

2018-04-25

A Comparison of the Costs Associated with the Administration of Select High-cost Infused Medications in Three Sites of Care for a State Medicaid Population

Sage Bagwell

University of Massachusetts Medical School

Pavel Lavitas

University of Massachusetts Medical School

Thomas C. Pomfret

University of Massachusetts Medical School

See next page for additional authors

Follow this and additional works at: https://escholarship.umassmed.edu/commed_pubs

 Part of the [Health Economics Commons](#), [Health Policy Commons](#), [Health Services Administration Commons](#), [Health Services Research Commons](#), [Pharmaceutical Preparations Commons](#), and the [Pharmacoeconomics and Pharmaceutical Economics Commons](#)

Repository Citation

Bagwell, Sage; Lavitas, Pavel; Pomfret, Thomas C.; Greenwood, Bonnie C.; Trask, Nicole M.; Tran, Stephanie; Schiff, Nancy L.; Hyder, Tasmina; Leto, Patricia; Price, Mylissa K.; Alper, Caroline J.; Lenz, Kimberly J.; and Jeffrey, Paul L., "A Comparison of the Costs Associated with the Administration of Select High-cost Infused Medications in Three Sites of Care for a State Medicaid Population" (2018). *Commonwealth Medicine Publications*. 189.
https://escholarship.umassmed.edu/commed_pubs/189

A Comparison of the Costs Associated with the Administration of Select High-cost Infused Medications in Three Sites of Care for a State Medicaid Population

Authors

Sage Bagwell, Pavel Lavitas, Thomas C. Pomfret, Bonnie C. Greenwood, Nicole M. Trask, Stephanie Tran, Nancy L. Schiff, Tasmina Hydery, Patricia Leto, Mylissa K. Price, Caroline J. Alper, Kimberly J. Lenz, and Paul L. Jeffrey

Keywords

Medicaid, Pharmacy, Drug Utilization Review

Rights and Permissions

© 2018 University of Massachusetts Medical School

A Comparison of the Costs Associated with the Administration of Select High-cost Infused Medications in Three Sites of Care in a State Medicaid Population

BACKGROUND

- According to a nationwide 2017 survey, 58 respondent commercial health plans attribute almost half of specialty drug costs to the medical benefit (45%) with the remainder attributed to the pharmacy benefit (55%).¹
- Site of care (SOC) programs are one of many strategies used by payers to reduce specialty drug spend. These programs aim to shift utilization of high-cost infused medications to less costly sites of administration.¹
- While the cost-savings associated with SOC programs are described in the literature for commercial insurers, data is lacking on their impact in Medicaid programs.
- The Massachusetts Medicaid Fee-for-Service (FFS) and Primary Care Clinician (PCC) plans do not currently manage drug spend through an SOC program.

OBJECTIVES

- To evaluate the costs associated with the administration of select high-cost infused medications in three SOC among the Massachusetts Medicaid FFS and PCC plans populations.

METHODS

- This retrospective analysis included pharmacy and medical claims data for select high-cost infused medications between April 1, 2017 and September 30, 2017.
 - Paid claims for abatacept, belimumab, eculizumab, golimumab for infusion, infliximab-aby, infliximab-dyyb, infliximab, intravenous immune globulins (IVIG), natalizumab, rituximab (non-oncology indications), tocilizumab, and vedolizumab were included.
 - All paid claims with third-party liability coverage (regardless of SOC) and 340B claims in the member home and physician office SOC were excluded.
 - Claims for immune globulins administered subcutaneously in the member home or physician office SOC were excluded. These claims could not be excluded in the hospital outpatient SOC.
- The average cost per claim (ACPC) and median cost per claim (MCPC) were calculated for each medication in each SOC as follows:
 - Member home SOC = medication cost (from pharmacy claims) + allowed home administration fee.
 - Physician office SOC = medication cost (from pharmacy claims or physician office claims) + allowed physician administration fee.
 - Two separate calculations were performed for this SOC with the higher of the ACPC and MCPC results included for analysis.
 - Hospital outpatient SOC = adjudicated payment per episode of care (APEC) + allowed professional service fees.
- The per member per month (PMPM) cost for each medication in each SOC was calculated using the following methodology:
 - PMPM = total amount paid ÷ number of unique utilizers ÷ six months.
- Statistical analysis:
 - Descriptive statistics (including box and whisker plots) were used to report ACPCs and MCPCs while the Kruskal-Wallis and Dunn's tests will be used to compare the MCPCs for each medication in each SOC.

DISCLOSURES/ACKNOWLEDGMENTS

The authors have no financial disclosures.
 Special thanks to Karen Clements (statistical analysis) and Theresa Bufum, Vilmore Wiltshire, and Exron Legaspi (data collection and analysis).

RESULTS

Final results pending further evaluation

82% of all claims were administered in the hospital outpatient SOC

Table 1: ACPC and MCPC for Select High-cost Infused Medications by SOC#

Medication Class	Medication	Member Home		Physician Office		Hospital Outpatient			Unique Utilizers	Claims
		ACPC	MCPC	ACPC	MCPC	ACPC [§]	MCPC [§]	Claims with an Outlier [§]		
IVIG	Gammagard S/D ^{®†}	\$7,792*	\$7,654*	\$7,815*	\$7,677*	Pending	Pending	56%	139	701
	Gammagard ^{®‡}	\$4,962	\$3,980	\$4,985	\$4,003	Pending	Pending			
	Gammaked ^{®‡}	\$8,715*	\$8,715*	\$8,737*	\$8,737*	Pending	Pending	7%		
	Gamunex-C ^{®‡}	\$7,782	\$7,444	\$7,805	\$7,466	Pending	Pending			
	Privigen [®]	\$6,004*	\$6,004*	\$6,027*	\$6,027*	Pending	Pending	100%*		
Immuno-modulators	Actemra [®] (tocilizumab)	\$1,320*	\$1,196*	\$3,077*	\$3,077*	Pending	Pending	17%	365	1,209
	Entyvio [®] (vedolizumab)	\$6,435*	\$5,479*	\$6,489*	\$5,532*	Pending	Pending	100%		
	Orencia [®] (abatacept)	\$3,918*	\$4,006*	\$3,972*	\$4,060*	Pending	Pending	69%		
	Remicade [®] (infliximab)	\$5,844	\$4,587	\$5,919	\$4,663	Pending	Pending	89%		
Others	Rituxan [®] (rituximab)	\$12,197*	\$8,746*	\$12,338*	\$8,887*	Pending	Pending	90%	166	406
	Soliris [®] (eculizumab)	\$35,816*	\$25,718*	\$35,870*	\$25,771*	Pending	Pending	79%		
	Tysabri [®] (natalizumab)	\$5,665	\$5,628	\$5,688	\$5,651	Pending	Pending	79%		

Figure 1: ACPC and MCPC for IVIG by SOC

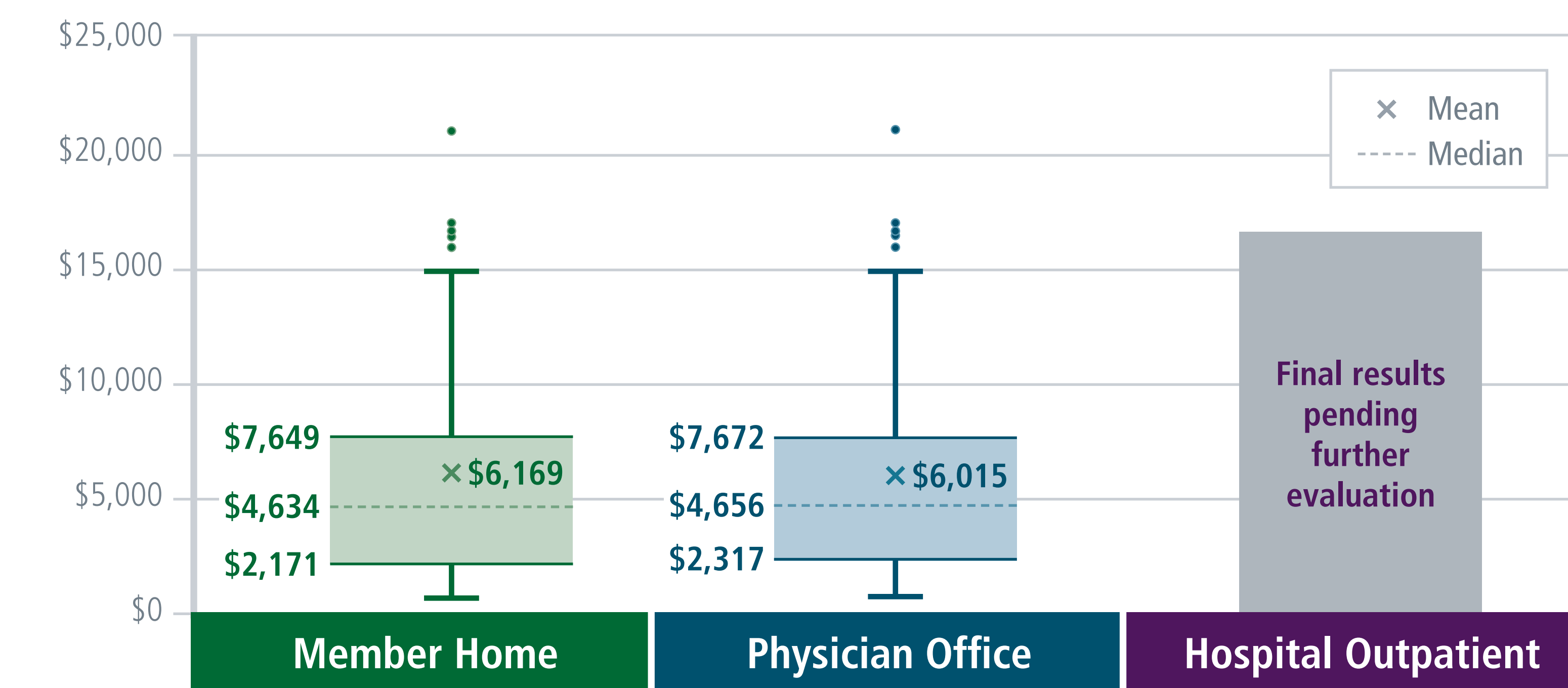


Figure 3: PMPM Cost for IVIG by SOC

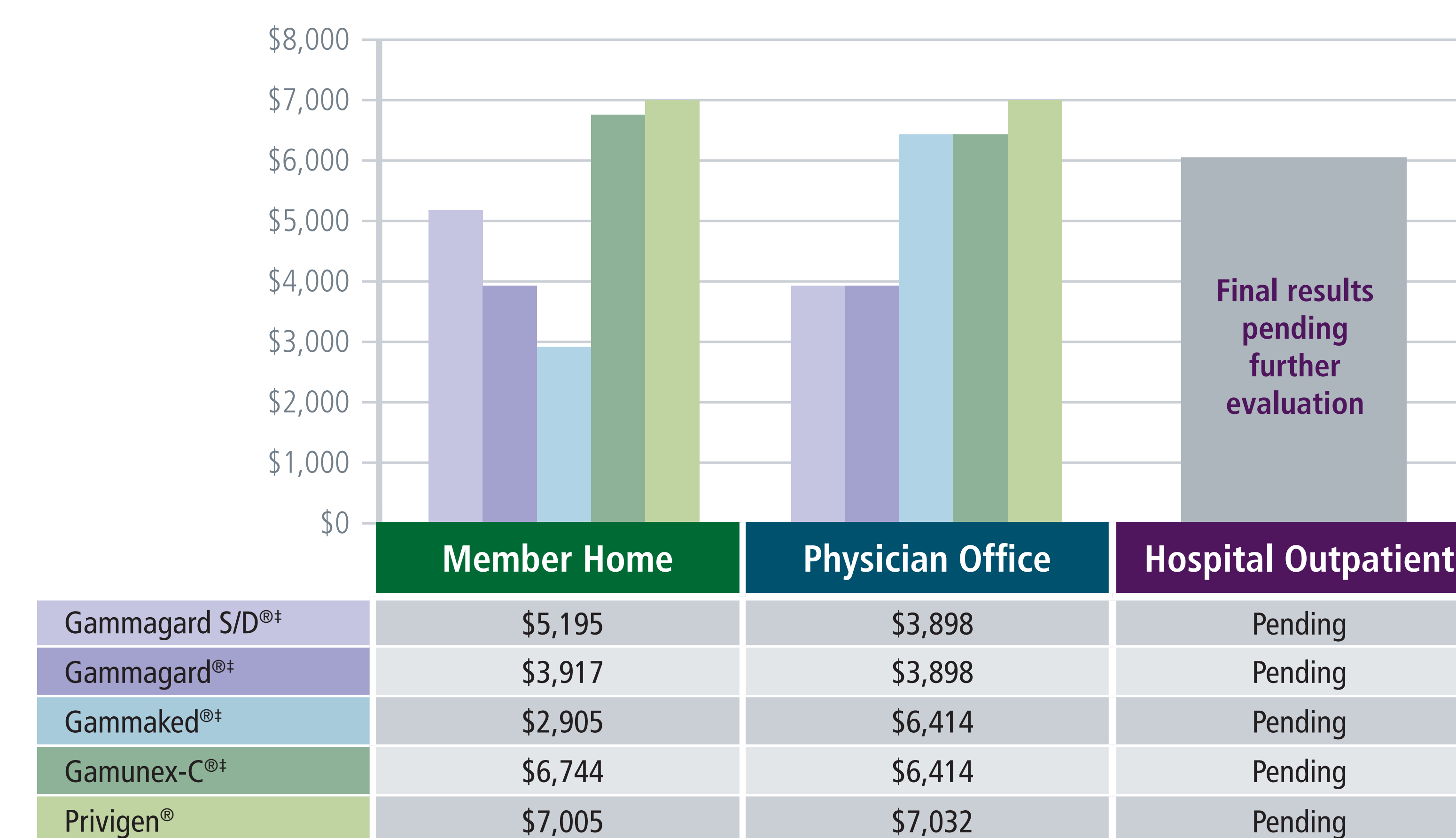


Figure 2: ACPC and MCPC for Immunomodulators by SOC

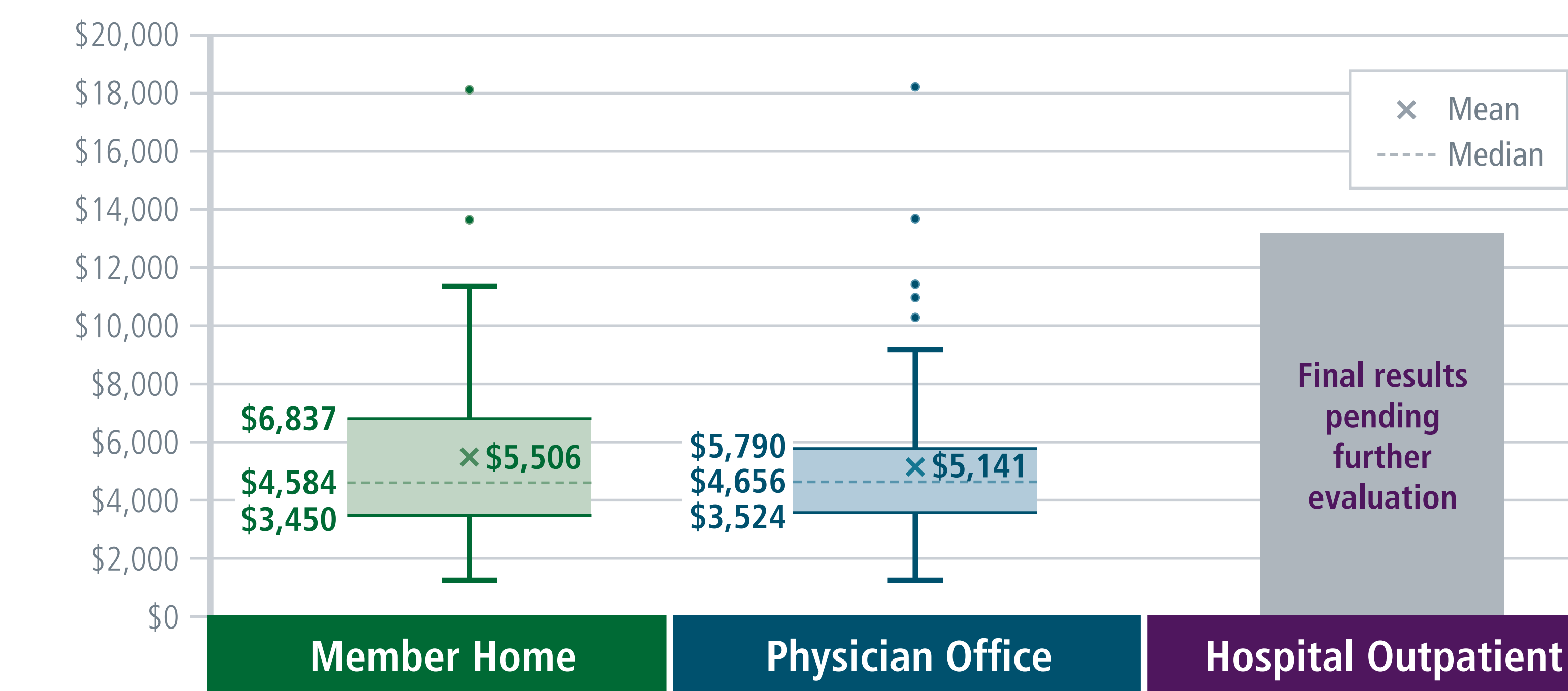
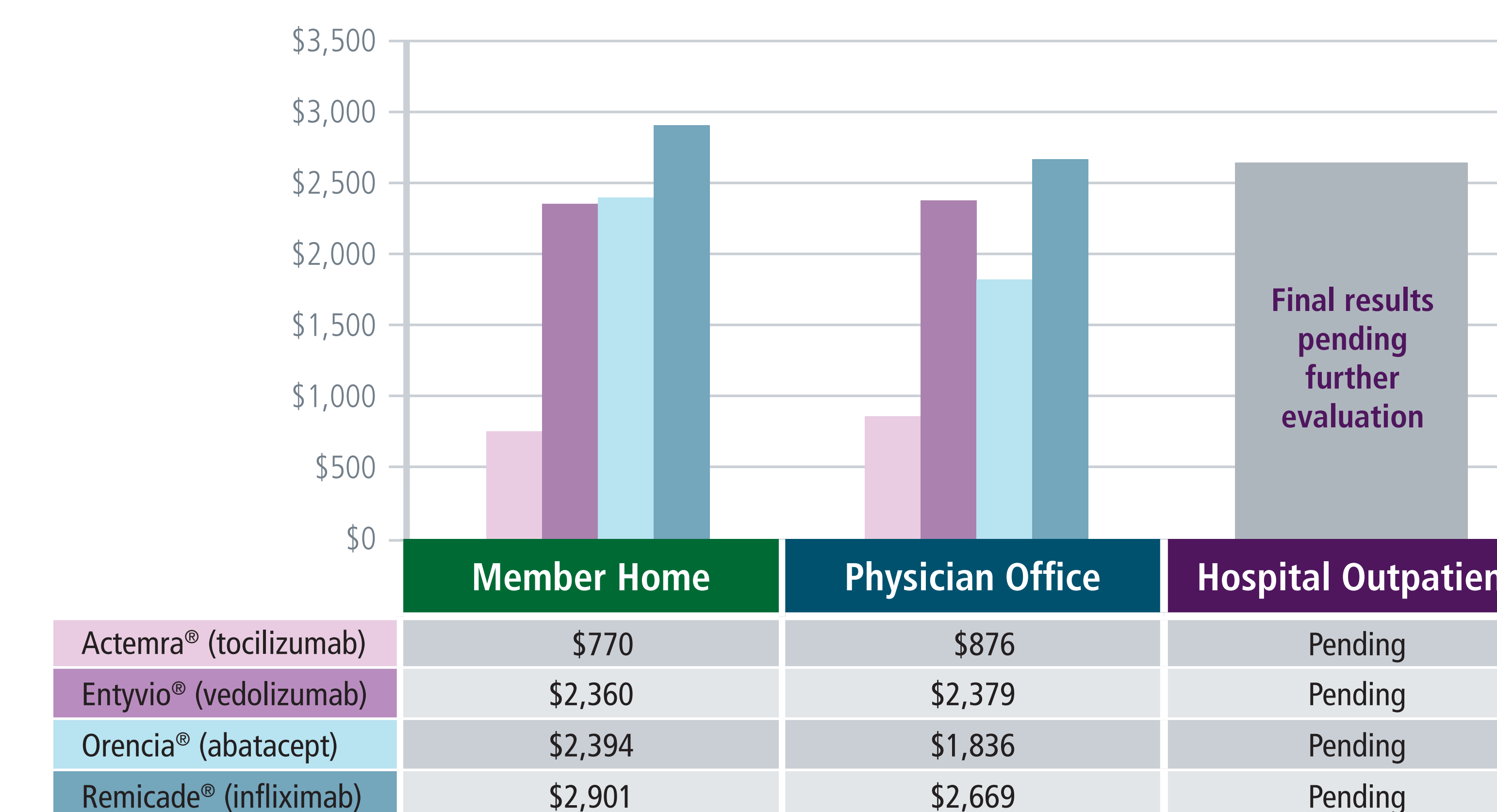


Figure 4: PMPM Cost for Immunomodulators by SOC



[§] Does not contain the ACPC or MCPC for Flebogamma[®], infliximab-dyyb, infliximab-aby, golimumab for infusion, or belimumab as there was not utilization for these medications in all three SOC.
[†] Final results are pending further analysis and review
[‡] Calculation based on <20 claims
[§] J-code J1569 is shared by Gammagard S/D[®] and Gammagard[®] and J-code J1561 is shared by Gammaked[®] and Gamunex-C[®]

DISCUSSION

- Massachusetts Medicaid reimburses for hospital outpatient services using APEC, an episode-specific, all-inclusive payment for each episode.²
 - APEC = Episode-Specific Total Enhanced Ambulatory Patient Grouping (EAPG) Payment + Outlier Component (if applicable).²
 - The EAPG system uses ICD-10 codes and Healthcare Common Procedure Coding System (HCPCS) codes (including J-codes) to group similar services for reimbursement.³
 - Medications are grouped into one of 22 EAPG drug categories (based on cost, clinical similarity, and substitutability), with each category assigned a weight to determine reimbursement.⁴
- The initial results for the hospital outpatient SOC did not conform with anticipated findings and given the complexity of the APEC billing methodology, the final results for the hospital outpatient SOC are pending further review and evaluation.
- The ACPCs and MCPCs were similar in the member home and physician office SOC for all medications evaluated (Table 1; Figures 1 and 2).
- The PMPM costs for all IVIG and immunomodulators evaluated were similar in the member home and physician office SOC (Figures 3 and 4).

LIMITATIONS

- With the current EAPG system, hospital outpatient facilities may be reimbursed more than the acquisition cost of some medications and less than the acquisition cost of others.
 - Medications selected for this analysis may not be representative of all medications in terms of overall SOC cost trends.
- The unique payment structure in the hospital outpatient SOC makes it challenging to compare costs across SOC or extrapolate to other plans.
- This analysis evaluated a short study time frame during which there was no utilization for some medications in some SOC.
- There were limited physician claims for medications and, as a result, medication costs through pharmacy claims were used to calculate ACPCs and MCPCs for most medications in the physician office SOC.

CONCLUSIONS

- This preliminary analysis suggests that for the Massachusetts Medicaid FFS and PCC plans, the costs associated with the administration of the selected high-cost medications evaluated were similar in the member home and physician office SOC.
- Based on the initial findings, further study is required to fully evaluate the hospital outpatient EAPG payment system and to make overall conclusions about the least expensive SOC.

FUTURE STUDIES

- An expanded analysis will be performed to evaluate the costs associated with the administration of medications from all 22 EAPG drug categories in each SOC. This review will allow for overall conclusions regarding SOC cost trends.

REFERENCES

1. EMD Serono. EMD Serono Specialty Digest™ 13th Edition [PDF on the internet]. Rockland (MA): EMD Serono; 2017 [cited 2018 Mar 4]. Available from: <https://specialtydigest.emdserono.com/>.
 2. Massachusetts Executive Office of Health and Human Services. Notice of Proposed Agency Action [PDF on the internet]. Boston (MA): Commonwealth of Massachusetts; 2017 [cited 2018 Mar 12]. Available from: <https://www.mass.gov/files/documents/2018/01/03/ny2018-notice-of-proposed-agency-action-in-out-state-acute-hospital-services.pdf>.
 3. 3M™ Health Information Systems. 3M™ Enhanced Ambulatory Patient Groups (EAPGs) [PDF on the internet]. Salt Lake City (UT): 3M™; 2015 [cited 2018 Mar 12]. Available from: <https://www.ohiohospitals.org/OHA/media/Finance%20and%20Policy/Introduction-to-3M-Enhanced-Ambulatory-Patient-Groups-Ohio-June-2015-version-3.pdf>.
 4. 3M™ Health Information Systems. 3M™ Enhanced Ambulatory Patient Groups (EAPG) Payment for Pharmaceuticals [PDF]. Salt Lake City (UT): 3M™; 2017 [cited 2018 Mar 12].