



REDUCE REUSE RECYCLE

DIGGING FOR GOLD IN EMR DATA

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ON BEHALF AND WITH THANKS TO MEMBERS OF THE
ASSOCIATION OF FAMILY HEALTH TEAMS OF ONTARIO
AND

THE QIDS ALGORITHM TEAM





PRESENTER DISCLOSURE

- Carol Mulder, Provincial Lead, Quality Improvement Decision Support, AFHTO
- No commercial interests to disclose



OBJECTIVES

- Participants will be able to
 - List and access the standardized, tested EMR queries available for THEIR EMR to help manage one or more of at least 4 common Chronic conditions
 - Convince others in their practices of the robust development process, solid foundation in evidence and therefore credibility of the queries
 - Evaluate their capacity to take advantage of the available queries



THE QUEST...

“In attempting to arrive at the truth, I ... applied everywhere for information, but in scarcely an instance have I been able to obtain [health] records fit for any purposes of comparison”

Florence Nightingale, 1863.



THE PROMISE OF EMRS

- Save time!
- Save money!
- Improve care!



WHY DID YOU IMPLEMENT AN EMR?



THE PROMISE OF EMRS

https://www.youtube.com/watch?v=xB_tSFjsjsw 2:11-2:20

- Save time: “75% of U.S. physicians who use electronic health records said no”
- Save money: “75% said they actually increase costs”
- Improve care: “When compared with paper records, EMR implementation had no significant effect on the provision of the 4 preventive services studied”

<http://www.medpagetoday.com/PracticeManagement/PracticeManagement/47716>

<https://www.ncbi.nlm.nih.gov/pubmed/21998247>



HOW DID THIS HAPPEN?

- EMRs were built to do EXACTLY what they do
 - Facilitate billing
 - Allow documentation to be customized by individual physicians
- Benefits of coded data are mostly relevant to administrators (ie not providers)
- There is no support for documentation
 - Compare to hospital, LTC/CCC
- There is limited support for using the data

SURPRISE?



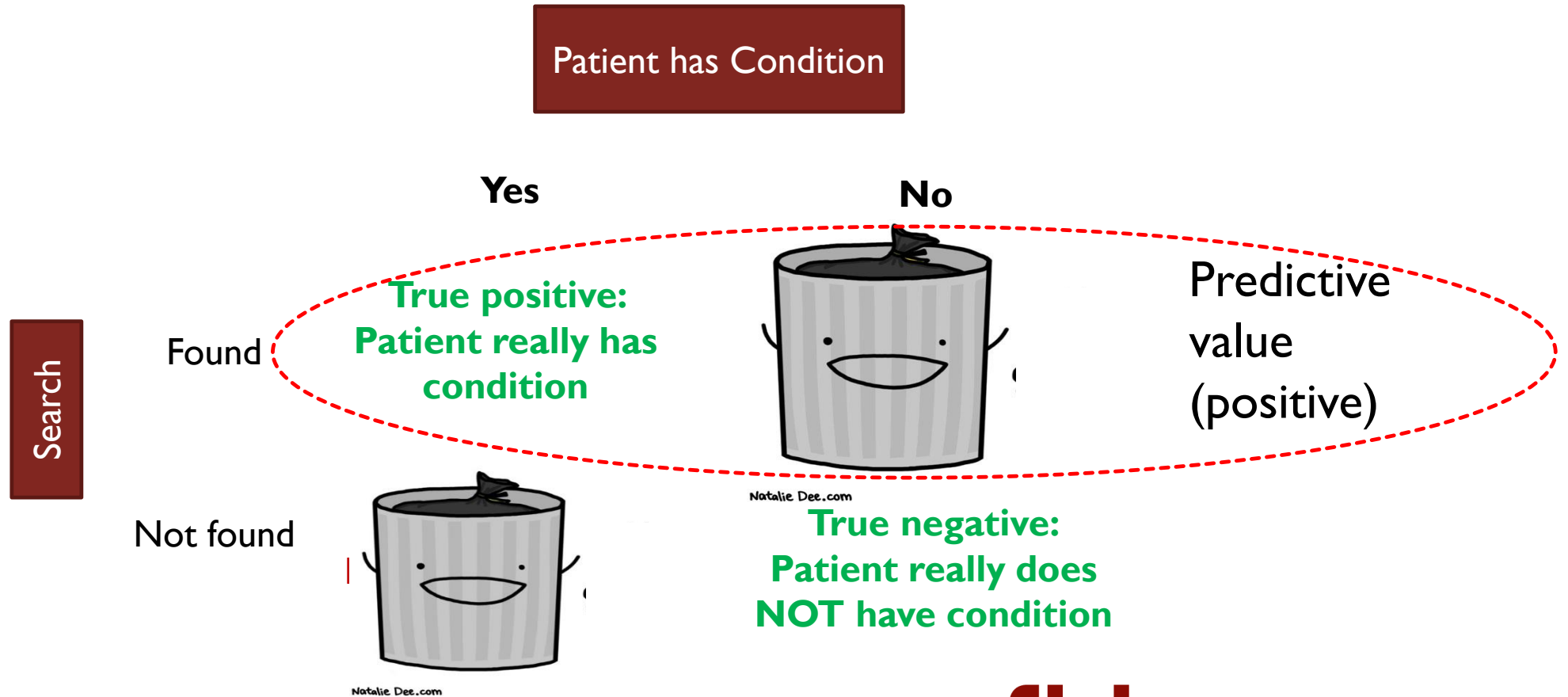
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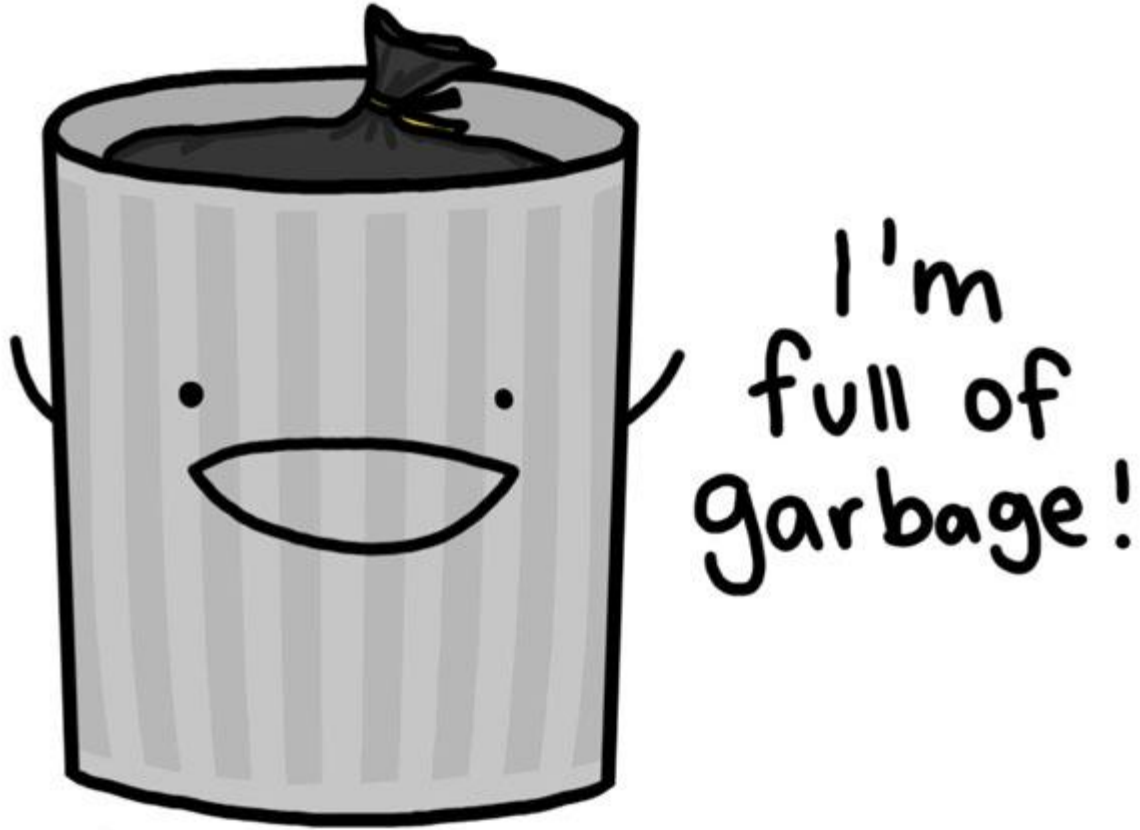
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EMR DATA QUALITY



WHAT DO YOU WANT EMR DATA FOR?



Natalie Dee.com

WHAT'S YOUR BEST OPTION FOR GETTING GOOD DATA FROM YOUR EMR?

- Wish you could do it
- Keep track of data you want OUTSIDE the EMR (eg EXCEL)
- Review all your charts and code them
- Code all your charts every day all day
- Safe Haven for EMR data: CPCCSN/EMRALD
- Do-it-yourself queries
- Standardized EMR queries



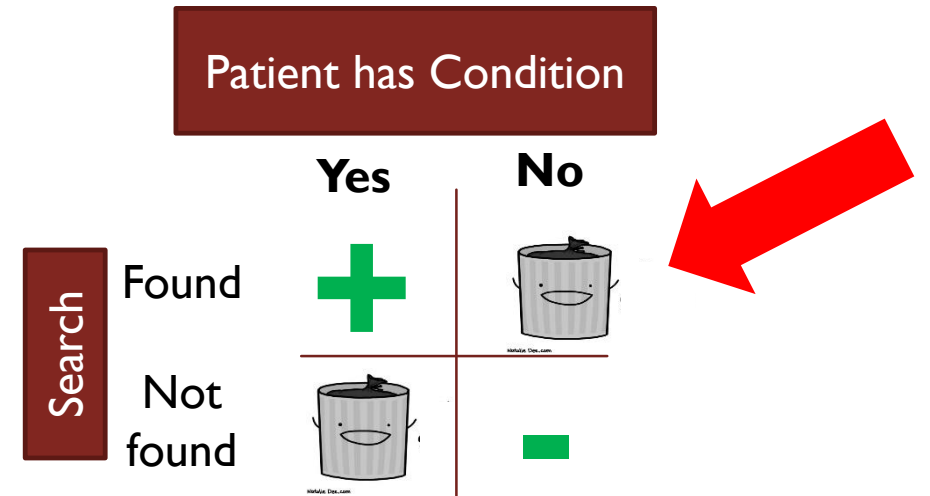


WHY MIGHT YOU DO STANDARDIZED EMR QUERIES?

- Not enough time/money/interest to code your data
- No access to someone to help build queries for you
- No way to know if your do-it-yourself queries are finding all the right patients
- Not ready to contribute your EMR data to [Safe Haven](#) (CPCSSN/EMRALD)
- Tired of the duplication of effort in keeping separate patient lists in Excel etc
- Too hard to get a list of patients for specific recalls and preventive procedures

HOW GOOD ARE THE STANDARDIZED EMR QUERIES?

Condition	CPCSSN/ EMRALD Predictive Value (positive)	Standardized Query Predictive Value (positive)
COPD	80%	85%
Diabetes	95%	83%
CHF	46%	74%
Depression	79%	62%





EXAMPLE OF WORK FLOW WITH THE QUERIES

- Run a query to find patients with COPD
- For roster of 1000 patients, query will find approximately 65 patients (apparent prevalence based on query – ie average number of patients found, right or wrong)
- With 85% positive predictive value, 15% or 10 of the patients will NOT have COPD
- Options:
 - Review ≤ 65 patients (vs 1000) to confirm COPD status
 - Leave as is (ie for performance measurement or reporting purposes)
 - Sign up for Safe Haven (if query and review is too much work or too uncertain for you)



WHO BUILT THE QUERIES?

ALGORITHM TEAM: QUALITY IMPROVEMENT DECISION SUPPORT SPECIALISTS

Technical Team

- Charles Bruntz, QIDS Specialist, North East LHIN FHTs
- Thivaher Paramsothy, Former QIDS Specialist, now Director of FHOCare, DoctorCare
- Tom Sitter, QIDS Specialist, East GTA FHT
- Brice Wong, QIDS Specialist, Erie-St. Clair FHTs

Communication Team

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

HOW DID THEY BUILD THE QUERIES?

Step 1

Identify priority conditions



AP Team

Step 2

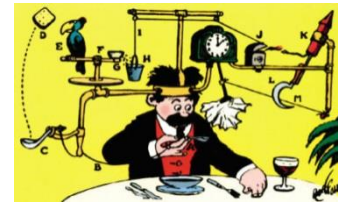
Leverage existing case definitions and collaborate with experts



AP Team

Step 3

Develop, test, and revise queries



AP Team

Step 4

Validate queries with confirmed diagnosis registries



AFHTO members

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

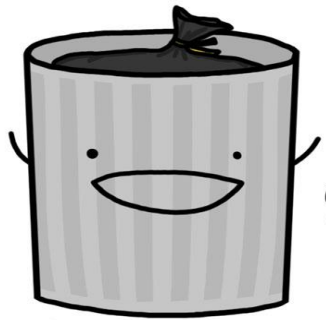
Use the data for practical application



Practice Team

HOW DO THE QUERIES WORK?

or
CPP HPH ICD-10 any item starts with E11
or
CPP Prob Description contains t2d
or
CPP P
or
CPP P
or
CPP P
or
CPP Prob Description contains diabetes
or



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or
CPP Prob Description contains diabetes
or
Hemoglobin A1C [Hb A1C] largest value > 0.069
and
Fasting Blood Sugar [FBS] largest value > 6.9
or
Rx/Meds/Treatments current meds contains Acarbose
or
Rx/Meds/Treatments current meds contains dapagliflozin
or
Rx/Meds/Treatments current meds contains Alogliptin
or
Rx/Meds/Treatments current meds contains chlorpropamide
or
Rx/Meds/Treatments current meds contains Canagliflozin
or
Rx/Meds/Treatments current meds contains Exenatide
or
Rx/Meds/Treatments current meds contains Glibenclamide



HOW DID THE QUERIES GET SO SMART?



EMERALD



WHAT QUERIES ARE AVAILABLE?

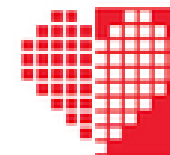
- Diabetes
- COPD
- CHF
- Depression
- Hypertension (in development)

St. Michael's

Inspired Care. Inspiring Science.



CARDIAC CARE NETWORK



WHAT DO YOU DO?

Search

2 a1c
20+ females - Date of Latest Pap
A1C greater than 9
A1c+BP+LDL
AFHTO COPD PSS Frontend Search Fi
AFHTO Diabetes PSS Frontend Search
Age 0-4
Age 10-18
Age 18-29
Age 19-34
Age 30-54
Age 35-49
Age 5-9
Age 50-64

CPP Prob ICD-9 no items start with 256.4
and
CPP Prob ICD-9 no items start with 648.8
and
CPP Prob ICD-9 no items start with 249
and
CPP Prob ICD-9 no items start with 790.29
and
CPP Prob ICD-9 no items start with 775.1
and
CPP Prob ICD-9 any item starts with 250
or
CPP HPH ICD-9 any item starts with 250
or
CPP Prob ICD-10 any item starts with E10

Search for Patients of These Doctors:

- Other doctor
-
-
-

Uncheck All Doctors
Check All Doctors

Include Matched Data with Results Include Deleted Records in Evaluation

Report Format

Title: D2D 3_0 Diabetes Denominator

Columns:

Patient #	Md Name	Privacy
-100		Privacy

Add Column... Remove Column

Notes:

Cancel Edit Searches... Search



Push the button!

afhto : D2D: DATA
TO DECISIONS ▶ 4.0

WHAT DO YOU GET?

- A list of YOUR patients with the condition
- Most will have the condition (see Predictive Value)
- Some will obviously have the condition, even if it wasn't coded or recorded in the correct place
- Some will obviously NOT have the condition even if the query thought so (see Predictive Value)
- Some may need to be reviewed by physician to confirm patient's condition
 - How many patients would you review?
- Now that you have a list, you can DO something!



WHAT CAN YOU DO WITH YOUR LIST OF PATIENTS?

- Code their records: ICD-9, ICD-10, SnoMedCT
 - “Using a data entry clerk to improve data quality in primary care electronic medical records: a pilot study”
<https://www.ncbi.nlm.nih.gov/pubmed/22828579>
- Develop or update disease registries
- Call to remind them about preventative health measures

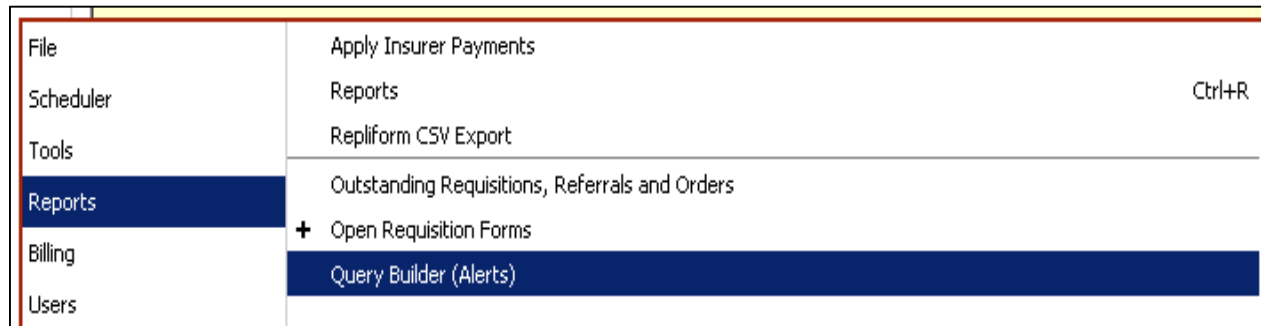


CONDITION-SPECIFIC ACTIONS: A VERY SHORT LIST

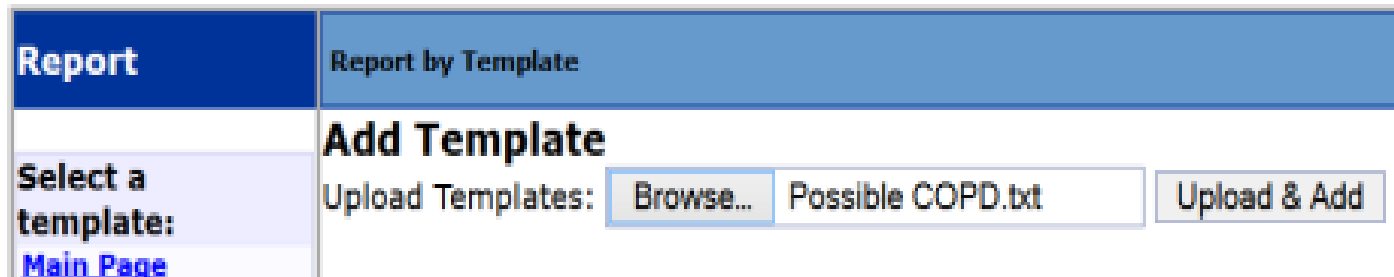
- [Diabetes](#):
 - Improve and expand data capture by your whole team using the flow chart developed by the AFHTO Diabetes Community of Practice
- COPD:
 - [Breathworks](#), an Ontario Lung Association intervention
- Heart Failure:
 - New tool to manage heart failure in primary care coming shortly from Cardiac Care Network
- Depression:
 - [Tool kit](#) for managing depression in primary care from CAMH
 - various research projects with St Michaels and CAMH

HOW CAN YOU GET THE QUERIES?

- [Queries from AFHTO website](#)
- Telus Queries: <https://telushealthcommunity.force.com/pssuitecommunity/thsite/login>
- Accuro: Alert Publisher



- OSCAR: Greg Mitchell greg.Mitchell@afhto.ca



OTHER WAYS TO GET MORE VALUE FROM YOUR EMR

- Sign up for OntarioMD's [EMR Practice Enhancement Program \(EPEP\)](#)
- Contribute your EMR data to the [Safe Haven](#)
- Help set priorities for the next standardized query from AFHTO's Algorithm Team
- Talk to you your [QIDS Specialist](#)
- Code your EMR data!





BOTTOM LINE

- REDUCE: Eliminate “garbage” by increasing consistency in EMR data entry
- REUSE: Run your EMR data thru the queries to find “the good stuff”
- RECYCLE: Take action with the patients found by the queries
- POT of GOLD: your own EMR data, right here, right now!



QUESTIONS?

afhto

⋮ D2D: DATA
⋮ TO DECISIONS ▶ 4.0