



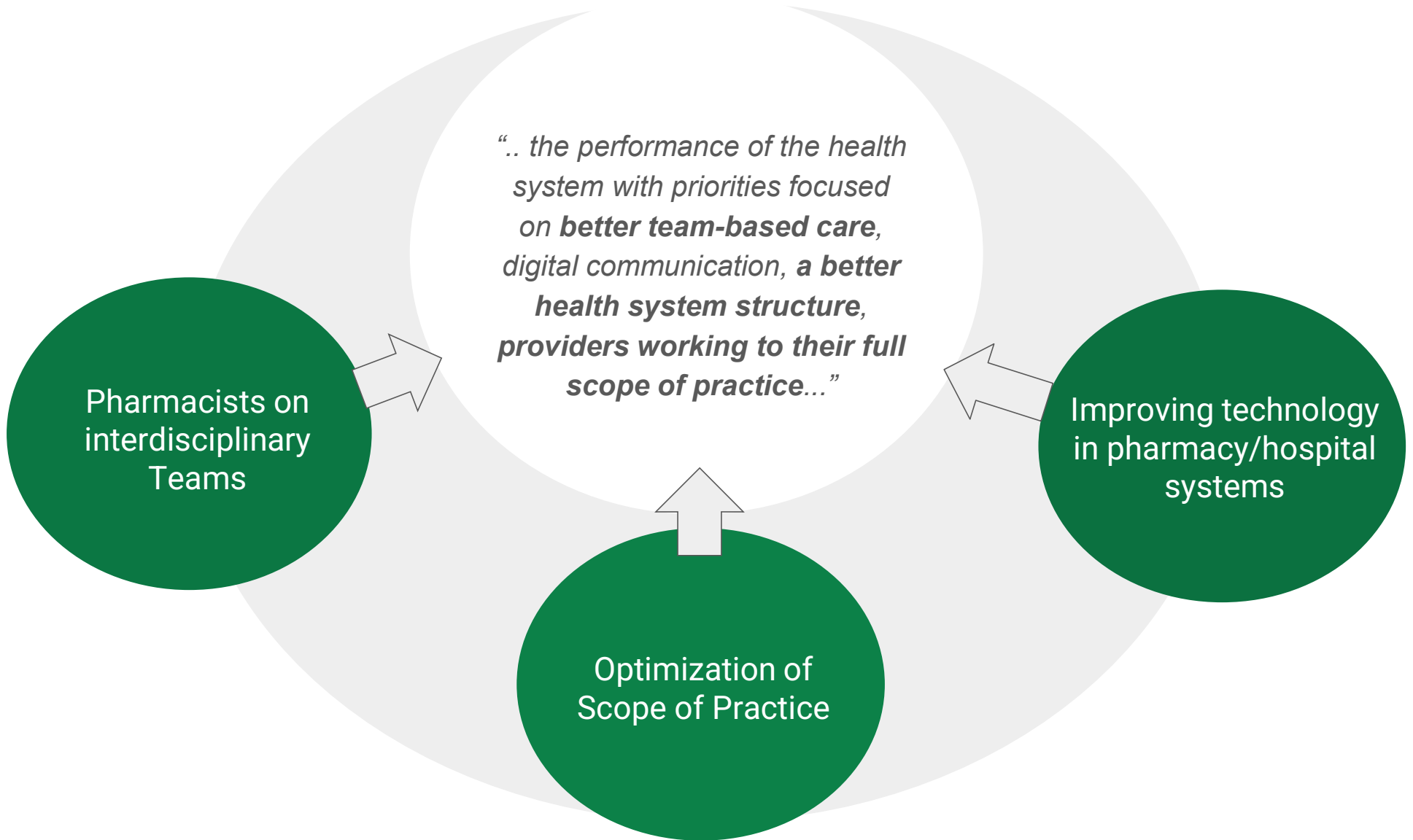
Hospital Pharmacists: Improving our health care system

CSHP NL Branch
July 16, 2021



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The Canadian Society of Hospital Pharmacists (CSHP) is the national voluntary organization of pharmacists committed to patient care through the advancement of safe, effective medication use in hospitals and other collaborative healthcare settings.



Issue

NL has the worst health system performance in Canada

- Need to improve quality of care to improve health and health outcomes
- Require seamless, high quality medication management, pharmaceutical care and medication education with a patient-centered focus
- NL teams have low and inconsistent pharmacist inclusion rates

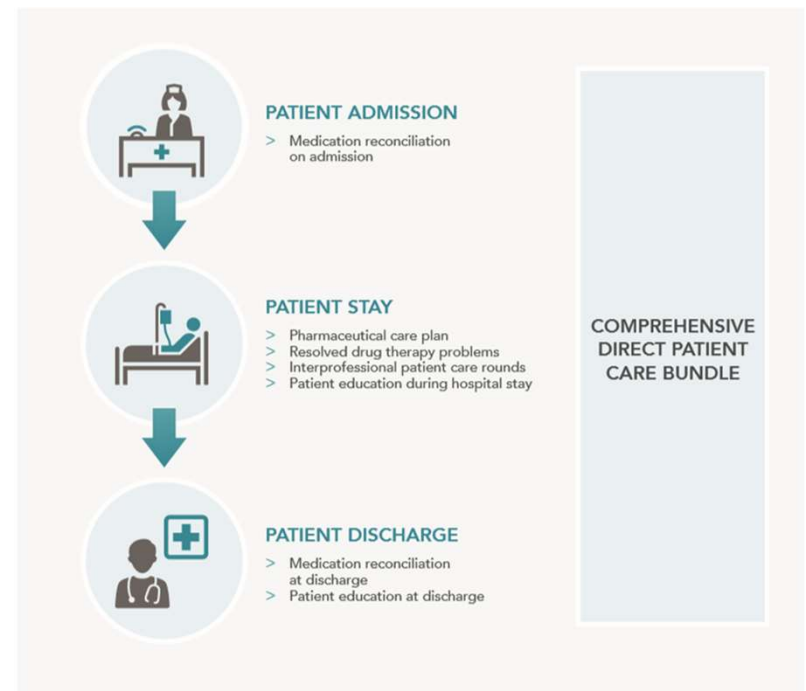
Recommendation

More pharmacists on interdisciplinary care teams

- Incorporating more pharmacists onto inpatient hospital care teams AND onto outpatient care teams will improve
 - Team based care
 - Patient outcomes
 - Seamless care
- All while reducing health care costs

Team Based Pharmacists...

- Prevent and resolve issues with medication therapy
- Provide patient-focused education about medications
- Proactively contribute to interprofessional care rounds
- Facilitate seamless care with other organizations during admission and discharge (eg. medication reconciliation).
- Contribute to efficiency by providing medication stewardship (antibiotic, opioid, and other), avoiding medication harm, and deprescribing unnecessary medications.¹



Prevent Readmissions

- COLLABORATE ²
 - 3 tertiary care teaching hospitals, Alberta
 - Internal medicine clinical teaching units and primary health care teams
 - Team-based pharmacists providing team-based clinical services vs usual care
 - Rate of readmission at 3 months: 36.2% (with pharmacist) vs 45.5% (without), a 20% relative reduction
- Gillespie et al. ³
 - Impact of team-based hospital pharmacist caring for internal medicine patients
 - > 80yo, Sweden, n=368
 - 12% reduction in 12-month readmission rates, 47% reduction ED visits, 80% reduction drug-related readmissions

Improve Patient Outcomes

- BOND database study ⁴
 - 2.8 million patients, 7.9 million hospitalizations across 885 hospitals
 - Chance of in-hospital death compared with pharmacist staffing levels and clinical pharmacist services
 - adjusted for severity of illness
 - **Reduced mortality found with increasing # clinical pharmacists/100 beds**
- Reduce length of hospital stay ⁵
 - 2019 systematic review and meta-analysis (14 trials) reduced likelihood mortality, reduced ICU LOS, reduced ADEs

Improve Patient Outcomes

- Reduce the risk of medication-related harm to patients ^{6,7}
 - Pharmacist-led patient monitoring and telephone follow programs in cancer care avoid treatment delays/dose reductions by managing side effects and improving adherence
- Improve medication use in our aging population
 - Pharmacists on long term care and acute geriatric teams promote cost savings^{4,8}, decrease inappropriate drug prescribing, and facilitate deprescribing ^{9,10,11}
- Improve quality at transitions of care
 - Pharmacy led medication reconciliation reduces discrepancies, rates of all-cause readmissions, all-cause ED visits and adverse drug event related hospital revisits ^{12, 13, 14, 15}

Improve Patient Outcomes

- Reduce the
 - Pharmacists avoid treatment errors and improve adherence
 - Improve medication management
 - Pharmacists decrease medication costs and improve patient adherence
 - Improve quality at transitions of care
 - Pharmacy led medication reconciliation reduces discrepancies, rates of all-cause readmissions, all-cause ED visits and adverse drug event related hospital revisits ^{12, 13, 14, 15}
- in cancer care and improving
cost savings^{4,8,9,10,11}

According to Accreditation Canada 2021 Standards, team Based Pharmacists should be an integral part of interdisciplinary teams.¹⁶

Reduce Health Care Costs

- Systematic Review (59 studies 1996-2000 from CAN, UK, AUS, US) ¹⁷
 - Cost-benefit analysis of pharmacists providing clinical services (ie: admission drug histories)
 - **Median savings to health system \$4.68 for each \$1 paid in pharmacist salary**
- Systematic Review (96 studies 2001-2006) ¹⁸
 - Showed significant return-on-investment with **median savings of \$4.81 for each \$1 of pharmacist salary paid to pharmacists** performing clinical services.
- Consistent, positive, significant financial return on investing in having pharmacists work directly with patients in team-based care
 - Affects overall drug cost (within hospital, upon discharge)
 - Hospital readmission rates, emergency department visit rates
 - Adherence to guideline-driven medication therapy (chronic disease)

Reduce Health Care Costs

- Systematic Review (19 studies, 1997-2011)
 - Cost-benefit (18 studies, 1997-2011)
 - Median savings: 12.5% (range 0-25%)
- Systematic Review (19 studies, 1997-2011)
 - Showed savings in drug costs
 - **pharmacists**
- Consistent, positive impact on costs

Expanding the number of hospitalized patients who are cared for by team-based pharmacists would pay for itself multiple times over

directly with patients in team-based care

- Affects overall drug cost (within hospital, upon discharge)
- Hospital readmission rates, emergency department visit rates
- Adherence to guideline-driven medication therapy (chronic disease)

admission drug

pharmacist salary

.81 for each \$1 of

\$.

pharmacists work

Issue

Not Working to Full Scope

- The Health Accord NL envisions improving health system performance by enabling providers to work to their full scope.
- Neither hospital pharmacists nor registered pharmacy technicians in NL hospitals are currently working to their full scope of practice, to the detriment of patient care.

Recommendation

Expanded Scope of Pharmacist Prescribing

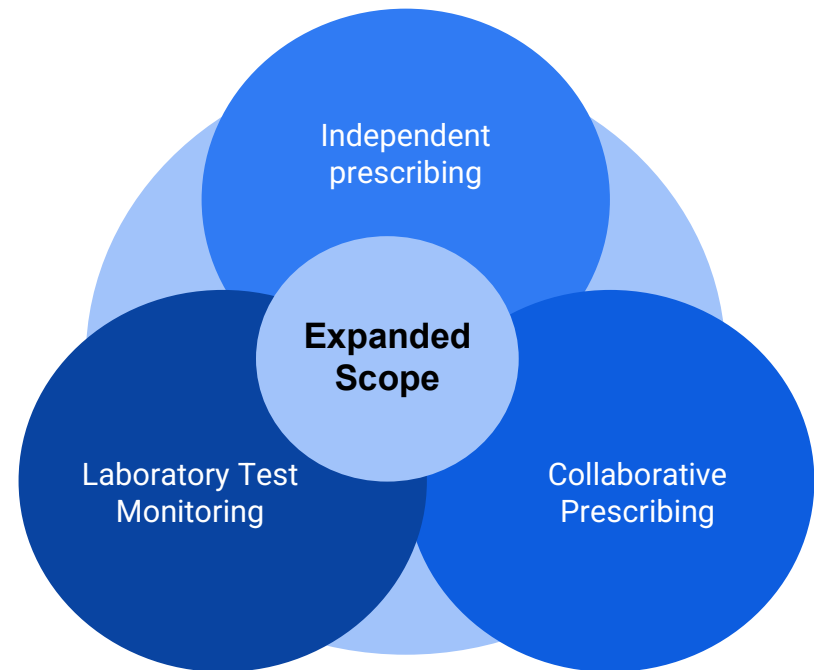
- Collaborative or independent prescribing will maximize the benefit pharmacists provide during patient care.

Technicians Utilizing Expanded Scope

- Registered pharmacy technicians practicing to full scope performing:
 - Technical preparation of medication
 - Drug access, BPMH, and more

Pharmacist Scope of Practice in NL

- Most narrow scope of practice within Atlantic Canada ¹⁹
- Well behind Alberta, the UK and others
- Expanded scope = increased benefit for patient care



PHARMACISTS' SCOPE OF PRACTICE IN CANADA

 Implemented in jurisdiction
  Pending legislation, regulation or policy for implementation
  Not implemented

		BC	AB	SK	MB	ON	QC	NB	NS	PEI	NL	YT	NWT	NU	
Prescriptive Authority (Schedule 1 Drugs) ¹	Independently, for any Schedule 1 drug	X	✓ ⁵	X	X	X	X	X	X	X	X	X	X	X	
	In a collaborative practice setting/agreement	X	✓ ⁵	✓ ⁵	✓ ⁵	X	X	✓	✓	X	X	X	X	X	
	Initiate ²	For minor ailments/conditions	X	✓	✓	✓ ⁵	P	✓	✓	✓	✓ ⁵	✓	X	X	X
		For smoking/tobacco cessation	X	✓	✓	✓ ⁵	✓	✓	✓	✓	✓ ⁵	✓	X	X	X
		In an emergency	✓ ⁷	✓	✓ ⁷	✓ ⁸	✓	✓	✓	✓	✓ ⁵	✓	X	X	X
Adapt ³ /Manage	Independently, for any Schedule 1 drug ⁴	X	✓ ⁵	X	X	X	X	X	X	X	X	X	X	X	
	Independently, in a collaborative practice ⁴	X	✓ ⁵	✓ ⁵	✓ ⁵	X	X	✓	✓	X	X	X	X	X	
	Make therapeutic substitution	✓	✓	✓ ⁹	X	X	✓ ¹⁰	✓	✓	✓	✓	✓	X	X	
	Change drug dosage, formulation, regimen, etc.	✓	✓	✓ ⁹	✓	✓	✓	✓	✓	✓	✓	✓	X	X	
	Renew/extend prescription for continuity of care	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	
Injection Authority (SC or IM) ^{1,5}	Any drug or vaccine	P	✓	✓	✓	X ¹¹	✓	✓	✓	✓	✓	✓	X	X	
	Vaccines ⁶	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	X	
	Influenza vaccine	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	X	
Labs	Order and interpret lab tests	X	✓	P ¹²	✓ ¹³	X	✓	P	P ¹²	✓ ¹⁴	X	X	X	X	
Techs	Regulated pharmacy technicians	✓	✓	✓	✓ ¹⁵	✓	X	✓	✓	✓	✓	X	X	X	

- Scope of activities, regulations, training requirements and/or limitations differ between jurisdictions. Please refer to the pharmacy regulatory authorities for details.
- Initiate new prescription drug therapy, not including drugs covered under the *Controlled Drugs and Substances Act*.
- Alter another prescriber's original/existing/current prescription for drug therapy.
- Pharmacists independently manage Schedule 1 drug therapy under their own authority, unrestricted by existing/initial prescription(s), drug type, condition, etc.
- Applies only to pharmacists with additional training, certification and/or authorisation through their regulatory authority.
- Authority to inject may not be inclusive of all vaccines in this category. Please refer to the jurisdictional regulations.
- Applies only to existing prescriptions, i.e., to provide continuity of care.
- Pursuant to a Ministerial Order during a public health emergency.
- Applies only to pharmacists working under collaborative practice agreements.
- Only in the case of a drug shortage.
- For education/demonstration purposes only.
- Pending health system regulations for pharmacist requisitions to labs.
- Authority is limited to ordering lab tests.
- Authority limited to ordering blood tests. No authority to interpret tests.
- Pharmacy technician registration available through the regulatory authority (no official licensing).

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Pharmacy Technician Scope of Practice

- Recent regulation and licensure of pharmacy technicians
- New expanded scope not being utilized in NL²⁰
 - Work independently, supervise each other's work
 - Administrative support of patient care activities
 - Management of investigational drug use
 - Drug access activities (e.g. special authorization paperwork)
 - Collection of Best Possible Medication History (BPMH) as part of medication reconciliation
- Pharmacists often still performing these technical tasks

Pharmacy Technician Scope of Practice

- Collection of BPMH (Best Possible Medication History)
 - Performed by technicians in 87% national emergency departments ²¹
 - Only performed at 2 hospitals within NL
 - Equal quality as those completed by pharmacists ^{22,23,24}
- Many areas of expanded scope not started yet in NL

Everyone Working to Full Scope

Technicians

Technicians working to full scope take over technical and administrative tasks from pharmacists, freeing them up for team-based care



Pharmacists

Pharmacists working to full scope provide direct team-based care instead of performing technical tasks in the dispensary



Improved Health Care Delivery

With both technicians and pharmacists working to full scope, more pharmacists will work on teams, which improves medication use, reduces hospital readmissions, and reduces health care costs

Issue

Lack of Digital Technologies

- Digital technologies that have the potential to prevent errors and improve efficiency are under-utilized in hospitals and hospital pharmacies in Newfoundland and Labrador

Recommendation

The quality of patient care can be improved by updating pharmacy systems and technologies

- This will prevent errors and medication-related harm and improve efficiency, freeing up pharmacist and pharmacy technician time to practice to full scope.

Digital Technology

The following pharmacy/hospital technologies are significantly associated with reductions in medication errors, time savings, and/or cost-savings:

- Barcode scanning
- Automated Dispensing Cabinets
- **Computerized or electronic medication administration records (CMAR/EMAR)**
- Computerized provider order entry (CPOE)
- **Prescription scanning**
- **Camera verification of IV medication preparation**
- Gravimetric verification of IV medication preparation

Digital Technology

- **Computerized or electronic medication administration records (CMAR/EMAR)**
 - CMAR/EMAR generated by pharmacy staff in 70% Canadian Hospitals ²⁵
 - NL among 30% of hospitals who still manually prepare some or all MARs on paper ²⁵
 - CMAR generated by pharmacy staff significantly reduces medication errors compared to hand transcription to a paper MAR ²⁶
 - Med occurrences per admission reduced 40% from 0.1084 occurrences per admission to 0.0658 ($p < 0.01$) ²⁷

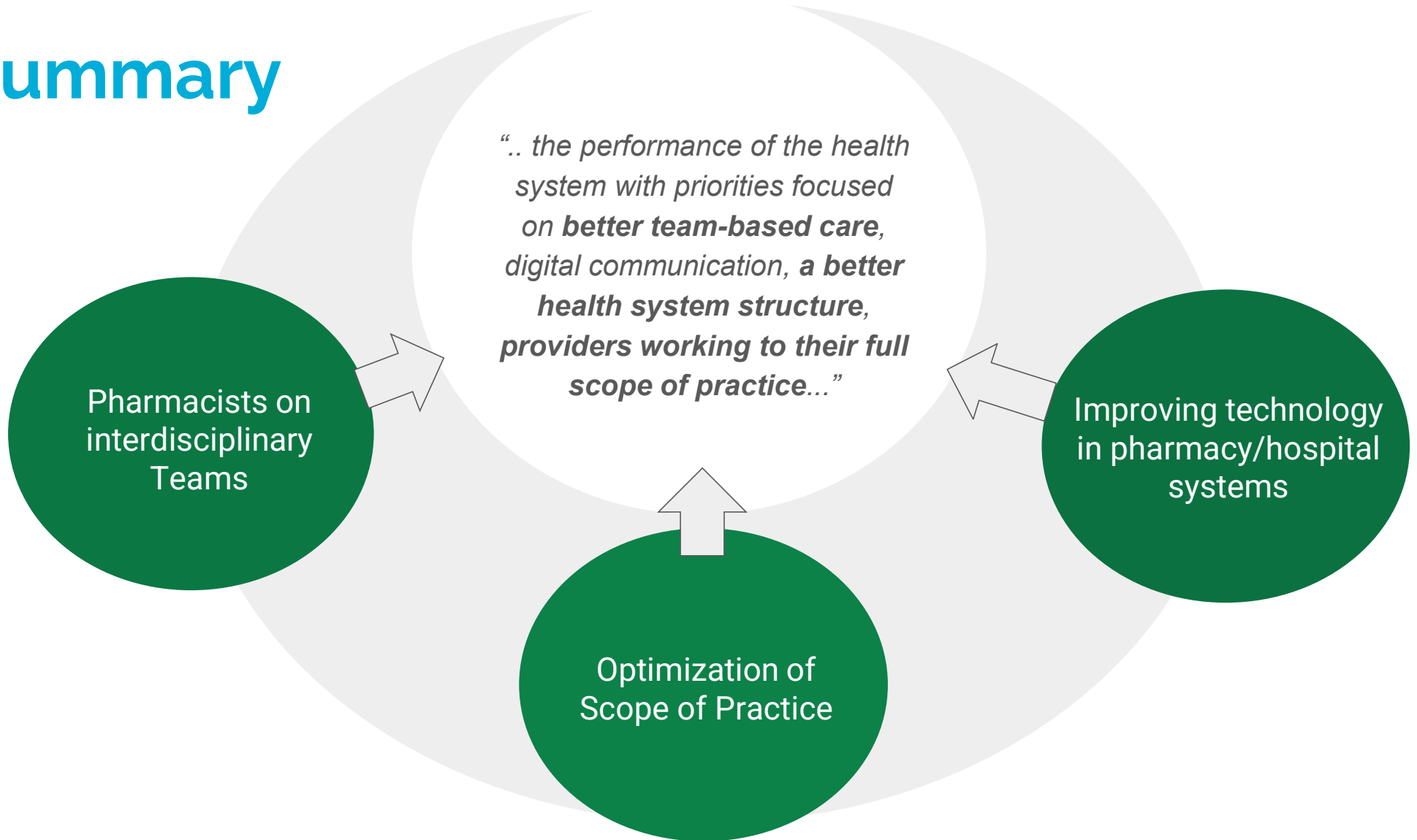
Digital Technology

- **Prescription scanning** ^{25, 28}
 - Nursing unit staff scan prescriptions directly to pharmacy computers
 - Reduces wait times for medications
 - Frees up pharmacy staff for full-scope activities
 - Reduces errors associated with reading carbon copies
 - Allows for multi-site work

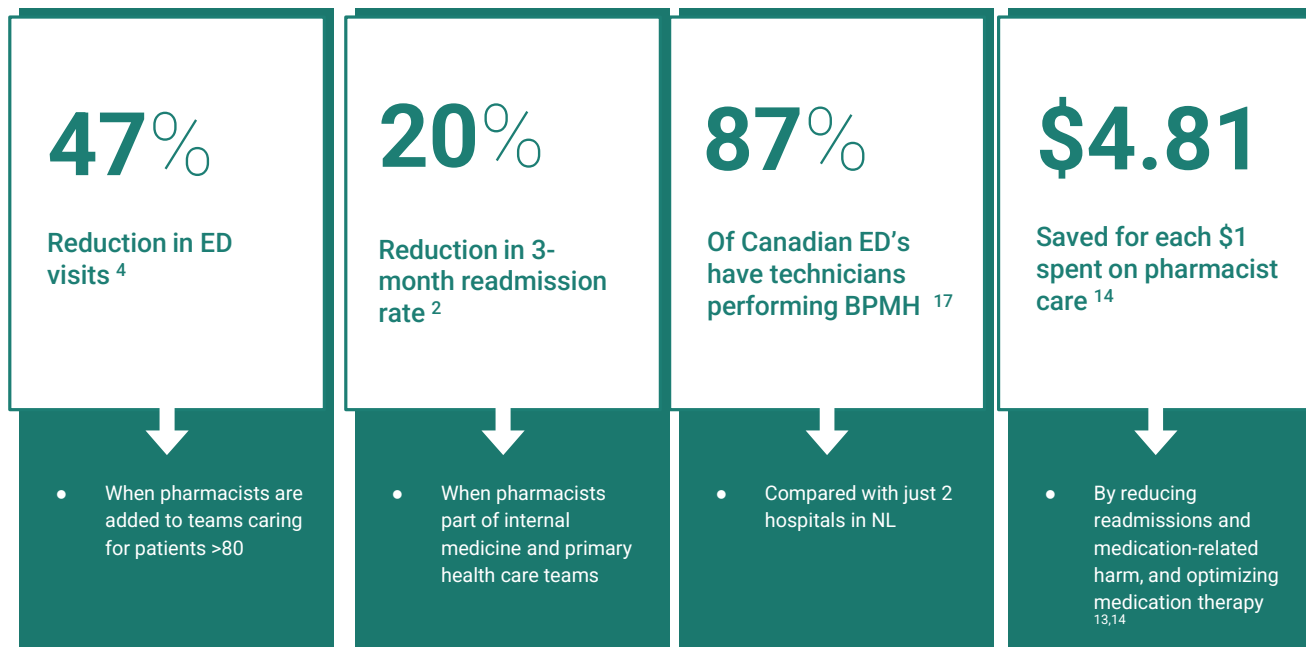
Digital Technology

- **Camera checking/verification systems**
 - Allow for pharmacists to remotely supervise technician preparation of medication
 - Chemotherapy preparation in sterile negative pressure room
 - Utility in remote locations
 - Technology helps pharmacy staff find significantly more errors than with manual check alone ^{29,30}

Summary



Key numbers



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THANK YOU

We sincerely appreciate the vital work the Task Force is doing to improve our province's health system. We welcome your questions now or at any point as the Health Accord takes shape.

