

# Patient-Completed Medication Histories Using a Patient-Specific Provincial Database Prescription History Form in an Urban Emergency Department

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## Introduction

Accreditation Canada mandates that Emergency Departments (EDs) obtain best possible medication histories (BPMHs) for all admitted patients.<sup>1</sup>

Incomplete medication history rates are as high as 67% and lead to hospital prescribing errors in up to 27% of cases.<sup>2</sup>

Obtaining BPMHs in EDs is time consuming and challenging due to high patient volumes and quick patient turnover rates.

**Current Evidence:**

Few studies have assessed the patient’s ability to independently complete a medication history; these studies did not utilize a BPMH process completed by a healthcare professional as a comparator and did not utilize a medication history form which identifies medications dispensed in the community.<sup>3-6</sup>

## Study Objectives

- Objective 1:** Determine if patients can complete a BPMH independently and precisely using a novel patient-specific medication history form
- Outcome measures:
- Percentage of patients able to complete the form without creating a discrepancy compared to a standard BPMH process
  - Types and number of discrepancies
- Objective 2:** Identify variables available at ED triage, which may predict the patient’s ability to complete a BPMH using a novel medication history form
- Objective 3:** Identify healthcare provider time savings with the intervention

## Methods

- Design:**
- Prospective, self-controlled study
- Study Population:**
- | Inclusion  | Exclusion  |
|--|--|
| <ul style="list-style-type: none"><li>– Patients presenting to the Royal Jubilee Hospital (RJH) ED in Victoria, BC</li><li>– 19 years of age and older</li></ul> | <ul style="list-style-type: none"><li>– Altered level of consciousness, confusion, delirium or dementia</li><li>– Study would disrupt care</li><li>– Unable to communicate</li><li>– High acuity illness</li><li>– Out of province patient</li><li>– BPMH already obtained</li></ul> |
- Intervention:** Patient independently completes a novel medication history form that is pre-populated with medications dispensed in the community (based on the provincial prescription database PharmaNet)
- Control:** Pharmacist performed BPMH; patients serve as their own control

## Intervention Tool

9897 430 648 - Patient, Test A Dec 25, 1950 - M

**Your Home Medication List**

PLEASE READ: This is a report showing medications you have filled in a community pharmacy. Please complete this form as accurately as possible. A pharmacist will discuss your home medications with you to ensure they are assessed during your hospital visit.

1. Do you know the names of your medications and when you take them? ☐ Yes ☐ No

2. Do you usually need help taking your medications? ☐ Yes ☐ No

3. Are your medications put in blister packs (bubble packs) by your pharmacy? ☐ Yes ☐ No

Home medications taken before this hospital visit

Taking as shown	Not taking	If taking differently than shown, please explain	If taking as needed, how often is it used?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Medications you may have stopped

Taking as shown	Not taking	If taking differently than shown, please explain	If taking as needed, how often is it used?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

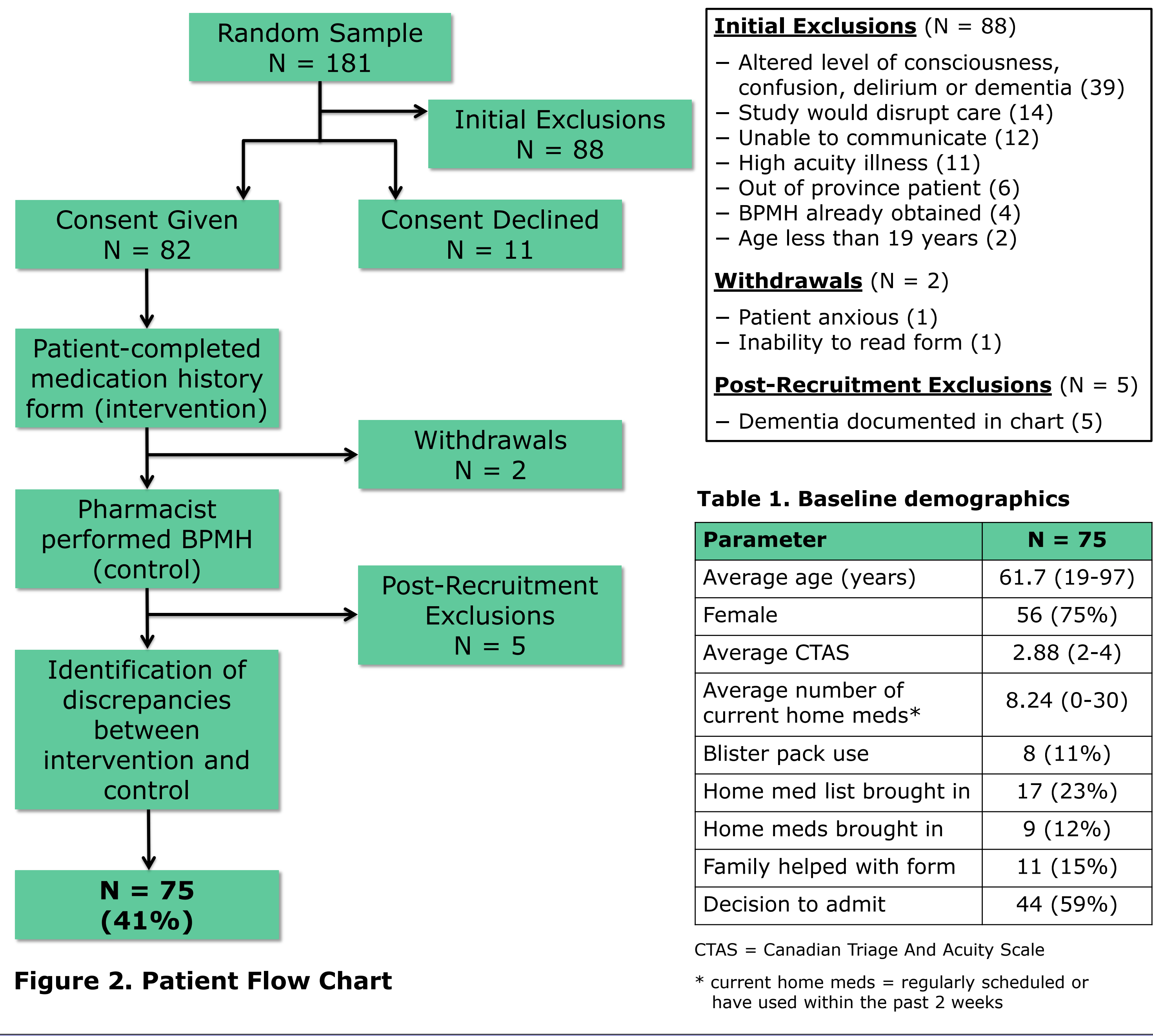
How much alcohol do you drink in a week? ☐ None OR \_\_\_\_\_ drinks per week

How much do you smoke in a day? ☐ None OR \_\_\_\_\_ cigs per day

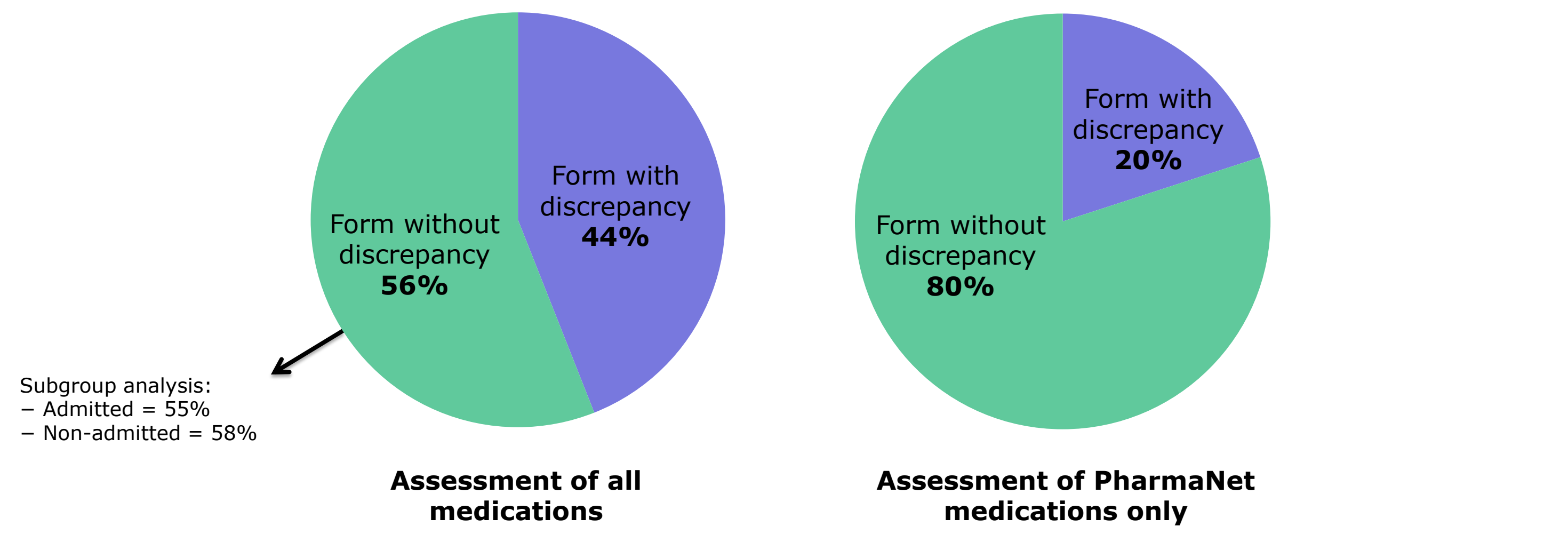
Please list any medications or street drugs you have used recreationally in the past year:

**Figure 1. Sample medication history form**

## Patient Flow Chart & Baseline Demographics

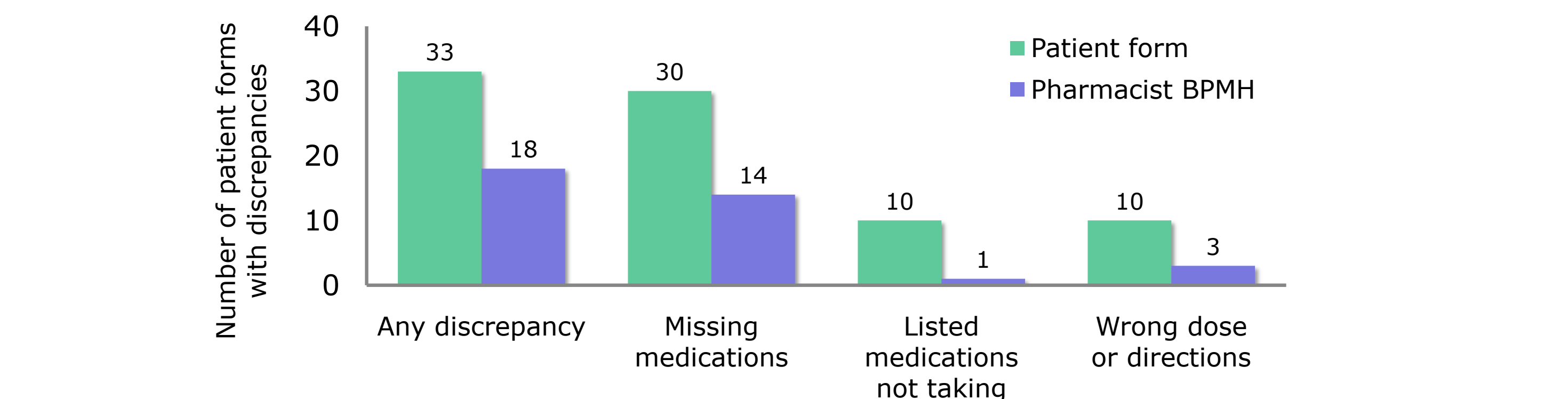


## Results



**Figure 3. Percentage of patients able to complete the medication history form without discrepancies**

– 61% of patient forms were equal or better than pharmacist performed BPMH



## Results

**Table 2. Predictive variables for patients with no discrepancies in the intervention process (logistic regression analysis)**

	Predictive variables	Expβ	Specificity (%)	Sensitivity (%)	R <sup>2</sup>
All meds	1. # of pages on med history form	0.427	43.8	90.5	0.233
PharmaNet meds only†	1. # of pages on med history form 2. # of meds with “current” flag	0.101 1.380	26.7	94.9	0.351

† Logistic regression analysis repeated for PharmaNet data only for further hypothesis generation

**Time Savings:**

Pharmacist time spent with patient to assist with the form versus conducting medication interview: **1.6min versus 6.7min** (excluding patients with discrepancies)

## Discussion

- Findings:**
- Given the rates of exclusion, withdrawal and declined consent, the expected number of patients that can complete their own BPMH in the RJH ED each day (out of 145 patients) is?:
    - At least 33 (23%) patients for a full BPMH
    - At least 48 (33%) patients for PharmaNet medications only
    - Similar rates for admitted and non-admitted patients
  - Benefits provided are conservative estimates; patients who were excluded or did not give consent may have been able to complete their own BPMH
  - Potential cost savings: ≥\$40,000 in pharmacy technician wages to obtain an additional 12,000 BPMHs per year at RJH ED
  - Logistic regression analysis cannot reliably distinguish patients who are able to complete their own BPMH without a discrepancy
  - Time for interview was short – form prepared patient prior to interview
  - Consent bias minimized by extensive exclusion criteria
  - Obtaining a BPMH for most patients still requires a healthcare provider

## Limitations

- Narrow patient population selection due to exclusion criteria
- Carryover bias due to study process sequence that favours control data
- All interactions with patients were conducted by the same pharmacist
- Blinding of the pharmacist was not possible
- Limited sample size
- Single study site
- Patients only recruited during daytime hours on weekdays
- Novel medication history form is not validated
- Does not represent an anticipated electronic BPMH format

## Conclusion

The majority of patients included in this study could complete their own BPMH using the form; however, there was a high exclusion rate. The results of this study may still represent an opportunity for healthcare time and cost savings with the expansion of medication reconciliation services in the ED. Further research is required to identify a triage protocol to select patients who are able to complete their own BPMH using a patient-specific provincial database prescription history form.