

# Predicting Health Care Utilization Over the Decade

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# Agenda

## **Key Trends Affecting Ambulatory Procedure Strategy**

Orthopedics and Spine Deep Dive

Ambulatory Trends Across Service Lines

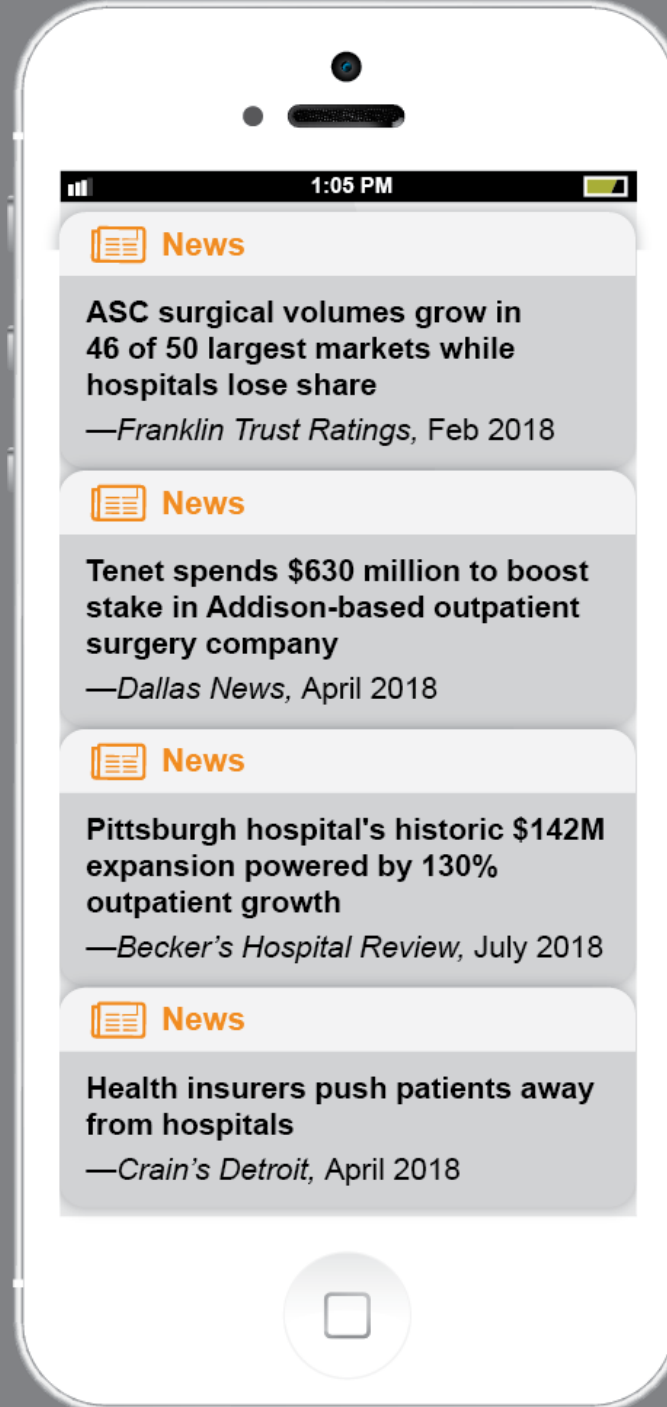
# Better Care Management, Surgical Shift to Outpatient Drove Historic Inpatient Decline

**-7%**  
2008–2014

**Historic Inpatient  
Discharge Volume Trends**

2007      2008      2009      2010      2011      2012      2013      2014      2015

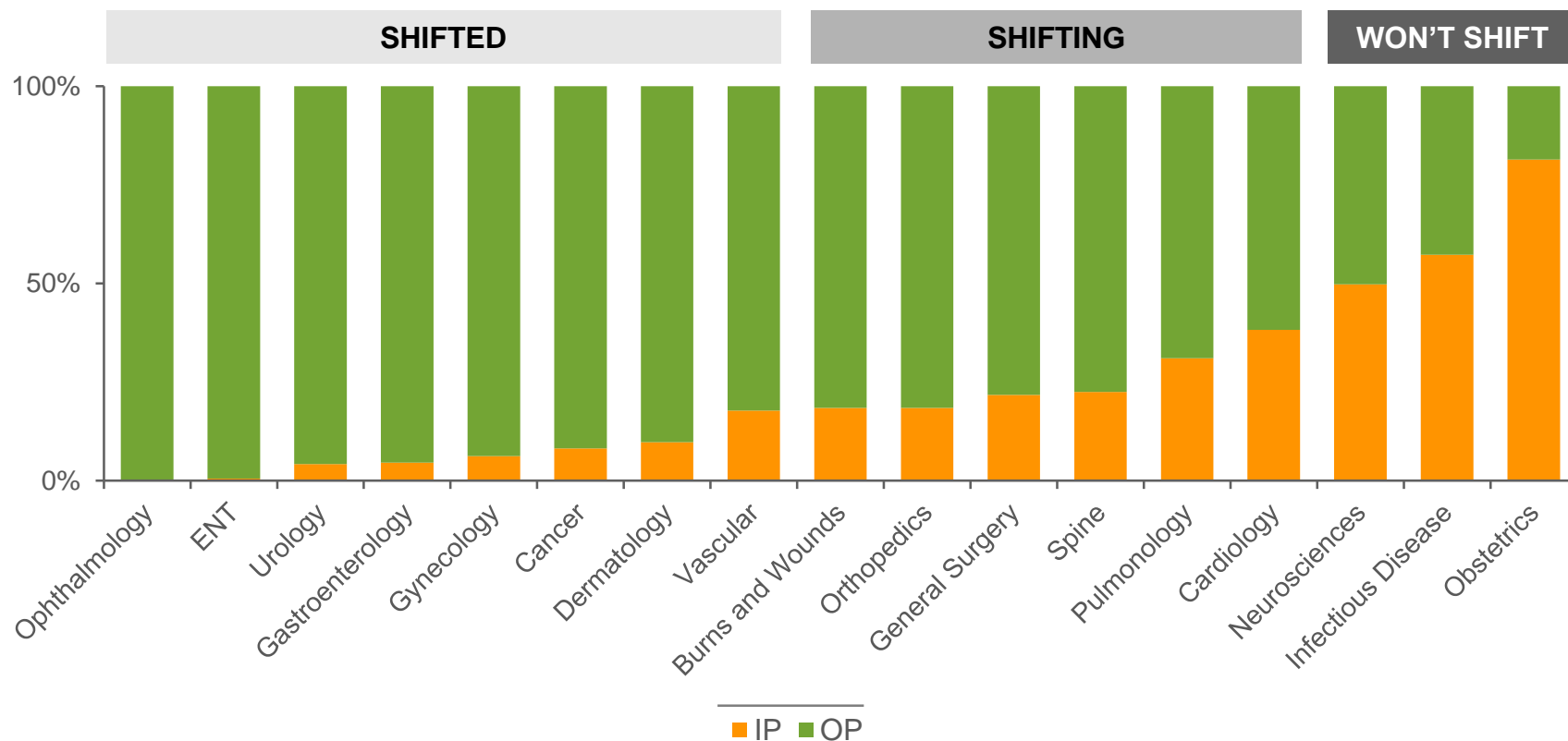
# Ambulatory Procedure Growth Shows No Sign of Slowing Down



# Most Procedures Across Service Lines Have Shifted or Will Shift to the Outpatient Setting

## IP vs OP Procedures

US Market, 2018

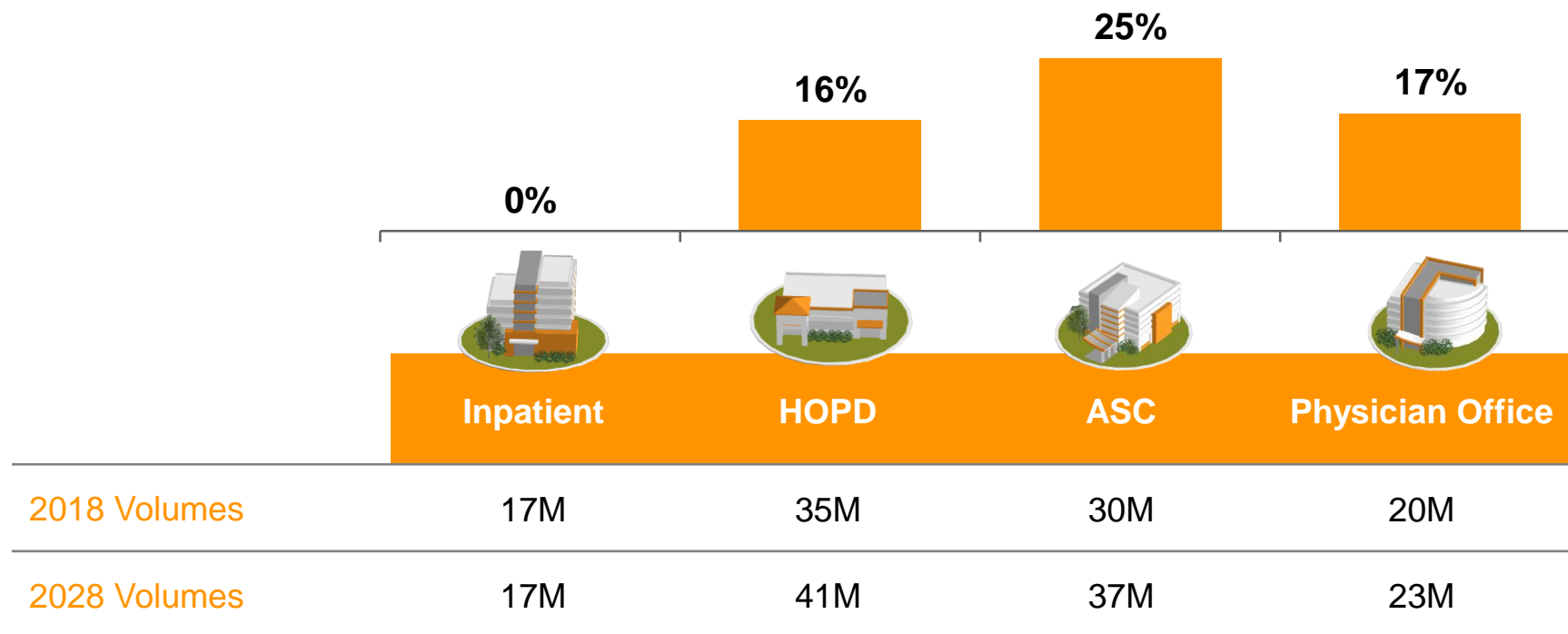


**Note:** IP procedures defined as all major therapeutic, all minor therapeutic, and diagnostics: brain biopsy and diagnostics: diagnostic catheterization. OP procedures defined as all major procedures, all endoscopy, and diagnostics: diagnostic catheterization. ENT = ear, nose and throat.

# Robust Procedure Growth Anticipated Across All Ambulatory Sites

## Procedure Forecast by Site of Care

US Market, 2018–2028



**Note:** IP procedures defined as all major therapeutic, all minor therapeutic, and diagnostics: brain biopsy and diagnostics: diagnostic catheterization. OP procedures defined as all major procedures, all endoscopy, and diagnostics: diagnostic catheterization. HOPD = hospital outpatient department.

# Accelerators of Outpatient Shift to Lower-Acuity, Lower-Cost Settings Dominate Braking Mechanisms

## Brakes

- Physician employment
- Physician logistics/practice patterns (physicians reluctant to split time between hospital and another site)
- Rising patient acuity across all sites
- High cost of equipment and technology needed for some procedures
- Low number of ASCs in market
- State regulatory climate unfavorable to ASCs

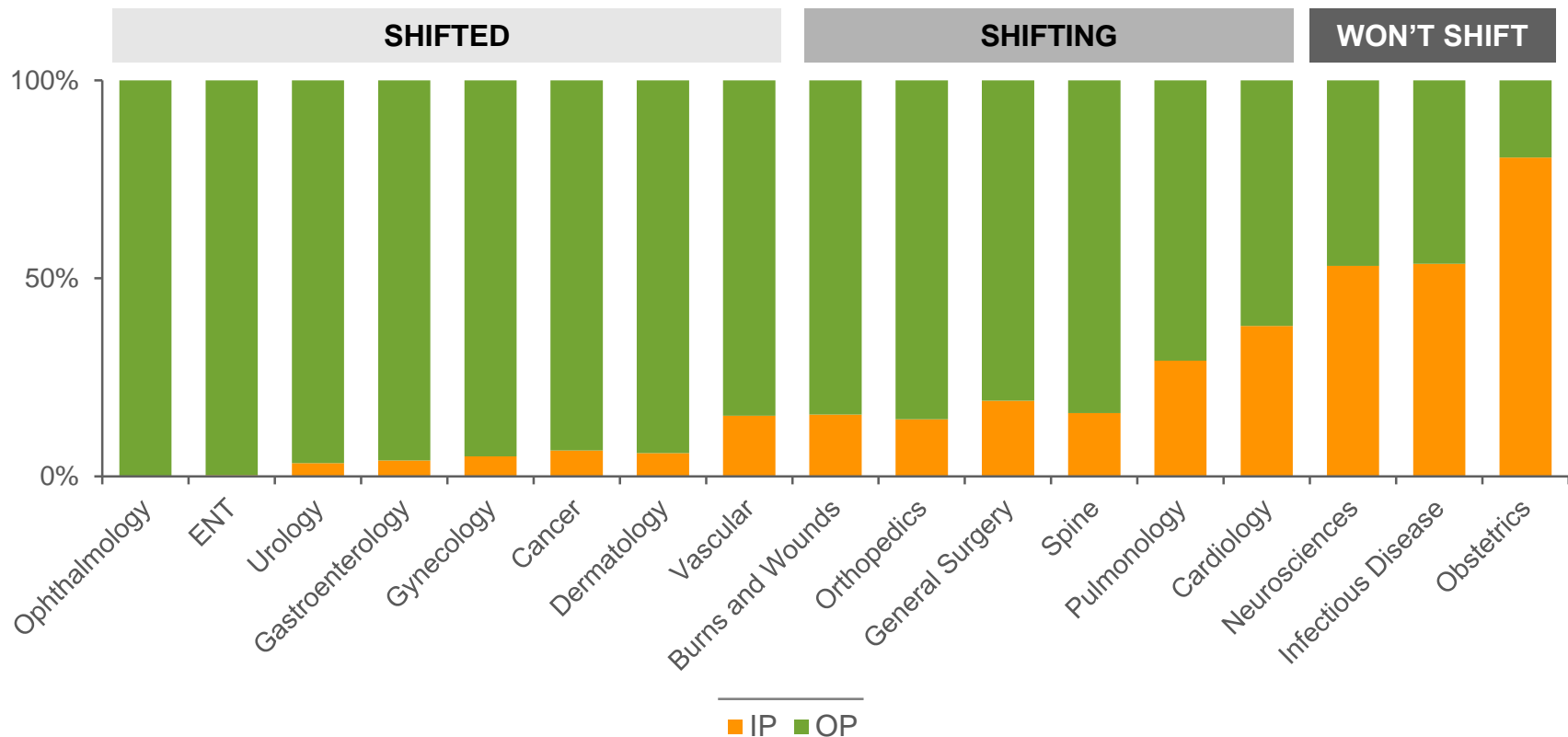
## Accelerators

- Physician ownership of ASCs in market; physician entrepreneurship; physician control
- Growing physician experience/comfort with clinical/technologic advances
- Pressure from payers, employers to move procedures to lower-cost sites
- Consumerism, patient convenience
- ASC evolution (eg, venture capital investment, payers buying ASC companies)
- High number of ASCs in market
- Current federal administration pushing competition and lower-cost settings
- State regulatory climate favorable to ASCs

# By 2028, 85% of Procedures Will Be Performed in the Outpatient Setting

## IP vs OP Procedures

US Market, 2028 (Projected)



**Note:** IP procedures defined as all major therapeutic, all minor therapeutic, and diagnostics: brain biopsy and diagnostics: diagnostic catheterization. OP procedures defined as all major procedures, all endoscopy, and diagnostics: diagnostic catheterization.

# Agenda

Key Trends Affecting Ambulatory  
Procedure Strategy

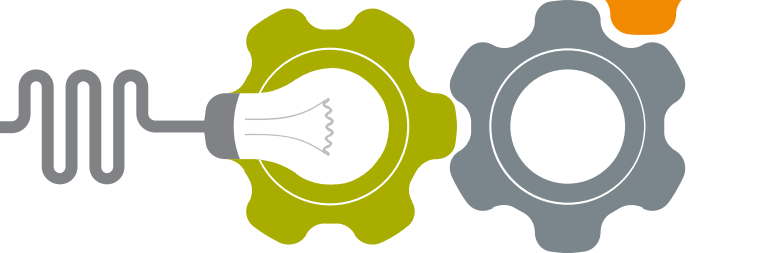
**Orthopedics and Spine Deep Dive**

Ambulatory Trends Across Service Lines

# Disruption, Innovation Dominate the Orthopedic and Spine Landscapes

## ● Sg2's Top Disruptive Trends in Orthopedics and Spine 2018

- ▶ Outpatient shift accelerates.
- ▶ Ortho and spine growth remain strong.
- ▶ Bundled payment TJR success drives alternative payment expansion.
- ▶ Efforts for ASC partnerships and physician alignment models continue.
- ▶ Ortho urgent care centers, alternative care pathways for spine care address patient access and value.
- ▶ Declining reimbursement reinvigorates cost efficiency evaluation in joint replacement, spine surgery.

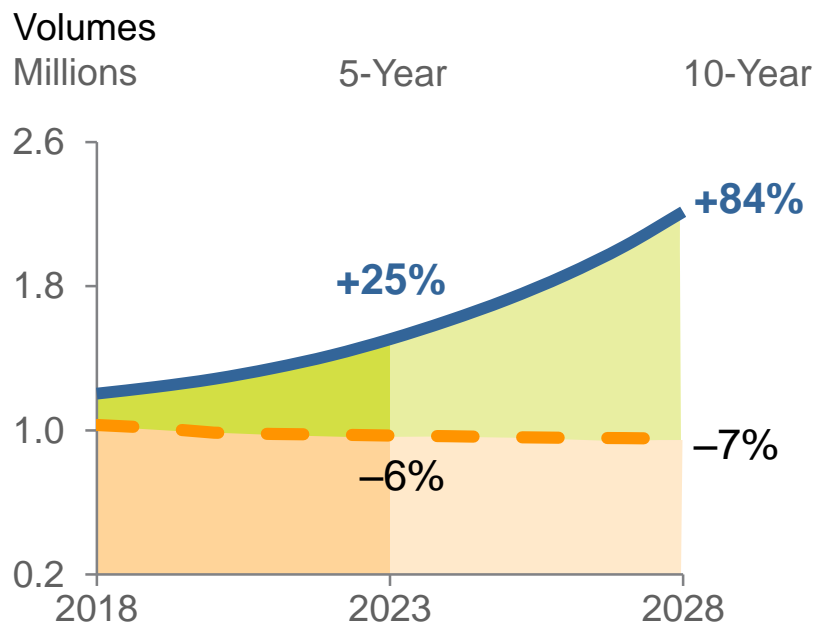


TJR = total joint replacement.

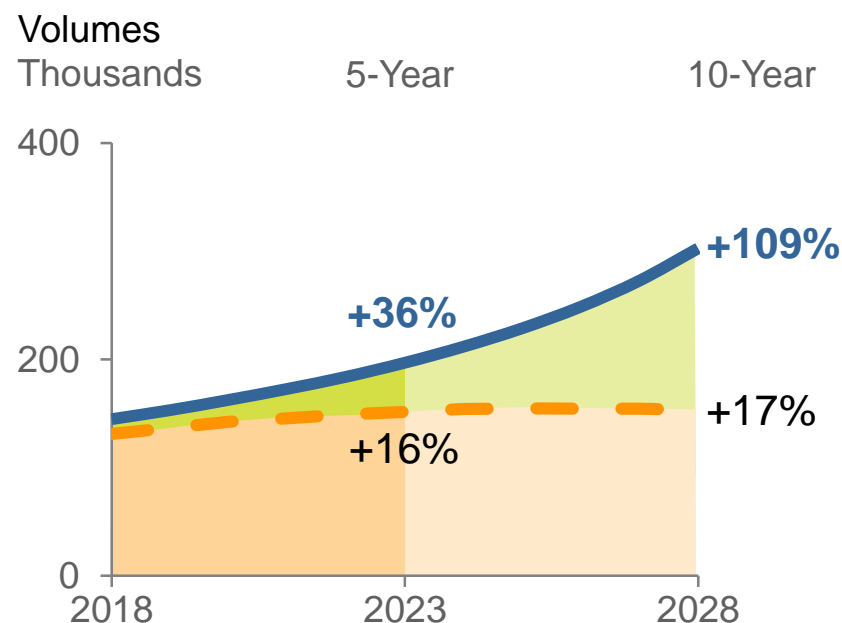
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# Joint Replacement Growth Will Be in the Outpatient Setting

## IP and OP Hip and Knee Replacement Forecast, US Market, 2018–2028



## IP and OP Shoulder Replacement Forecast, US Market, 2018–2028

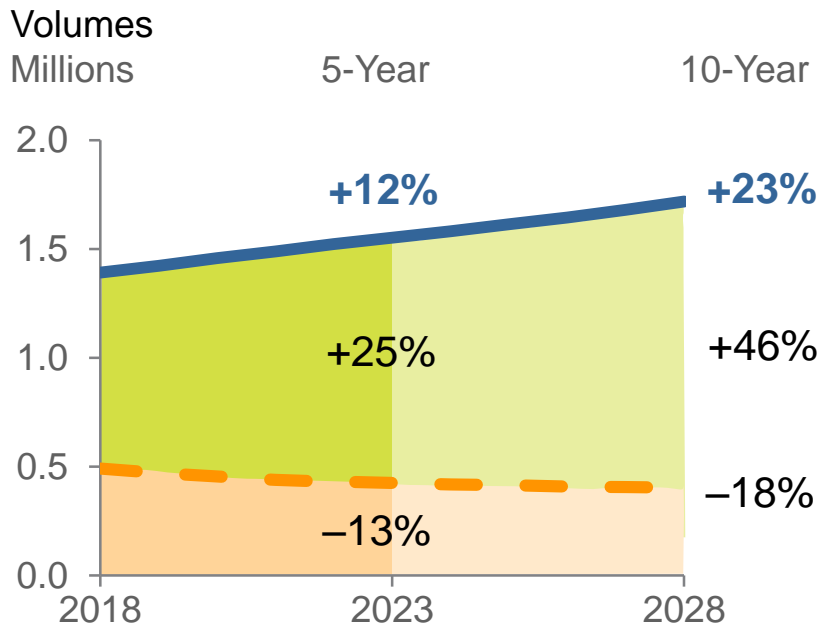


■ Sg2 IP and OP Forecast ■ Sg2 IP Forecast ■ Sg2 OP Forecast

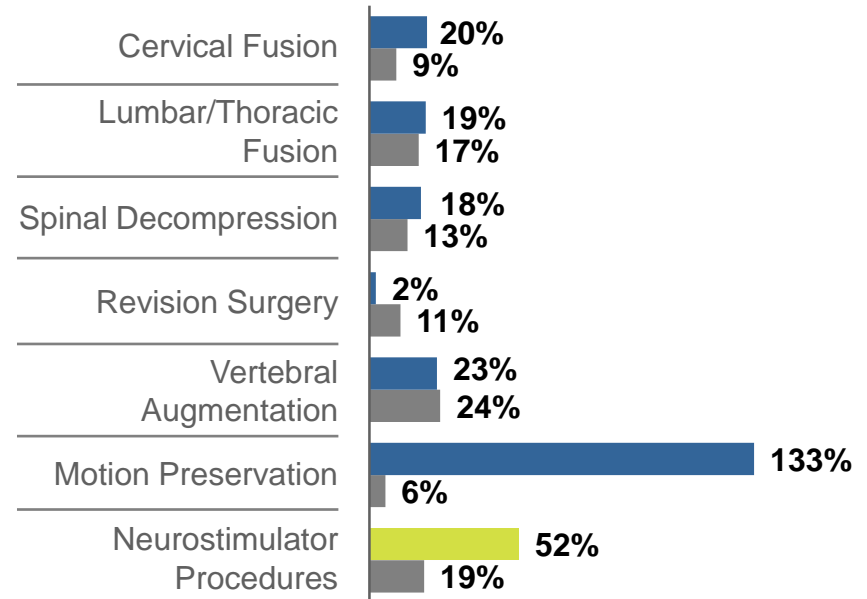
**Note:** Analysis excludes 0–17 age group. Hip and knee replacement includes primary and revision hip/knee replacement and partial knee replacement for Osteoarthritis CARE Family only. Shoulder replacement includes all orthopedic CARE Families. **Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

# Surgical Spine Growth Is Strong

## Surgical Spine Forecast IP and OP, US Market, 2018–2028



## Surgical Spine Procedure Forecast IP and OP, US Market, 2018–2028



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

**Note:** Analysis excludes 0–17 age group and includes the spine service line. Sg2 IP and OP Forecast includes IP Major Therapeutic procedure group and OP Major Procedures procedure group but excludes radiofrequency ablation. **Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

# Orthopedics/Spine Top Outpatient Growth for Surgical Procedures

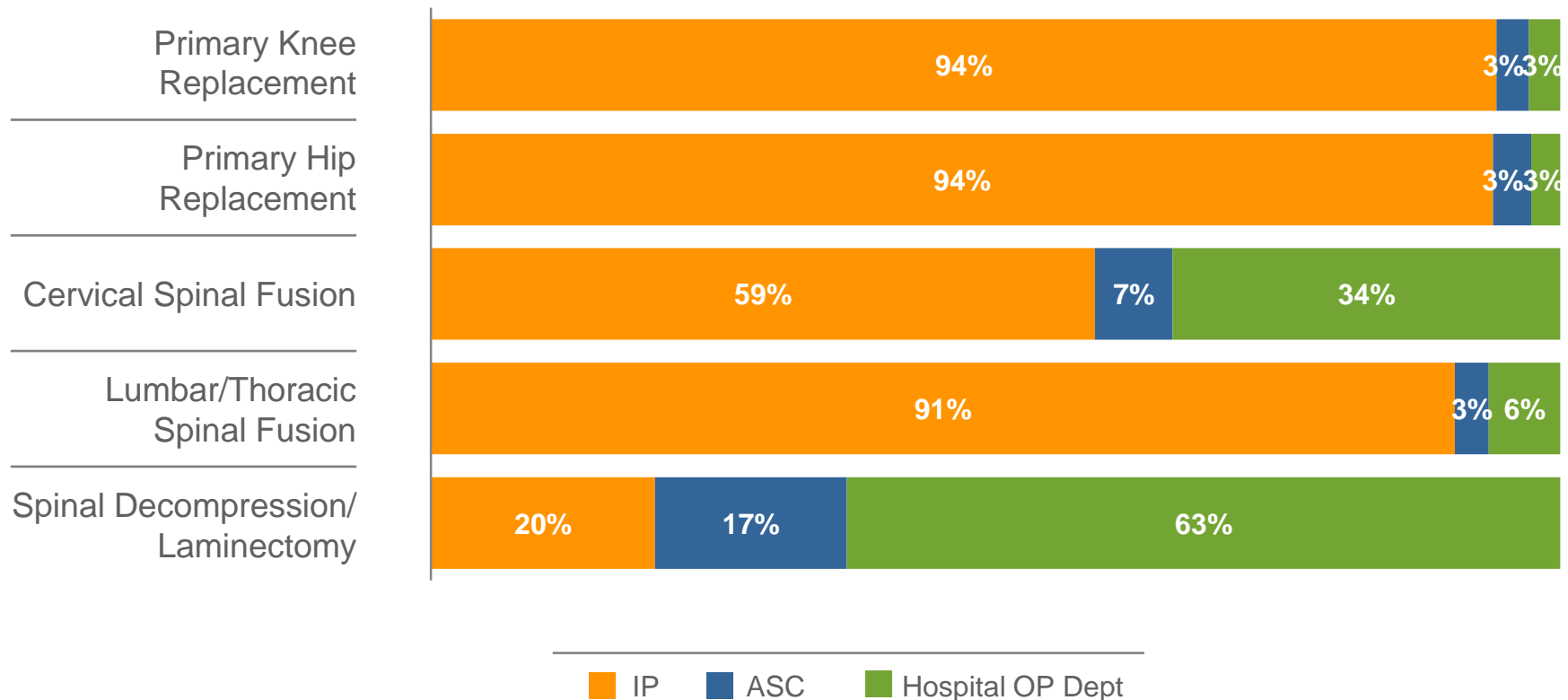
	10-YEAR % CHANGE	2018 VOLUMES
<b>Overall Surgeries</b>	<b>23%</b>	<b>40,658,000</b>
Primary Knee Replacement	1,105%	61,000
Primary Shoulder Replacement	971%	14,000
Primary Hip Replacement	712%	43,000
Lumbar/Thoracic Spinal Fusion	211%	31,000
Motion Preservation Procedures	153%	15,000
Partial Knee Replacement	139%	77,000
Revision Knee Replacement	120%	4,000
Primary Ankle Replacement	110%	2,000
Cervical Spinal Fusion	90%	103,000
Prostatectomy	62%	12,000
Intracardiac Catheter Ablation	51%	236,000
Arthroscopy	35%	3,557,000
Neurostimulator Procedure	30%	448,000

**Note:** Forecast excludes 0–17 age group. OP surgery is defined as procedures: major and endoscopy: arthroscopy.

**Sources:** Impact of Change®, 2018; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

# Majority of Ortho and Spine Procedures Are Performed in the Hospital Today

## 2018 Procedure Location Mix

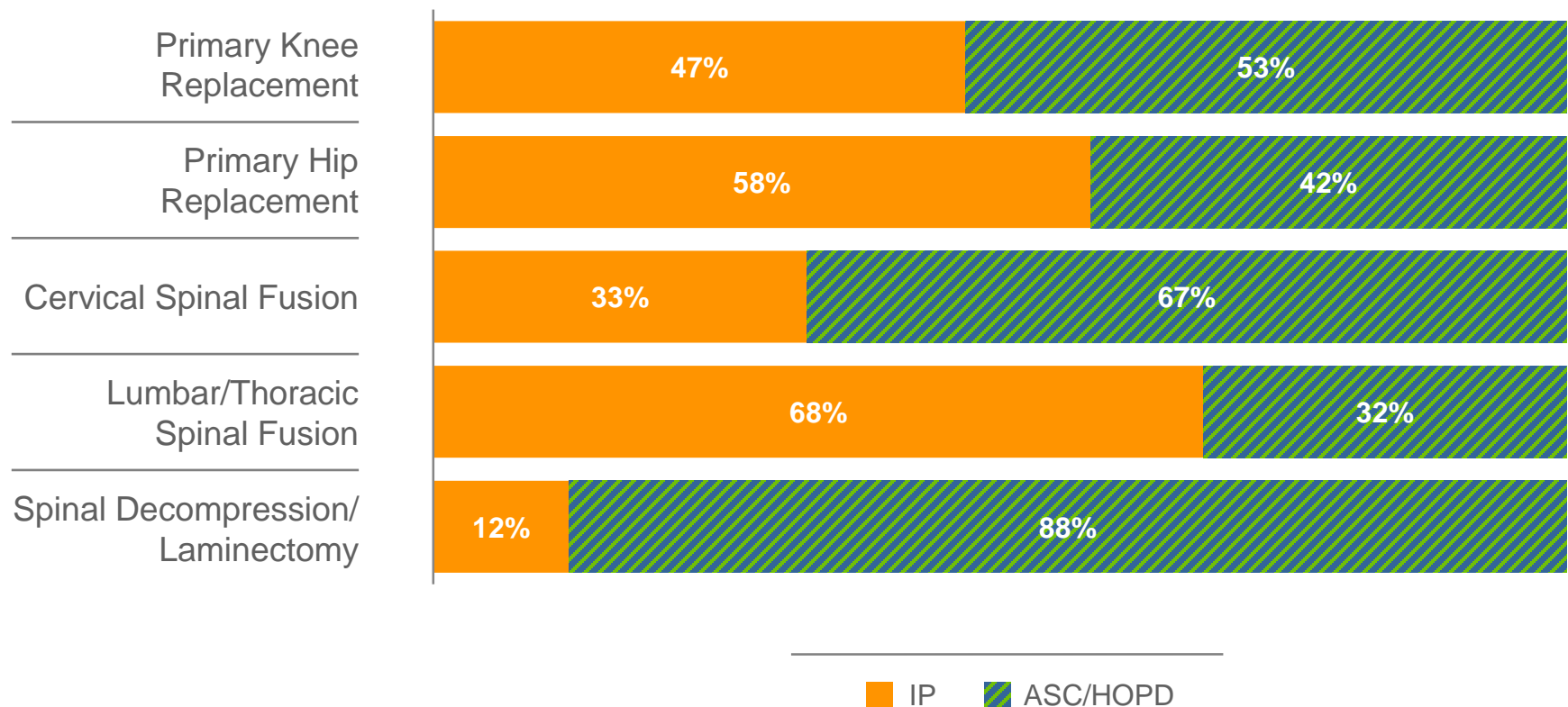


**Note:** Analysis excludes 0–17 age group. Dept = department.

**Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

# Ortho and Spine Procedures Primed for Outpatient Shift

## 2028 Forecasted Procedure Breakout

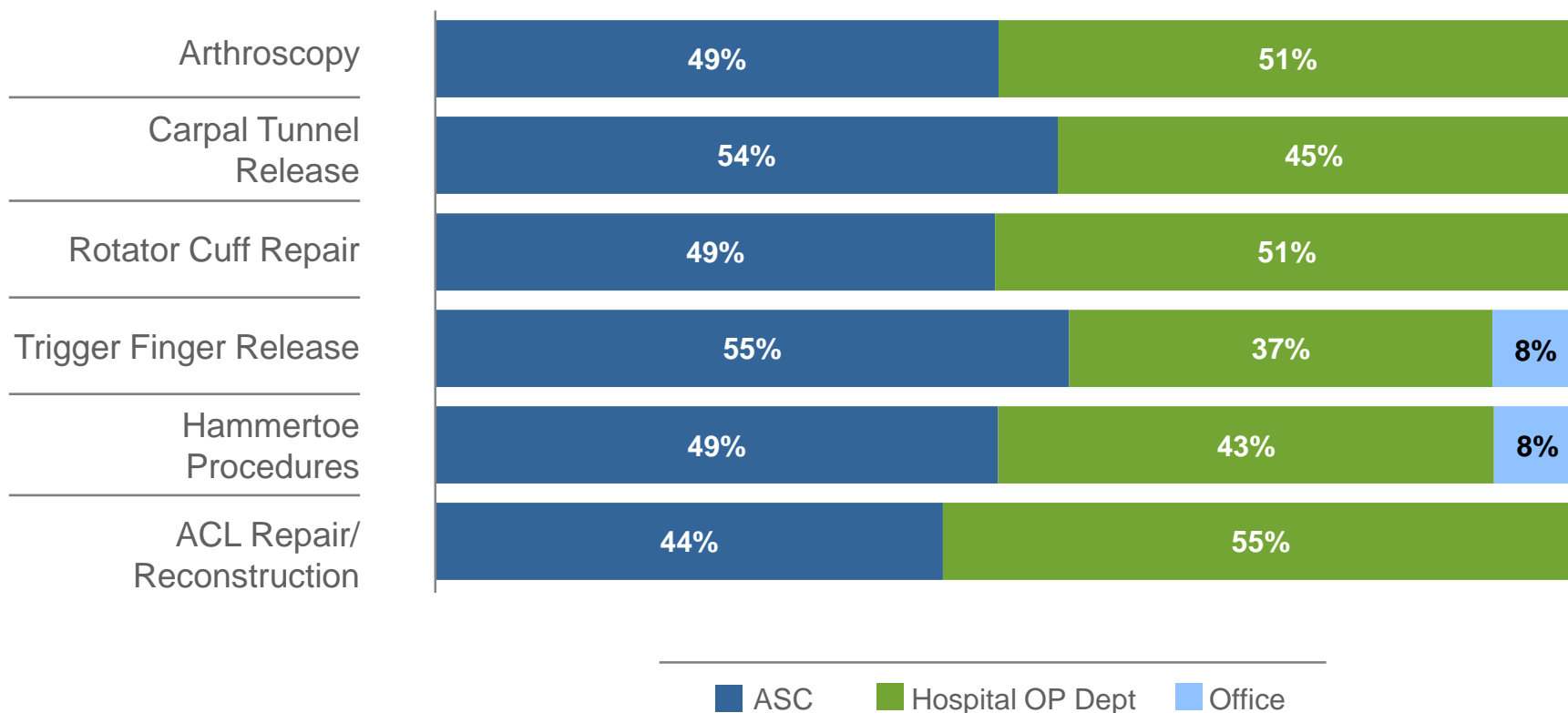


**Note:** Analysis excludes 0–17 age group.

**Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

# Today's Ambulatory Procedures Are Split Roughly 50/50 Between HOPD and ASC

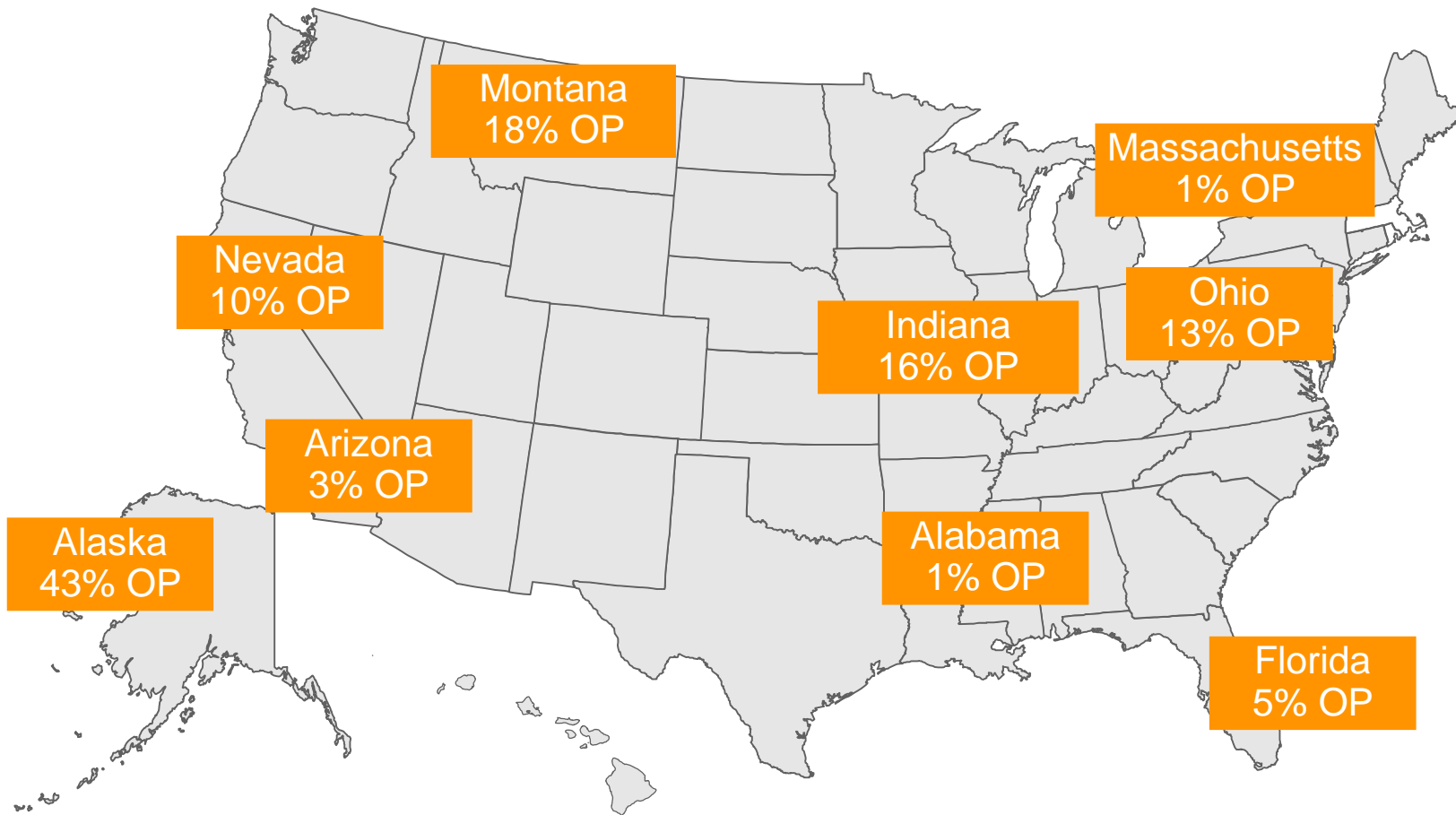
## 2018 Procedure Location Mix



**Note:** Analysis excludes 0–17 age group. Percentages that do not add to 100% are due to rounding.

**Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

# OP TJR Adoption Varies Substantially by Region



Sources: Health Intelligence Company, LLC; OptumInsight; Healthcare Data Solutions; Sg2 Analysis, 2017.

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## UNITYPOINT HEALTH—TRINITY, BETTENDORF, IA



- Surgeon-driven movement
- Consistent ASC and hospital experience
- Hospital alignment and ASC buy-in
- Focus on the patient and quality
- Aggressive contracting
- Expansion

Primary hip and  
knee replacement  
volumes are  
expected to grow

**84%**

over the next  
decade

2013–2017 Growth



Surgery Center	<b>178%</b>
Hospital	<b>41%</b>
Total Program	<b>69%</b>

## CASE STUDY

# High-Quality Focus Across the System of CARE Differentiates Program

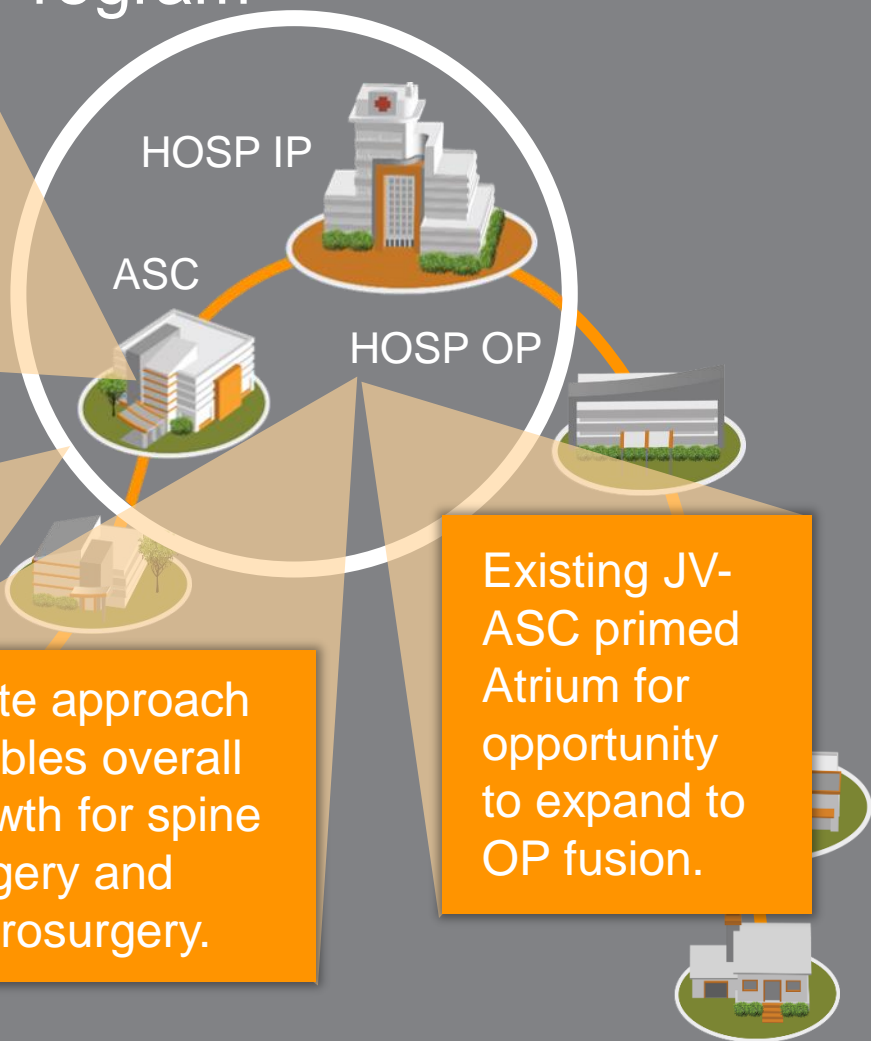
ASC joint venture between Atrium and Carolina Neurosurgery & Spine Associates

23-hour stay enables transition of select cases to ASC.

High-quality, efficient care continuum positions Atrium for success in national employer bundles.

3-site approach enables overall growth for spine surgery and neurosurgery.

Existing JV-ASC primed Atrium for opportunity to expand to OP fusion.



**Note:** Atrium Health was formerly Carolinas HealthCare System. JV = joint venture.

**Source:** Sg2 Interview With Atrium Health, 2018.

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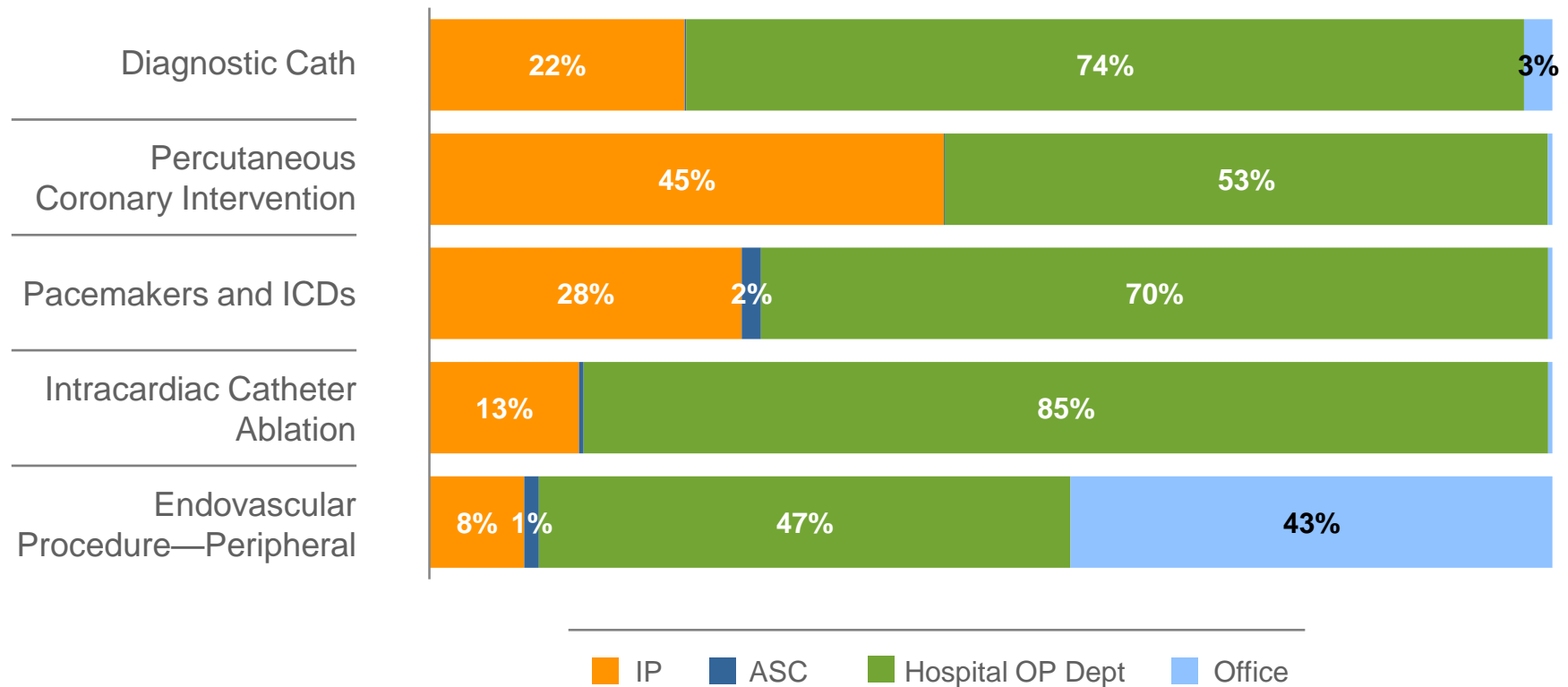
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**Ambulatory Trends Across Service  
Lines**

# CV Procedures Have Gained a Strong Foothold in the Outpatient Setting

## 2018 Procedure Location Mix

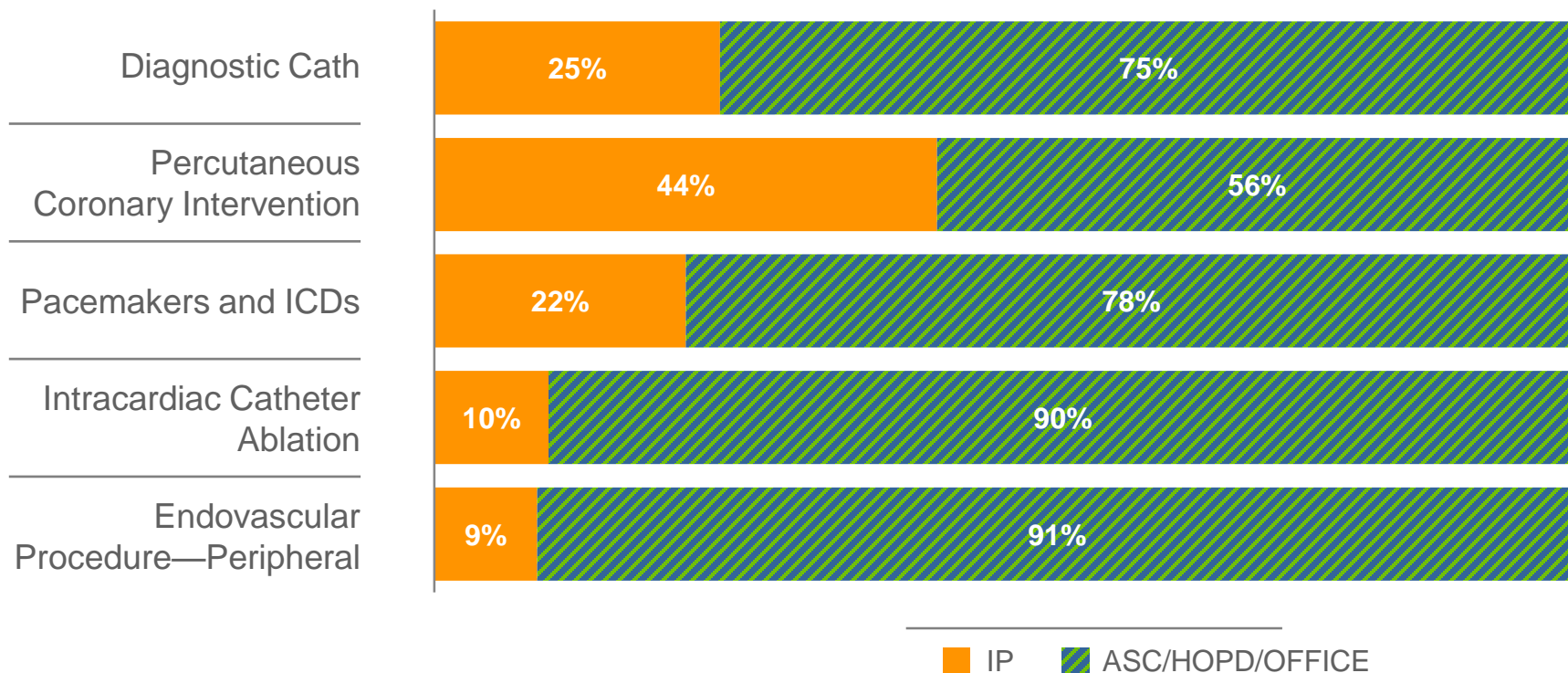


**Note:** Analysis excludes 0–17 age group. Percentages that do not add to 100% are due to rounding. Cath = catheterization; ICD = implantable cardioverter defibrillator.

**Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

# Over 80% of CV Procedures Will Be Performed Outpatient by 2028

## 2028 Forecasted Procedure Breakout

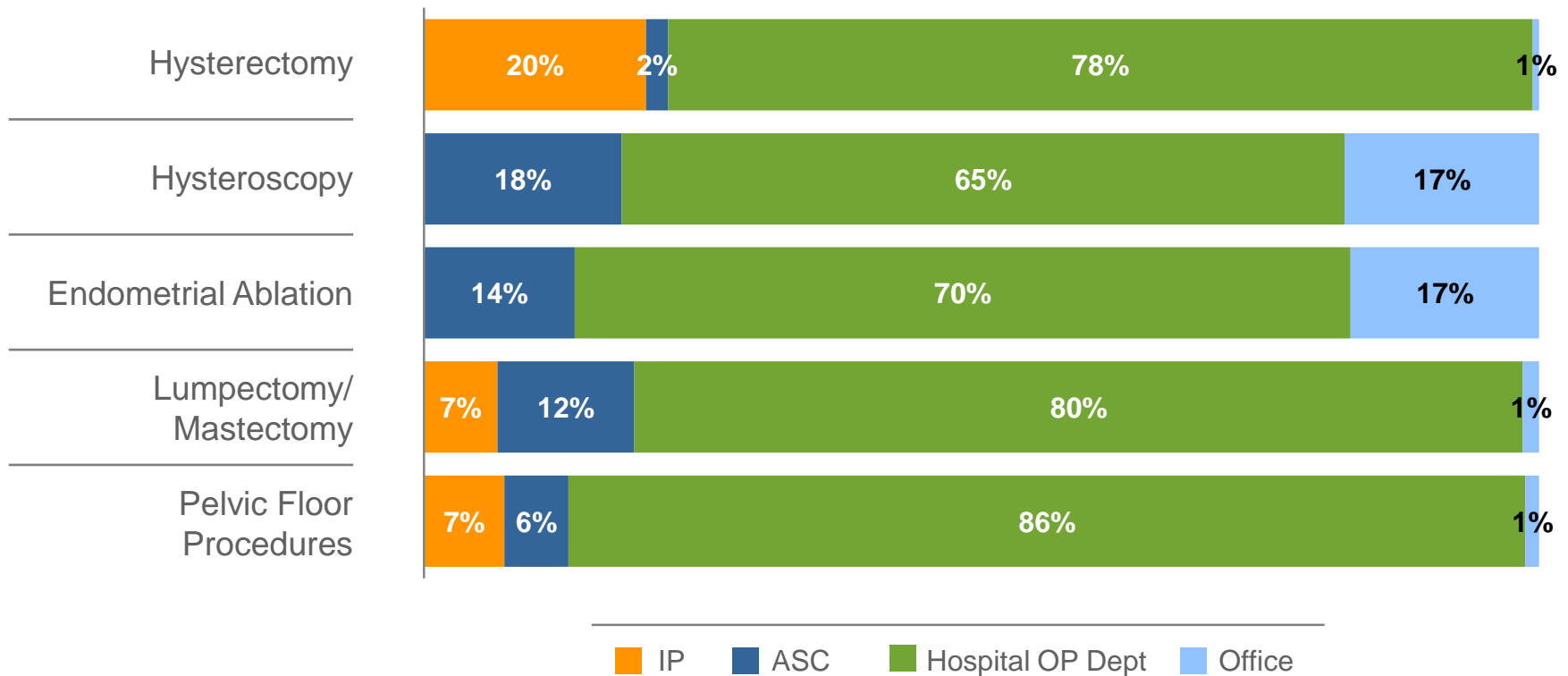


**Note:** Analysis excludes 0–17 age group.

**Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

# Women's Health Procedures Are Performed Primarily in Hospital OP Department Today

## 2018 Procedure Location Mix

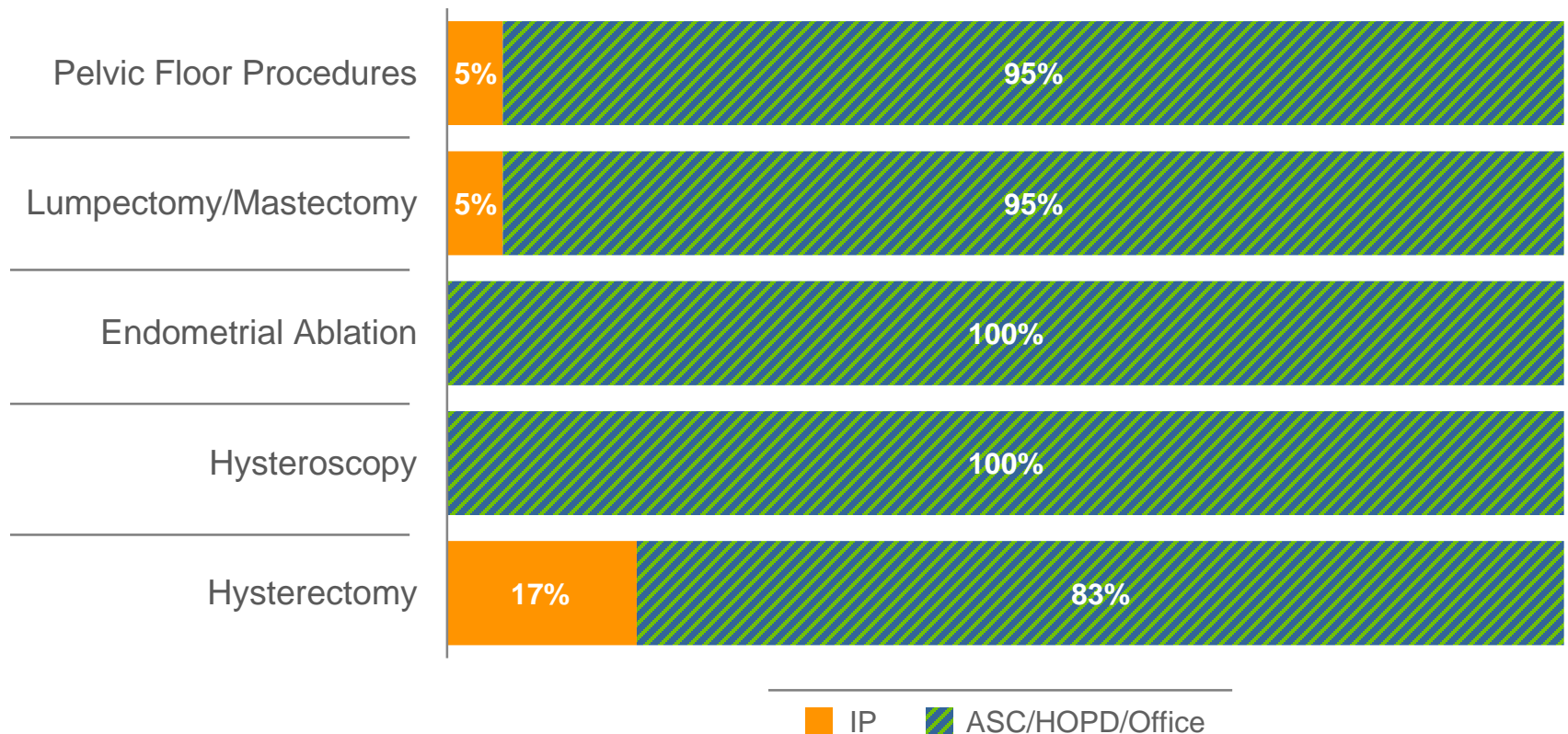


**Note:** Analysis excludes 0–17 age group. Percentages that do not add to 100% are due to rounding.

**Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

# Physician Specialization Will Enable Shift of Procedures to ASC and Office Setting

## 2028 Forecasted Procedure Breakout

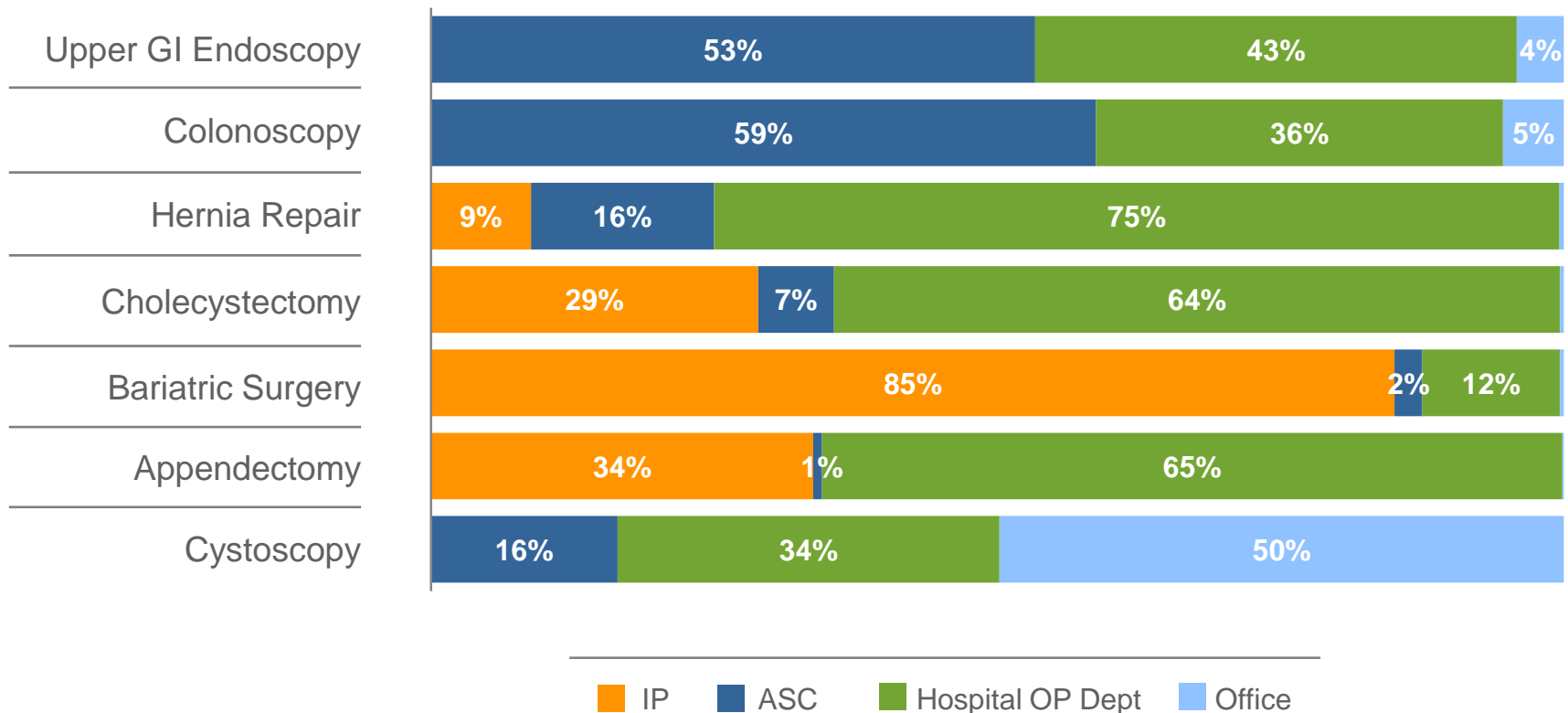


**Note:** Analysis excludes 0–17 age group.

**Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

# GI, Urology and General Surgery Procedures Dominate the ASC Setting

## 2018 Procedure Location Mix



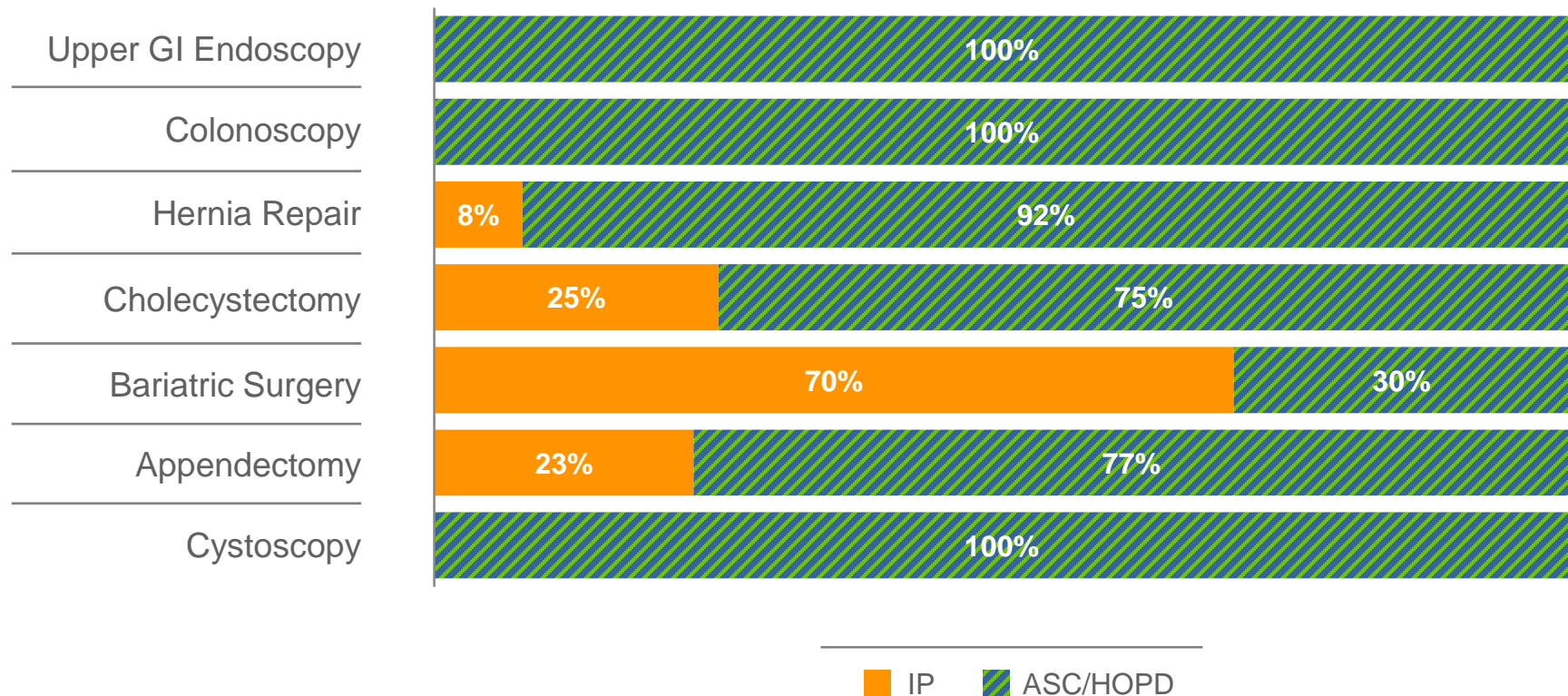
**Note:** Analysis excludes 0–17 age group. Percentages that do not add to 100% are due to rounding. GI = gastrointestinal.

**Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

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# General Surgery Expected to See Continued Outpatient Shift Across Ambulatory Sites

## 2028 Forecasted Procedure Breakout



**Note:** Analysis excludes 0–17 age group.

**Sources:** Impact of Change®, 2018; HCUP National Inpatient Sample (NIS). Healthcare Cost and Utilization Project (HCUP) 2015. Agency for Healthcare Research and Quality, Rockville, MD; OptumInsight, 2016; The following 2016 CMS Limited Data Sets (LDS): Carrier, Denominator, Home Health Agency, Hospice, Outpatient, Skilled Nursing Facility; Claritas Pop-Facts®, 2018; Sg2 Analysis, 2018.

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