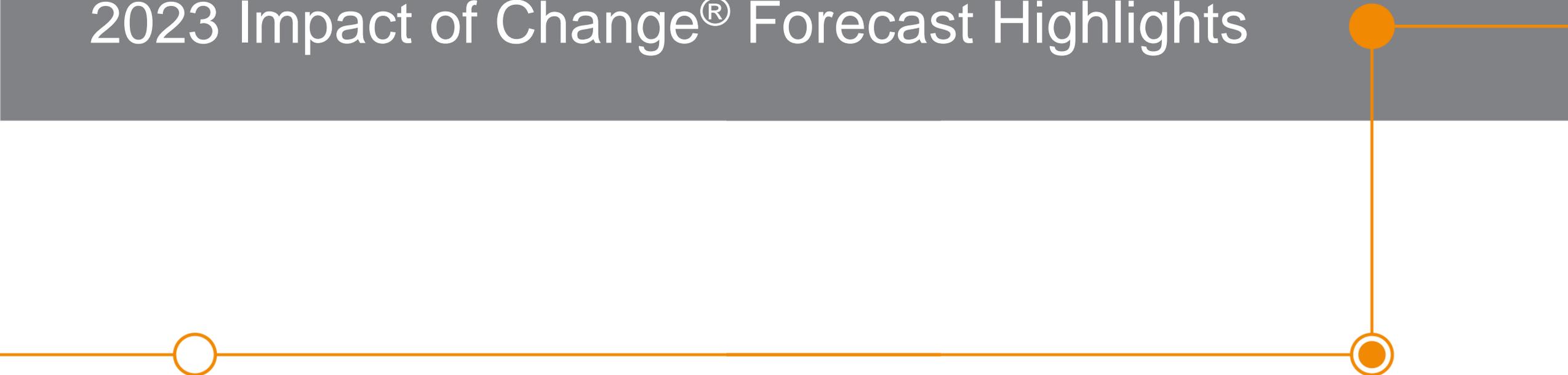


# 2023 Impact of Change<sup>®</sup> Forecast Highlights



## Key Takeaways

- ▶ Assess case mix to better understand opportunities for optimization.
- ▶ Plan for access challenges to be further exacerbated by rising acuity.
- ▶ Deploy care redesign initiatives to mitigate capacity constraints.

# Highlights From the 2023 Release of the Impact of Change Forecast

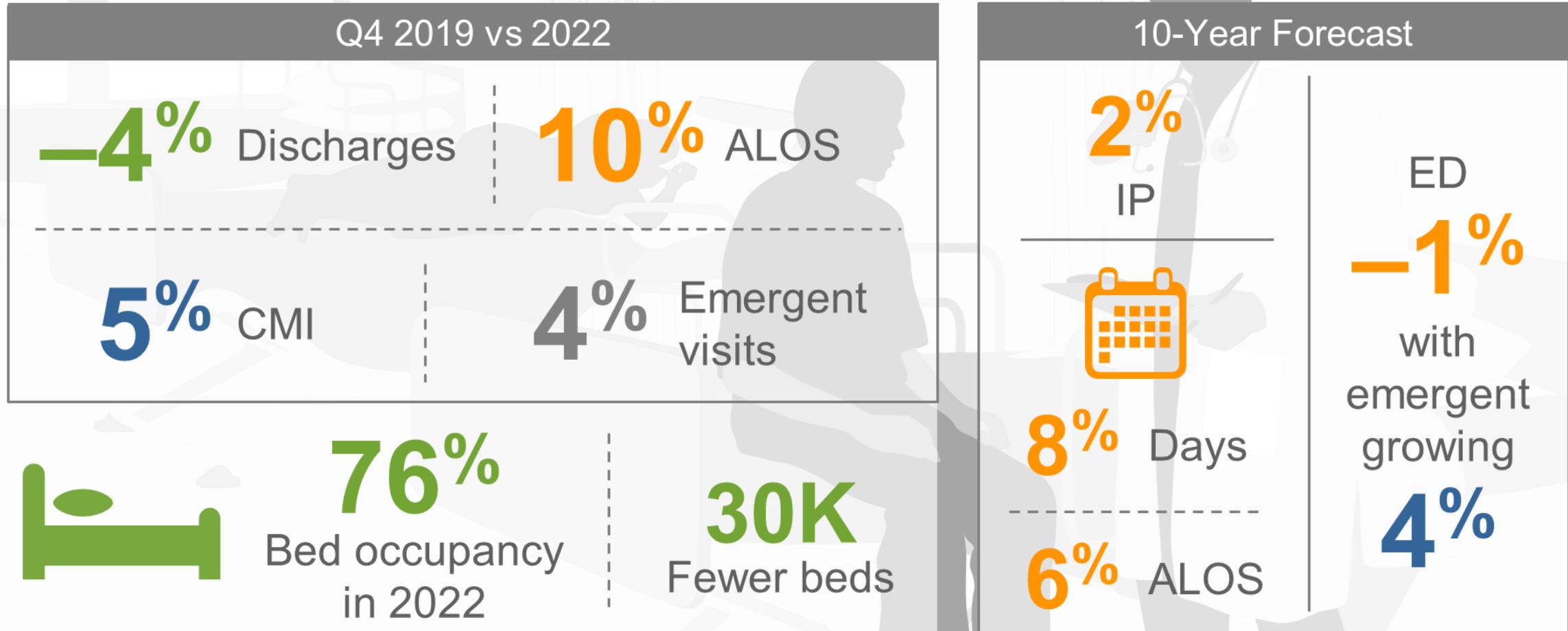


**1. Rising Acuity Exacerbates Capacity Crunch**



**2. Mounting Pressure to Pursue Care Redesign Initiatives**

# Bed Capacity Down, Patient Acuity Up and Climbing



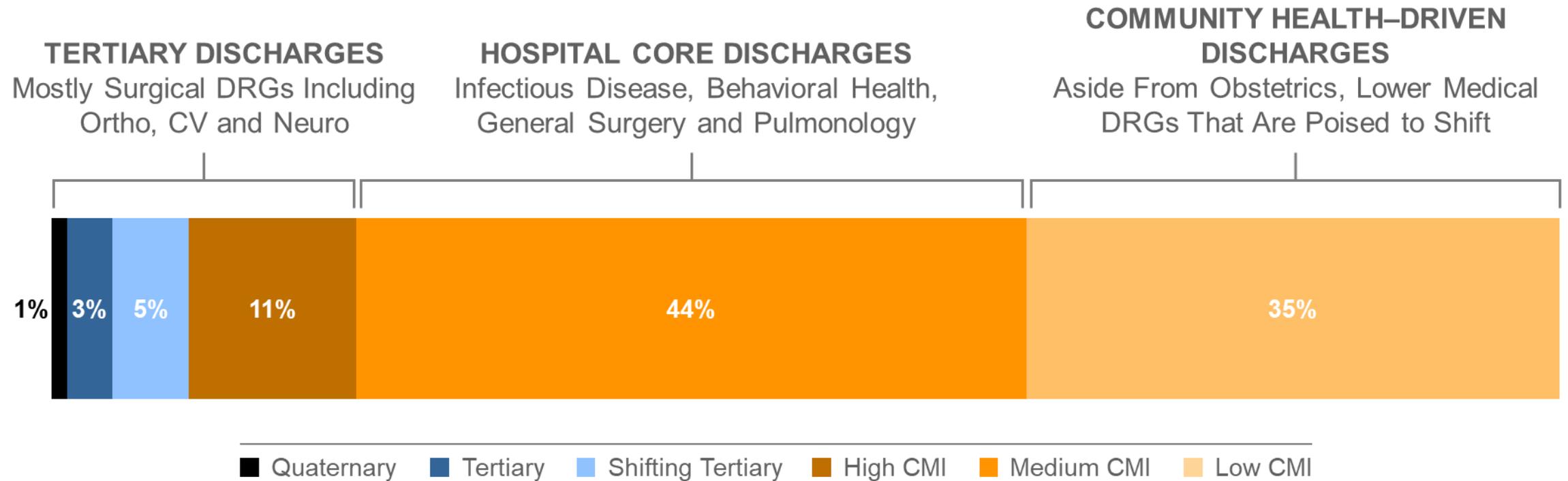
CMI = case mix index. **Sources:** Data from the Vizient Clinical Data Base/Resource Manager™ used by permission of Vizient, Inc. All rights reserved. Q1 2019–Q4 2022; US Department of Health and Human Services. COVID-19 reported patient impact and hospital capacity by facility. Accessed December 2022; Impact of Change®, 2023; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2021; The following 2021 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.



# Case Mix Evaluation Highlights Opportunities for Optimization

## 2023 Inpatient Discharges by DRG Subtype

US Market, 2023

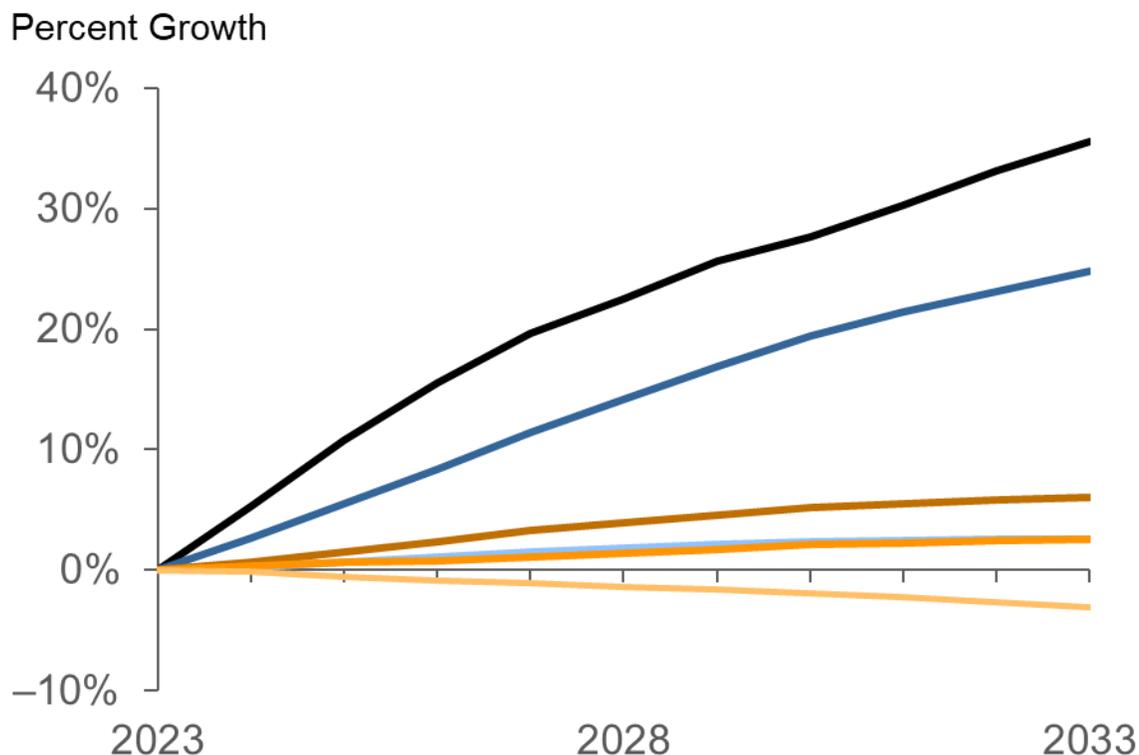


**Note:** Analysis excludes 0–17 age group. Percentages may not add to 100% due to rounding. AMC-centered tertiary is Sg2 2022 Tertiary DRG list; tertiary at risk of shifting = DRGs removed from Sg2 Tertiary List from 2017 to 2022. Quaternary is Sg2 2022 Quaternary DRG list. High CMI: >2.0; Medium CMI: 2.0 to 1.0; Low CMI: <1.0. AMC = academic medical center. **Sources:** Impact of Change®, 2023; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.



# High-Acuity Portfolio Categories Offer Biggest Growth Opportunities

## Adult Inpatient Portfolio Forecast US Market, 2023–2033



- 36%** | **Quaternary**
  - Higher acuity, higher growth
- 25%** | **Tertiary**
  - Growth far outpaces population gains.
  - If you can't capture, competition will.
- 6%** | **High CMI**
  - Higher-margin procedural admissions
  - Compete on quality to capture share.
- 3%** | **Medium CMI**
  - Community opportunity, AMC opportunity cost
- 3%** | **Shifting Tertiary**
  - Talent attrition drives to community
  - Realign incentives to fund mission with margin.
- 3%** | **Low CMI**
  - Cost pressures incentivize care redesign.

**Note:** Analysis excludes volumes for ICD-10 diagnosis code U07.1, COVID-19 infection. Excludes ages 0-17. AMC-centered tertiary is Sg2 2022 Tertiary DRG list; tertiary at risk of shifting = DRGs removed from Sg2 Tertiary List from 2017 to 2022. Quaternary is Sg2 2022 Quaternary DRG list. High CMI: >2.0; Medium CMI: 2.0 to 1.0; Low CMI: <1.0. **Sources:** Impact of Change®, 2023; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.



# CV Highlight: Growing Demand Places Increased Pressure on Existing Access Points

IP Rising Tide of Acuity and Volume	2033
IP Discharges	+5%
ALOS	+1%
Bed Days	+6%
Congestive Heart Failure	+10%
Transcatheter Valve Procedures	+111%

An increased need for CV services will challenge IP services even as medications, care shifts and clinical redesign temper growth.

OP Procedures and Visits Are Growing	2033
OP Volumes	+22%
E&M Visits	+17%
Advanced Imaging	+31%
Major Procedures	+18%

OP volumes continue to grow with an aging population requiring more visits, imaging and procedures.

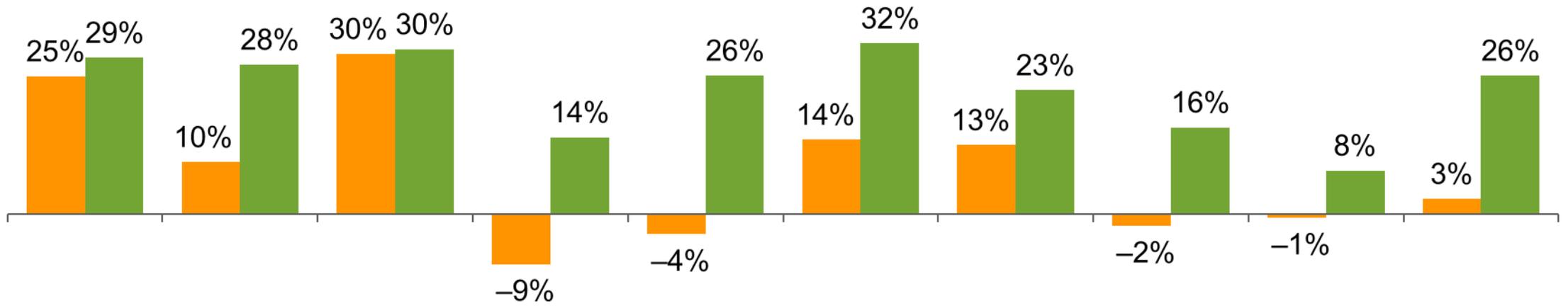
**Note:** Analysis excludes 0–17 age group. Percentages represent Sg2's 10-year growth forecast. E&M = evaluation and management. **Sources:** Impact of Change®, 2023; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2021; The following 2021 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.



# Chronic Care Highlight: Improved Care Management Required to Mitigate Increasing Demand

**2023 Chronic Care Volumes and 10-Year Forecast by CARE Family**  
US Market, 2023–2033

■ Sg2 Inpatient 10-Year % Change  
■ Sg2 Outpatient 10-Year % Change



	Advanced Liver Disease	CHF	Chronic Lung Disease	COPD	Dementia	Diabetes	ESRD	Inflammatory Diseases	Multiple Sclerosis	Rheumatoid Arthritis
IP	228K	1.21M	61.4K	539K	90.5K	768K	213K	45.2K	44.1K	8.50K
OP	4.64M	53.9M	6.01M	50.0M	73.4M	107M	155M	18.5M	7.70M	10.4M

**Note:** Analysis excludes 0–17 age group. CHF = congestive heart failure; COPD = chronic obstructive pulmonary disease; ESRD = end-stage renal disease. **Sources:** Impact of Change®, 2023; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2021; The following 2021 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.

# Highlights From the 2023 Release of the Impact of Change Forecast

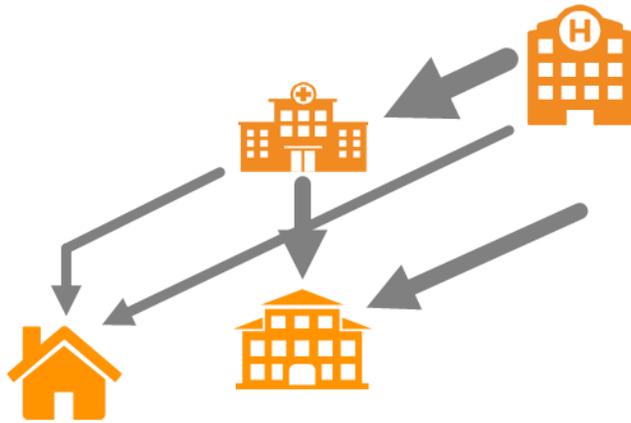


**1. Rising Acuity Exacerbates Capacity Crunch**



**2. Mounting Pressure to Pursue Care Redesign Initiatives**

# Reframe Care Redesign Decisions to Tackle Capacity Crunch



**Procedure Shift Sites**



**Digital Care Redirects**



**Care at Home Choices**



# Site of Care Shifts Continue Throughout the Decade

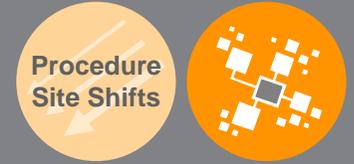
OP surgical  
volumes to grow

**18%**

by 2033

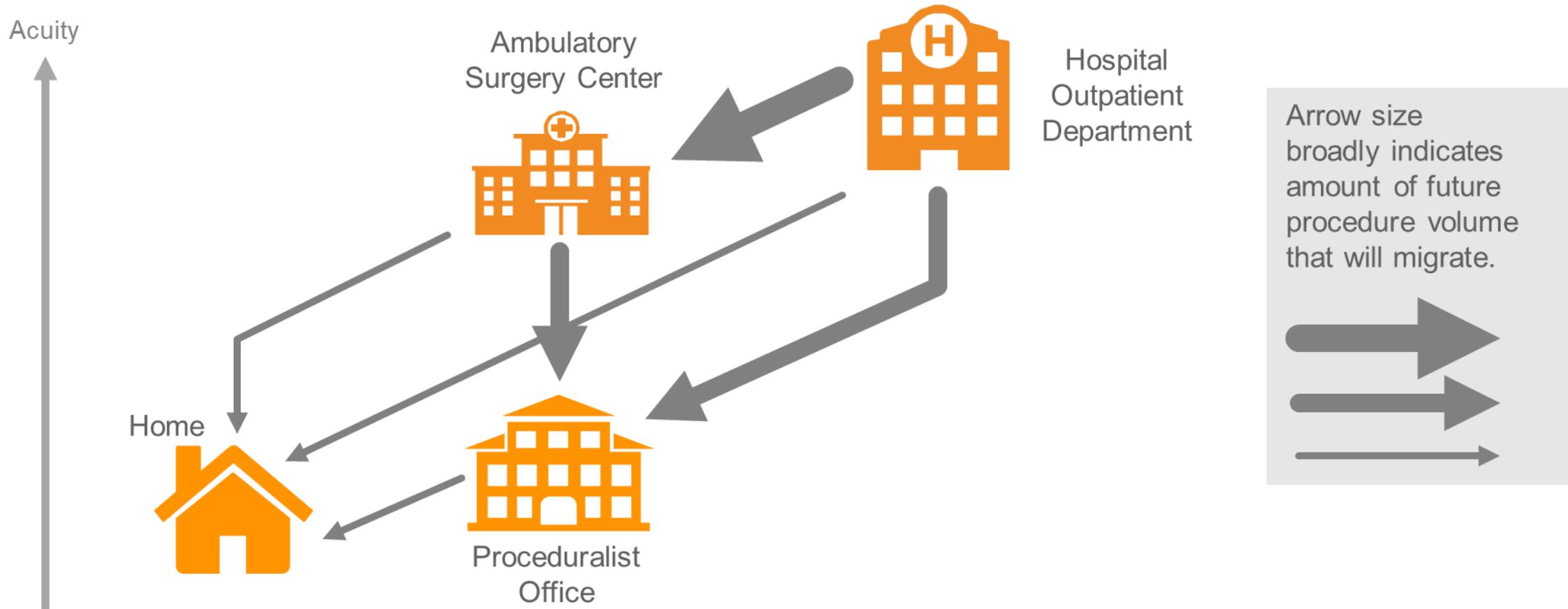
## TOP SHIFTING PROCEDURES

- ▶ Total Joint Replacement
- ▶ Lumbar/Thoracic Spinal Fusion
- ▶ Revision Knee Replacement
- ▶ Prostatectomy
- ▶ Cervical Spinal Fusion
- ▶ Cholecystectomy
- ▶ Bariatric Surgery



# Procedural Volumes Will Shuffle to Lower-Cost Sites of Care

## Extent of Coming Procedural Volume Shifts Among OP Sites





# Procedural Volumes Will Shuffle to Lower-Cost Sites of Care

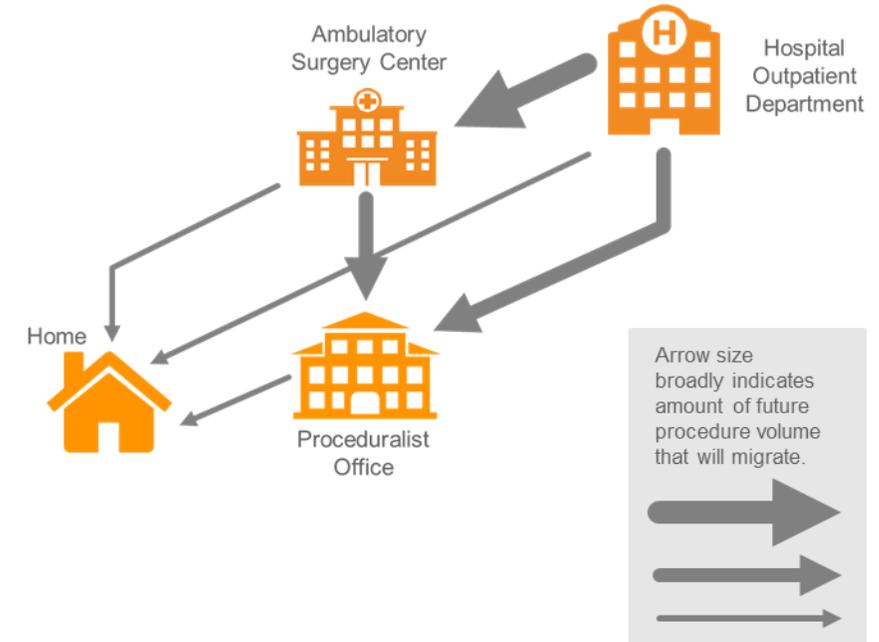
## Likely HOPD to ASC Shuffle Procedures

US Market, 2023–2033

Procedure	2023 HOPD/ASC Volume	2023 HOPD/ASC Forecast
Upper GI Endoscopy	9.56M	21%
Hammertoe Procedures	181K	21%
First Ray (Foot) Procedures	378K	20%
Spinal Decompression/Laminectomy	441K	17%
Carpal Tunnel Release	775K	11%
<hr/>		
Colonoscopy	15.4M	24%
Neurostimulator Procedure	575K	24%
Rotator Cuff Repair	503K	17%
Lumpectomy/Mastectomy	615K	16%
Manipulation	103K	9%

High Shift Potential

Med Shift Potential



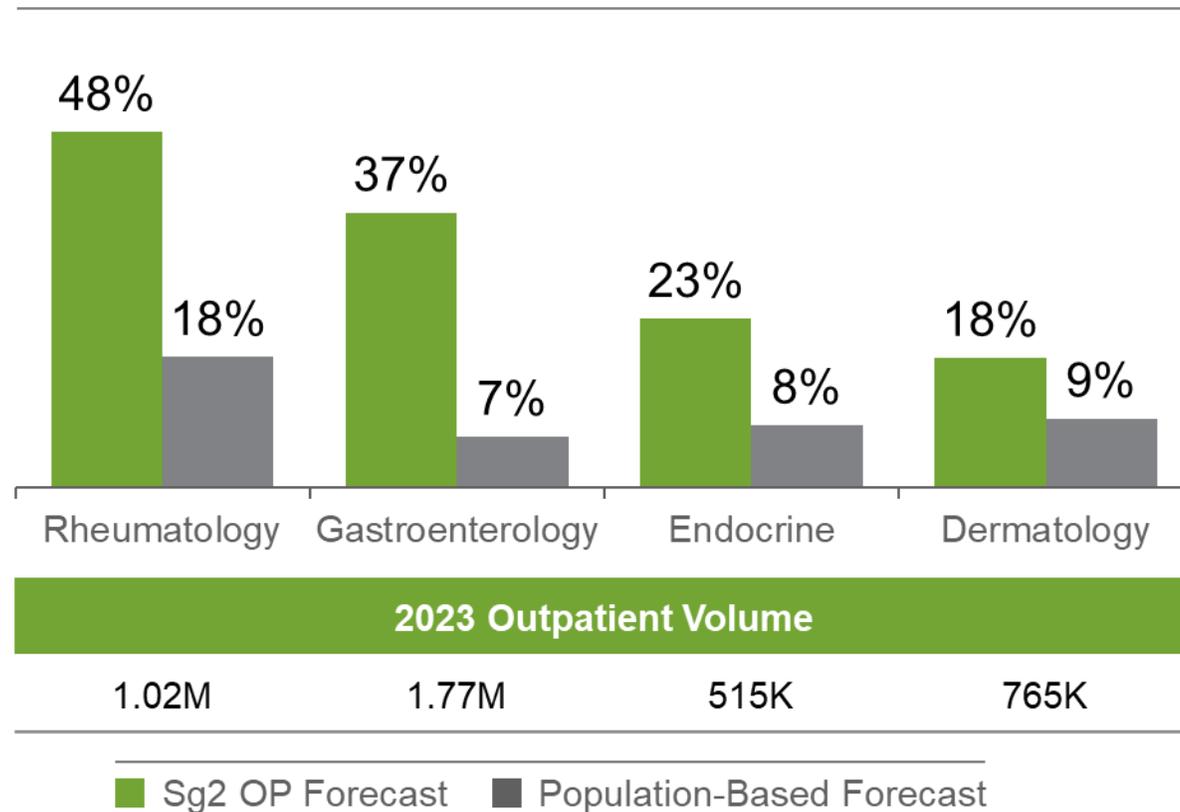
ASC = ambulatory surgery center; med = medium; GI = gastrointestinal. Sources: Impact of Change®, 2023; Proprietary Sg2 All-Payer Claims Data Set, 2021; The following 2021 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.



# Medicine Highlight: Pharmaceuticals Enable Medical Management of Select Patient Populations

## Emerging Service Lines for Infusion Therapy

US Market, 2023–2033



Anti-obesity medications to reduce bariatric surgery volumes

**-4%**

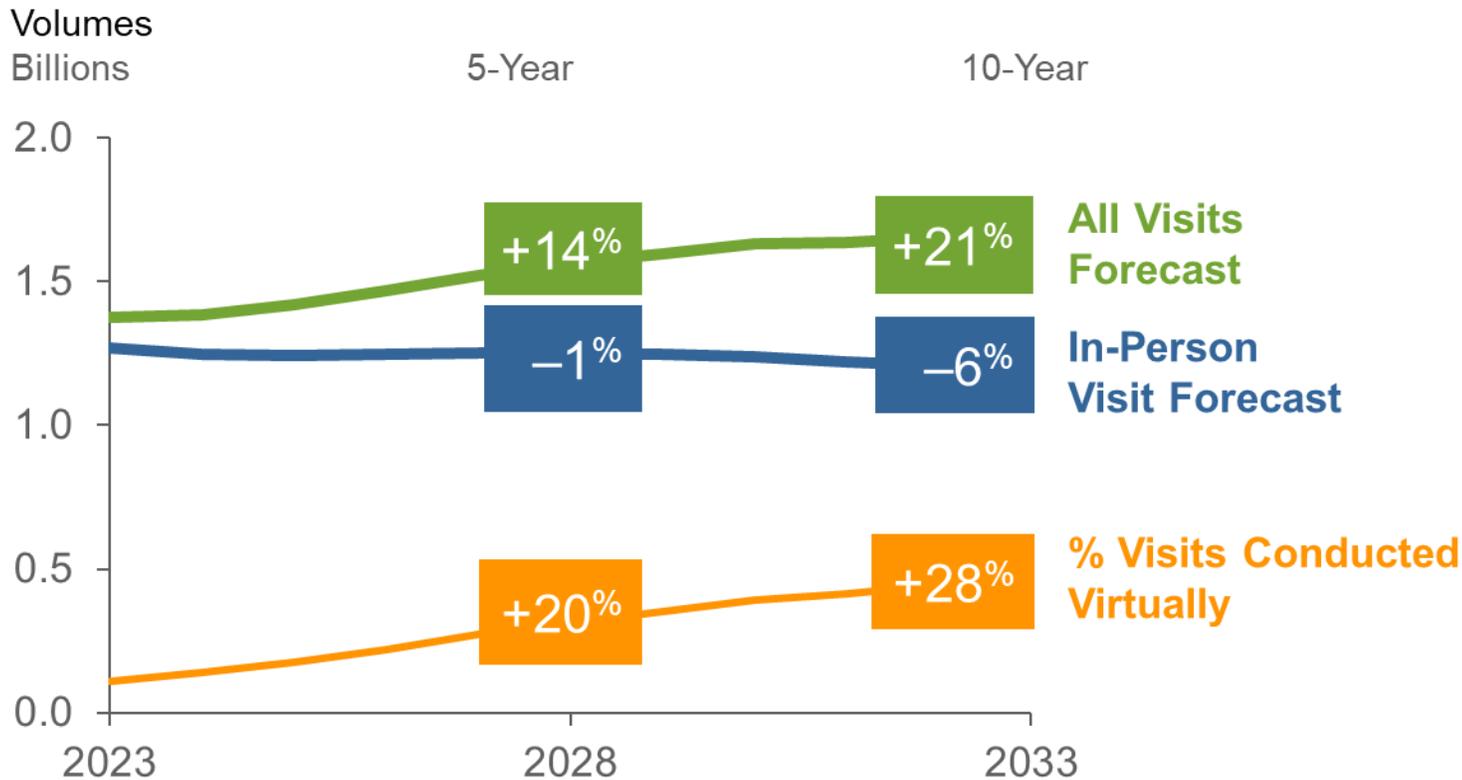
by 2033

**Note:** Analysis excludes 0–17 age group. **Sources:** Impact of Change®, 2023; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2021; The following 2021 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.



# Shift to Virtual Continues Despite Payment and Investment Headwinds

## New and Established E&M Visits 10-Year Forecast US Market, 2023–2033



In-Person Visits	
5%	-8%
New Patient Visits	Established Patient Visits

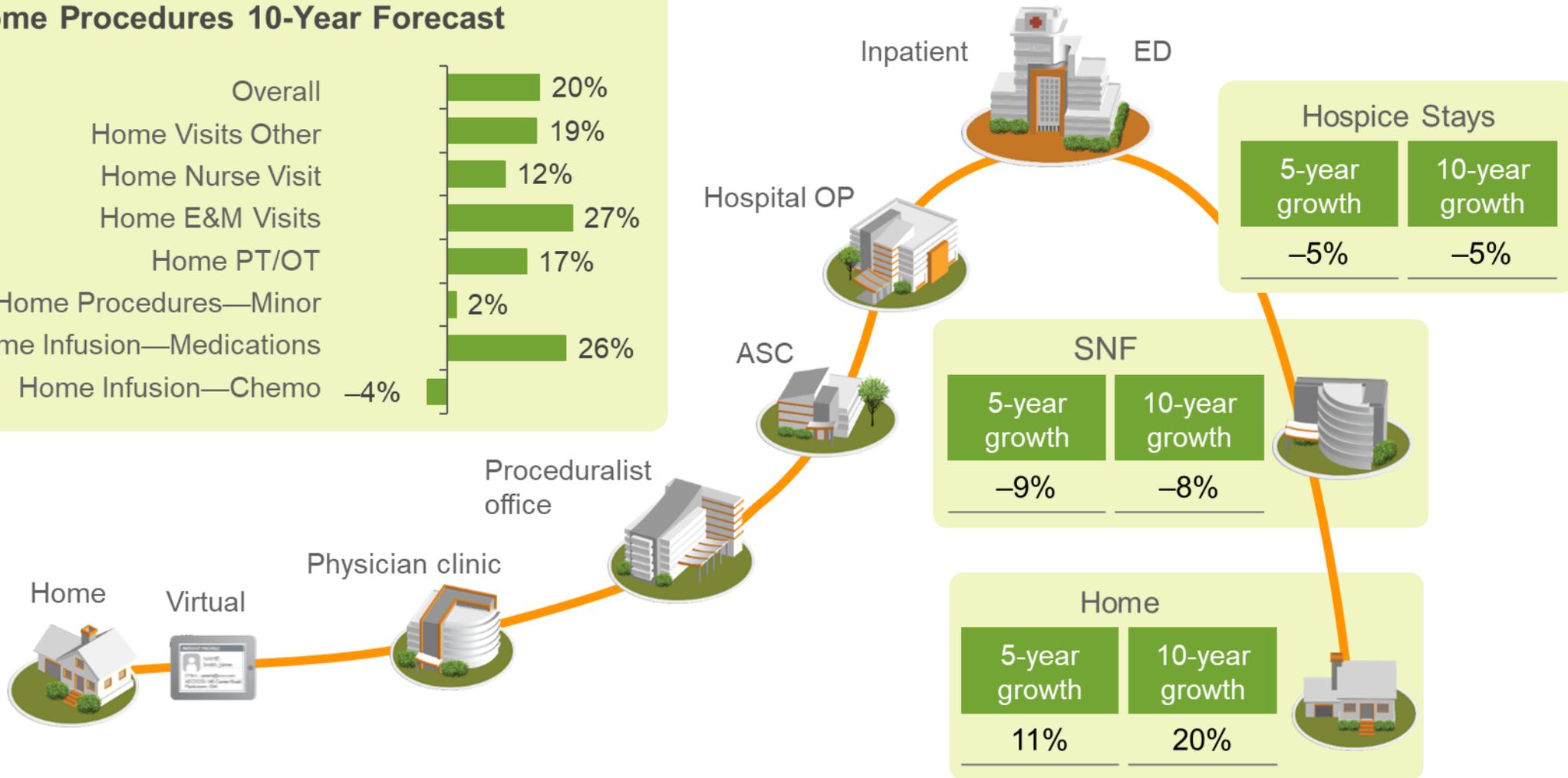
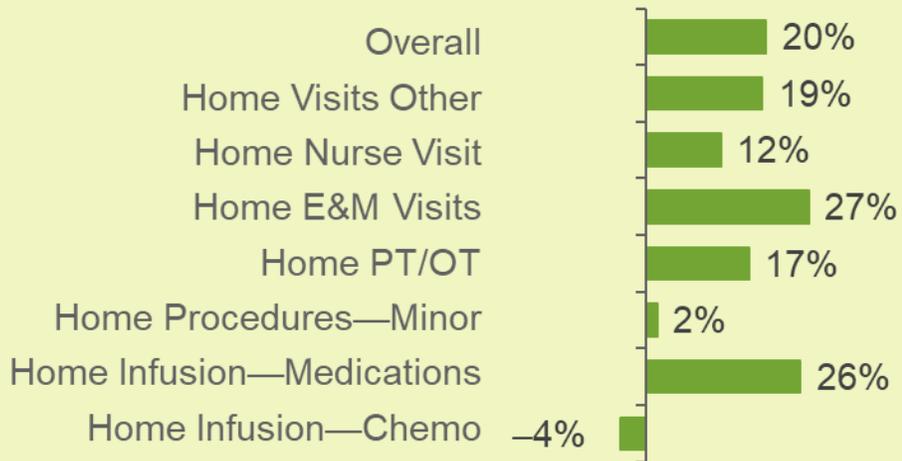
Virtual Visits	
14%*	31%*
New Patient Visits	Established Patient Visits

\*Percentage of E&M visits occurring virtually. **Note:** Analysis excludes 0–17 age group. **Sources:** Impact of Change®, 2023; Proprietary Sg2 All-Payer Claims Data Set, 2021; The following 2021 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.

# Portfolio Approach to Care at Home Can Provide Relief to Otherwise Constrained Sites



## Home Procedures 10-Year Forecast



**Note:** Analysis excludes 0–17 age group. SNF = skilled nursing facility. **Sources:** Impact of Change®, 2023; Proprietary Sg2 All-Payer Claims Data Set, 2021; The following 2021 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.

# APPENDIX

# Methodology

## THE POWER OF DISEASE-BASED FORECASTING

By starting with trends in the prevalence and incidence of underlying health conditions, the disease-based Impact of Change model analyzes patient-level data and local market trends to project demand across inpatient and outpatient services. Each year, Sg2's experts evaluate and update a series of impact factors to forecast how each of these variables will influence volumes. Each impact factor reflects the trends specific to disease groupings and procedures within the population.

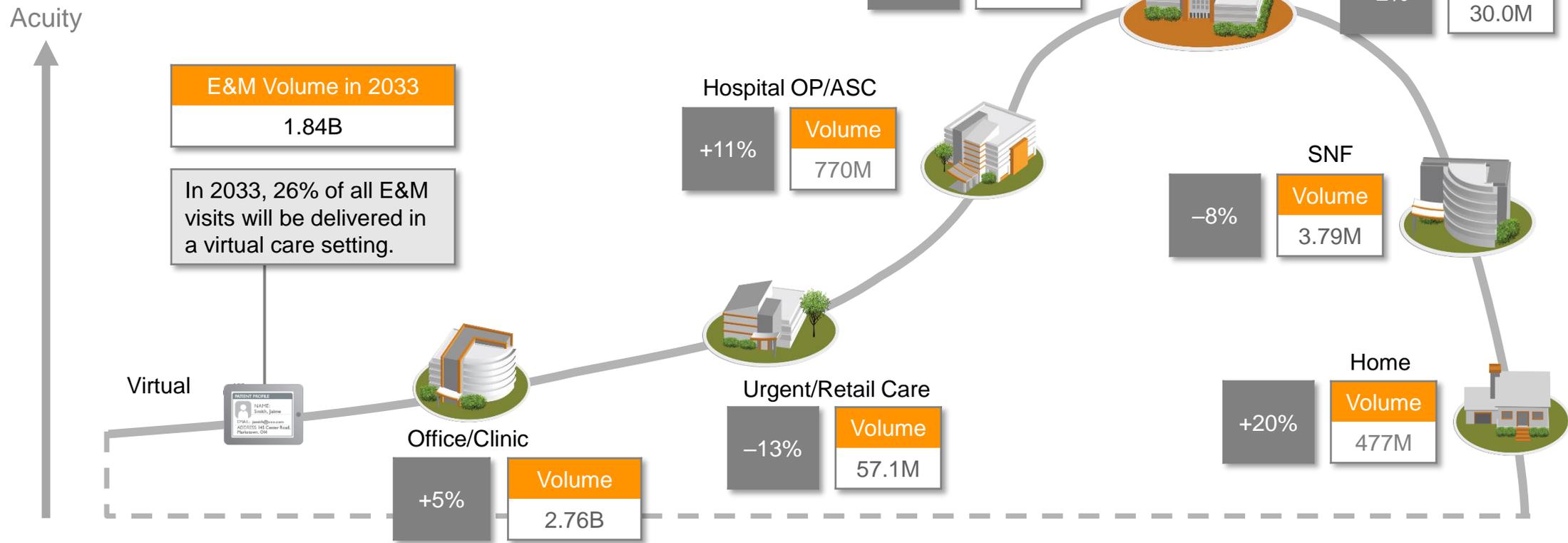
## SOURCES

Impact of Change®, 2023; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2021; The following 2021 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.



# Site of Care Forecast Driven by Rising Acuity and Alternative Care Models

## 2023 Site of Care Volumes and 10-Year Forecast US Market, 2023–2033

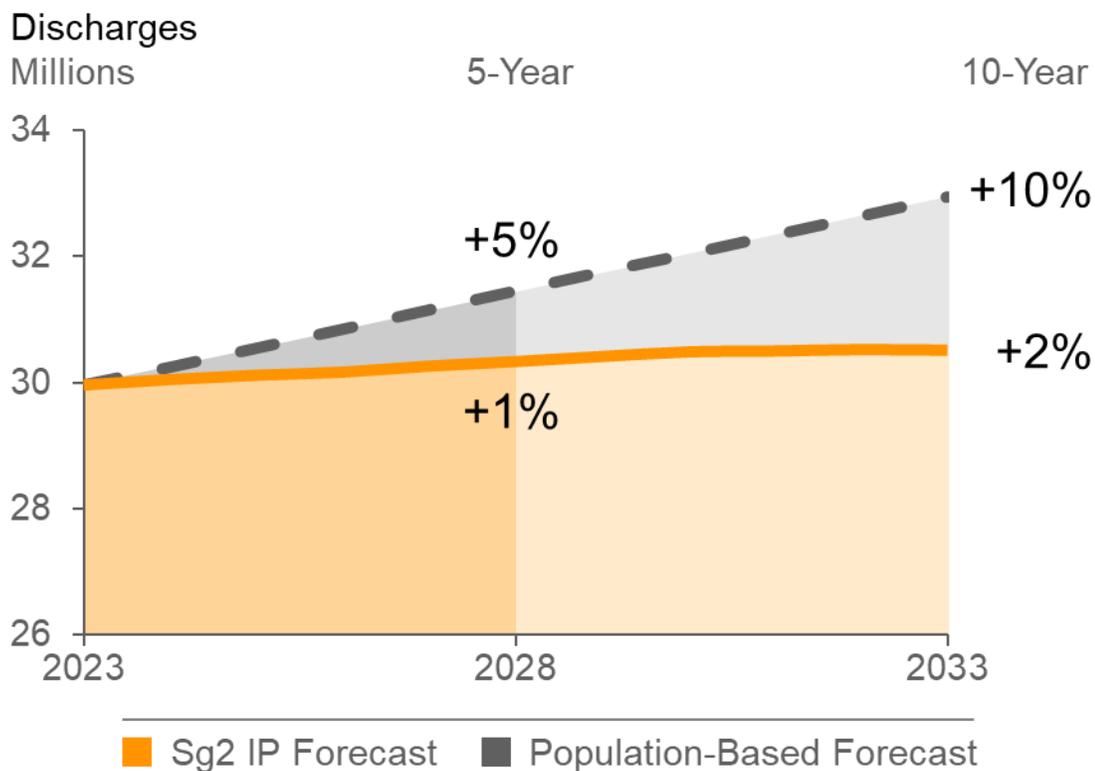


**Notes:** ED forecast defined as urgent and emergent visits. Analysis excludes 0–17 age group. **Sources:** Impact of Change®, 2023; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2021; The following 2021 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.

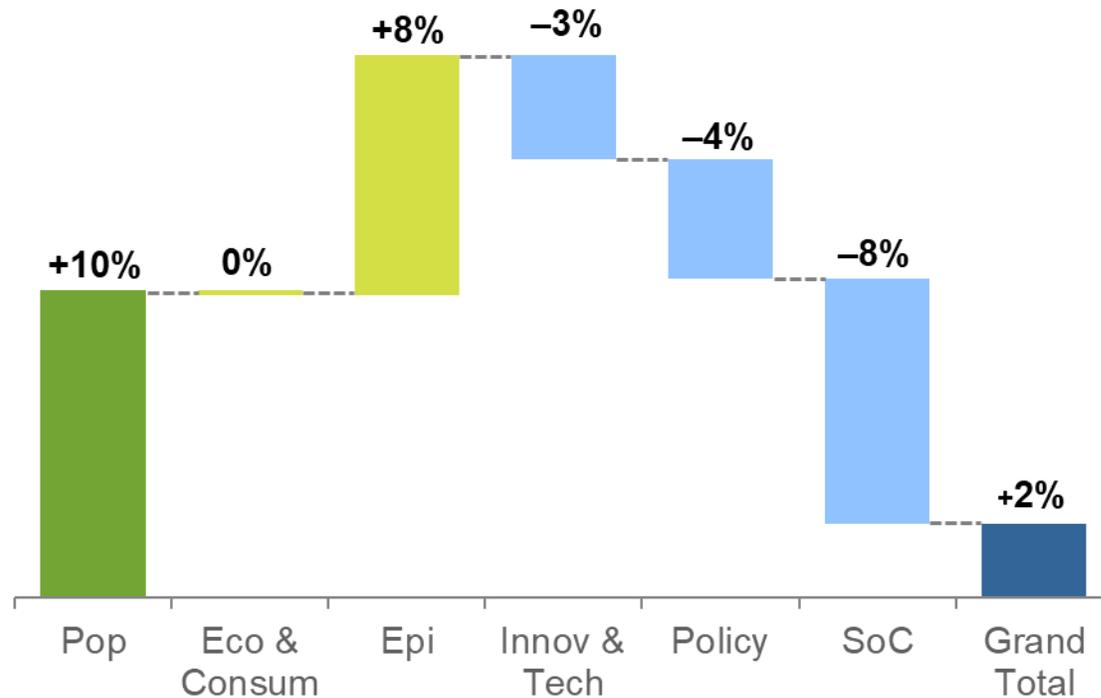


# Modest Rises in Inpatient Volumes Expected Due to Rising Patient Acuity

## Adult Inpatient Forecast US Market, 2023–2033



## Adult Inpatient Forecast Impact Factors US Market, 2023–2033

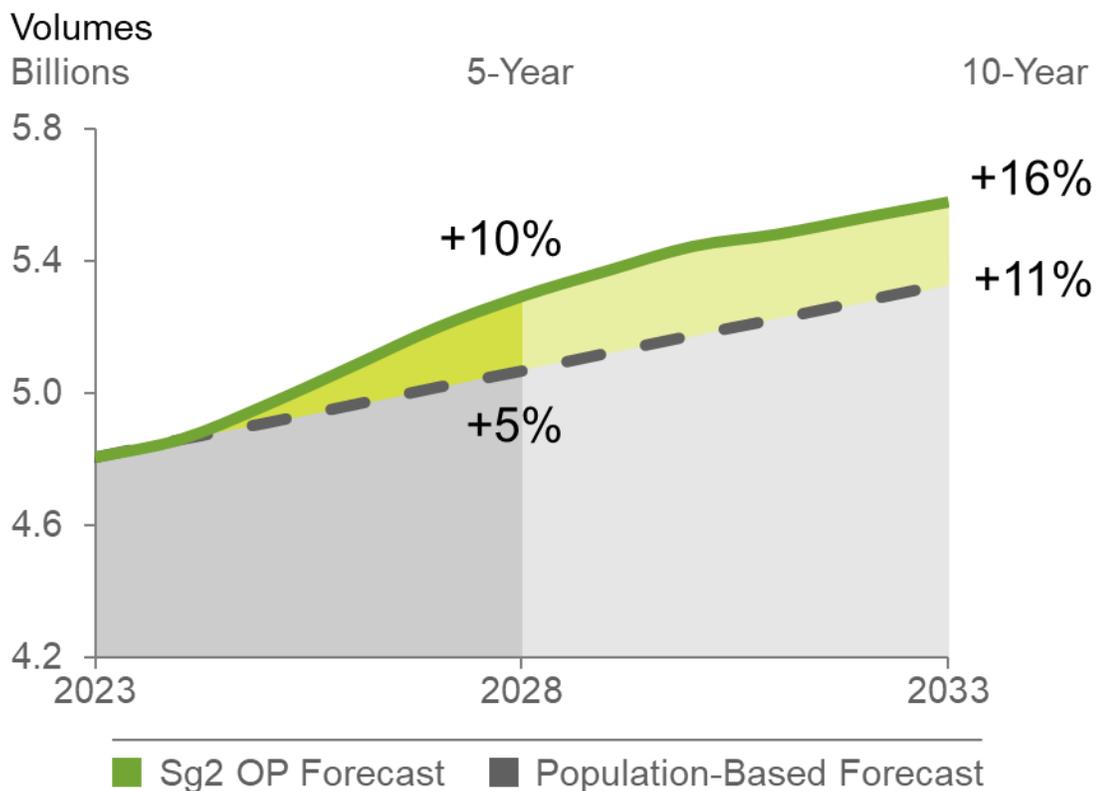


**Note:** Forecast excludes 0–17 age group. Numbers may not add due to rounding. Eco & consum = economy and consumerism; epi = epidemiology; innov & tech = innovation and technology; pop = population; SoC = System of CARE. **Sources:** Impact of Change®, 2023; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.

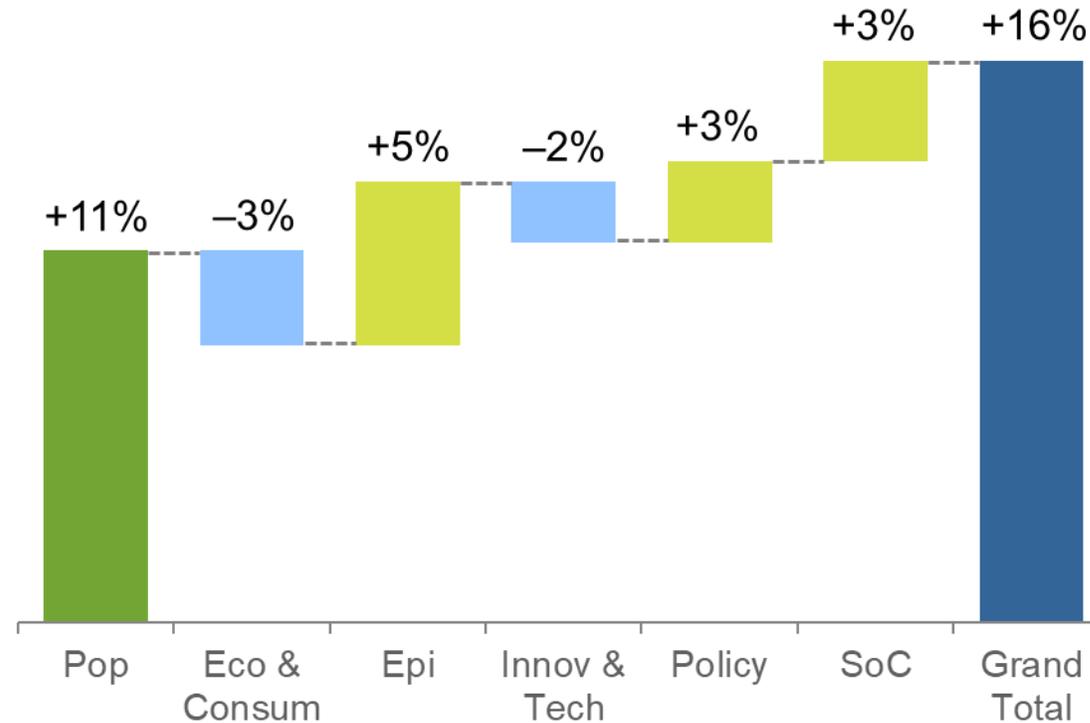


# Outpatient Demand Outpaces Population-Based Demand Projections

## Adult Outpatient Forecast US Market, 2023–2033



## Adult Outpatient Forecast Impact Factors US Market, 2023–2033

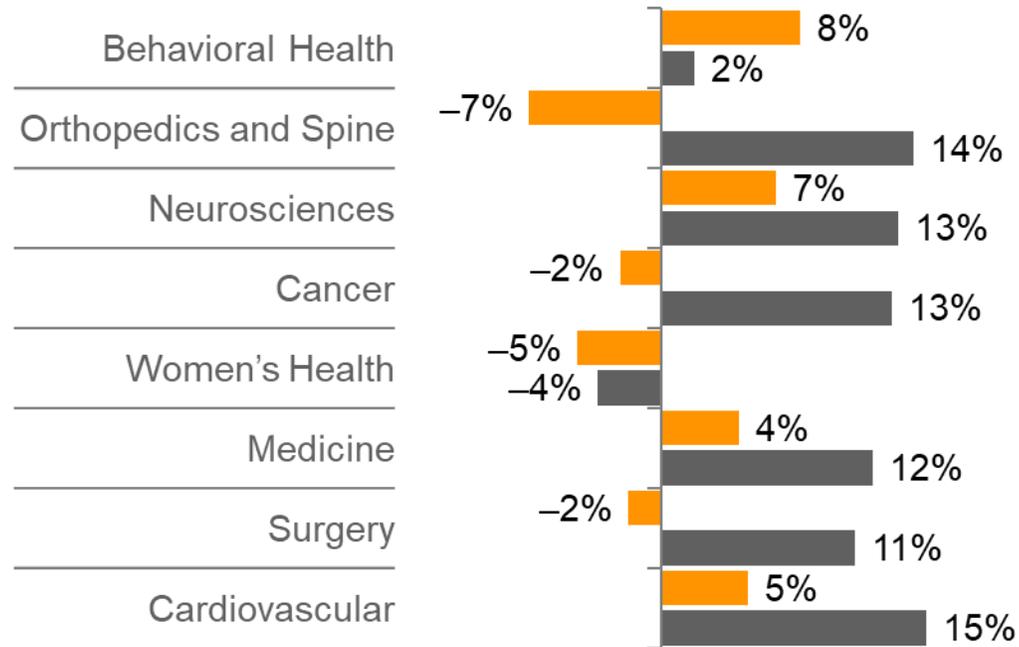


**Note:** Forecast excludes 0–17 age group. Numbers may not add due to rounding. **Sources:** Impact of Change®, 2023; Proprietary Sg2 All-Payer Claims Data Set, 2021; The following 2021 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.

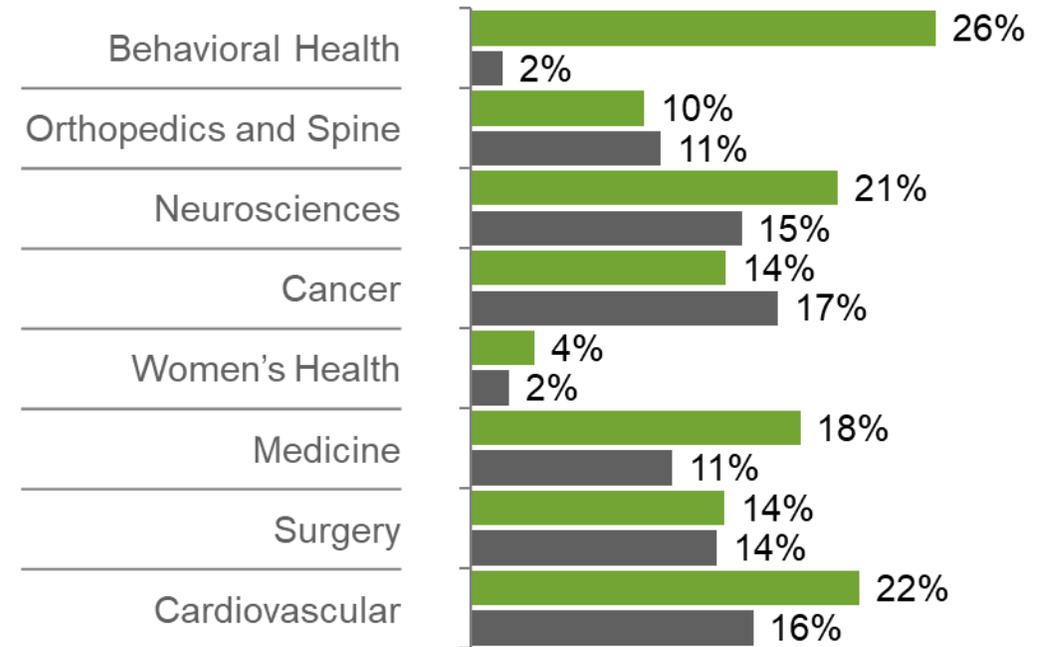


# Utilization Trends Vary Across Service Lines

## Inpatient Service Line Growth US Market, 2023–2033



## Outpatient Service Line Growth US Market, 2023–2033



■ Sg2 IP Forecast   
 ■ Population-Based Forecast   
 ■ Sg2 OP Forecast

**Note:** All service lines exclude 0–17 age group. Cardiovascular includes cardiology and vascular. Medicine includes allergy and immunology, dermatology, endocrinology, gastroenterology, genetics, hematology, hepatology, infectious diseases, nephrology, pulmonology, and rheumatology. Surgery includes burns and wounds, otolaryngology, general surgery, ophthalmology, and urology. **Sources:** Impact of Change®, 2023; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2019. Agency for Healthcare Research and Quality, Rockville, MD; Proprietary Sg2 All-Payer Claims Data Set, 2021; The following 2021 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2023; Sg2 Analysis, 2023.

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