

Cost–Benefit Analysis of Pharmacist-Led Video Telehealth Medication Therapy Management in Adolescents and Young Adults with Asthma: A Randomized Controlled Trial

CoDES
CENTER FOR DRUG EVALUATION & SAFETY

Suk-Chan Jang, PharmD, PhD¹; Shao-Hsuan Chang, MS¹; Kathryn V. Blake, PharmD²; Lin Nan, MD, ScM³; Tracy Leonard, RPh¹; Janet T. Holbrook, PhD, MPH³;

Elizabeth Sugar, PhD³; Heather Hazucha, MPH³; Gary Guan, PharmD¹; Robert A Wise, MD⁴; Haesuk Park, PhD^{1*};

¹College of Pharmacy, University of Florida, Gainesville, FL; ²Nemours Children's Health, Jacksonville, FL; ³School of Public Health, Johns Hopkins University, Baltimore, MD; ⁴School of Medicine, Johns Hopkins University, Baltimore, MD

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BACKGROUND

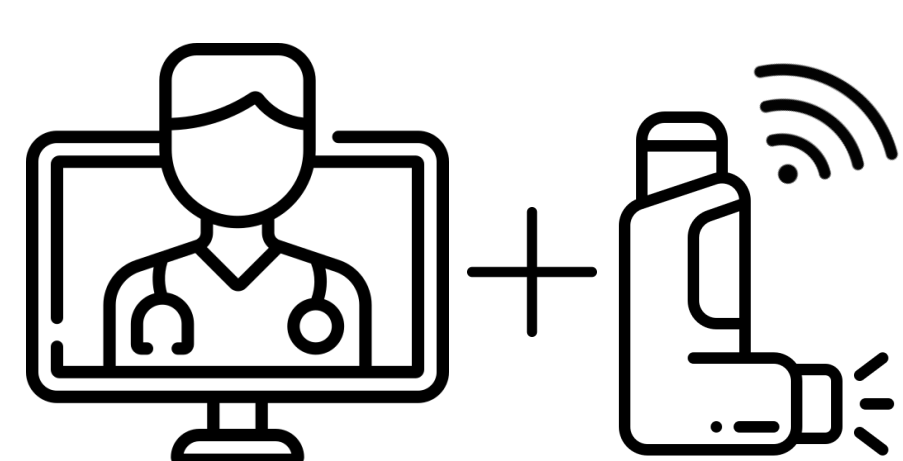
- In adolescents and young adults with asthma, inhaled corticosteroid adherence is low, and inhaler technique is often poor.
- Video telehealth medication therapy management with digital adherence monitoring (MTM-DAM) may address these barriers.
- The economic value of MTM integrated with DAM in this population is unknown.
- Objective:** To evaluate the cost-benefit of pharmacist-led video telehealth MTM-DAM versus DAM alone in adolescents and young adults with asthma.

METHODS

- Design:** Cost-benefit analyses
- Source:** Randomized controlled trial (Improving Medication Adherence with Telehealthcare Medication Therapy Management to Change Health Outcomes in Adolescents and Young Adults With Asthma; MATCH; NCT03978936).
- Study population:** Adolescents and young adults aged 12–35 years with poorly controlled asthma
- Cost-Benefit Analysis**
 - Cost and benefits were monetized to estimate per participant per year (PPPY) net savings of MTM-DAM relative to DAM
 - Net savings = intervention costs – benefits
 - Negative net savings (<0) indicate MTM-DAM is cost-beneficial
 - Perspective: Healthcare payer and Societal
 - All costs adjusted to 2025 U.S. dollars

Interventions

MTM-DAM (n=157)



- App feedback to support self-management
- 8 pharmacist-led MTM encounters via video telehealth

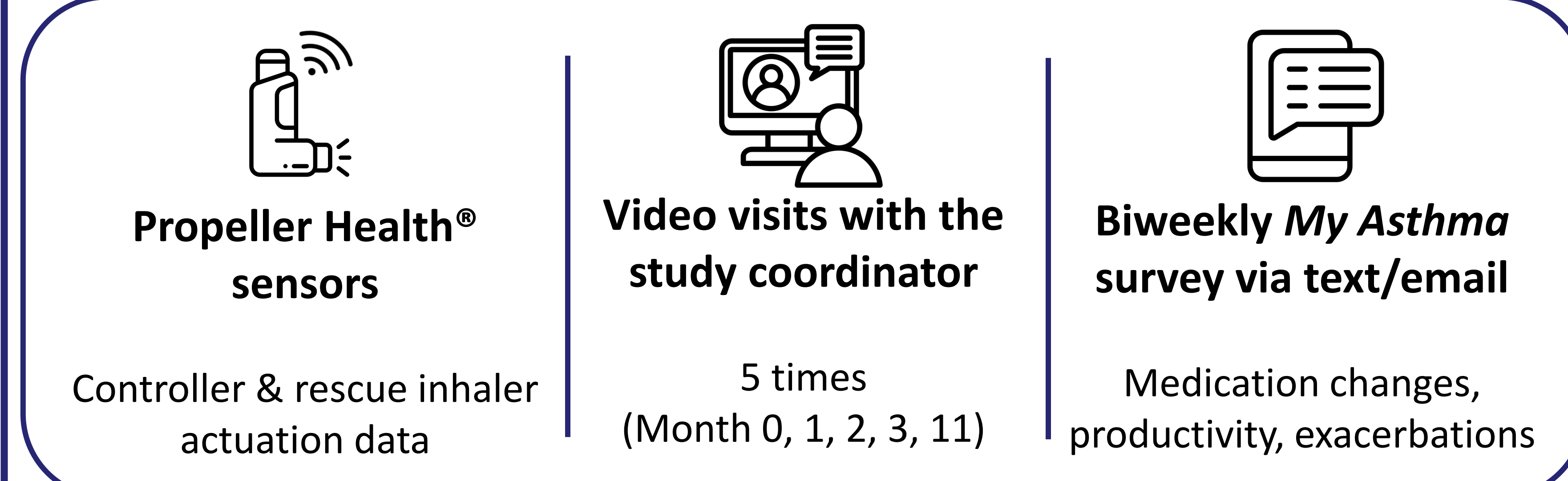
DAM (n=138)



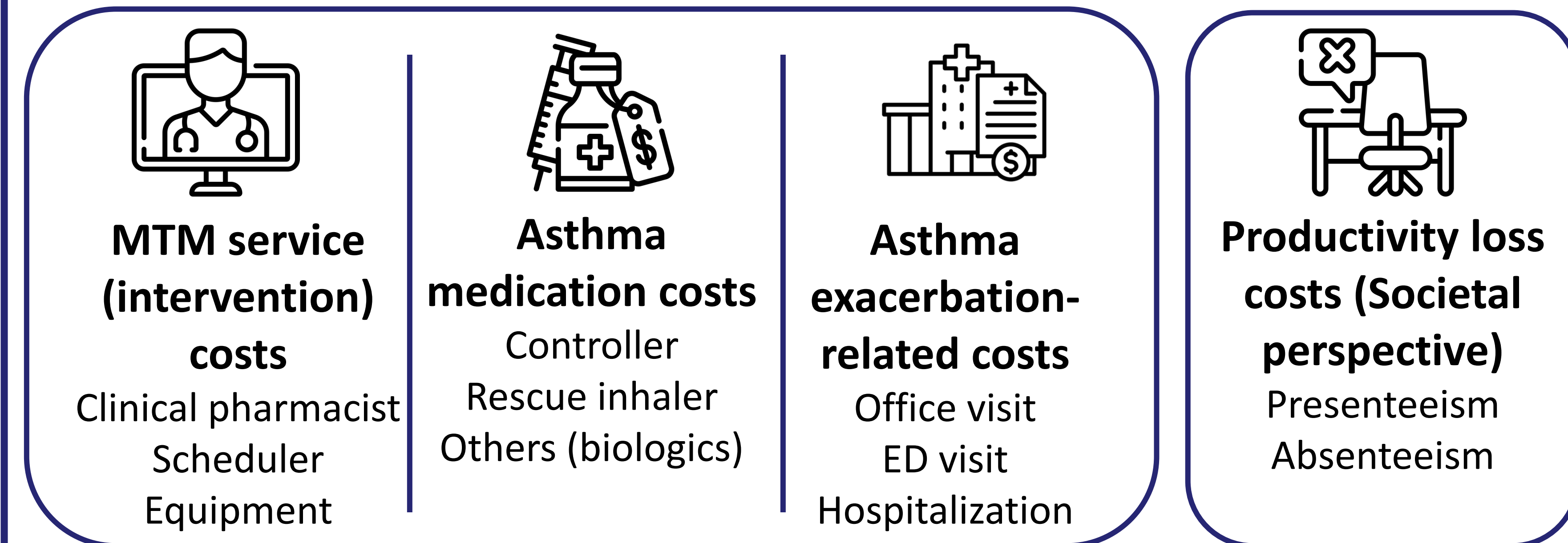
- App feedback to support self-management

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Data Collection



Cost Component



RESULTS

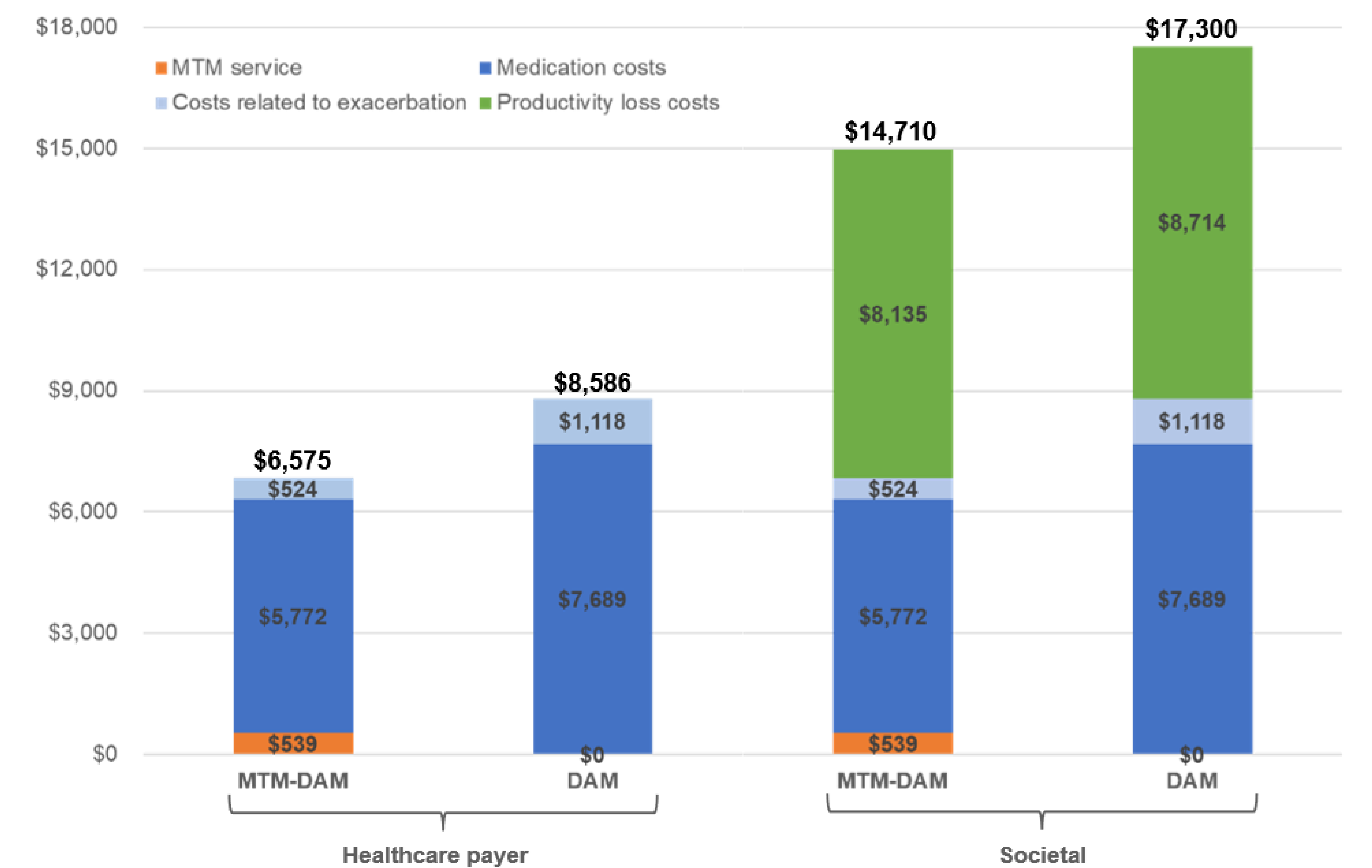
- Of the 295 participants, 157 were assigned to the MTM-DAM group, and 138 to the DAM group.

Baseline Characteristics

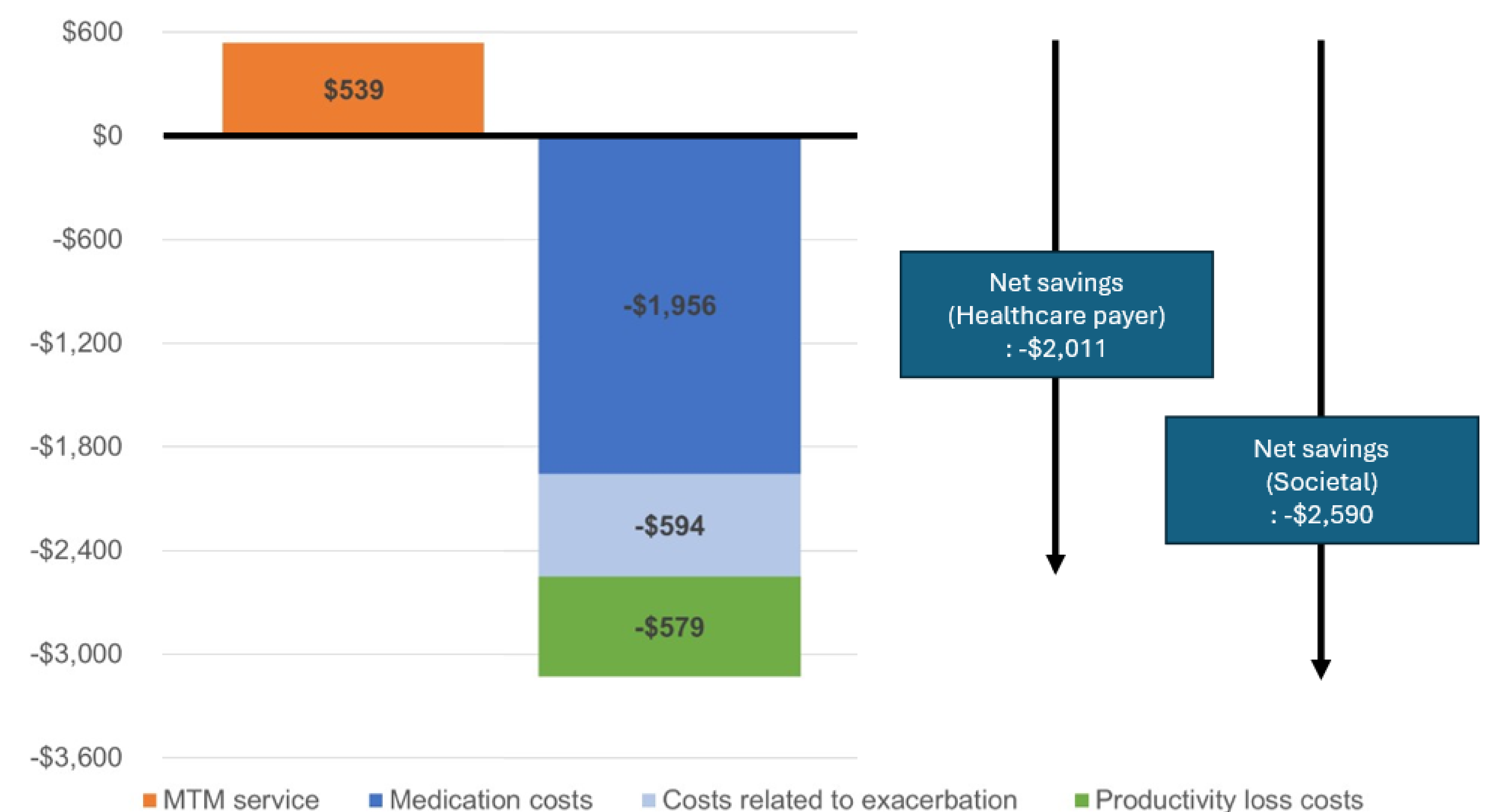
	MTM-DAM(n=157)	DAM (n=138)
Age, mean (SD)	22.8 (7.5)	22.7 (7.4)
Female, n (%)	105 (66.9)	90 (65.2)
Hispanic, n (%)	23 (14.6)	22 (15.9)
Race, n (%)		
White	96 (65.8)	91 (70.0)
Black	44 (30.1)	36 (27.7)
Asian	6 (4.1)	3 (2.3)
Asthma diagnosis age, mean (SD), y	6.8 (6.2)	8.4 (7.2)
FEV ₁ , mean (SD), L	3.1 (0.8)	3.3 (0.9)
History of visits, n (%)		
Emergency department	62 (39.5)	48 (34.8)
Inpatient hospital stay	16 (10.2)	8 (5.8)
Intensive care unit	4 (2.5)	3 (2.2)

FEV₁, forced expiratory volume in 1 second; MTM, medication treatment management

Direct medical and indirect costs per participant per year between the MTM-DAM and DAM groups, from healthcare payer and societal perspectives



Net cost savings per participant per year between MTM-DAM and DAM groups, from healthcare payer and societal perspectives



Net savings values below zero in this analysis indicate that the MTM-DAM is cost-beneficial

Conclusions

- MTM-DAM was cost-beneficial compared with DAM alone, driven primarily by asthma medication cost savings (77% of healthcare payer and 63% of societal perspective), particularly lower biologics-related costs, along with reduced exacerbation-related healthcare utilization and decreased productivity losses.
- These findings support integrating pharmacist-led telehealth MTM with DAM to improve efficiency and economic outcomes of asthma management in adolescents and young adults.



Contact Email:
sukchan.jang@ufl.edu

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UF College of Pharmacy
UNIVERSITY of FLORIDA