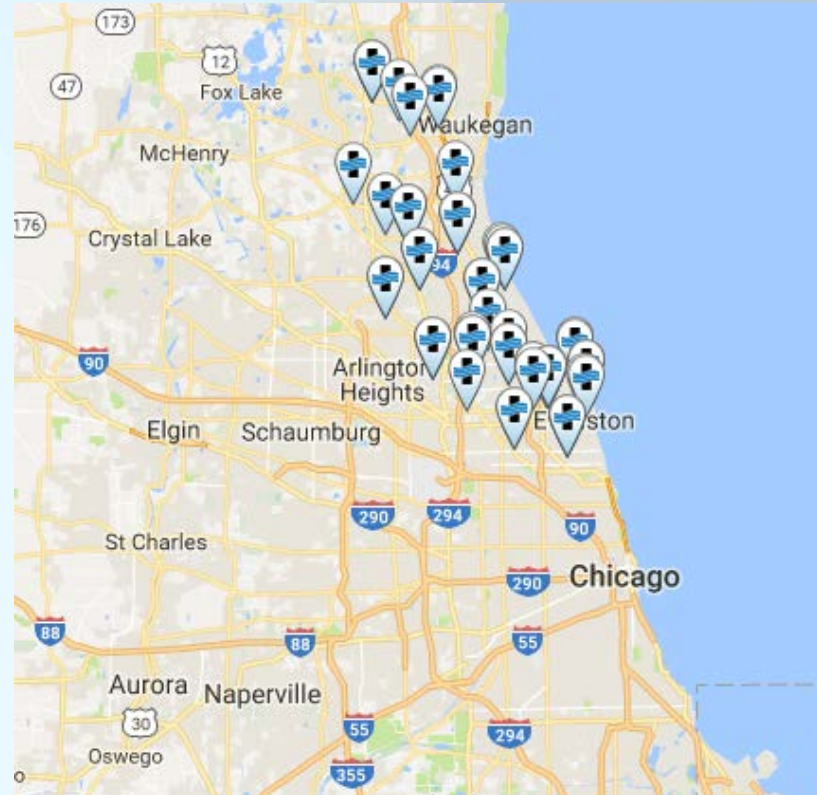


The Patient-Clinician Encounter in a Pharmacogenomics Clinic in a Community Health System

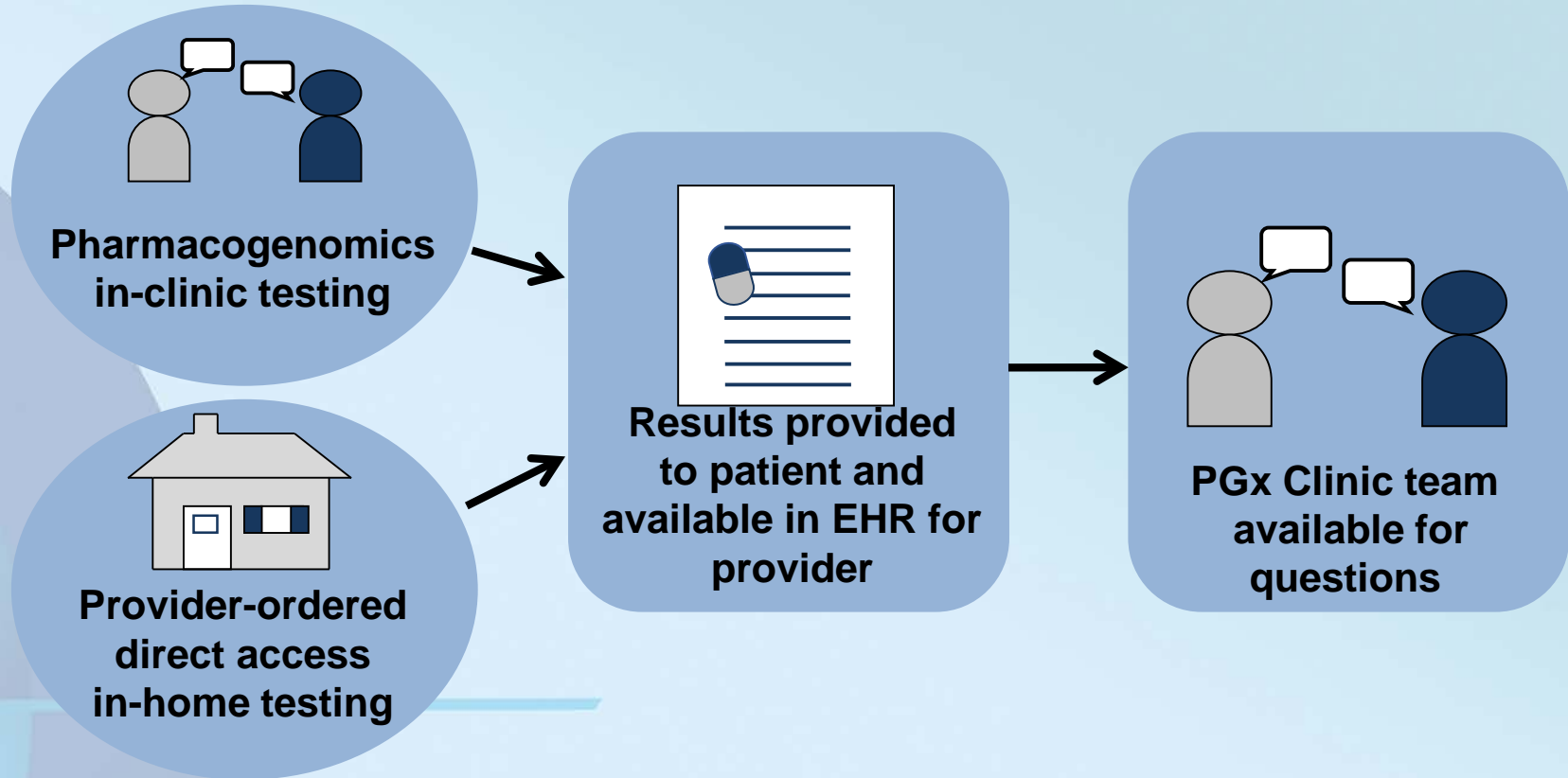
Henry “Mark” Dunnenberger, PharmD, BCPS
Center for Personalized Medicine
NorthShore University HealthSystem

NorthShore University HealthSystem

- Four community hospitals
 - 828 beds
- Medical Group
 - 100+ offices
- 42,000 admissions/year
- 120,000 ER visits/year
- Integrated inpatient and outpatient EHR



Two Delivery Methods



NorthShore's Pharmacogenomics Clinic

Goal: Meet the current pharmacogenomics needs of the community, both providers and patients

Visit 1

- Benefits
- Limitations
- Risks
- Cost

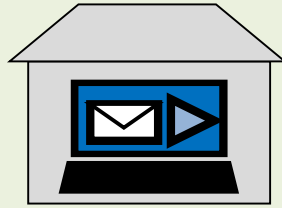
Visit 2

- Review results

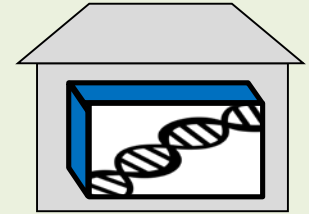
In-home Testing



Physician orders
PGx testing



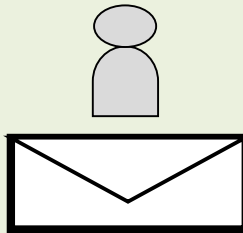
Educational video and
instructions - online portal



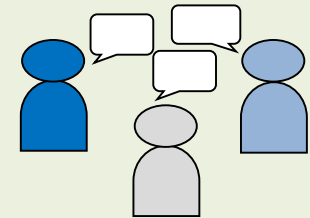
Patient completes PGx kit
at home



Results available to
physicians in EHR

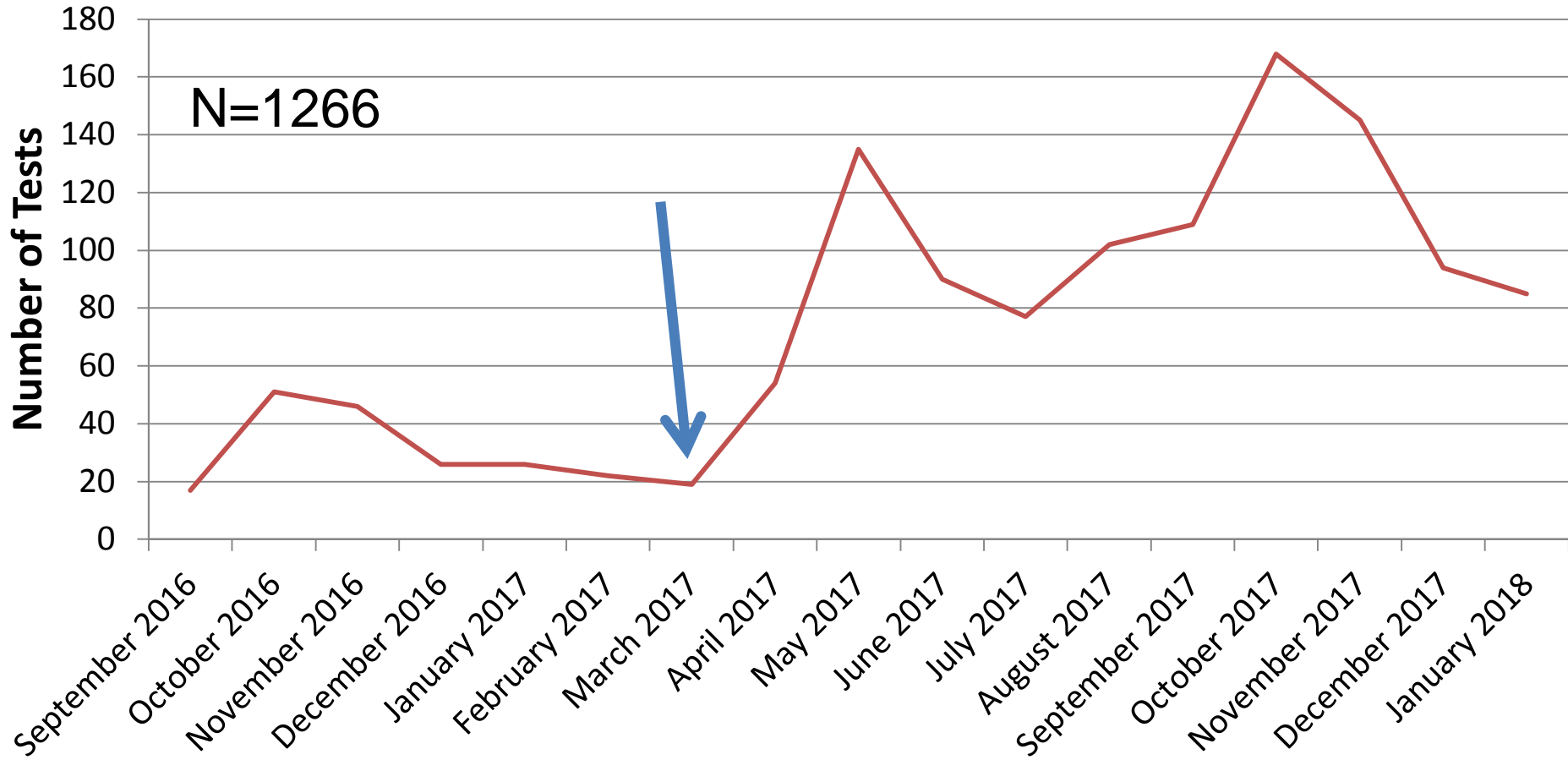


Results mailed
to patient

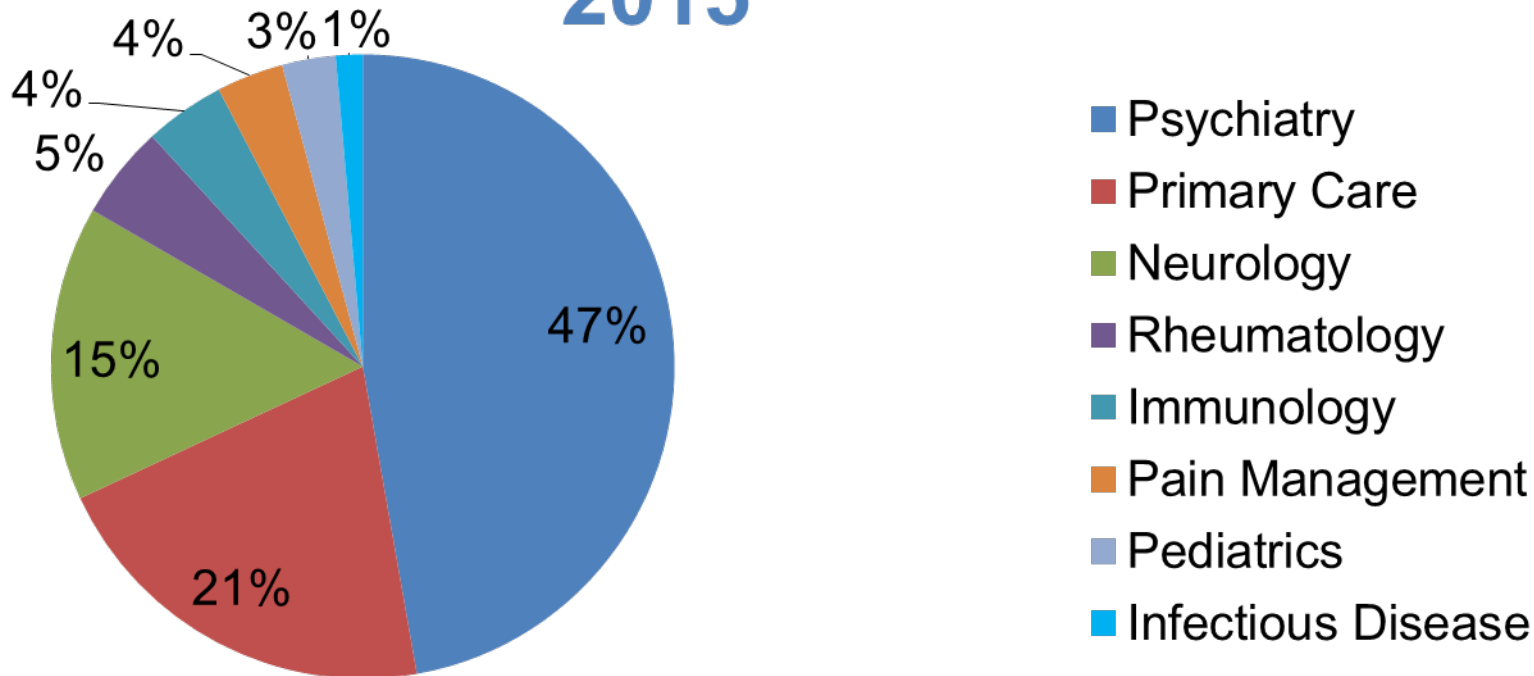


Provider and clinical
PGx team for follow-up

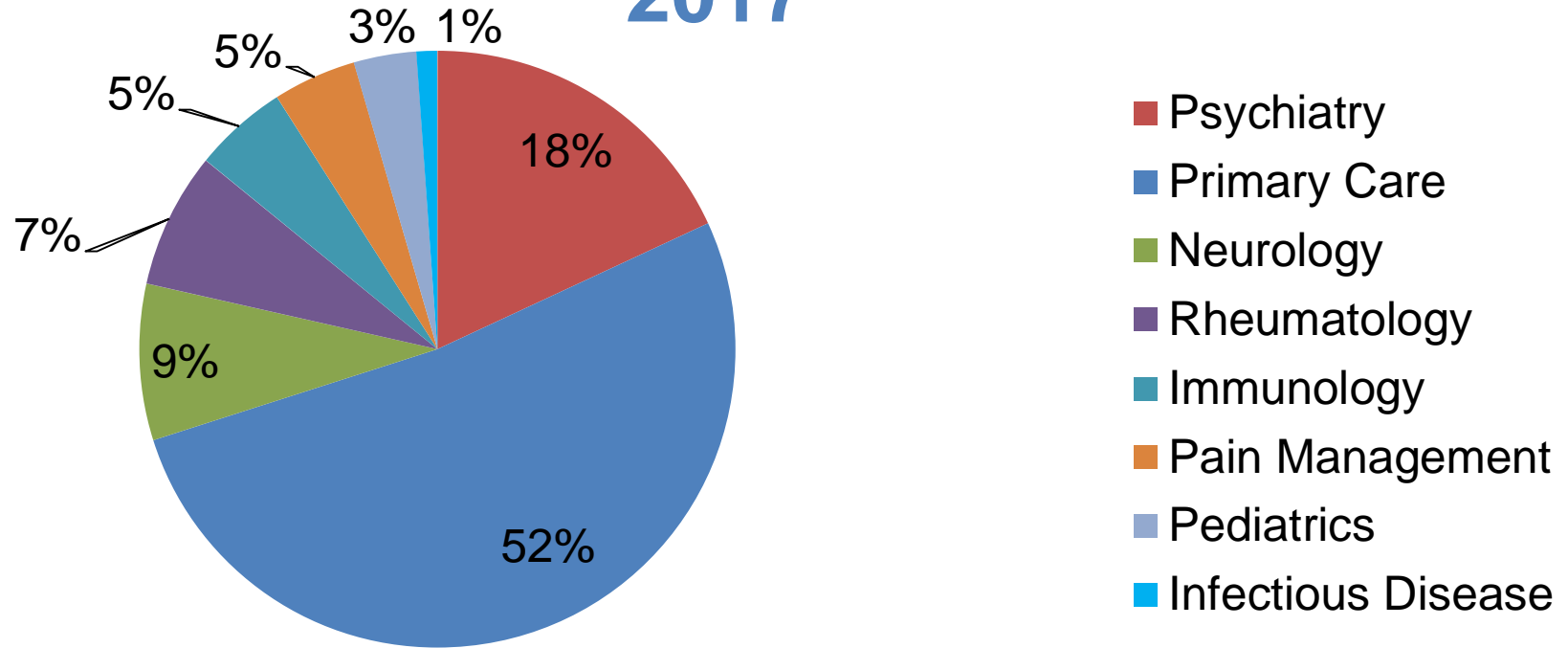
Test Volume by Month



Departments utilizing PGx service in 2015



Departments utilizing PGx service in 2017



NorthShore's Patient Study

Patient perspectives following
pharmacogenomics results disclosure in an
integrated health system



Amy A Lemke^{*1}, Peter J Hulick¹, Dyson T Wake¹, Chi Wang², Annette W Sereika¹, Kristen Dilzell Yu¹, Nicole S Glaser¹ & Henry M Dunnenberger¹

¹Center for Personalized Medicine, NorthShore University HealthSystem, 1001 University Place, Suite 160, Evanston, IL 60201, USA

²Biostatistics & Research Informatics, NorthShore University HealthSystem, 1001 University Place, Suite 146, Evanston, IL 60201, USA

* Author for correspondence: Tel.: +1 224 364 7567; Fax: +1 847 570 8033; alemke@northshore.org

- Purpose:
 - To assess patient perceptions and utilization of PGx testing
 - To determine if the delivery method was important

Patient Study

- 57 Patients (37% response rate)
- 44 question online survey
- Key Survey Domains
 - Pre-testing decisions
 - PGx testing experience
 - Post-testing feelings and outcomes
 - Perceived benefits/concerns

Demographics

- Female (73%)
- Non-Hispanic/Latino (96%)
- White (98%)
- Some college education or more (92%)

Summary

- 60% completed testing via direct access testing kits
- The “most valuable outcome” reported was decreased trial-and-error in prescribing medications (48%)
- Findings were not statistically different between the two testing modality groups (p values 0.19-0.97)

Patient-Provider interactions

Survey statement	Yes	No
I discussed my pharmacogenomics test results with my healthcare provider. (n=57)	36 (63.2%)	21 (36.8%)
After discussing results with your healthcare provider, did you look up additional information? (n=35)	14 (40.0%)	21 (60.0%)
I would like additional follow-up from my healthcare provider to discuss my pharmacogenomics test results. (n=56)	20 (35.7%)	36 (64.3%)

Patient actions post-results disclosure

Survey Statement	Yes	No	Plan to do so
I made a change in taking a current medication (such as discontinued it, or made a change in dose) with the guidance of my healthcare provider. (n=54)	16 (29.6%)	34 (63.0%)	4 (7.4%)
I made a change in taking a current medication (such as discontinued it, or made a change in dose) on my own without the guidance of my healthcare provider. (n=55)	7 (12.7%)	48 (87.3%)	0 (0%)
I started a new medication. (n=55)	10 (18.2%)	41 (74.5%)	4 (7.3%)

Patient reactions to testing

Survey Statement	SA	SWA	NAD	SWD	SD
I found pharmacogenomics testing to be helpful to me in my health care decision-making at this time. (n=57)	16 (28.1%)	18 (31.6%)	8 (14.0%)	9 (15.8%)	6 (10.5%)
I am more likely to take medications prescribed by my healthcare provider. (n=56)	16 (28.6%)	16 (28.6%)	18 (32.1%)	5 (8.9%)	1 (1.8%)

SA= Strongly agree SWA= Somewhat agree NAD= Neither agree or disagree
SWD= Somewhat disagree SD= Strongly disagree

Patient reactions to testing

Survey Statement	SA	SWA	NAD	SWD	SD
I feel more confident that medication(s) prescribed to me will not cause side effects and/or will help my condition, compared to past prescriptions I've received without testing. (n=56)	24 (42.9%)	17 (30.4%)	7 (12.5%)	6 (10.7%)	2 (3.6%)
I feel more validated about my medication experiences. (n=56)	30 (53.6%)	9 (16.1%)	10 (17.9%)	7 (12.5%)	0 (0%)

SA= Strongly agree SWA= Somewhat agree NAD= Neither agree or disagree
 SWD= Somewhat disagree SD= Strongly disagree

Patient Quotes

- *“Having the information in the beginning of treatment would have really saved on cost, time, and shortened my treatment plan. I think that more education about these tests needs to be passed on to providers and encouraged to order.”*
- *“For 6 months, I kept telling one of my doctors that the medicine he had prescribed for me wasn't working for me. After reading the report, he said, ‘Oh, you're right! It doesn't work for you.’ It took this testing for him to finally believe me.”*

Conclusion

- In-clinic vs. In-home PGx testing service delivery in our population revealed similar patient outcomes
- Feedback was used to implement changes, including the development of new educational resources for patients and providers
- Participants in this study provided key insights into how they perceived and used their PGx test result information