

BENEFITS

# Predicting compatibility

## *Can pharmacogenetics provide much-needed answers?*

By Michael Prouse

**C**ompanies are always searching for drug plan strategies to keep the workforce healthy, while simultaneously reducing rising costs. Unfortunately, many benefits that promise this fall short because of persistent absenteeism, presenteeism, disability and medication waste.

Employees are absent from work on average 9.3 days per year, according to 2011 numbers from Statistics Canada, costing the Canadian economy roughly \$16 billion annually, according to a 2013 report from the Conference Board of Canada. Studies have also shown presenteeism can be more costly than absenteeism, while disability can add up to a significant percentage of payroll.

One of the driving forces behind these health-related factors is poor prescription drug compatibility. Medications often do not work on patients, while adverse drug reactions can lead to hospitalizations and sometimes death. The result is a prolonged trial-and-error period in selecting the best drug that works.

### Pharmacogenetics

Employees are all unique, and so are the ways they respond to medications. Some people break down certain medications efficiently, while

others do it slowly. These differences are predominantly governed by genetics.

Pharmacogenetics studies how genes influence an individual's ability to metabolize specific drugs. A genetic test can now predict the right drug, at the right dose, for the right person — drastically reducing the trial-and-error process. A simple, non-invasive cheek swab can identify a patient's drug compatibility for more than 900 drugs.

Genetic testing for therapeutic response is different than genetic testing for disease risk, which reveals a certain chance of developing a disease. This information is not a diagnosis and could lead to employees being afraid of discrimination and even apathy about negative test results, which might encourage unhealthy behaviours.

In contrast, with genetic testing for therapeutic response, as is the case with pharmacogenetic testing, disease risk is not reported. Further, this information can be acted upon immediately and cannot be used to discriminate against the patient — the doctor is given this information as a tool to allow her to tailor the therapy.

### Employee benefits

For plan sponsors, the cost of pharmacogenetic tests is offset by sav-

ings realized through the avoidance of hospitalizations, reduction of medication waste, greater safety and efficacy in the use of medications, and avoidance of costs due to employee absenteeism, presenteeism and disability.

A Medco/Mayo joint study in 2010 reported a 30 per cent drop in hospitalization rates for patients who received a pharmacogenetic test before taking warfarin, a commonly prescribed anticoagulant medication. Another study published in the March 2013 edition of *Translational Psychiatry* found this test could help reduce general medical visits by 67 per cent and help reduce absenteeism and disability claims by three- and four-fold respectively.

The most effective way to purchase a pharmacogenetic test is to take advantage of either a volume purchasing arrangement or a fixed subscription plan, instead of paying the normal retail price (which can be upwards of \$1,000). This can be achieved through buying groups or benefit plan add-ons, similar to an employee assistance program (EAP).

The ideal situation would see the plan sponsor paying a fixed monthly fee to allow anyone to requisition a test when needed.

Once pharmacogenetic tests have

been implemented as a benefit, plan members can start requisitioning their tests when they become eligible. Eligibility is granted if the plan member is prescribed a medication covered under the pharmacogenetic plan.

After the test is requisitioned, she will receive a swab package. After she completes a cheek swab, it is shipped to the genetic lab at no additional cost.

The laboratory analyzes the genetics and provides an easy-to-read drug-gene compatibility report directly to the person's doctor, giving the physician a tool to elevate his prescribing power.

Individuals should have the ability to requisition a test even if they are not on an eligible medication. As a plan sponsor, it is important to accommodate these individuals to ensure the best possible health outcomes.

Proactive plan members should be able to requisition the test at a discounted rate through their employer's group plan, or a co-pay method, to help protect them.

Patients' private information should be kept confidential from their peers, employers and insurers. To accomplish this, private genetic information is only shared with their physician, based on explicit patient consent.

Plan sponsors should be able to access anonymous, aggregate usage reports to track if this benefit is truly bringing positive outcomes to their company.

#### Looking ahead

**Biologics:** Currently, no pharmacogenetic test exists to predict a patient's response to biologic drugs, which are typically the most costly drugs in any plan. For example, the biologics used to treat rheumatoid arthritis — Enbrel, Remicade and Humira — work in about 60 per cent of patients, costing employ-

ers a significant amount of money. However, a pharmacogenetic test is in the pipeline of being developed to help offset this drug plan problem.

**Step therapy:** Step therapy is the medical practice that aims to first provide a patient with the most cost-effective and safe therapy, and then progresses to more costly or risky therapies, if necessary. Step therapy can lead to prolonged trial-and-error periods because the treatment has been prescribed in a one-size-fits-all method.

Pharmacogenetics evaluates the

individual to predict the best treatment possible for that particular patient, eliminating the need for step therapy and long trial-and-error periods.

**Prior authorization:** Pharmacogenetics can have a great impact on the prior authorization process. For example, the Ontario Trillium Drug Benefit program requires a genetic test (G511D) for prior authorization to allow patients to be covered for ivacaftor, a cystic fibrosis drug costing \$300,000 annually.

In the future, employers and insurers will start to use pharmaco-

netic testing as a prior authorization tool to manage the sustainability of drug plans.

Implementing pharmacogenetics into a benefit plan is a cost-effective way to help a company's drug plan run as efficiently as possible — no employer drug plan should be without it.

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