



# The Value of Pharmacogenomics (PGx)

Co-founded by Mayo Clinic, OneOme is a full-service PGx partner that helps organizations unlock the power of precision medicine.

Clinicians across a variety of specializations can use PGx testing to help optimize medication decisions.

## The cost of adverse drug events (ADEs)

Each year, adverse drug events result in a tremendous negative impact on patient lives and the U.S. health system.



**2.2 million** hospital admissions<sup>1</sup>

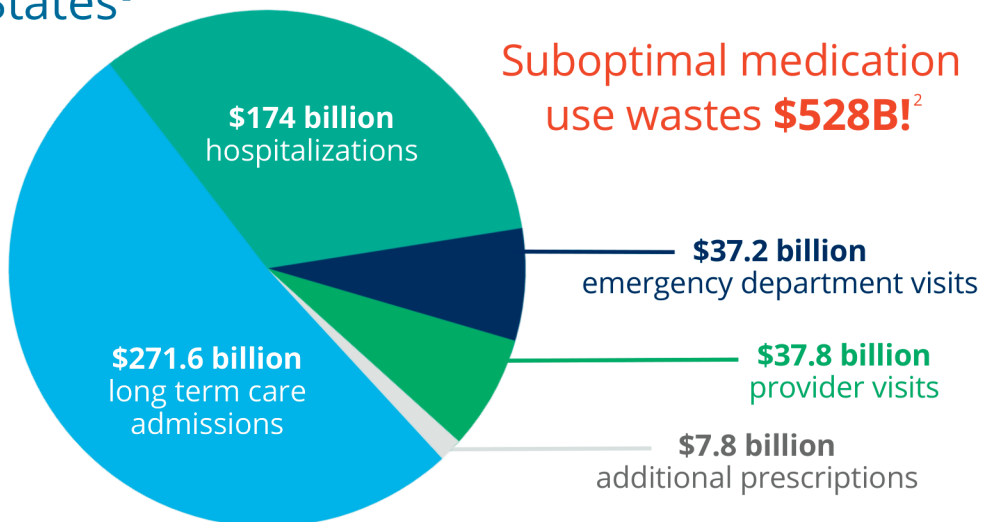


**\$136 billion** in healthcare costs<sup>1</sup>



**4th leading** cause of death for Americans<sup>1</sup>

## Estimated annual patient impact of non-optimized medication in the United States<sup>2</sup>

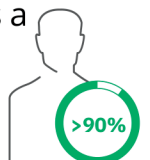


## Clinical Evidence


The 2023 PREPARE Study, which included over 6,000 patients and a multi-gene panel, showed that adverse drug reactions were reduced by around 30% when certain prescriptions were informed by PGx test results.<sup>3</sup>


## Who does PGx impact?

>90% of the general population has a relevant gene variant.<sup>4,5</sup>




PGx can be used in a variety of therapeutic areas.  
 Example studies that show potential cost-savings include:\*

 <p><b>Mental Health</b></p>	<p>Patients with MDD or newly starting antipsychotic therapy</p>
	<p>Annual per patient Rx savings: <b>\$1,035.60</b><sup>6</sup></p>
	<p>4-month patient savings with PGx testing: <b>\$562</b><sup>7</sup></p>
	<p>Estimated lifetime patient savings: <b>\$6,264</b> direct + costs<sup>8</sup>          Estimated 1 year savings of <b>\$5,962</b> direct + indirect costs<sup>9</sup></p>

 <p><b>Oncology</b></p>	<p>Oncology, chemotherapy, and supportive care</p>
	<p>Annual patient savings with PGx + irinotecan dose reduction: <b>\$272.34</b><sup>10</sup>          Savings of <b>\$415</b> per patient receiving voriconazole for fungal infection<sup>11</sup></p>

 <p><b>Pain Management</b></p>	<p>Moderate-severe chronic pain</p>
	<p>1 year cost savings of <b>\$256</b> per person<sup>12</sup></p>

 <p><b>Cardiology</b></p>	<p>Patients undergoing a PCI</p>
	<p>PGx guided therapy saves <b>\$6,720</b> over 15-month post PCI vs. universal Clopidogrel use<sup>13</sup></p>
	<p>Hypercholesteremia, diabetes, statin therapy</p> <p>Savings of <b>\$270</b> per person<sup>14</sup></p>

 <p><b>Geriatric Medicine</b></p>	<p>Elderly polypharmacy patients enrolled in a CMM program</p>
	<p>4 months cost savings per patient: <b>\$788</b><sup>15</sup></p>
	<p>Elderly patients at a home health clinic post-hospitalization</p> <p>60-day cost savings per patient: <b>\$4,382</b><sup>16</sup></p>

\*Savings are estimated based on clinical studies and may vary depending on individual circumstances.

**REFERENCES**

1. American Society of Pharmacovigilance. Pharmacovigilance. Retrieved 2023, from <https://fourthcause.org/> "Official Toolkit." Downloaded May 15, 2023.
2. Watanabe, JH, McInnis, T, & Hirsch, JD. "Cost of Prescription Drug-Related Morbidity and Mortality." *Annals of Pharmacotherapy*, 2018; 52(9), 829-837.
3. Swen, Jesse J., et al. "A 12-gene pharmacogenetic panel to prevent adverse drug reactions: an open-label, multicentre, controlled, cluster-randomised crossover implementation study." *The Lancet* 401.10374 (2023): 347-356.
4. Ji Y et al. *J Mol Diag*. 2016 May;18(3):438-445
5. Van Driest et al. *Clin Pharmacol Ther*. 2014 April;95(4): 423-431
6. Winner JG et al. *Curr Med Res Opin* 2015;31:9, 1633-1643
7. Fagerness J et al. *Am J Manag Care* 2014;20(5):e146-e156
8. Hornberger J et al. *Am J Manag Care* 2015;21(6):e357-e365
9. Maciel A et al. *Neuropsychiatr Dis Treat*. 2018; 14: 225-230
10. Gold HT et al., *Cancer* 2009;115(17):3858-3867
11. Mason NT et al., *J Antimicrob Chemother*. 2015 Nov; 70(11): 3124-3126
12. Morlock R et al., *Pain Rep*. 2017 Sep; 2(5): e615.
13. Reese ES et al., *Pharmacotherapy*. 2012 Apr; 32(4): 323-332
14. Mitchell, D et al., *Mol Diagn Ther*. 2017; 21(1): 95-105
15. Brixner D et al., *J Med Econ* 2015;19(3):213-228
16. Elliott LS et al. *Plos One* 2017;12(2):e0170905



OneOme.com | +1 844-663-6635 | Support@OneOme.com