

Reference

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Retrospective Cohort Study of the Economic Value of Providing Microprocessor Knees to the Medicare K2 Knee Disarticulation/Above Knee Amputation Population

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Products

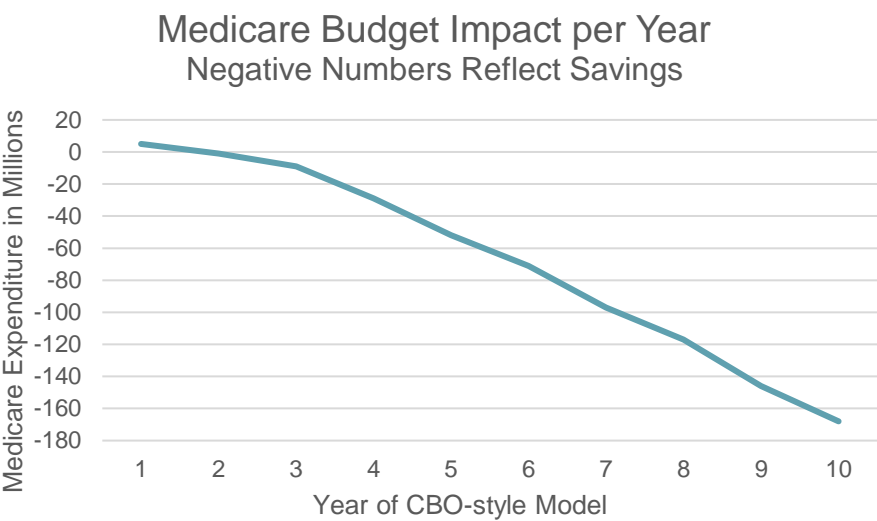
Kenevo

- Major Findings
- With MPKs (Kenevo) compared to NMPKs:

→ The initial difference in prosthetic device cost between MPK and NMPKs amortizes within 19 months through savings in medical expenses

→ The MPK produces medical cost savings of \$1,351 per member per month (PMPM) compared to NMPKs

→ Potential cost savings of \$410.3 million over a ten-year period for Medicare if providing the MPK prostheses to the K2 population follows similar adoption rate as for the K3 population in the past



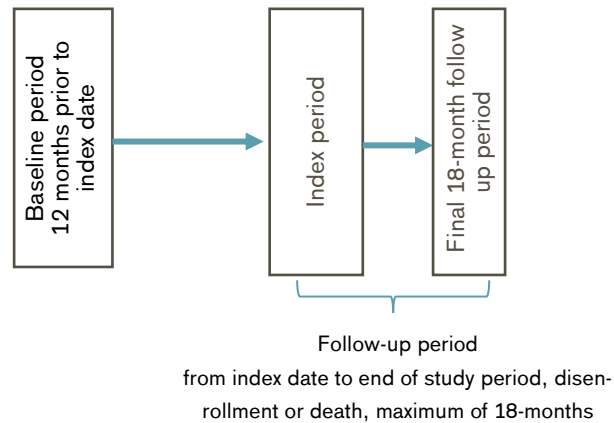
Population	Subjects	n= 17,943 in total n= 10,147 in the K2 NMPK cohort (65.5% male)) n= 7,796 in the K3 MPK cohort (65.2% male)
	Amputation level:	Unilateral knee disarticulation/above-knee amputation
	Amputation causes:	Not reported
	Mean age:	67.69 years ±12.19 for the K2 NMPK cohort 67.77 years ±12.23 for the K3 MPK cohort
	MFCL:	K2 (56.6%) and K3 (43.4%)

Study Design

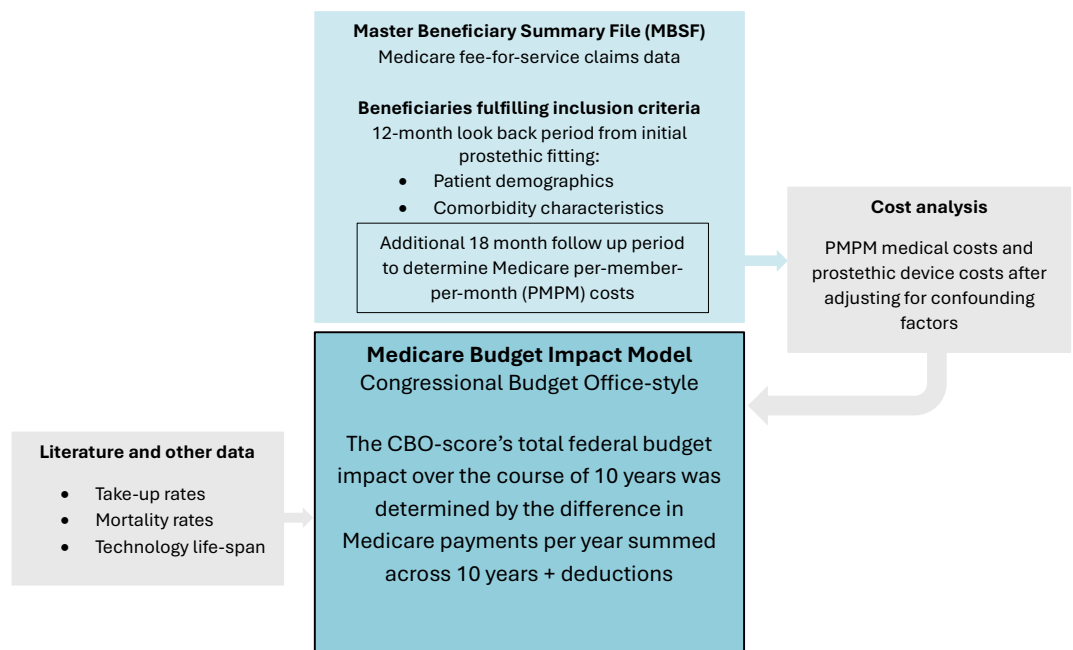
A retrospective cohort study using Medicare fee-for-service (FFS) claims data from the Centers for Medicare and Medicaid Services (CMS). The model utilized

propensity score weighting (PSW) using inverse probability treatment weights (IPTW) to adjust for confounding factors observed between the K2 NMPK cohort and the K3 MPK cohort. Observation period lasted from Oct. 2016 to Dec. 2021. A generalized linear model with log link function and Gamma distribution was performed to determine the prosthetic device and per-member-per-month (PMPM) medical cost. The results allowed to predict the economic impact, over a ten-year period, to Medicare of covering MPKs for the K2 population using the methodology of the Congressional Budget Office (CBO).

Timeline:



Congressional Budget Office Medicare budget impact model:



Results

Functions and Activities								Participation	Environment
Level walking	Stairs	Ramps, Hills	Uneven ground, Obstacles	Cognitive demand	Metabolic Energy Consumption	Safety	Activity, Mobility, ADLs	Preference, Satisfaction, QoL	Health Economics

Category	Outcomes	Results for the K3 MPK vs. K2 NMPK cohort	Sig.*
Safety	Faller Rates	18.5% lower rate of fallers with injuries resulting in a medical claim in the K3 MPK than K2 NMPK cohort (p<0.05)	++
Health Economics	Medical Costs	Lower medical costs of \$1,351 per member per month (PMPM) in the K3 MPK cohort compared to the K2 NMPK cohort (\$4,881 versus \$6,232 PMPM)	n.a.
	Amortization Over Time	The difference in the initial prosthetic device cost between MPKs and NMPKs of \$25,075 (\$28,853 versus \$3,778) would amortize through medical cost savings within 19 months	n.a.
	Budget Impact Analysis (CBO-score)	Estimated Medicare cost savings by providing MPKs to the K2 population: The modelled economic impact to Medicare of covering MPKs for the K2 population would result in cumulative Medicare cost savings of \$410.3 million over a ten-year period (culminating at \$168 million in savings during the last year of the model).	n.a.

*no difference (0), positive trend (+), negative trend (–), significant (++/–), not applicable (n.a.)

Author's Conclusion

“Our analytical results indicate that the microprocessor knee prosthetic device could provide meaningful safety benefits to the K2 population and fiscal benefits to the Medicare program, as demonstrated by the decrease in injurious faller rates and PMPM medical costs. We demonstrated that the initial \$25,075 difference between the MPK and NMPK prosthetic devices would amortize within 19 months. Importantly, the CBO-style score determined that Medicare would save \$410.3 million over ten years if the K2 population was provided coverage of MPK prostheses.

Because this study is the first to examine, within the United States context, the cost effectiveness of providing a MPK prosthesis to the K2 population by itself, we encourage the community of researchers and medical practitioners to perform more research on the cost effectiveness of the MPK prosthetic device for K2 beneficiaries.”

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