

# Contract Pharmacy Integration into Chronic Kidney Disease Clinic

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## Background

- Chronic kidney disease (CKD) is a multifaceted condition complicated by comorbidities and complex pharmacotherapy regimens
- Pharmacists integrated into a CKD interdisciplinary team (IDT) have been shown to reduce adverse effects, improved health outcomes, reduced hospitalizations, and health care utilization costs
- Royal Inland Hospital's (RIH) CKD clinic IDT does not include a pharmacist
- BC PharmaCare Medication Review Service offers remuneration to community pharmacists for medication reviews, offering a means of fulfilling this gap and thus improving quality of care

## Definitions

### Medication Discrepancy

Variation between the PROMIS medication list and Best Possible Medication History (BPMH)

### Drug Related Problem (DRP)

Classified using BC PharmaCare Medication Review Service medication management issue categories: unnecessary drug, needs additional drug, ineffective drug, dosage too low, dosage too high, adverse drug reaction (ADR), patient self management

### Key Performance Indicator (KPI)

Evidence based intervention proven to reduce morbidity, mortality, or health-resource utilization, as defined by Interior Health (IH) Disease State Education Modules

## Methods

### Design

- Prospective quality improvement analysis of contract pharmacist integration within RIH CKD clinic IDT (16/10/12 - 31/01/13)
- IH DRP tracking tool adapted to capture DRPs & discrepancies; Microsoft Excel used to collect additional data; Survey to assess team/patient experiences
- IH Research Ethics Board (16/11/12) & UBC Clinical Research Ethics Board (10/12/12) approval

### Inclusion Criteria

- Patient registered as a BC Renal Agency patient seen in RIH CKD clinic
- Patient eligible for BC PharmaCare Medication Review Services Program

### Statistical Analysis

- Descriptive statistics using Microsoft Excel
- Qualitative data using patient & team surveys

## Table I: Objectives & Outcomes

	Objective	Outcome
Primary	Describe quality improvement post pharmacist integration	Structure Measures: # Clinics attended # Patients interviewed
		Process Measures: # Discrepancies, DRPs, & KPIs # Suggestions made/implemented
Secondary	Characterize discrepancies, DRPs, & KPIs, and qualitatively assess pharmacist integration	Characterization of discrepancies, DRPs, & KPIs Pharmacist time Reviews eligible for compensation Patient/Team Survey

## Secondary Results

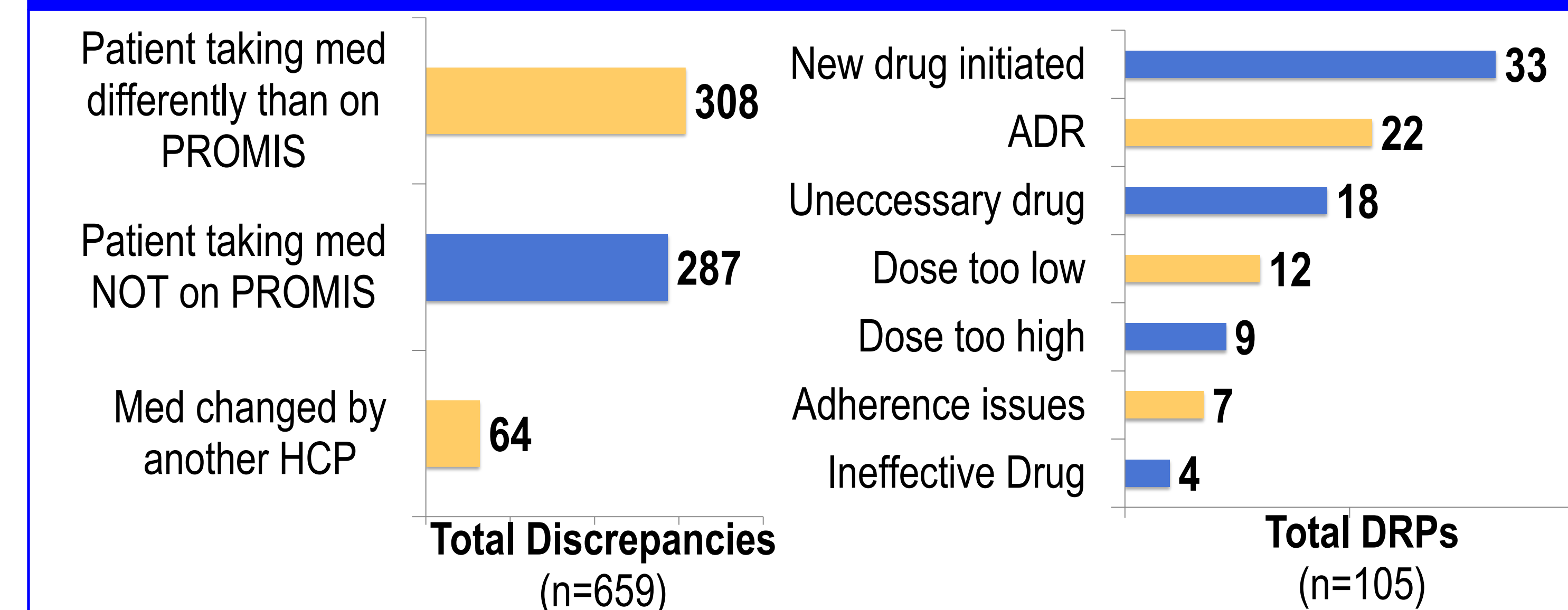


Figure II: Discrepancy Characterization | Figure III: DRP Characterization

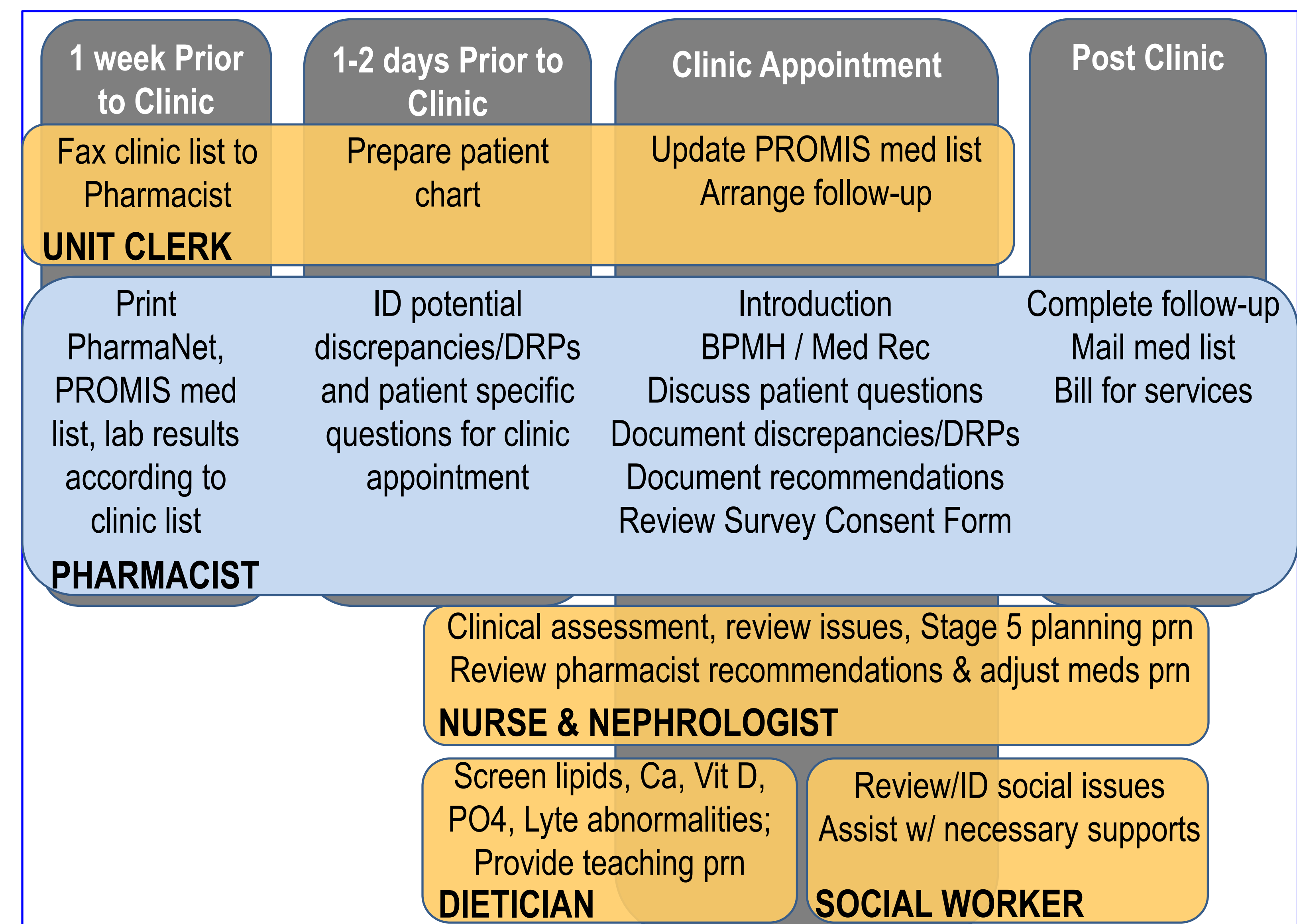


Figure I: Clinic Team Process Map

## Table II: Primary Results

Outcome	Total	Average per patient
<b>Structure Measures:</b>		
Clinics attended	35/42 (83%)	-
Patients interviewed	187/334 (56%)	-
Medications reviewed	2326	12.4
<b>Process Measures:</b>		
Discrepancies	659	3.5
DRPs	105	0.6
KPIs	5/105 (5%*)	0.03
Suggestions made	150	0.8
Suggestions implemented	104/150 (69%†)	0.6

\* Refers to percent of total DRPs † percent of suggestions made

## Pharmacist Time

- 45 min/patient for preparation, interview, & documentation
- Patient interview time: 3045 min (16 min/patient)

## Compensation Eligibility

- 92% of patient interviews eligible for compensation
- 86% of those were eligible for *Standard* & 14% for *Follow-Up* compensation\*
- 0% *Pharmacist Consultation* reviews\* due to documentation & time requirements

## Patient Survey (n=19)

- Experience with pharmacist rated as very good
- 42% (8/19) learned something new about their medications
- 53% (10/19) had changes made to their medications at that appointment
- 95% (18/19) would like to see the pharmacist at future visits

## Team Survey (n=6)

- Understood their role (100%) & role of others (83%) very well
- 67% (4/6) rated pharmacist integration as fair
- Improvements to patient care & professional benefits rated as moderate
- All members recommended pilot continue

\*BC PharmaCare Medication Review Services Policies, Procedures, & Guidelines for Pharmacists v2.2

## Limitations

- Pharmacist was unable to work to fullest capacity due to lack of computer access and limited workspace
- Nephrologist shortage made alterations to clinic structure difficult
- Some DRPs outside of nephrologist scope & consequently remained unresolved
- Study period of limited duration and may have underestimated primary outcome

## Conclusions

- Pharmacist integration permitted identification of a significant number of DRPs and discrepancies, which data suggests improves health outcomes and reduces hospitalizations & health care utilization costs
- Proper supports should be in place and clinic structure adjusted to optimize efficiency prior to implementation
- A communication tool for resolution of non-nephrologist related DRPs would be beneficial

