

An Economic Evaluation of Methotrexate in Psoriatic Arthritis

Kimberly M. Deininger¹, MPH;
Ervant J. Maksabedian Hernandez², Ph.D., M.Phil.

¹University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences, Anschutz Medical Campus, Aurora, Colorado, USA.
²Global Health Economics, Amgen, Inc.

Background & Objective

- Although not indicated for psoriatic arthritis (PsA), methotrexate (MTX) is commonly prescribed as first-line treatment in this population.
- The objective of this study was to provide an economic evaluation of the costs and benefits of first-line MTX in MTX- and bio-naïve PsA patients over time.

Methods

- Decision tree analysis
- Clinical and utility inputs derived from MTX arm of Amgen’s randomized trial: ‘Study of Etanercept and Methotrexate in Combination or as Monotherapy in Subjects with Psoriatic Arthritis’ (SEAM-PsA).*
- Cost inputs estimated from Medicare Fee Schedule, AnalySource, and published studies.
- Estimated utility by mapping HAQ-DI scores to EuroQol-5D (EQ-5D).**
- Calculated observed mean utilities and costs for each time point in SEAM-PsA study (weeks 0 through 48).
- Modeled estimated utility scores, costs, and quality-adjusted life years (QALYs) for years 2 through 5 post-MTX initiation.

*Mease, Philip J., Dafna D. Gladman, David H. Collier, Christopher T. Ritchlin, Philip S. Helliwell, Lyrica Liu, Gregory Kricorian, and James B. Chung. "Etanercept and methotrexate as monotherapy or in combination for psoriatic arthritis: primary results from a randomized, controlled Phase III trial." *Arthritis & Rheumatology* 71, no. 7 (2019): 1112-1124.
**Pennington, B., & Davis, S. (2014). Mapping from the Health Assessment Questionnaire to the EQ-5D: the impact of different algorithms on cost-effectiveness results. *Value in health*, 17(8), 762-771.

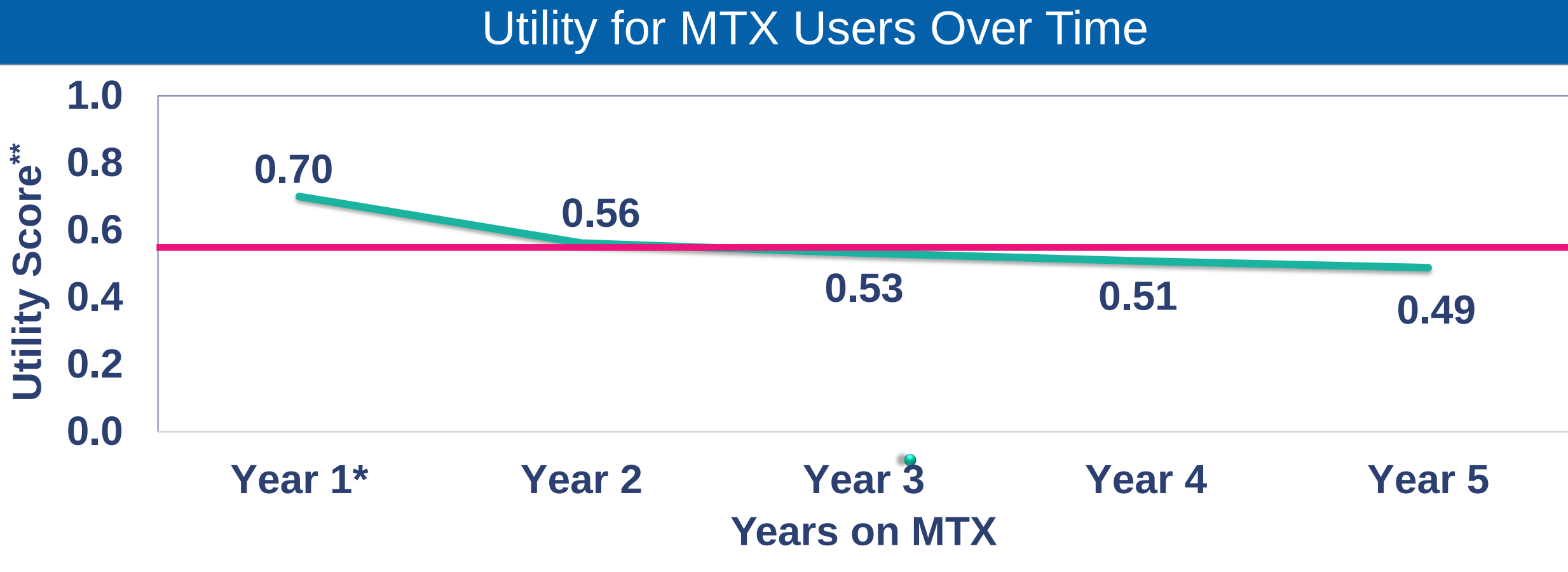
Disclosures & Funding Statement

- This study was funded by Amgen, Inc.
- K.M.D.: Was a summer intern at Amgen, Inc. at the time of study conception and data analysis and interpretation. E.J.M.H.: employment by and stock ownership in Amgen, Inc.

Observed utilities and costs increased (relative to baseline) in the first year of MTX use.

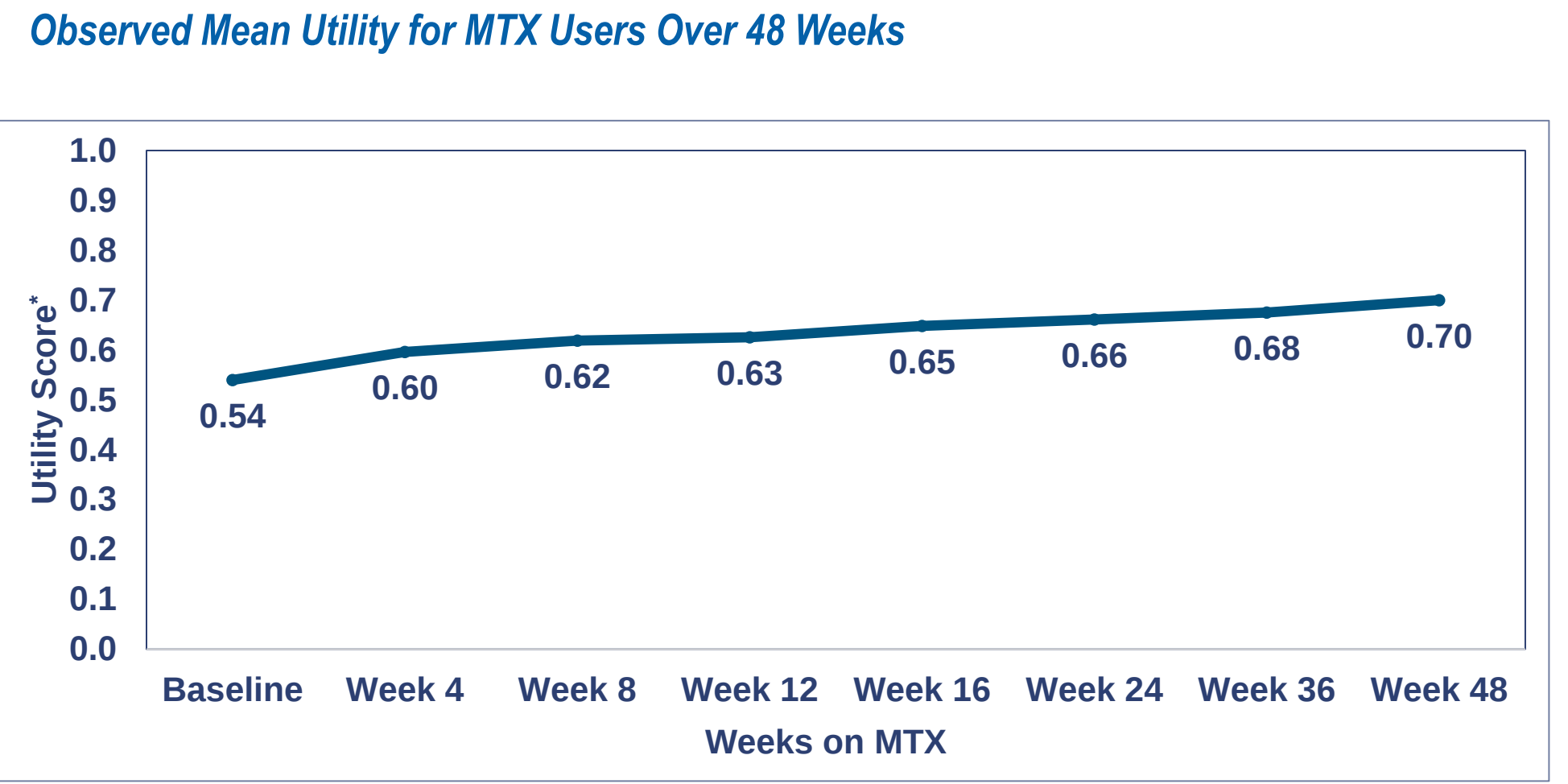
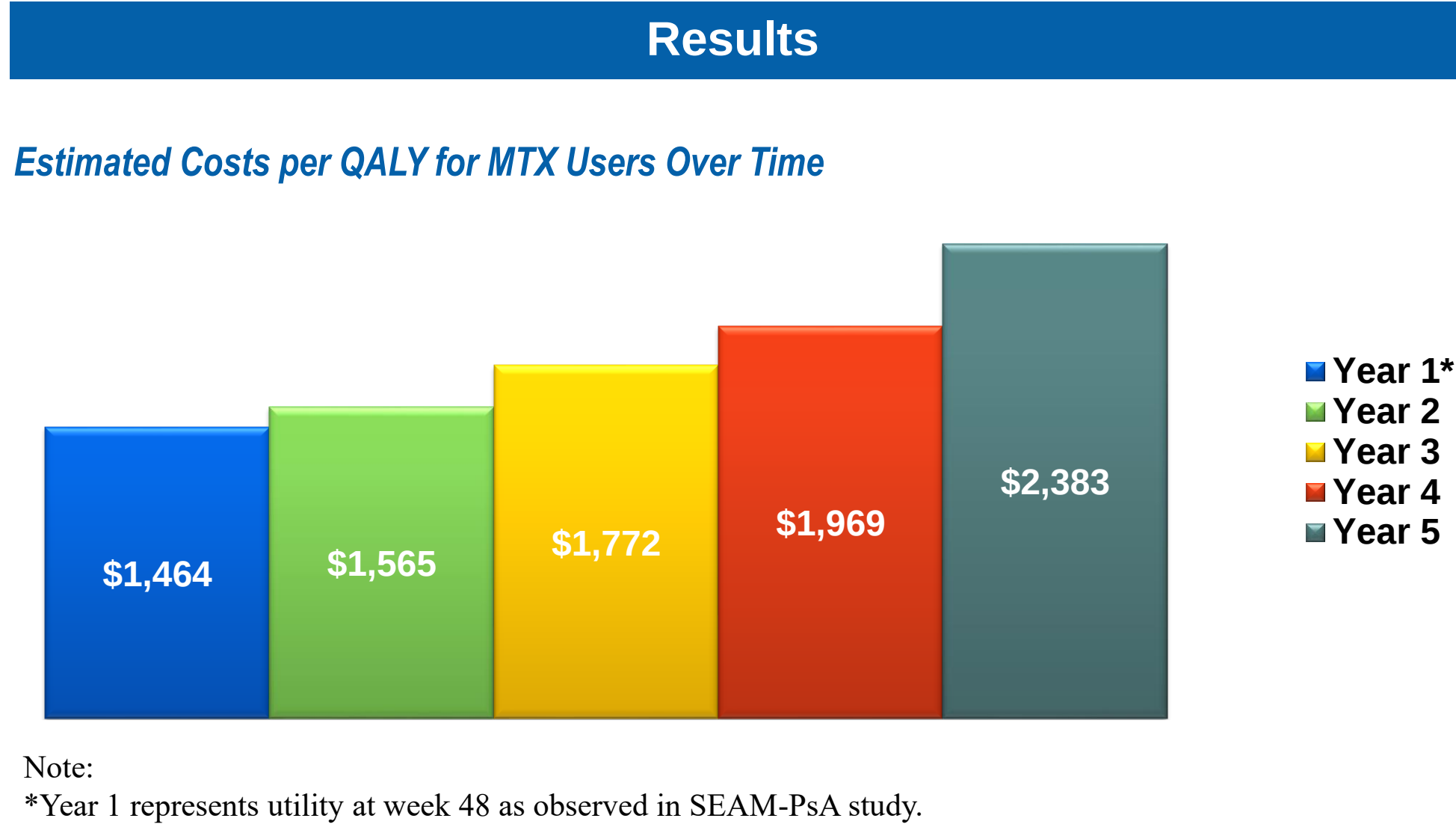
Estimated utility scores decreased in years 2 through 5 post-MTX initiation.

Costs and cost/QALY increased after the first year of MTX use.

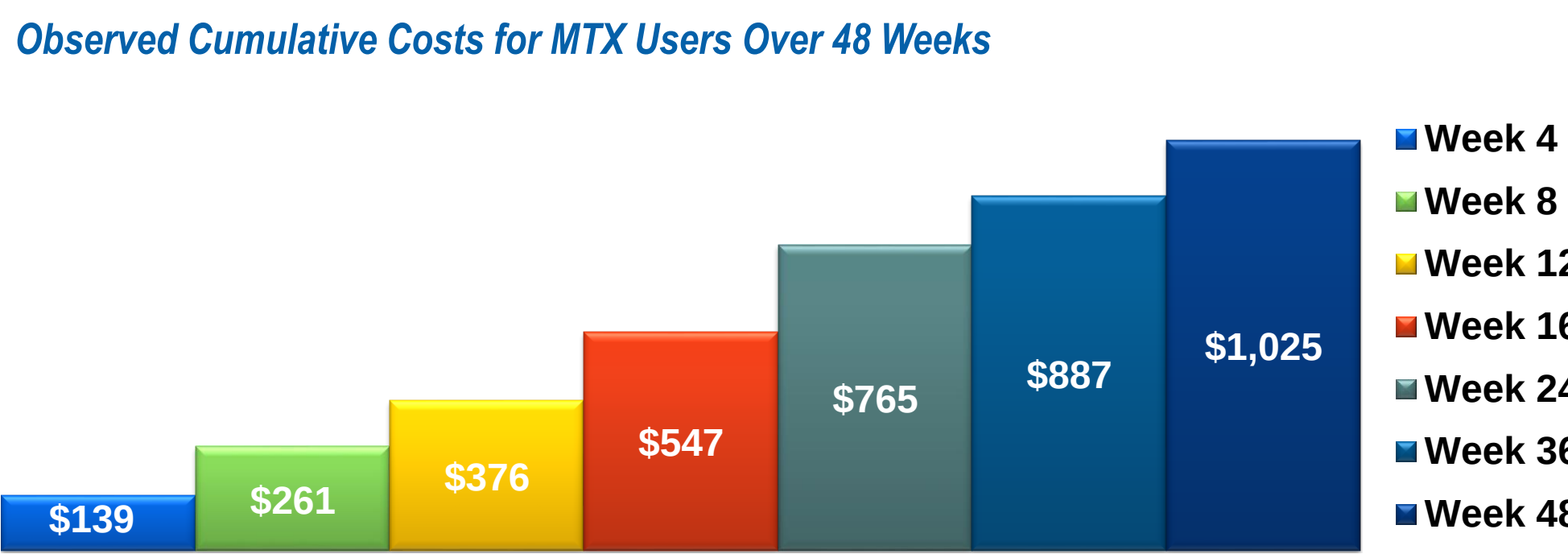


— Baseline utility (SEAM-PsA baseline at week 0)

Notes:
*Year 1 represents utility at week 48 as observed in SEAM-PsA study.
**Mapped HAQ-DI scores to EuroQol-5D (EQ-5D) using the Clark algorithm as described in Pennington & Davis (2014). The utility range is 0.027 – 0.915.



Note: Data derived from MTX arm of Amgen’s SEAM-PsA.
*Mapped HAQ-DI scores to EuroQol-5D (EQ-5D) using the Clark algorithm as described in Pennington & Davis (2014). The utility range is 0.027 – 0.915.



Note: Cost inputs estimated from Medicare Fee Schedule, AnalySource, and published studies. Constant 2019 US dollars.

Conclusions

- MTX may have more costs compared to benefits in new PsA patients naïve to treatment, especially over time.
- Physicians and patients should consider the long-term benefits and costs of MTX when evaluating PsA treatment options.