# Clinical Pharmacy Key Performance Indicators (cpKPI) in Canadian Hospitals Supported by Telepharmacists

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## Background

- Key performance indicators (KPI) are specific, measureable metrics used to evaluate the performance of a process, service, or system.

- KPIs are critical to understanding how effectively a service or function is being delivered, usually based on established standards or expectations.

- A Canadian clinical pharmacy key performance indicator (cpKPI) is a quantifiable measure of clinical pharmacy care provided by pharmacists.

- The eight Canadian cpKPI's are aimed at improving the quality of patient care and advancing the practice of pharmacy.

- Implementation of cpKPIs and collecting cpKPI data over time supports continuous quality improvement.

- The current state of expected performance and documentation of cpKPIs in healthcare facilities across Canada serviced by telepharmacists has not be studied.

## Methods

**Study Design:** Cross sectional survey study

**Objectives:**

- To describe the current state of expected pharmacist performance of cpKPIs in healthcare facilities serviced in part or whole by telepharmacists in Canada

- To describe the current state of expected pharmacist documentation (communication) of cpKPIs in healthcare facilities serviced in part or whole by telepharmacists in Canada:

    I. intraprofessional (pharmacist to pharmacist only)

    II. interprofessional (within the patient health record)

**Methods**:

An email requesting completion of the survey was sent to each health care facility telepharmacist site lead. The message included a Microsoft Forms link, QR code, and details on study design, rationale and timeline for survey completion.

**Data Collected:**

Pharmacy software system, utilization of computer prescriber order entry (CPOE), and whether prioritization of pharmacist activities were based on cpKPIs. For each of the eight cpKPIs, the current expectations for pharmacist performance, documentation within the pharmacy software system, in the patient health record and workload. The person(s) responsible for completion of the BPMH was also collected.

**Participants**:

Pharmacist site leads for each Canadian healthcare facility serviced in part or in whole by telepharmacists employed by Northwest Telepharmacy Services, full-time, part-time or casual status.

**Analysis:**

Collected data was cleaned, descriptive statistics applied, continuous data reported by central measures of tendency and categorical variables reported as numbers and percentages

**Website**: northwesttelepharmacy.ca
**Instagram**: northwest_telepharmacy
**Facebook**: Northwest Telepharmacy Solutions
**X**: NWTelepharmacy
**Linkedin**: Northwest Telepharmacy Solutions

## Results

Table 1: Frequencies of cpKPI expectations, documentation in the pharmacy system, health care record, and workload

| CLINICAL PHARMACY KEY PERFORMANCE INDICATORS | SITES, n (%) | DOCUMENTED IN PHARMACY SYSTEM | DOCUMENTED IN Medical Health Record | DOCUMENTED cpKPI Time |
|---|---|---|---|---|
| **Pharmacist Medication Reconciliation on Admission, n=57** | | | | |
| Yes | 29 (51) | 35 (61) | 23 (40) | 15 (26) |
| No | 15 (26) | 22 (39) | 34 (60) | 42 (74) |
| Sometimes | 13 (23) | - | - | - |
| **Creation of an Pharmaceutical Care Plan, n=57** | | | | |
| Yes | 16 (28) | 23 (40) | 14 (25) | 10 (18) |
| No | 24 (42) | 34 (60) | 43 (75) | 47 (82) |
| Sometimes | 17 (30) | - | - | - |
| **Identification and Resolution of Drug Therapy Problems, n=57** | | | | |
| Yes | 57 (100) | 43 (75) | 23 (40) | 17 (30) |
| No | 0 | 14 (25) | 34 (60) | 40 (70) |
| Sometimes | 0 | - | - | - |
| **Active Participation in Interprofessional Patient Care Rounds, n=57** | | | | |
| Yes | 9 (16) | - | - | 7 (12) |
| **Patient Education during Hospital Stay, n=57** | | | | |
| Yes | 12 (21) | 20 (35) | 15 (26) | 9 (16) |
| No | 26 (46) | 37 (65) | 42 (74) | 49 (84) |
| Sometimes | 19 (33) | - | - | - |
| **Pharmacist Medication Reconciliation at Discharge, n=57** | | | | |
| Yes | 4 (7) | 7 (12) | 6 (11) | 3 (5) |
| No | 40 (70) | 50 (88) | 51 (89) | 54 (95) |
| Sometimes | 13 (23) | - | - | - |
| **Patient Education at Discharge, n=57** | | | | |
| Yes | 3 (5) | 9 (16) | 10 (18) | 5 (9) |
| No | 37 (65) | 48 (84) | 47 (82) | 52 (91) |
| Sometimes | 17 (30) | - | - | - |
| **Bundled Patient Care Interventions, n=57** | | | | |
| Yes | 10 (18) | 7 (12) | 7 (12) | 4 (7) |
| No | 44 (77) | 50 (88) | 50 (88) | 53 (93) |
| Sometimes | 3 (5) | - | - | - |

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42 Pharmacists

57 Facilities

Facility Size 8-500 beds

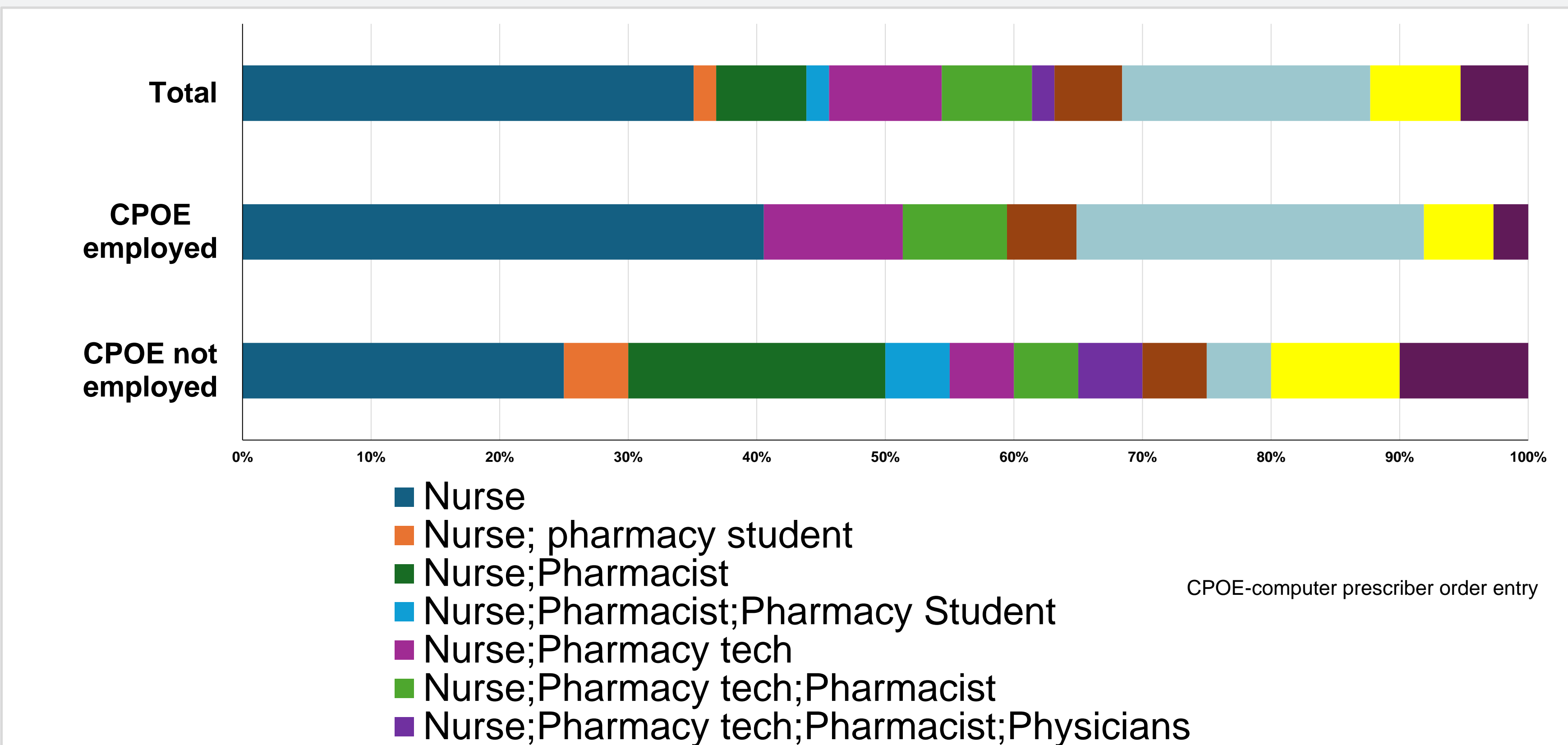Figure 1: Prioritization of pharmacist's activities based on the 8 Canadian cpKPIs? (n=57)
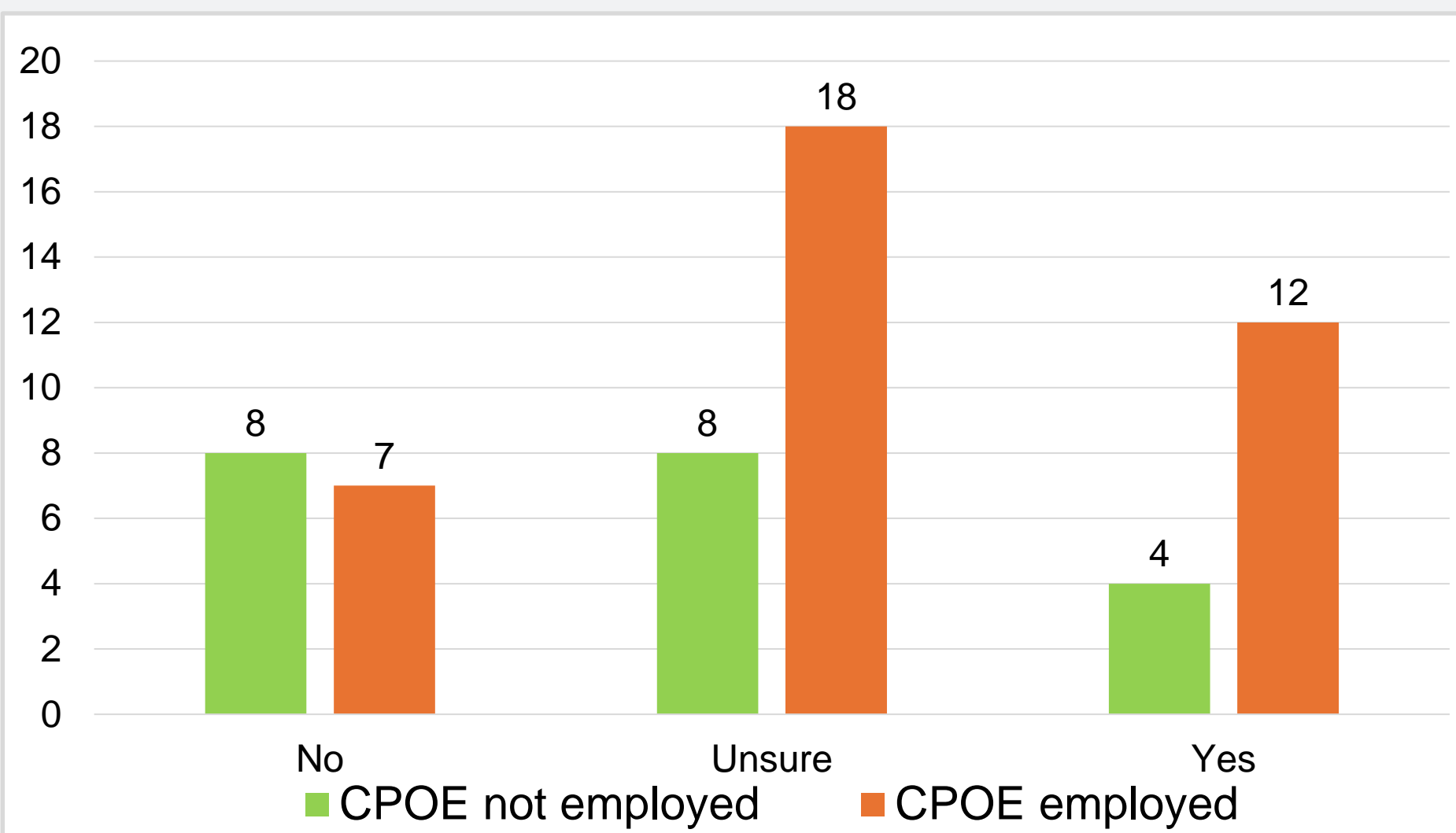


CPOE-computer prescriber order entry

Figure 2: Documentation/upload of MedRec on admission to patient health record by a pharmacist (n=57)
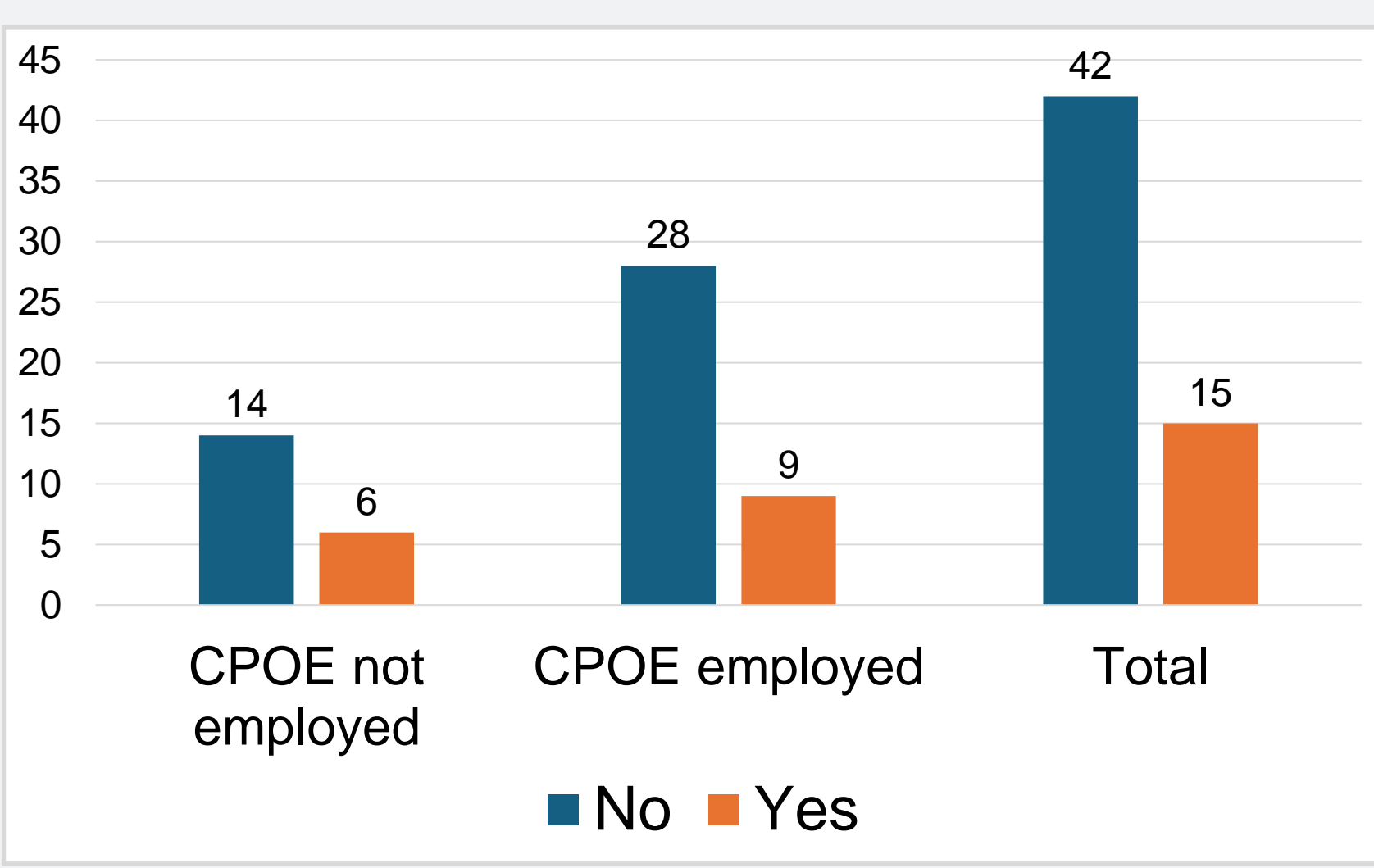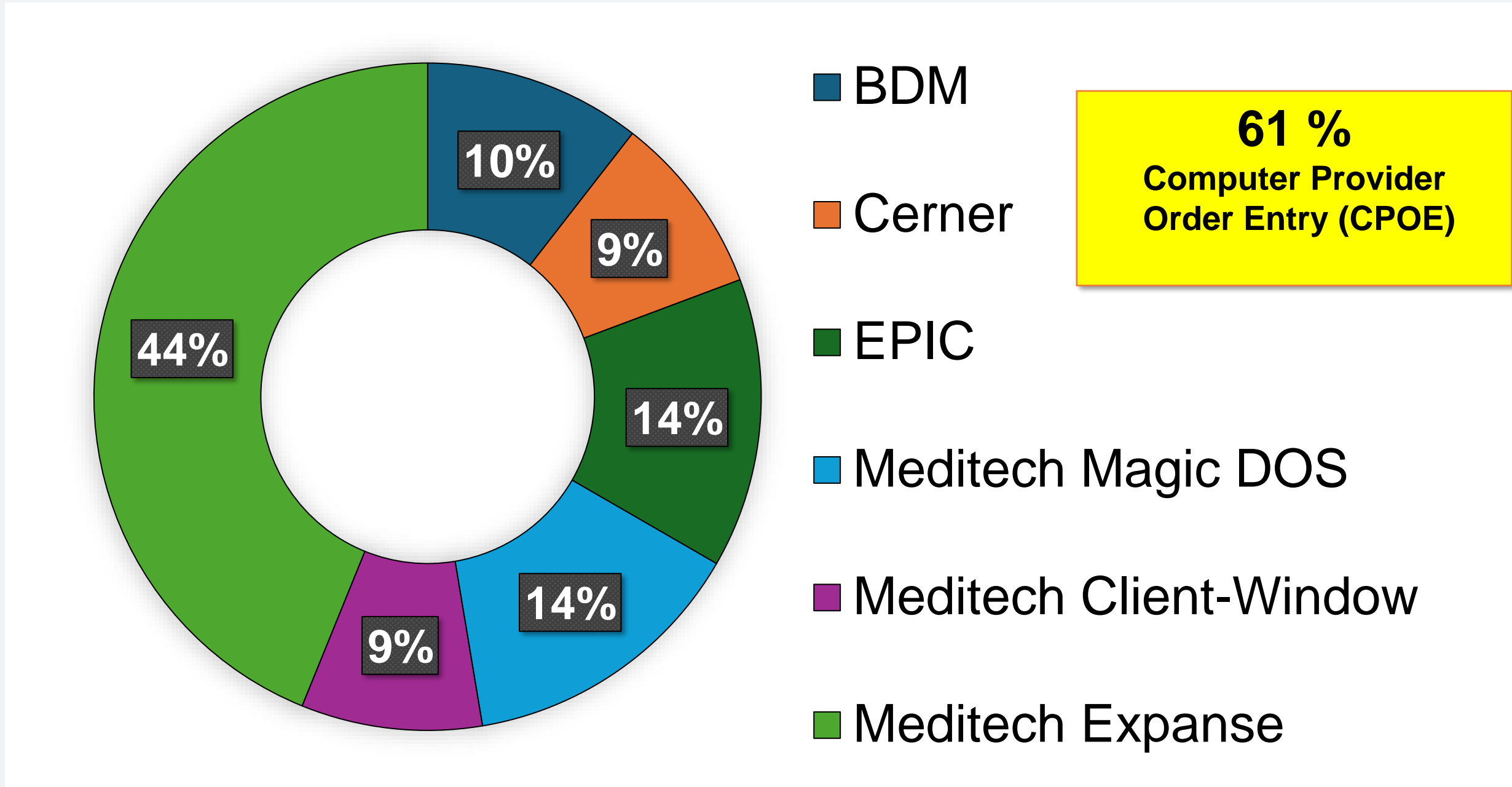


CPOE-computer prescriber order entry

Figure 3: Healthcare providers responsible for completing a BPMH*



Nurse
Nurse; pharmacy student
Nurse;Pharmacist
Nurse;Pharmacist;Pharmacy Student
Nurse;Pharmacy tech
Nurse;Pharmacy tech;Pharmacist
Nurse;Pharmacy tech;Pharmacist;Physicians

CPOE-computer prescriber order entry

## Results

Figure 4: Pharmacy Software Systems (N=57)



- BDM
- Cerner
- EPIC
- Meditech Magic DOS
- Meditech Client-Window
- Meditech Expanse

**61 %** Computer Provider Order Entry (CPOE)

## Summary

- Among the eight cpKPIs, **identification and resolution of drug therapy problems (DTP)** emerged as a **universal priority** pharmacist activity across all surveyed facilities

- In contrast, cpKPIs related to **patient education during hospital stay/upon discharge, Medrec on discharge, and bundled interventions** were **infrequently** considered clinical priorities

- **Medrec on admission was a priority** pharmacist activity in half surveyed

- None of the facilities required pharmacists to document all eight cpKPIs, or all cpKPI workload, in the pharmacy system or patient health records

- **Medrec on admission and resolution of DTPs** were the most frequent cpKPIs with the expectation that **pharmacists document** in the pharmacy system and the health record

- Although the **majority of BPMHs are still completed by nurses**, 44% of facilities reported pharmacy technicians commonly complete BPMHs

## Conclusion

Healthcare facilities have made some progress in prioritizing pharmacist clinical activities according to the Canadian eight cpKPIs, but there is still much work to be done. Implementation of CPOE and leveraging pharmacy technicians to create BPMHs could help accelerate this progress.

Pharmacy departments need to continue exploring ways to improve documentation in pharmacy systems and the patient health record to facilitate ongoing quality improvement, workload measurement, and enhance health care team communication and advance pharmacy practice.

## Disclosure Summary