



## Canadian Pharmacists Conference 2015

Innovation and Collaboration

# Point-of-care screening programs in community pharmacy practice:

An innovative approach to improving patient care

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*Jointly presented by the Canadian Pharmacists Association (CPhA) and the Ontario Pharmacists Association (OPA)*

# Disclosures

## Speaker's Bureau:

*Bayer, Merck, Abbvie, Pfizer, Almirall, Valeant, Leo, OPA*

## Consultants:

*Abbvie, La Roche-Posay, Galderma*



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# Practice site



High volume,  
large format  
store in GTA



Diverse,  
multiethnic patient  
population



200,000  
prescriptions  
filled annually



Cash/Gov/Third  
18/47/ 35%



Many local  
independent  
competitors



Large  
community  
hospital nearby



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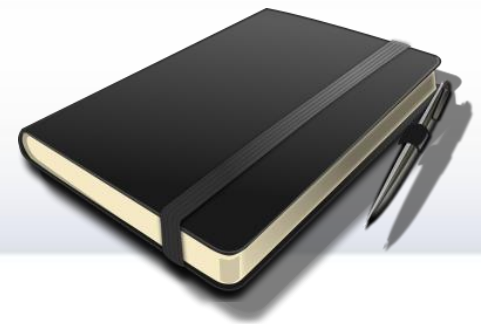


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# Objectives

1. Review the current **point-of-care technologies** available for use by **community pharmacists**.
2. Showcase recent evidence that highlights the **impact of pharmacist-directed point-of-care screening** in the management of different disease states.
3. Discuss strategies to **overcome barriers** when attempting to integrate point-of-care screening into a busy community pharmacy practice.
4. Identify opportunities to utilize point-of-care screening to **add value to other expanded scope** activities.



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# Point-of-care testing (POCT)



## What is point-of-care testing?

Testing performed on site, at the time of patient consultation

### New opportunities with

- Enhancing clinical pharmacy services
- Facilitating expanded scope activities
- Improving patient health



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# POCT: Bridging healthcare access gaps

Expanded Scope	Province/Territory													
	BC	AB	SK	MB	ON	QC	NB	NS	PEI	NL	NWT	YT	NU	
Provide emergency prescription refills	✓	✓	✓	✓	✓	<sup>7,8</sup> P	✓	✓	✓	✓	✓	✗	✗	
Renew/extend prescriptions	✓	✓	✓	<sup>4</sup> ✓	✓	<sup>7</sup> P	✓	✓	✓	✓	✓	✗	✗	
Change drug dosage/formulation	✓	✓	✓	✓	✓	<sup>7,8</sup> P	✓	✓	✓	✓	✗	✗	✗	
Make therapeutic substitution	✓	✓	✓	✗	✗	<sup>7,8</sup> P	✓	✓	✓	<sup>12</sup> ✓	✗	✗	✗	
Prescribe for minor ailments/conditions	✗	<sup>1</sup> ✓	✓	✓	✗	<sup>7,8</sup> P	✓	✓	✓	✗	✗	✗	✗	
Initiate prescription drug therapy	✗	✓	<sup>2</sup> ✓	✓	<sup>5</sup> ✓	<sup>7,8</sup> P	<sup>10</sup> ✓	<sup>2</sup> ✓	<sup>2</sup> ✓	✗	✗	✗	✗	
Order and interpret lab tests	✗	✓	<sup>3</sup> P	✓	P	<sup>7</sup> P	P	P	P	<sup>11</sup> P	✗	✗	✗	
Administer a drug by injection	✓	✓	<sup>3</sup> P	✓	<sup>6</sup> ✓	<sup>7,9</sup> P	✓	✓	✓	✓	✗	✗	✗	
Regulated Pharmacy Technicians	✓	✓	<sup>3</sup> P	P	✓	✗	P	✓	✓	✓	✗	✗	✗	

✓

 Implemented in jurisdiction

P

 Pending legislation, regulation or policy for implementation

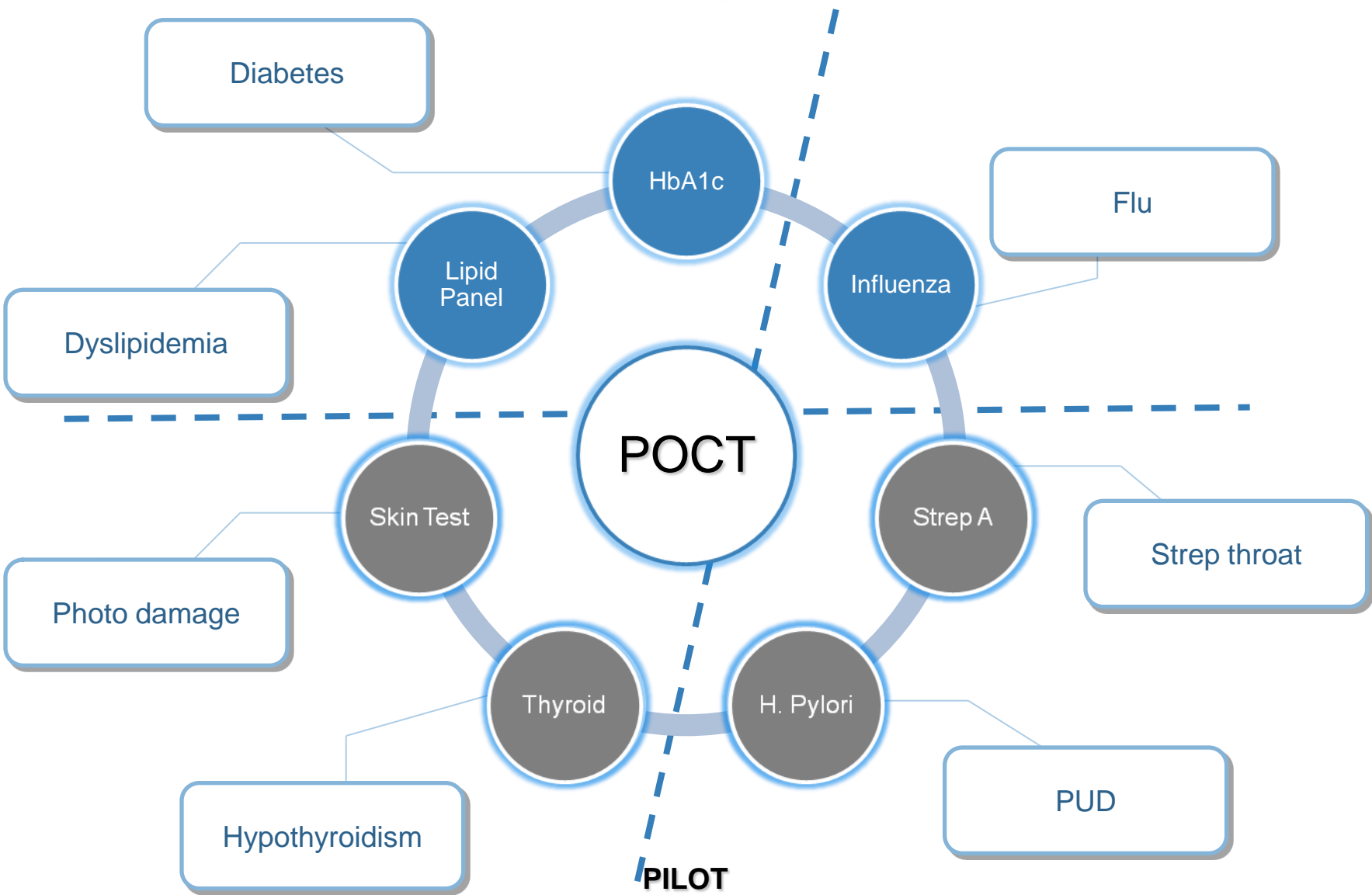
✗

 Not implemented



**CHRONIC  
CONDITIONS**

**STUDIED  
TESTS**



**PILOT  
TESTS**

**ACUTE  
CONDITIONS**



# HbA1c point-of-care test



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**2.4 MILLION** **DIABETES.**  
CANADIANS LIVING WITH

**20%** OF DIABETICS HAVE **NOT YET**  
**BEEN DIAGNOSED.**<sup>1</sup>

**50%** OF DIABETES IS  
**UNCONTROLLED.**<sup>1</sup>

**70%** OF DIABETICS HAVE **NOT HAD** AN  
**A1C IN THE PAST YEAR.**<sup>2</sup>



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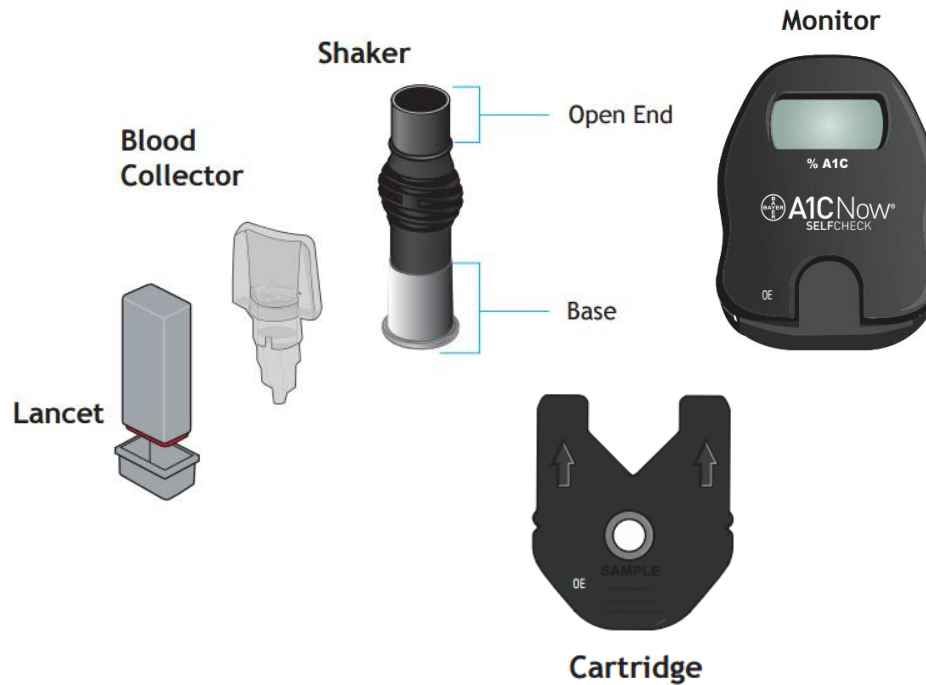


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1. Public Health Agency of Canada: Facts and Figures from a Public Health Perspective. Ottawa; 2001.
2. Saaddine, J. Ann Intern Med. 2002; 136:565-74

# HbA1c point-of-care test



5 minutes, 93.2% accurate



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# National A1C POCT study

## Community Pharmacy-Based A1C Screening - A Canadian Model for Diabetes Care

John Papastergiou, BScPhm; Chris Folkins, BScPhm, PhD; Wilson Li, BScPhm, CDE

**Population:** patients diagnosed with diabetes across Canada

**Assessment:** POC A1C test

**Intervention:** pharmacist recommendation

### **Outcome:**

- ✓ level of **A1C control** of diabetics
- ✓ number and type of **pharmacist interventions** in diabetes



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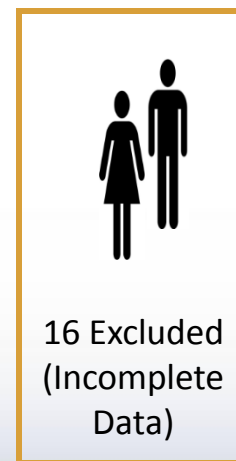
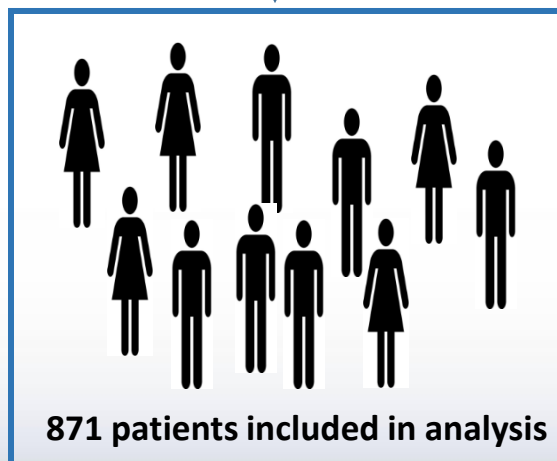
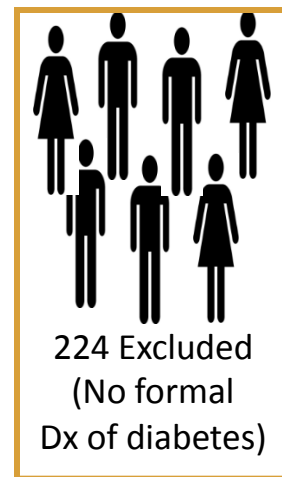
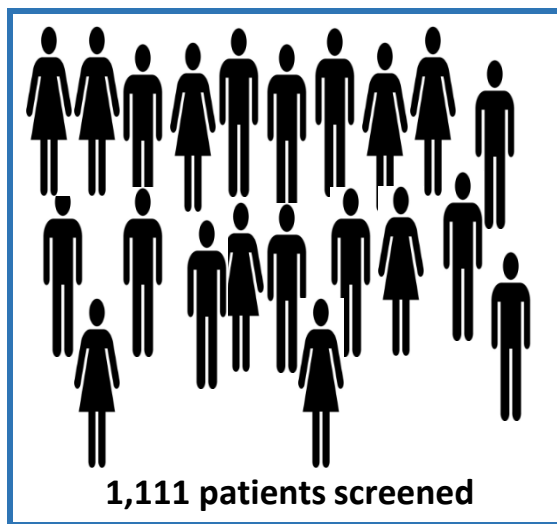
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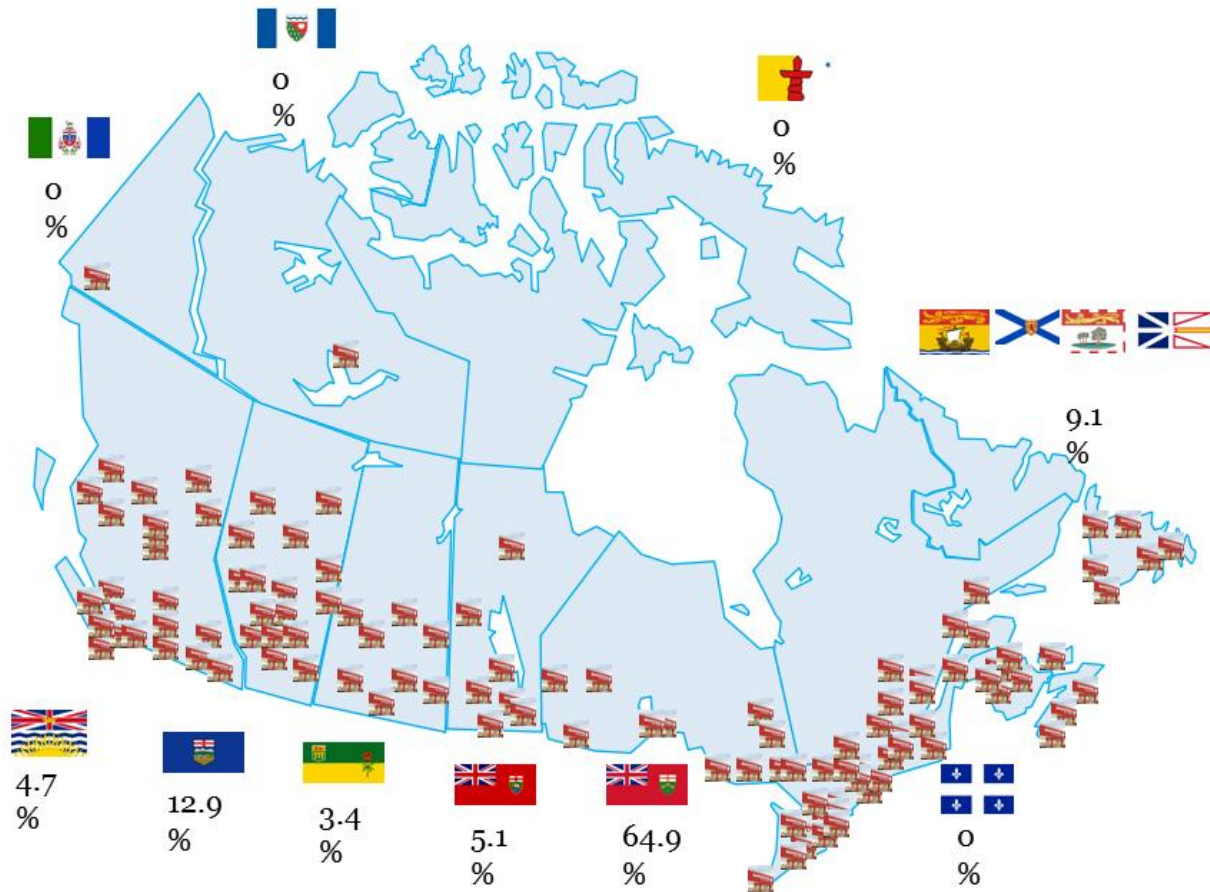
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# Geographic Distribution of Participants



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# Results

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**40.9% optimal glycemic control  
(A1c  $\leq$  7.0%)**



# Results

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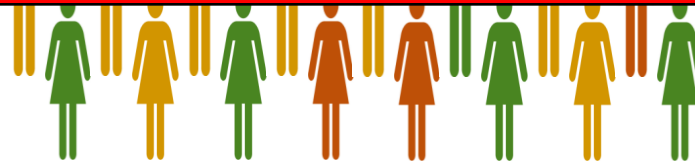
**43.3% hyperglycemic  
(A1c >7 and <9%)**

# Results

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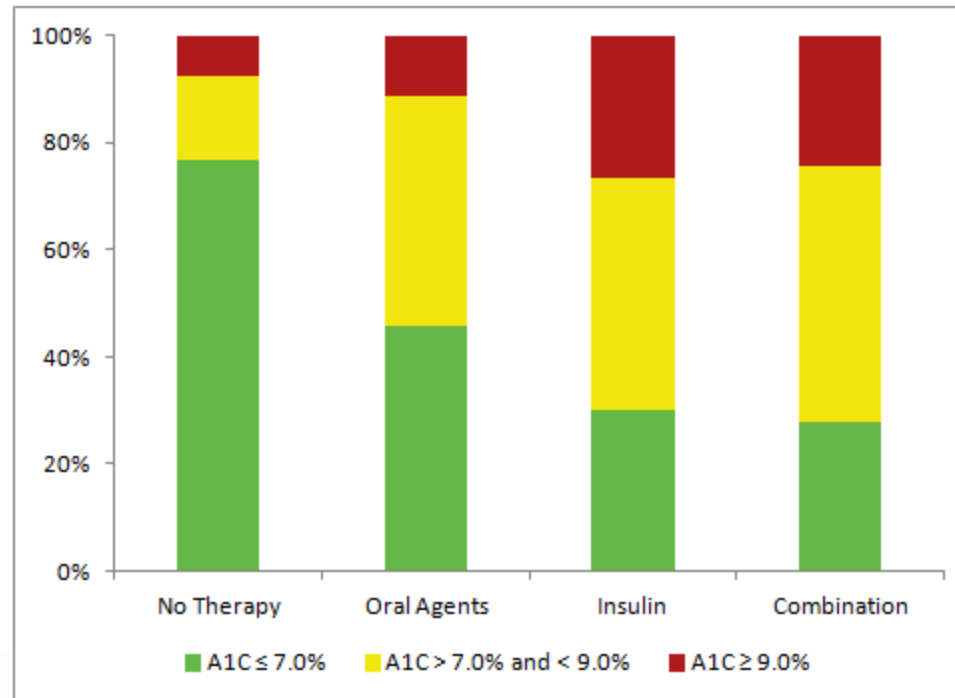


**Over half (59.1%) of patients  
screened did not meet  
glycemic targets**



**15.8% marked hyperglycemia  
(A1c  $\geq 9.0\%$ )**

# Results - Glycemic Control by Regimen



Trend towards worse glycemic control with more intense antihyperglycemic regimen



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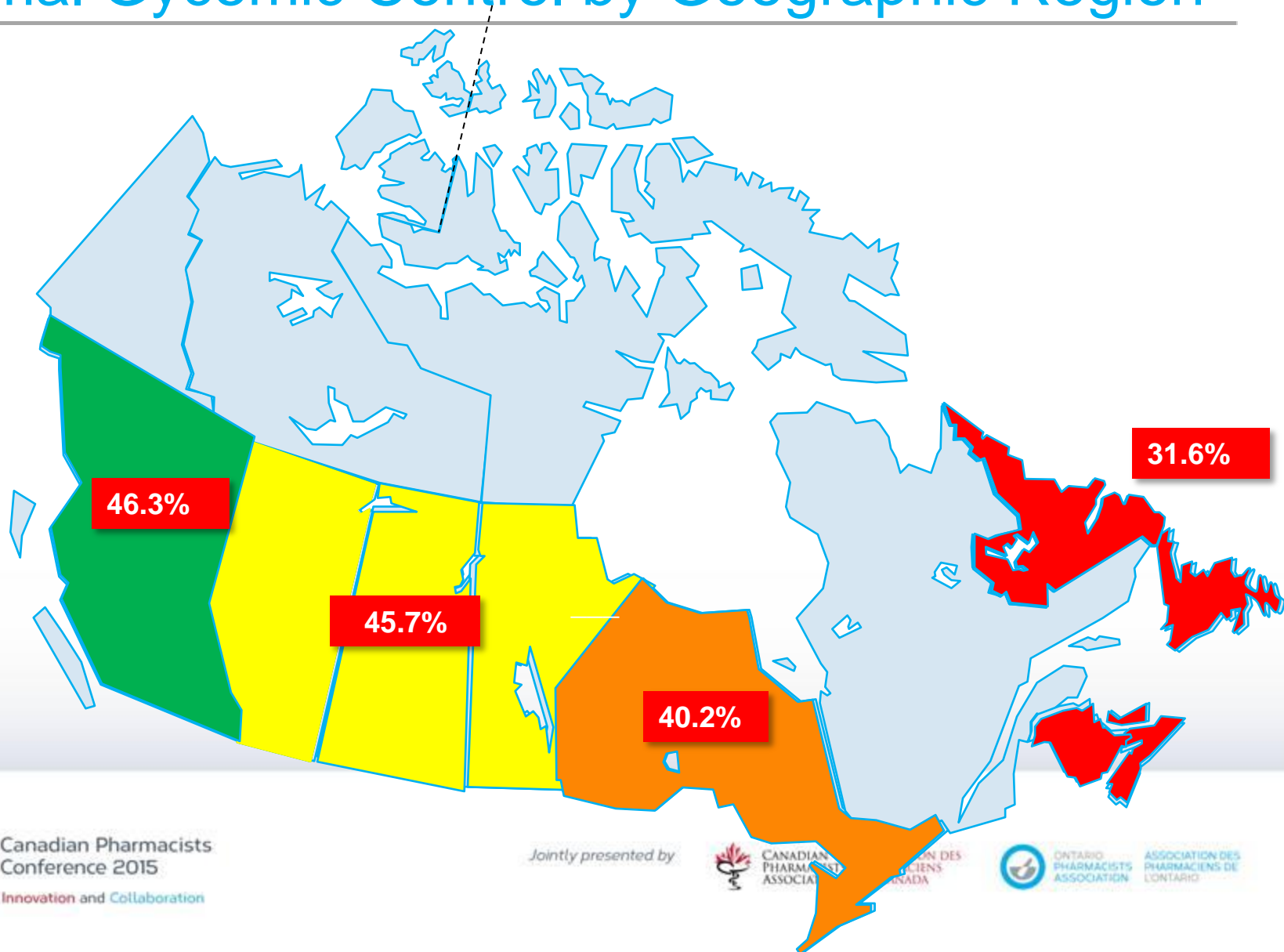
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# Optimal Glycemic Control by Geographic Region



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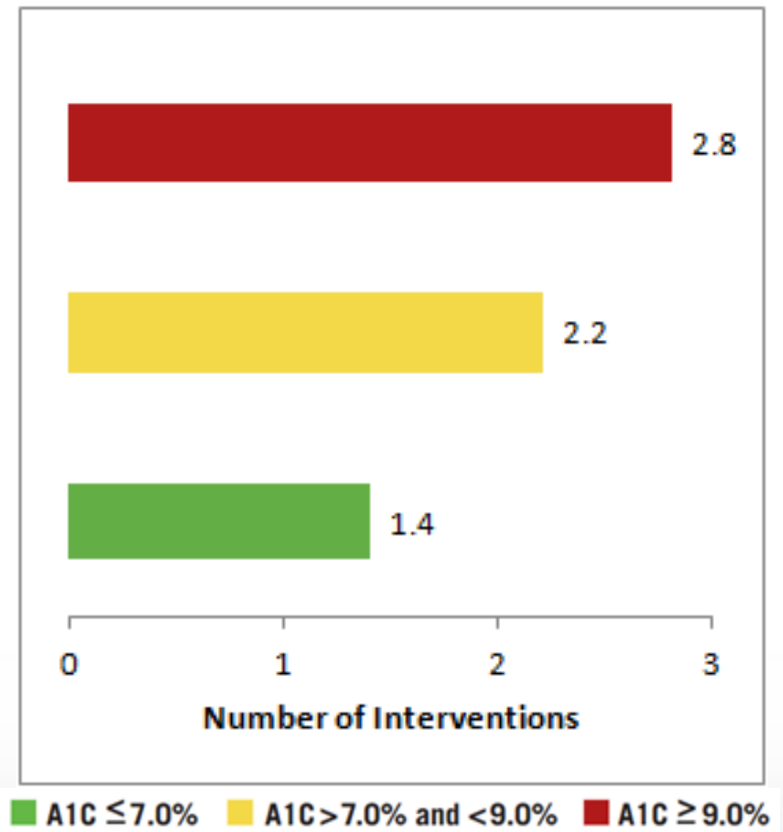
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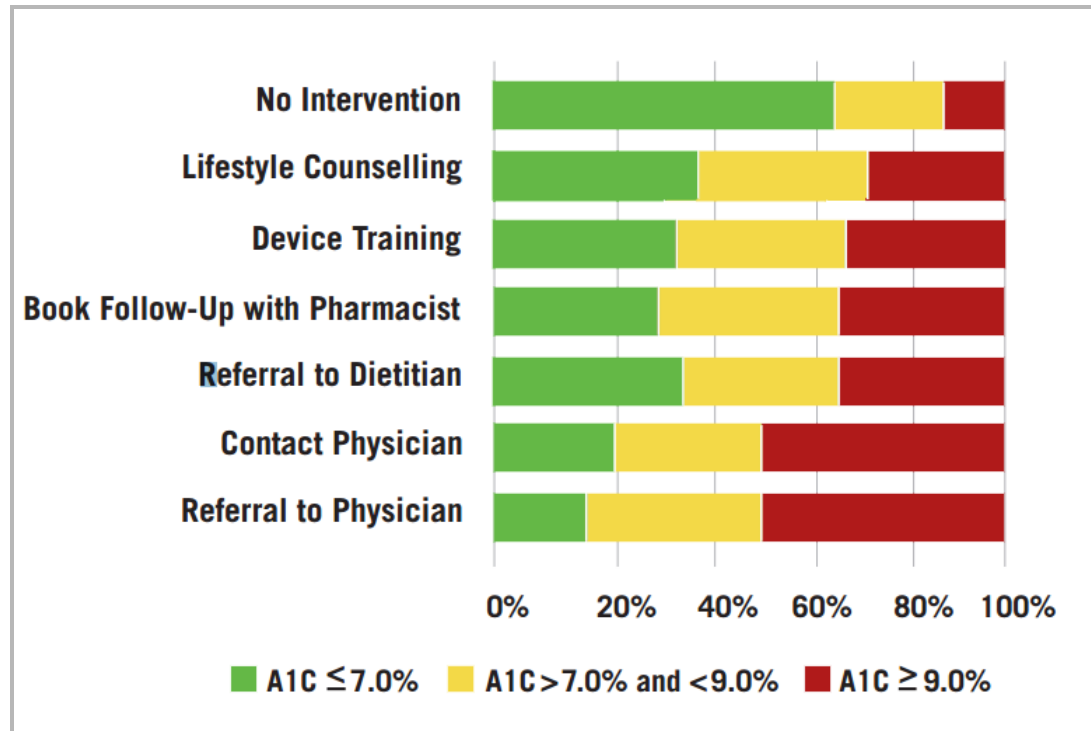
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# Results – Interventions

- **Average number of interventions per patient: 2**
- Total 1,711 interventions performed by pharmacists
  - **Lifestyle counselling (29.0 %)**
  - **Referral to physician (16.5%)**
  - **Discussion of the patient's A1C (13.7%)**
  - Communication with the physician
  - Device training
  - Referral to dietitian
  - Booking a follow-up appointment



# Results - Type of Interventions by A1C



Shift towards **decreased** prevalence of pharmacist-directed interventions and **increased** prevalence of physician-directed interventions with poorer glycemic control



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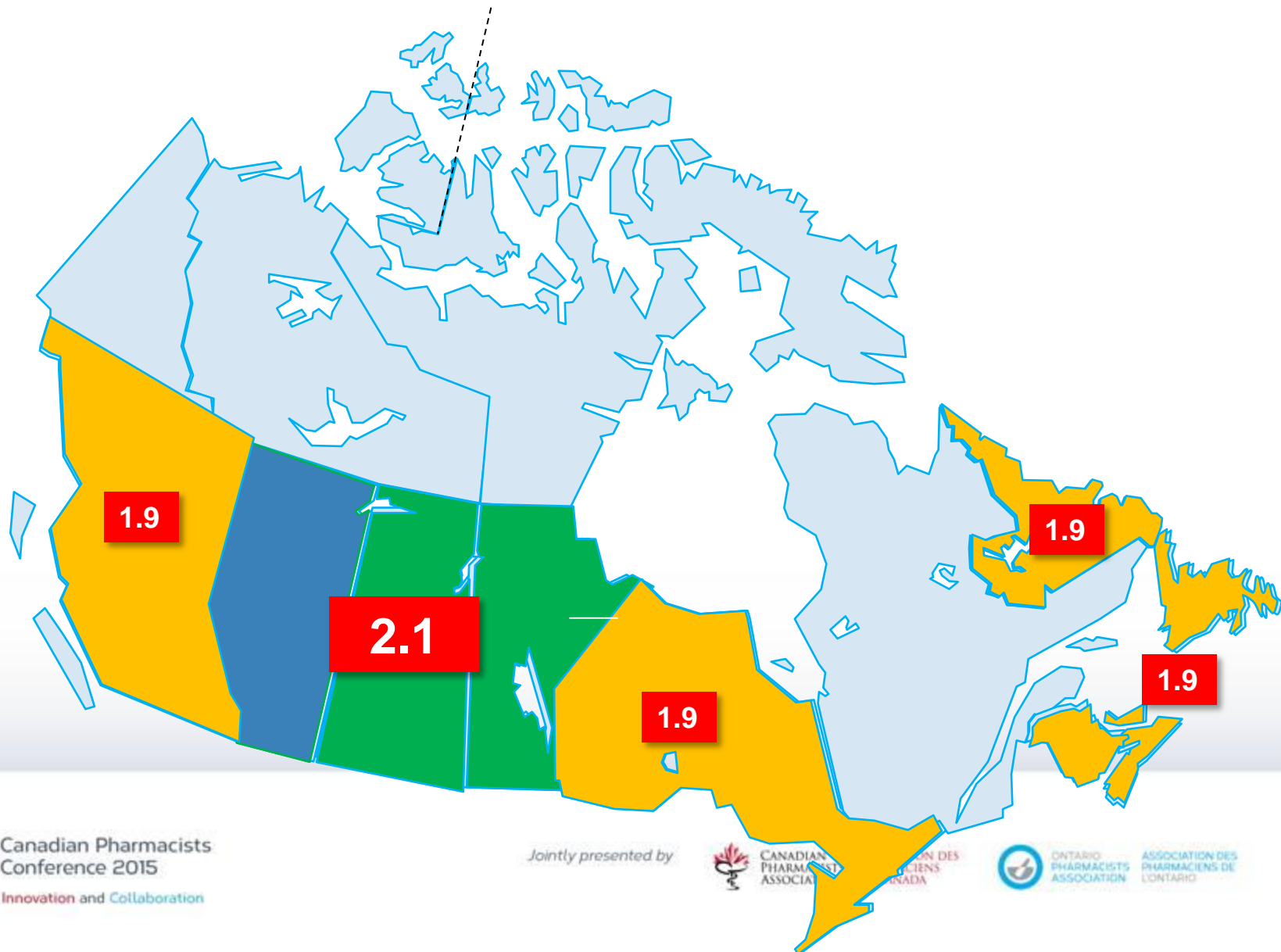
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# Geographic Distribution of Interventions



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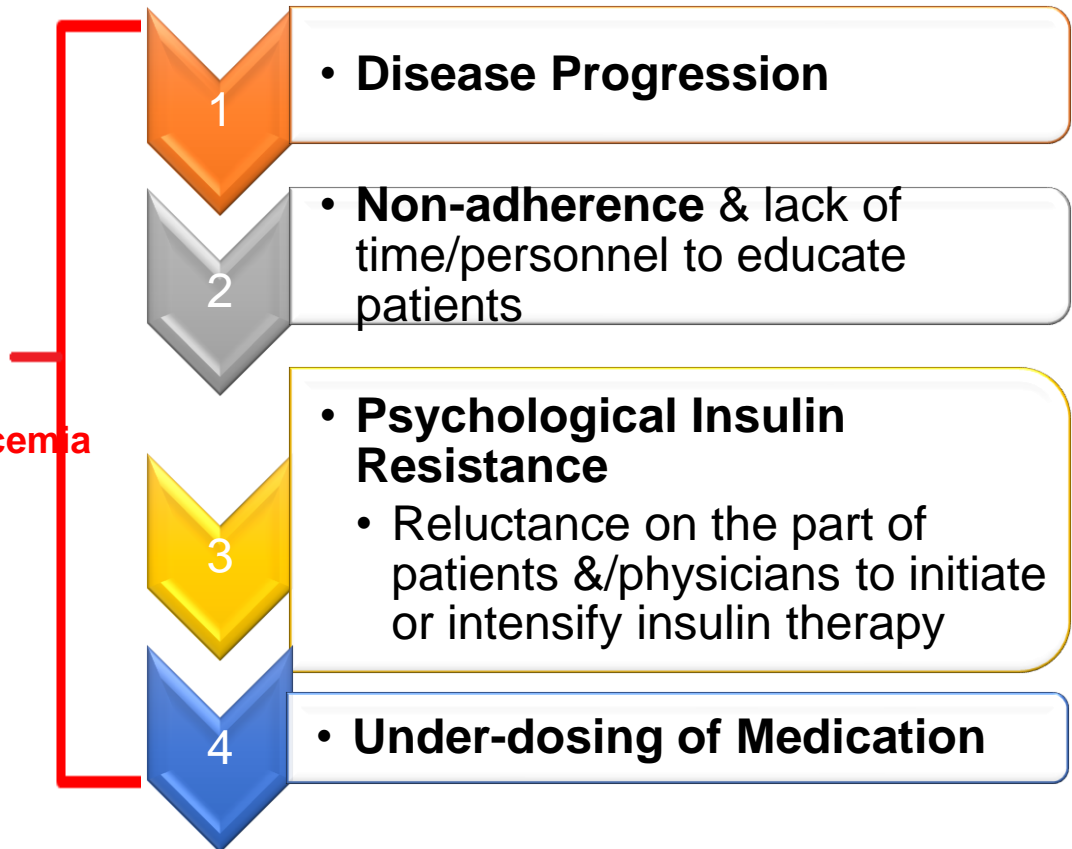


# Possible Explanations

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- Why are so many patients not meeting glycemic targets?
- Why is control worse in patients with more intense therapy?
- Huge opportunity for the pharmacist during medication reviews

Fear of  
Hypoglycemia



# Diabetes Support Program study

## Diabetes Support Program - a Case Study

Shoppers Drug Mart & Greenshield

**Population:** Diabetic patients across Canada

**Assessment:** POC A1C

**Intervention:** Pharmacist recommendation

**Outcome:** Change in level of A1C control at follow up

**457** diabetic patients initially included in analysis

**82** diabetic patients participated in a follow-up



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# Impact

## Following pharmacist recommendations:

The number of patients at **A1C target** tripled



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The number of patients at A1C target quadrupled after the pharmacist **consulted with their physician**



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Half of all patients had a **clinically significant** reduction in A1C



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# Patient satisfaction

## Survey Question

## Strongly Agree/Agree

You were able to find a convenient appointment time.

95%

You found the assistance/consultation you had with the pharmacist very valuable in managing your diabetes.

90%

You received information that would help you better manage your condition.

89%

You will discuss the appointment results with your doctor or other health care provider

91%



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# A1C POCT take home message

Pharmacists can use the A1C POCT:

- ✓ Promoting **adherence**
- ✓ Escalating **therapy** when appropriate
- ✓ **Interprofessional** collaboration
- ✓ Optimizing patient **outcomes**
- ✓ Improving patient **satisfaction**



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# Lipid point-of-care test



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EVERY **7 MINUTES** **HEART DISEASE**  
A CANADIAN **DIES** DUE TO **OR A STROKE**

1

**40%** OF CANADIANS HAVE **HIGH**  
**CHOLESTEROL**<sub>2</sub>

**50%** OF PATIENTS WITH  
DYSLIPIDEMIA ARE  
**UNAWARE** OF IT<sub>2</sub>



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1. (Statistics Canada, 2012)

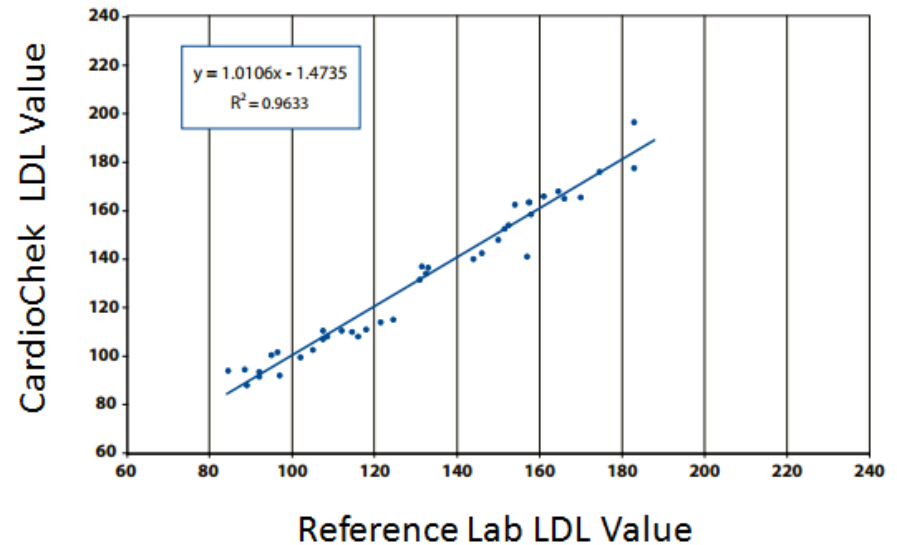
2. Cholesterol levels of adults, 2012 to 2013. (n.d.). Retrieved April 18, 2015, from <http://www.statcan.gc.ca/pub/82-625-x/2014001/article/14122-eng.htm>



# Lipid point-of-care test



2 minutes, accurate



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# Cardiovascular risk assessment is key

## Framingham Risk Score (FRS):

- ✓ Estimates risk of cardiovascular event in the next 10 years based on TC/HDL ratio, BP, age, gender, smoking status, presence of diabetes<sup>2</sup>
- ✓ Benefits are maximized when results are communicated to the patient to engage patient and increase adherence<sup>1</sup>

## Cardiovascular Age Assessment:

- ✓ Estimates life expectancy based on factors similar to FRS<sup>2</sup>
- ✓ Comparing patients' chronological age with age of their vascular system improves their adherence<sup>2</sup>



Due to time constraints, many patients visiting physician office have never had their cardiovascular risk assessed<sup>2</sup>



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1. Anderson, T. Can J Cardiol. 2013 Feb;29(2):151-67.  
2. Grover, S. Can J Cardiol. 2011 Jul-Aug;27(4):481-7.

# FRAMINGHAM RISK SCORE (FRS)

## Estimation of 10-year Cardiovascular Disease (CVD) Risk

Date: \_\_\_\_\_

Patient's Name: \_\_\_\_\_

**Step 1<sup>1</sup>**  
In the "points" column enter the appropriate value according to the patient's age, HDL-C, total cholesterol, systolic blood pressure, and if they smoke or have diabetes. Calculate the total points.

Risk Factor		Risk Points		Points		
		Men	Women			
Age						
30-34		0	0			
35-39		2	2			
40-44		5	4			
45-49		7	5			
50-54		8	7			
55-59		10	8			
60-64		11	9			
65-69		13	10			
70-74		14	11			
75+		15	12			
HDL-C (mmol/L)						
>1.6		-2	-2			
1.3-1.6		-1	-1			
1.2-1.3		0	0			
0.9-1.2		1	1			
<0.9		2	2			
Total Cholesterol						
<4.1		0	0			
4.1-5.2		1	1			
5.2-6.2		2	3			
6.2-7.2		3	4			
>7.2		4	5			
Systolic Blood Pressure (mmHg)		Not Treated	Treated	Not Treated	Treated	
<120		-2	0	-3	-1	
120-129		0	2	0	2	
130-139		1	3	1	3	
140-149		2	4	2	5	
150-159		2	4	4	6	
160+		3	5	5	7	
Diabetes	Yes	3		4		
	No	0		0		
Smoker	Yes	4		3		
	No	0		0		
Total Points						

**Step 2<sup>1</sup>**  
Using the total points from Step 1, determine the 10-year CVD risk\* (%).

Total Points	10-Year CVD Risk (%)*	
	Men	Women
-3 or less	<1	<1
-2	1.1	<1
-1	1.4	1.0
0	1.6	1.2
1	1.9	1.5
2	2.3	1.7
3	2.8	2.0
4	3.3	2.4
5	3.9	2.8
6	4.7	3.3
7	5.6	3.9
8	6.7	4.5
9	7.9	5.3
10	9.4	6.3
11	11.2	7.3
12	13.3	8.6
13	15.6	10.0
14	18.4	11.7
15	21.6	13.7
16	25.3	15.9
17	29.4	18.5
18	>30	21.5
19	>30	24.8
20	>30	27.5
21+	>30	>30

\* Double cardiovascular disease risk percentage for individuals between the ages of 30 and 59 without diabetes if the presence of a positive history of premature cardiovascular disease is present in a first-degree relative before 55 years of age for men and before 65 years of age for women. This is known as the modified Framingham Risk Score.<sup>2</sup>

**Step 4<sup>2,3</sup>**  
Using 10-year CVD risk from Step 2, determine if patient is Low, Moderate or High risk.  
Indicate Lipid and/or Apo B targets

Risk Level <sup>4</sup>	Initiate Treatment If:	Primary Target (LDL-C)	Alternate Target
High FRS ≥20%	• Consider treatment in all (Strong, High)	• ≤2 mmol/L or ≥50% decrease in LDL-C (Strong, Moderate)	• Apo B ≤0.8 g/L or • Non-HDL-C ≤2.6 mmol/L (Strong, High)
Intermediate FRS 10-19%	• LDL-C ≥3.5 mmol/L (Strong, Moderate) • For LDL-C <3.5 mmol/L consider if: • Apo B ≥1.2 g/L • OR Non-HDL-C ≥4.3 mmol/L (Strong, Moderate)	• ≤2 mmol/L or ≥50% decrease in LDL-C (Strong, Moderate)	• Apo B ≤0.8 g/L or • Non-HDL-C ≤2.6 mmol/L (Strong, Moderate)
Low FRS <10%	• LDL-C ≥5.0 mmol/L • Familial hypercholesterolemia (Strong, Moderate)	• ≥50% decrease in LDL-C (Strong, Moderate)	N/A
Lipid targets LDL-C: _____ or Apo B: _____			

<sup>1</sup> Consider moving some patients with metabolic syndrome up a risk level based on their "load" of metabolic risk factors or the "severity" of their metabolic syndrome.  
<sup>2</sup> Atherosclerosis in any vascular bed, including carotid arteries.  
apoB: apolipoprotein B stat; CAD: coronary artery disease; FRS: Framingham Risk Score; HDL-C: high-density lipoprotein cholesterol; hs-CRP: high-sensitivity C-reactive protein; PVD: peripheral vascular disease; RRS: Reynolds Risk Score; TC: total cholesterol.  
Provided courtesy of

# Lipid POCT pilot study

## A Community Pharmacy-Based Point of Care Screening Program to Improve Cardiovascular Risk Management

John Papastergiou, BScPhm; Chris Folkins , BScPhm, PhD; Wilson Li, BScPhm, CDE

**Population:** 56 patients of two retail pharmacies in Toronto

**Assessment:** Framingham Risk and Cardiovascular Age Assessment  
(measured POC LDL, HDL, Total Cholesterol, TG, Blood Pressure)

**Intervention:** pharmacist recommendations

### Outcome:

- ✓ level of **baseline** cardiovascular risk
- ✓ **change** in measured parameters at follow up for **moderate-high risk patients**



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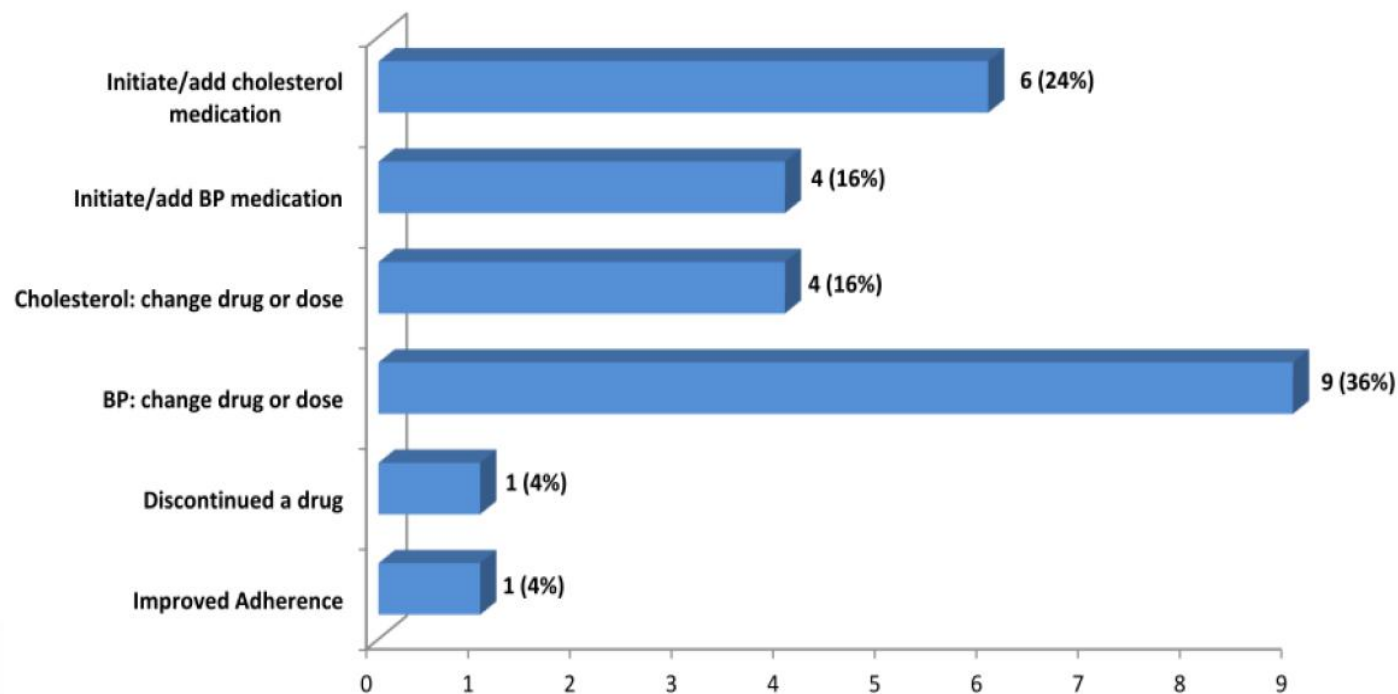
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# Pharmacist interventions



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Dear Dr. \_\_\_\_\_

RE: PHARMACY CARDIOCHEK CLINIC – 10-YEAR CARDIOVASCULAR DISEASE (CVD) RISK ASSESSMENT USING THE FRAMINGHAM RISK SCORE (FRS)

Our mutual patient, \_\_\_\_\_, has undergone a 10-year cardiovascular disease (CVD) assessment at our pharmacy based on the Framingham Risk Score (FRS), adapted from the *Canadian Cardiovascular Society* guidelines.

Framingham 10-Year CVD Assessment Results

	CVD RISK FACTORS					
	Age (year)	HDL-C* (mmol/L)	Total Cholesterol* (mmol/L)	Systolic BP (mmHg)	Diabetes (Y/N)	Smoker (Y/N)
Value						
Risk Points						

\*Lipid profile obtained using the CardioChek® meter.

Total Points = \_\_\_\_\_

FRS = \_\_\_\_\_ %

Based on the FRS, the patient is at a \_\_\_\_\_ risk of developing CVD in the next 10 years.

**Additional service(s) that was provided to patient at the clinic:**

- ☐ Education on diet and exercise based on *Canada's Food Guide* and the physical activity section
- ☐ Reinforce adherence on medications for dyslipidemia, hypertension and diabetes (as applicable)
- ☐ Counselling on medications for dyslipidemia, hypertension and diabetes (as applicable)
- ☐ Other: \_\_\_\_\_

**We would like to make the following recommendation(s) for the patient, if deemed appropriate:**

☐ Initiate medication(s): \_\_\_\_\_  
(PLEASE PROVIDE NEW RX)

☐ Modify medication(s): \_\_\_\_\_  
(PLEASE PROVIDE NEW RX)

☐ Referral to MD

☐ Referral to dietitian

☐ Other: \_\_\_\_\_

--



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# Impact

Moderate-High Patient <u>Baseline</u> Screening Results (mean; range) (n = 27)
Time per consultation (minutes): 20.0; 10-30
LDL (mmol/L): 2.18; 0.92-4.94
HDL (mmol/L): 1.12; 0.51-2.39
TC (mmol/L): 4.05; 2.59-8.14
TC/HDL: 3.88; 2.0-6.9
SBP (mmHg): 133; 101-167
10-year CVD risk (%): 19.85; 10-30

Moderate-High Patient <u>Follow-Up*</u> Screening Results (mean; range) (n = 27)
Time per consultation (minutes): 13.9; 12-25
LDL (mmol/L): 1.86; 0.72-3.9
HDL (mmol/L): 1.19; 0.58-2.51
TC (mmol/L): 3.78; 2.59-6.8
TC/HDL: 3.53; 1.7-8.1
SBP (mmHg): 128.3; 101-159
10-year CVD risk (%): 17.42; 6.3-30



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# Lipid POCT take home message

Pharmacists can use the lipid POCT:

- ✓ **Identification** of patients who may benefit from primary prevention pharmacotherapy
- ✓ Enhancing patient **understanding** of their cardiovascular risks
- ✓ Promoting patient **adherence**
- ✓ Improving cardiovascular **outcomes**



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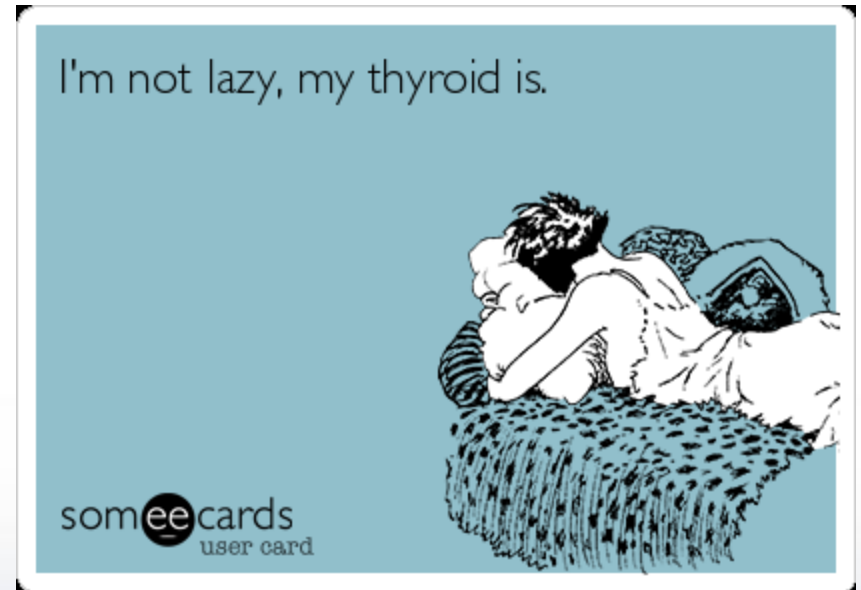
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# TSH point-of-care test



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**5-10%** **OF ADULT WOMEN HAVE**  
**SUBCLINICAL HYPOTHYROIDISM**

**SUBCLINICAL**  
**HYPOTHYROIDISM** **MAY RAISE**  
**CHOLESTEROL**

**26%** **PROGRESSES ANNUALLY TO**  
**OVERT HYPOTHYROIDISM**



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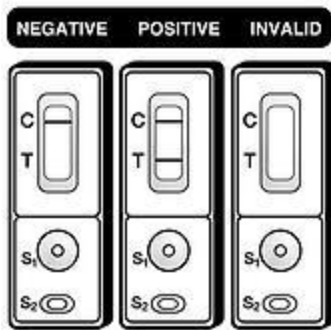
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# TSH point-of-care test



10 min, 97.7% precision



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# Our experience

**Target population:** Patients with symptoms of, or at risk for subclinical hypothyroidism, in our two community pharmacies

**Assessment:** Qualitative **TSH antibody detection** point of care test

## **Intervention:**

- ✓ Supportive care for bothersome signs and symptoms
- ✓ For patients with positive results (**TSH > 5 uIU/L**), refer to physician to either:
  - a) perform further testing
  - b) perform thyroid surveillance annually



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# Subclinical Hypothyroidism Screening Protocol

Patient Name: \_\_\_\_\_

DOB: \_\_\_\_\_

Age: \_\_\_\_\_

Female

Male

Subclinical Prevalence = 4.3%  
 Women = 5.9%  
 Men = 2.3%  
 Women >60yo = up to 20%

Please check any of the following diseases/conditions which you may have:

<input type="checkbox"/>	Type I Diabetes
<input type="checkbox"/>	Autoimmune disorders
<input type="checkbox"/>	1 <sup>st</sup> degree relative with thyroid disease
<input type="checkbox"/>	Previous neck radiation or surgery

Female + 60yo> strong recommendation for screening

Yes any Strong recommendation for screening

Please check any of the following symptoms which you may have:

<input type="checkbox"/>	Fatigue
<input type="checkbox"/>	Cold intolerance

Yes both strong recommendation for screening

Yes one moderate recommendation for screening

<input type="checkbox"/>	Muscle aches/pains (arthralgia)
<input type="checkbox"/>	Constipation
<input type="checkbox"/>	Depression
<input type="checkbox"/>	Difficulty Concentrating
<input type="checkbox"/>	Dry Skin
<input type="checkbox"/>	Enlarged tongue (Macroglossia)
<input type="checkbox"/>	Eyebrow thinning
<input type="checkbox"/>	Irregular menstruation
<input type="checkbox"/>	Hair thinning/hair loss
<input type="checkbox"/>	Memory Impairment
<input type="checkbox"/>	Weight gain
<input type="checkbox"/>	Swelling around the eyes (periorbital edema)

Yes 3> moderate recommendation for screening



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# TSH POCT: Take home message

## Based on our anecdotal experience:

- ✓ **Does not** warrant implementation
- ✓ Must test **large population** to identify patients with high TSH
- ✓ Large **time and resource** commitment for the pharmacy



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# Skin assessment point-of-care test



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**CHRONIC SUN EXPOSURE** LINKED TO **PHOTOAGEING AND SKIN CANCERS<sup>1</sup>**

**1/3** OF CANCER DIAGNOSES ARE **SKIN CANCERS**

**35 000** ONTARIANS DIAGNOSED WITH SKIN CANCER **ANNUALLY**

**\$344** **ECONOMIC BURDEN**  
**MILLION** OF SKIN CANCER IN 2011



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1. [Dermatol Clin.](#) 1986 Jul;4(3):509-16.
2. Canadian Cancer Statistics 2011.

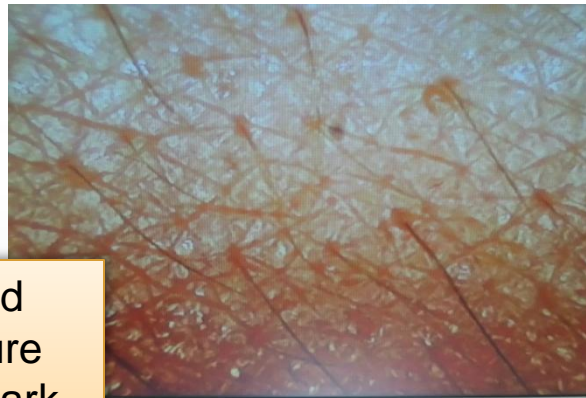
# Scalar Video Microscope

Specialized tool which magnifies the skin's surface **30X**

- The non-polarized setting examines the skin surface
- The polarized setting examines the skin sub-surface
- The patented illumination technology displays any desquamation signifying dry skin

This tool can help identify:

- **clogged pores**
- **dry or oily skin**
- **sun damage**



Dry skin and sun exposure shows as dark and thick lines



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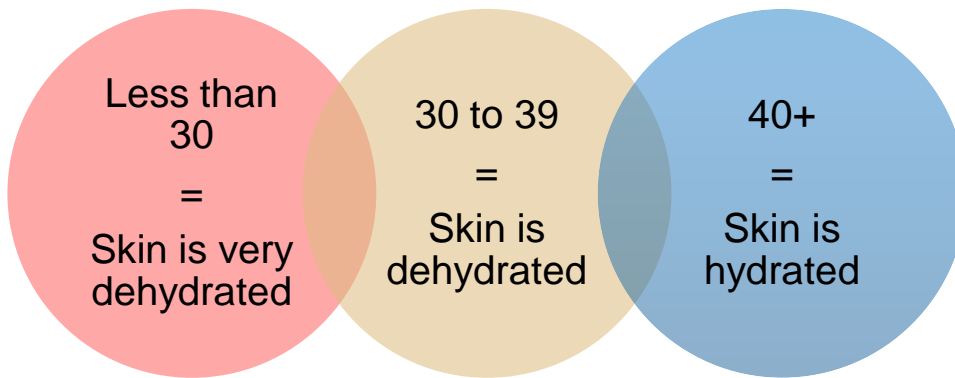


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# Scalar Moisture Checker

Specialized tool to measure skin hydration.  
Water content contributes to skin's suppleness and comfort.



- ✓ UVB exposure is associated with wrinkling, elastosis, actinic keratoses, irregular pigmentation, **telangiectasia** (visible blood vessels), and skin cancer<sup>1</sup>
- ✓ UVB exposure is associated with **reduced skin water content**<sup>2</sup>



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1. [Dermatol Clin.](#) 1986 Jul;4(3):509-16.
2. [J Dermatol Sci.](#) 2001 Aug;27 Suppl 1:S42-52.

# Our experience

**Target population:** Patients on **phototoxic** medications or with skin concerns

- ✓ isotretinoin
- ✓ NSAIDs
- ✓ sulfonylureas
- ✓ diuretics

- ✓ amiodarone
- ✓ nifedipine
- ✓ diltiazem
- ✓ quinidine

**Assessment:** Point of care skin assessment for hydration and signs of photo-aging

**Intervention:** Recommendation of appropriate OTC sun protection and moisturizers



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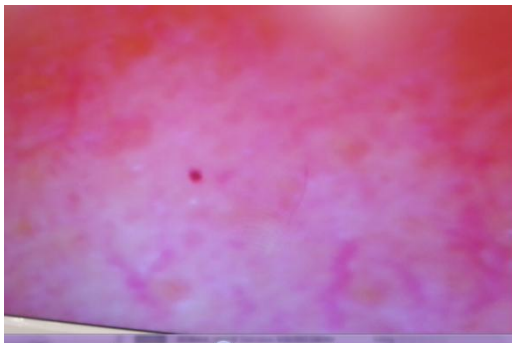
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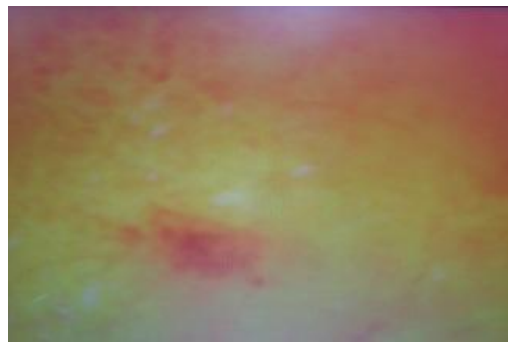
# Skin Assessment Clinics: Our Experience

What does photo damage look like under **30X** magnification?

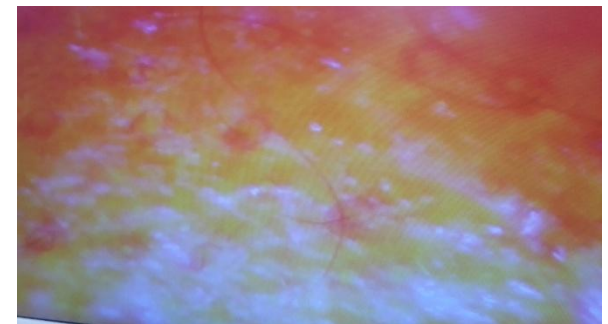
Blood vessel dilation can be a sign of excess sun exposure



- 68 year old
- female
- moisture level: 16



- 40 year old
- female
- moisture level: 23.1



- 56 year old
- female
- moisture level: 35.4



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# Pilot Study Results



20



32 (17-68)

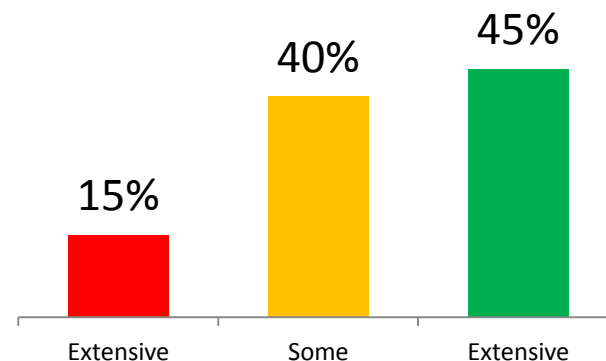


90%

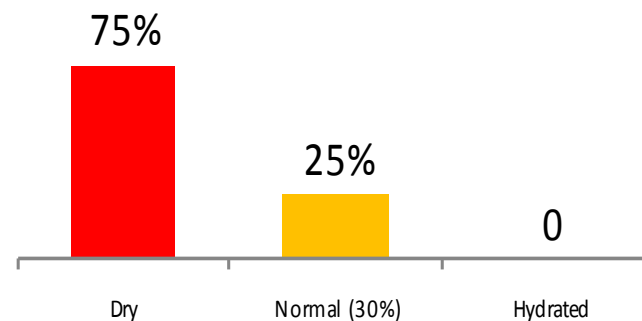


26.4%

## Photodamage



## Hydration Status



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# Skin Assessment POCT: Take home message

Pharmacists can use the skin assessment tools for:

- ✓ Increasing **patient awareness** of the most preventable cancer
- ✓ Helping patients choose appropriate **sun protection and moisturizing** products
- ✓ **Improving awareness** of professional pharmacy services among front store customers



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# Group A strep pharyngitis point-of-care test



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# RHEUMATIC FEVER & **COMPLICATIONS** OF GLOMERULONEPHRITIS UNTREATED STREP THROAT<sub>2</sub>

**30%** REDUCTION IN INAPPROPRIATE ABX  
PRESCRIBING WITH STREP A POCT<sub>3</sub>

PROMPT TREATMENT OF STREP A WITH ABX  
LIMITS **DURATION OF SYMPTOMS** TO **24 HRS**<sub>1</sub>



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<sup>1</sup>Am Fam Physician. 2004 Mar 15;69(6):1465-70

<sup>2</sup>Snellman L, Adams W, et al. Diagnosis and Treatment of Respiratory Illness in Children and Adults. Institute for Clinical Systems Improvement. Updated January 2013

<sup>3</sup>Arch Pediatr. 2014 Nov;21 Suppl 2:S78-83. doi: 10.1016/S0929-693X(14)72265-1. Epub 2014 Nov 13.

# Rapid Response Strep A test

**Strep A Rapid Test Strip Procedure**

**Procedure** Read Procedure before running test. Refer to Package Insert for details.

- Holding bottles upright, add 4 Drops of Reagent A, then 4 Drops of Reagent B to Tube

• Tap bottom of Tube to mix
- Add Swab to Tube

• Rotate Swab 10 times in Tube

• Let stand 1 minute

• To remove Swab from Tube: Press Swab against inside of Tube & squeeze Tube while removing Swab so most of liquid stays in Tube
- Place Test Strip in Tube

• Liquid should be at or just below MAX Line

• Read result at 5 minutes

**Interpretation of Results**

**Positive** **Negative** **Invalid**

1150146/202



10 minutes, 97% accuracy<sup>1</sup>



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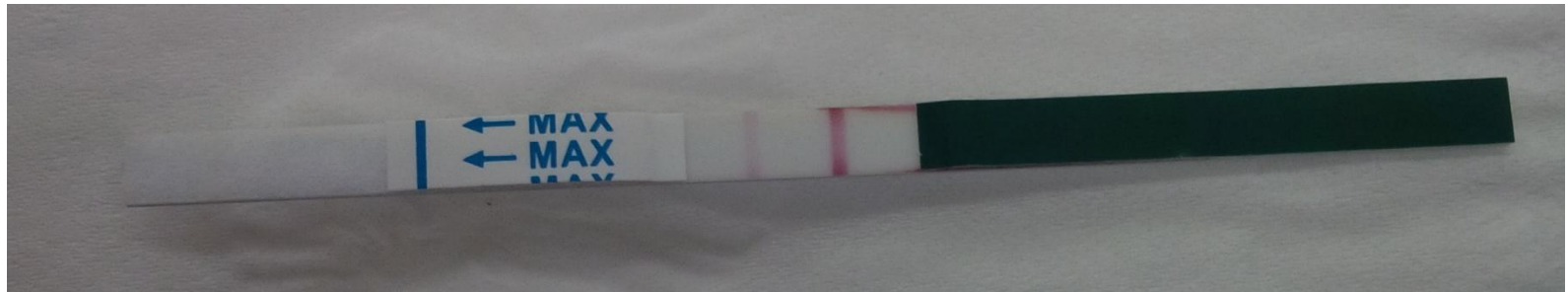
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# Positive strep test



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# Our experience

**Target Population**

**Assessment:** Strep

**Intervention:**

✓ Pharmacist recommend

✓ Pharmacist **letter to**

## Centor Criteria:

- ☐ Absence of cough (1 point)
- ☐ History of fever  $>38^{\circ}\text{C}$  (1 point)
- ☐ Presence of tonsillar exudates (1 point)
- ☐ Swollen and tender cervical nodes (1 point)
- ☐ Age 3-14 (1 point) Age  $\geq 45$  (-1 point)

Score: 0 - Strep test and antibiotic therapy are not indicated.

Score:  $>1$  - Strep test indicated.

*Used to differentiate sore throat due to Group A Strep vs due to other pathogens*

ore



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[Home](#)
[New Screening](#)
[History](#)

## SEND FORM

Patient name:

Fax number:

## PREVIOUS RESPONSES

UPDATED ON 05/04/2015 8:28 PM

**Physician's Plan:** Have patient return to clinic

## ADD RESPONSE

- ☐ Have patient return to clinic
- ☐ Initiate antibiotic therapy
- ☐ Do nothing, continue with supportive care
- ☐ Other

INITIATE ANTIBIOTIC THERAPY:

### STREP POSITIVE CHILD

- ☐ Amoxicillin 50 mg/kg/day BID x 10 days Dose:
- ☐ Cephalexin 25-50 mg/kg/day BID x 10 days Dose:
- ☐ Clarithromycin 15 mg/kg/day BID x 10 days Dose:
- ☐ Azithromycin 12 mg/kg/day OD x 5 days Dose:
- ☐ Other  Dose:

### STREP POSITIVE ADULT

- ☐ Penicillin V 600 mg BID x 10 days
- ☐ Cephalexin 500 mg BID x 10 days
- ☐ Clarithromycin 250 mg BID x 10 days
- ☐ Azithromycin 500 mg 1st day then 250 mg x 4 days
- ☐ Other  Dose:



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# Pilot Study: In Progress

Result	MD Response
Positive	Penicillin
Positive	Return To Clinic, MD prescribed Penicillin
Positive	Return to Clinic, MD prescribed Amoxicillin
Positive	Return to Clinic, MD prescribed Amoxiclav
Negative	Return to Clinic, confirmed Strep A, MD prescribed Amoxiclav

Centor criteria is a **highly reliable** tool for strep throat screening



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# Strep A POCT: Take home message

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Pharmacists can use the Strep A POCT for:

- ✓ Helping minimize **duration of symptoms** of strep throat
- ✓ Helping minimize **complications** of strep throat
- ✓ Reducing rate of **inappropriate antibiotics prescribing**
- ✓ Helping reduce **physician workload**



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# H. pylori POCT for uninvestigated dyspepsia



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**25%** OF CANADIANS EXPERIENCE DYSPEPSIA  
OVER THE COURSE OF ONE YEAR

**25%** OF CANADIANS WITH **UNINVESTIGATED  
DYSPEPSIA HAVE** H. PYLORI INFECTION

ACCORDING TO THE **CLASS I**  
**WHO**, H. PYLORI IS A **CARCINOGEN**



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1. Ont Health Technol Assess Ser. 2013; 13(19): 1–30.
2. Compendium of Therapeutic Choices (7th ed.). (2014). CPhA.

# Our experience

**Target Population:** Patients in our community pharmacy in Toronto:

- ✓ age < 50
- ✓ evidence of **dyspepsia**
- ✓ no prior **H. pylori test**
- ✓ have **not been treated** for H. Pylori
- ✓ have no **alarm symptoms** for GI cancer

**Assessment:** H. pylori rapid antibody POCT

**Intervention:** Pharmacist letter to MD with recommendation



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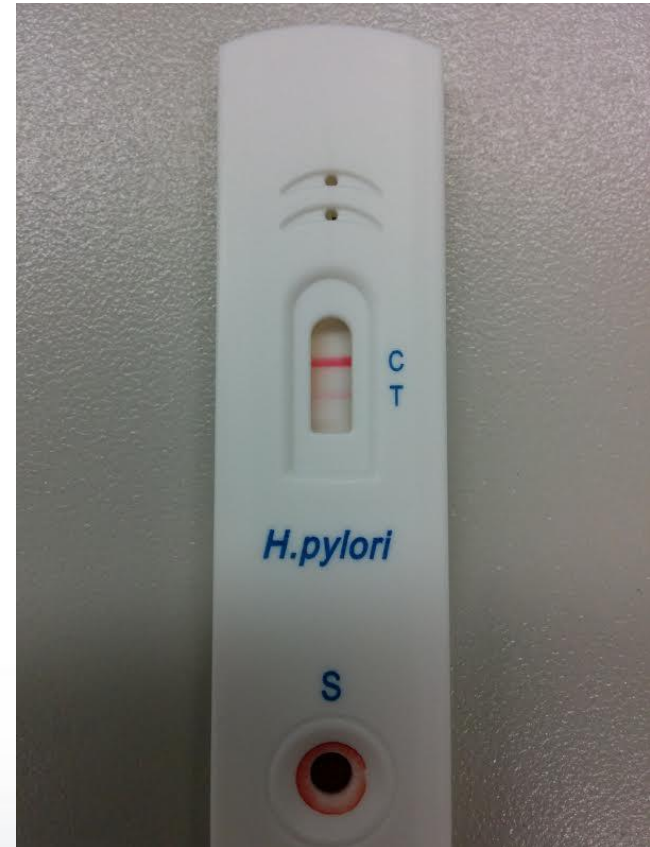
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# Positive H. pylori test



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### History of Present Illness

Have you been previously diagnosed with a gastrointestinal disorder? \_\_\_\_\_

Have you recently experienced the following (select all that apply)?

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Unexplained weight loss | <input type="checkbox"/> Difficulty swallowing | <input type="checkbox"/> Bloody vomit or black vomit |
| <input type="checkbox"/> Anemia                  | <input type="checkbox"/> Nausea or vomiting    | <input type="checkbox"/> Bloody stool or black stool |

Have you ever had an endoscopy or a Urea Breath Test? \_\_\_\_\_

Have you ever been treated for H Pylori infection? \_\_\_\_\_ If so, how long ago? \_\_\_\_\_

*This assessment is for screening purposes and does not constitute a diagnosis. A negative test result is not a guarantee of good health, and participation in this program cannot substitute a consultation with a physician for any medical or health-related condition, or for a regular physical exam. A positive test result only indicates that H Pylori may be present, and in the absence of symptoms, does not indicate any specific disease status. Further follow up with the physician may be necessary.*

Signature \_\_\_\_\_

Date: \_\_\_\_\_

### Assessment

Qualifies for H Pylori testing (dyspepsia symptoms, age < 50, absence of alarm symptoms, no prior H Pylori test)? \_\_\_\_\_

H Pylori Serology Screening Result: \_\_\_\_\_

**Test: Rapid Response™ H. Pylori Cassette**

Specificity: 89.2%

Sensitivity: 93%

Lot #: \_\_\_\_\_

Exp. Date: \_\_\_\_\_

### Pharmacotherapy Plan - \*Physician's Response Required\*

#### H Pylori Positive

- ☐ Initiate HP-Pac (lansoprazole 30 mg, clarithromycin 500 mg, amoxicillin 500 mg) BID x 7 days
- ☐ Initiate H Pylori eradication alternative regimen: \_\_\_\_\_

#### H Pylori Negative (select all that apply)

- ☐ Initiate Omeprazole 20 mg once daily x 1 month
- ☐ Initiate Ranitidine 150 mg once daily x 1 month
- ☐ Increase dose of \_\_\_\_\_ to \_\_\_\_\_

☐ Patient to visit clinic

☐ Other: \_\_\_\_\_

\_\_\_\_\_  
Physician's signature

\_\_\_\_\_  
Date



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# Pilot Study – In Progress



15



39 (22-50)



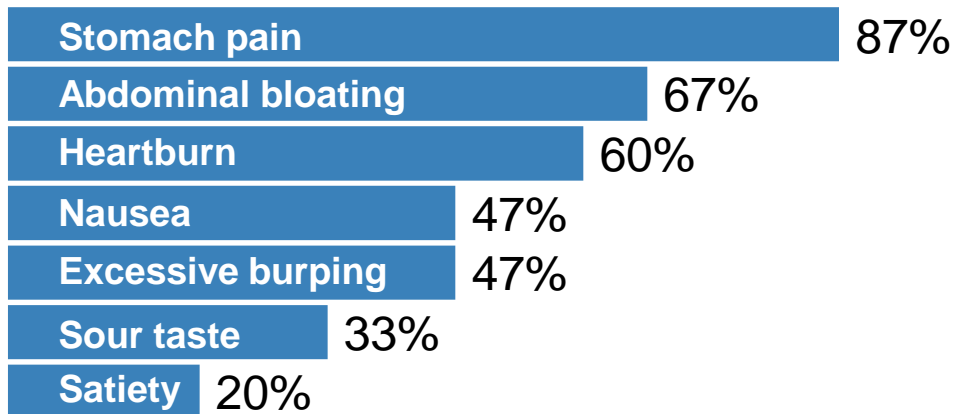
47%



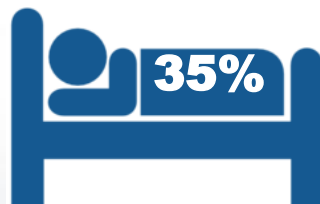
OTC

27%

## Symptoms of Dyspepsia:



## Impact on Daily Life:



Sleep



Eating



Daily Activities



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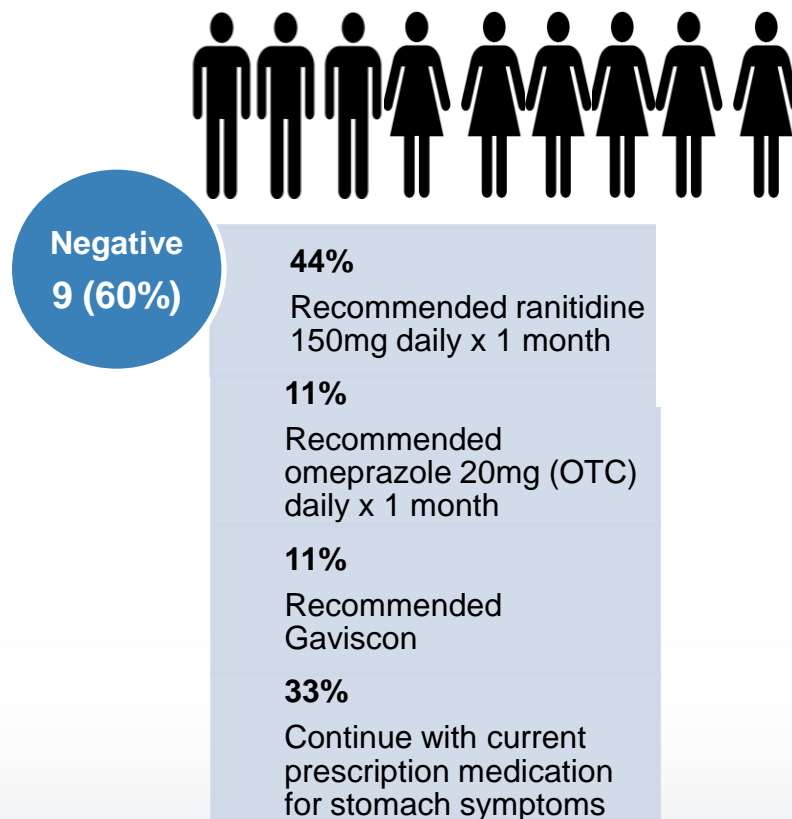
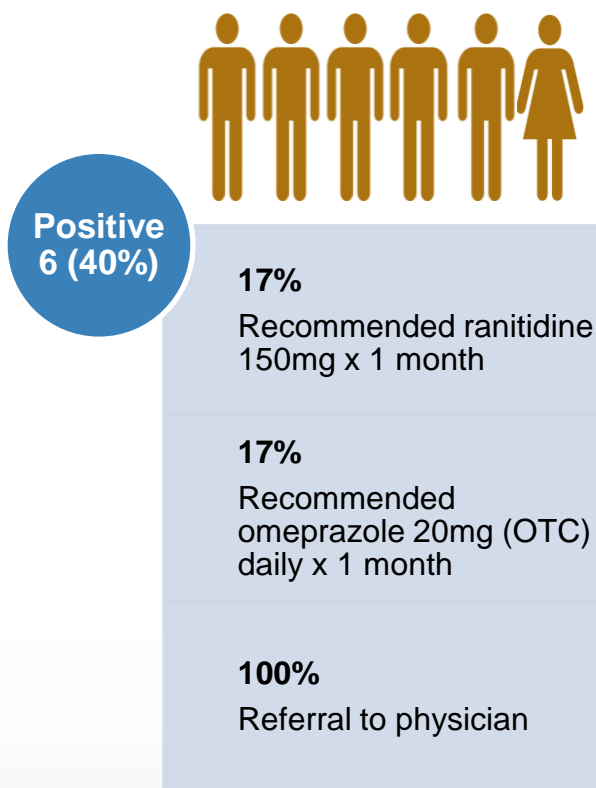
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# Results – In Progress

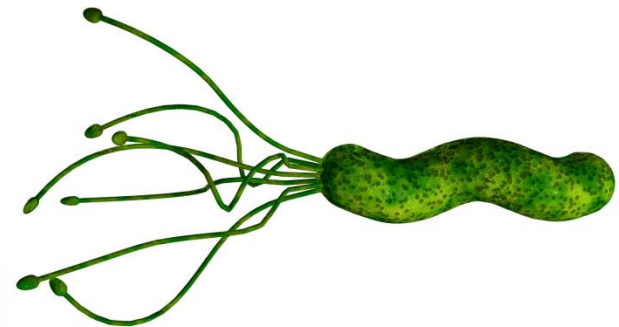


# H. pylori POCT: Take home message

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Pharmacists can use the H. pylori POCT for:

- ✓ Helping to **reduce severity** of H. pylori-associated dyspepsia
- ✓ Addressing **gaps in access** to GI care
- ✓ **Rapid** assessment and referral



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# Influenza point-of-care test



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**5457**

HOSPITALIZATIONS

**344**

DEATHS

**ASSOCIATED WITH INFLUENZA DURING  
THE 2013-14 INFLUENZA SEASON**

**EARLY  
DETECTION**

**IS KEY TO MANAGEMENT OF PATIENTS  
AT RISK OF INFLUENZA COMPLICATIONS**



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# BD Veritor point-of-care



10 minutes, 93.8-94.2% accurate<sup>1</sup>



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# Our experience

**Target Population:** Patients five years or older with symptoms suggestive of influenza

**Assessment:** Influenza A/B point of care rapid antigen detection test

**Intervention:**

- ✓ Pharmacist recommendation of **supportive care** OTCs
- ✓ For positive test result, pharmacist **letter to MD** with suggested antiviral regimen where indicated



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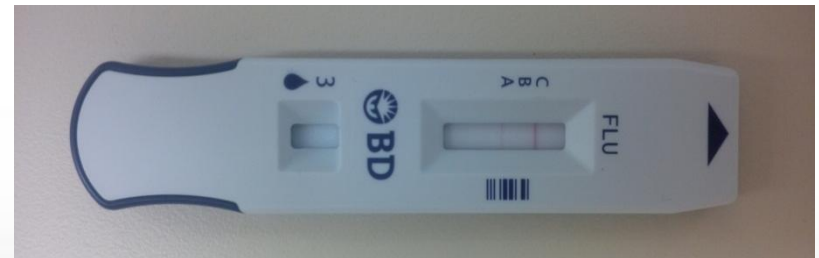
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Dear Dr. \_\_\_\_\_

Date \_\_\_\_\_

Upon suspicion of Influenza virus infection, we have performed a preliminary screening. Please see results below.

### Patient Information

Affix Label Here

Date of Birth: \_\_\_\_\_ Age: \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 Allergies \_\_\_\_\_

### Rapid Detection of Flu A+B Test

BD Veritor™ System Test Device/Lot \_\_\_\_\_ Expiry \_\_\_\_\_  
 Flu A Sensitivity: 82.1-94.9% Specificity: 93.9-98.6%  
 Flu B Sensitivity: 74.6-83.9% Specificity: 91.9-99.6%

### History of Current Illness

#### Symptoms

- ☐ \*Fever (\_\_\_\_ °C)/chills
- ☐ \*Cough
- ☐ Myalgia
- ☐ Headache
- ☐ Sore throat
- ☐ Running nose
- ☐ Nausea/vomiting

#### Influenza Vaccination Status

- ☐ Unvaccinated
- ☐ Vaccinated (vaccine type: \_\_\_\_\_ date: \_\_\_\_\_)

\*Symptom Onset within 48 hours ☐ YES ☐ NO

Subjective Symptom Severity: Mild / Moderate / Severe

Actions Taken to Date: \_\_\_\_\_

#### Factors for Influenza Complications

- ☐ Nursing home/chronic care facility resident
- ☐ Pregnant
- ☐ <18 years of age on chronic aspirin therapy
- ☐ ≥65 years of age
- ☐ Obese (BMI ≥40)
- ☐ Aboriginal
- ☐ Chronic respiratory disease
- ☐ Cardiovascular disease
- ☐ Malignancy
- ☐ Chronic renal insufficiency
- ☐ Diabetes mellitus, other metabolic disease
- ☐ Hemoglobinopathy
- ☐ Immunosuppression, immunodeficiency
- ☐ Neurologic disease, neurodevelopmental disorder

### Pharmacotherapy Plan -- \*PHYSICIAN'S RESPONSE REQUIRED\*

- ☐ Initiate Oseltamivir (Tamiflu™) antiviral therapy
- ☐ Clcr > 60 mL/min: Oseltamivir 75mg BID x 5 days
- ☐ Clcr 30-60 mL/min: Oseltamivir 30 mg BID x 5 days
- ☐ Clcr 10-30 mL/min: Oseltamivir 30 mg QD x 5 days
- ☐ Patient to visit clinic
- ☐ Supportive care recommended by Pharmacist
- ☐ Acetaminophen 500-1000mg QID
- ☐ Ibuprofen 200-400mg TID
- ☐ Antihistamine:
- ☐ Cough syrup:
- ☐ Lozenge:



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# Pilot Study Results



59



45 (13-82)



64%



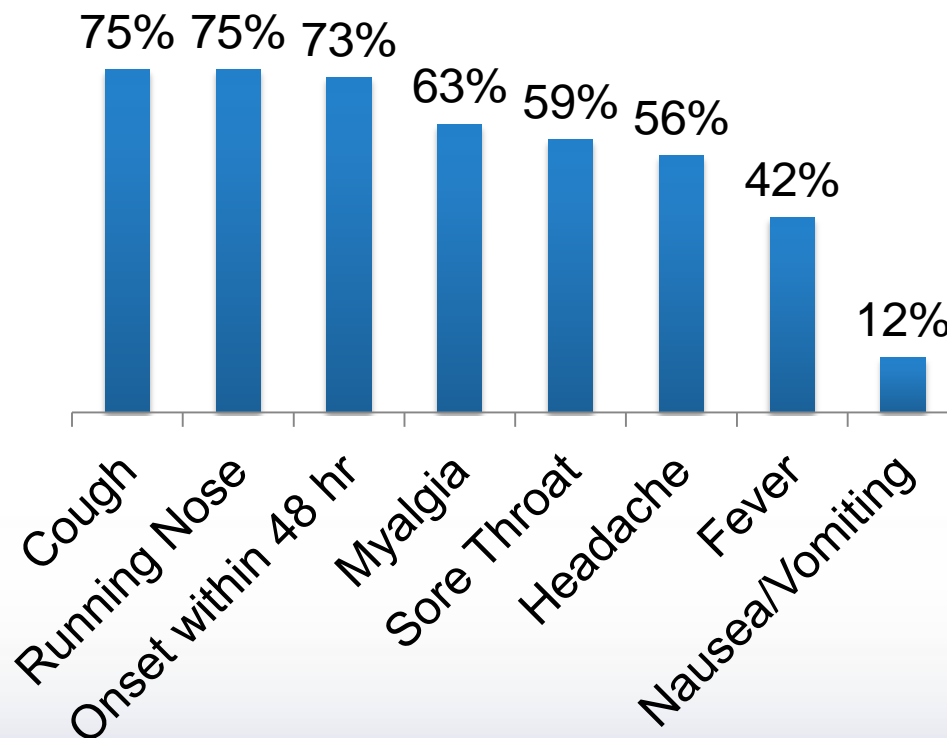
High Risk

61%



20 (34%)

## Patient Symptoms



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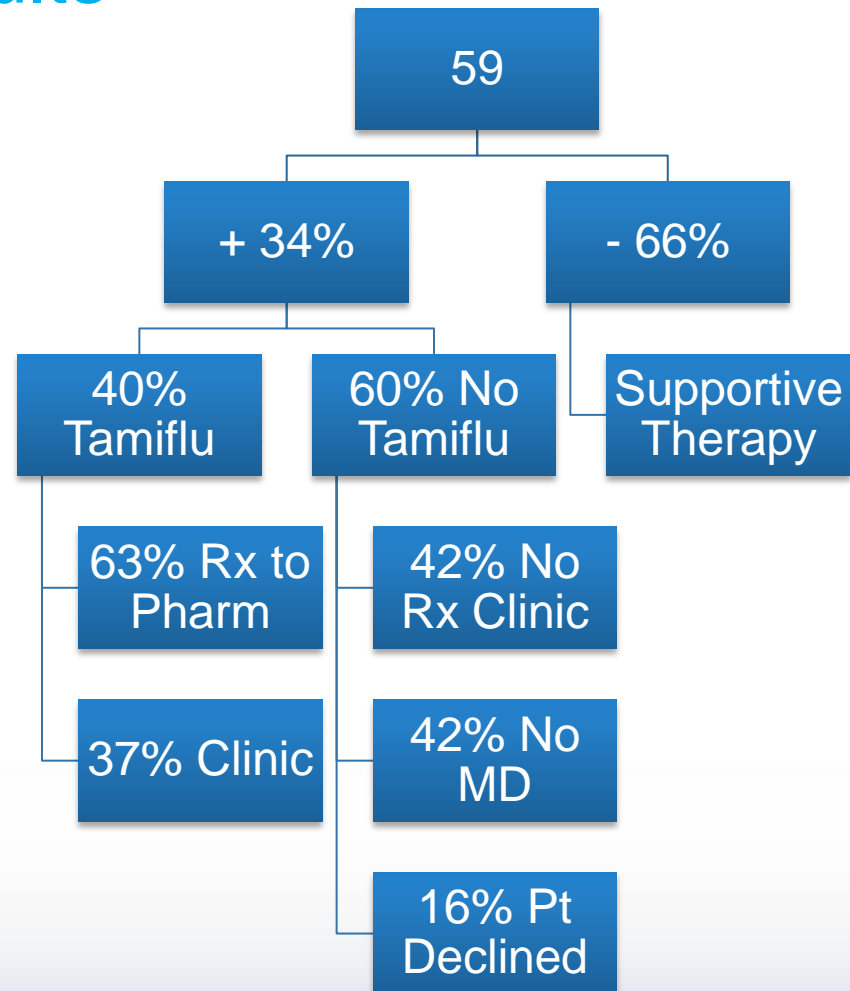
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# Pilot Study Results



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# Influenza POCT: Take home message

- ✓ Pharmacy influenza screening facilitates **prompt access** to treatment
- ✓ Pharmacy influenza screening may **reduce burden** of influenza illness
- ✓ Timely physician communication remains a **barrier to access** to treatment
- ✓ Pharmacy influenza screening may **decrease burden on the healthcare system**



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# What are the pharmacy POCT barriers?



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# Common barriers to pharmacy POCT



1. Lack of **time and resources**
2. Lack of **support** from stakeholders
3. Lack of pharmacist **confidence**
4. Lack of **patient awareness** or interest



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# Time and resources

Chronic condition POCTs ➡ patient clinics

Acute condition POCTs ➡ integrate in dispensing process

- ✓ **Educate staff** regarding: patient eligibility, purpose of clinic
- ✓ Master **appropriate use** of POCT, and its **limitations**
- ✓ Know **red flags** prompting immediate MD assessment
- ✓ Create **advertisements**
- ✓ Generate **sign up sheet**
- ✓ Formulate **standardized letter** to MD
- ✓ Adjust **staffing hours** for Clinic Day



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# Lack of stakeholder support

As pharmacists, we must build **evidence base** demonstrating that pharmacy POCT:

- ✓ Improves healthcare **outcomes**
- ✓ Enhances patient **satisfaction**
- ✓ Reduces healthcare **costs**



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# Lack of confidence

Performing POCT is associated with the **professional responsibility** of knowing what to do with the results!

- ✓ Become familiar with **red flags**

*When to refer*

*Need for further assessment*

*Limitations of POCT device*

- ✓ Continuing **education**

*Workshops*

*Journals*

*Guidelines*



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## FIRST STOP ON NACDS POINT-OF-CARE TESTING TOUR: UNIVERSITY OF NEBRASKA

04.20.2015



**Arlington, Va.** – The National Association of Chain Drug Stores (NACDS) [Community Pharmacy-Based Point-of-Care Testing](#) certificate program kicked off this weekend at the University of Nebraska Medical Center (UNMC) College of Pharmacy in Omaha, Nebraska. This is the first stop on a national [multi-city tour](#) that will continue at colleges and schools of pharmacy during 2015.

### Point-of-care testing empowers clinicians to use effective, fast technology to aid their decision making at the “point-of-care” to improve patient health.

Last month, NACDS [announced](#) the acquisition and expansion of a certificate program designed to provide training for pharmacists to administer point-of-care testing and other health assessments in pharmacies.

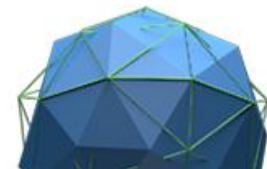


*Improving patient health through partnership in research, education and medication management*

## Detecting and Treating Illness More Quickly and Effectively

The NACDS Foundation is partnering with more than 70 pharmacies in various states to diagnosis and treat patients with influenza and strep throat.

[LEARN MORE »](#)



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# Lack of patient awareness

- ✓ Make the patient **aware** of service availability
- ✓ **Define** the service in patient-friendly language
- ✓ Describe the **need** your service will address
- ✓ Describe the value of the service (**benefits**) to the patient
- ✓ Outline the **investment** patient needs to make



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# Why do point-of-care screening in community pharmacy?



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## Patients

- Improved patient care
- Reduced DTPs & complications
- ↓ need for physician visits
- More frequent monitoring



## Pharmacists

- Increased job satisfaction
- Expanded scope of practice
- Teamwork
- Best practice sharing
- Get out of the dispensary



## Business

- Increased customer loyalty
- Physician & patient referrals to pharmacy
- Increased professional revenue
- Increased script count & compliance packs



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