

AFHTO's Algorithm Project (AP) was established in 2014 with a small group of QIDS Specialists interested in data mapping. The group quickly realized that there was a need to develop and test standard EMR queries to enhance the ability of all teams to extract and analyze EMR data in order to facilitate data clean-up initiatives and to support conversations about improvement. One year later the AP team, composed mostly of volunteers, has established their mission to develop, test and deploy consistent queries based on the formally tested case definitions developed and published by [CPCSSN](#) and [EMRALD](#). This work builds on the [ALIVE](#) project.

The goal of the AP team is to improve access to clinical data through the development of standard queries for five major EMRs so that teams across the province can collect data on eight chronic conditions identified by CPCSSN (see below)

CPCSSN Case Definitions	EMRs
<ul style="list-style-type: none"> <li>• COPD</li> <li>• Diabetes Mellitus</li> <li>• Hypertension</li> <li>• Depression</li> <li>• Osteoarthritis</li> <li>• Epilepsy</li> <li>• Parkinson's Disease</li> <li>• Dementia</li> </ul>	<ul style="list-style-type: none"> <li>• Accuro</li> <li>• Practice Solutions</li> <li>• Clinic Information System (P&amp;P)</li> <li>• Nightingale</li> <li>• OSCAR</li> </ul>

### Goals of having consistent clinical data:

- Deliver consistent searches for multiple disease conditions across multiple EMRs
- Allow for easy and consistent identification of correct patients not previously identified
- Offer early treatment, hopefully mitigating disease progression
- Improve patient outcomes
- Reduce costs to the healthcare system

### Results:

- COPD query: this query was developed in collaboration with the Ontario Lung Association (OLA) and the University of Toronto Practice Based Research Network (UTOPIAN)
  - Penetration: 14 teams have directly requested the query from AFHTO and as many as 10 more teams may be using the query accessed indirectly from other teams or QIDSS.
- Diabetes query: released in early August 2015.
  - Penetration: 7 teams have directly requested the query from AFHTO and as many as 9 more teams may be using the query accessed indirectly from other teams or QIDSS.

*Note: penetration is expected to increase as teams prepare to submit data to D2D 3.0 in January 2016*

### Implementation of a formal methodology:

In order to keep the momentum going, a more rigorous method was needed for selecting the order in which queries for chronic conditions are developed and deployed. In response to this need, the AP team devised a decision matrix and criteria for selection of the next custom query to be developed. The criteria include an assessment of the prevalence of the condition in Ontario, both indirect and direct costs of the condition to our healthcare system, the feasibility of extracting data related to the condition from each of the five EMRs listed above, and availability of existing patient registries to test queries against.

### Summary of impact:

The AP team is a member-driven initiative, established by the QIDS Specialists in response to a need that they identified within their teams. The spontaneous emergence of this group is an example of the positive impact of the ground-up approach to effective use of EMRs. Additionally, the success of the AP team illustrates the value of having the people using the technology bringing about the change. The standardized queries developed by the AP team have shown that while EMR data quality issues have historically resulted in more emphasis being placed on data standardization efforts, it is possible to work with EMR data in its current state to get started on the QI journey.

#### **I. Spread Beyond AFHTO**

- Accuro has uploaded the COPD query and made it accessible to all users across the province via the Accuro Alerts Publisher
- The OLA has shared the COPD query with their network and continues to encourage all providers caring for patients with COPD to use this as a tool to identify patients with a diagnosis of COPD

#### **II. A ground-up approach works for getting started**

- Through the development of standardized queries, customized to meet the needs of all teams, it is possible to extract reliable and meaningful data from the EMR without modifying functionality – teams are already doing this!
- Converting the diabetes case definition into a standard query, we now have teams creating more accurate diabetes registries – physicians are validating the lists, teams are coding their patients in a consistent way and updating their cohorts accordingly

#### **III. Getting value out of EMR data starts with people**

- Despite no change in EMR functionality, data standardization is increasing

Feasible solutions for extracting data and using it to improve have been developed and implemented through QIDS Specialists and the EMR CoPs

### **WHAT'S NEXT?**

The Algorithm Project team has selected the next three chronic conditions for which they will develop standard EMR queries: Congestive heart failure (CHF), depression and hypertension.