

# A Commentary on a Precision Medicine Program: Humanistic Outcomes Are Always Key

By Jane Cheshire Gilbert, CPA, Teachers' Retirement System (TRS)  
of the State of Kentucky, a Member of the GTMRx Institute

## Introduction: GTMRx and TRS Kentucky

Precision medicine meets personalized medicine in cases like the TRS retiree (quoted in #1) who voluntarily submitted a saliva sample for testing. Such a simple act, one of the many by TRS retirees, yields long-term returns on the scientific and financial investments made by TRS to achieve its precision medicine goals. Moreover, TRS puts

those goals into human terms, showing how real people express in their own words how precision science benefits them. Are there any better words a pharmacist or doctor could hear? Or for those inside the pharmacogenomics research world and academia? Or, for that matter, the director of retiree health care for Kentucky's retired teachers?

In the past few years, TRS has made countless virtual presentations on this program to others

interested in their employees' and retirees' wellness, drug cost containment and precise use of science that now is well over a decade old. In addition, TRS has presented its program to many health care professionals, including doctors and health plan administrators at the National Institutes of Health in Bethesda, Maryland; attendees at the Personalized Medicine Coalition meeting at Harvard in Massachusetts; and, now, readers of

**#1** *"I am so grateful for the information that was given to me and my physician. I was taking Metoprolol for my heart condition. Your tests showed that it stayed too long in my system. I sometimes had the feeling that I was on the verge of fainting. I had not had that feeling since I started taking the new suggested medication. I thank you from the bottom of my heart."*

Retiree on the Medicare Eligible Health Plan of the Teachers' Retirement System (TRS) of the State of Kentucky

the *Journal of Precision Medicine*. Of special note, Get the Medications Right Institute (GTMRx) and TRS jointly presented this Kentucky success story at a recent Precision Medicine Leaders' Summit (PMLS).

What's more – and what was surprising to TRS – is that the interest was not just from the scientific community but also from our retirees, who want this type of informed treatment. This may be equally surprising to the medical professionals judging by the audible gasp when the 300-plus attendees at the recent PMLS gathering heard that 7,800 retired Kentucky teachers participated voluntarily.

### The Partners and the Plan

TRS chose to be a member of GTMRx because pharmacogenomics has proved to be a successful tool in the comprehensive medication management (CMM) toolbox. GTMRx defines CMM as:

"the standard of care that ensures each patient's medications (whether they are prescription, nonprescription, alternative, traditional, vitamins or nutritional supplements) are individually assessed to determine that each medication is appropriate for the patient, effective for the medical condition, safe given the comorbidities and other medications being taken and able to be taken by the patient as intended."

The TRS pharmacogenomics program has four integral partners; in addition to TRS, the other partners are Aon, Coriell Life Sciences (CLS) and the Know Your Rx Coalition. All four partners hold firmly that the humanistic outcome quoted above is the *definitively* desired outcome and is of equal or greater importance to the evidentiary research and the returns on investment. TRS Kentucky offers a defined benefit plan that serves about 140,000 active and retired teachers. More than 37,000 of those retirees are Medicare eligible. For them, TRS offers a fully insured Medicare Advantage health plan and a self-funded Medicare Part D drug plan with a fiduciary responsibility to offer both valuable and cost-effective coverage.

TRS utilizes Aon as the medical benefit consultant to find appropriate vendors for the Medicare-eligible plan, which included finding the appropriate life sciences vendor and bringing all the program partners together for this successful product. CLS is the for-profit arm of the research institute that has been in operation since 1965 and is named after Lou Coriell, who worked with Jonas Salk on the polio vaccine. The Know Your Rx Coalition is a group of medication management therapy pharmacists out of the University of Kentucky that had already brought the TRS generic fill rate from 73% to 88% by patient-centered phone counseling alone for the Medicare Part D drug plan.

### How did the TRS Kentucky story of personalized medicine begin?

First, TRS developed a plan to address the issues of escalating costs and non-optimized medication. To start, TRS consulted with Aon, which resulted in Aon issuing a request for proposals that was won by CLS. CLS supplied the decision-tool software and created the medication action plans that provided the Know Your Rx Coalition pharmacists with the roadmaps from which to counsel TRS's retired teachers on the medication actions to be taken as a result of this lifetime benefit.

From the outset, TRS worked with CLS to get a baseline. A deep dive into our population

discovered that 84% of retirees are on medications that are influenced by genetics. Medicare-eligible retirees were on an average of 15 prescriptions. Roughly 75% of the population had high blood pressure, 58% had high cholesterol and 50% were suffering from pain and inflammation. Using de-identified claims information, CLS provided an in-depth analysis of the possible return on investment with the program which found: 10% of members should stop taking a prescription immediately (potential savings: \$1.7 million), 57% of members might need to adjust dosage (potential savings: \$10 million) and 33% of members have a better alternative medication available.

With such a significant potential impact to member health and cost savings, TRS launched a pilot in 2017 for the TRS Personalized Medicine partnership, initially focusing on those who figured to benefit most. The program began by engaging members. The first challenge in getting genetic information to the point of care is patient understanding – the language of genetics, genomics, precision medicine, pharmacogenomics and genetic testing can be intimidating, especially for retirees who naturally want to understand how they'll benefit.

Communicating with members early and consistently contributed to the program's successful launch. The overarching message: TRS is making smarter use of the health care dollar through the program because taking medications that do not work is bad for the member's health and for the TRS health insurance fund. All materials, from the invitation to participate to the mail-return saliva collection kits themselves, include the TRS logo. TRS wanted to make sure that our members were comfortable that this was a sanctioned pilot program by TRS, the executive staff and the Board of Trustees. The invitation made clear that the data would be used only by the participating pharmacists and the members' physicians; TRS would have no access. All of this contributed to the now-7,800 members embracing the PGx program. ►

**#2** *We've all heard the statistics by now: \$528.4 billion a year – 16% of the total U.S. health care spend – is wasted on non-optimized medication use. Even worse are the more than 275,000 avoidable deaths associated with it.<sup>1,2</sup> Precision medicine – specifically, pharmacogenomics – provides a powerful tool with which to chip away at these numbers. PGx allows pharmacists and clinicians to better match the medication to the patient, improving the likelihood of therapeutic success while reducing the potential of toxicity.*



**#3** A deep dive into our population discovered that 84% of retirees are on medications that are influenced by genetics. Medicare-eligible retirees were on an average of 15 prescriptions. Roughly 75% of the population had high blood pressure, 58% had high cholesterol and 50% were suffering from pain and inflammation. Using de-identified claims information, the PGx vendor provided an in-depth analysis of the possible return on investment with the program which found: 10% of members should stop taking a prescription immediately (potential savings: \$1.7 million), 57% of members might need to adjust dosage (potential savings: \$10 million) and 33% of members have a better alternative medication available.

### Doctor-Patient Reports and Consultations

CLS develops a personalized medicine report that includes the relevant genetic data as well as known drug-drug interactions, lifestyle factors and other relevant information. TRS made sure that if a retired teacher wanted to have their DNA tested, a pharmacist was in place who could communicate the results to the patient in language they understood. Pharmacists have developed medication action plans for the 7,800 program enrollees. Both the patient and the physician receive a copy of the plans, which explains the results of the testing and the pharmacist's recommendations.

After these conversations with patients, the pharmacists then reach out to the prescribing physician, with the patient's permission, and discuss the recommended medication changes. And those recommendations are taken seriously. The physicians' acceptance of the initiative is gratifying and astounding – and key to validating the program. Prescribing physicians almost universally accepted the pharmacists' recommendations — 89% of the time. Like the retirees, physicians were generally appreciative. TRS heard a lot of positive feedback, such as “you're helping me become a better doctor, to take better care of my patients and to be able to prescribe the right drug at the right time for them.”

Of the medication action plans delivered for those enrolled in the program, 64% resulted in medication changes. Over 40% of the suggested medication changes are directly related to DNA-drug interactions. The rest are the result of what CLS calls the “halo effect” of working with

**#4** Communicating with members early and consistently contributed to the program's successful launch. The overarching message: TRS is making smarter use of the health care dollar through the program because taking medications that do not work is bad for the member's health and for the TRS health insurance fund.

the pharmacists and, for example, switching to a generic. Other examples from this medication therapy management process – in which the pharmacist spends about an hour with a patient – include identifying drug-to-drug interactions, side effects and other issues.

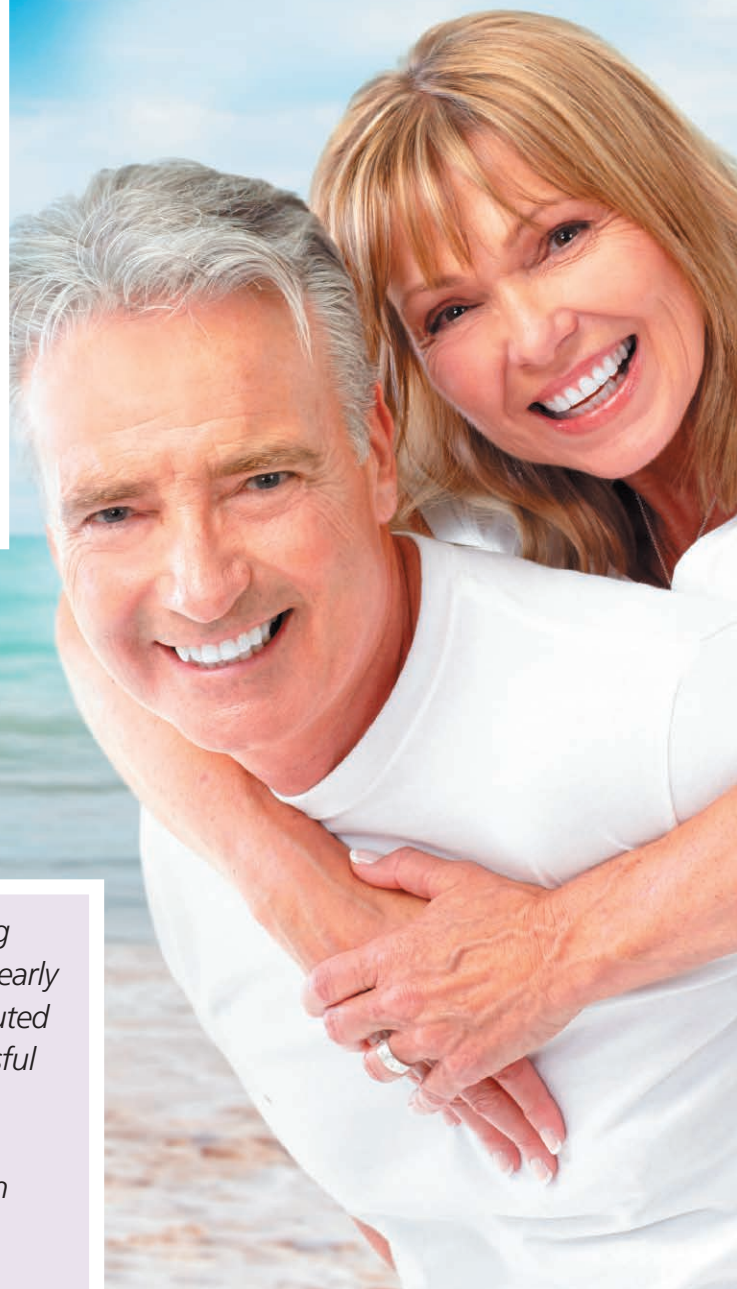
The process of “test, report, consult” avoids the possibly fatal trial-and-error type of prescribing

known as titrating and playing with the dosage. In keeping with GTMRx, TRS hopes the medication is right the first time, saving members considerable pain and suffering and saving the plan a lot of money.

The outcomes have proven the concept.

According to CLS, costs grew 12% faster for those not enrolled in the PGx program than enrollees, based on charged amounts for medical claims at an 18-month evaluation. About \$12 was saved on charged claims for every \$1 spent on PGx program costs.

Despite these initial results, PGx still faces resistance – in no small part from the





determination to allow PGx when specific criteria are met. Second, on the insurer side, some large companies, including UnitedHealthcare, have incorporated the use of PGx to include, for example, reimbursement for certain patients with depression.

In addition to these positive signs, the accumulation of data and the weight of evidence will dictate that PGx becomes the standard so that patients are not on a drug that is ineffective or unsafe for months or years.

### What's next

To implement PGx, engage your medical plan carrier and your pharmacy benefits manager (PBM) in this conversation. PBMs will see the value in lives saved, improved health outcomes and reduced costs; PBMs will come to recognize the value of PGx as a tool to optimize medications through comprehensive medication management (CMM).<sup>3,4</sup> Introducing a pharmacist who works

**#5** *TRS heard a lot of positive feedback, such as "you're helping me become a better doctor, to take better care of my patients and to be able to prescribe the right drug at the right time for them"*

in collaborative practice with the physician to target correct therapies reduces the trial-and-error approach to prescribing. And TRS's experience provides a path toward getting there as a widespread, accepted standard of care.


Resources are available to guide those new to these concepts. In April, the GTMRx Institute released the GTMRx Employer Toolkit,<sup>5</sup> a suite of resources to equip employers with the knowledge to manage and control medication therapy problems more effectively through their pharmacy benefit programs and medical carriers. The toolkit is designed to help educate, guide and assist employers as they work with solution providers.

A pharmacist-led, person-centered, team-based, standardized and rational approach to medication use empowers employees to leverage PGx testing and moves us all toward a more precise and personalized care process.

TRS continues to educate Medicare Advantage carriers and PBMs of the need for PGx inside these federal programs. Including PGx in Medicare Advantage and Medicare Part D would help continue to control the TRS Medicare Eligible Health Plan premium. The 2021 monthly premium is \$178, down \$54 (not adjusted for inflation) from 20 years ago due to increased federal revenues

and heightened care management inside these federal programs. PGx, if included in these federal programs, would bring greater cost efficiency.

In the end, the most rewarding part of the program, as indicated earlier, is not only the medication change that results from the testing and or the dollars saved; it is also the reaction of Kentucky's retired teachers who take part in the program and the thanks TRS receives for actually running these tests.

The story will get better because this wellness and savings program is a lifetime benefit for each Kentucky retired teacher who volunteered to provide a DNA sample. Testing results that already have paid dividends for the retirees and their health plan can continue to inform every aspect of their pharmaceutical treatment for the rest of their lives. 



### Jane Cheshire Gilbert, CPA

Director of Retiree Health Care for the Teachers' Retirement System of the State of Kentucky

Jane has served TRS retirees since April 2002. She manages two retiree health plans covering 48,000 retirees. She also serves as a leader in the areas of health insurance cost containment, project management, risk management and federal health care solutions. Gilbert served in management and directorship positions for a Louisville, Kentucky law firm and a cost containment company, The Rawlings Company, from 1989 through 2002. Prior to that, she worked as an accountant for a national CPA firm. Gilbert earned a bachelor's degree in accounting from Bellarmine University in Louisville, Kentucky and is a certified public accountant and a certified government benefits administrator. She has served on the board of the State and Local Government Benefits Association and is a member of the Public Sector Healthcare Roundtable.

### References

1. Cutler DM, Everett W. Thinking outside the pillbox: medication adherence as a priority for health care reform. *N Engl J Med*. 2010;362(17):1553-1555. PubMedGoogle ScholarCrossref
2. Watanabe J, et al. Cost of Prescription Drug-Related Morbidity and Mortality. *Annals of Pharmacotherapy*, March 26, 2018. Accessed 3 April 2018. <http://journals.sagepub.com/epri/ic2iH2maTdl5zfN5iUay/full>
3. 10 Steps to Achieve Comprehensive Medication Management (CMM). The Get the Medications Right (GTMRx) Institute. <http://16bvl028dn7zhgp35k7rzh5c-wpengine.netdna-ssl.com/wp-content/uploads/2019/04/GTMRx-CMM-10-steps-PDF.pdf>
4. The Outcomes of Implementing and Integrating Pharmacogenomics within Comprehensive Medication Management in Team-Based Care: A Review of the Evidence on Quality, Access and Costs, October 2020. The Get the Medications Right (GTMRx) Institute. <https://16bvl028dn7zhgp35k7rzh5c-wpengine.netdna-ssl.com/wp-content/uploads/2020/11/The-Outcomes-of-Implementing-and-Integrating-PGx-within-CMM-in-Team-Based-Care-A-Review-of-the-Evidence-on-Quality-Access-and-Costs-11252020-1.pdf>
5. Comprehensive Medication Management in Benefits Design: A Toolkit for Employers. The Get the Medications Right (GTMRx) Institute. <https://gtmr.org/employer-toolkit-2/>

predisposition to keep doing things the same way as always. The DNA testing and medication management counseling was not reimbursable, so the TRS health insurance trust fund decided to cover the costs. Ideally, that will be a short-term solution as reimbursement improves. The goal is that this approach becomes a standard of care, and the large payers in the nation, especially those inside of Medicare Advantage and Medicare Part D, begin paying routinely as they do with any other standard of care.

A couple of positive signs toward that outcome have recently been seen. On the regulatory side, Medicare made a recent local coverage