“If you can’t measure it, you can’t manage it” **Addressing Disease Risk Factors in Primary Care Settings**

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Director, Research and Quality Improvement and the Manitoba Primary Care Research Network
Department of Family Medicine, Rady Faculty of Health Sciences, University of Manitoba

Health Information Exchange Standards – Approaches
May 18, 2022

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation.

We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration.

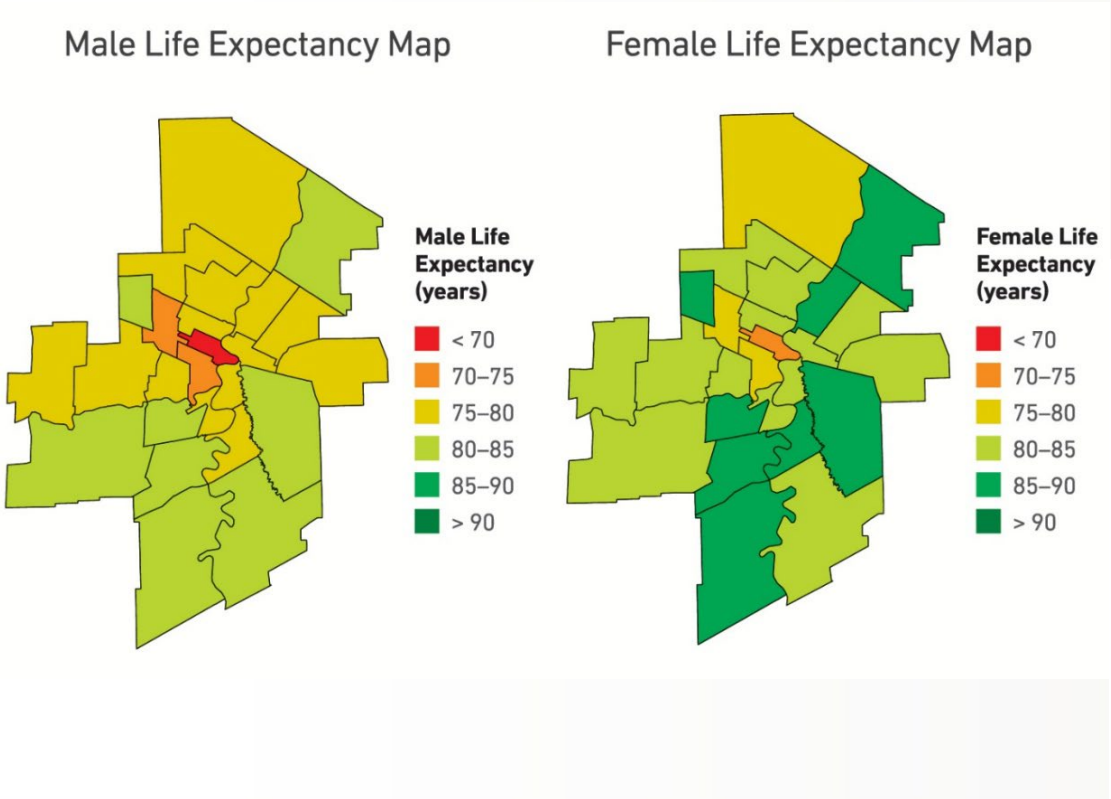
Conflict of Interest –A Singer

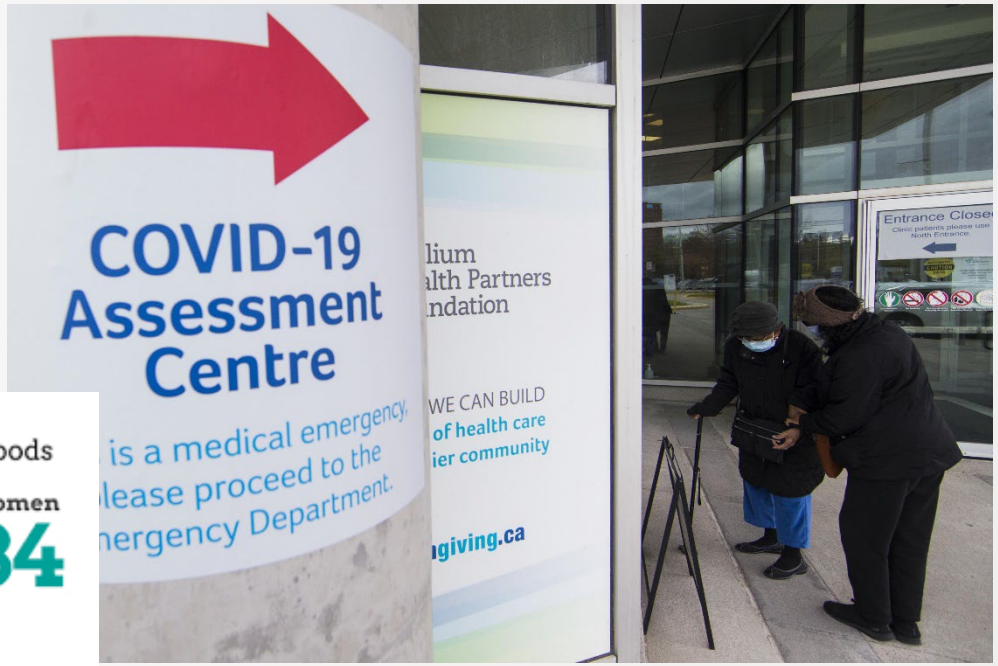
- Paid by University of Manitoba for academic work
- Grant funding from CIHR, Research Manitoba, PHAC
- Principal Investigator on grant funded by IBM and Calian administered by the Canadian Institute for Military and Veterans Health Research related to the identification of PTSD in electronic medical records
  - There are no products related to these funders that will be discussed in this program

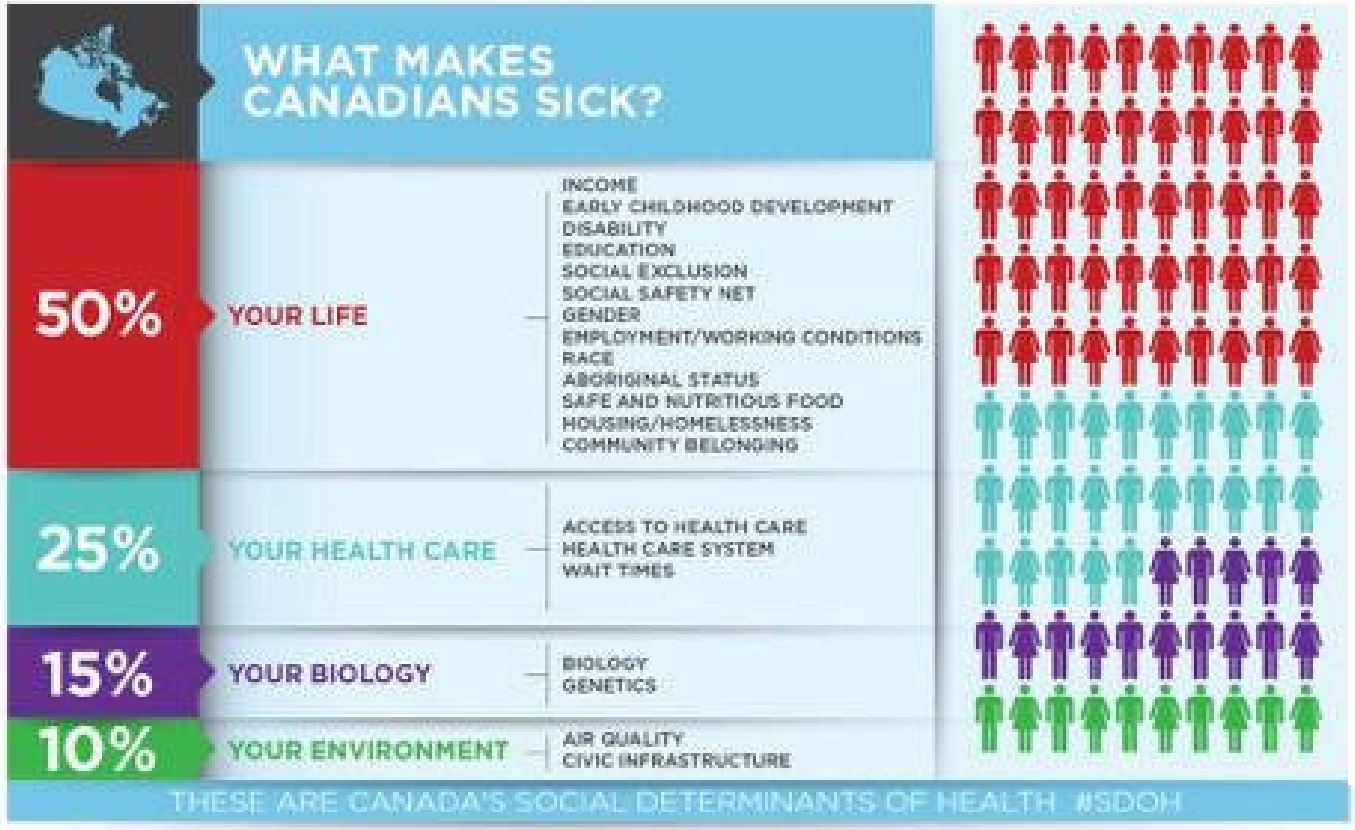
Introduction

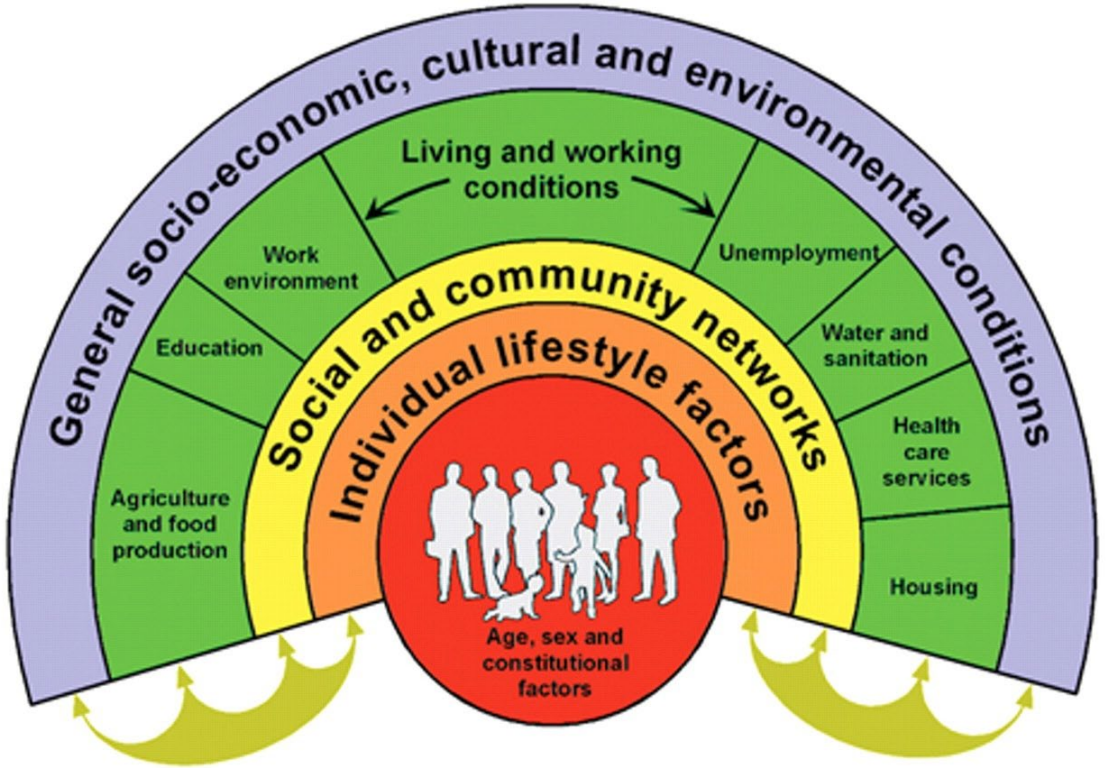
- Risk factors for acute and chronic diseases include social, environmental and health related behaviours
- Many these inequities were further exacerbated during the COVID-19 pandemic
- Robust Practice Based Research and Learning Networks can help understand and address the underlying risk factors contributing to poor health

Medicine is not the most important driver of health outcomes…



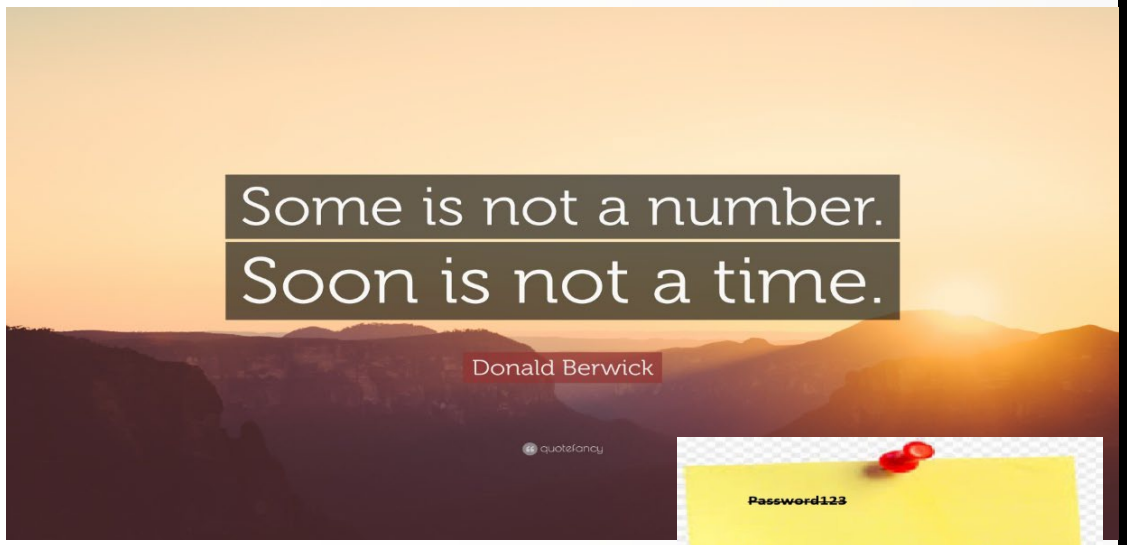




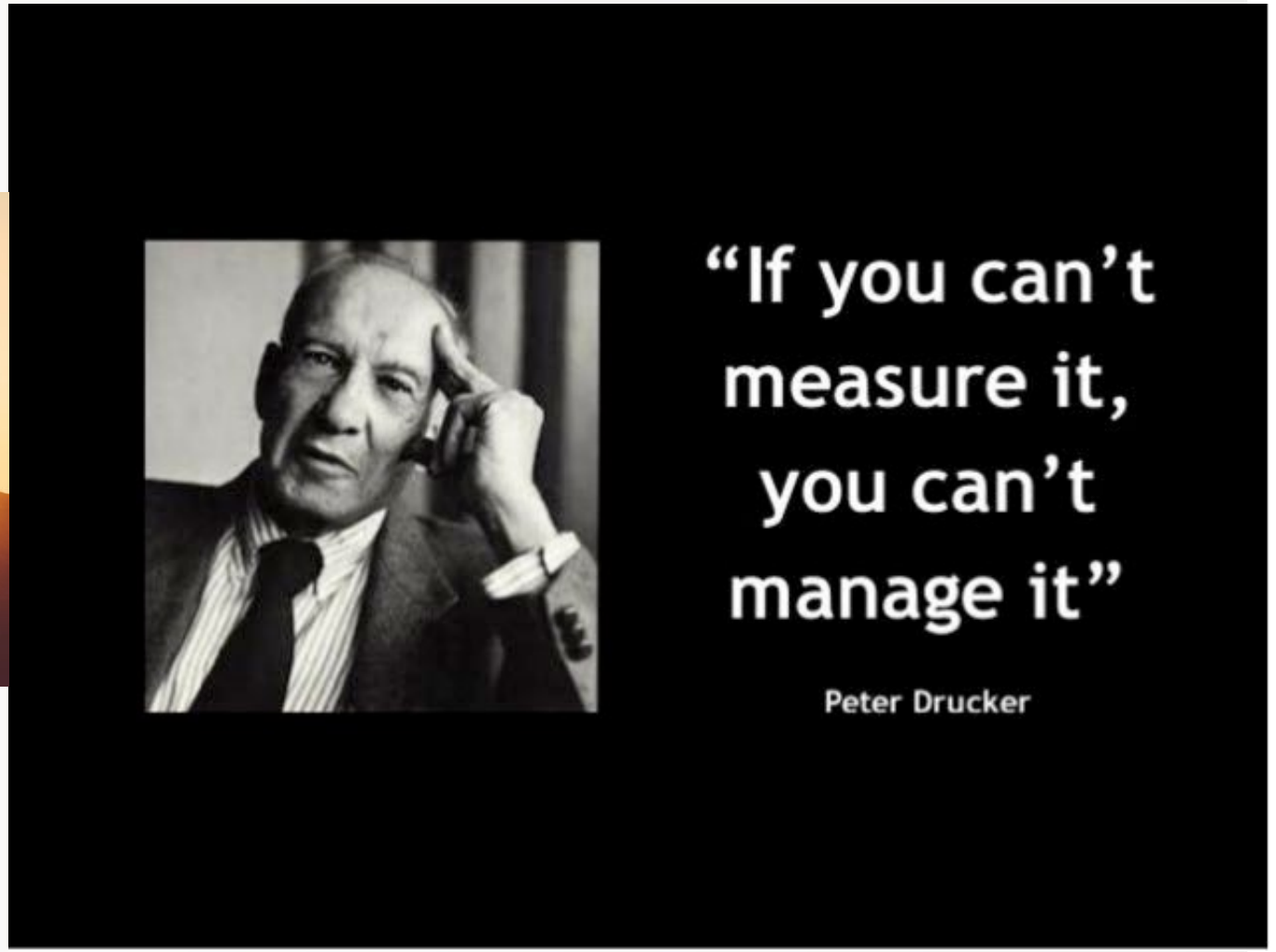


CMA; https://www.cma.ca/health-care-canada-what-makes-us-sick

Dahlgreen, G. and Whitehead, M. (1991). Policies and Strategies to Promote Social Equity in Health. Stockholm: Institute for Future Studies.


Some is not a number.
Soon is not a time.
Donald Berwick
quotefancy


~~Password123~~
"Hope is not a plan"
- Alex Singer


"If you can't measure it, you can't manage it"
Peter Drucker

GIGO = Garbage in Garbage Out and Bias

COMPUTING

Racial Bias Found in a Major Health Care Risk Algorithm

Black patients lose out on critical care when systems equate health needs with costs

By Starre Vartan on October 24, 2019

READ THIS NEXT

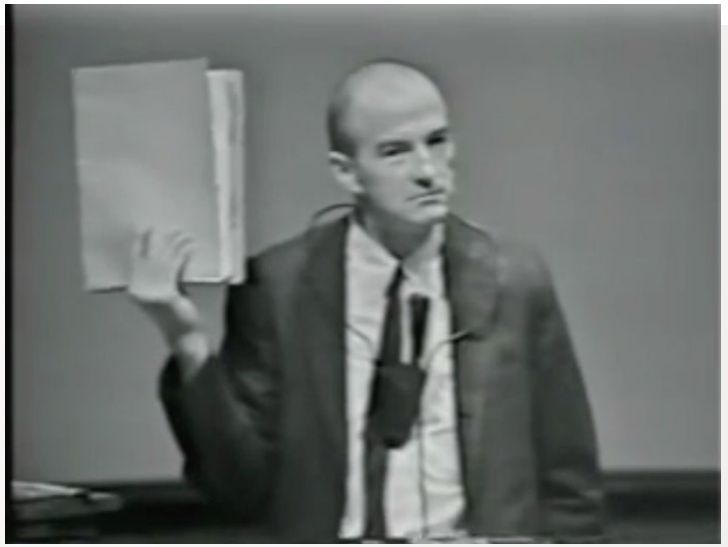
THE SCIENCES

Even Kids Can Understand That Algorithms Can Be Biased

Evelyn Lamb

- "If we accept the limits of discipline and form as we keep data in the medical record, the physician's task will be better defined…"

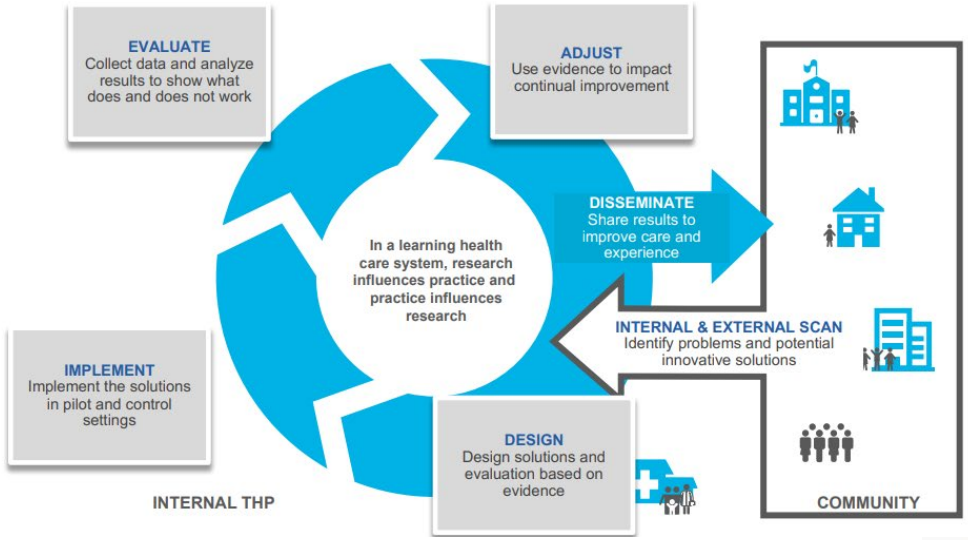
- *"Coding is caring"*



Laurence Weed, 1968

Trillium Health Partners | INSTITUTE FOR BETTER HEALTH

LEARNING HEALTH SYSTEM



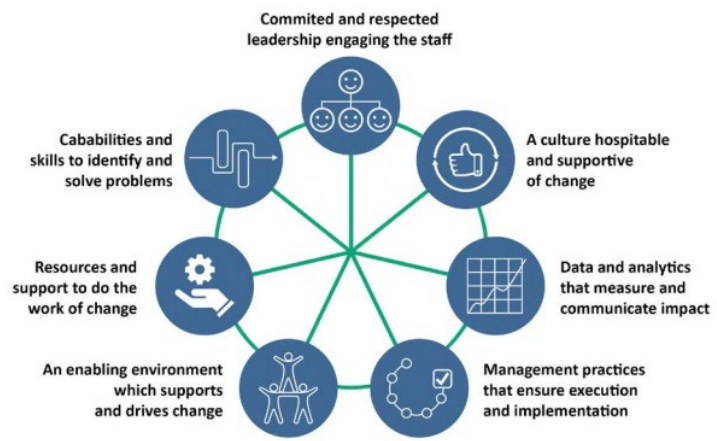
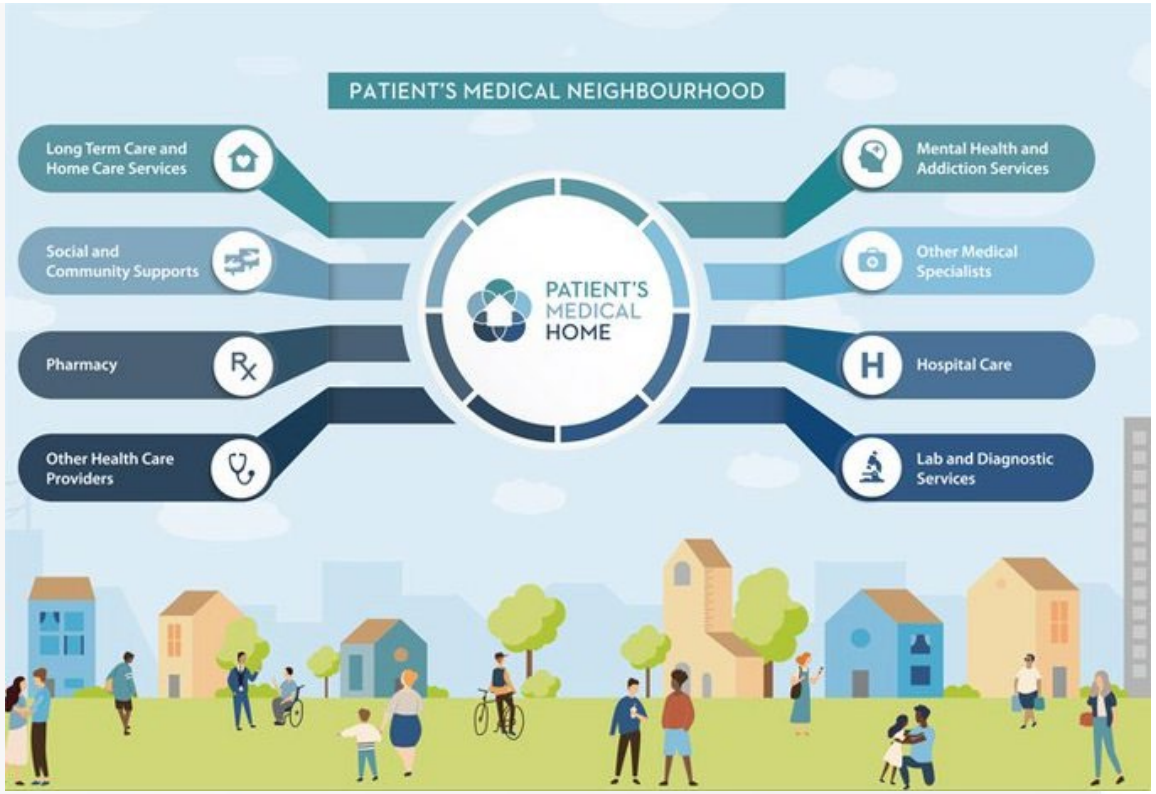


Figure 1. Seven success factors for change in the NHS. Reproduced from [39]

RESEARCH Open Access

Strategies for working across Canadian practice-based research and learning networks (PBRLNs) in primary care: focus on frailty

Manpreet Thandi[1*], Sabrina T. Wong[2], Sylvia Aponte-Hao[3], Mathew Grandy[4], Dee Mangin[5], Alexander Singer[6] and Tyler Williamson[7]



Allcock, C., et al., Constructive comfort: accelerating change in the NHS. 2015, The Health Foundation: London

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Practice Based Research and Learning Networks

POPLAR is a network of networks for primary care across Ontario.

It includes all six of the regional PBLNs in Ontario as well as the Alliance's EPIC PBLN.

POPLAR stands for *Primary Care Ontario Practice-Based Learning and Research.*

CPCSSN RCSSSP

Canadian Primary Care Sentinel Surveillance Network

Réseau canadien de surveillance sentinelle en soins primaires

MaPCReN

Manitoba Primary Care Research Network

PBRLN's role in Patient Risk Factors and Social Determinants of Health

1. Measuring behvioural risk factors
2. Using surrogate measures to understand social determinants of health and inequities health outcomes
3. Contribute to Learning Health Systems in order to address underlying inequalities to build cultures of quality improvement

Behavioural Risk Factors: Tobacco, Alcohol, Substance Use

ARTICLE IN PRESS

Are We Asking Patients if They Smoke?

Missing Information on Tobacco Use in Canadian Electronic Medical Records

Michelle Greiver, MD, Babak Aliarzadeh, MD, Christopher Meaney, MSc, Rahim Moineddin, PhD, Chris A. Southgate, BA, David T.S. Barber, MD, David G. White, MD, Ken B. Martin, MSc, Tabassum Ikhtiar, MD, Tyler Williamson, PhD

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Contents lists available at ScienceDirect

Preventive Medicine Reports

journal homepage: www.elsevier.com/locate/pmedr

Who is asked about alcohol consumption? A retrospective cohort study using a national repository of Electronic Medical Records

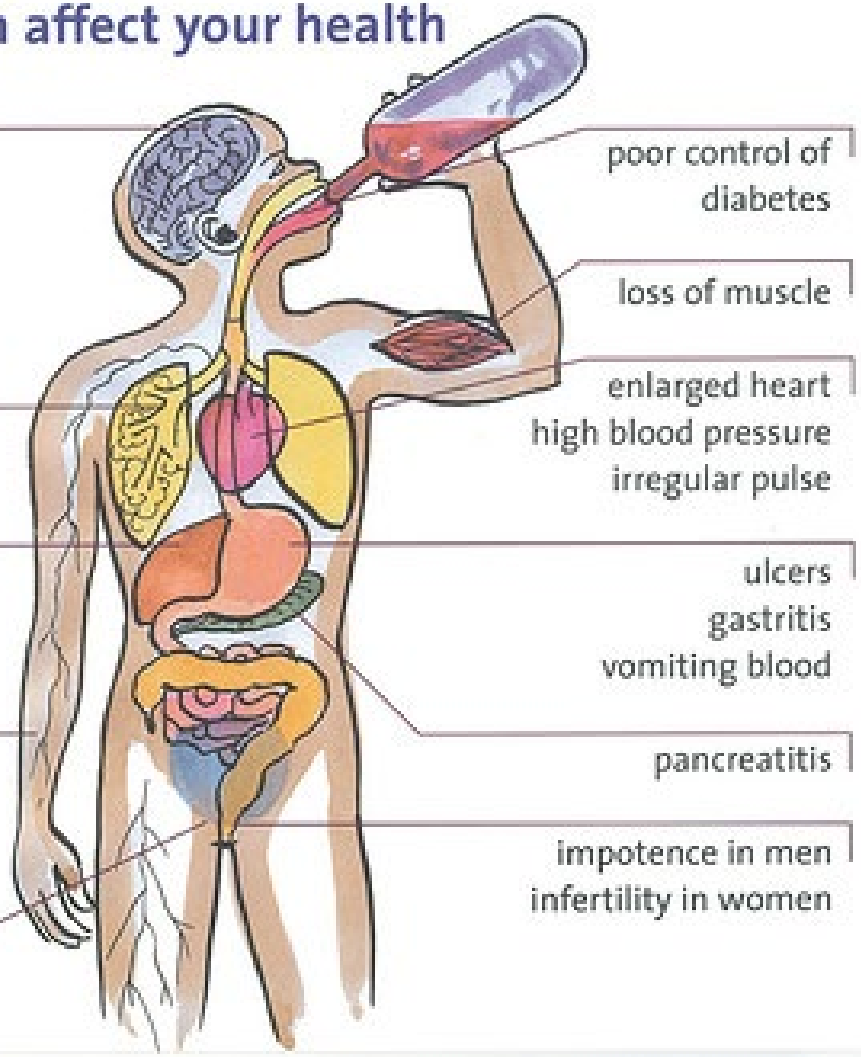
Alexander Singer [a,*], Leanne Kosowan [a], Shilpa Loewen [a], Sheryl Spithoff [b], Michelle Greiver [b], Joanna Lynch [a]

[a] Max Rady College of Medicine, Rady Faculty of Health Sciences, University of Manitoba, Winnipeg, Manitoba, Canada
[b] Department of Family and Community Medicine, University of Toronto, Toronto, Ontario, Canada

Why Record Alcohol Consumption in EMR?

- Contributed to 7.7% of Canadian deaths in 2005
- Associated with major medical comorbidities
- What's the use of recording alcohol consumption?
  - Track patient's alcohol use screening history
  - Offer appropriate programs and additional care
  - Target patients who could benefit from a more organized approach to prevent alcohol dependence or reduce alcohol use

alcohol can affect your health



brain damage
loss of memory
hallucinations
fits
dementia

risk of chest infection

swollen liver
hepatitis
cirrhosis

tingling nerves
numbness
trembling hands

risk of STI and HIV/AIDS

poor control of diabetes

loss of muscle

enlarged heart
high blood pressure
irregular pulse

ulcers
gastritis
vomiting blood

pancreatitis

impotence in men
infertility in women

Who gets asked about alcohol?

- Only 40.6% of patients had their alcohol use documented

- More commonly documented in males, older age, patients who saw their PCP more often (>3 visits per year), some comorbid conditions (hypertension, depression), heavy consumption
  - All moderate increases in odds ratios (1-3X)

Singer A, Kosowan L, Loewen S, Spitoff S, Greiver M, Lynch J. Who is asked about alcohol consumption? A retrospective cohort study using a national repository of Electronic Medical Records. Prev Med Rep. 2021 Mar 9;22:101346. doi: 10.1016/j.pmedr.2021.101346. PMID: 33767948

But EMR data is not clean…

No EtOH, Occasional ETOH, alchol use disorder, binge drinking, binge drinker, bnge drunker, drinks 5 units per day, drinks 5/u p/d, binge drnks on weekend, 2 beers per day – more on the wknd, 10-12 units of alcohol per week, hepatits related to etoh use, hepatititis 2ndary to alcohol use disorder, hipititis related to etoh, tx for alc use disorder now abstint

Data cleaning example : medication table

EMR Text	Cleaned Text	ATC Code
(Polytrim) drops 1 drop qhourly today then reduce to QID tomorrow	Combinations of Different Antibiotics	S01AA30
PERCOCET (Tabs) Sig 1 tab(s) Oral PRN if migraine Quantity 25 tab(s)	Oxycodone and Paracetamol	N02AJ17
TOUJEO SOLOSTAR 300 UNIT/ML (300/ML)	Insulin Glargine	A10AE04

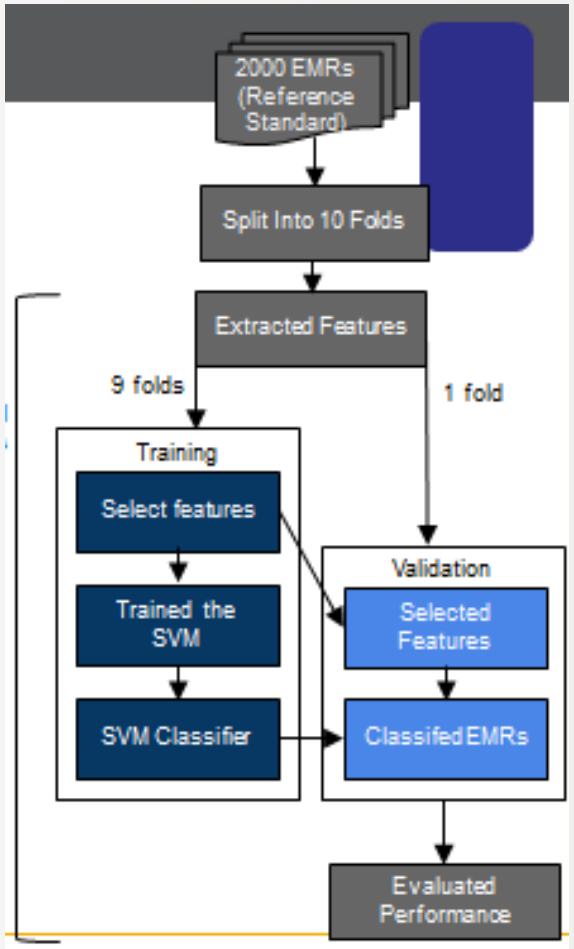
CPCSSN RCSSSP

Canadian Primary Care Sentinel Surveillance Network

Réseau canadien de surveillance sentinelle en soins primaires

Natural Language Processing: Methods

1. Extracted data
2. Develop reference standard
   - Agreement and consensus of clinical experts
3. Apply reference standard
4. Train and validate classification algorithm
   - Bag-of-Words model
     - Unigrams (i.e single word) and Bigrams (i.e. pairs of words)
     - Text processed into suitable form



Singer A, Kosowan L, Loewen S, Spitoff S, Greiver M, Lynch J. Who is asked about alcohol consumption? A retrospective cohort study using a national repository of Electronic Medical Records. Prev Med Rep. 2021 Mar 9;22:101346. doi: 10.1016/j.pmedr.2021.101346. PMID: 33767948

Natural Language Processing: Results

Table 1

Documentations of Alcohol Use in the Electronic Medical Record of CPCSSN participating primary care providers.

Alcohol category	Percent (n)
Non-drinker	21.4% (57,712)
Light	43.6% (117,779)
Moderate	30.4% (82,178)
Heavy	3.0% (8088)
Past	1.7% (4519)
Total*	270,276

*There were 13,992 patients with documentation of alcohol in the EMR that were not classified (i.e. record focused on family history, health conditions or did not specific an amount).

Singer A, Kosowan L, Loewen S, Spitoff S, Greiver M, Lynch J. Who is asked about alcohol consumption? A retrospective cohort study using a national repository of Electronic Medical Records. Prev Med Rep. 2021 Mar 9;22:101346. doi: 10.1016/j.pmedr.2021.101346. PMID: 33767948

Who gets asked about Substance Use Disorders?

Substance Use…

- Dataset from 2020Q4, considered patients with substance use ICD9 codes, substance use documented in the risk factor table, and substance use in encounter notes
- Two medical students reviewed drug use documentation in the risk factor table
  - Categorized using drug type (using DSM categories).
  - Agreement compared – some disparity particularly for status (i.e. high risk, moderate, occasional, past).
- Work underway to improve our processing algorithms and analyze treatment/management plan documentation (if offered/declined, etc.)

MaPCReN Patients
N=289,000

Active MaPCReN Patients (i.e. appointment in the last 2 years January 1, 2018-January 1, 2020)

N=191,331

Patients with substance use documented in Risk Factor Table

N=48,957

Type of substance (current use) in risk factor table

Alcohol = 29,799

Tobacco = 33,873

Drug = 10,934

Patients with substance use

ICD-9 code

N=9,465

Type of substance in ICD-9 code

Alcohol = 3,002

Tobacco = 4,376

Drug = 3,152

Under Construction

Patients with substance use in the risk factor table and encounter note

N=1,497

Patients with substance use ICD-9 code and encounter note

N=3,035

Patients with substance use in the risk factor table, substance use ICD9 and encounter note

N=1,452

Measuring SDOH

- Growth, Pediatric hypertension, CKD and PTSD

Paediatrics & Child Health, 2021, 1–9
https://doi.org/10.1093/pch/pxab081
Original Article

OXFORD

Original Article

Pediatric hypertension screening and recognition in primary care clinics in Canada

Linda Ding MD[1,2], Alexander Singer MD[1,3], Leanne Kosowan MSc[1,3], Allison Dart MD MSc[1,]

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ARTICLE IN PRESS

KI REPORTS
KIReports.org
CLINICAL RESEARCH

Prevalence and Demographics of CKD in Canadian Primary Care Practices: A Cross-sectional Study

Aminu K. Bello[1], Paul E. Ronksley[2], Navdeep Tangri[3], Julia Kurzawa[1], Mohamed A. Osman[1], Alexander Singer[4], Allan Grill[5], Dorothea Nitsch[6], John A. Queenan[7], James Wick[8], Cliff Lindeman[9], Boglarka Soos[2,10], Delphine S. Tuot[11,12], Soroush Shojai[1], Scott Brimble[13], Dee Mangin[14] and Neil Drummond[2,9,10]

RESEARCH ARTICLE Open Access

Check for updates

Characteristics associated with pediatric growth measurement collection in electronic medical records: a retrospective observational study

Leanne Kosowan[1], John Page[2], Jennifer Protudjer[3], Tyler Williamson[4], John Queenan[5] and Alexander Singer[1*]

Rady Faculty of Health Sciences | University of Manitoba

Capture of Pediatric Growth Measures

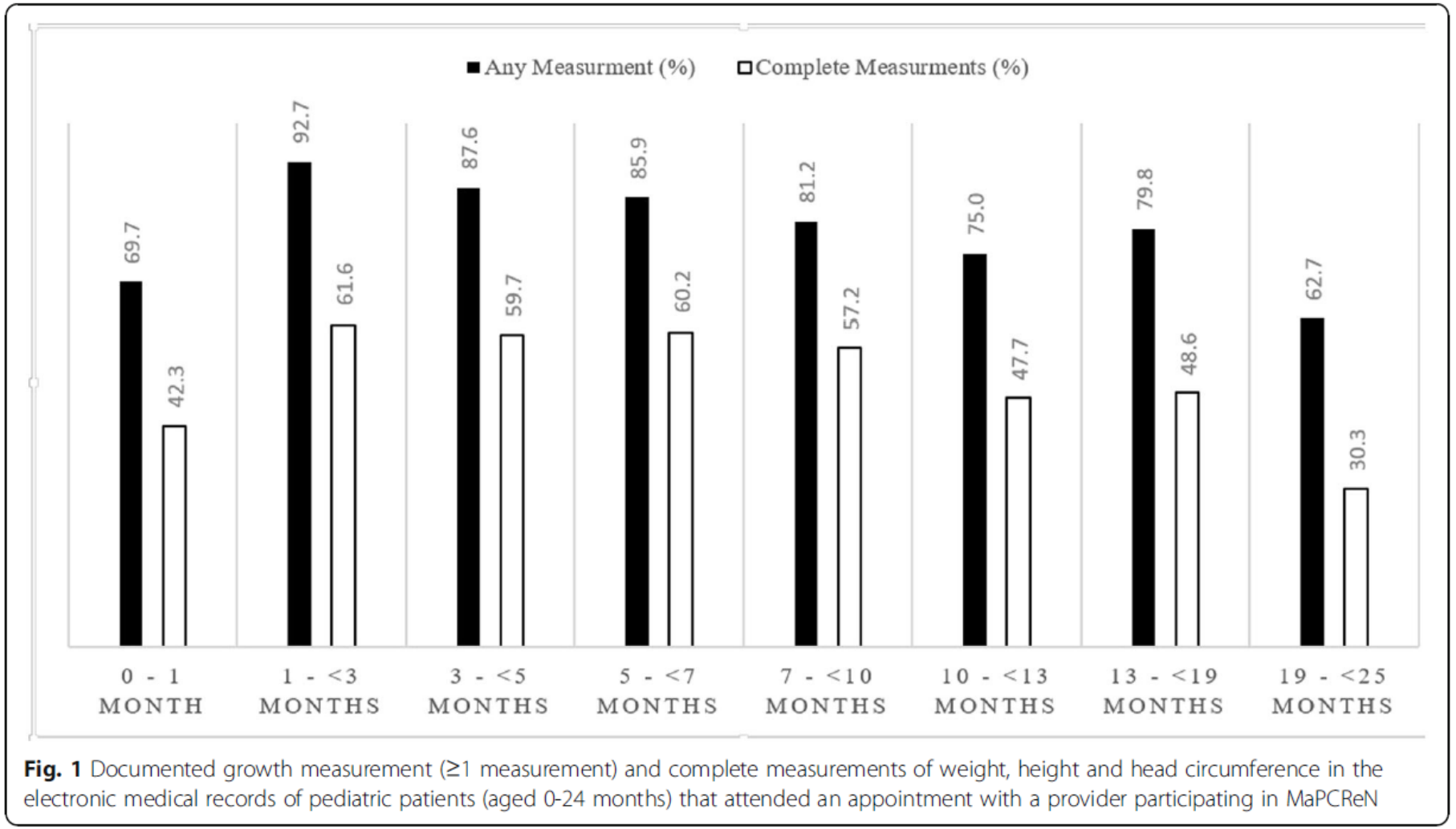
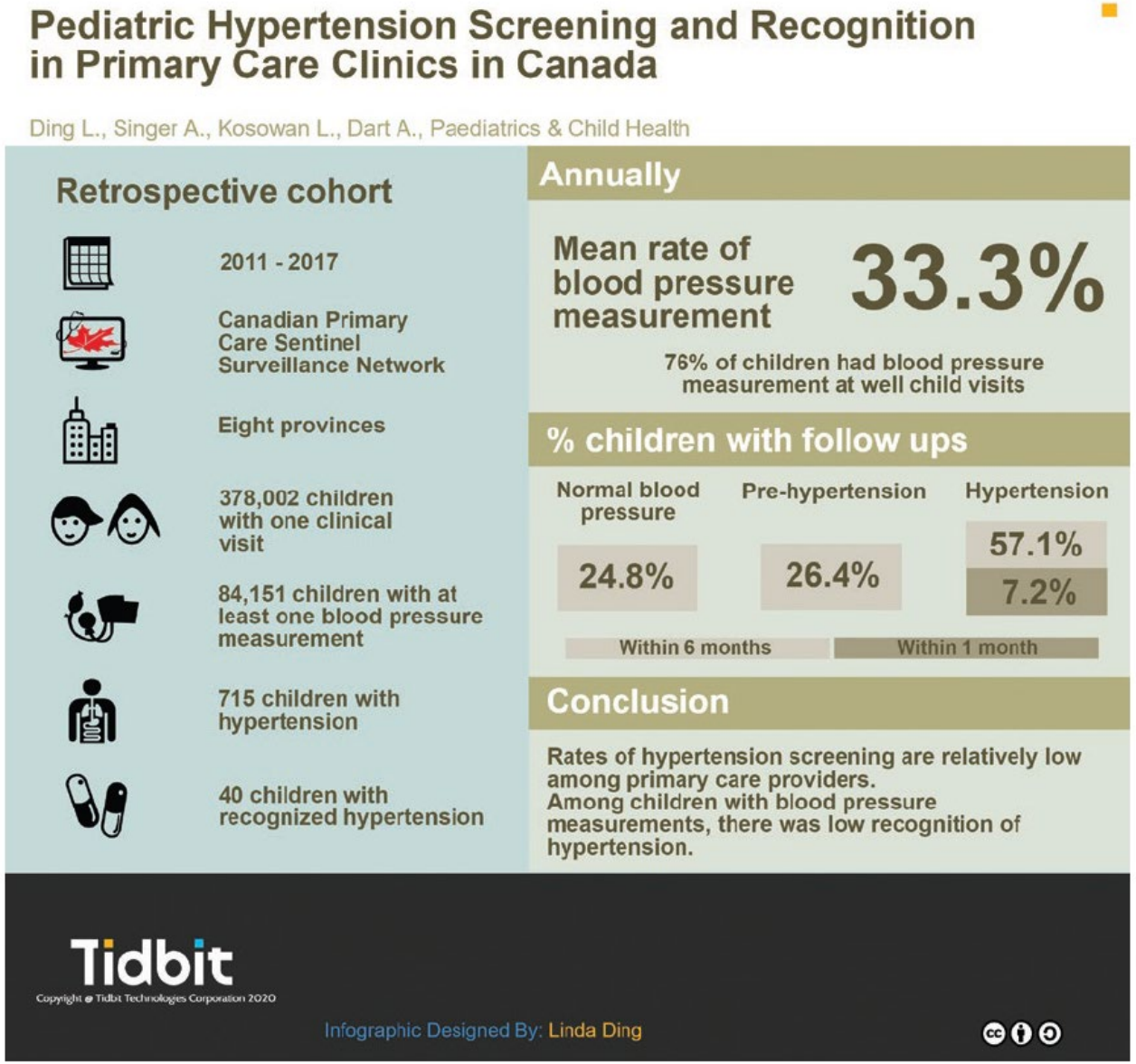


Fig. 1 Documented growth measurement (≥1 measurement) and complete measurements of weight, height and head circumference in the electronic medical records of pediatric patients (aged 0-24 months) that attended an appointment with a provider participating in MaPCReN

Kosowan L, Page J, Protudjer J, Williamson T, Queenan J, Singer A. Characteristics associated with pediatric growth measurement collection in electronic medical records: a retrospective observational study. BMC Fam Pract. 2020 Sep 15;21(1):191. doi: 10.1186/s12875-020-01259-x. PMID: 32933471



Ding L, Singer A, Kosowan L, Dart A. *Pediatric hypertension screening and recognition in primary care clinics in Canada*. Paediatrics & Child Health. Oct 2021.

Rady Faculty of Health Sciences | University of Manitoba

Children with hypertension

Table 1. Characteristics of Canadian children with high blood pressure (HBP) and normal blood pressure (BP).

	Normal Blood Pressure	High Blood Pressure	
Variable	N=79316	N=6571	P-value
Sex (% male)	48.2	55.1	<0.001
Age at first BP measurement in years (mean, SD)	10.8 ± 4.7	10.6 ± 4.5	<0.0001
Age categories for HBP (%)			
0-5 years		13.6	
6-12 years		35.8	
13-18 years		50.6	
Combined Material/Social Deprivation Quintile (%)			
Quintile 1 (least deprived)	23.4	25. 8	<0.001
Quintile 2	26.0	25.0	
Quintile 3	19.5	17.2	
Quintile 4	15.2	14.1	
Quintile 5 (most deprived)	15.9	17.9	
BMI z-score (mean, SD)	0.2 ± 1.1	0.7 ± 1.1	<0.0001
BMI >30 (%)	20.5	36.9	<0.0001
Urban (vs rural) clinic (%)	94.6	93.9	<0.0001
Diabetes (%)	0.5	1.4	<0.0001
Depression (%)	5.1	7.5	<0.0001

Ding L, Singer A, Kosowan L, Dart A. *Pediatric hypertension screening and recognition in primary care clinics in Canada*. Paediatrics & Child Health. Oct 2021.

Social and Material Deprivation Indices

- **Social Deprivation Index** - reflects the deprivation of relationships among individuals in the family, the workplace, and the community. This index includes the following indicators: proportion of the population separated, divorced, or widowed; proportion of the population that lives alone; and proportion of the population that has moved in the past five years.

- **Material Deprivation Index** - reflects the deprivation of goods and conveniences. This index includes the following indicators: average household income; unemployment rate; and high school education rate (Pampalon and Raymond, 2000).

http://mchp-appserv.cpe.umanitoba.ca/viewConcept.php?conceptID=1415

Not all "deprivation" has the same effect

Table 2. Sex stratified regression analyses evaluating association between high BP and clinical characteristics (univariate, and corrected for age, BMI z-score and combined deprivation score). All deprivation scores compare the most deprived quintile to the least deprived quintile.

	Females N=43,979		Males N=41,836	
	OR (95%CI)	Adjusted OR (95%CI)	OR (95% CI)	Adjusted OR (95%CI)
Age at 1st bp	0.984 (0.977-0.992)	0.957 (0.941-0.974)	0.997 (0.989-1.004)	0.971 (0.955-0.987)
BMI z-score	1.461 (1.406-1.515)	1.475 (1.362-1.598)	1.429 (1.383-1.476)	1.505 (1.407-1.61)
Combined Deprivation	1.019 (0.878-1.182)		0.954 (0.832-1.094)	
Material Deprivation	1.056 (0.905-1.232)	0.936 (0.794-1.103)	**1.184 (1.031-1.360)**	1.063 (0.918-1.231)
Social Deprivation	0.983 (0.838-1.153)		1.031 (0.891-1.192)	

Ding L, Singer A, Kosowan L, Dart A. *Pediatric hypertension screening and recognition in primary care clinics in Canada*. Paediatrics & Child Health. Oct 2021.

Adult Chronic Kidney Disease and Deprivation Scores

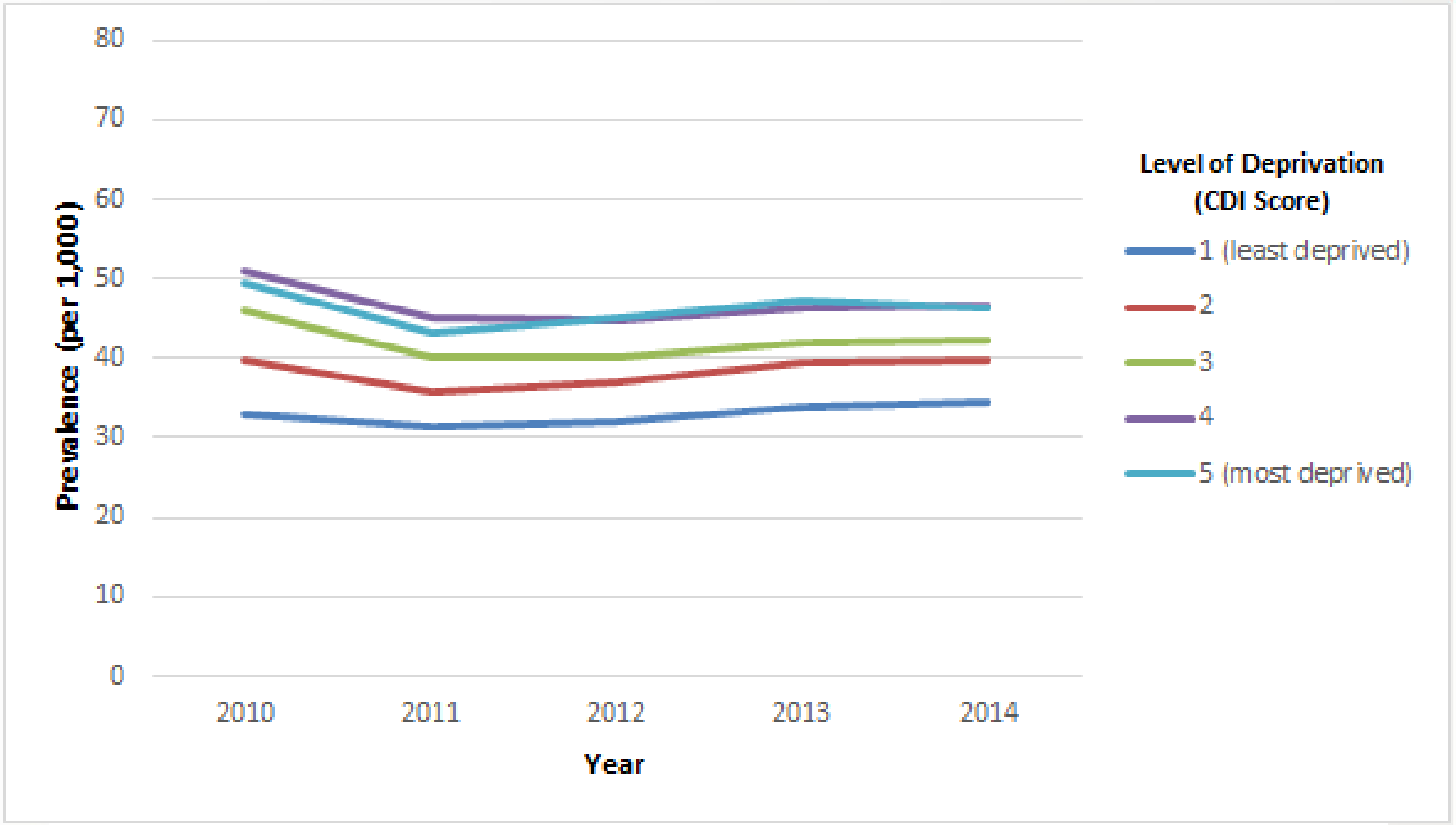


Figure 4. (a) Period prevalence of chronic kidney disease (CKD) by year and deprivation index. Level of deprivation of Canadian Deprivation Index score: 1 (least deprived), dark blue; 2, red; 3, green; 4, purple; 5 (most deprived), light blue. (b) Period prevalence of CKD by year and urban/rural residence. Participant residence: urban (blue); rural (red).

Bello AK, Ronksley PE, Tangri N, Kurzawa J, Osman MA, Singer A, Grill A, Nitsch D, Queenan JA, Wick J, Lindeman C, Soos B, Tuot DS, Shojai S, Brimble S, Mangin D, Drummond N. Prevalence and Demographics of CKD in Canadian Primary Care Practices: A Cross-sectional Study. Kidney Int Rep. 2019 Jan 21;4(4):561-570. doi: 10.1016/j.ekir.2019.01.005. PMID: 30993231; PMCID: PMC6451150.

Post Traumatic Stress Disorder (PTSD)

- Same pattern as CKD in term of the impact of social and material deprivation on prevalence
- Demonstrated in cohort within the Canadian Primary Care Sentinel Surveillance Network
- Cohort evaluated of 689,000 patients from across Canada

Singer A, Kosowan L, Muthumuni D, Katz A, Zafari H, Zulkernine F, Richardson JD, Price M, Williamson T, Queenan J, Sareen J. Characterizing primary care patients with posttraumatic stress disorder using electronic medical records: a retrospective cross-sectional study. *Under Review* Family Practice.

Material and Social Deprivation and PTSD

Table1: Characteristics of patients with and without PTSD

N=689,301

Variable	Patients without PTSD	Patients with PTSD	P-value
Urban (No., %) vs rural residency	510,755 (80.4%)	6,804 (85.2%)	<.001
Material Social Deprivation Index[a], No. (%)			
Q1 (least deprived)	9458 (18.0%)	68 (6.2%)	<.001
Q2	10,067 (19.1%)	104 (9.4%)	
Q3	13,266 (25.2%)	278 (25.2%)	
Q4	9,537 (18.1%)	245 (22.2%)	
Q5 (most deprived)	10,293 (19.6%)	409 (37.1%)	
Annual visit frequency, mean (SD)	2.8 (3.4)	4.8 (5.0)	<.001

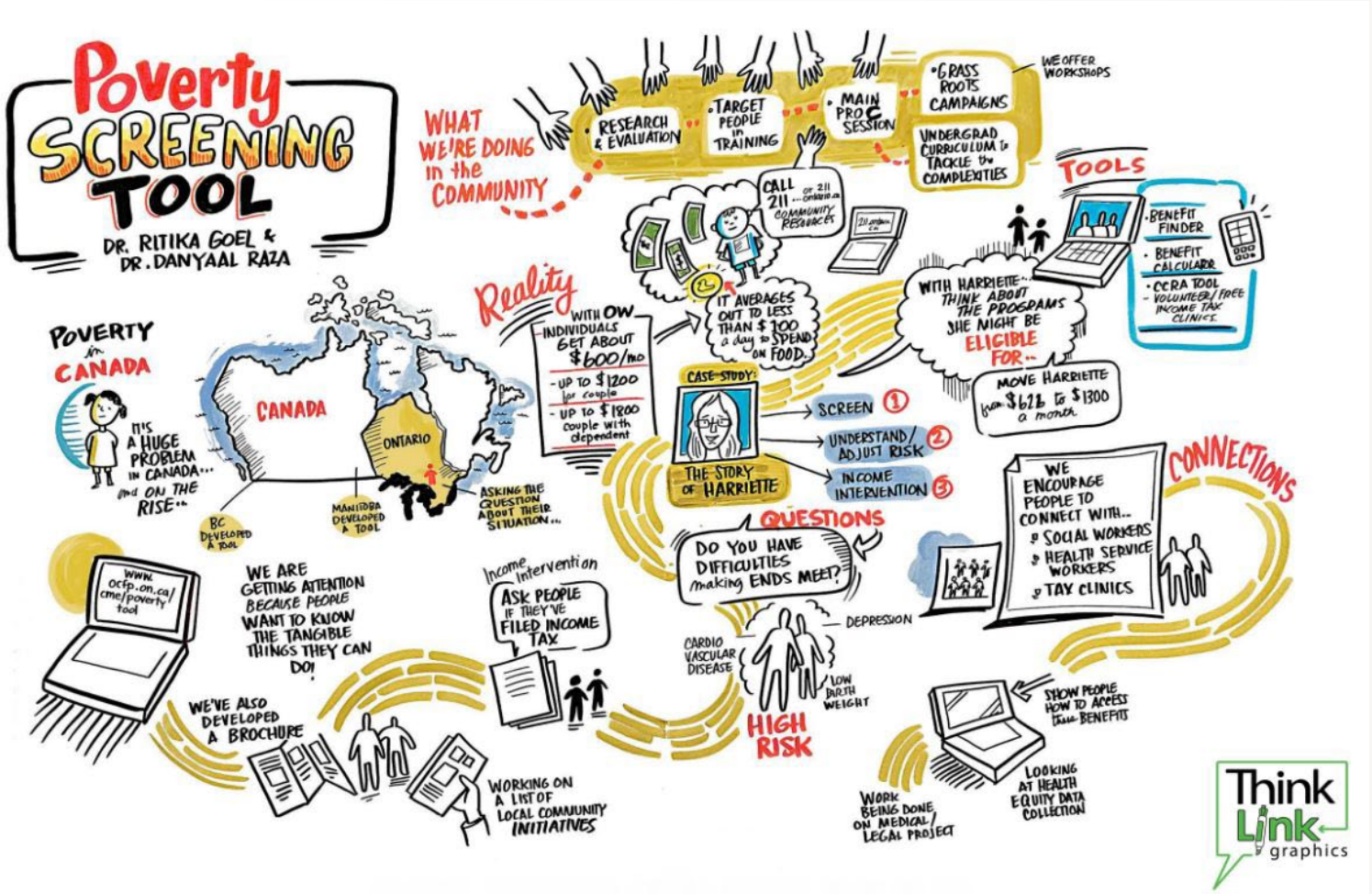
Singer A, Kosowan L, Muthumuni D, Katz A, Zafari H, Zulkernine F, Richardson JD, Price M, Williamson T, Queenan J, Sareen J. Characterizing primary care patients with posttraumatic stress disorder using electronic medical records: a retrospective cross-sectional study. *Under Review* Family Practice.

Odds Ratios for Impact of Deprivation on PTSD

	Adjusted Odds Ratio
Material deprivation	
5 (most deprived) vs. 1 (least deprived)	2.1, 1.45-2.06
4 vs. 1 (least deprived)	1.31, 1.07-1.61
3 vs. 1 (least deprived)	1.1, 0.9-1.34
2 vs. 1 (least deprived)	0.91, 0.74-1.12
Social deprivation	
5 (most deprived) vs. 1 (least deprived)	3.78, 2.72-5.25
4 vs. 1 (least deprived)	2.37, 1.69-3.33
3 vs. 1 (least deprived)	1.69, 1.18-2.42
2 vs. 1 (least deprived)	1.55, 1.05-2.3

Singer A, Kosowan L, Muthumuni D, Katz A, Zafari H, Zulkernine F, Richardson JD, Price M, Williamson T, Queenan J, Sareen J. Characterizing primary care patients with posttraumatic stress disorder using electronic medical records: a retrospective cross-sectional study. *Under Review* Family Practice.

So how can this be addressed?



FOR MANITOBA HEALTH CARE PROVIDERS:
A TOOL TO ADDRESS POVERTY

IT'S A FACT:
BETTER INCOME CAN LEAD TO BETTER HEALTH

GET YOUR BENEFITS!

Children's Hospital Health Sciences Centre Winnipeg

THE MANITOBA COLLEGE OF FAMILY PHYSICIANS | LE COLLÈGE DES MÉDECINS DE FAMILLE DU MANITOBA

A CHAPTER OF THE COLLEGE OF FAMILY PHYSICIANS OF CANADA
UNE SECTION DU COLLÈGE DES MÉDECINS DE FAMILLE DU CANADA

Rady Faculty of Health Sciences | University of Manitoba

The “Poverty Tool” (or Get Your Benefits Tool) was tested as web based screening tool that gave customized recommendations

The Benefits Screening Tool can help you as a health-care provider in recommending income assistance benefits to your patients living on a low income. By asking a series of questions, the tool will generate a list of benefits and resources that your patient might be eligible for but may not yet be receiving including more information about how they can qualify and apply.

Let's get started

We have 13 questions for you to ask your patient. This will help us build our recommendations based on your patient's situation. If you don't have enough time to complete the entire questionnaire, not to worry, just answer the two questions on this page, click on the 'Finish' button below and we will provide you with a quick 'Patient Income Benefit Handout'.

Which clinic are you visiting?

- St. Michael's Hospital (Toronto)
- South East Toronto Family Health Team (Toronto)
- South Riverdale Community Health Centre (Toronto)
- Aikins Street Community Health Centre (Winnipeg)
- Klinic Community Health Centre (Winnipeg)
- Mount Carmel Clinic (Winnipeg)
- I am visiting a clinic/family health care center not listed above
- I am not visiting a clinic - I am exploring this tool for informational purposes

We need to obtain some more information about your patient

Please tell us more about your patient by answering some additional questions. The more questions that are answered, the more tailored the suggestions will be. However, the patient is not required to complete the survey or answer any question that they are not comfortable responding to. Once you complete this page of the survey, you can continue onto the last page of the survey by clicking on "Continue" at the bottom of this page, should you and your patient choose to do so. Your patient can choose to stop participating in the survey at any time and can still receive benefit recommendations if you click on 'Finish' at the bottom of this page.

What is your citizenship or immigration status? I will read you a list of options and I'd like you to tell me which status best applies to you.

Select option

How old are you?

Select option

What is your employment status? I will read you a list of options and I'd like you to tell me which status best applies to you.

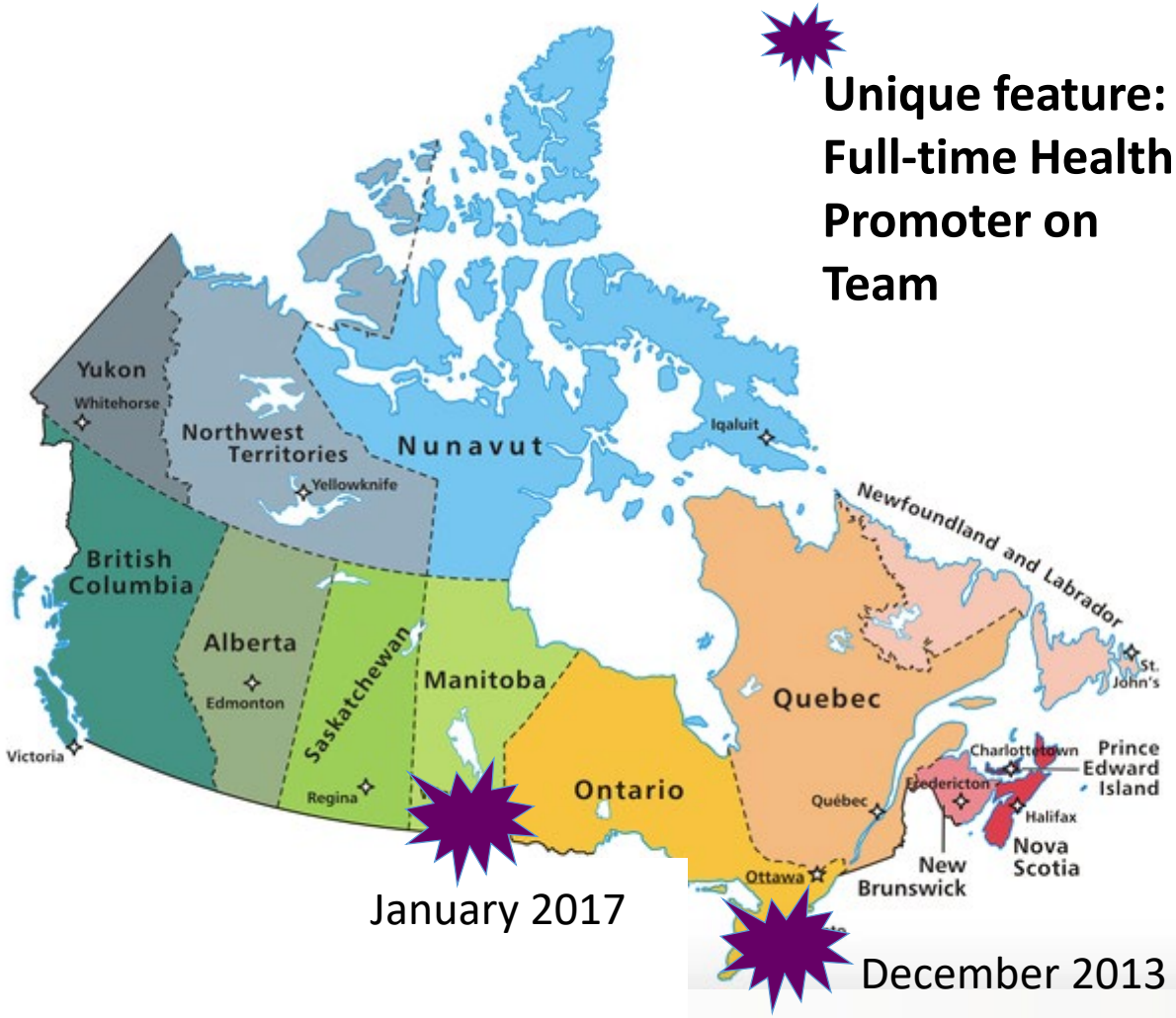
Select option

Are you or anyone in your household living with a physical or mental health disability?

Findings - Providers

- Provider Perspectives
  - Addressing poverty should be central to primary care; address SDOH and not just behaviours
  - Across professional designations, physicians are not the optimal staff to use the tool with patients
    - “I’m not sure I’m the best person to be doing this” – MB Physician
  - Integration of a new tool into the busy workflow of clinics requires additional supports and resources to see ongoing use with clients

Income Security Health Promotion in Canada



Unique feature: Full-time Health Promoter on Team

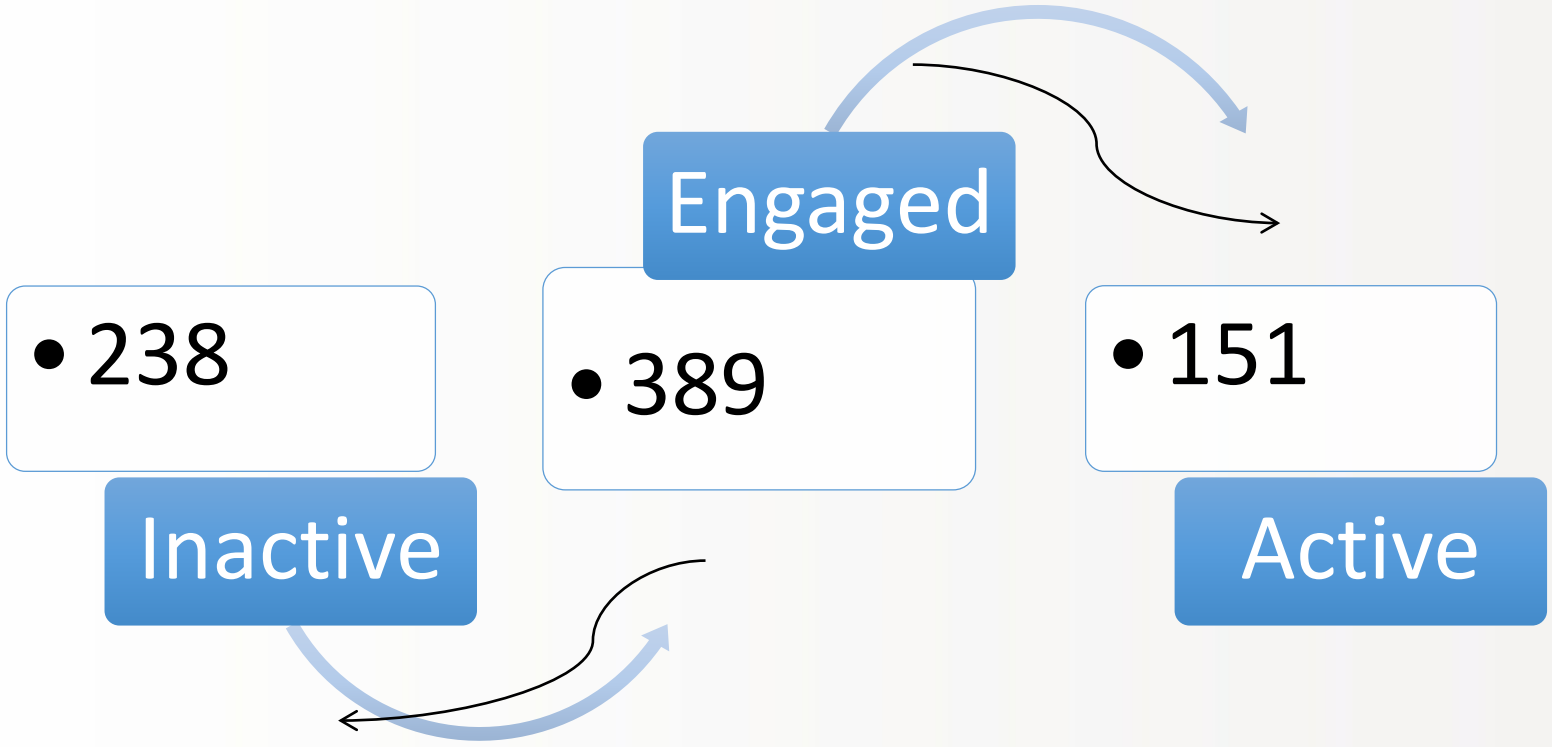
January 2017

December 2013

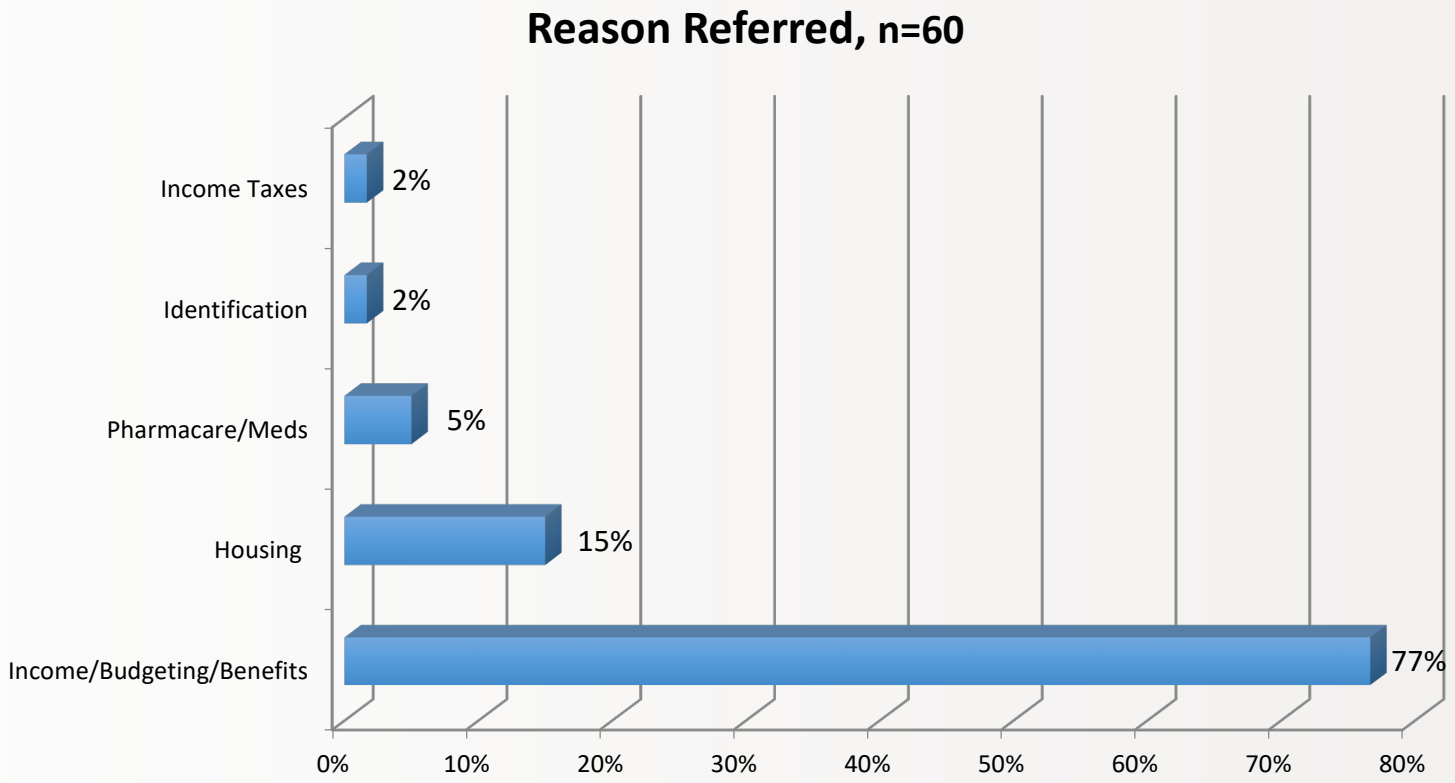
TORONTO:
Income Security Health Promotion Service, December 2013

WINNIPEG:
Income Security Health Provider Program, January 2017

January 7, 2017 - September 7, 2018 (20 months)



Income Support Health Promoter (ISHP) Reasons for Referral:



ISHP Referrals:

*"I'd say **most of the clients that I see, come and see me in crisis**, so they will be: "I don't have funds for this…", "I can't purchase my medications…", and it's kind of, "I need this fixed now"… And once this concern is resolved, then we don't necessarily follow-up, nor do the clients necessarily want follow-up as part of that resolution. I'd say that's the majority of my clients."*

Patient Impact:

"Yeah, and also he is helping me with my treaty status."
"So [ISHP provider] has been helping me, and then part of that too, he helped me out with receiving all my tax papers, so he got all that information and I did all those taxes."
*"**I have more peace of mind now, because now I know that I have those… documents**."*

The Culture of Quality Improvement

External Supports of Quality Improvement

- Data Feedback and Benchmarking
- Practice Facilitation and Coaching
- Expert Consolations (and peer support)
- Shared Learning and Learning Collaboratives

Agency for Healthcare Research and Quality

Quality Improvement in Primary Care. Content last reviewed November 2020. Agency for Healthcare Research and Quality, Rockville, MD.
https://www.ahrq.gov/research/findings/factsheets/quality/qipc/index.html

PBRLN's are Living Laboratories

1. Identify the problems that arise in daily practice that create the gap between recommended care and actual care
2. Demonstrate whether treatments with proven efficacy are truly effective and sustainable when provided in the real-world setting of ambulatory care
3. Provide the "laboratory" for testing system improvements in primary care to maximize the number of patients who benefit from medical discovery.

Westfall JM, Mold J, Fagnan L. Practice-Based Research—"Blue Highways" on the NIH Roadmap. *JAMA.* 2007;297(4):403–406. doi:10.1001/jama.297.4.403

Pan-Canadian Health Data Strategy:
Toward a world-class health data system

https://www.canada.ca/en/public-health/corporate/mandate/about-agency/external-advisory-bodies/list/pan-canadian-health-data-strategy-reports-summaries/expert-advisory-group-report-01-charting-path-toward-ambition.html

Behavioural Risk Factors: Tobacco, Alcohol, Substance Use

ARTICLE IN PRESS

Are We Asking Patients if They Smoke?

Missing Information on Tobacco Use in Canadian Electronic Medical Records

Michelle Greiver, MD, Babak Aliarzadeh, MD, Christopher Meaney, MSc, Rahim Moineddin, PhD, Chris A. Southgate, BA, David T.S. Barber, MD, David G. White, MD, Ken B. Martin, MSc, Tabassum Ikhtiar, MD, Tyler Williamson, PhD

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Preventive Medicine Reports

journal homepage: www.elsevier.com/locate/pmedr

Who is asked about alcohol consumption? A retrospective cohort study using a national repository of Electronic Medical Records

Alexander Singer [a,*], Leanne Kosowan [a], Shilpa Loewen [a], Sheryl Spithoff [b], Michelle Greiver [b], Joanna Lynch [a]

[a] Max Rady College of Medicine, Rady Faculty of Health Sciences, University of Manitoba, Winnipeg, Manitoba, Canada
[b] Department of Family and Community Medicine, University of Toronto, Toronto, Ontario, Canada

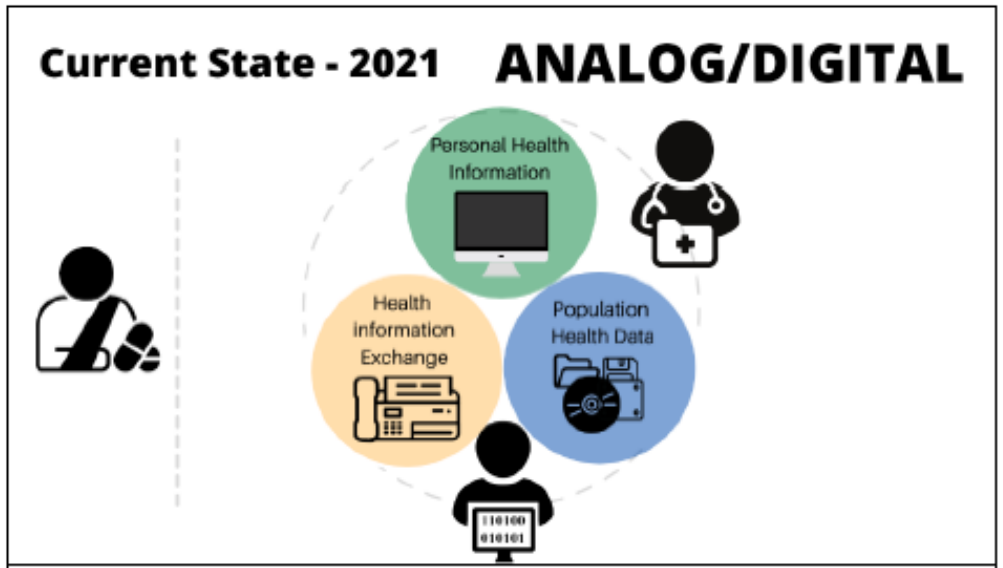


Figure 3b. 2021- Providers act as custodians of digitized health records. Some patient access and sharing. Barriers make it difficult to share data between silos.

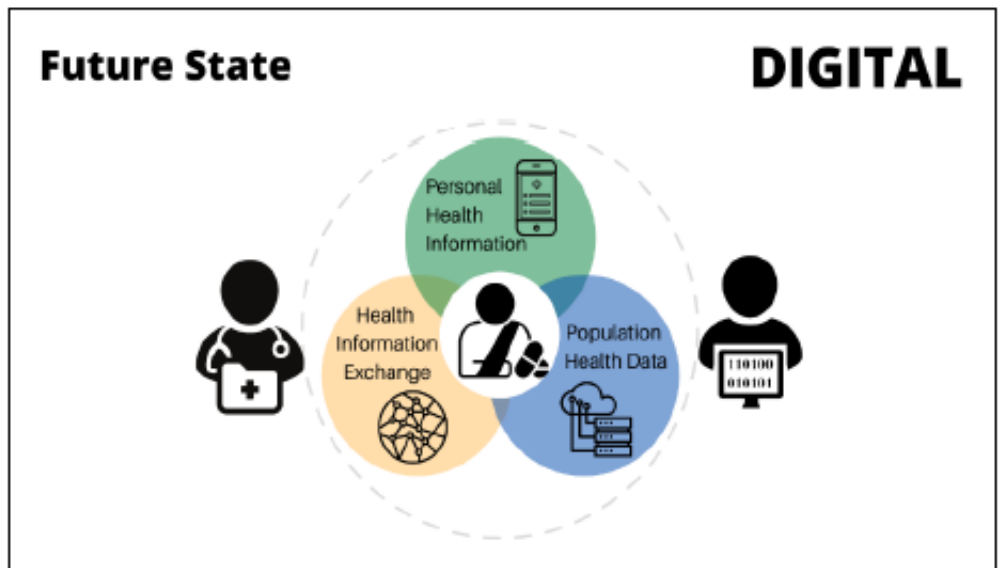
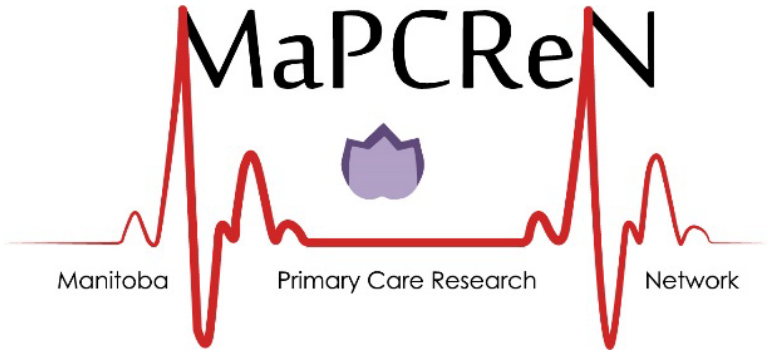


Figure 3c. Future - Person-centred data provides the right data to the right people at the right time by design.

Concluding Remarks

- Risk taking behaviours and social/material circumstances impact disease prevalence and outcomes and need to be measured in order to be addressed
- Practice Based Research and Learning Networks can serve as a key driver of testing improvements that contribute to Learning Health systems



Thanks for listening!
Any questions?

University of Victoria