




The Evidence For A Full Scope of Pharmacy Practice

Ross T. Tsuyuki, BSc(Pharm), PharmD, MSc, FCHSP, FACC, FCAHS
 Professor and Chair, Department of Pharmacology
 Professor of Medicine (Cardiology) and Director, EPICORE Centre
 Faculty of Medicine and Dentistry


In support of improving patient care, this activity has been planned and implemented by Idaho State Board of Pharmacy and Idaho State University. Idaho State University is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.

NABP District Meeting, Boise, Idaho
 October 7, 2019.

Key Message

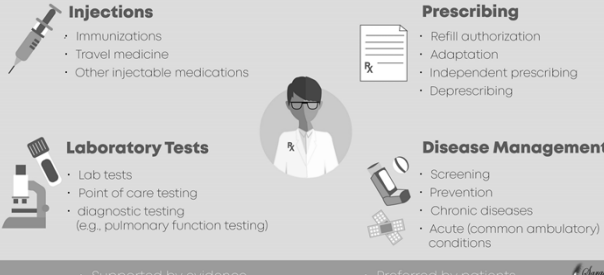
- All of our patients and populations need, want, and deserve access to their pharmacist's *full scope* of clinical services
 - Evidence-based
 - Cost-saving
 - Preferred by patients



Conflict of Interest Disclosure

The planners and presenters of this presentation have no relevant financial relationships with a commercial interest pertaining to the content of this presentation.



Full Scope of Pharmacy Practice



- Injections**
 - Immunizations
 - Travel medicine
 - Other injectable medications
- Laboratory Tests**
 - Lab tests
 - Point of care testing
 - diagnostic testing (e.g. pulmonary function testing)
- Prescribing**
 - Refill authorization
 - Adaptation
 - Independent prescribing
 - Deprescribing
- Disease Management**
 - Screening
 - Prevention
 - Chronic diseases
 - Acute (common ambulatory) conditions


• Supported by evidence • Preferred by patients

Tsuyuki RT, Houle SKD, Okada H. Can Pharm J 2018;151: 286-287

Objectives

- Outline the components of a full scope of pharmacy practice
- Describe the evidence for a full scope of pharmacy practice
- Discuss solutions for moving towards a full scope of pharmacy practice



Outline

- Evidence for a full scope of pharmacy practice:
 - Diabetes
 - Hypertension
 - Cardiovascular Risk
 - Urinary Tract Infections

Pharmacist Care in Diabetes

- Several systematic reviews have demonstrated the beneficial effect of pharmacist care in diabetes

Figure 2. Observed effect size on hemoglobin A_{1c} (A1C) values by country and pharmacist prescriptive authority.

*Wubben DP and Vivian EM. *Pharmacother* 2008;28(4):421-436.
 Evans CD et al. *Ann Pharmacother* 2011;45:615-620.
 Collins C, et al. *Diab Res Clin Pract* 2011;95:145-152.
 Santschi V, et al. *Diab Care* 2012;35:2706-2717

R_xING Conclusions

- First completed study of independent prescribing by pharmacists
- These findings take the evidence for pharmacist care in diabetes one step further:
 - R_xING showed that pharmacists can systematically identify patients with poor glycemic control and educate/support them to achieve better outcomes

Al Hamamah YN et al. *BMJ Open* 2013; 3:e003154

Pharmacist Prescribing in Type 2 Diabetes: R_xING

- Background:** glycemic control in patients with type 2 diabetes is very poor (about 50% controlled)
- Objective:** To determine the effect of a community pharmacist prescribing intervention on glycemic control in patients with poorly controlled type 2 diabetes
- Methods:**
 - Design: before-after design conducted in 12 community pharmacies in Alberta
 - Patients: 100 patients with poorly controlled type 2 diabetes, A1C of 7.5-11.0%
 - Intervention: prescribing by pharmacist (including oral medications and insulin glargine), including titration and follow-up at for 6 months

Al Hamamah YN et al. *BMJ Open* 2013; 3:e003154

Evidence For Pharmacist Care in Hypertension

- 39 randomized trials
- 14,224 patients
- Effect on blood pressure:
 - 7.6 (95% CI -9.0 to -6.3) / -3.9 (95% CI -5.0 to -2.8) mmHg
- Greater effects if pharmacist-led and monthly follow-up

Santschi V, et al. *J Am Heart Assoc* 2014; 3:e003718.
 Santschi V, et al. *Can Pharm J* 2015; 148(1): 13-16.

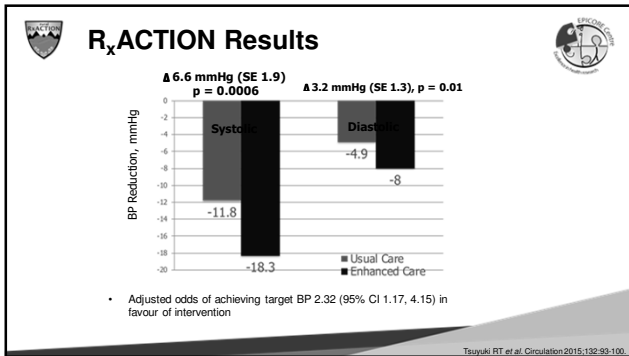
R_xING Results

Al Hamamah YN et al. *BMJ Open* 2013; 3:e003154

Pharmacist Prescribing in Hypertension: R_xACTION

- Background:** Blood pressure control in the community is poor (30-90% uncontrolled)
- Objective:** To evaluate the effect of pharmacist prescribing on systolic BP reduction in patients with poorly controlled hypertension
- Methods:**
 - Randomized trial conducted in 23 pharmacies in Alberta
 - Patients: 248 patients with BP >140/90 or >130/80 mmHg recruited by the pharmacist
 - Randomized to:
 - Intervention: pharmacist assessment of BP, CV risk, patient education, prescribing, lab monitoring, monthly follow-up according to the Hypertension Canada guidelines
 - Control: usual pharm and physician care (written educational materials, BP wallet card and physician referral)

Touyaki RT et al. *Circulation* 2015;132:90-100.



Pharmacist Prescribing and Care in Cardiovascular Risk Reduction: R_xEACH

- Background:** Many patients at high risk for cardiovascular disease are still not optimally managed
- Objective:** To evaluate the effect of a community pharmacy-based prescribing intervention in patients at high cardiovascular risk on reduction in risk for major cardiovascular events
- Methods:**
 - Patients: 723 at high risk for cardiovascular events (those with diabetes, chronic kidney disease, established vascular disease, high Framingham risk) and at least one uncontrolled risk factor
 - Randomized to:
 - Intervention: Cardiovascular risk assessment, patient education, prescribing, lab monitoring, monthly follow-up for 3 months (according to Canadian guidelines)
 - Control: Usual pharmacist and physician care

Tsujiaki RT, Al Hamamneh YN, Jones CA, Hemmelgarn BF. J Am Coll Cardiol 2016; 67(24): 2846-54.

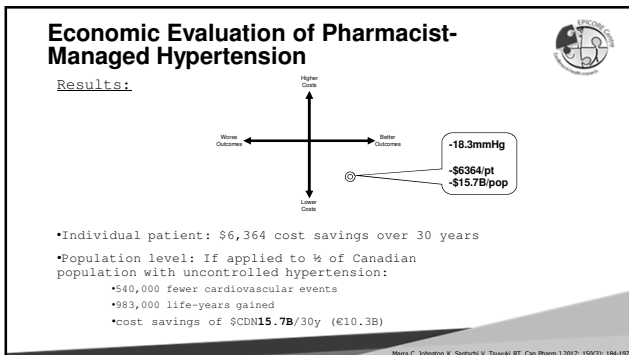
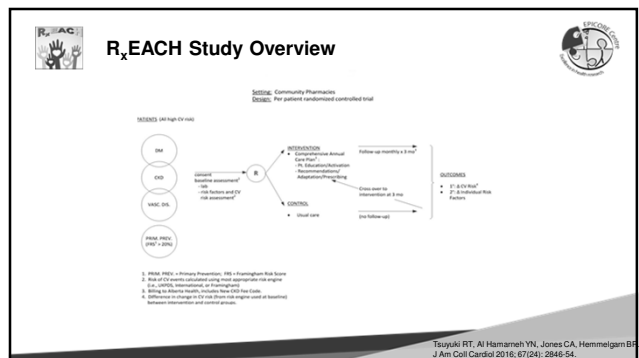
Economic Evaluation of Pharmacist-Managed Hypertension

- Objective:** To evaluate the cost-effectiveness of pharmacist prescribing in hypertension
- Methods:**
 - Used R_xACTION results (-18.3 mmHg systolic blood pressure reduction)

Costs: Pharmacist training Pharmacist payments Drug costs	+	Benefits (\$): Reduced strokes Reduced myocardial infarctions Reduced kidney failure	= ?
---	---	--	-----

- By individual patient
- At a population level

Mora C, Johnston K, Sartorius V, Tsujiaki RT. Can Pharm J 2017; 155(17): 184-197.



R_xEACH Intervention

- A standard Medication Therapy Management consultation:
 - Patient assessment:** blood pressure, waist circumference, weight and height measurements
 - Lab assessment:** A1C, lipid profile and kidney function and status
 - Individualized CV risk assessment:** risk calculation and education about this risk
 - Treatment recommendations, prescription adaptation, and prescribing** as appropriate to meet treatment targets
 - Regular follow-up:** every 4 weeks for 3 months

Tsujiaki RT, Al Hamamneh YN, Jones CA, Hemmelgarn BF. J Am Coll Cardiol 2016; 67(24): 2846-54.

R_xEACH Control Group

- Usual pharmacist and physician care with no specific interventions for 3 months
- At the end of the 3 months of the control period, all patients crossed over to receive "intervention" for 3 months

Tsuyuki RT, Al Hamameh YN, Jones CA, Hemmelgarn BF
J Am Coll Cardiol 2016; 67(24): 2846-54.

R_xEACH Secondary Outcomes

Tsuyuki RT, Al Hamameh YN, Jones CA, Hemmelgarn BF
J Am Coll Cardiol 2016; 67(24): 2846-54.

R_xEACH Demographics

- Age: 62y (SD12)
- Male: 58%
- Study Eligibility:
 - 79% uncontrolled HbA1c
 - 72% uncontrolled BP
 - 58% uncontrolled LDL
 - 27% current smokers

Tsuyuki RT, Al Hamameh YN, Jones CA, Hemmelgarn BF
J Am Coll Cardiol 2016; 67(24): 2846-54.

R_xEACH Tobacco Cessation

Tsuyuki RT, Al Hamameh YN, Jones CA, Hemmelgarn BF
J Am Coll Cardiol 2016; 67(24): 2846-54.

R_xEACH Primary Outcome

Tsuyuki RT, Al Hamameh YN, Jones CA, Hemmelgarn BF
J Am Coll Cardiol 2016; 67(24): 2846-54.

R_xEACH Patient Perceptions

16 patients answered questions on their perception of the intervention and care they received from pharmacists.

3 Themes Identified:

1. Positive pharmacist interactions
2. Health care system responsiveness
3. Patient Reaction

Patient Thoughts:

1. Extremely respectful and appreciative of pharmacist's full scope of practice.
2. Respected that pharmacists and physicians are communicating.
3. Accessibility, good relationships and compassion are major contributors to satisfaction.

Pharmacists' full scope of practice is patient centered and could be of great public health benefit!

Al Hamameh YN, et al. Can Pharm J 2018;151:223-227.

R_xEACH Cost Effectiveness

- Based upon 15% of high risk patients cared for by their pharmacist
- 30 y time horizon

Al Hamarneh YN, et al. Can Pharm J 2019;152(4):257-266

R_xOUTMAP, Other Results

- Accessibility** – time from symptom onset to accessing care:
 - Pharmacist: 1.7 days
 - Physician: 2.8 days
- Guideline Concordance:**
 - 95% by pharmacists
 - 35% by physicians
- Antibiotic Stewardship:**
 - Pharmacists used: nitrofurantoin (88%), TMP-SMX (8%), fosfomycin (2%)
 - Physicians used: nitrofurantoin (55%), TMP-SMX (26%), fluoroquinolones (11%)
 - Shorter durations of therapy prescribed by pharmacists

Beahm NP, Smyth DJ, Tsuyuki RT. Can Pharm J 2018;151:306-314.

Pharmacist Prescribing and Care for Urinary Tract Infections: R_xOUTMAP

- Background:** Urinary tract infections are common
 - 8th most common reason for a physician visit
 - 5th most common reason for an emergency department visit
- Objective:** to evaluate the effectiveness, safety, and patient satisfaction with pharmacist assessment and management of patients with uncomplicated UTI
- Methods:**
 - Design: prospective registry
 - Patients: uncomplicated UTI
 - de novo or with physician prescription
 - Intervention: assessment and prescribing

Beahm NP, Smyth DJ, Tsuyuki RT. Can Pharm J 2018;151:305-314.

R_xOUTMAP Economic Evaluation

- Healthcare system costs:**
 - Pharmacist: \$72.49
 - Family physician: \$142.45
 - Emergency department: \$320.27
- Cost savings if 25% of Canadians with UTI received care from their pharmacist:** \$51M/5y

Sanyal C et al. BMC Health Serv Res 2019;19:499.

Outcomes of Urinary Tract Infection Management by Pharmacists: R_xOUTMAP Study

Study Population:	Pharmacist's Interventions:	Outcomes:
<p>Pharmacist-Initial Arm: (n=40)</p> <ul style="list-style-type: none"> Patients with UTI symptoms with no prescription present to pharmacist <p>Physician-Initial Arm: (n=40)</p> <ul style="list-style-type: none"> Patients come to pharmacists with prescription from another health care professional 	<ul style="list-style-type: none"> Assessment for UTI Symptoms Prescribed antibacterial therapy Provided education OR Referred to a physician where appropriate Assessed and modified prescription where appropriate 	<p>Pharmacist-Initial arm had a sustained clinical cure rate of 88.9%</p> <p>Patients' satisfaction very high:</p> <ul style="list-style-type: none"> quality of care received accessibility trust support pharmacists role

Beahm et al. Outcomes of Urinary Tract Infection Management by Pharmacists (RxOUTMAP): A study of pharmacist prescribing and care in patients with uncomplicated urinary tract infections in the community. Can Pharm J 2018; 151: 305-314. Sponsors: New Brunswick Pharmacists Association and the Canadian Foundation for Pharmacy.

Bottom Line

- Pharmacist prescribing and care improves patient outcomes compared to usual care:
 - This would lead to significant reductions in morbidity, mortality, and costs to society
 - Strongly supported by patients

Full Scope of Pharmacy Practice

Injections

- Immunizations
- Travel medicine
- Other injectable medications

Prescribing

- Refill authorization
- Adaptation
- Independent prescribing
- Deprescribing

Laboratory Tests

- Lab tests
- Point of care testing
- diagnostic testing (e.g., pulmonary function testing)

Disease Management

- Screening
- Prevention
- Chronic diseases
- Acute (common ambulatory) conditions

Supported by evidence Preferred by patients

Tsuyuki RT, Houle SKD, Obeid H. *Can Pharm J* 2018;151: 256-257

Prescribing By Pharmacists in Alberta – A brief history

1995: AB Gov't: Health Workforce Rebalancing
• Use of health professionals more effectively

1995-97: AB Gov't: "Role Statements for health professions"

2000: AB Gov't: Health Professions Act
• 29 health professions, one act
• Removal of exclusive scopes of practice

2004-05: ACP: Whitepapers on pharmacist prescribing

2004-06: ACP: Wide consultation on prescribing – focus on importance to public and health system

2006-07: AB Gov't: Regulations and Legislation for pharmacist prescribing

2007-08: ACP: Process for obtaining prescribing

2008: ACP: First pharmacist prescribers

AB Gov't: Alberta Health (Ministry of Health of Alberta)
ACP: Alberta College of Pharmacists (Regulatory Body)

• Eberhart G, personal communication 2017
• Yusef N, Eberhart G, Bungard T. *Am J Health-Sust Pharm* 2008; 65: 2126-27

A Full Scope of Pharmacy Practice: A Public Health Priority

- Don't all of our populations deserve a full scope of pharmacist services?
- Shouldn't pharmacists' scope of practice be driven by evidence, rather than outdated legislation and professional protectionism?
- What is our societal role?
- Do we have the collective courage to change that?

rtsuyuki@ualberta.ca
www.epicore.ualberta.ca
Twitter: @Ross_Tsuyuki

Alberta: Initial Access Prescribing

- Alberta pharmacists with at least 1 year of practice experience can apply for prescribing privileges
- Pharmacists with prescribing privileges can prescribe drugs for patients after conducting a complete patient assessment
 - can prescribe any drug in their area of competence except for narcotics and controlled drugs (e.g., benzodiazepines)
 - For example, my practice and expertise is in cardiology, so I do not prescribe for asthma or diabetes or other areas outside my expertise
 - Independent of physician

Alberta: Initial Access Prescribing

- If a pharmacist prescribes a drug for a patient, they become legally responsible for the outcomes of that prescribing decision
- Whenever a pharmacist prescribes, they are required to inform the patient's usual prescriber of their action to ensure continuity of care
- Pharmacists who prescribe must have a follow-up plan in place to monitor the outcome of the prescription
- If you choose to prescribe, you must take responsibility for those decisions