



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.**



Conflict of Interest Disclosrue



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

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

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

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



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

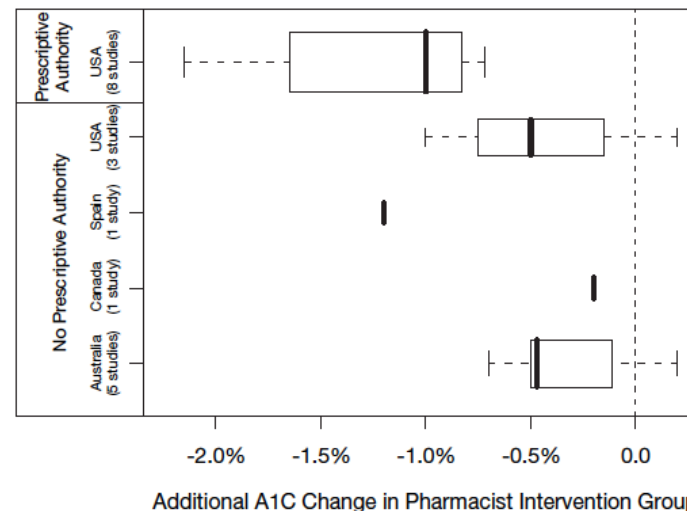


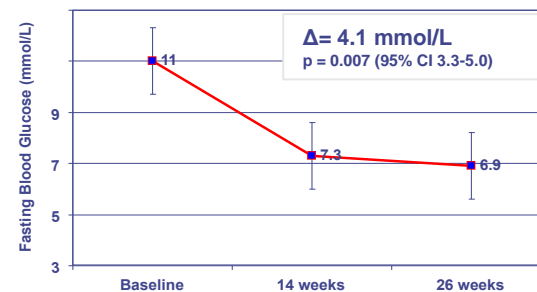
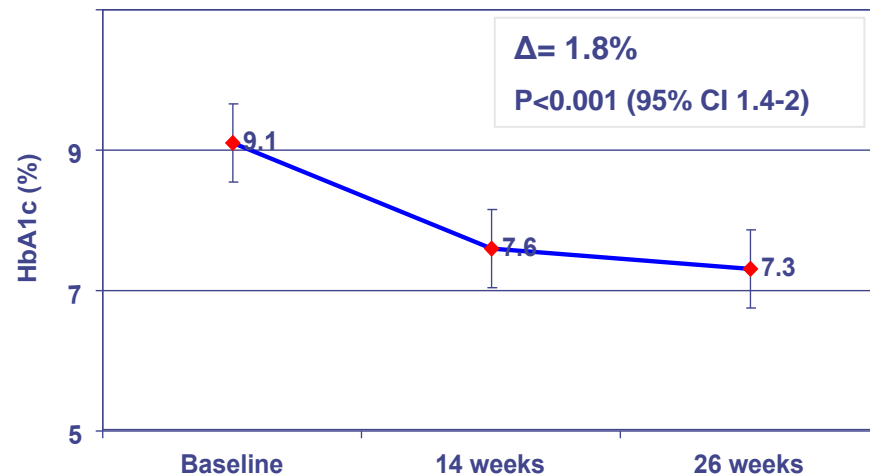
Figure 2. Observed effect size on hemoglobin A_{1c} (A1C) values by country and pharmacist prescriptive authority.

*Wubben DP and Vivian EM. *Pharmacother* 2008;28(4):421-436.
 Evans CD *et al.* *Ann Pharmacother* 2011;45:615-628.
 Collins C, *et al.* *Diab Res Clin Pract* 2011;92:145-152.
 Santschi V, *et al.* *Diab Care* 2012;35: 2706-2717

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

R_xING Results





R_xING Conclusions

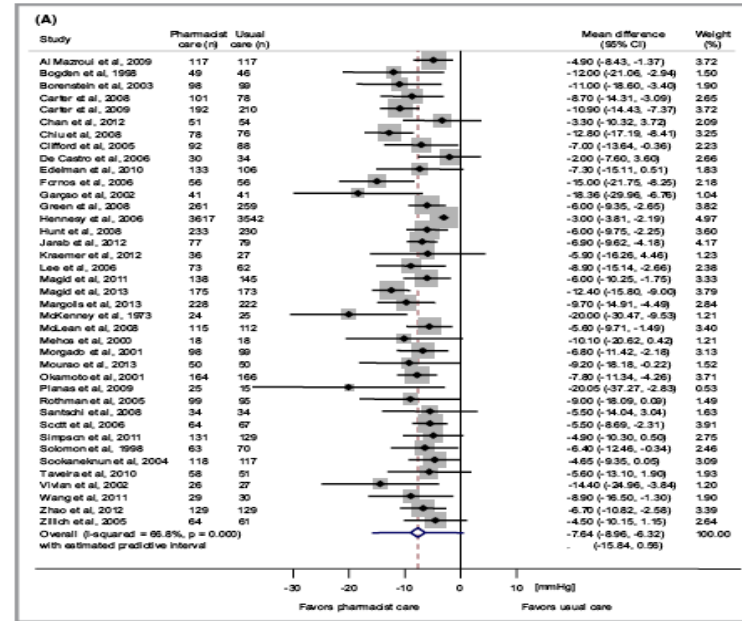


- First completed study of independent prescribing by pharmacists
- These findings take the evidence for pharmacist care in diabetes one step further:
 - R_xING showed that pharmacists can systematically identify patients with poor glycemic control and educate/support them to achieve better outcomes

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





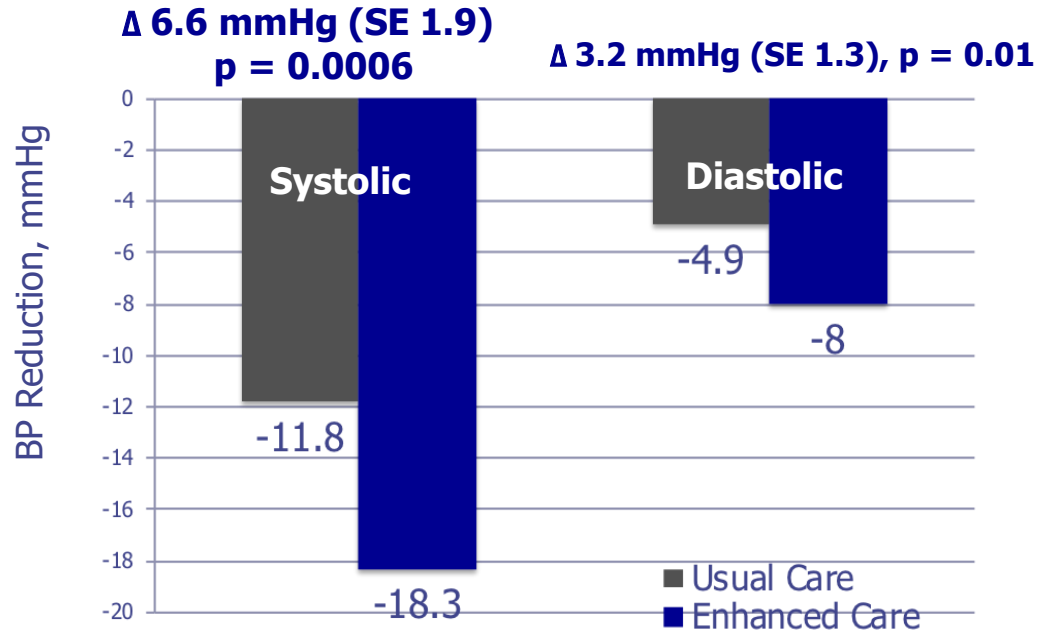
Pharmacist Prescribing in Hypertension: R_xACTION



- **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)



R_xACTION Results

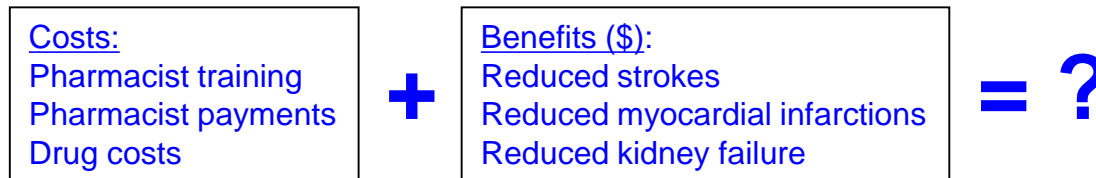


- Adjusted odds of achieving target BP 2.32 (95% CI 1.17, 4.15) in favour of intervention

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)

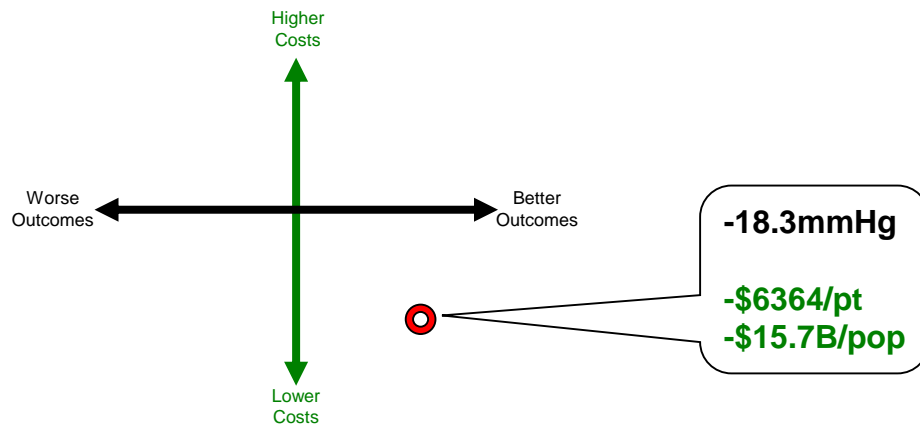


- By individual patient
- At a population level

Economic Evaluation of Pharmacist-Managed Hypertension



Results:



- Individual patient: \$6,364 cost savings over 30 years
- Population level: If applied to $\frac{1}{2}$ of Canadian population with uncontrolled hypertension:
 - 540,000 fewer cardiovascular events
 - 983,000 life-years gained
 - cost savings of \$CDN**15.7B**/30y (€10.3B)



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



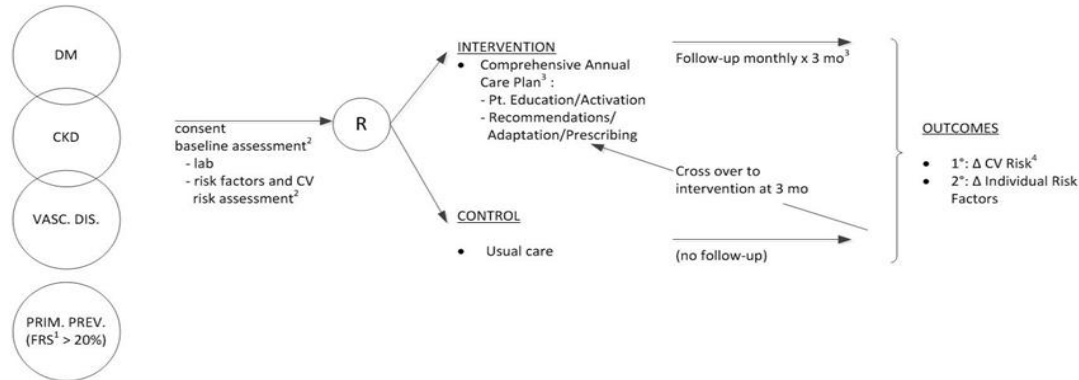
R_xEACH Study Overview



Setting: Community Pharmacies

Design: Per patient randomized controlled trial

PATIENTS (All high CV risk)



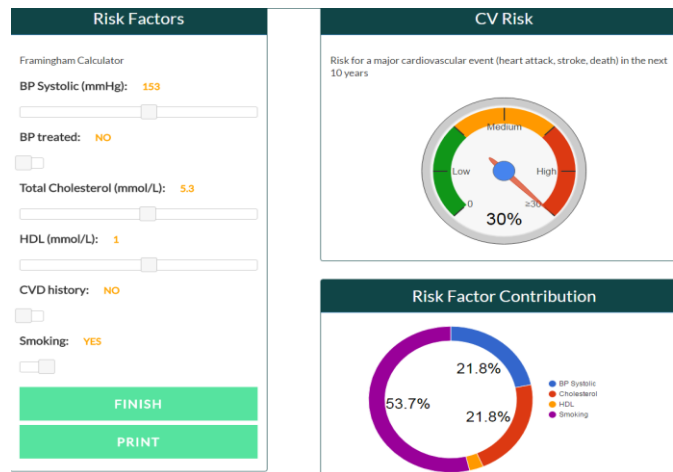
1. PRIM. PREV. = Primary Prevention; FRS = Framingham Risk Score
2. Risk of CV events calculated using most appropriate risk engine (i.e., UKPDS, International, or Framingham)
3. Billing to Alberta Health, includes New CKD Fee Code.
4. Difference in change in CV risk (from risk engine used at baseline) between intervention and control groups.



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





R_xEACH Control Group



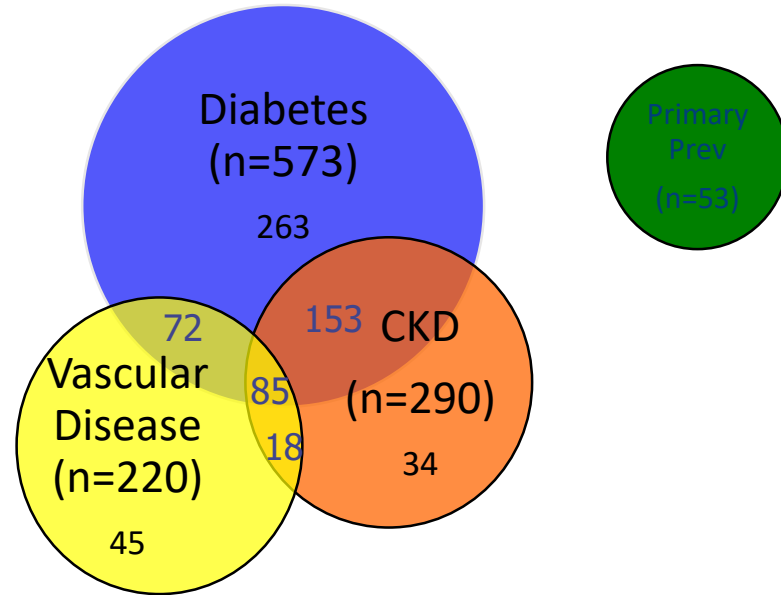
- Usual pharmacist and physician care with no specific interventions for 3 months
- At the end of the 3 months of the control period, all patients crossed over to receive “intervention” for 3 months



R_xEACH Demographics

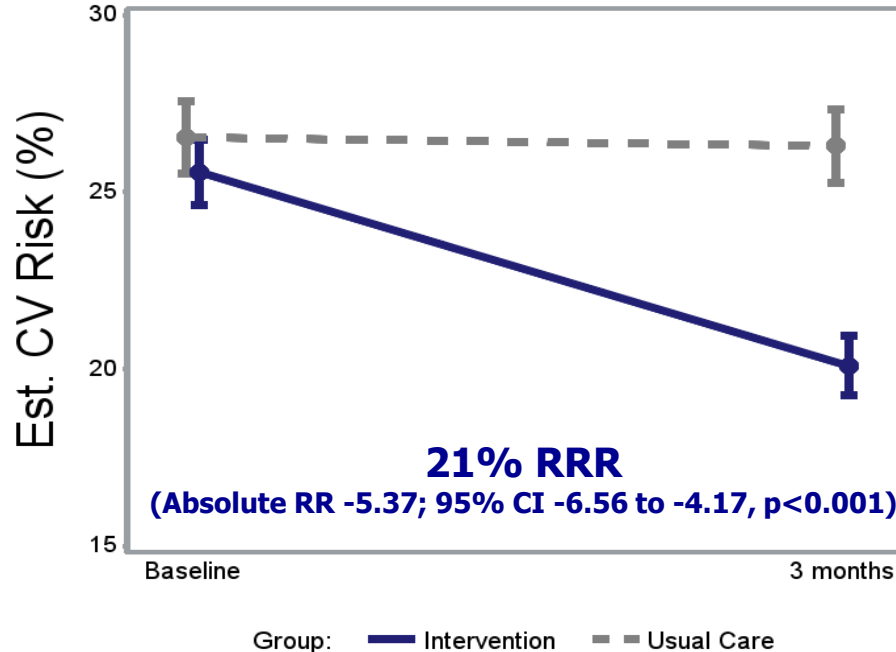


- Age: 62y (SD12)
- Male: 58%
- Study Eligibility:
 - 79% uncontrolled HbA1c
 - 72% uncontrolled BP
 - 58% uncontrolled LDL
 - 27% current smokers



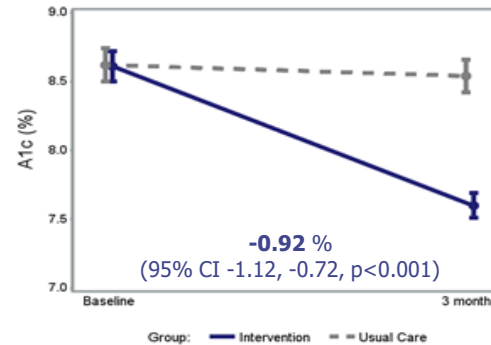
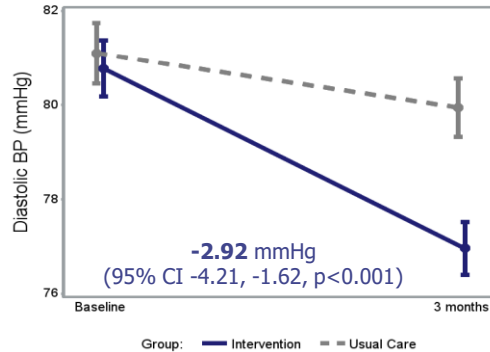
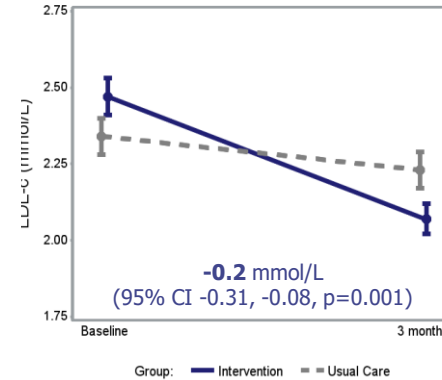
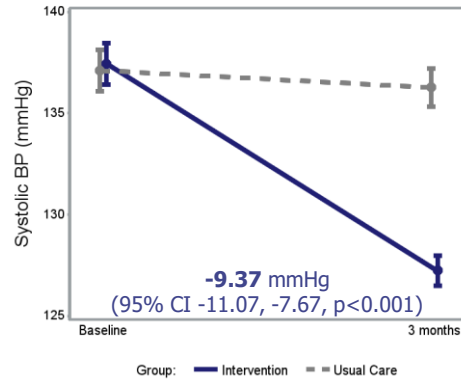


R_xEACH Primary Outcome



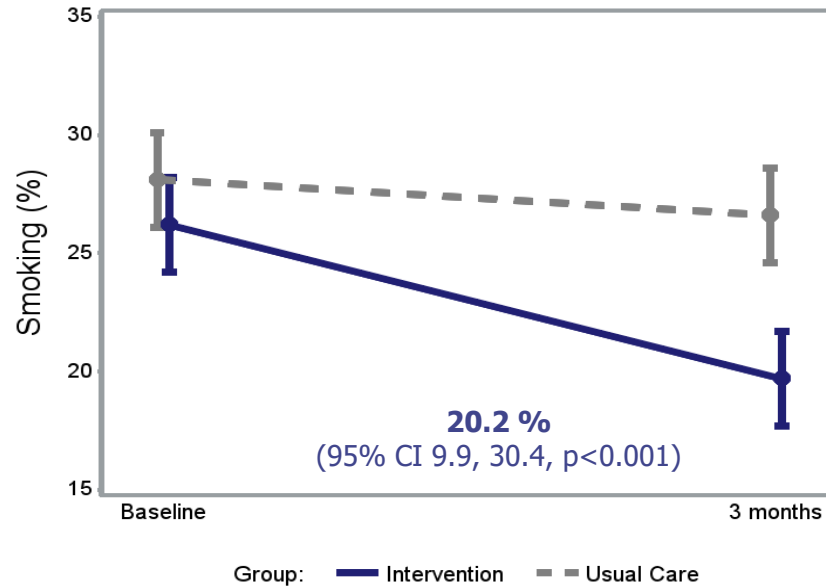


R_xEACH Secondary Outcomes





R_xEACH Tobacco Cessation





R_xEACH Patient Perceptions



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

3 Themes Identified:

1. Patient-pharmacist relationships.



2. Health care system characteristics.



3. Patient Reaction.



Patient Thoughts:

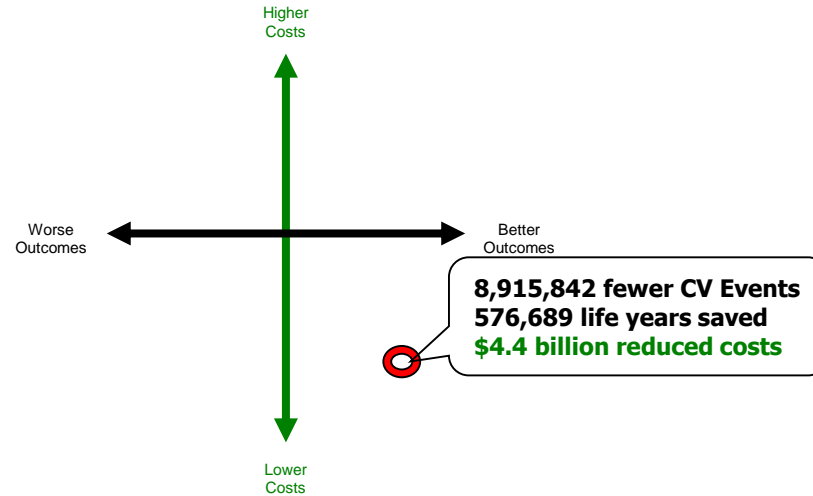
1. Extremely supportive and appreciative of pharmacists' full scope of practice.
2. Reassured that pharmacists and Physicians are communicating.
3. Accessibility, good relationships and compassion are major contributors to satisfaction.



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



R_xEACH Cost Effectiveness



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



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

Study Population:



Pharmacist-Initial Arm:

N=656

- Patients with UTI symptoms with no prescription present to pharmacist



Patients from 39 pharmacies in NB with uncomplicated urinary tract infection(UTI)

N=750



Physician-Initial Arm:

N=94

- Patients come to pharmacists with prescription from another health care professional

Pharmacist's Interventions:



Assessment for UTI Symptoms



Prescribed antibacterial therapy



Provided education

OR



Referred to a physician where appropriate



Assessed and modified prescription where appropriate

Outcomes:

Pharmacist-Initial arm had a sustained **clinical cure rate of 88.9%**

Patients' satisfaction very high:

- quality of care received
- accessibility
- trust
- support pharmacists role





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



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

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



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

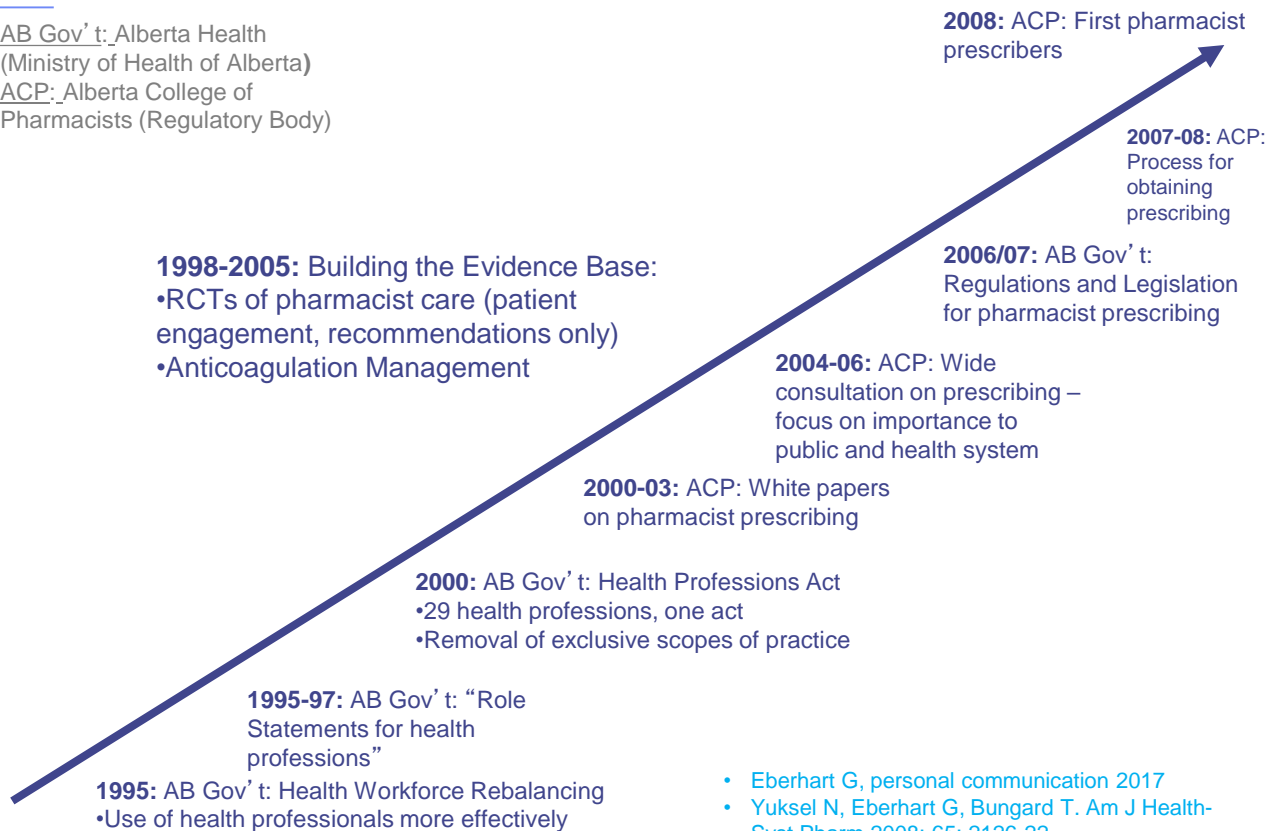
www.epicore.ualberta.ca

Twitter: @Ross_Tsuyuki



Prescribing By Pharmacists in Alberta – A brief history

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



- Eberhart G, personal communication 2017
- Yuksel N, Eberhart G, Bungard T. Am J Health-Syst Pharm 2008; 65: 2126-22.

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