



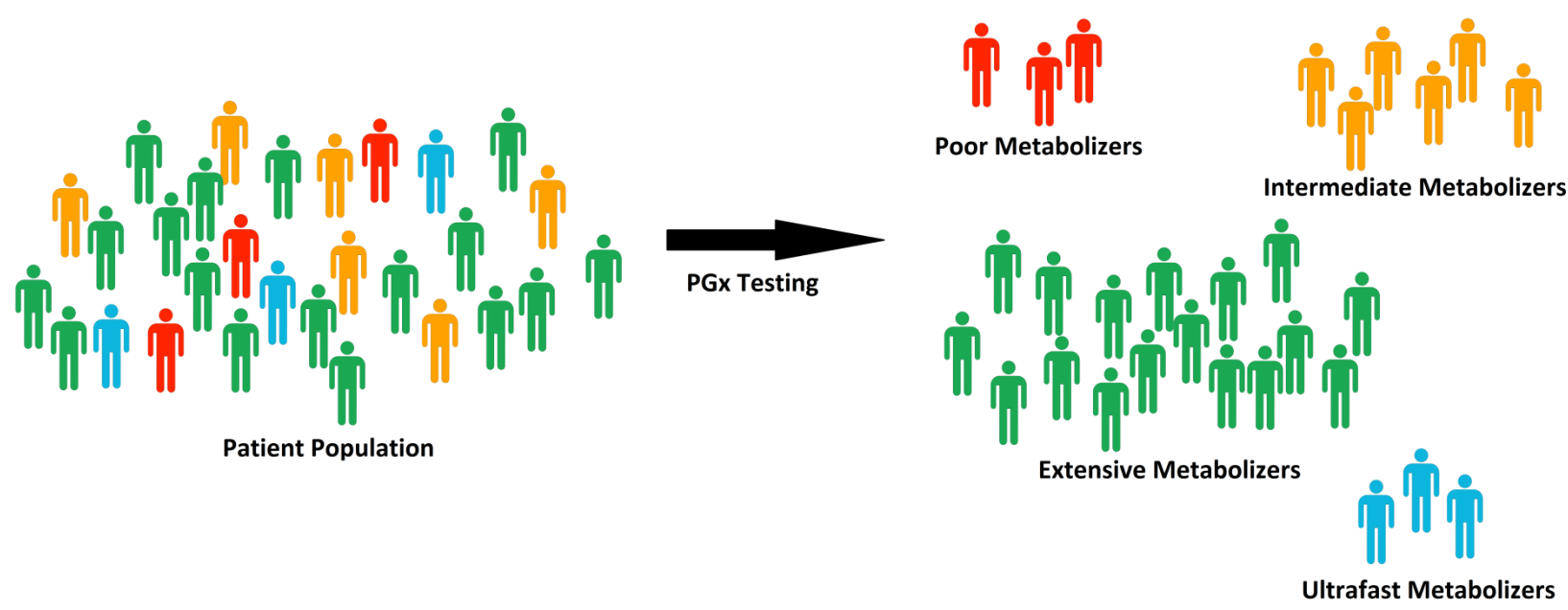
# Innovative Canadian Pharmacogenomic Screening Initiative in Community Pharmacy (ICANPIC) Study



John Papastergiou<sup>1,2,3</sup>, Peter Tolios<sup>1,3</sup>, Wilson Li<sup>3</sup>, Jia Jane Li<sup>1</sup>, Phillip Kim<sup>1</sup>  
 Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Canada | School of Pharmacy, University of Waterloo, Kitchener, Canada | Shoppers Drug Mart, Toronto, Canada

## 1. Introduction

- The safety and efficacy of medications varies significantly between patients due to genetic variability.
- As genomic screening becomes more widely available, community pharmacists are ideally suited to utilize this tool to optimize therapy.



**Figure 1.** Illustration demonstrating genetic variability within the general population. PGx = Pharmacogenomics

## 2. Aim

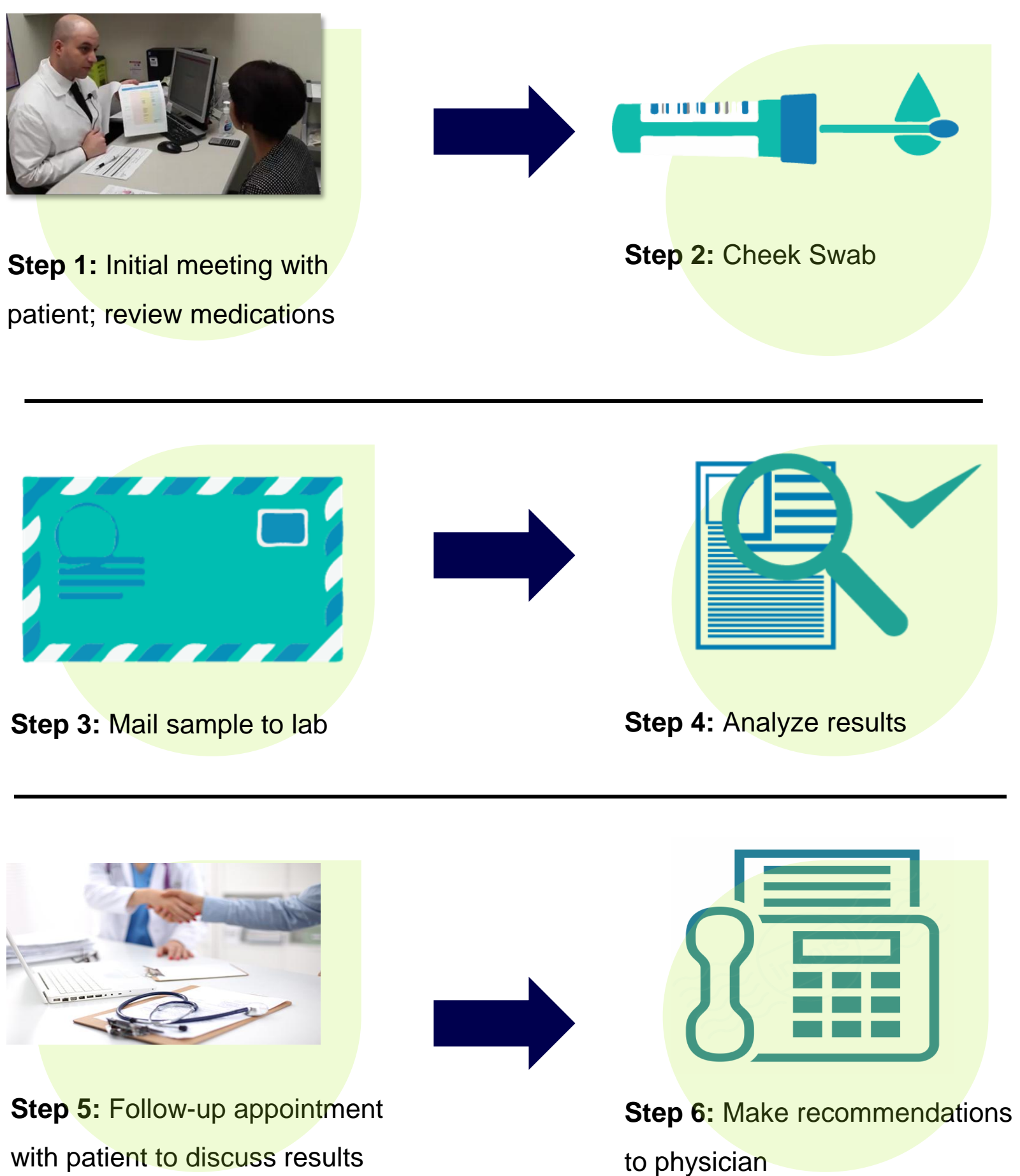
To evaluate the feasibility of implementing personalized medication services into community practice and to quantify the type of drug therapy problems identified as a result of screening.

## 3. Methods

### Prior to Study Initiation

- Community pharmacists at two sites underwent comprehensive training in pharmacogenomics

### Study Process



### Sample of PillCheck® Report

**Figure 2:** PillCheck® offers a genotyping assay that uses genomic data to generate a personalized report that provides insight into a patient's inherited metabolic profile. The above report shows a patient who is an intermediate metabolizer of the prodrug clopidogrel as a result of having CYP2C19 \*2/\*17 alleles. A drug switch is recommended due to reduced activation of the prodrug to active metabolite based on Clinical Pharmacogenetics Implementation Consortium guidelines.

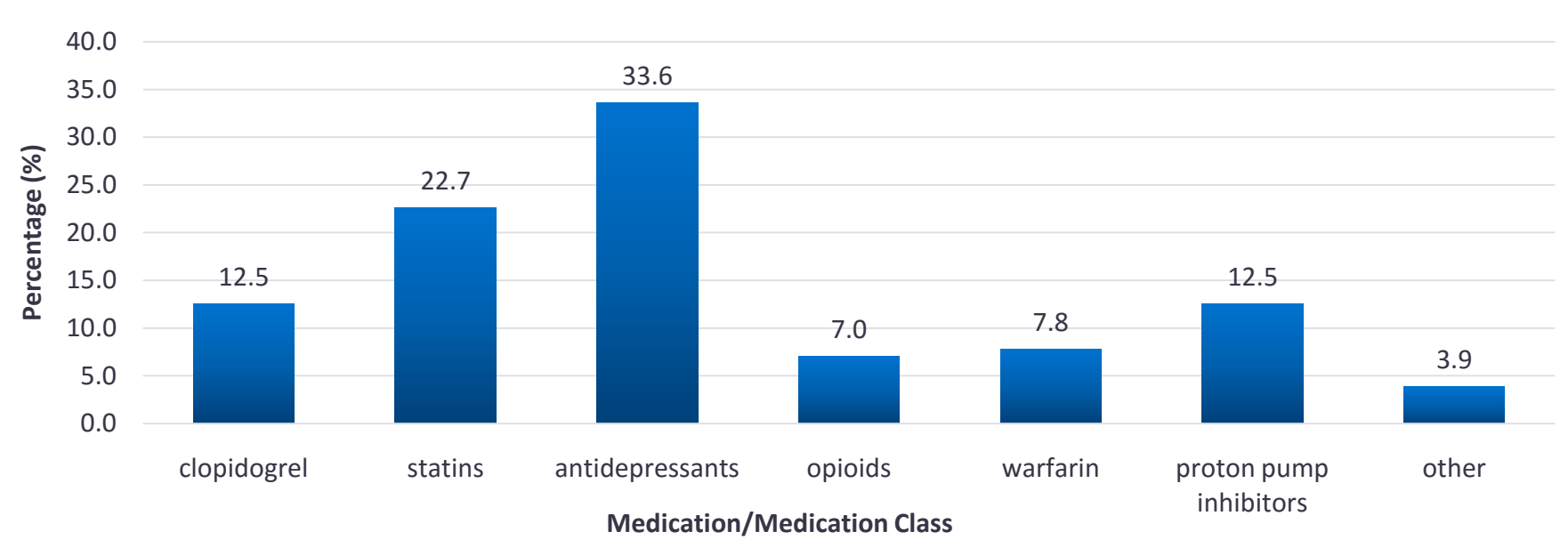
## 4. Results

### Patient Recruitment

**Table 1:** Summary of Patient Baseline Characteristics

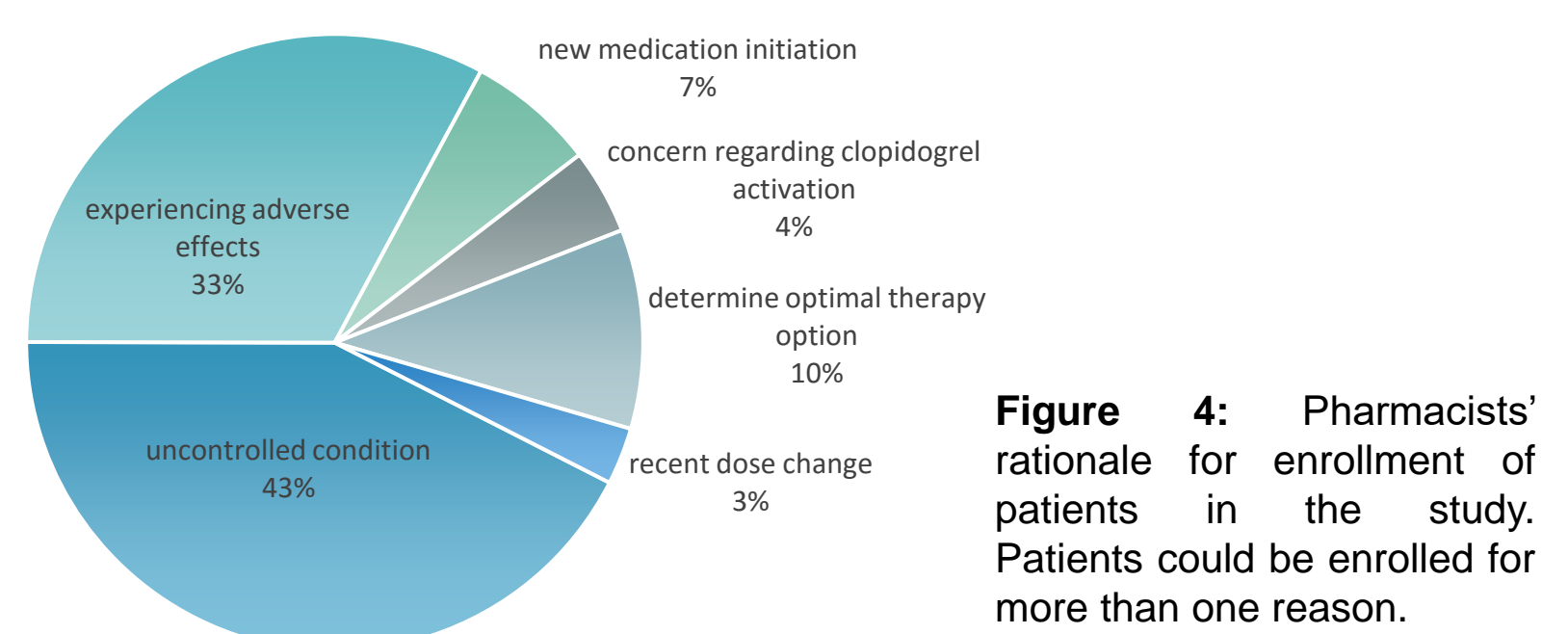
Patient Characteristics (n=100)	
Mean age (years)	56.5
Sex (% female)	62.0
Mean number of chronic medications per patient	4.9
Mean number of PillCheck® medications per patient	2.0

### Medication Category Triggering Screening



**Figure 3:** Patients were screened for enrollment based on chief complaints involving medications whose safety and efficacy are significantly influenced by genetics.

### Rationale For Testing



**Figure 4:** Pharmacists' rationale for enrollment of patients in the study. Patients could be enrolled for more than one reason.

### Patient Interventions

#### Total Interventions

**1.29** per patient

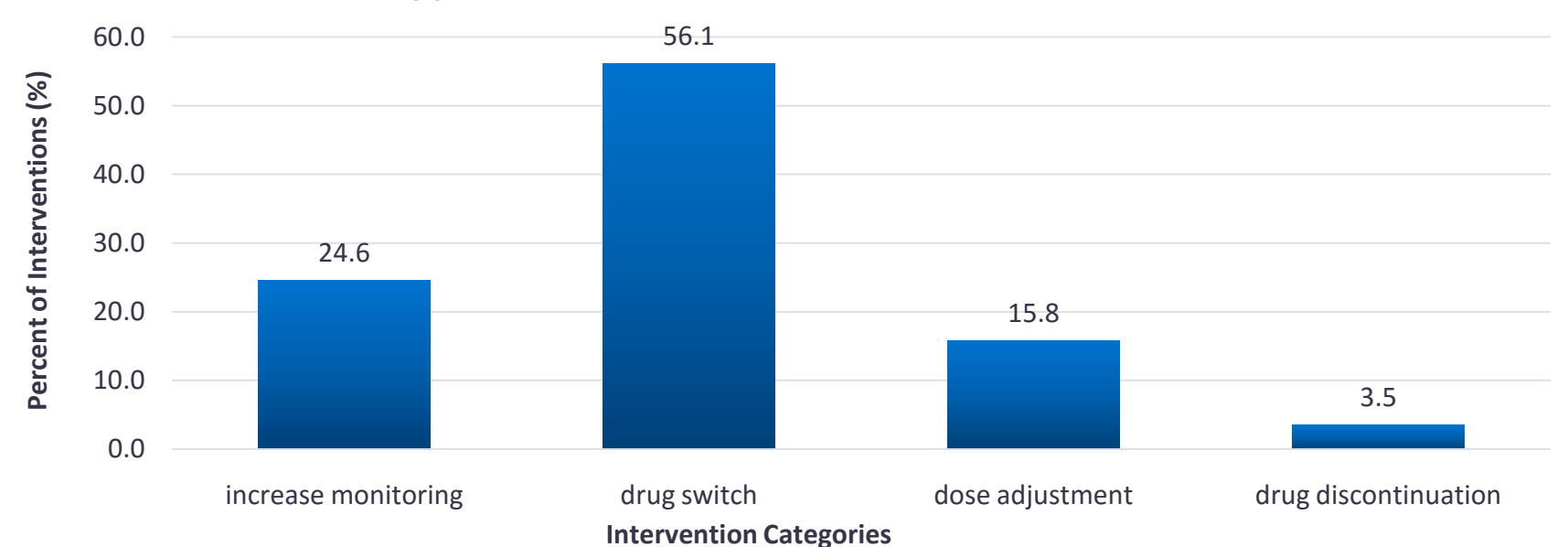
#### PGx-Related Interventions

**0.69** per patient

#### Pharmacist Interventions

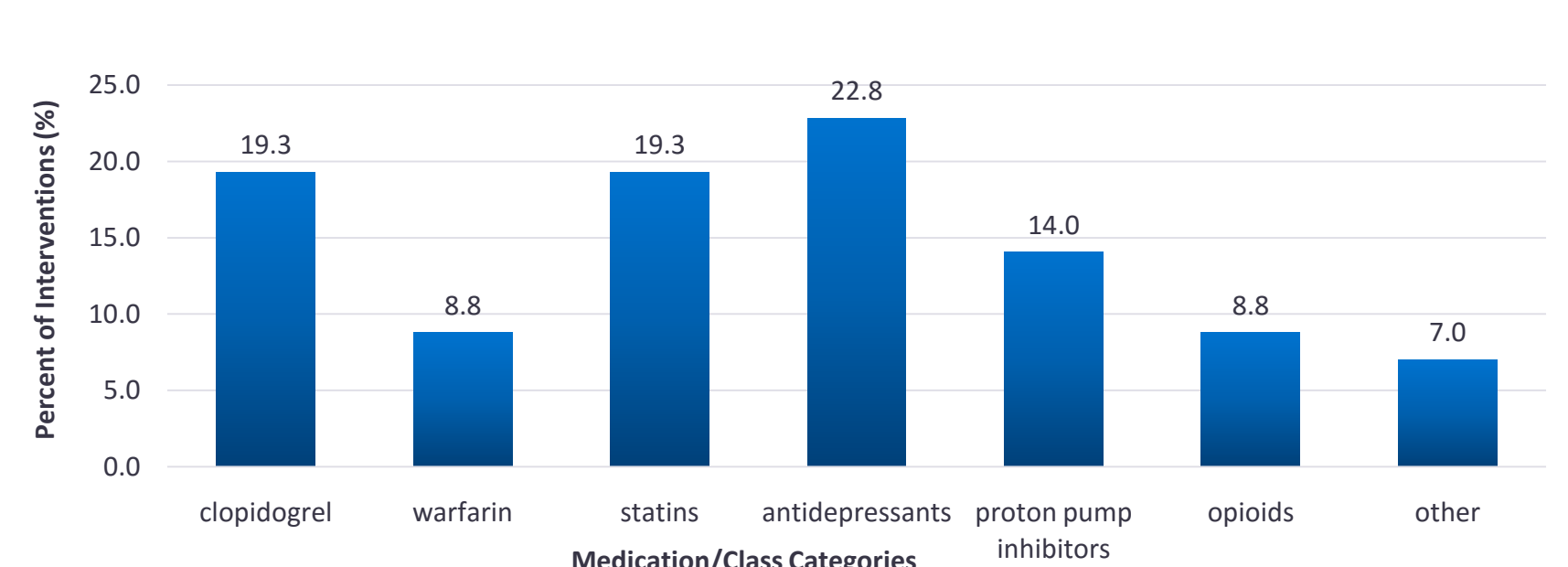
**0.60** per patient

### Types of PGx-Related Interventions



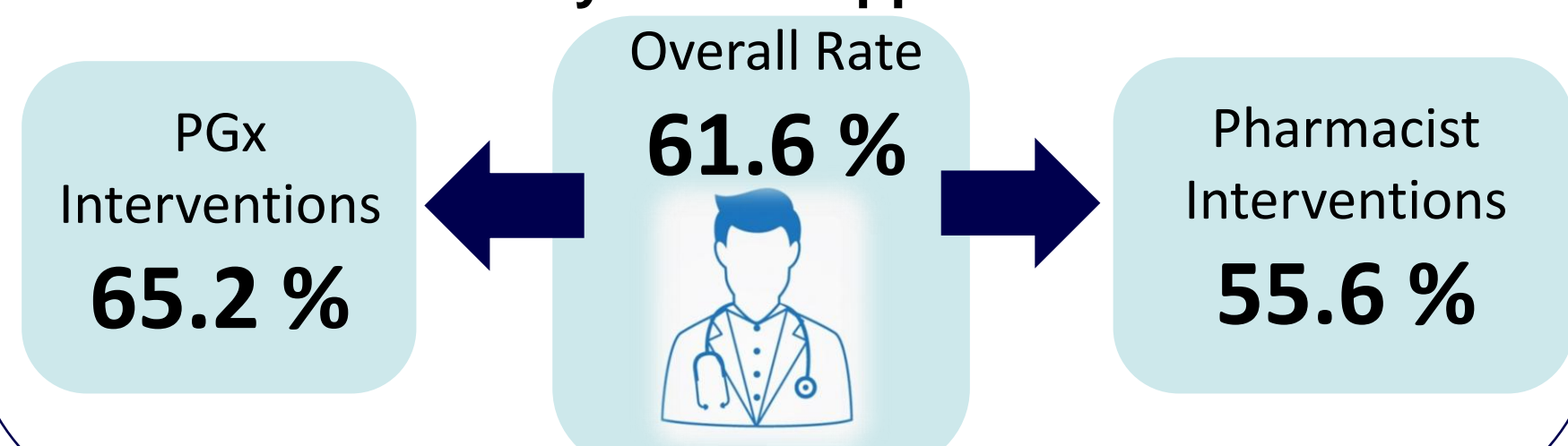
**Figure 5:** PGx-related interventions categorized into 4 intervention types.

### PGx-Related Interventions By Medication Class



**Figure 6:** PGx-related interventions categorized by medication or medication class

### Physicians Approvals



## 5. Conclusions

These results highlight the readiness of pharmacists to adopt PGx screening into practice and their ability to leverage this novel technology to positively impact medication management.

## 6. Contact Details

John Papastergiou BScPhM || Adjunct Assistant Professor || Leslie Dan Faculty of Pharmacy, University of Toronto || School of Pharmacy, University of Waterloo || Shoppers Drug Mart || Tel. 416-461-7533 || Fax. 416-463-8465 || 755 Danforth Avenue Toronto ON Canada M4J 1L2 || asdm500@shoppersdrugmart.ca