

GeneSight® Economic Utility Studies

Medco Study

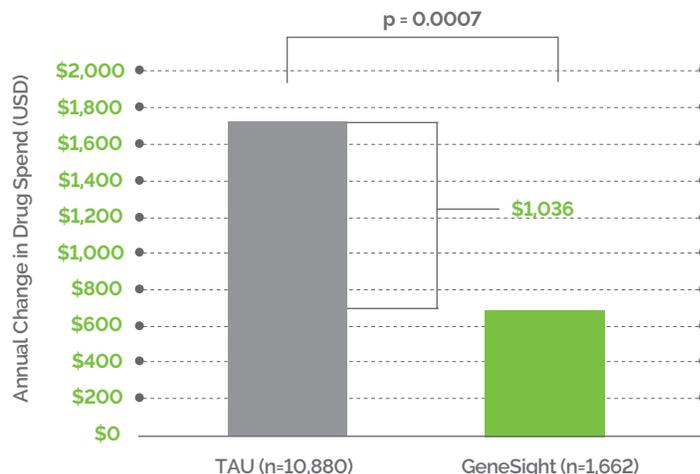
Winner JG, et al. Combinatorial pharmacogenomic guidance for psychiatric medications reduces overall pharmacy costs in a 1 year prospective evaluation. *Curr Med Res Opin.* 2015; 31: 1633-1643.

<https://pubmed.ncbi.nlm.nih.gov/26086890>

Study Design: Pharmacy claims were compared over one year between a cohort of GeneSight tested subjects (n = 2,168 enrolled) and a control group (n = 10,880). Both groups were followed for 365 days after the date of project enrollment. Prescription medication claims data was analyzed for differences between the two groups and within the GeneSight group based on medication changes that were congruent (medications with no or moderate gene-drug interactions) or incongruent (medications with significant gene-drug interactions) with each individual's GeneSight results.

Study Endpoints: Total pharmacy spend per member per year, adherence, discontinuation, and polypharmacy were measured.

Study Limitations: Study was not designed to evaluate efficacy of the GeneSight test. Cost savings is not directly associated with efficacy, and the results cannot be interpreted to be an indicator of efficacy.



Key Findings:

Significant annual savings were realized for patients in the GeneSight group: Patients who received GeneSight testing saved, on average, \$1,035.60 in total annual medication costs compared to TAU patients. Of that total, annual medication savings were \$714.24 for non-CNS medications and \$321.36 for CNS medications.

Improvement in adherence: An increase in medication adherence of 17% was observed in the GeneSight group ($p < 0.0001$) for the medication prescribed after enrollment compared to the medication prescribed prior to enrollment.

Reduced polypharmacy: One in five patients in the GeneSight group were on fewer medications by the end of the study (significantly greater than the TAU cohort, $p < 0.0001$).

Taking medications with no or moderate gene-drug interactions resulted in lower medication costs: GeneSight tested patients with congruent medication regimens saw an average of \$2,774.53 in net annual cost savings compared to patients with incongruent medication regimens.

Worked across practice settings: Both psychiatrists and non-psychiatrists who had access to GeneSight information saw average savings of over \$1,000 per patient.

For additional information on any GeneSight study, contact Medical Information at 855.891.9415

Union Health Service (UHS) Study

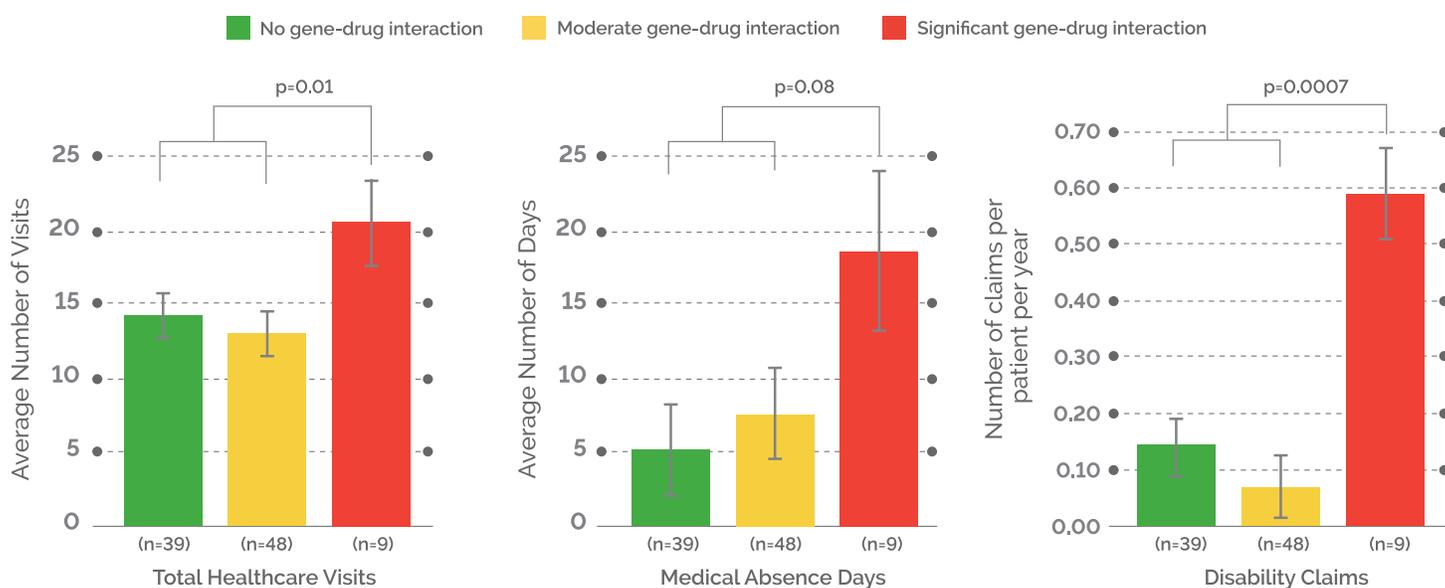
Winner JG, et al. Psychiatric pharmacogenomics predicts health resource utilization of outpatients with anxiety and depression. *Transl Psychiatry*. 2013; 3: e242.

<https://pubmed.ncbi.nlm.nih.gov/23511609>

Study Design: The effect on healthcare utilization when prescribed a medication with significant gene-drug interactions was evaluated in a 1-year, blinded, retrospective study of 96 subjects with a DSM-IV-TR diagnosis of depression or anxiety disorder.

Study Endpoints: Healthcare visits, medical visits, psychiatric visits, medical absence days, disability claims, and healthcare spend were measured. Healthcare utilization costs included medical visit costs, psychiatric visit costs, ER costs, hospital costs, prescription costs, medical absence costs, and disability claim costs. Total healthcare visits included the total number of medical visits, psychiatrist visits, and ER visits.

Study Limitations: This study was retrospective, had a relatively small sample size, and included multiple diagnoses.



Key Findings:

Taking medications with significant gene-drug interactions resulted in more total healthcare visits and disability claims: Patients taking medications with significant gene-drug interactions had nearly twice the number of total healthcare visits and about four times the number of disability claims compared to patients taking medications with no or moderate gene-drug interactions.

Employee productivity decreased when patients were on medications with significant gene-drug interactions: There was a 3-fold increase in medical absence days between patients on a medication with significant gene-drug interactions and those on a medication with no or moderate gene-drug interactions.

Switching patients to medications with no or moderate gene-drug interactions may decrease healthcare costs: When subjects were taking medications with significant gene-drug interactions, their average healthcare utilization cost was \$8,627. In comparison, the average healthcare utilization cost was \$3,453 for subjects taking medications with no gene-drug interactions and \$3,426 for subjects taking medications with moderate gene-drug interactions. This resulted in an average annual increase in healthcare utilization cost of \$5,188 for subjects taking medications with significant gene-drug interactions.

