



Looking to improve member health and lower healthcare costs—in a big way?



The Teachers' Retirement System of the State of Kentucky (TRS) is doing both with a leading precision medicine program for its members. The program:

- Reduced direct medical charges by approximately \$7,000 per member—saving \$37+ million—in less than 3 years
- Improves members' health today and throughout their lives
- Minimizes unnecessary physician, hospital, and emergency department visits
- Has yielded a greater-than-3x annualized return on investment

This overview explains how TRS is making notable strides in improving member health and lowering healthcare costs, and can help you determine if a precision medicine program is right for your organization.

Searching for a Solution

TRS is a comprehensive retirement plan for Kentucky's public school teachers that includes retiree health insurance and other benefits. Like other retirement and pension groups, TRS is continually looking for ways to help their members live better, healthier lives while also controlling rising healthcare costs for individuals and the organization.

After learning about the health benefits of precision medicine that's fueled by pharmacogenomics (PGx)—which uses an individual's unique DNA to identify medications that are likely to be ineffective or unsafe for them specifically—TRS knew that offering this type of program was the right thing to do for its members. Helping steer members' physicians to safer, more effective therapies and enabling a more personalized approach to healthcare would also pay dividends in healthcare savings.

ARE YOUR MEMBERS AT RISK?

Many people are surprised to learn that DNA can affect whether or not 150+ commonly prescribed medications work for any given individual and if they are safe to take or likely to cause potentially dangerous adverse drug events. That's because natural variation in our genetic code can cause the same drug to produce different effects on different people.

50% of people are on a prescription drug that fails to be effective or causes side effects.¹



THE HIGH COST

OF GETTING MEDICATIONS WRONG

Adverse drug events in outpatient settings account for:²



1 million

ER VISITS



3.5 million

PHYSICIAN OFFICE VISITS



125,000

HOSPITAL ADMISSIONS

Treating adverse drug events
in the U.S. may cost up to



\$30.1 billion

EVERY YEAR³

¹ Spears BB, Health-Chiozzi M, Huff J. Trends Mol. Med. 2001;7(5):201-201.

² <https://health.gov/sites/default/files/2019-09/ADE-Action-Plan-508c.pdf>

³ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3853675/>

COMPREHENSIVE PRECISION MEDICINE BENEFITS

After an extensive proposal process with over a dozen competing providers, TRS selected Coriell Life Sciences (CLS) as its personalized medicine partner. CLS is an international leader in precision medicine that uses DNA testing to empower the most precise medical care and eliminate the needless risks, costs, and waste associated with trial-and-error prescribing.

CLS' Corigen® Program is the most comprehensive Medication Safety Program on the market. It provides participants and their doctors insight on drug-gene interactions as well as dozens of other important risk factors like drug-drug interactions, medical conditions, lifestyle factors (e.g., foods, alcohol, smoking), and age-related concerns.

HOW THE CORIGEN MEDICATION SAFETY PROGRAM WORKS



1. Population Analytics

Proprietary risk analysis system reveals "high risk, likely-to-benefit" members



2. Member Engagement

Fully-coordinated education and enrollment of members



3. DNA Testing

Members provide a saliva sample at home for DNA testing by CLIA-licensed laboratories



4. Pharmacist Consult

Pharmacists review results, including recommended medication changes, with members and their physicians



5. Improved Member Health & Savings

Economic, clinical, and humanistic outcomes reported on a regular basis

CLS works collaboratively with leading benefit consultants, third-party administrators, and pharmacy benefit managers.

PROJECTING THE PAYOFF

To help TRS determine the return on investment of implementing the Corigen Program, CLS conducted an in-depth analysis of the TRS member population and their prescription claims data.

Summary of Pre-Program TRS Population Analytics

- Number of members: 36,000
- Age: 65-109
- Average number of prescriptions: 15
- Most prevalent conditions:
 - High blood pressure/heart disease: 71%
 - High cholesterol: 55%
 - Pain/inflammation: 39%
 - Depression: 26%
 - Heartburn/ulcer disease: 26%
 - Diabetes: 16%
- Members on medications that have known genetic impacts: 83%

The healthcare system realized a greater-than-**3x annualized return** on their investment.

PRECISION MEDICINE IN ACTION

Together, TRS and CLS, along with the Know Your Rx Coalition, rolled out the Corigen Program as a voluntary benefit offered free-of-charge to all members age 65+ who were continuously insured in the TRS medical insurance plan. Since January 2018, more than 10,000 members have actively participated in the program.

A retrospective study of TRS participants highlights the benefits of Corigen and precision medicine in action.⁴

Improvements in Medication Safety

- 3 out of 5 participants had a change to their medications recommended by a pharmacist
- 100% of participants had at least one variant known to impact therapy outcomes
- 66% had genetic risks detected in currently prescribed medication

Reduction in Healthcare Resource Utilization

- 14.9% decrease in inpatient visits
- 6.8% decrease in emergency department visits
- 1.9% decrease in outpatient visits

Significant Economic Savings*

- Per member per month cost avoidance: \$218.34
- Per member cost savings: ~\$7,000
- Cumulative cost savings: ~\$37,000,000

A LIFETIME OF VALUE

DNA doesn't change over time. That means that in addition to helping physicians optimize participants' current medications, individuals and their providers are also empowered to know which medications they should avoid throughout their lives.

Having this knowledge at the ready is especially crucial for acute medical situations. Consider that one of the most commonly prescribed blood thinners on the market—Plavix (or Clopidogrel)—is ineffective for about 30% of the population based on their genetics. If one of those people has a heart attack or stroke and needs a blood thinner, the choice of medication can mean the difference between therapeutic success and a life-threatening situation.

The bottom line is that precision medicine is a powerful tool for optimizing healthcare delivery—now and in the future.



I had previously been taking different antidepressant meds for 15 years for severe depression and hospitalization. Once I received my results, my doctor changed me from SSNI to SNRI meds and I have never felt better.

– Participating Retired Kentucky Teacher

*Direct medical charges at 32 months
⁴<https://www.mdpi.com/2075-4426/12/3/421>



The DNA results revealed one of my medications may be causing side effects. After discussing the results with the pharmacist and listing various problems I had experienced since taking my cholesterol meds, the pharmacist contacted my physician, who lowered the dosage. The side effects disappeared after a few days.

– Participating Retired Kentucky Teacher

Is a precision medicine program right for your organization?

Do you:

- Provide and fund healthcare benefits for members?
- Have members who take medications today or will take them at any point in their lives?
- Want to measurably improve the health of your members?
- Need to control healthcare spending for your organization and your members?
- Struggle with high rates of absenteeism among members?

If the answer to any of these questions is “yes,” take the next step and get a free ROI analysis for your organization.

CALCULATE YOUR SAVINGS

Get a free ROI analysis

Interested in learning how much your organization can save with the Corigen Medication Safety Program? We can calculate a savings projection based on your specific population. We just need to know your organization's:

- Population size
_____ (ex. 50,000)
- Age breakdown (approximate counts for each age group)
____ 21-30 ____ 31-40 ____ 41-50 ____ 51-60 ____ 60+
- Gender breakdown
____ Male (ex. 20,000 or 40%)
____ Female (ex. 30,000 or 60%)

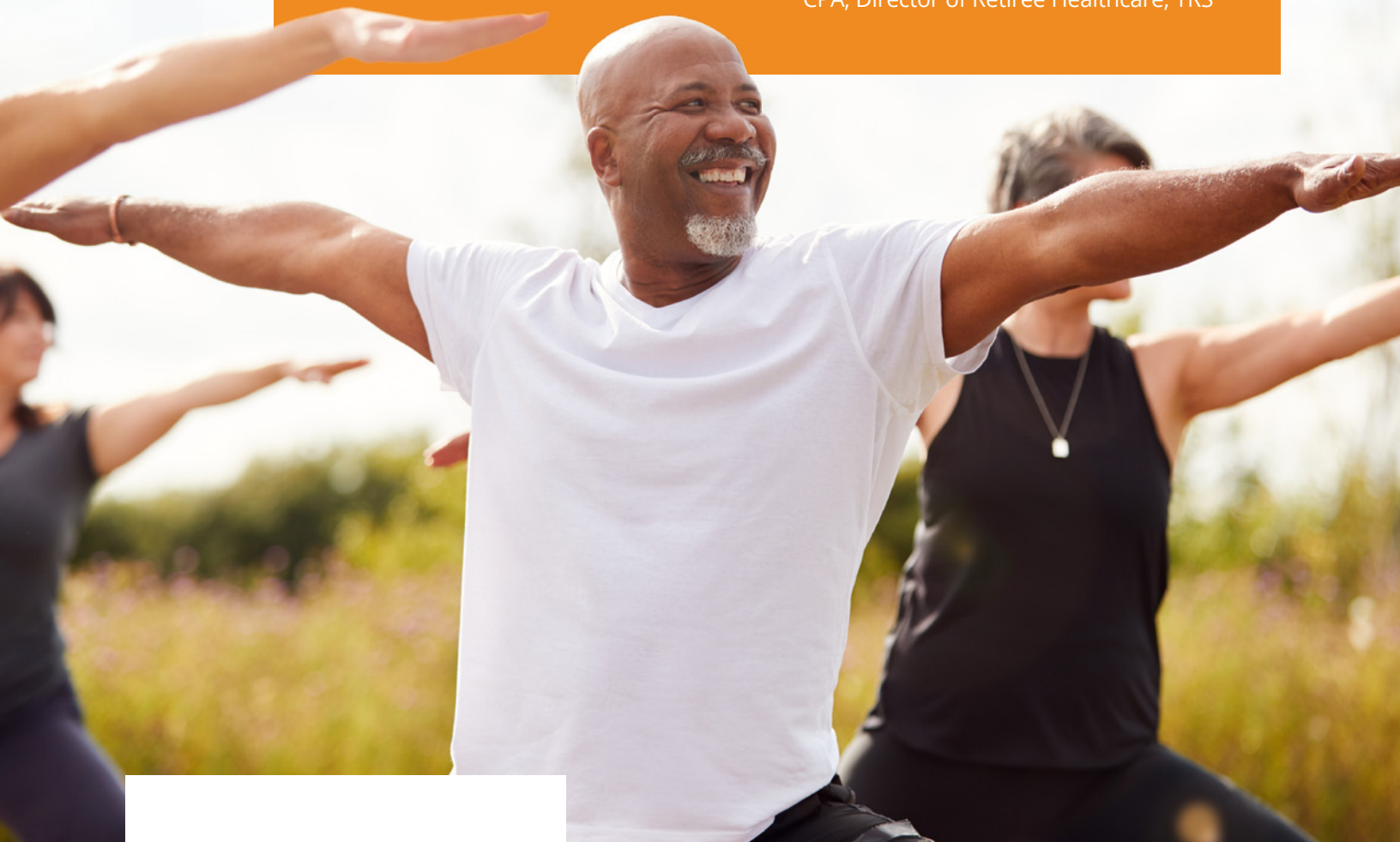
Email us at info@coriell.com and we'll get in touch!





In terms of the financial results of the program, we have been very pleased with a greater-than-**3x return on our investment**. But it doesn't take a CPA or a scientist to know that the real value is the humanistic value—the value of someone taking a prescription drug that works for them and does what it's intended to do.

– Jane Cheshire Gilbert
CPA, Director of Retiree Healthcare, TRS



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Let us help you! Interested in learning more?
coriell.com | info@coriell.com | 888-415-7834