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**Putting your EMR to work for  
you: how expert-built tools  
can help you improve patient  
care**

Presented by:

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# Faculty / Presenter Disclosure

- **Faculty:** Jesse Lamothe, Quality Improvement Decision Support Specialist (QIDSS) HNHB LHIN FHTs
- Athina Perivolaris, Director, Medical Psychiatry Alliance & Collaborative Care, Centre for Addiction and Mental Health (CAMH)
- **Relationships with commercial interests:**
  - No relationships with commercial interests

# Disclosure of Commercial Support

- This program has not received financial support or in-kind support from any organization
- **Potential for conflict(s) of interest:**
  - Jesse Lamothe has not received payment or funding from any organization supporting this program AND/OR organization whose product(s) are being discussed in this program.
  - Athina Perivolaris has not received payment or funding from any organization supporting this program AND/OR organization whose product(s) are being discussed in this program.

# Mitigating Potential Bias

- There are no potential sources of bias.

# Learning Objectives

1. Understand how four newly available EMR queries contribute to more reliable data for your practice.
2. Appreciate the relevance and meaningfulness of these expert-informed queries to your organization and your patients
3. Learn the difference between these queries and what you're currently using



## Technical Team

- Brice Wong, QIDSS, Erie-St. Clair FHTs
- Charles Bruntz, QIDSS, North East LHIN FHTs
- Tom Sitter, QIDSS, East GTA FHTs

## Communication Team

- Sara Dalo, Manage of Quality, Experience and Patient Safety, Windsor FHT
- Greg Mitchell, QIDS Knowledge Translation and Exchange Specialist, AFHTO
- Jesse Lamothe, QIDSS, Hamilton Niagara Haldimand Brant LHIN FHTs

# AP Team Methodology

## Step 1

Identify priority conditions



AP Team

## Step 2

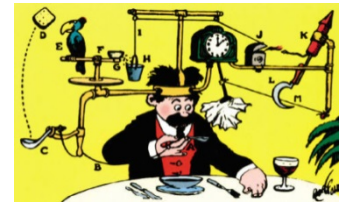
Leverage existing case definitions and collaborate with experts



AP Team

## Step 3

Develop, test, and revise queries



AP Team

## Step 4

Validate queries with confirmed diagnosis registries



afhto-member FHTs

## Step 5

Retrieve queries from afhto



Practice Team

## Step 6

Import the queries to your EMR



Practice Team

## Step 7

Extract reliable and meaningful data



Practice Team

## Step 8

Use the data for practical application



Practice Team



# Collaborate with Experts

## Step 2

Leverage existing case definitions and collaborate with experts



AP Team

- Consult subject matter experts for specific clinical information about each query
- Medication list review, typical diagnostic terms, common billing practices
- Example: Bipolar diagnostic coding and medications for depression query



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Inspired Care. Inspiring Science.



# Query Use in Practice Teams

## Step 5

Retrieve queries from afhto



Practice Team

## Step 6

Import the queries to your EMR



Practice Team

## Step 7

Extract reliable and meaningful data



Practice Team

## Step 8

Use the data for practical application



Practice Team

- Data Cleanup
- Registry Development
- Missing Patients
- Physician review of narrowed list
- Evidence to support programs
- Building block for complex clinical dashboards

# Query Criteria and Complexity

## Simple (ideal for initial searches, ballpark figures)

- Common text diagnoses
- Demographics

## Intermediate (registry development)

- Coded diagnoses
- Common medications

## Complex (thorough patient identification, research)

- Comprehensive list of medications
- Lab results and other clinical metrics
- Conditional criteria
- Subject matter expert validation

**What kind of queries are you using?**



# Query Availability and Next Steps

Query	Telus PS Suite	QHR Accuro	OSCAR
Diabetes	Available	Available	Available
COPD	Available	Available	Available
CHF	Available	Available	Available
Depression	Available	Available	Available
Hypertension	In Development	In Development	In Development
Opioid Use	Soon	In Development	In Development

# Obtaining the Queries

- TELUS Queries
  - Contact Greg
  - Visit TELUS Community Portal
- Accuro
  - Alert publisher within EMR
- OSCAR
  - Contact Greg

**Greg Mitchell**

**greg.mitchell@afhto.ca**

# Thanks to our Partners in Development



**EMERALD**



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# Query Use for Programs



- Diabetes query referenced in the HQO Primary Care Practice Report (PCPR) as an additional tool to manage EMR diabetes data



- Query case definition criteria is being used for OntarioMD dashboard specifications
- EMR queries to be the foundation for teams to contribute to D2D 5.0 EMR Data Quality Indicator. The composite score requires teams to report on the % of coded patients for DM, COPD, CHF and Depression







# OPTIMUM

Optimizing Depression  
Treatment in Older Adults

**camh**

Centre for Addiction and Mental Health

**pcori**

PATIENT-CENTERED OUTCOMES RESEARCH INSTITUTE

**To Refer a Patient:  
Call OPTIMUM  
Recruitment Line  
1-866-539-3510**

**REB REF #086/2016**

A depression query has been developed and is used for identifying patients in the EMR with treatment-resistant depression. The OPTIMUM project team would like to collaborate with teams using the query to help providers and their patients who are hard to treat.

# Patient Oriented Research

- Older adults with depression in primary care may be difficult to manage (Ex. Diagnosis and treatment)
- Older adults often have many other co-morbid conditions
- Lack of access to geriatric psychiatry
- Virtual teams can assess, recommend and follow up patients for good response and side effects



# What is OPTIMUM?

OPTIMUM is a treatment study for adults age 60 + with treatment resistant depression

## This research adds to usual clinical care:

- Participants receive new treatment options and additional psychological support

**Measurement-based care** guides treatment recommendations

**Patient-centered assessments** are used to measure outcomes that patients have described as “very important”

Patients will be randomized to one of three open **evidence-based** medication strategies

Results can help the care of other patients



# How OPTIMUM Works

## 1 How to refer your patients?

### Contact us.

Providers will first go through a brief informed consent process and will become a provider participant in the study.

We will screen patients you refer to us and confirm that they are eligible.

### Inclusion

- ✓ Age 60+
- ✓ Treatment Resistant Depression, defined by:
  - Major depression
  - PHQ-9  $\geq$  6
  - 2 or more failed antidepressant trials



### Exclusion

- ✗ Dementia
- ✗ Unstable medical illness
- ✗ Unable to take the OPTIMUM medications

# How OPTIMUM Works

## 2 What can you expect?

We will ask you to prescribe a study medication at a specific dose. **You prescribe it.**

**You are at the center of this study!**

- **Patients** stay with their own provider
- **Study team** monitors and supports patients. They recommend treatment steps to you.
- **Provider** prescribes medication



We are  
there to  
support both  
patient and  
provider!

# How OPTIMUM Works

## 3 How is the medication managed?

We'll call your patient every two weeks to ask them about:

- Symptoms
- Side effects
- Adherence

The study geriatric psychiatrist then recommends that you stay the course, raise or lower the dose, or change the medication(s).

If the patient has a side effect or problem, we will follow-up. The study psychiatrists will also provide clinical recommendations based on safety labs and drug monitoring.



# How OPTIMUM Works

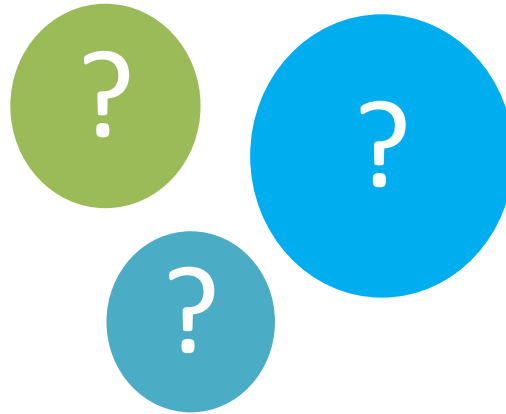
## 4 What is in it for you and your practice?

- **Improved outcomes** for depressed older patients
- **State-of-the-science** prescribing practices
- **Decision support** from geriatric psychiatrists specific to each patient
- **Treatment recommendations** and mental health referrals for ineligible patients
- A partnership: **we compensate you or your practice** for your time and effort. Providers will receive \$300 per participant randomized. Participants will also be compensated for their time.





# Study questions or concerns?



[www.OPTIMUMstudy.org](http://www.OPTIMUMstudy.org)

TOGETHER, WE CAN FIND A BETTER TREATMENT

To refer a patient  
call:

**1-866-539-3510**  
[optimum@camh.ca](mailto:optimum@camh.ca)

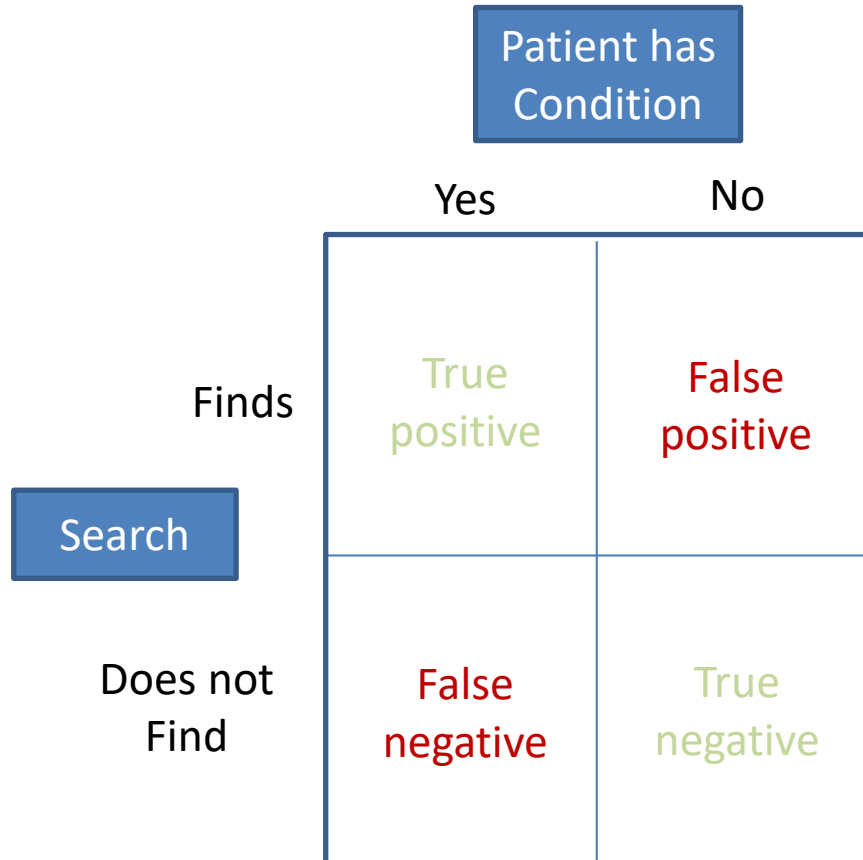
Medical questions about study patients and  
treatment:

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# Diagram for Term Definitions



# Technical Note – Positive Predictive Value (PPV) and Sensitivity

The definitions for PPV and Sensitivity are based on the terms defined as follows:

- True Positive: A patient who has the condition and is found in the search results.
- False Positive: A patient who does not have the condition but is found in the search results.
- True Negative: A patient who does not have the condition and is not found in the search results.
- False Negative: A patient who has the condition but is not found in the search results.
  
- **PPV:** ratio of true positives divided by the sum of the true positives and the false positives.

Example 1: we run the AFHTO diabetic search on a Physician's Practice. If 80 patients have diabetes and are found in the search results, and 20 patients don't have this condition but are found in the search results, then the PPV in this hypothetical scenario is 80%.

The PPV is used to indicate the probability that the patient really has the specified disease when it is found in the search results.

**Sensitivity:** ratio of true positives divided by the sum of the true positives and false negatives.

Example 2: Same search results as in example 1. Now, we learn that 80 additional patients have this condition in this Physician's Practice but are not found in the search results: The sensitivity in this hypothetical scenario would be 50%.

The sensitivity indicates the proportion of people who are found in the search results for the disease among those who have the disease.

Condition	Gold Standard		AP EMR Testing
COPD	CPCSSN	Sensitivity: 41%	Sensitivity: 80%
		PPV: 80%	PPV: 59%
Diabetes	CPCSSN	Sensitivity: 100%	Sensitivity: 80%
		PPV: 95%	PPV: 88%
CHF	EMRALD	Sensitivity: 83%	Sensitivity: 61%
		PPV: 46%	PPV: 74%
Depression	CPCSSN	Sensitivity: 39%	Sensitivity: 96%
		PPV: 79%	PPV: 62%