

“There is a crack in everything – that’s how the light gets in\*”. AFHTO members find the light of quality through the imperfect cracks in their EMRs. By recycling the “garbage-in”, they are using their EMRs to improve their value for primary care \* Anthem, music and lyrics by Leonard Cohen

## What is our problem?

EMR data is vital to improving the quality of team-based primary care. However, EMR data quality is persistently perceived to be poor. As such it is rarely used, thus remaining poor, causing the perception to become reality.

## Who are we?

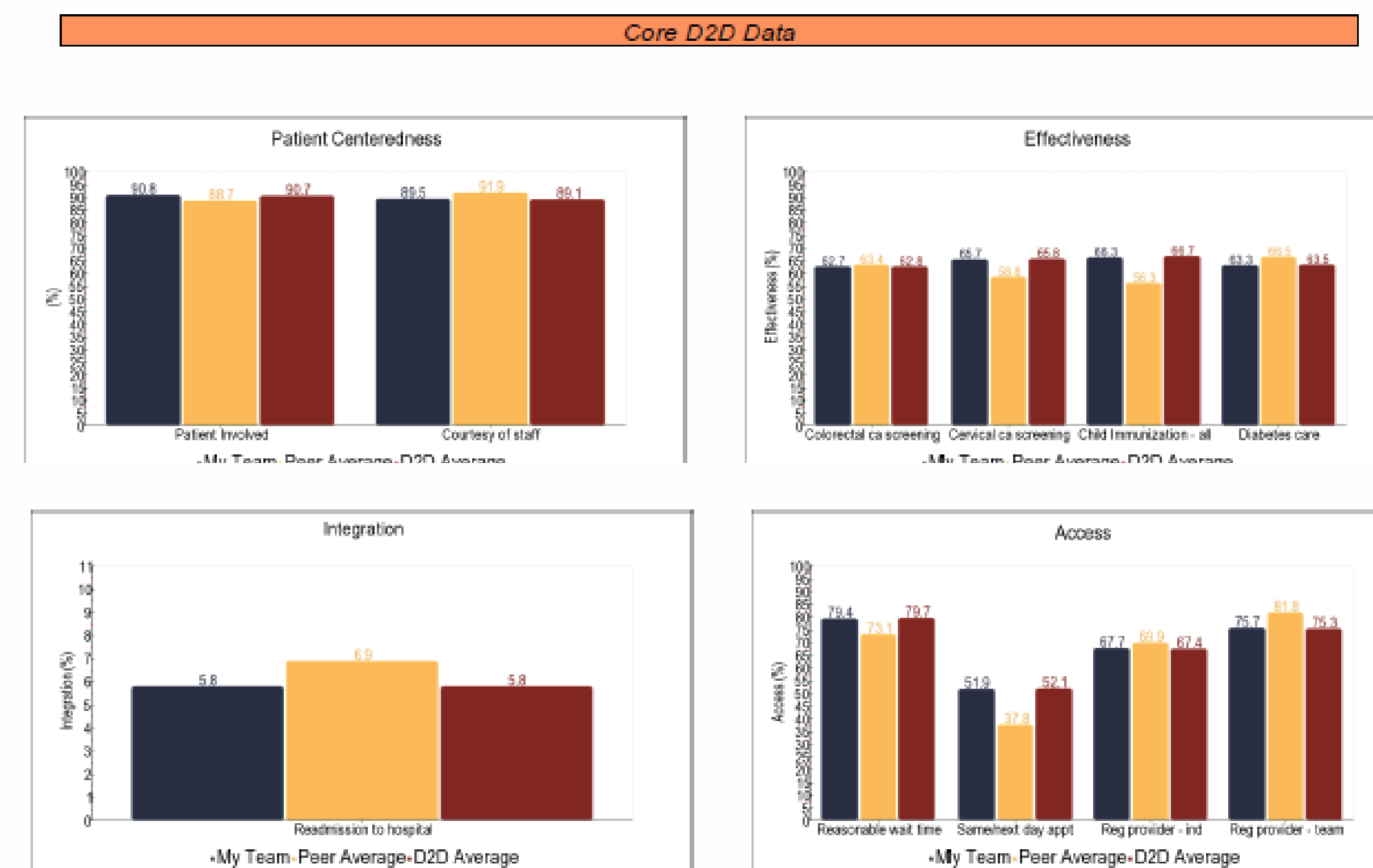
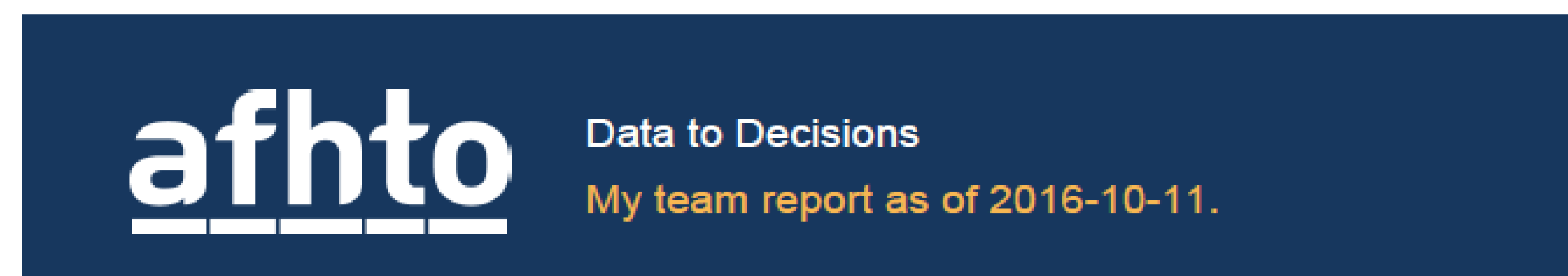
- 184 interdisciplinary primary care teams
- +/- 2,000 physicians & 2,200 interdisciplinary healthcare professionals
- +/- 3 million patients (25% of Ontarians)

## What got us going?

### Data to Decisions (D2D)

A performance measurement report based on **voluntary** contribution of a **small number** of indicators **selected by primary care providers**. Data reflect **multiple perspectives**:

- **Patients:** patient surveys.
  - **Healthcare system:** administrative data.
  - **Primary care TEAM** (not just physicians): EMR
- Anonymous **peer comparisons** depend on consistency of and confidence in data quality.



## What have we learned so far?

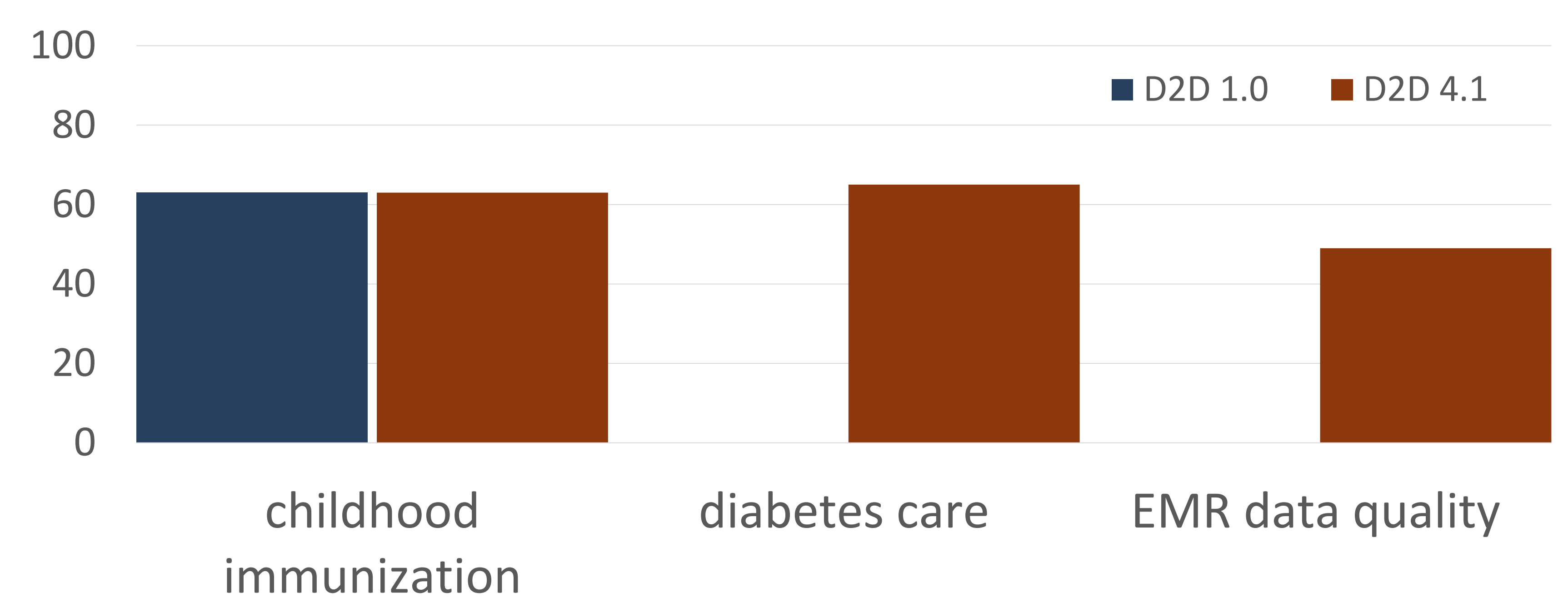
Quality and capacity to extract useful EMR data are increasing. Use of EMR data is increasing in patient management, quality improvement and performance monitoring, suggesting increased confidence in EMR data. Next steps include expanding scope of the EMR data quality indicator and supporting workflow and clinical action based on standardized EMR queries.

## What are we doing to improve data quality and how is it working?

### Use it or lose it

D2D 1.0 (1<sup>st</sup> iteration, Oct 2014) included one indicator based on data from the EMR: childhood Immunizations.  
 D2D 4.1 (5<sup>th</sup> iteration, Mar 2017) included three indicators based on data from the EMR: childhood immunizations, composite indicator of diabetes care based on several data elements like frequency and results of monitoring tests and the EMR Data Quality (EMR DQ) score, another composite indicator (see below).

### EMR-based indicators in D2D



## Measurement: the ultimate attention-seeking behavior

D2D 2.0 (Summer 2015)	D2D 3.0 (Winter 2016)	D2D 4.0-4.1 (Fall 2016/ Winter 2017)	D2D 5.0 (Fall 2017)
Cervical Cancer Screening	Cervical Cancer Screening Colorectal Cancer Screening Smoking Status	Cervical Cancer Screening Colorectal Cancer Screening Smoking Status Coded Diagnosis: • Diabetes	Cervical cancer screening Colorectal Cancer Screening Smoking Status Coded Diagnosis: • Diabetes • COPD • CHF • Depression

### AFHTO’s EMR Data Quality score (EMR DQ)

- A practical application of the data quality framework proposed by Bowen, 2012.
- Composite measure covering the following domains:
  - **Completeness:** smoking status.
  - **Concordance:** agreement between screening rates in EMR and provincial cancer registry.
  - **Consistency:** use of diagnostic codes to identify chronic conditions.
- Evolving to continually measure, attract attention to and improve data quality (see left).
- Examples of impact on data entry and quality of care:
  - inclusion of “smoking status” led to friendly data entry competitions between clinicians.
  - comparison between EMR and provincial cancer screening rates led to better lab-primary care information system integration and better patient safety due to reduced risk of loss of test results.

Bowen, M. (2012), eHealth Observatory Data Quality Evaluation Guide – Version 1.0, University of Victoria, BC, Canada

## Where’s [multimorbidity] Waldo?

### Develop consistent and standardized EMR Queries

Developed by the Algorithm Project of AFHTO’s Quality Improvement Decision Support specialists. Identify patients with COPD, diabetes, CHF & depression based on CPCSSN/EMRALD case definitions. Tested among peer teams to assess predictive value: 85% for both Diabetes and COPD.

Application of queries:

- Diabetes query recommended by Health Quality Ontario in the Primacy Care Report as tool to manage EMR data.
- Depression query used by Centre for Addictions and Mental Health to treatment-resistant depression for the OPTIMUM research project.
- criteria for all queries used for OntarioMD’s EMR dashboard proof of concept.
- Foundation for “consistency” element of EMR Data Quality indicator (Coded Diagnoses).

### EMR Queries by the numbers

- 85:** Positive predictive value for Diabetes and COPD queries
- 3:** EMR products able to use the queries: TELUS PS, Accuro, OSCAR
- 93:** Percent of AFHTO members using one of the 3 EMR products
- 100:** Percent of **any** users of the 3 products able to use queries for free