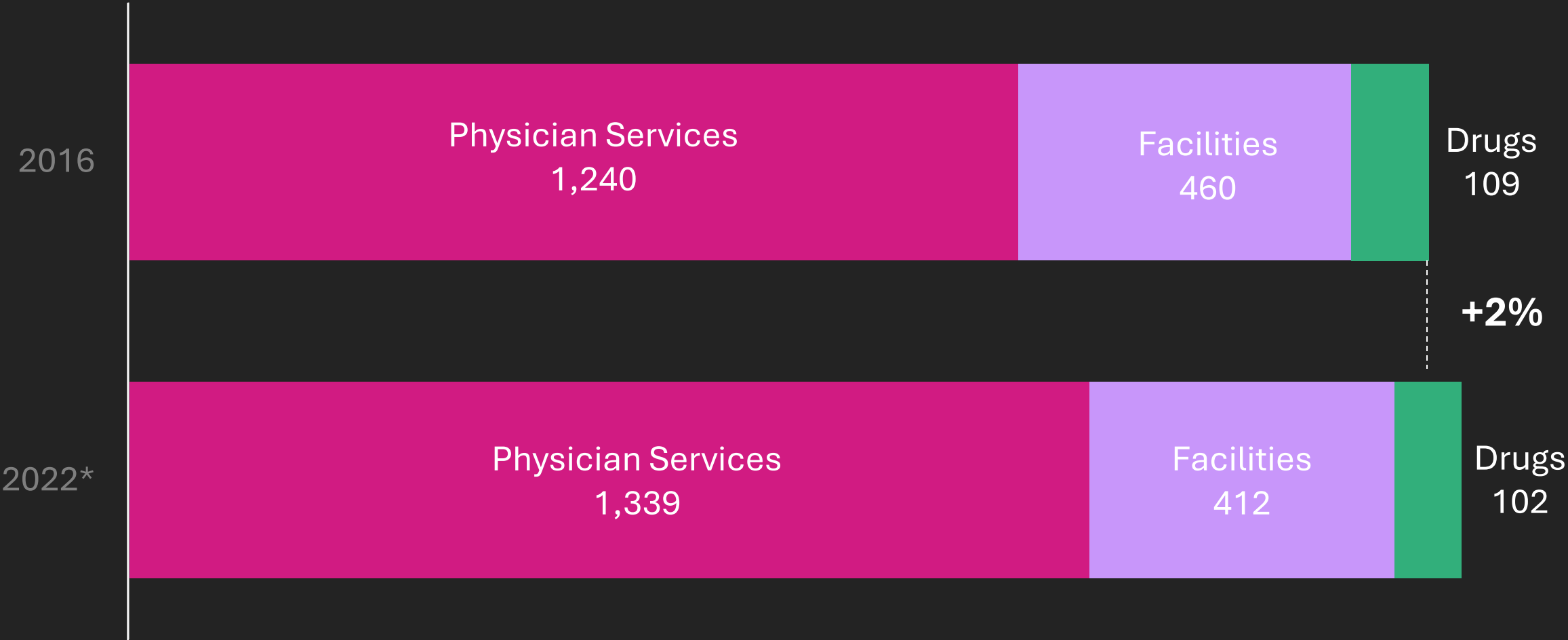
Physical Medicine Utilization Is Going Up

Utilization in Claims With No Surgery



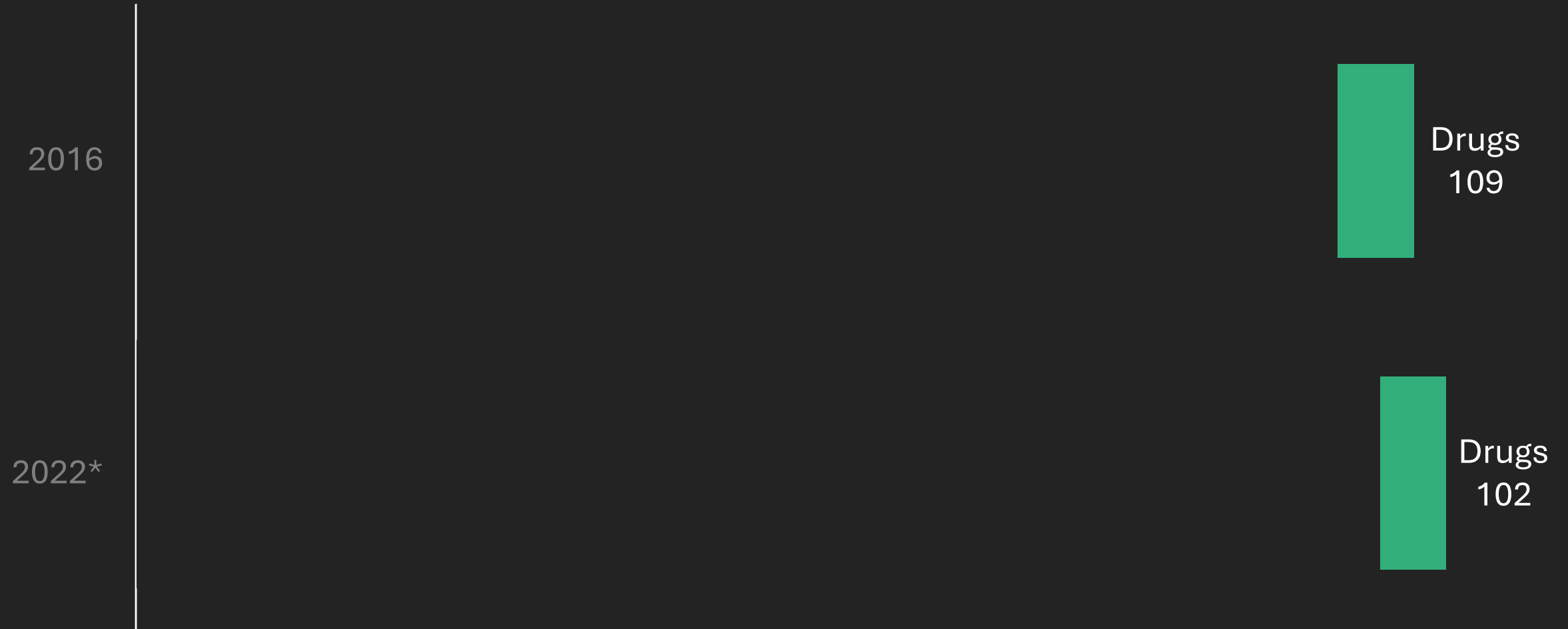
Utilization Is Almost Flat

Utilization in Claims With No Surgery

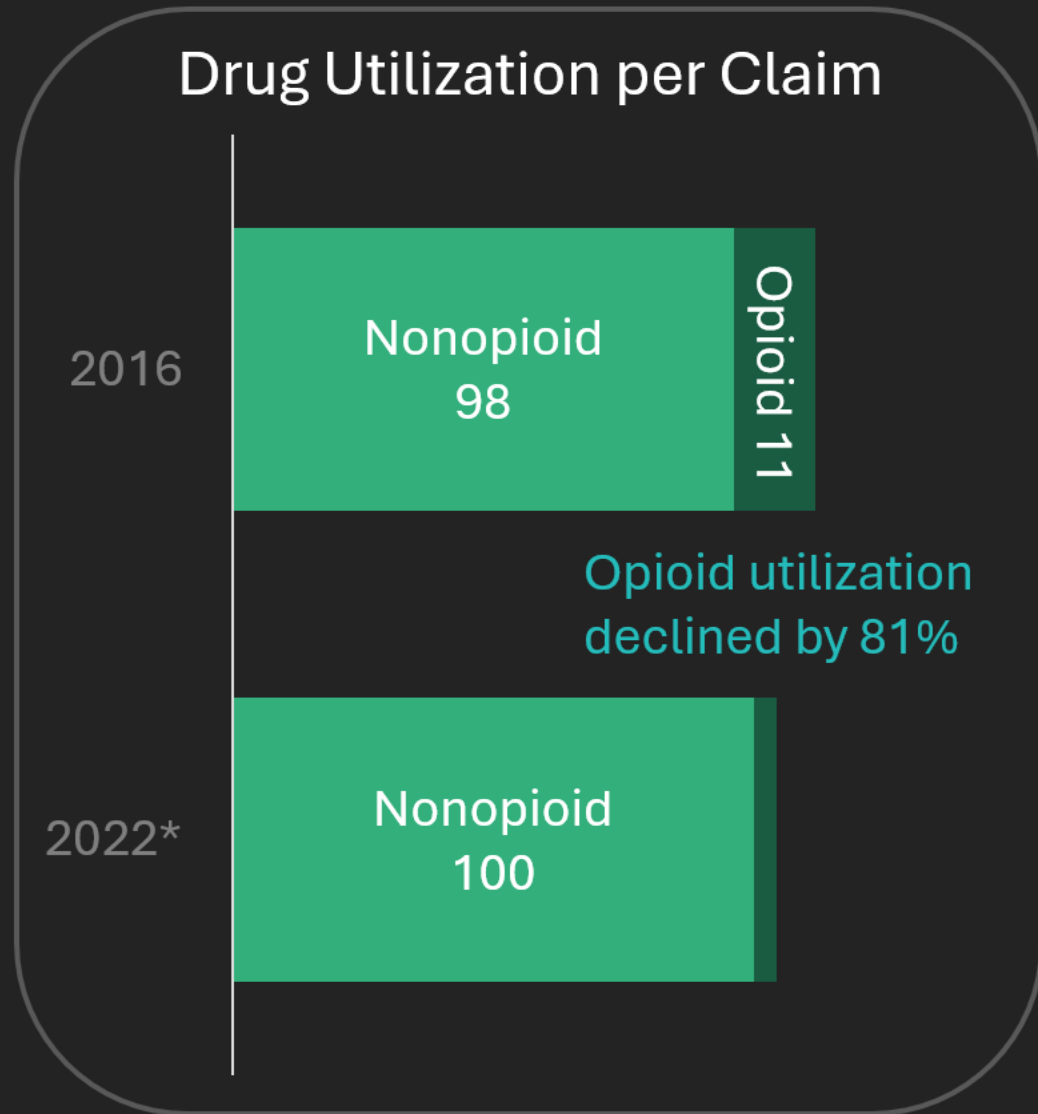


Drug Utilization Is Down by 7%

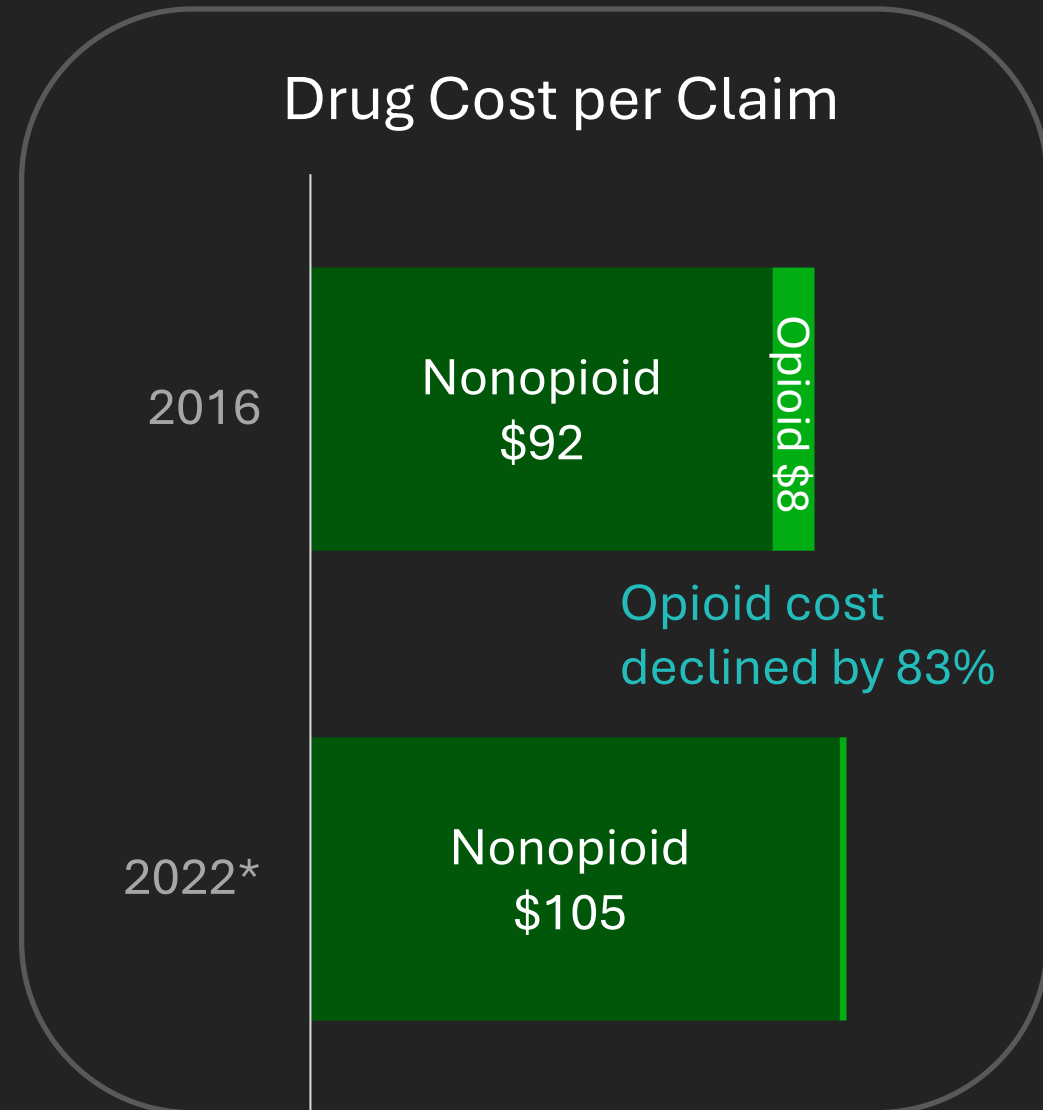
Utilization in Claims With No Surgery



Opioids Are Down, Nonopioids Are Up for Nonsurgery Claims



Opioids Are Down, Nonopioids Are Up for Nonsurgery Claims





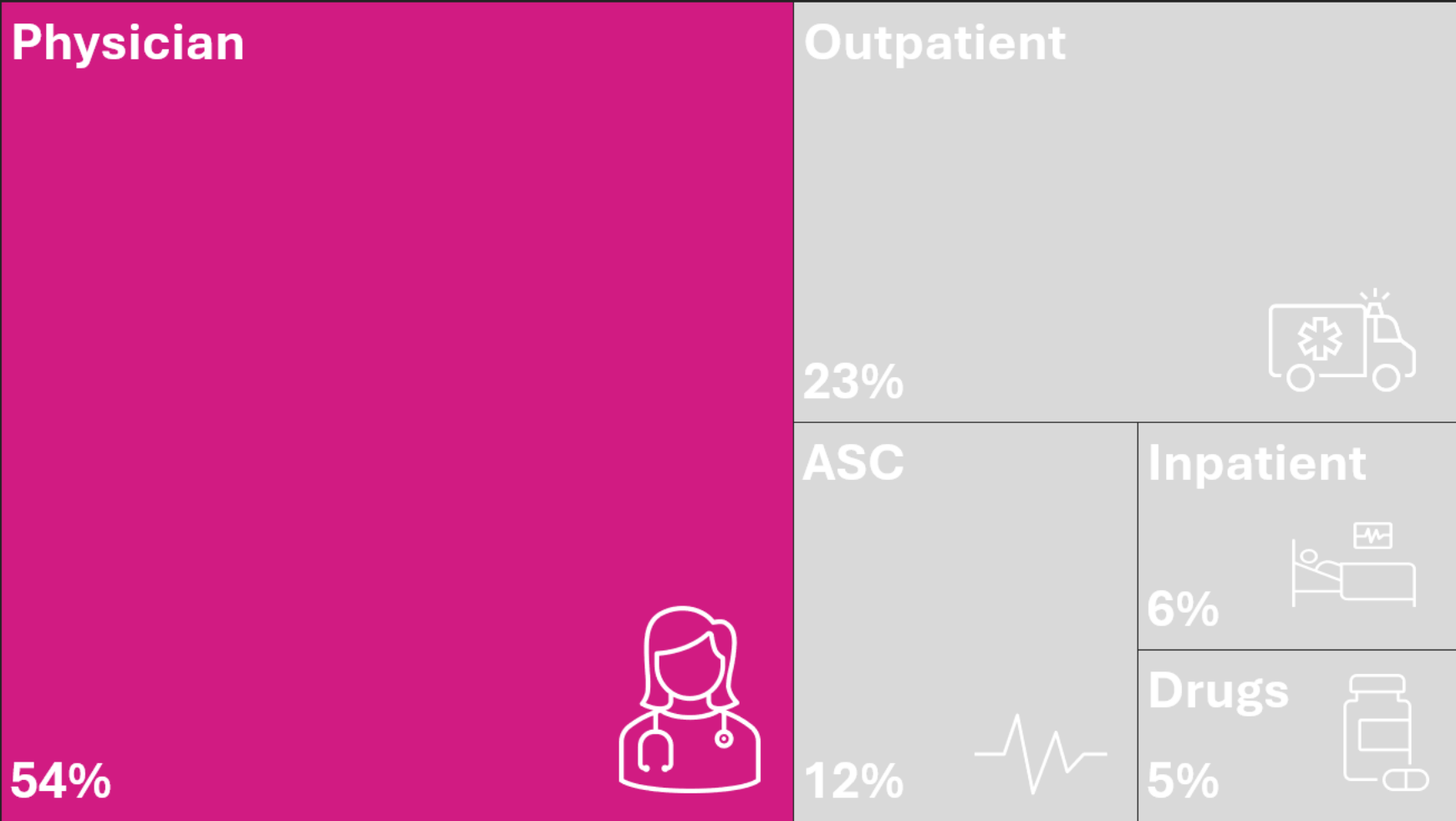
Utilization

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UTILIZATION AND PRICE TRENDS

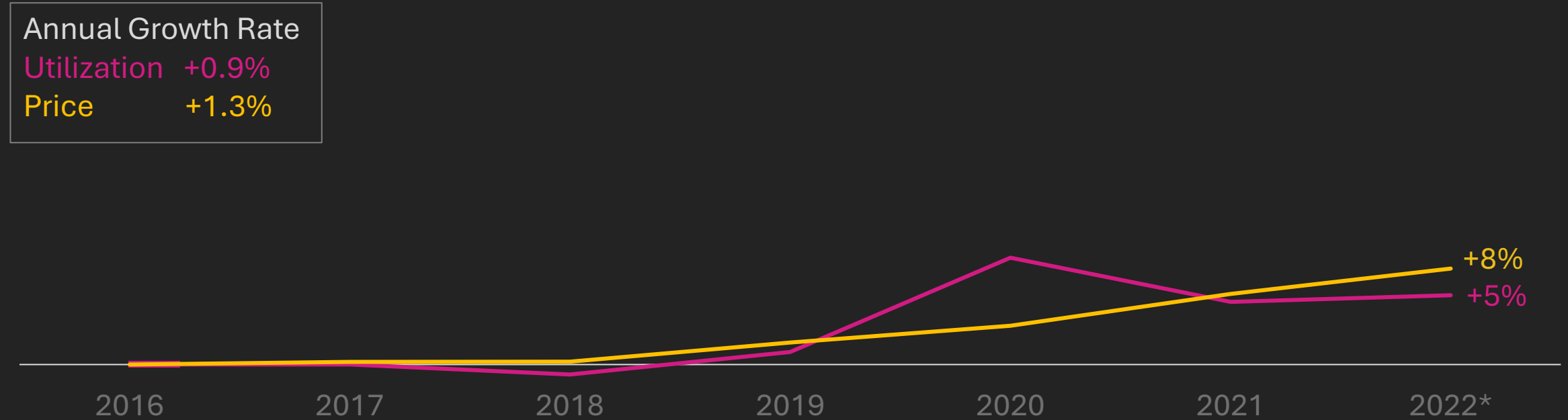


Physician Utilization and Price Trend

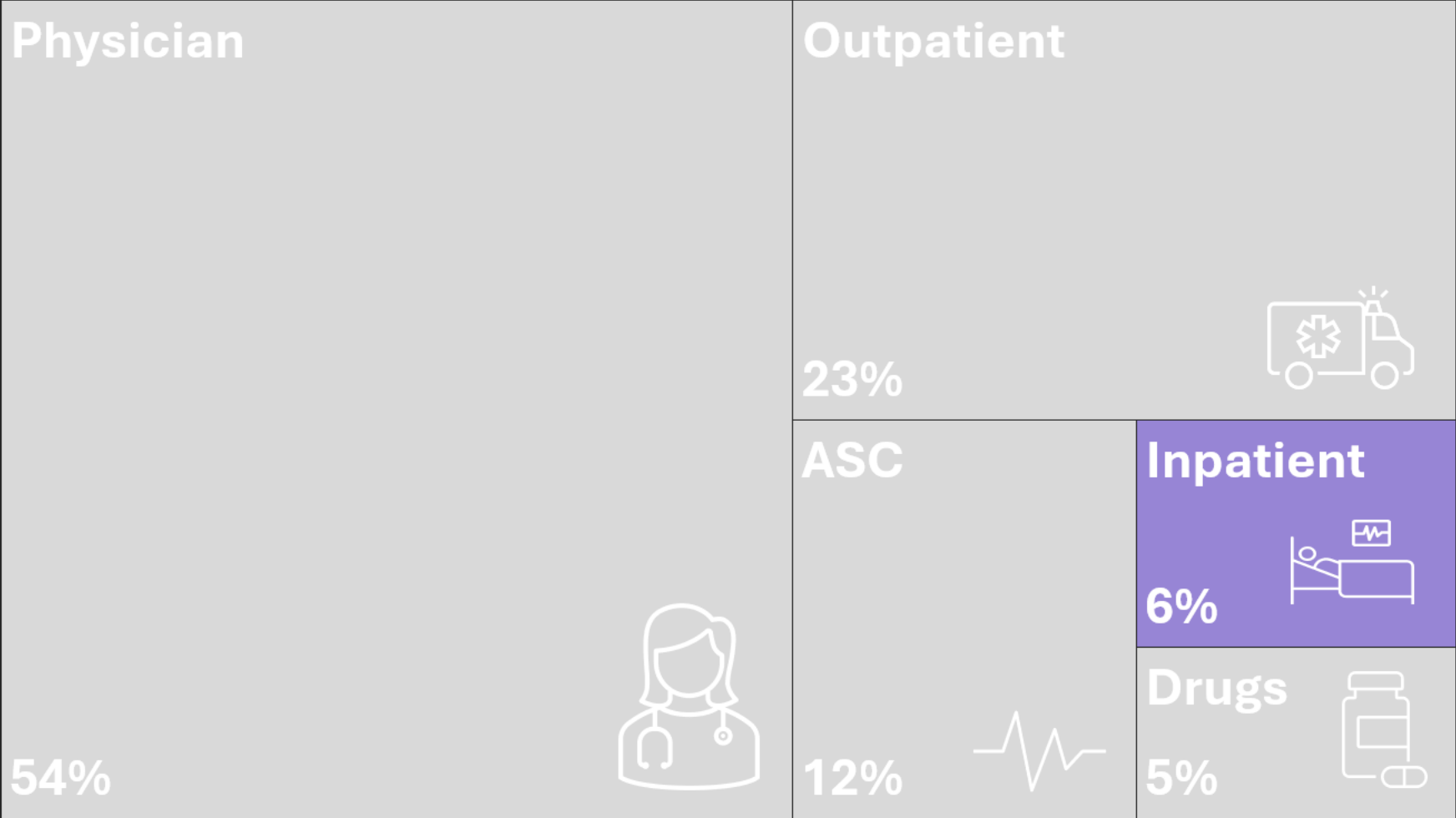


Physician

Cumulative Changes in **Utilization** and **Price** per Claim Since 2016



Inpatient Utilization and Price Trend



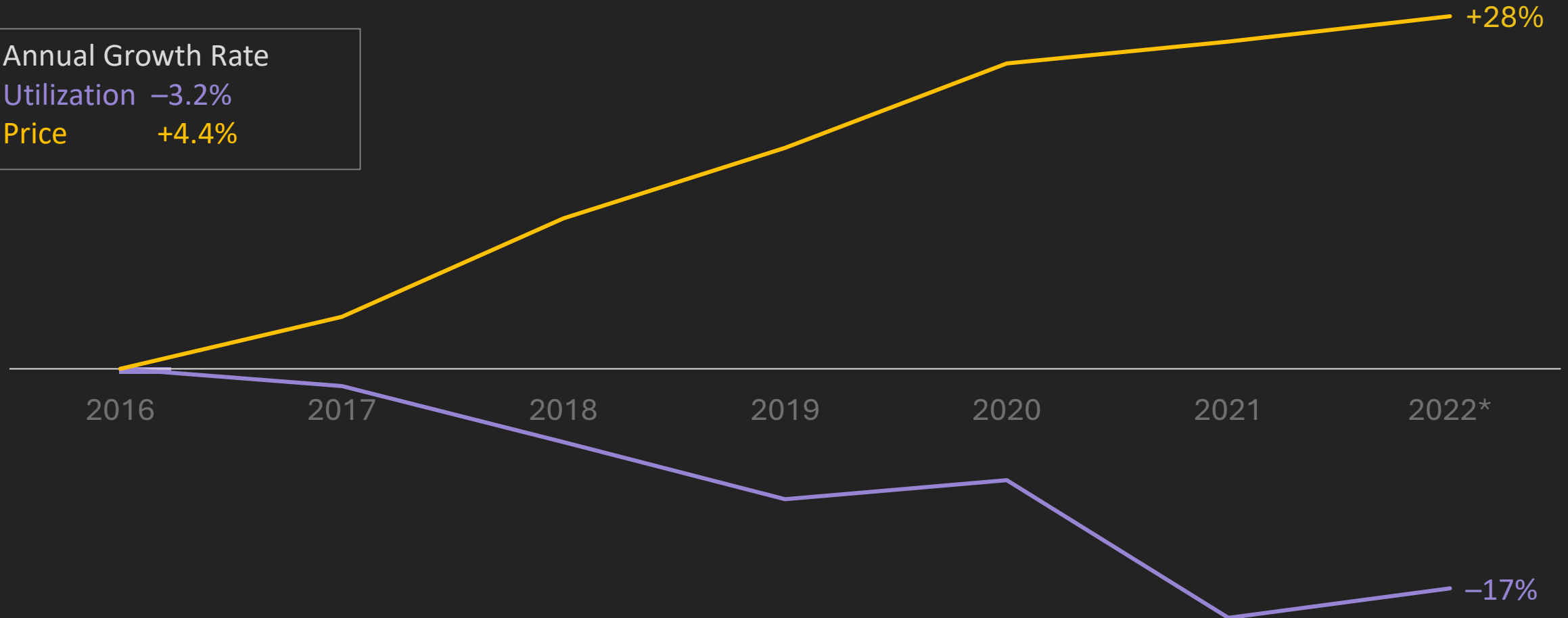
Inpatient

Cumulative Changes in **Utilization** and **Price** per Claim Since 2016

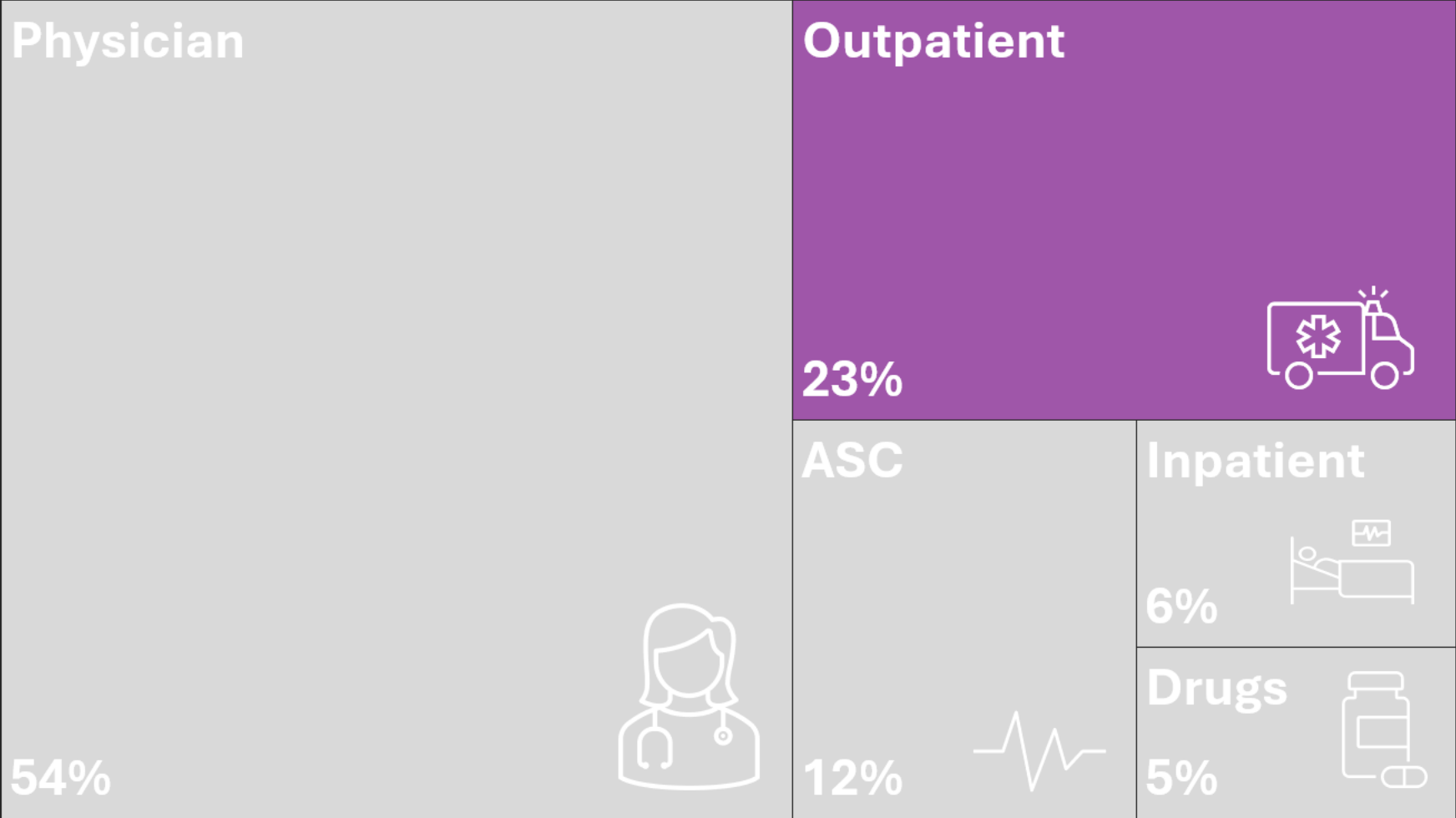
Annual Growth Rate

Utilization **-3.2%**

Price **+4.4%**

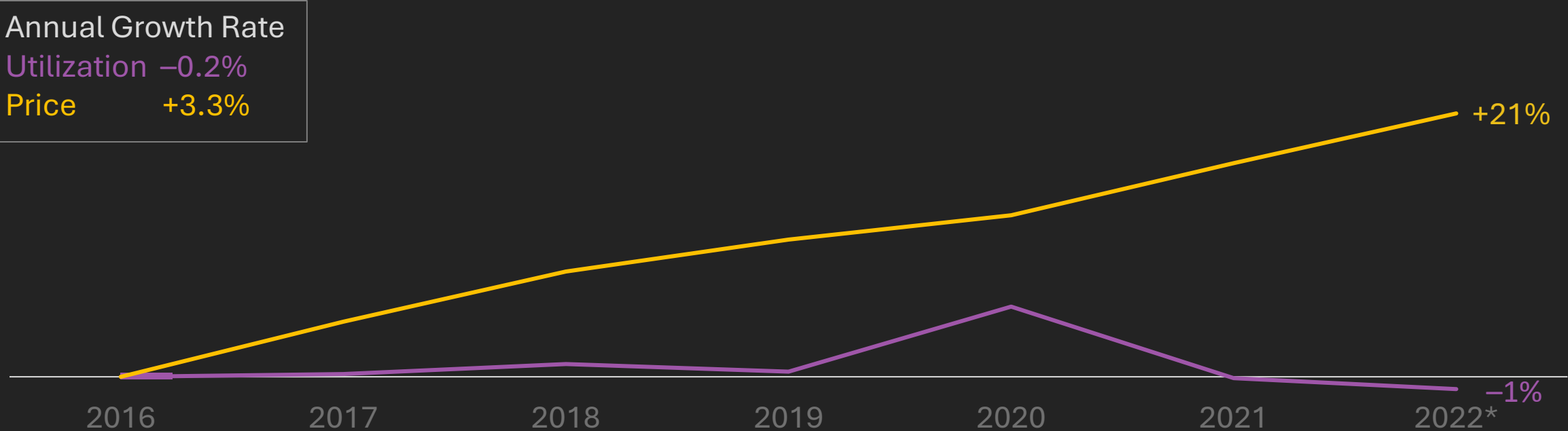


Outpatient Utilization and Price Trend

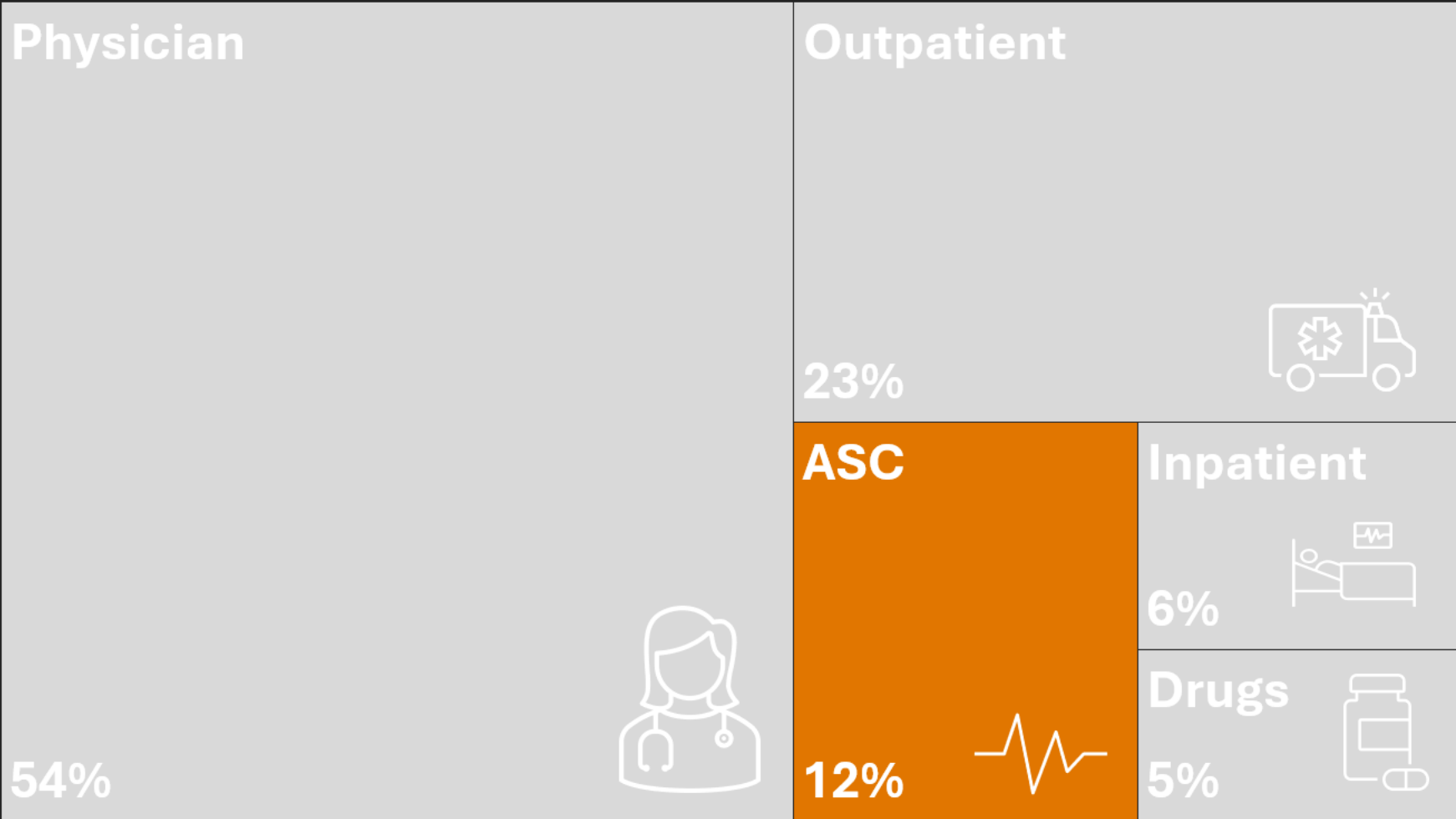


Outpatient

Cumulative Changes in **Utilization** and **Price** per Claim Since 2016

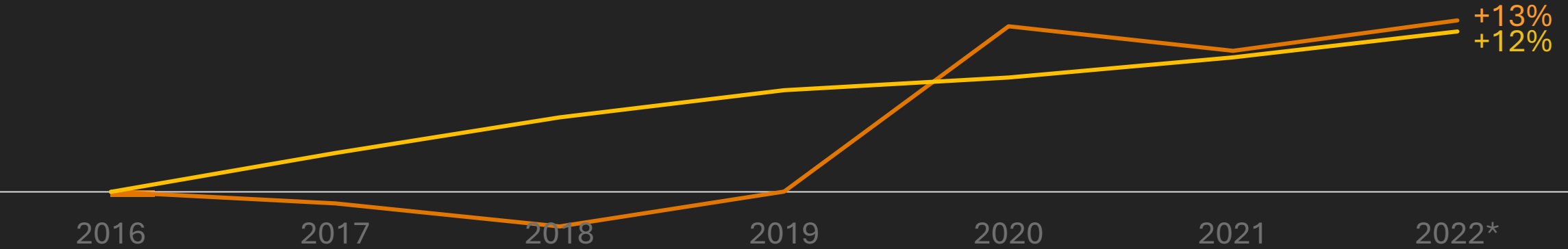


ASC Utilization and Price Trend

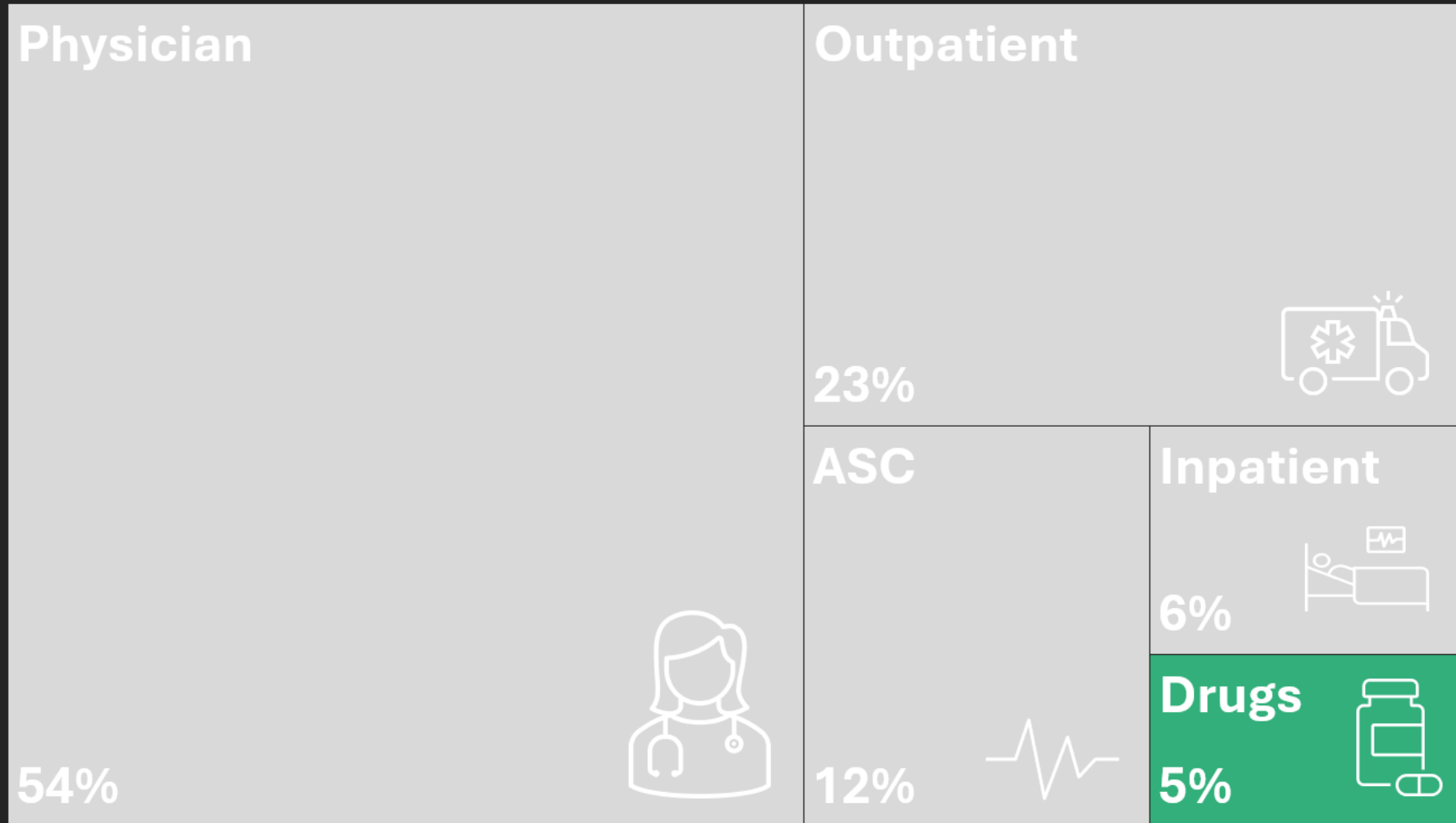


Cumulative Changes in Utilization and Price per Claim Since 2016

Annual Growth Rate
Utilization +2.2%
Price +2.1%



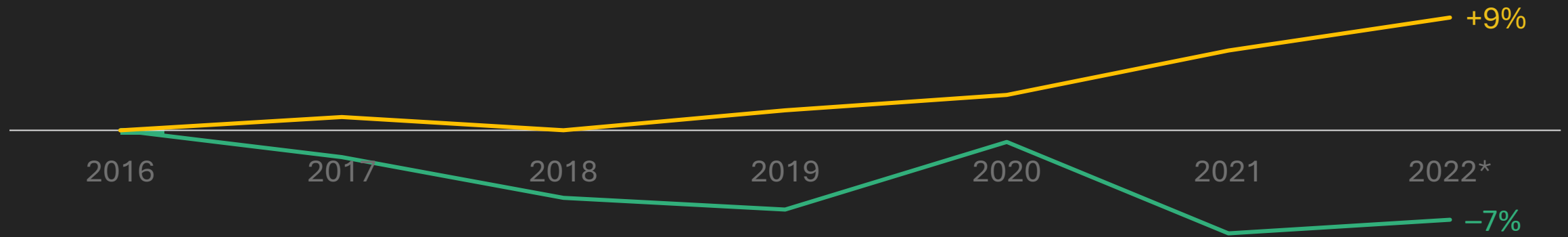
Drugs Utilization and Price Trend



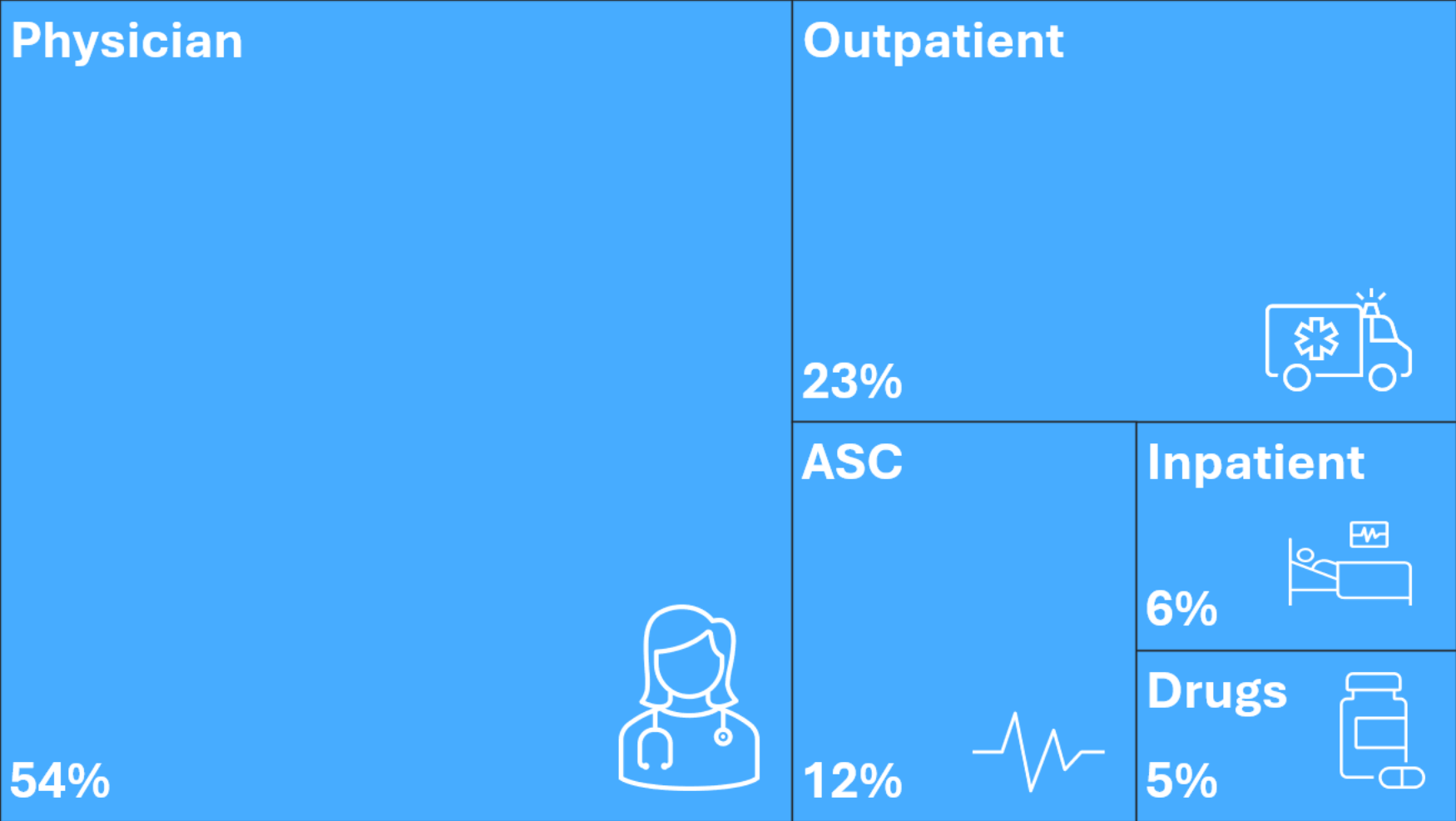
Drugs

Cumulative Changes in **Utilization** and **Price** per Claim Since 2016

Annual Growth Rate	
Utilization	-1.3%
Price	+1.5%

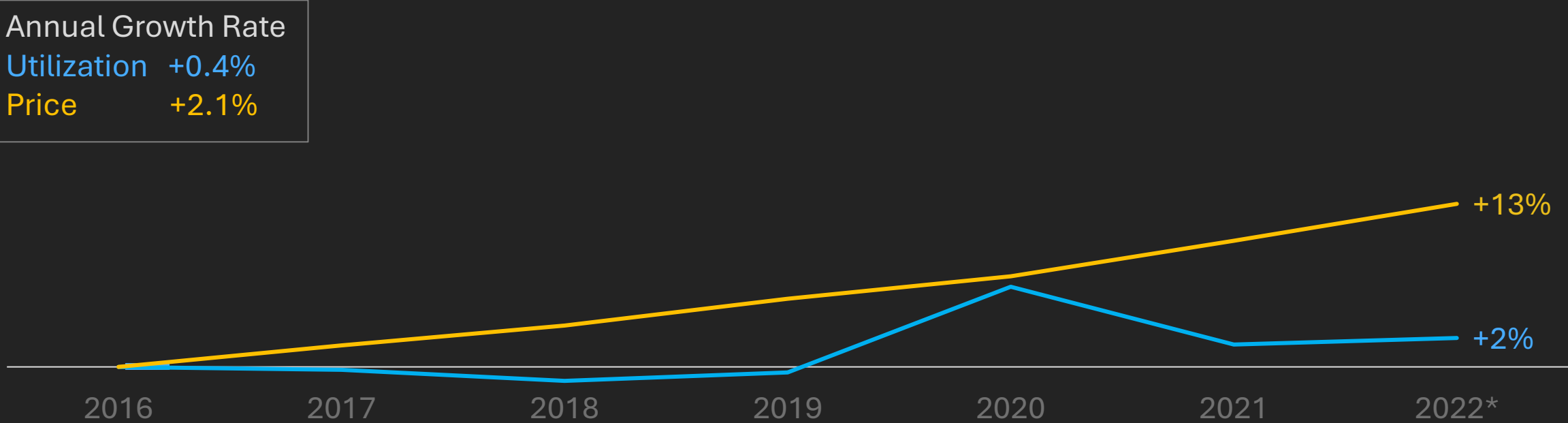


Overall Utilization and Price Trend



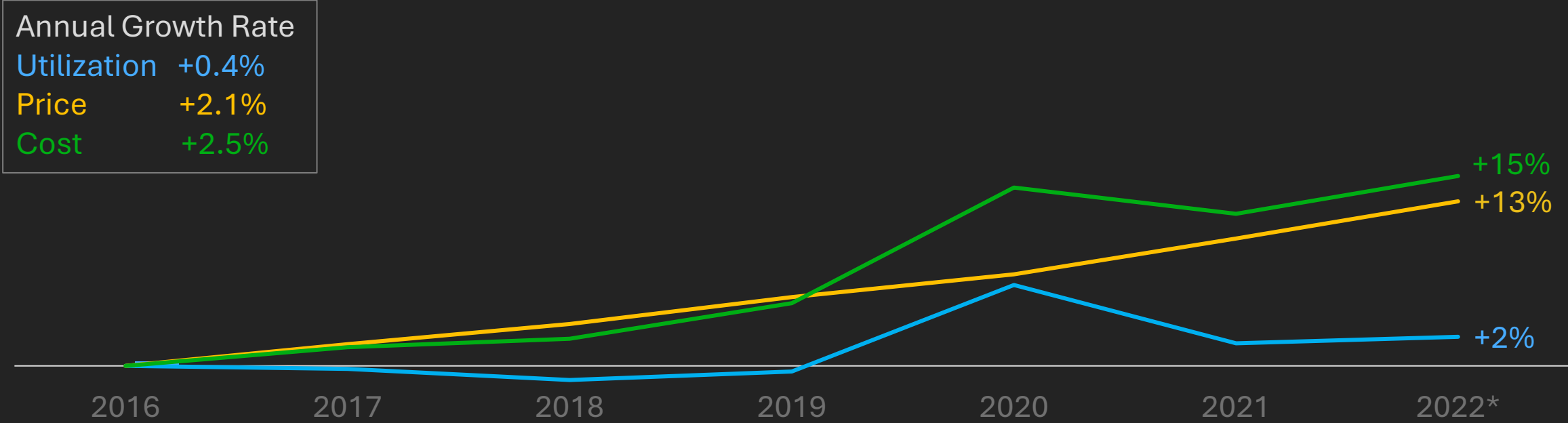
Overall

Cumulative Changes in **Utilization** and **Price** per Claim Since 2016



Overall

Cumulative Changes in **Utilization**, **Price**, and **Cost** per Claim Since 2016



THAT WAS THEN,
TELL US MORE!





Disruptions

Advances in
medicine

Fee
schedules
changes

New
medications

Scenario 1: Continuing Trends

More Severe Cases Continue:
Higher intensity of care



Utilization
Annual Growth Rate
+0.3%

Scenario 1: Continuing Trends

More Severe Cases Continue:
Higher intensity of care



Ongoing Shift to ASCs:
More procedures in outpatient settings



Utilization
Annual Growth Rate
+0.5%

Scenario 1: Continuing Trends

More Severe Cases Continue:
Higher intensity of care



Ongoing Shift to ASCs:
More procedures in outpatient settings



Changing Treatment Mix:
Physical medicine up, opioids flat, NSAIDs
and topicals up



Utilization
Annual Growth Rate
+1.1%

Scenario 1: Continuing Trends Realize a Greater Impact Due to Utilization

Annual Growth Rates



Scenario 2: Accelerated Trends in Physical Medicine and Prices

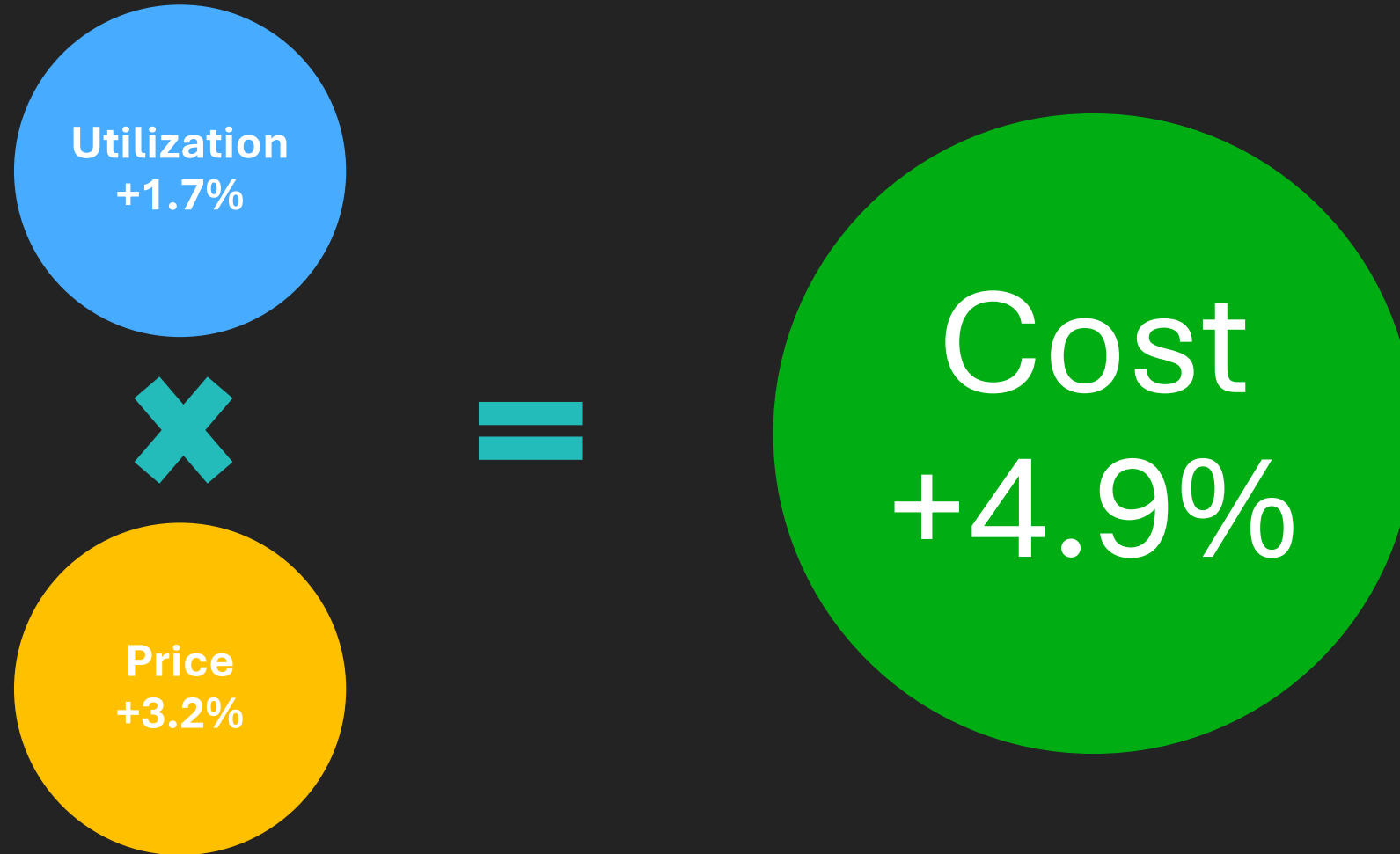
Major assumptions:

- Change in mix of medical conditions continues at the observed 2016–2022 rate
- Change in surgery rates for underlying medical conditions continues at the observed 2016–2022 rate
- The shift in surgery venue and opioid decreases slow down to a halt
- Physician services, particularly physical medicine, accelerate
- Prices growing faster



Scenario 2: Accelerated Trends in Physical Medicine and Prices

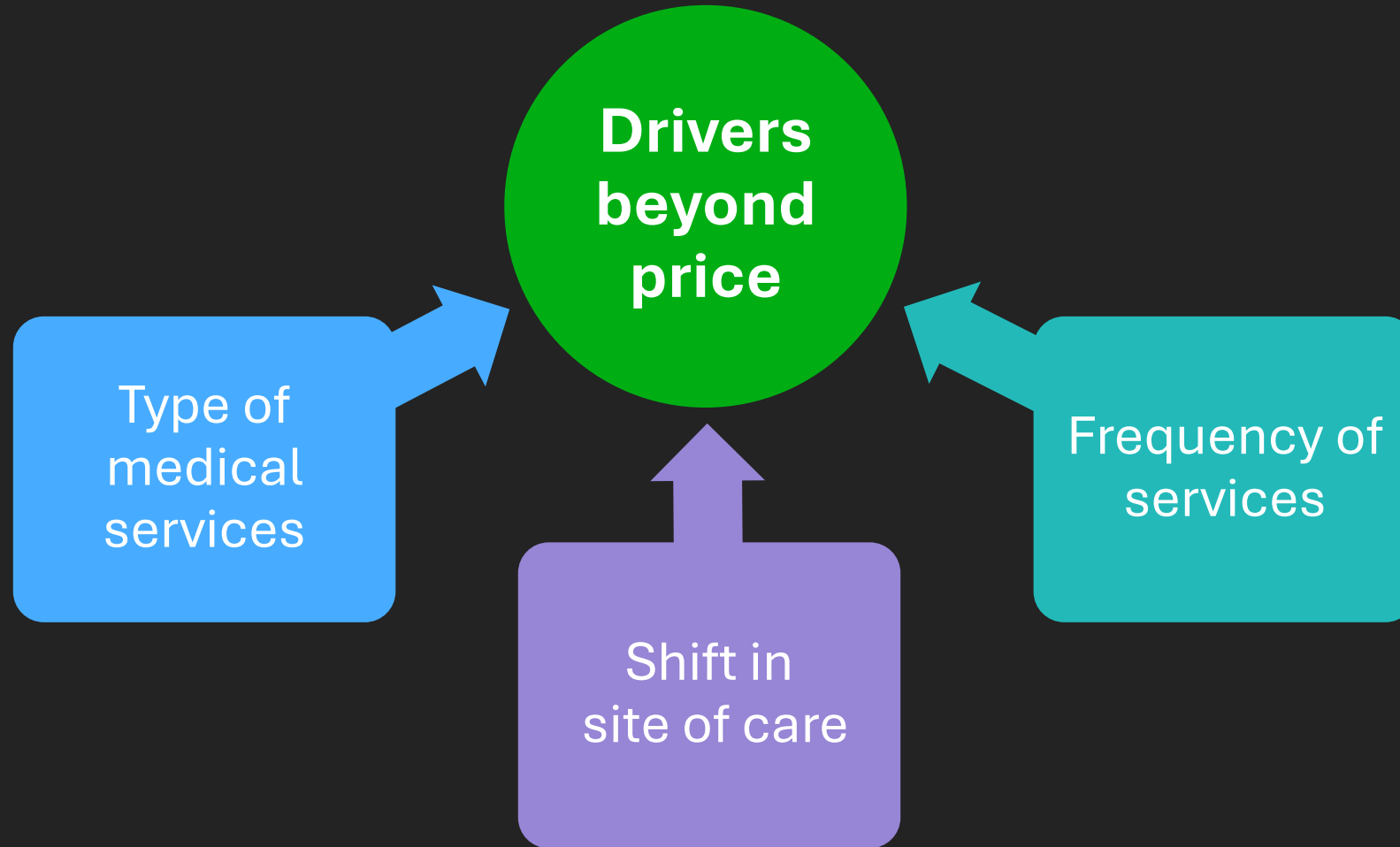
Annual Growth Rates



THE CONUNDRUM SOLVED?

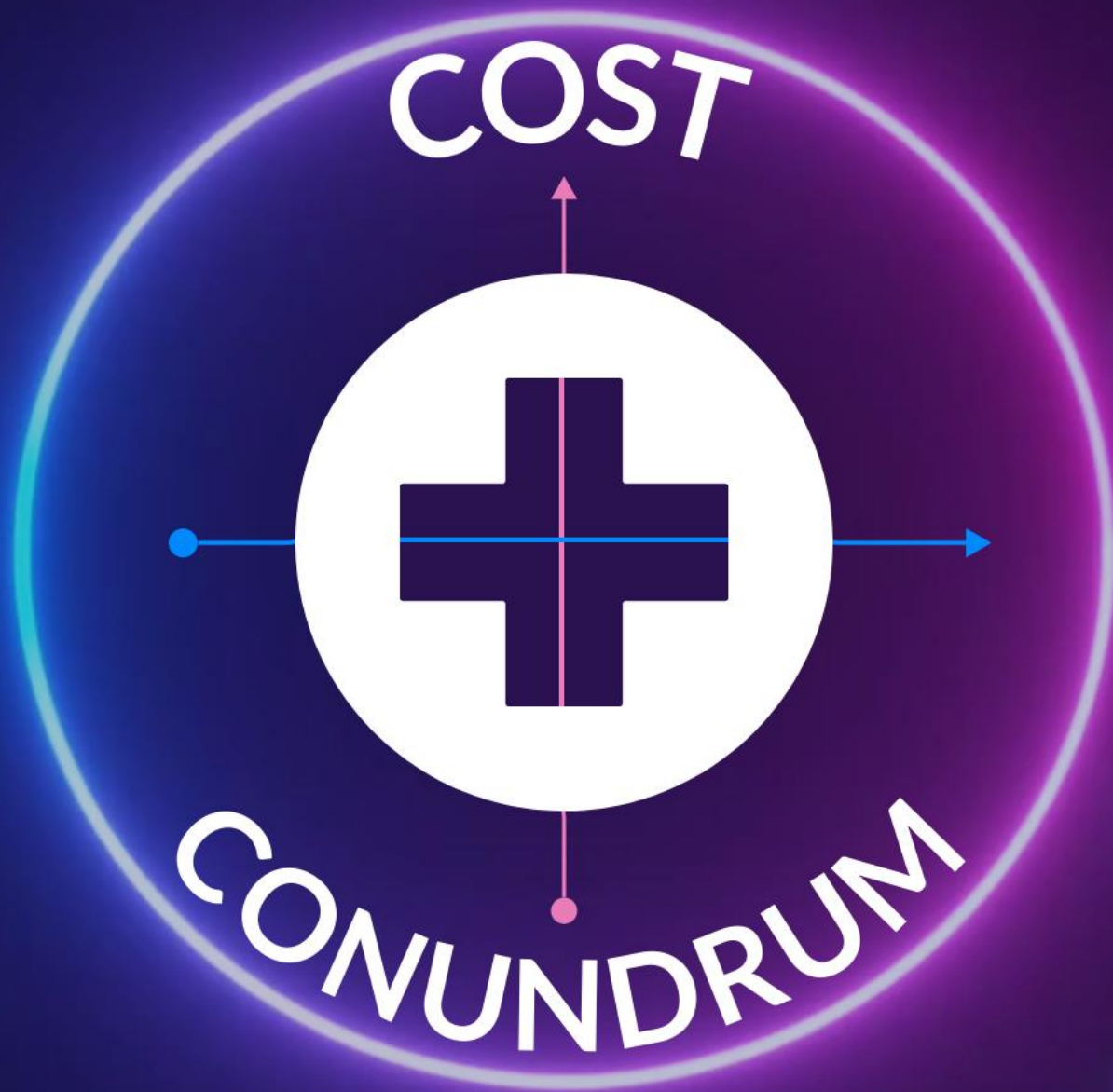


Spending Projection Reflects Multiple Utilization Factors



A large circular graphic with a rainbow gradient, transitioning from blue on the left to red on the right. The circle is filled with various white line-art icons related to healthcare and medicine, including a microscope, a hand holding a pulse oximeter, a first aid kit, a stethoscope, a clipboard, a person in a wheelchair, a syringe, a tooth, a heart, a magnifying glass, a bandage, a pill, a DNA helix, a brain, a heart rate monitor, a microscope, a hand holding a pulse oximeter, a first aid kit, a stethoscope, a clipboard, a person in a wheelchair, a syringe, a tooth, a heart, a magnifying glass, a bandage, a pill, a DNA helix, a brain, and a heart rate monitor.

Utilization



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