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Cost effectiveness of pharmacogenomic (PGx) testing

Health economics and research findings support PGx testing

PGx VALUE FOR INSTITUTIONS

Billions of dollars wasted annually

when treatment regimens are not tailored to the individual[1]

Adverse drug reaction (ADR) incidence unchanged over time

5-10%
of patients

may suffer from an ADR at admission, during admission, or at discharge, despite preventative efforts[2]

$114 USD
preemptive test

could allow hospitals to break even due to savings from reduced ADRs, according to one study[3]

PGx VALUE FOR PHYSICIANS

20-30%
of ADRs prevented

with PGx testing[4]

Up to 99%
of patients

have at least one actionable gene variant that predisposes them to increased drug metabolism risk[5]

7.6%
improvement in medication adherence

using PGx testing to guide treatment[6]

PGx VALUE FOR PATIENTS

Save money on medications[7,8]

Reduced medical trial and error,

especially for mental health therapies[9]

PRACTICAL PGx FINDINGS

Oncology

PGx-guided therapies improved safety outcomes and saved money—Risk of grade ≥ 3 toxicity was reduced from 73% (control group) to 28% (PGx-guided group) for *DPYD*2A* allele carriers[8]

Behavioral health

PGx-guided treatment helped patients experience greater improvement from baseline depression scores compared with unguided patients suffering from major depression[9]

Cardiovascular

PGx-guided dosing of warfarin was a cost-effective strategy, improving outcomes of patients with atrial fibrillation in the United Kingdom and Sweden[10]

Pain management

PGx testing for specific variants could help reduce opioid addiction, saving up to $14,000 USD per patient each year in addiction treatment[11]

SUMMARY: PGx TESTING IMPROVES CARE

- Nonoptimized medication usage results in wasted time and resources,[1] increased avoidable ADR occurrence,[2] and reduced medication adherence[6]
- Most people have an actionable PGx variant[5] that increases the potential clinical impact of panel testing and provides a path to future cost savings for healthcare

Learn more

Benefits of pharmacogenomics, www.illumina.com/areas-of-interest/pharmacogenomics.html

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