



Introducing pillcheck

Prescription drugs often do not work well. Individual patients can react to the same dose of the same drug in quite different ways. This is because 90% of people have genetic variations that affect their response to medications, requiring different prescribing decisions for different patients. 'One size fits all' prescribing can lead to poor compliance, adverse side effects, and even treatment failure, affecting health and productivity.

Pillcheck is a state-of-the-art medication optimization service based on Pharmacogenetics (PGx), which matches specific drugs and doses to an individual's genetics.

Pillcheck provides personalized recommendations for over 100 of the most commonly prescribed drugs.

Leveraging Precision Medicine to Reduce Benefit & Disability Claims Costs

You know Jane

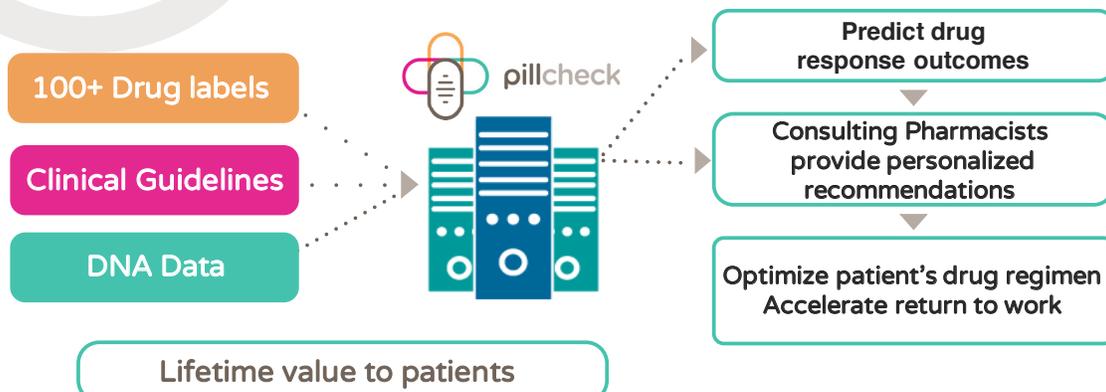
Jane, diagnosed with anxiety disorder and depression, left work in January 2015. Over the next 6 months, Jane's doctor prescribed several medications for her depression, all of which caused intolerable side effects. Jane had a history of non-adherence to medications due to their limited benefits.

Her doctor referred her to a psychiatrist for a medication review in July 2015, and in the interim, she continued to see her psychologist biweekly for cognitive behavioural therapy (CBT). Her doctor eventually stopped all medications and Jane was referred to a rehabilitation professional by her long-term disability (LTD) insurer. This consultant recommended Pillcheck.

Do you see this in your organization?

- Lack of treatment efficacy; not getting better
- Maximized all sick days; STD claim accepted
- Prolonged absence

Pillcheck: \$499 medication optimization service



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How Pillcheck helped Jane

Jane's case manager suggested the Pillcheck Medication Optimization Service to identify medications which would be effective for her. Jane provided formal consent and agreed to share the Pillcheck test results with her treatment team. She received her cheek swab kit in the mail and sent it back to lab. Jane's case manager listed Jane's prescribed medications for the consulting pharmacist review. In two weeks the Pillcheck results were made available to the case manager and Jane.

Jane's test results consisted of the Pillcheck report outlining her response to over 100 medications including antidepressants, and the pharmaceutical opinion letter that provided recommendations to prescribers on the optimal treatment for her condition. The pharmacist's letter indicated that Jane was a poor metabolizer for many antidepressants; therefore, she experiences significant adverse side effects. The pharmacist's letter also indicated that "her previous symptoms may have been linked to medication accumulating in the body." The pharmacist recommended medications and dosages aligned with Jane's genetic capability to metabolize them.

In the subsequent appointment her psychiatrist approved adjusting Jane's medications according to the recommendations outlined in the pharmacist's letter.

More specifically, Jane started taking Celexa® again but at a new dosage to be adjusted over a few weeks. By late December, Jane reported that her mood had improved and side effects had decreased. Jane's psychologist and psychiatrist confirmed the improvement in her mood and that Jane's anxiety and depression were much improved.

Jane's Pillcheck Report identified the problem

MEDICINE	 USE WITH INCREASED CAUTION - CONSIDER ALTERNATIVES	 USE WITH CAUTION - MORE FREQUENT MONITORING	 USE AS DIRECTED - STANDARD PRECAUTION
Psychiatry	Amitriptyline Aripiprazole Atomoxetine Chlordiazepoxide and amitriptyline Clomipramine Clozapine Desipramine Doxepin Fluoxetine Fluoxetine and olanzapine Fluvoxamine Iloperidone Imipramine Modafinil Nefazodone	Diazepam Sertraline	Citalopram

This explains why she had to discontinue taking these medications due to side effects

Return on Investment (ROI)

By adhering to her new medication regimen and with continued counselling, Jane returned to work in March 2016, 3.5 months after receiving the results of her report. If Pillcheck had been used at the onset of her LTD claim, she likely would have returned to work much sooner. Based on the wage-replacement benefits paid to Jane, the insurer could have saved more than \$11,950 in total monthly benefits alone. Ideally, the test should have been performed prior to the claim.

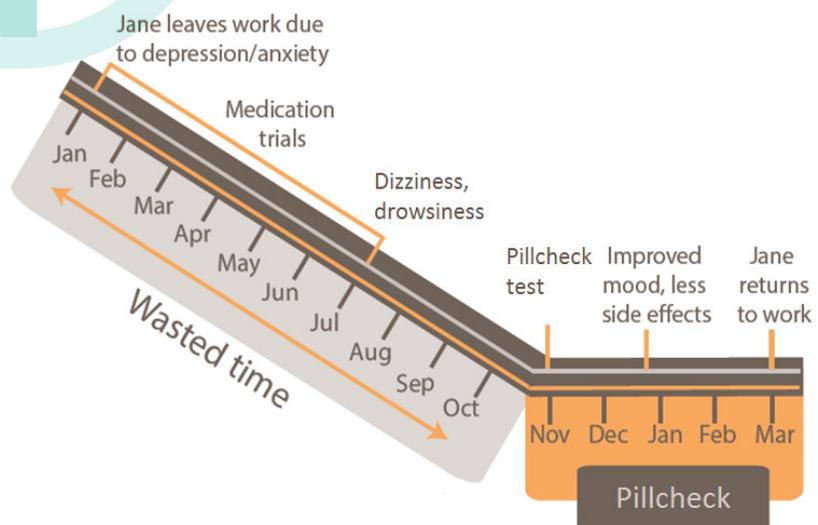
Identifying the right drug at the right dose through Pillcheck improves treatment outcomes, promoting earlier remission and averting productivity loss. This represents an important economic benefit for both employer and the health care system. Averted productivity losses can be directly translated to monetary benefits. At the average Canadian wage of \$200 per day, a 35 days of absenteeism at the average Canadian wage of \$200 per day means a \$7000 loss averted by using Pillcheck.

The case of Jane



Age **27**

Monthly Benefits **\$1195 / Month**



Why it matters to your organization

Since 2000, there has been a steady rise in disability claims, with mental health contributing substantially to this rise. Studies by Munich Reinsurance Company show 26% of all LTD claims outside of Quebec are due to a primary mental health diagnosis. In Quebec, the figure is 45%.

In 2012, the Conference Board of Canada estimated the cost of absenteeism to the economy at \$16.6 billion, the brunt of it being assumed by employers. The trend shows no sign of abating. Early-stage absence, combined with long-term disability/absence, amounts to an annual expense of \$1,700 per employee per year.

Many factors are at play and early stage medical intervention is a crucial step to ensuring timely resolution of cases and reducing the duration of disability.

pillcheck
DISCOVER PRECISION



USERS

Improves treatment efficacy while reducing side-effects, for today or tomorrow



HEALTH CARE
PROFESSIONALS

Helps doctors personalize treatments



BENEFITS PLAN

Reduces duration of disability and decreases drug waste