

Finding out About Trials in Family Medicine: How Practice Based Research Networks and their Data Can Help

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Panel discussion, March 27 2018

Practice Based Research Networks

- **Alliance** between primary care **clinicians** and **researchers**
- Aim to answer questions **relevant** to primary care practice
- Seek to improve **quality** in participating practices
- Opportunity to increase **research skills**
- Benefit from **linkages** to experienced researchers

PBRNs and Data

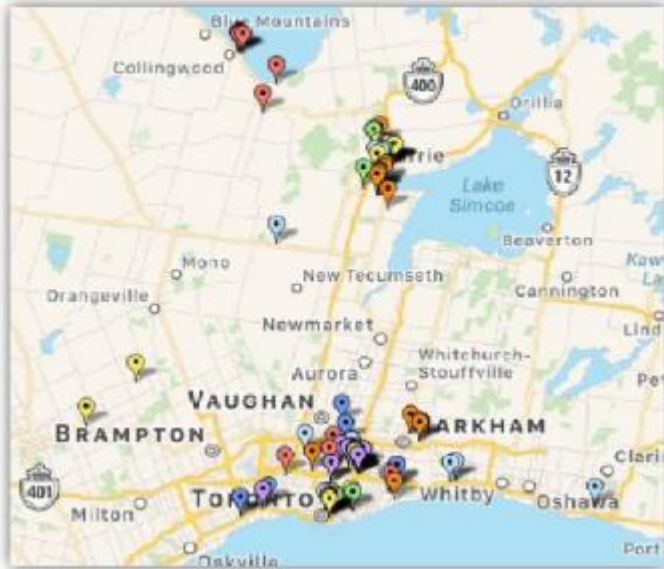
- EMRs are now widely used in primary care
- The **size and scope of EMR data** has dramatically increased in Canada and elsewhere
- PBRNs have **relationships with clinicians**
- PBRNs have an interest in EMR data to support their activities and **collect/manage de-identified EMR data**

- Because of this, PBRNs have emerged as **important players in secondary uses of EMR data and recruitment of patients**

UTOPIAN

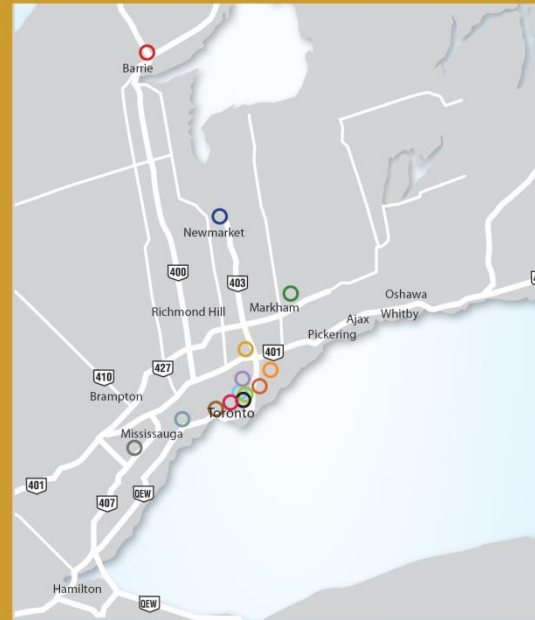
Toronto, Ontario, Canada

Geographical distribution of UTOPIAN sites



Primary care **EMR database** (>500k+ patient records in 2017.Q1)

FAMILY MEDICINE TEACHING UNITS



Units associated with fully-affiliated teaching hospitals

- Mount Sinai Hospital
- St. Michael's Hospital
- Sunnybrook Health Sciences Centre
- Toronto Western Hospital, University Health Network
- Women's College Hospital

Units associated with community-affiliated teaching hospitals

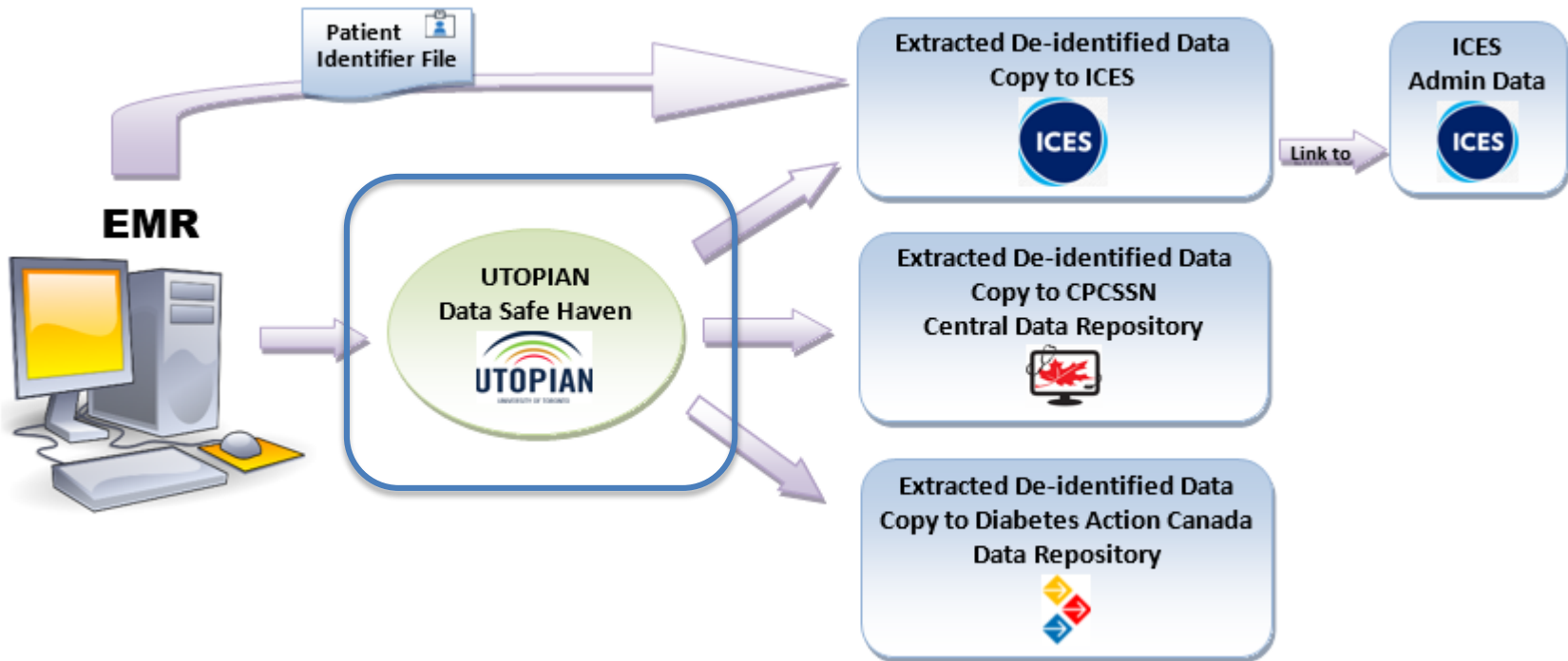
- Credit Valley Hospital, Trillium Health Partners, Mississauga
- Markham-Stouffville Hospital, Markham
- Mississauga Hospital, Trillium Health Partners
- North York General Hospital, Toronto
- Royal Victoria Regional Health Centre, Barrie
- Southlake Regional Health Centre, Newmarket
- St. Joseph's Health Centre, Toronto
- The Scarborough Hospital Scarborough
- Toronto East General Hospital

Rural Program sites

- Headwaters Health Care Centre, Orangeville
- Georgian Bay General Hospital, Midland
- Lakeridge Health Network, Port Perry
- Orillia Soldiers' Memorial Hospital, Orillia

UTOPIAN membership is open to all 14 DFCM teaching hospitals, four rural and 38 teaching practice sites.

Data sharing: UTOPIAN Data Safe Haven

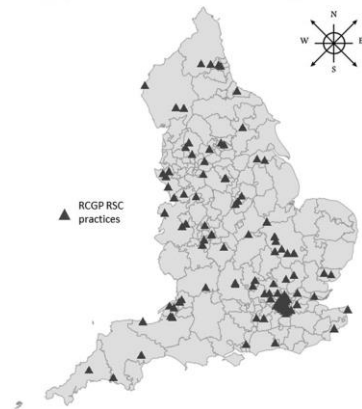


EMR databases in PBRNs in UK and Canada CPCSSN and RCGP

- Routinely collected data extracted from EMRs of primary care providers
- **Canada:** Canadian Primary Care Sentinel Surveillance Network (CPCSSN) database
 - **1.5 million Canadian patients**
- **UK:** Royal College of General Practice (RCGP) database
 - **1.8 million UK patients**
- Both databases undergo extensive **data cleaning** (e.g. removing confidential information (names; address; telephone numbers; free text details etc) and outlier information).



Geographical distribution of the RCGP RSC practices



Identification and invitation to trials

- The de-identified EMR database can be used to **provide information on numbers of patients potentially meeting study criteria** for feasibility
- **Coded lists** of patients can be returned to practices and **re-identified at practice sites**
- Primary care practitioners can **verify lists** and indicate **which patients should not be invited**

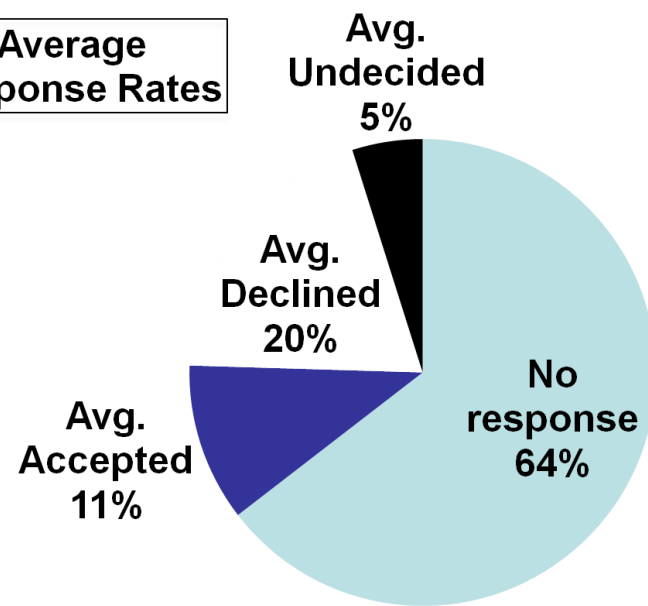
Identification of patients and invitation to trials: example

- Between 40 and 70 years old;
- Living with Diabetes Type II and/or Hypertension;
- Meet at least 2 out of 3 of the following criteria:
 1. A1C (last) $>7.5\%$,
 2. Systolic BP (last) > 140
 3. LDL (last) > 4 (in non-diabetics) or >2 (for diabetics).
- Invited to RCT:
 - Group program to address emotional response to food, compared to
 - Usual care

Identification and trial invitation

	Site 1	Site 2	Site 3
# identified	641	192	54
# invited	231	119	54

Average Response Rates



Interventional: Using EMR data and PBRNs for clinical research

- Approach to improvement: the **SPIDER** model
 - Structured Process Informed by Data, Evidence and Research
 - Build on the Institute for Healthcare Improvement (IHI) Breakthrough model
 - QI Programs and PBRNs working together on QI Collaboratives
 - **EMR data for measurement**



Study planning: can we identify complex patients in primary care

Amongst those 65+, **ten or more medications** identified patients with **persistent high needs**:

- **46.2%** sensitivity
- **95.3%** specificity
- positive predictive value of **69%**.

*Two thirds of patients identified using this method will have persistently high use over three years, and these patients **can reliably be identified using EMR data** for the practices looking after them*



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Thank you!

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