The clinical and economic consequences of regimens involving switches between DMDs have not been studied fully. The following analysis sought to examine clinical and economic outcomes in MS patients who switch from one of the two leading DMDs in the United States (IFNβ-1a intramuscular [IM] and glatiramer acetate [GA]) to a high-dose high-frequency (HDHF) interferon beta (IFNβ-1b subcutaneous [SC], IFNβ-1a SC) or natalizumab, a second-line agent. METHODS: A previously published pharmacoeconomic model was modified to evaluate switching scenarios and estimate total cost of MS care and the number of relapses avoided over a four year period. The model assumes that switches from the first agent occurred at the end of the first year and that the second agent is continued through the end of the four year period. Clinical data inputs were derived from Class I clinical trials. The costs of relapses and disability steps were based on published literature, and drug prices were obtained from the Red Book. Relative cost-effectiveness between switching scenarios was compared by calculating the cost per relapse avoided over the four year time frame.

RESULTS: The cost of avoiding one relapse in patients switching from IFNβ-1a IM to IFNβ-1a SC or IFNβ-1b SC was $84,401 and $87,090, respectively. The most costly switch was from IFNβ-1a IM to natalizumab ($104,568 per relapse avoided). Switching from GA to IFNβ-1a SC, IFNβ-1b SC, or natalizumab resulted in costs per relapse avoided of $70,822, $73,511, and $90,989, respectively. CONCLUSION: This analysis suggests that MS patients switched from IFNβ-1a IM or GA to an HDHF IFNβ benefited from the lowest cost to avoid a relapse.