

Shifting Routes: Real-World Utilization, Costs and Site of Care of Intravenous and Subcutaneous Oncology Biologics

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Background

- US spending on anticancer therapies is projected to reach \$180 billion by 2028, underscoring the growing financial impact of oncology care.¹
- Several oncology biologics have been reformulated from intravenous (IV) to subcutaneous (SC) products, with the promise of improving patient convenience and reducing administration time.
- While clinical trials have demonstrated comparable efficacy and safety, the real-world payer impact of IV-to-SC transitions on healthcare costs, site-of-care utilization, and resource use remains poorly characterized.

Objective

Our objective is to characterize the utilization of IV and SC oncology biologics at treatment initiation, evaluate patterns of administration route switching during treatment, and assess the economic implications of route of administration (ROA).

Methods

- This retrospective observational analysis uses administrative medical and pharmacy claims.
- The US database has approximately 19 million members across commercial (17M), Medicare (1M) and Medicaid (1M).
- Study period is from January 1, 2023, to December 31, 2025.
- Baseline period is a 180-day look back to identify new starts and establish the index date.
- Follow-up period is 12 months post-index date (1.5-year total observation window).
- Study drugs of interest include trastuzumab, trastuzumab/pertuzumab, rituximab, daratumumab, nivolumab, and atezolizumab.
- Index date is defined as the earliest qualifying oncology biologic claim during the identification window.
- Switch is defined as the same ingredient administered SC.
- Inclusion criteria included a new start with ≥1 study drug claim, cancer indication, and continuous enrollment. Members were further filtered for 22 study drug claims and 24 oncology drug claims.
- Index date restrictions were applied to drugs with SC formulations with FDA approval during study period.
- The average drug allowed amount was presented as cost per clinical unit to account for various doses and frequencies.

Table 1
Characteristics

Characteristics	n = 5,219
Age (years, mean)	57.2 +/- 13.0
Female, n(%)	3,634 (69.6)
IV administration, n(%)	4,717 (90.4)
SC administration, n(%)	502 (9.6)
Biosimilar use, n(%)	4,406 (93.4)

IV = Intravenous
SC = Subcutaneous

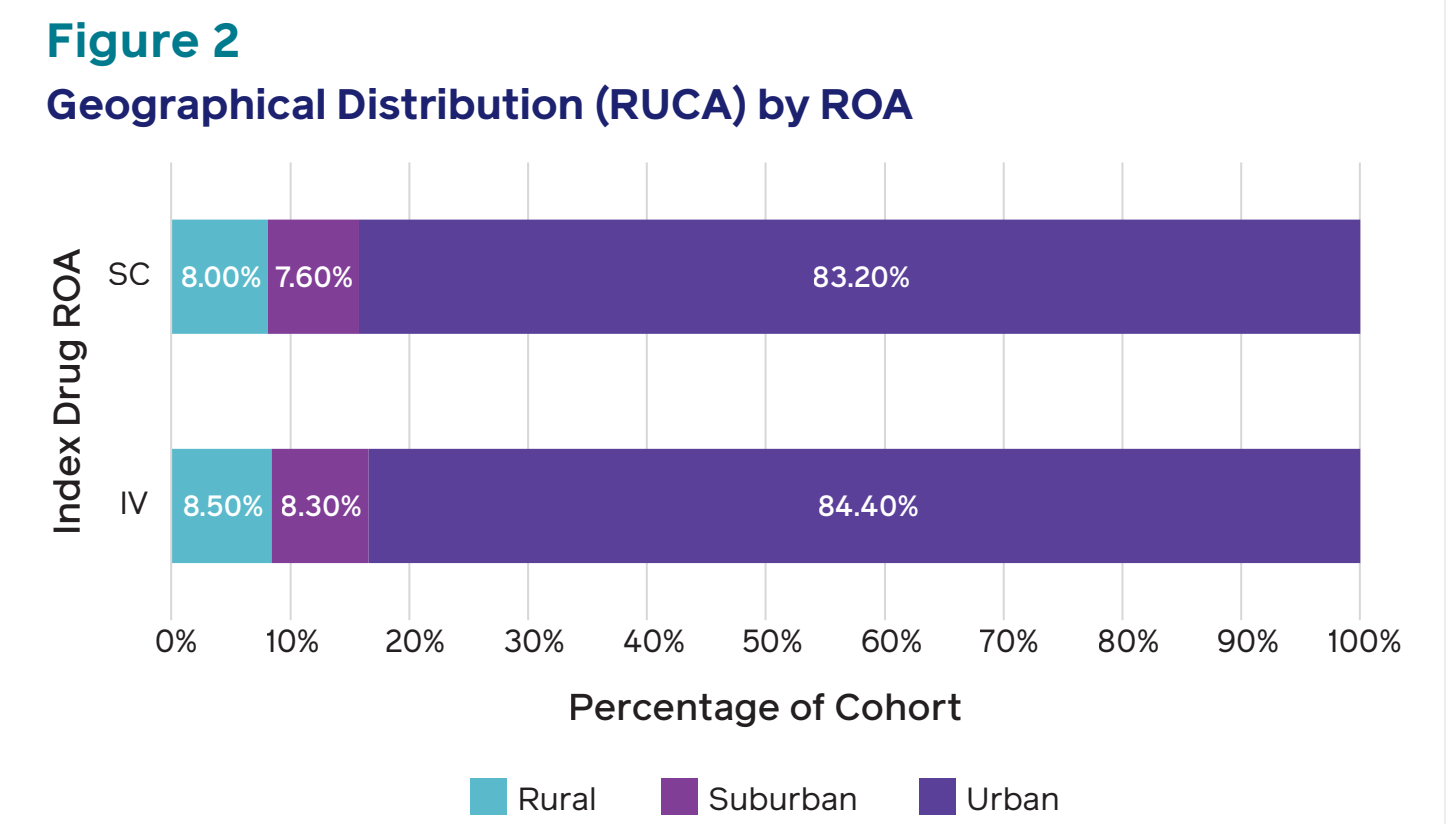
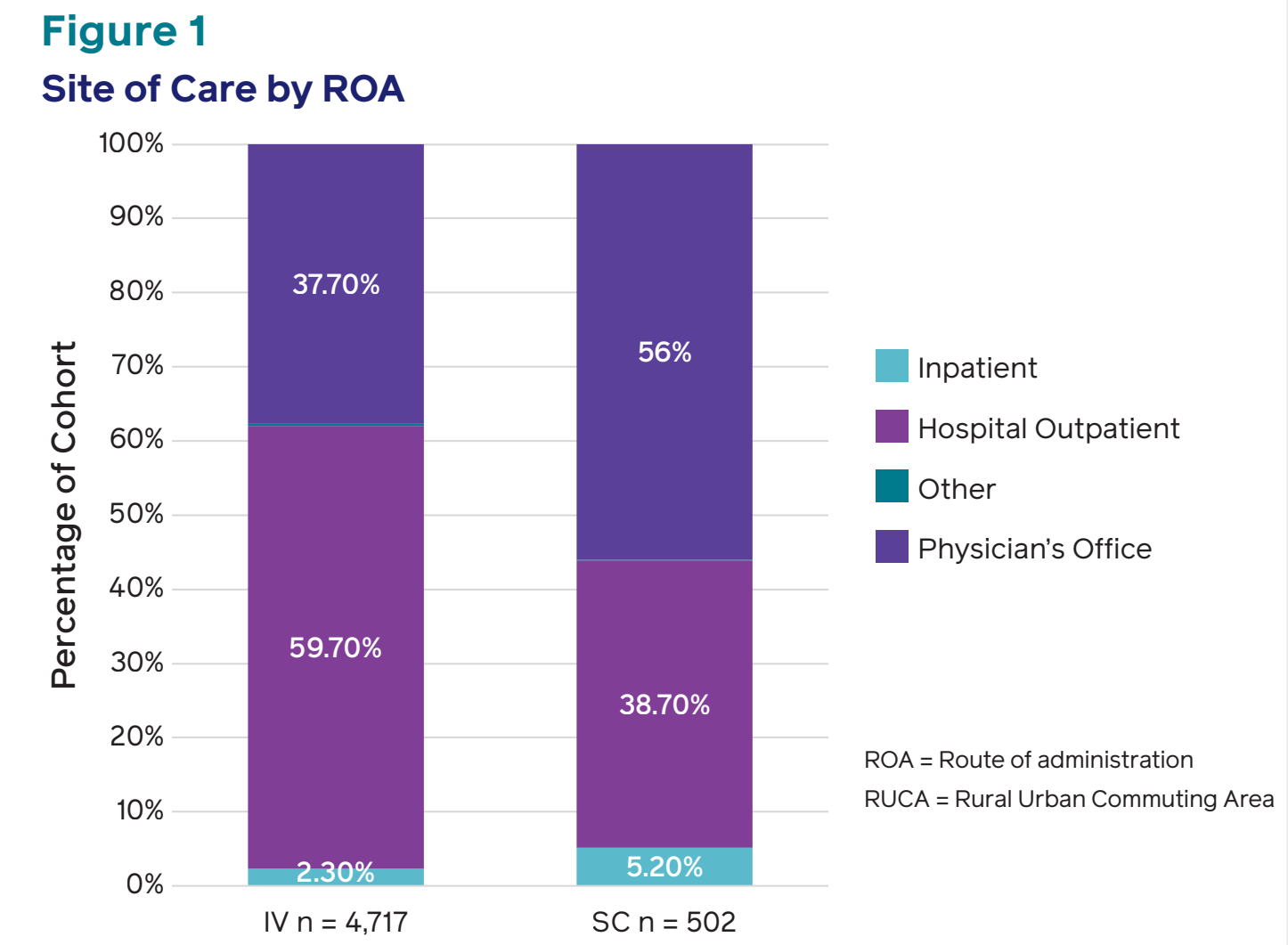
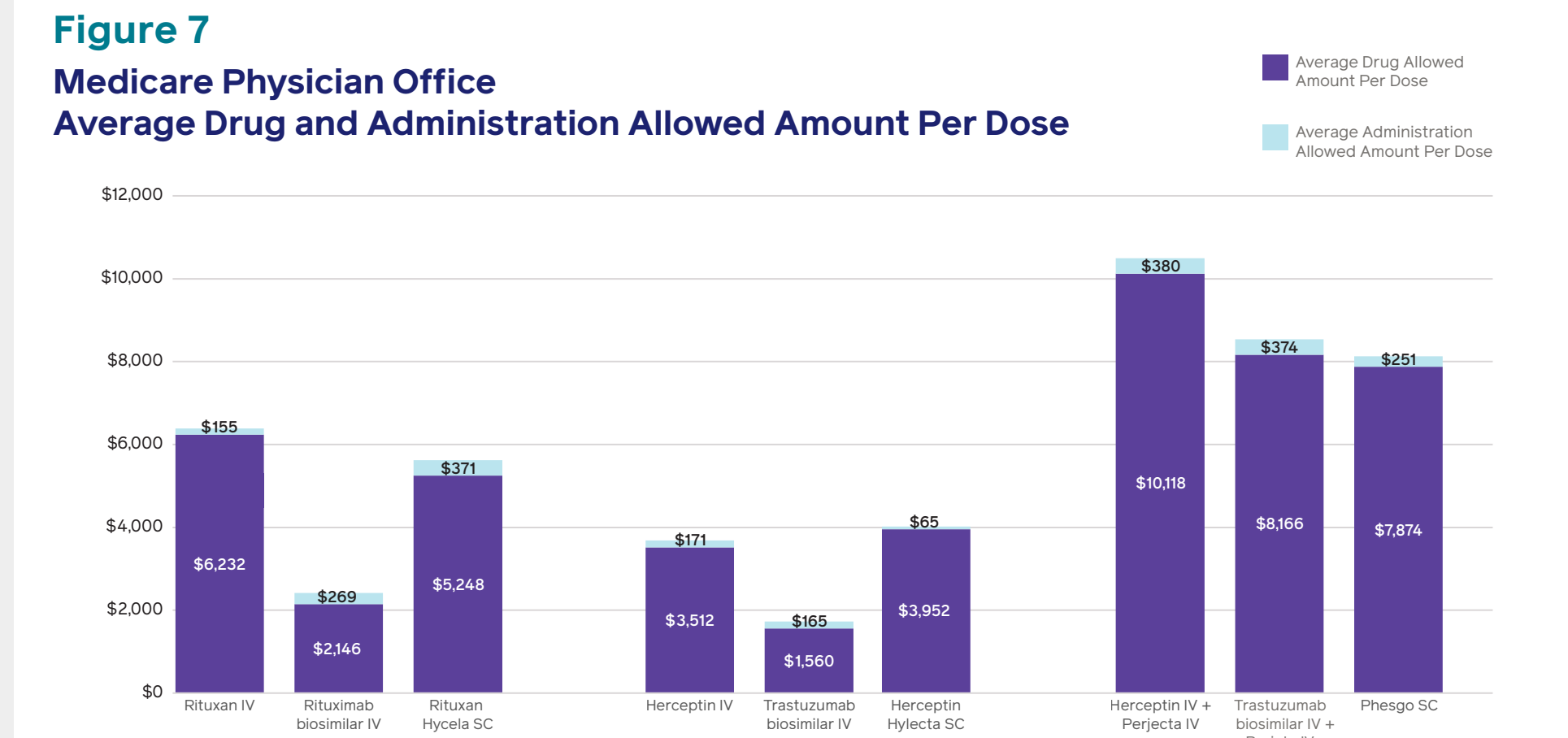
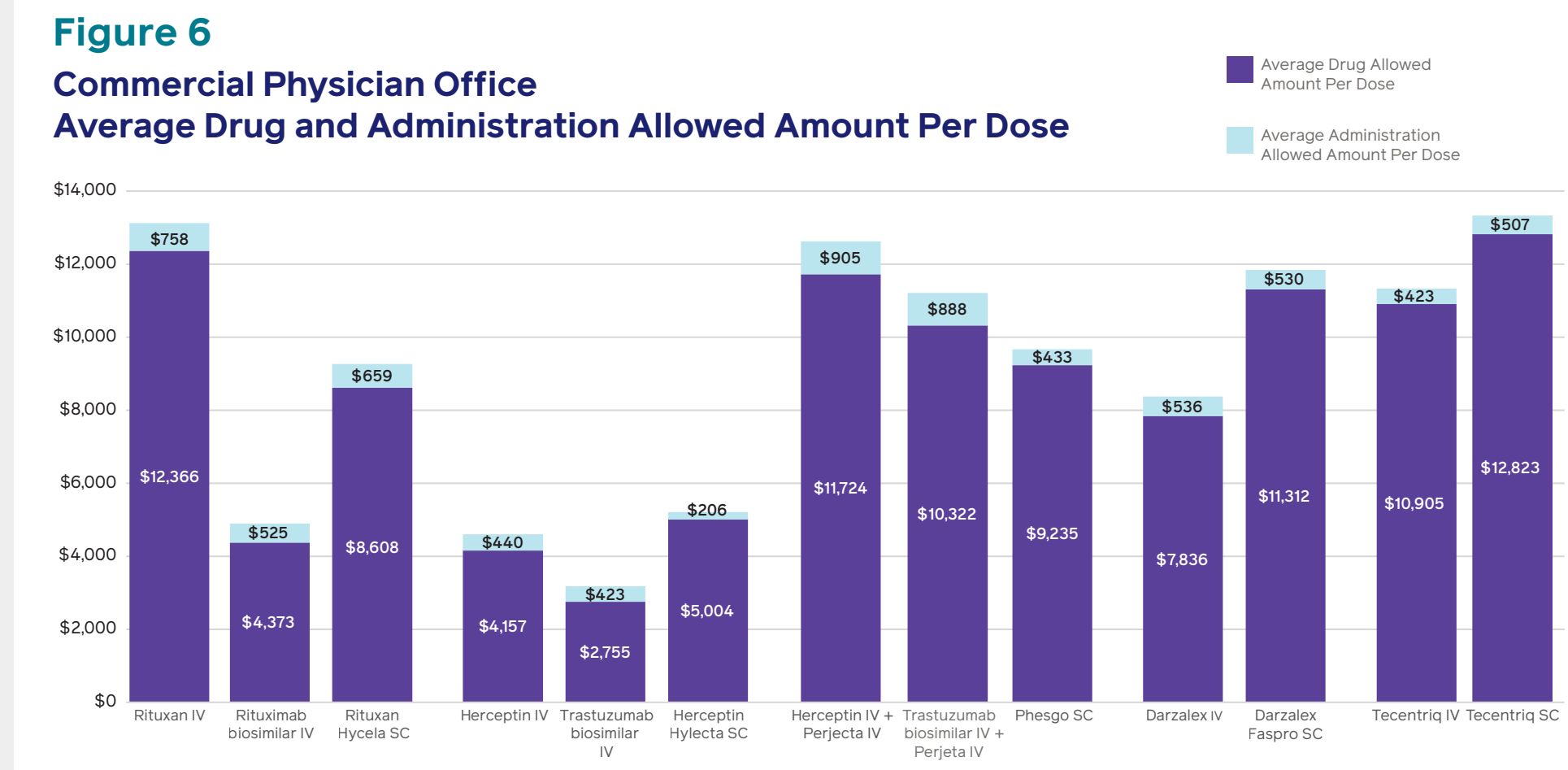
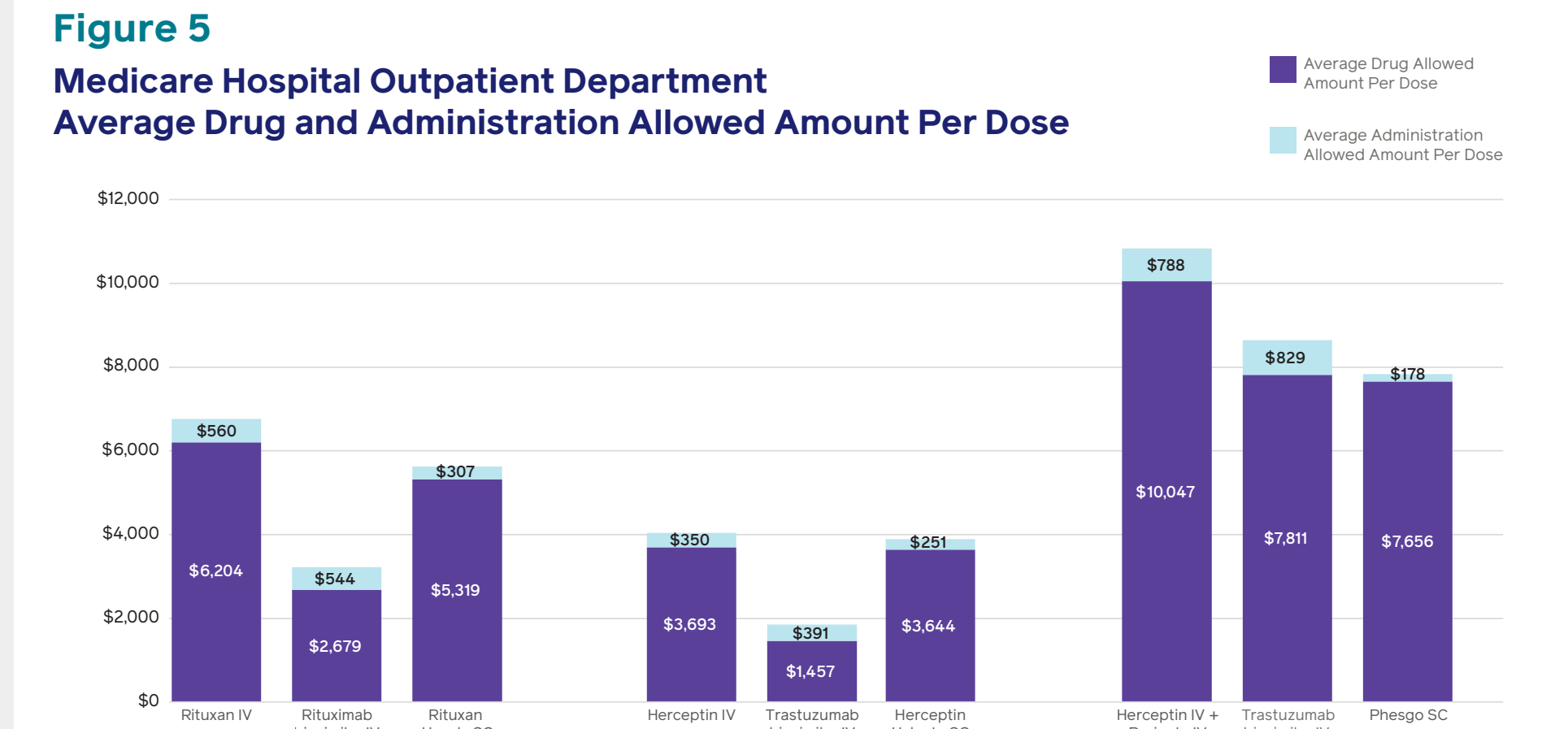
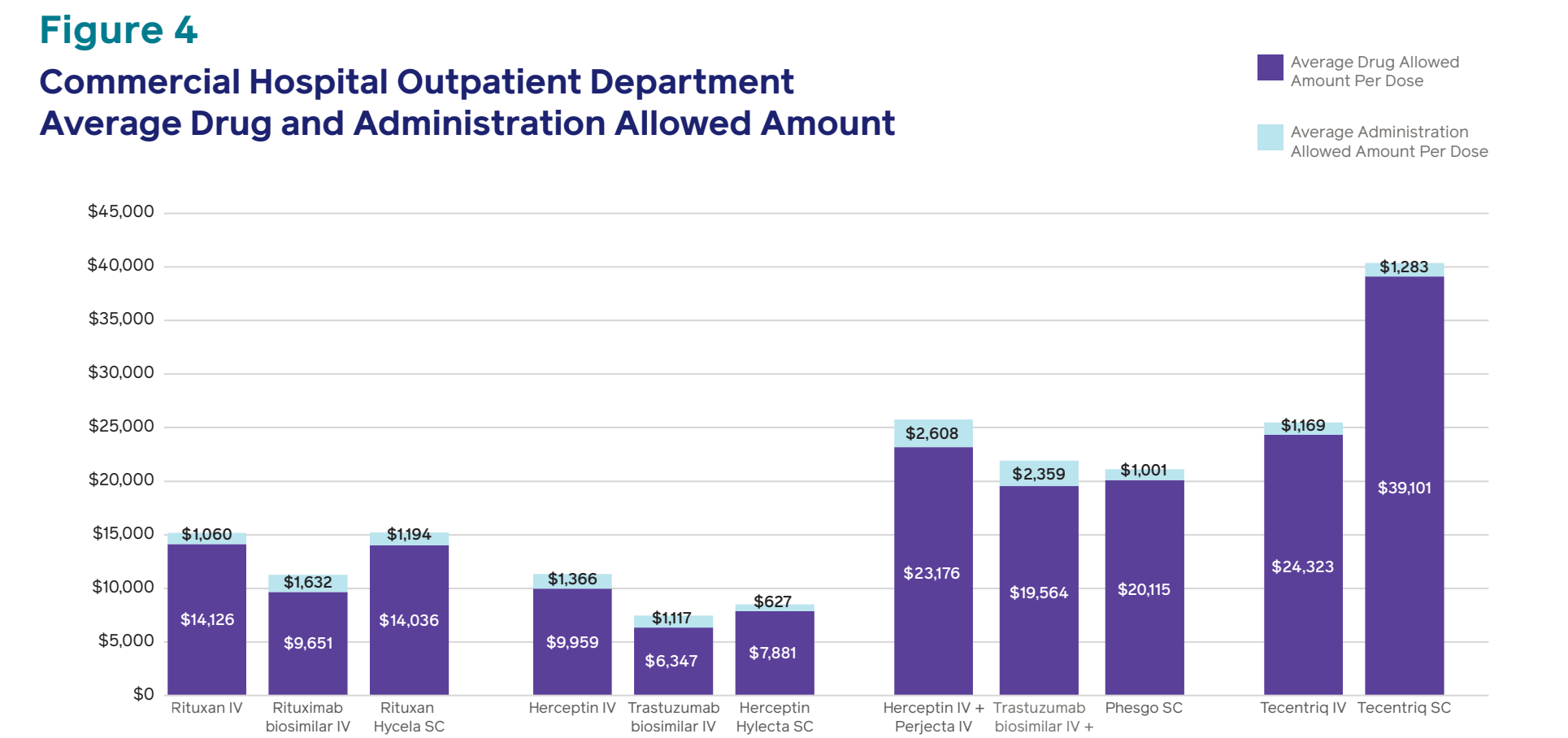
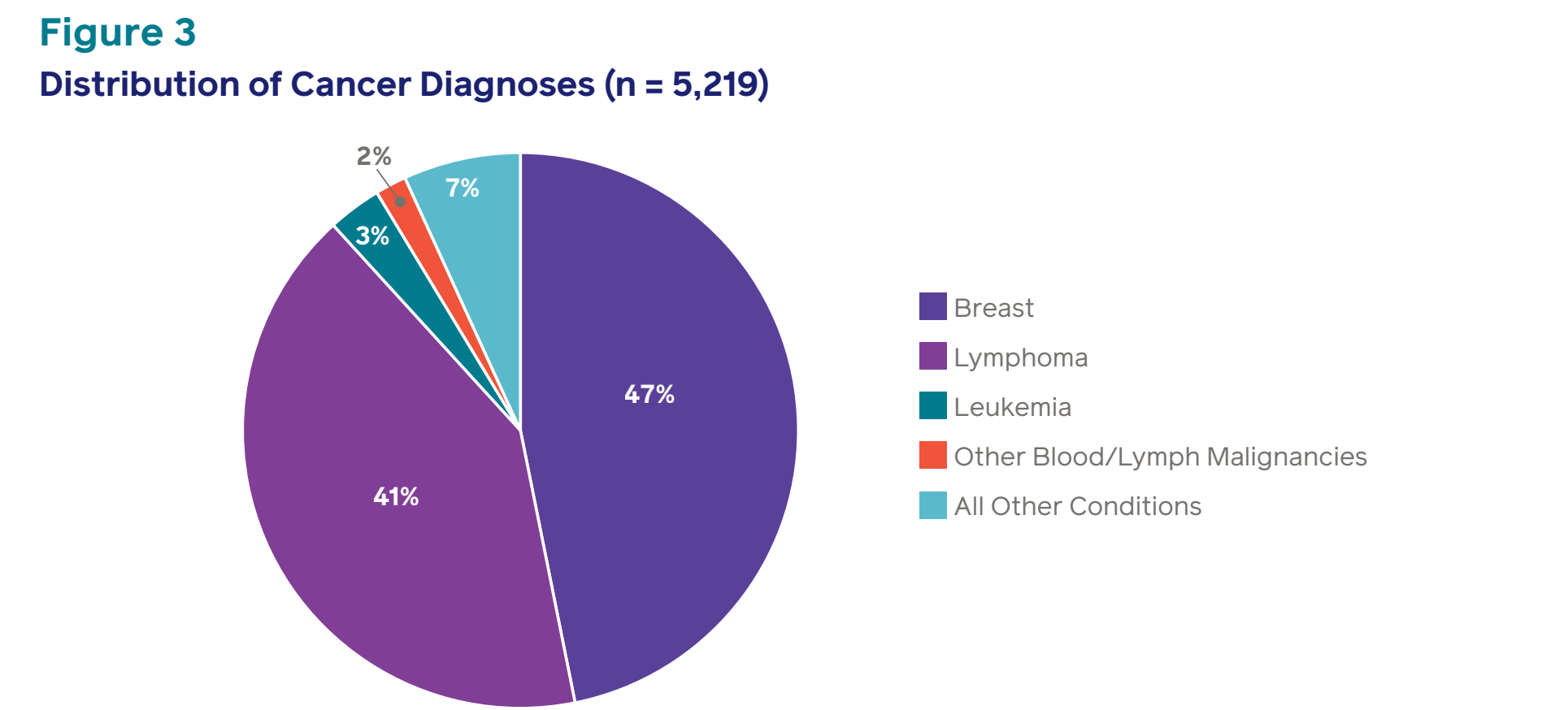


Table 2
IV to SC Adoption

Index Drug (IV)	IV to SC Switch Rate	Median Time to Switch (days)
Rituximab n = 2,422	2.7%	28
Trastuzumab n = 872	4.7%	105
Pertuzumab + trastuzumab n = 1,219	15.3%	166
Daratumumab n = 7	28.6%	91
Nivolumab n = 85	1.2%	286
Atezolizumab n = 70	5.7%	162



Results

- See [tables 1-2](#) and [figures 2-7](#) for detailed results.

Limitations

- Nivolumab and atezolizumab were indexed shortly after SC approval, and early adoption may not reflect longer-term utilization patterns.
- Therapy duration and switching were derived from claims data and may not fully represent clinical treatment patterns.
- Smaller subgroup sample sizes may have limited statistical precision and power.

Conclusion

- Among 5,219 oncology biologic initiators, IV therapy remained the predominant route of administration (ROA) (90.4%), despite availability of SC formulations.
- IV-to-SC adoption was limited and varied substantially across biologics, suggesting that SC availability alone does not drive practice change.
- Pertuzumab/trastuzumab demonstrated greater SC adoption, potentially reflecting the convenience of a fixed dose combination. Compared with IV therapy, SC treatment was more frequently delivered in physician offices representing a step toward site-of-care optimization; however, substantial opportunity remains to expand care delivery through use of ambulatory infusion centers and home infusion, which represent lower costs.
- Geographic residence was not associated with ROA (p=0.8), suggesting that ROA selection may be influenced more by clinical and operational factors than patient geography.
- Average allowed amounts were driven primarily by drug expenditures and site of care, with IV biosimilars consistently yielding the lowest costs as administration-related savings from SC formulations were relatively modest.
- These findings suggest that payer strategies should not assume an inherent economic advantage with SC formulations and instead evaluate biosimilars, SC products, and site-of-care management together to maximize value.

References

- Jazowski SA, Nayak RK, Dusetzina SB. The high costs of anticancer therapies in the USA: challenges, opportunities and progress. *Nat Rev Clin Oncol.* 2024;21(12):888-899. doi:10.1038/s41571-024-00948-1.