PGx Patient Pretest Survey

Please indicate your gender Male (1) Female (2) Prefer not to answer (3)
Please indicate your age group 18-29 years old (1) 30-39 years old (2) 40-49 years old (3) 50-59 years old (4) 60-69 years old (5) 70 years or older (6) Prefer not to answer (7)
 Which category best describes your ethnicity? Hispanic or Latino (1) Not Hispanic or Latino (2) Unsure (3) Prefer not to answer (4)
Which category best describes your race (you may choose more than one) White (1) Black or African-American (2) American Indian or Alaskan Native (3) Asian (4) Native Hawaiian or Other Pacific Islander (5) Unsure (6) Prefer not to answer (7)
Please indicate the highest grade or level of school you have completed Less than 9th grade (1) 9-12th grade, no diploma (2) High school graduate or equivalent (GED) (3) Some college, no degree (4) Associate's degree (5) Bachelor's degree (6) Graduate or professional degree (7) Prefer not to answer (8)
DO you work in a health-care or science-related field? O Yes (1) O No (2) O Prefer not to answer (3)

only one type of service (such as nursing home care, accidents, or dental care). Exclude private plans that only provide extra cash while hospitalized. If you have more than one kind of health insurance, indicate all plans that you have. Private health insurance (1) Medicare (2) Medi-gap (3) Medicaid (4) SCHIP (5) Military health care (TRICARE/VA/CHAMP-VA) (6) Indian Health Service (7) State-sponsored health plan (8) Other government program (9) Single service plan (e.g. dental, vision, prescription) (10) No coverage of any type (11)
□ Don't know (12) □ Prefer not to answer (13)
In general, would you say your health is Excellent (1) Very Good (2) Good (3) Fair (4) Poor (5)
In the past year, have you been prescribed any medicine a health professional such as a doctor, physician assistant or dentist [do not include things like vitamins or supplements] O Yes (1) O No (2) O Not sure (3) O Prefer not to answer (4)
How many different prescription medicines do you regularly take/use?
A "side effect" is a secondary problem or reaction caused by taking medicine.
Have you ever had any type of side effect from a medicine that you have been prescribed? O Yes (1) O No (2) O Don't know (3)
If Yes Is Not Selected. Then Skip To To your knowledge has any member of v

What kind of health insurance or health care coverage do you have? Include those that pay for

Have you ever had a serious side effect from medicine that required immediate medical attention (such as heart failure or seizures)? O Yes (1) O No (2)
O Don't know (3) The lest time you experienced a side effect from a modicine, how much did that side effect.
The last time you experienced a side effect from a medicine, how much did that side effect bother you?
O Not at all bothered (1)
O Not very bothered (2)
O Somewhat bothered (3)
O Very bothered (4)
O Extremely bothered (5)
Have you ever stopped taking a prescription medicine because of the side effects? O Yes (1) O No (2) O Don't know (3)
If Yes Is Not Selected, Then Skip To Have you ever stopped taking a prescr
Was stopping taking the medicine of your own choice or based on a doctor's orders? O Your own choice (1) O Based on a doctor's orders (2)
Have you ever stopped taking a prescription medicine because it was not helping your condition?
O Yes (1)
O No (2)
O Don't know (3)
If Yes Is Not Selected, Then Skip To To your knowledge has any member of y
 Was stopping taking the medicine of your own choice or based on a doctor's orders? Your own choice (1) Based on a doctor's orders (2)
To your knowledge has any member of your immediate family (parents, children, siblings) ever had any side effects from a prescription medicine? O Yes (1) O No (2) O Don't know (3)

Please tell how much you agree or disagree with the following statements.

	Strongly disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
My health, at present, depends on my medicines (1)	O	O	O	O	O
Having to take medicines worries me (2)	O	O	O	O	O
My life would be impossible without my medicines (3)	O	O	O	O	O
WIthout my medicines, I would be very ill (4)	O	O	O	O	O
I sometimes worry about the long-term effects of my medicines (5)	O	O	O	O	O
My medicines are a mystery to me (6)	O	O	0	O	O
My health and future will depend on my medicines (7)	O	O	O	O	O
My medicines disrupt my life (8)	O .	O	O	O	O
I sometimes worry about becoming too dependent on my medicines (9)	O	O	O	O	O
My medicines protect me from becoming worse (10)	O	O	O	O	O
Doctors use too many medicines (11)	O	O	O	O	O
People who take medicines should stop their treatment for a while every now and again (12)	0	•	•	•	O
Most medicines are addictive (13)	O	O	0	O	O
Natural remedies are safer than medicines (14)	O	O	O	O	O
Medicines do more harm than good (15)	O	O	O	O	O
All medicines are poisons (16)	O	O	•	O	O
Doctors place too much trust on medicines (17)	O	O	•	O	O
If doctors had more time with patients they would prescribe fewer medicines (18)	O	O	O	O	O

Have you or anyone in your family ever had a genetic test to predict or diagnose a disease or condition?
O Yes (1)
O No (2)
Don't know (3)
Have you or anyone in your family ever had a genetic test to predict how well a medicine may work for you or your risk for having a side effect? O Yes (1)
O No (2)
How would you describe your understanding of how genetic testing can be used in healthcare Nould you say you understand it
O Very well (1)
O Somewhat well (2)
A little (3)
O Not at all (4)
Your doctor mentioned a genetic test (called a phar-ma-co-genetic test). These tests are use o predict how well you may respond to a medicine or your risk for having a side effect. We anterested in understanding what factors are considered by patients in their decision whether not to be tested.
What was your decision regarding having pharmacogenetic testing?
O I declined to have testing (1)
O I agreed to have testing (2)
Prefer not to answer (3)

Please indicate which, if any, of the following factors you considered in your decision to be tested and the level of importance of that reason in your decision:

	Major factor in my decision (1)	Minor factor in my decision (2)	Considered, but was not a factor in my decision (3)	Did not consider (4)
Concern about the privacy of my test result (1)	0	0	0	0
Potential discrimination based on my test result (2)	O	O	•	O
Helpfulness in optimizing my medicine treatment (3)	O	O	•	O
Worry about the possibility of side effects or needing to get another medicine prescribed if this one didn't work (4)	•	•	•	O
Trust in test result (5)	O	O	O	O
Time to wait to learn of my test results (6)	O	O	O .	O
Providing a DNA sample for testing (7)	O	O	O	O
Family history of side effects from medicines or not responding to medicines (8)	O	O	•	O
Recommendations from your physician (9)	O	O	•	O
Length of time you'll need to take the prescribed medicines (e.g. 1 week vs. indefinitely (10)	O	O	•	O
Your familiarity (knowledge) of the medicine (11)	O	O	O	O
Your understanding about how the test will help your doctor choose the best medicine for you (12)	•	•	•	O
Concern about being prescribed a more expensive medicine based on test results (13)	O	O	0	O
Concern about having a genetic test ordered and reported by a non-genetics professional (14)	O	O	•	O

PGx Patient Follow-up Survey

Q28 About three months ago, your doctor ordered a pharmacogenetic test. This test looks for genetic changes that may affect how a medicine works in your body. You kindly completed a survey at the time the test was ordered. We would now like to get your opinions about your experience with the test and the medicine your doctor prescribed. Your responses will remain confidential and will not be shared with your physician. The survey should take about 10-15 minutes to complete and you will receive compensation. Please click through to the next pags to continue to the survey.

Did your doctor share your pharmacogenetic test results with you?

O Yes (1)

\mathbf{O}	No (2)
O	Don't know/can't recall (3)
\mathbf{O}	Prefer not to answer (4)
If Y	es Is Not Selected, Then Skip To Do you recall whether any changes wer
Ho	w did your doctor report your results?
\mathbf{O}	Over the phone (by nurse or doctor) (1)
\mathbf{O}	In-person at a follow-up appointment scheduled specifically to review results (2)
\mathbf{O}	In-person at an appointment scheduled for another reason (3)
O	In an email or letter sent by mail (4)
O	Don't know/can't recall (5)
O	Prefer not to answer (6)

What information did the physician include when discussing your pharmacogenetic test results?

	Yes; my doctor did discuss this (1)	No; my doctor did not discuss this (2)	Don't know/ can't recall (3)	Prefer not to answer (4)
Options for therapy based on the test results (1)	0	•	•	O
Changes (or no changes) necessary for the medication based on results (2)	O	O	O	O
Relevance of test result for other medications you currently take or may be prescribed in the future (3)	O	O	O	O
The specific genetic results/gene changes (4)	O	O	O	O
A description of what your genetic test results mean (for example, that you may break down drugs slowly) (5)	O	O	O	O

Was there anything else that your doctor discussed regarding the pharmacogenetic test that has not been mentioned? If so, please explain briefly
O No (1)
O Yes (2)
O Don't know/can't recall (3)
O Prefer not to answer (4)
How well do you feel you understand the test results?
O I understand the results very well (1)
O I somewhat understand the results (2)
Unsure (3)I really did not understand the results (4)
O Prefer not to answer (5)
Do you recall whether any changes were made to your prescription based on the test results?
I did not start on the prescribed medication until the test results were back (1)
My doctor switched my prescription to a different medication (2)
My doctor changed the dose of the prescribed medication (3)
O No changes were made to the prescribed medication (4)
O Don't know/can't recall (5)
O Prefer not to answer (6)
Did you have any questions about the test result that were not addressed by your doctor? If so,
please described briefly.
O Yes (1)
O No (2) O Prefer not to answer (3)
Trefer not to answer (5)
Were you satisfied with your decision to take the test?
O Extremely satisfied (1)
O Fairly satisfied (2)
Uncertain (3)Rather dissatisfied (4)
O Rather dissatisfied (4) O Extremely dissatisfied (5)
O Prefer not to answer (6)
Do you trust the test result?
Do you trust the test result? O Trust completely (1)
O Trust hesitantly (2)
O Uncertain (3)
O Rather distrustful (4)
O Do not trust at all (5)
O Prefer not to answer (6)

Ho	w helpful do you think the testing was to your doctor's decision about your treatment
O	Very helpful (1)
O	Somewhat helpful (2)
O	Neutral (3)
O	Not very helpful (4)
O	Not at all helpful (5)
0	Prefer not to answer (6)
	er having the test, did you feel more confident that the medication prescribed to you would
	t cause side effects and/or would help your condition, compared to past prescriptions you'v
	ceived without testing?
	Yes, definitely felt more confident (1)
	Yes, somewhat felt more confident (2)
	Unsure/ No difference (3)
	No, did not really feel more confident (4)
	No, definitely did not feel more confident (5)
J	Prefer not to answer (6)
Но	w likely would you be to have another pharmaco-genetic test if recommended for other
me	edications prescribed to you in the future?
O	Very likely (1)
O	Somewhat likely (2)
O	Neutral (3)
O	Somewhat unlikely (4)
O	Very unlikely (5)
0	Prefer not to answer (6)
Dio	d you prefer providing a saliva sample for testing compared to a blood sample?
O	Yes (1)
O	No (2)
O	Makes no difference either way (3)
	Don't know (4)
O	Prefer not to answer (5)

There are two options for how pharmacogenetic tests can be used. Option #1 - Individual tests are ordered as needed each time a new medication is prescribed (as was in your case). Option #2 - Ordering a complete pharmacogenetic profile (multiple tests at once), so that results are available whenever your doctor needs to prescribed a new medication.

	you have a preference between these two options for pharmacogenetic testing?
	Option # 1: Tests are ordered as needed for each prescribed medication (1)
O	Option # 2: A complete pharmacogenetic profile is ordered (2)
	No preference (3)
O	Unsure/don't know (4)
O	Prefer not to answer (5)
Aft	er discussing your results with your doctor, did you look up any additional information about
the	medicine or the test result?
O	Yes (1)
O	No (2)
O	Don't know/ can't recall (3)
O	Prefer not to answer (4)
If Y	es Is Not Selected, Then Skip To End of Block
	nen you looked up additional information, where did you go first?
	Books (1)
	Brochures, pamphlets etc (2)
	Disease organization (3)
	Family (4)
0	Friend/co-worker (5)
O	Pharmacist (6)
	A different doctor or healthcare provider that the one who ordered the test (7)
O	Internet (8)
\mathbf{O}	Library (9)
O	Magazines (10)
O	Newspapers (11)
O	Telephone information number (12)
\mathbf{C}	Complementary, alternative or unconventional practitioner (13)
\mathbf{C}	Other (14)
\mathbf{C}	Don't know/can't recall (15)

Dic	I you go or look anywhere else for additional information? [check all that apply]
	Books (1)
	Brochures, pamphlets etc (2)
	Disease organization (3)
	Family (4)
	Friend/co-worker (5)
	Pharmacist (6)
	A different doctor of healthcare provider than the one who ordered the test (7)
	Internet (8)
	Library (9)
	Magazines (10)
	Newspapers (11)
	Telephone information number (12)
	Complementary, alternative or unconventional practitioner (13)
	Other (14)
	Don't know/can't recall (15)
Dic	I you find the information you were seeking?
O	Yes (1)
O	No (2)
O	Don't know/can't recall (3)
0	Prefer not to answer (4)
If Y	'es Is Not Selected, Then Skip To End of Block

Thinking about your search for additional information about your medicine or the test result, how much do you agree or disagree with the following statements. Rank each on a scale from 1 to 5 where 1 is strongly disagree and 5 is strongly agree.

	1 (Strongly disagree) (1)	2 (2)	3 (3)	4 (4)	5 (Strongly agree) (5)
It took a lot of effort to get the information you needed (1)	•	O	0	0	O
You felt frustrated during your search for information (2)	O	0	0	0	O
You were concerned about the quality of the information (3)	O	0	0	0	O
The information you found was hard to understand (4)	O	0	0	0	O

Th	erefore, your test results may be important for other medications prescribed to you in the
fut	ure. How likely would you be to share these results with other doctors that prescribe
me	dications for you?
\mathbf{C}	Very likely (1)
\mathbf{C}	Somewhat likely (2)
\mathbf{C}	Unsure (3)
\mathbf{C}	Not very likely (4)
\mathbf{C}	Not at all likely (5)
O	Prefer not to answer (6)
	w likely would you be to share the test result with your pharmacist so that s/he can check
	ether other drugs you are currently taking or will take in the future should be adjusted based
	the results?
	Very likely (1)
	Somewhat likely (2)
	Unsure (3)
	Not very likely (4)
	Not at all likely (5)
0	Prefer not to answer (6)
	I you discuss the results of the pharmacogenetic test you had about 3 months ago with
_	yone? If yes, with whom did you share the results? [check all that apply]
	I have not shared my test results with anyone at this time (1)
	Your spouse/partner (2)
	Your child/children (3) Other femiles mark a report ground arount supply male sequences (4)
	Other family members (sister, parent, grandparent, aunt/uncle, cousin, etc) (4) A close friend (5)
	A co-worker (6)
	Your boss (7)
	A doctor or healthcare provider other than the one who ordered the test (8)
	Your pharmacist (9)
	A church leader (minister, deacon, priest, etc) (10)
	Other (11)
_	

Sometimes the same genes are involved in how your body responds to different drugs.

On a scale from 1-5, indicate how much you agree or disagree with each statement, where 1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, and 5 = strongly agree

	1 (Strongly disagree) (1)	2 (Disagree) (2)	3 (Uncertain) (3)	4 (Agree) (4)	5 (Strongly Agree) (5)
My health, at present, depends on my medicines (1)	0	0	0	O	O
Having to take medicines worries me (2)	O	0	•	O	O
My life would be impossible without my medicines (3)	O	O	•	O	O
Without my medicines, I would be very ill (4)	O	O	•	O	O
I sometimes worry about the long- term effects of my medicines (5)	O	O	•	O	O
My medicines are a mystery to me (6)	O	O	•	O	O
My health and future will depend on my medicines (7)	O	O	•	O	O
My medicines disrupt my life (8)	O	O	O	O	O
I sometimes worry about becoming to dependent on my medicines (9)	O	O	•	O	O
My medicines protect me from becoming worse (10)	O	O	•	O	O
Doctors use too many medicines (11)	O	O	•	O	O
People who take medicines should stop their treatment for a while every now and again (12)	•	•	•	0	O
Most medicines are addictive (13)	O	O	O	O	O
Natural remedies are safer than medicines (14)	O	O	•	O	O
Medicines do more harm than good (15)	O	O	•	O	O
All medicines are poisons (16)	O	O	O	O	O
Doctors place too much trust on medicines (17)	O	O	0	O	O
If doctors had more time with patients they would prescribe fewer medicines (18)	0	O	0	0	O

40-		
	Yes (1)	No (2)
Do you sometimes forget to take your medicine? (1)	0	$\mid \mathbf{c} \mid$
People sometimes miss taking their medicines for reasons other than forgetting. Thinking over the past 2 weeks, were there any days when you did not take your medicine? (2)	•	O
Have you ever cut back or stopped taking your medicine without telling your doctor because you felt worse when you took it? (3)	0	O
When you travel or leave home, do you sometimes forget to bring along your medicine? (4)	0	O
Did you take all your medicines yesterday? (5)	O	$\mid \mathbf{c} \mid$
When you feel like your symptoms are under control, do you sometimes stop taking your medicine? (6)	0	O
Taking medicine every day is a real inconvenience for some people. Do you ever feel hassled about sticking to your treatment plan? (7)	0	O

0 0 0	w often do you have difficulty remember to take all your medicine? Never/rarely (1) Once in a while (2) Sometimes (3) Usually (4) All the time (5)
Wo O O	w would you describe your understanding of how genetic testing can be used in healthcare? uld you say you understand it Very well (1) Somewhat well (2) A little (3) Not at all (4)
0 0	w much do you think your genes contribute to how you respond to a prescribed medication? A lot (1) Somewhat (2) A little (3) None at all (4) Don't know (5)

For the next series of questions, please tell how often you've experienced these things in the past week.

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)
Felt upset about my test result (1)	0	0	0	0
Felt anxious or nervous about my test result (2)	O	O	O	O
Felt guilty about my test result (3)	O	O	O	O
Felt relieved about my test result (4)	O	O	O	O
Felt happy about my test result (5)	O	O	O	O
Felt a loss of control (6)	O	O	O	O
Had problems enjoying life because of my test result (7)	O	O	O	O
Worried about my risk of a side effect or not responding to the prescribed medication (8)	O	•	O	O
Was uncertain about what my test result means about my risk of having a side effect or not responding to the prescribed medication (9)	O	•	•	O
Was uncertain about what my test result means for my child(ren) and/or family's risk of a side effect or not responding to particular medications (10)	O	•	•	0
Thinking about my test results affected my work or family life (11)	O	•	0	O
Felt concerned about how my test results would affect my insurance status (12)	O	O	•	O
Had difficulty talking about my test results with family members (13)	O	O	•	O
Felt regret about getting my test results (14)	•	O	O	0
Worried about the possibility of my children being at risk for side effects or not responding to certain medications (15)	0	0	•	O

PGx Pre-study Physician Survey

In what year did you graduate from medical/PA school? O Before 1980 (1) O 1981-1990 (2) O 1991-2000 (3) O After 2000 (4) O Prefer not to answer (5)
What is the total number of years you have been in clinical practice (post-residency/fellowship
Genetic testing refers to a type of medical test where genes are used to diagnose or predict a disease or medical condition. Diagnostic testing: Testing to diagnose a genetic disorder of predict onset of a genetic disorder; may be performed in a symptomatic or asymptomatic individual. Examples include: Genetic testing for Marfan syndrome or Huntington disease. Susceptibility testing: Testing to determine likelihood of developing a common disease in the future; typically performed in asymptomatic individuals. Testing determines the presence of genetic variants that are associated with increased risk of disease onset, but are not diagnosti or absolutely predictive of the disease. Examples include: testing for Type 2 diabetes risk or to breast and ovarian cancer risk (BRCA1/2) genes.
On average, how often do you order genetic diagnostic tests or genetic susceptibility tests? Never (1) 1-2 times a year (2) 3-10 times a year (3) 11-25 times a year (4) More than 25 times a year (5) Don't know (6)
On average, how often do you refer patients to a genetic specialist (e.g. a genetic counselor o a physician board-certified in medical genetics)? O Never (1) O 1-2 times a year (2) O 3-10 times a year (3) O 11-25 times a year (4) O More than 25 times a year (5) O Don't know (6)

For the following questions, please indicate your level of agreement with each statement:

0 1 71						
	Strongly agree (1)	Somewhat agree (2)	Neutral (3)	Somewhat disagree (4)	Strongly Disagree (5)	Prefer not to answer (6)
I feel well-informed about genetic testing in general (1)	0	•	•	•	O	O
I (would) feel comfortable discussing genetic testing for disease diagnosis/ susceptibility with a patient (2)	•	•	•	•	•	•
I (would) feel comfortable ordering a genetic diagnostic test or genetic susceptibility test for a patient (3)	•	•	0	•	•	•
I (would) feel comfortable interpreting and discussing genetic testing results for disease diagnosis/prediction with a patient (4)	O	•	•	•	•	•

Pharmacogenetic (PGx) testing identifies genetic variants associated with drug response such as an increased risk for an adverse drug reaction or low likelihood of responding to a drug. PGx test results are intended to help inform drug selection and/or help guide dosing decisions.

Are you familiar with PGx testing (pri-	or to this study)?
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- **O** Yes (1)
- O No (2)
- O Prefer not to answer (3)

If No Is Selected, Then Skip To Click to write the question text

LIG	ase indicated where you learned about PGx and PGx testing
	Medical school course(s) (1)
	Professional meetings (2)
	Drug or laboratory representative (3)
	Peer-reviewed publications/journals (4)
	CME learning (5)
	Just-in-time (point-of-care, reminder notice) (6)
	Grand rounds or other in-house seminars (7)
	Other (8)
	Prefer not to answer (9)
_	Troid field another (e)
	、
	average, how often do you order PGx testing?
On	、
On •	average, how often do you order PGx testing?
On O	average, how often do you order PGx testing? Never (1)
On O O	average, how often do you order PGx testing? Never (1) 1-2 times a year (2)
On O O	average, how often do you order PGx testing? Never (1) 1-2 times a year (2) 3-10 times a year (3)

For the following questions, please indicate your level of agreement with each statement:

Tot the fellowing queetiene, p	or agreement man each etatement					
	Strongly agree (1)	Somewhat agree (2)	Neutral (3)	Somewhat disagree (4)	Strongly Disagree (5)	Prefer not to answer (6)
I feel well-informed about PGx testing (1)	O	•	O	•	O	O
I (would) feel comfortable discussing PGx with a patient prior to ordering the test if I recommended the test (2)	•	•	•	•	•	o
I would discuss the results of PGx testing with a patient prior to making any changes to their treatment (3)	•	•	•	•	•	•
I (would) feel comfortable discussing the results of PGx testing with a patient (4)	0	•	•	•	0	O
I (would) feel comfortable using PGx testing to inform decisions regarding a given patient's treatment (5)	0	•	O	•	0	O
I believe most patients would be interested in having PGx testing if available (6)	0	•	O	•	•	O
I believe PGx testing would improve patient compliance with drug regimen (7)	O	•	0	•	0	O

The next series of questions will assess knowledge about genomics and pharmacogenomics.

Which of the following types of	gene products may influence	drug response or metabolism

- a. Drug transporter (1)
- O b. Cytochrome P450 enzymes (2)
- O c. Cell cycle genes (3)
- O d. All of the above (4)
- O e. Both A and B (5)

A single nucleotide polymorphism (SNP) is a. A combination of alleles closely linked in a single chromosome inherited together (1) b. A structural unit of DNA containing a sugar moiety, a phosphate group, and a base (2) c. A variation in the DNA sequence present in more than 1% of the population (3) d. The original or variant form of a gene at a particular location on a chromosome (4) e. None of the above (5)
All medications are metabolized through the Cytochrome P450 pathway O True (1) O False (2)
Up to% of drugs are estimated to be metabolized by proteins that are coded for by one of the three CYP genes (CYP2D6, CYP2C19, CYP2C9) O 50 (1) O 60 (2) O 70 (3) O 80 (4) O 90 (5)
Patients who are identified by testing as poor metabolizers may be at risk for a. Drug induced side effects (1) b. Increased concentration of medication (2) c. Decreased potential for drug interactions (3) d. Both A and B (4) e. None of the above (5)
Patients who are identified by testing as ultra-rapid metabolizers may exhibit the following a. Lower than average rates of metabolism (1) b. Higher than average rates of metabolism (2) c. May require no dose adjustment (3) d. All of the above (4) e. None of the above (5)

JM is a 65 year-old woman who has recently been diagnosed with atrial fibrillation. To reduce the risk of stroke and other thrombotic events, JM's physician recommends warfarin therapy. To estimate the initial dose, JM's clinical characteristics (age, sex, weight, diet) were considered. However, JM will need to return to the clinic every day for INR monitoring until a stable dose is determined, and then every few weeks thereafter for maintenance monitoring. How could PGx testing for two genes (CYP2C9 and VKORC1) help JM? O a. Determination of JMs CYP2C9 genotype would be of no help. (1) D b. Determination of JMs VKORC1 genotype would reveal whether to increase or decrease the dose of warfarin needed to inhibit the formation of the clotting factor. (2) C c. It would allow for more accurate initial dosing. (3) d. All of the above (4) e B and C (5)
SH is a 30 year-old woman who gave birth by C-section 10 days ago. Her physician prescribed codeine for post-caesarian pain. Despite taking no more than the prescribed dose, SH experienced nausea and dizziness. She also noticed that her breastfed infant appeared lethargic and was feeding poorly. When SH mentioned these symptoms to her physician, he recommended that she discontinue codeine use. Within a few days, both SH's and her infant's symptoms were no longer present. How would PGx testing have helped SH and her infant? a. Genotyping of SH's CYP2D6 gene may have revealed that she is an ultra-rapid metabolizer; so her physician could prescribe another drug to prevent infant opioid toxicity. (1) b. Genotyping of SH's CYP2D6 gene may have revealed the possible genotype of her infant; so her physician could prescribe another drug to prevent opioid toxicity. (2) c. SH would not benefit from genetic testing because it was a drug allergy. (3)
Q d. All of the above (4)Q e. none of the above (5)
What factors would increase your likelihood of ordering PGx testing routinely? Please indicate the level of importance each factor by ranking them 1 (most important) to 6 (least important). To do this, click and drag the blocks to the right of each factor to move them into the order of importance. Clinical guidelines (1) Insurance reimbursement (2) Cost of the test (3) Urgency of treatment (4) Turn around time for test results (5) Patient request (6)

To what degree do you believe that clinical pharmacists will play a role in delivery of PGx tests in clinical care? O None (1) O A little (2) O Some (3) O A Lot (4) O Prefer not to answer (5)
To what degree do you believe that clinical geneticists/genetic counselors will play a role in delivery of PGx tests in clinical care? O None (1) O A little (2) O Some (3) O A Lot (4) O Prefer not to answer (5)
If a medication that is the recommended first-line treatment has been found to be affected by a pharmacogenetic variant, would you choose to prescribe an alternative medication if available to avoid the need for testing? O Yes (1) O No (2) O Prefer not to answer (3)
Would you be more likely to order a PGx test if the patient was on numerous medications? O Yes (1) O No (2) O Prefer not to answer (3)
Would having assistance in evaluating a PGx test result (analogous to a radiologist's report) increase your likelihood of ordering a PGx test? O Yes (1) O No (2) O Prefer not to answer (3)
Which health professional should communicate PGx test results to the patient? Physician who ordered test (1) Genetic counselor/geneticist (2) Pharmacist (3) Any of the above (4) No need to communicate results to the patient (5) Prefer not to answer (6)

in your opinion, what is the best way to educate primary care practitioners about PGX testing?
O Coursework/curricula (medical school) (1)
O Professional meetings (2)
O Drug or laboratory representative (3)
O Peer-reviewed publications/journals (4)
O Distance learning (mail or web-based) (5)
O Just-in-time (point-of-care, reminder notice) (6)
O Grand rounds of other types of in-house seminars (7)
O Other (8)
O Pharmacogenetics (PGx) education is not necessary for primary car practitioners (9)
O Prefer not to answer (10)
The Genetic Non-Discrimination Act (GINA) protects patients from discriminatory use of genetic information by which group (s)? a. Health insurers (1) b. Life insurers (2) c. Employers (3) d. All of the above (4) e. A and C (5)

Thank you for completing the survey. Please proceed to complete information needed to receive your reimbursement of \$100. You will be taken to a separate questionnaire that is not linked to this survey.

PGx Post-Study Physician Survey

Q1 Thank you for participating in the Pharmacogenetics in Primary Care Study. We invite you to share your experiences and opinions about PGx testing now that the study has ended. The goal of the post-intervention survey is to assess your knowledge of PGx testing, attitudes toward testing and delivery models, perceived value of testing, and potential patient harms or problems related to the future delivery of testing. As with the pre-trial survey, you will receive an honorarium of \$100 for your time.

Strongly agree (1) Somewhat agree (2) Neutral (3) Somewhat disagree (4) Strongly disagree (5) Prefer not to answer (6) ase indicate how the CME seminar could have been improved to better prepare you to offer
Neutral (3) Somewhat disagree (4) Strongly disagree (5) Prefer not to answer (6) ase indicate how the CME seminar could have been improved to better prepare you to offer
Somewhat disagree (4) Strongly disagree (5) Prefer not to answer (6) ase indicate how the CME seminar could have been improved to better prepare you to offer
Strongly disagree (5) Prefer not to answer (6) ase indicate how the CME seminar could have been improved to better prepare you to offer
Prefer not to answer (6) ase indicate how the CME seminar could have been improved to better prepare you to offer
k testing
The CME seminar covered too many topics (would recommend more time devoted to fewer
topics) (1)
The CME seminar covered too few topics and did not provide sufficient information (would recommend more topics to provide more comprehensive overview) (2)
The CME seminar did not focus enough on PGx testing (would recommend less background information about genetics and genomics) (3)
The examples presented were too simplistic and not characteristic of real world setting (would recommend including more examples representative of those encountered in primary care setting) (4)
I felt the CME seminar was satisfactory (5)
Other (6)
you order any PGx tests during the 6-month study period? Yes (1) No (2) Don't recall (3)
t () () ()

Please answer the following questions based on your experience in the study:

	Strongly agree (1)	Somewhat agree (2)	Neutral (3)	Somewhat disagree (4)	Strongly disagree (5)
Due to my participation in the study, I feel more informed about PGx testing. (1)	•	•	•	•	O
Due to my participation in the study, I feel comfortable discussing PGx testing with a patient prior to ordering testing (2)	0	•	•	•	•
Due to my participation in the study, I feel comfortable using PGx test results to inform decisions regarding a given patient's treatment (3)	0	•	•	O	•
Due to my participation in this study, I feel comfortable discussing PGx test results with my patients. (4)	•	•	•	•	O

Dic	I you review PGx test results with patients?
\mathbf{C}	Yes, I reviewed PGx test results with all patients for which PGx testing was ordered (1)
0	Yes, I reviewed PGx test results for only patients for which the test result affected the original dose or drug choice (2)
\mathbf{C}	No, I did not review PGx test results with any patients for which PGx testing was ordered (3)
\mathbf{O}	Prefer not to answer (4)
If N	lo, I did not review PGx te Is Selected, Then Skip To Please indicate your level of
agı	reeme
Ho	w did you inform patients about their results?
	Discussed results at a follow-up visit (1)
	Discussed results at their next scheduled visit (2)
	Mailed results to patients (3)
	Reported results over the phone (4)

☐ I did not inform patients of their results (5)

Other (6) _____Prefer not to answer (7)

Please indicate your level of agreement with the following statement:

I was able to answer most questions my patients had about PGx testing and their results.

- O Strongly agree (1)
- O Somewhat agree (2)
- O Neutral (3)
- O Somewhat disagree (4)
- O Strongly disagree (5)
- O Prefer not to answer (6)

Please indicate your level of agreement with each statement regarding the PGx test lab report

	3			J		- 1
	Strongly agree (1)	Somewhat agree (2)	Neutral (3)	Somewhat disagree (4)	Strongly disagree (5)	Prefer not to answer (6)
In general, the PGx lab report provided helpful information about drug dosing/selection adjustments based on patient's genotype/phenotype (1)	•	•	0	•	0	0
The lab report included too much text/information (2)	O	O	•	O	O .	O
The lab report provided information that was not pertinent/extraneous (3)	•	•	•	•	•	0
The lab report did not provide any good additional resources to consult (4)	•	•	•	•	•	0

Did you provide the patient educational brochure to patients whom testing was offered?

- O No, I did not give the brochure to any patients with whom I discussed PGx testing (1)
- O No, I did not give the brochure but provided other resources to patients with whom I discussed PGx testing (2)
- O No, I was unaware of the brochure (3)
- Yes, I gave the brochure to some patients with whom I discussed PGx testing (4)
- Yes, I gave the brochure to all patients with whom I discussed PGx testing (5)
- O Prefer not to answer (6)
- O Don't recall (7)

O	you provide the drug-specific insert to patients with whom PGx testing was offered? No, I did not give the drug-specific inserts to any patients with whom I discussed PGx testing (1)
0 0 0 0	No,I did not give the drug-specific inserts but provided other resources for patients with whom I discussed PGx testing (2) No, I was unaware of the drug-specific inserts (3) Yes, I gave the drug-specific insert to some patients with whom I discussed PGx testing (4) Yes, I gave the drug-specific insert to all patients with whom I discussed PGx testing (5) Prefer not to answer (6) Don't recall (7)
edu O O O O	ase indicate your level of agreement with the following statement: I believe the patient icational brochure explained PGx testing satisfactorily Strongly agree (1) Somewhat agree (2) Neutral (3) Somewhat disagree (4) Strongly disagree (5) Prefer not to answer (6) Don't know (7)
con O O	you consult with the pharmacist regarding PGx testing for any patients for whom testing was sidered or ordered (either pre-testing or post-testing)? Yes (1) No (2) Don't recall (3) Did not know there was a pharmacist available to consult (4) es Is Selected, Then Skip To Regardless of whether you consulted t
If you	ou did not consult the pharmacist regarding PGx testing, for which of the following reasons you not (check all that apply)? Did not need pharmacist input (1) Did not have time (2) Pharmacist was unavailable (3) Was unclear how pharmacist could assist me (4) Did not know there was a pharmacist available to consult (5) Other (6)

agrada o	gardless of whether you consulted the pharmacist or not, please indicate your level of reement with the following statement: I believe that having a pharmacist available to consult in be helpful in interpreting and applying the PGx test results. Strongly agree (1) Somewhat agree (2) Neutral (3) Somewhat disagree (4) Strongly disagree (5) Prefer not to answer (6)
	ease indicate how the pharmacist could have been more useful to you as a clinical ucational resource
	I would have liked if the pharmacist could have met with my patients (1) I would have liked to have more learning opportunities with the pharmacist focusing on PGx (2)
	I would have liked for the pharmacist to have provided a written summary to mail to my patients (3)
	Pharmacist was useful and no changes recommended (4) Other (5)
bed	ease indicate your level of agreement with the following statement: I believe PGx testing will come standard of care in the future Strongly agree (1) Somewhat agree (2) Neutral (3) Somewhat disagree (4) Strongly disagree (5) Prefer not to answer (6)
tes inc O O O	ease indicate your level of agreement with the following statement: I believe that PGx ting should be ordered prior to prescribing a medication for which PGx information has been luded on the drug package insert Strongly agree (1) Somewhat agree (2) Neutral (3) Somewhat disagree (4) Strongly disagree (5) Prefer not to answer (6)

In general, how useful did you find PGx testing to be in informing drug dosing or selection? Very useful (1) Somewhat Useful (2) Neutral (3) Not very useful (4) Not at all useful (5) Prefer not to answer (6)
Would you choose to prescribe an alternative medication if a recommended medication you are considering has a PGx component? O Yes (1) O No (2) O Prefer not to answer (3)
Would you be more likely to order a PGx test for a patient who was on multiple medications? O Yes (1) O No (2) O Prefer not to answer (3)
How likely will you be to continue ordering PGx testing after the completion of this study? Not at all likely (1) Not very likely (2) Undecided (3) Somewhat Likely (4) Very Likely (5) Prefer not to answer (6)
Please indicate any challenges you experienced in ordering PGx testing (please check all that apply) There was insufficient time during office visit to discuss PGx testing with patient (1) Patients needed to be contacted to return to provide a saliva sample for testing (2) Sample collection is time consuming (3) Turnaround time to receive test results was too long (4) Receiving results via fax made incorporation into patient records timely and complicated (5) Explaining the test and collection process to the patient was difficult (6) Providing the results to patients was difficult (8) Other (9)

What factors would increase your likelihood of ordering PGx testing? Please indicate the level of importance of each factor where 1 is most important and 6 is least important:(For this question, click and drag the response to the order. For example, if you think "Urgency of treatment" is most important, click and drag to the top of the list where "Clinical Guidelines" is located) Clinical Guidelines (1) Insurance reimbursement (2) Cost of the test (3) Urgency of treatment (4) Turn-around time on test results (5) Patient request (6)
Which of the following types of gene products may influence drug response or metabolism? A. Drug transporter (1) B. Cytochrome P450 enzymes (2) C. Cell cycle genes (3) D. All of the above (4) E. Both A and B (5)
The Genetic Non-Discrimination Act (GINA) protects patients from discriminatory use of genetic information by which group (s)? O A. Health insurers (1) O B. Life insurers (2) O C. Employers (3) O D. All of the above (4) O E. Both A and C (5)
All medications are metabolized through the Cytochrome P 450 pathway. O True (1) O False (2)
A single nucleotide polymorphism (SNP) is: A. A combination of alleles closely linked in single chromosome inherited together. (1) B. A structural unit of DNA containing a sugar moiety, a phosphate group, and a base. (2) C. A variation in the DNA sequence present in more than 1% of the population. (3) D. The original or variant form of a gene at a particular location on a chromosome. (4) E. None of the above (5)
Up to% of drugs are estimated to be metabolized by proteins that are coded for one of the three CYP genes (CYP2D6, CYP2C19, CYP2C9). 20 (1) 40 (2) 60 (3) 80 (4) 100 (5)

O .	ents who are identified by testing as poor metabolizers may be at risk for: A. Increased concentration of medication (1) B. Drug induced side effects (2) C. Decreased potential for drug interactions. (3) D. Both A and B (4) E. None of the above (5)				
OOOO	ents who are identified by testing as ultra rapid metabolizers may exhibit the following: Higher than average rates of metabolism (1) Lower than average rates of metabolism (2) May require no dose adjustment (3) All of the above (4) None of the above (5)				
risk estin Hov mor	JM is a 65 year-old man who has recently been diagnosed with atrial fibrillation. To reduce the risk of stroke and other thrombotic events, JM's physician recommends Coumadin® therapy. To estimate the initial dose, JM's clinical characteristics (age, sex, weight, diet) were considered. How could PGx testing for two genes (CYP2C9 and VKORC1) help JM reach a stable dose more quickly?				
O O	A. Allows for more accurate initial dosing. (1) B. Determination of JM's CYP2C9 genotype would be of no help. (2) C. Determination of JM's VKORC1 genotype would reveal whether to increase or decrease the dose of Coumadin® needed to inhibit the formation of the clotting factor. (3) D. All of the above (4) E. Both A and C. (5)				
code expelethat reconsymmetry	is a 30 year-old woman who gave birth by C-section 10 days ago. Her physician prescribed eine for post-caesarean pain. Despite taking no more than the prescribed dose, SH erienced nausea and dizziness. She also noticed that her breastfed infant appeared argic and was feeding poorly. When SH mentioned these symptoms to her physician, he ommended that she discontinue codeine use. Within a few days, both SH's and her infant's aptoms were no longer present. How would PGx testing have helped SH and her infant? A. Genotyping of SH's CYP2D6 gene may have revealed that SH is an ultra-rapid metabolizer; so her physician could prescribe another drug to prevent infant opiod toxicity. (1)				
O O	B. SH would not benefit from genetic testing because it was a drug allergy. (2) C. Genotyping of SH's CYP2D6 gene may have revealed the possible genotype of her infant; so her physician could prescribe another drug to prevent infant opiod toxicity. (3) D. All of the above (4) E. None of the above (5)				

To what degree do you believe clinical pharmacists will play a role in delivery of PGx tests in clinical care? O None (1) O A Little (2) O Some (3) O A Lot (4) O Prefer not to answer (5)
To what degree do you believe clinical geneticists/genetic counselors will play a role in delivery of PGx tests in clinical care? O None (1) O A Little (2) O Some (3) O A Lot (4) O Prefer not to answer (5)
Would having assistance in evaluating a PGx test result (analogous to a radiologist's report) increase your likelihood to order a PGx test? O Yes (1) O No (2) O Prefer not to answer (3)
Several options have been proposed as to when PGx testing should be ordered with respect to initiation of treatment. This study provided testing at the point-of-care (when a prescription has been initiated). Others have suggested that PGx testing should be ordered in advance as a panel of genes known to impact many commonly prescribed medications (referred to as prospective or preemptive testing). Which approach would you support? O Point-of-care testing (1) O Prospective testing (2) O Neither (3) O Unsure (4) O Prefer not to answer (5)
If preemptive testing is reimbursed by insurers, when do you think it should be ordered? At birth (1) Adolescence (2) Young adult (3) First time a medication is prescribed (regardless of age) (4) Not at all (5) Prefer not to answer (6)

ΡО	r patients wno nave had one or more PGx tests, where do you think PGx test results shou
be	stored?
\mathbf{O}	Patient pharmacy record (1)
\mathbf{O}	Patient medical record (2)
\mathbf{O}	Patient keeps results (3)
\mathbf{O}	Patient's pharmacy and medical records (4)
0	All of the above (5)
Of	the patients you discussed PGx testing with, would you say most
O	Agreed to testing with few/no questions or concerns (1)
O	Agreed to testing with some questions or concerns (2)
O	Deferred testing option until they experienced an adverse event or non-response (3)
0	Declined testing (4)
0	Did not discuss PGx testing with any patients (5)
	your opinion, of the patients that agreed to have PGx testing, most agreed because:
O	They wanted to avoid adverse responses (1)
O	They wanted to avoid multiple trips to the pharmacy or doctor's office to get new prescriptions if original prescription did not work (2)
\mathbf{C}	Testing was free (3)
0	You, their primary care physician, recommended it (4)
\mathbf{O}	Unsure (5)
\mathbf{O}	Other reasons (6)
O	Did not have any patients to whom testing was offered or that agreed to testing (7)

Please report the occurrence of each patient outcome in response to the PGx testing

	Did not occur at all	Occurred in some patients	Occurred in all patients	Unsure
Increased patient anxiety regarding their medication	0	0	0	0
Decreased patient anxiety regarding their medication	•	O	O	O
Increased patient compliance	O	O	O	O
Decreased patient compliance	O	O	O	O
Increased patient confidence in effectiveness of drug	O	O	O	O
Decreased patient confidence in effectiveness of drug	O	O	O	O
Prescription cost increase	O	O	O	O
Prescription cost decrease	O	O	O	O
Increased patient confusion	O	O	O	O
Delay in treatment until test results returned	O	O	O	O