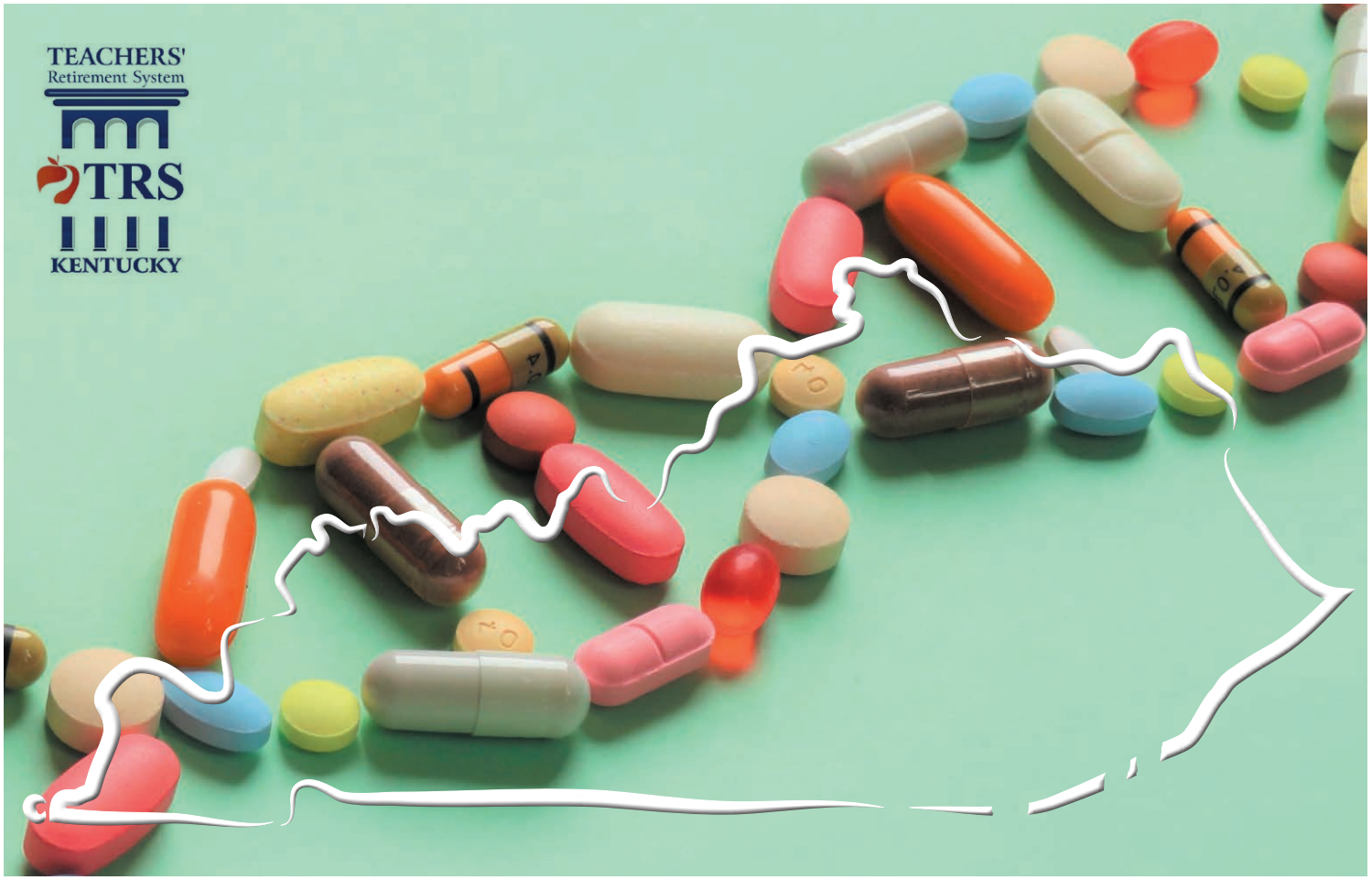

A Humanistic Goal: Limiting Overtreatment Through Comprehensive Medication Management

By Jane Cheshire Gilbert, CPA, Teachers' Retirement System of the State of Kentucky

AS A STRATEGIC PARTNER of the Get the Medication Right (GTMRx) Institute, the Teachers' Retirement System of Kentucky (TRS) launched a breast cancer initiative that, once again, demonstrates how we can (and should) reorient health care in support of the principles of comprehensive medication management (CMM) to improve quality of life for our members and make better use of our resources (See ***Comprehensive medication management*** inset). As described in the *Journal of Precision Medicine's* Issue 2 of 2021, TRS received tremendous response to its general pharmacogenomics (PGx) outreach, recommending these diagnostic tools to help our members make better informed decisions about their medications. We remain committed to the principles of comprehensive medication management, which can be implemented by an interprofessional team with the goal of:

"Decreasing misuse, overuse and underuse of medications and avoiding waste by advancing comprehensive medication management ensures appropriate and personalized use of medications and other therapies." »

Comprehensive medication management

The GTMRx Institute 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.[1]

TRS Kentucky offers a defined benefit plan that serves about 140,000 active and retired teachers, and the outsourced pharmacist division of TRS, called Know Your Rx (KYRx), has worked with TRS on drug purchasing leverage, generic fill maximization, medication therapy management and CMM since 2012. As mentioned above, TRS partners with the GTMRx Institute in outreach initiatives to educate members about CMM, of which pharmacogenomics and precision diagnostic tools are one piece.

As part of this effort, we resolved in 2021 to help address a critical challenge in the treatment of early-stage, hormone receptor positive (HR+) breast cancer – namely, *the majority (95%) currently taking endocrine (anti-estrogen) medications receive no benefit from this treatment if continued more than five years after diagnosis.*[2-3] And because adverse side effects associated with extended endocrine therapy (EET) can substantially reduce quality of life, identifying the small percentage of patients who actually benefit from EET presents a unique opportunity in the field of precision medicine.[3] (See ***Adverse events associated with prolonged anti-estrogen therapy*** inset.)

In January of 2021, The National Comprehensive Cancer Network (NCCN) identified Breast Cancer Index™ (BCI) as the only guideline-recognized test used to predict benefit of extending endocrine therapy beyond five years. BCI has been validated for prediction of EET benefit across five trials and over 4,500 breast cancer patients.[4-6] (see ***BCI*** inset) The test is typically conducted as a patient is approaching the fifth-year post diagnosis, and it does not require the patient to undergo a new biopsy, which is both invasive and expensive.[7]

In addition to providing a predictive answer (yes/no) to the question of whether a patient is likely to benefit from EET, BCI provides a prognosis for the patient's risk of late distant recurrence (reported as a percentage). In one study led by Yale University and University of Pittsburgh Medical Centers, BCI results amended physician recommendations –either to continue or discontinue endocrine therapy after five years – for 30% of their patients. "The goal of EET is to treat the patients most likely to benefit from prolonged therapy in order to spare them a recurrence, and this test may have helped identify those who would have otherwise been overlooked based on clinical and pathologic factors alone," write the study's authors.[8]

"Knowing that only up to 5% of our members diagnosed with breast cancer were receiving any benefit from EET, we saw BCI as an opportunity to help mitigate overtreatment where we could."

KYRx Outreach to TRS Members Diagnosed with Breast Cancer

Knowing that only up to 5% of our members diagnosed with breast cancer were receiving any benefit from EET, we saw BCI as an opportunity to help mitigate overtreatment where we could. The KYRx team identified 417 members diagnosed with breast cancer prescribed with either Aromatase Inhibitors (360 members) or Tamoxifen (57 members). Of these, the pharmacy team made outreach by phone to 383 members, provided answers to FAQ and responded directly to members' follow-up questions. Only 29 members (7%) expressed no interest in receiving information about BCI, while 354 members (93%) were sent more information.

During the six-month program, 14 TRS members (>2 per month) were prescribed BCI tests, and the KYRx team found the results enlightening. Four of the members (29%) were identified as likely to benefit from EET while the other 10 members (71%) were identified as unlikely to benefit from continued treatment. Most importantly, these members diagnosed with breast cancer were empowered to consult with their doctors and make more informed, personalized decisions about their long-term care.

Adverse events associated with prolonged anti-estrogen therapy

Like many breast cancer patients on anti-estrogen therapy, one TRS member experienced significant weight gain and joint stiffness due to her medication. Her oncologist ordered Breast Cancer Index, and based on the results, the doctor determined that she could discontinue her anti-estrogen medication after five years of use.

Breast Cancer Index (BCI)

Breast Cancer Index is a unique, proprietary genomic test that helps physicians individualize treatment decisions beyond 5 years for patients with early-stage, HR+ breast cancer. It is the only genomic test recognized by multiple national oncology practice guidelines to help inform extension of Tamoxifen (TAM), aromatase inhibitor (AI) or TAM followed by AI, for pre- or post-menopausal women with lymph node-negative or lymph node-positive (1-3 positive nodes) disease.

Summary and references for breast cancer survivorship

3.8 Million Breast cancer survivors report >25 toleration problems impacting quality of life.

Significant Adverse Effects: Bone toxicity; Endometrial cancer; Embolisms; Heart disease.
Tolerability Challenges: Hot flashes; Sexual dysfunction; Arthralgias; Myalgias; Mild to moderate cognitive impairment; Joint pain; fractures; depression; stress.

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Survivorship Survey Findings

BCI fits well into both virtual visit and breast cancer survivorship programs. A recent 2021 National Cancer of Survivorship survey revealed the following:

- 2/3 feel informed about side effects, but in most cases less than ½ believe their health care provider was very helpful in addressing them.
- Survivorship Telehealth appointments received the most (89%) – "Excellence/very good" experience ratings.
- Post-COVID, in-person appointments are preferred for most situations, except for counseling, medication management and getting test results.

Ref: National Coalition for Cancer Survivorship. State of Survivorship Study 2021. https://canceradvocacy.org/2021-state-of-cancer-survivorship/#briefing

When a patient is armed with the kind of precision information provided by BCI, she may confidently choose to avoid the potential adverse effects and tolerability issues reported by millions of breast cancer survivors. Approximately 10% of patients on endocrine medications experience serious effects, which may be as severe as bone toxicity or other cancers.[2] Meanwhile, 50% of patients report a range of tolerability issues, like increased hot flashes or cognitive dysfunction.[3] (See ***Summary and references for breast cancer survivorship*** inset.)

"One reason TRS Kentucky is so enthusiastic about the BCI initiative through our KYRx pharmacy team is that it clearly demonstrates the essential role pharmacists can and must play for patients to take full advantage of pharmacogenomics, diagnostic tools, and precision medicine practices."

Further, because these ill effects result in a high rate of non-compliance (~40%) with EET, the BCI assay provides those patients who are likely to benefit with a greater sense of confidence to continue treatment.[9] Women who are identified as likely to benefit experience approximately 2/3 reduction in the risk of recurrence when they maintain treatment up to 10 years.[3] Notably, 82% of patients surveyed have indicated that knowing they were likely to benefit, based on their BCI results, would substantially increase their likelihood of compliance.[9] (See ***Survivorship Survey Findings*** inset.)

Changing Practice and Perceptions

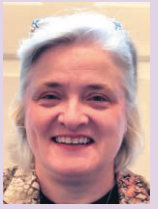
One reason TRS Kentucky is so enthusiastic about the BCI initiative through our KYRx pharmacy team is that it clearly demonstrates the essential role pharmacists can and must play for patients to take full advantage of pharmacogenomics, diagnostic tools, and precision medicine practices. Clinical pharmacists working in collaborative practice with physicians are often uniquely situated to recognize potentially harmful drug interactions and to take an active part in recognizing adverse effects a patient may be experiencing. (See ***Legislative Actions*** inset.) If we continue to limit the pharmacist to the role of prescription filler, we waste a valuable opportunity to achieve a more consultative, more targeted and more cost-effective health care system with better outcomes instead of perpetuating a cycle of over-medicating or undermedicating patients.

A constellation of factors – economic, diagnostic, technological and habitual – contributeto the trial-and-error prescription model that results in needless patient risk and needless cost for systems like TRS Kentucky. Meanwhile, PGx diagnostics – like BCI – not only promise to improve the quality of health care for individual members, but these precision tools also enable TRS to reallocate funds (e.g., we estimate $5,000 per member who discontinues EET) to better serve the entire membership. Now those are humanistic outcomes of which we can all be proud. JoPM

Legislative Actions

GTMRx Institute and other professional groups are working to advocate for legislation such as the Right Drug Dose Now Act (H.R.6875) that would allow greater involvement of interprofessional teams (to include a clinical pharmacist) to offer CMM services that incorporate PGx testing as a tool to target correct therapies.

Also, in response to the pandemic, and under emergency use authorization (EUA), several state legislatures recognized the efficacy of permitting pharmacists to order, use and dispense diagnostic tests to combat COVID-19.



Jane Cheshire Gilbert, CPA, CGBA

Jane Gilbert is the Director of Retiree Health Care for the Teachers' Retirement System of the State of Kentucky (TRS) and 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.

Ms. Gilbert served in management and directorship positions for a Louisville Kentucky law firm and cost containment company, The Rawlings Company, from 1989 through 2002. Prior to serving at The Rawlings Company, she worked as an accountant for a national CPA firm.

Ms. Gilbert graduated with honors from Bellarmine University in Louisville, Kentucky, with a Bachelor of Arts in Accounting in 1987, became a CPA in 1992, and achieved her Certified Government Benefits Administrator (CGBA) designation in 2012. Ms. Gilbert served on the Board of the State and Local Government Benefits Association, is a proud member of the Public Sector Healthcare Roundtable, and currently serves on the Board of the Kentuckiana Health Collaborative.

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General reading

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