

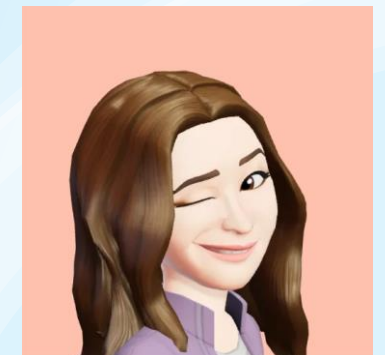
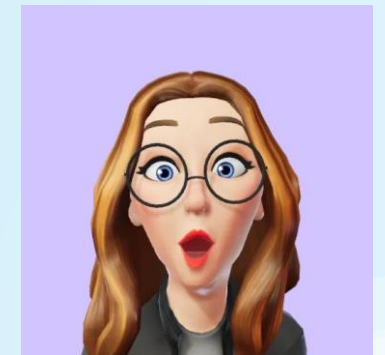
LIHC Practice Profiles

Using Data to Determine Roster Complexity

Introduction

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Does anyone
want to play
with our data?



Background



London, ON



30 years +



Urban CHC with 4 locations with various programs, including 3 primary care sites



120 full and part-time staff



6.5 MD FTE and 7 NP FTE



Roster to both MDs and NPs



What inspired our
complexity project?

Reoccurring challenges

- Different priority populations across different sites
- Disproportionate workloads associated with roster complexity
- Nurse Practitioners rostering complex clients
- Provider transitions - how to redistribute roster?
- SAMI based on Centre-wide score not specific individual provider's complexity
- How to capture additional complexity factors we see in our setting (contextual & psychosocial)



Our journey with complexity

- Listening to the providers' experience and challenges
- Limited accessible tools, needed something customized for LIHC
- Curiosity for what's possible
- Complexity 1.0 – Health Links Chronic Conditions



Complexity
Project
2.0



Defining the questions...

How do we define and measure healthcare complexity of our clients?

How can we utilize the data from our EMR to help determine varying complexity across provider rosters?

Determining our objectives

- Develop an ethical and nuanced measure for appropriate matching of client complexity to skill/scope/pay of the provider role
- Better reflect complexity in our encountering to ascertain a more accurate SAMI score
- Future tailored design and resourcing of primary care teams with the right skill mix/staffing supports to complement the roster complexity needs



Where did we start?

1. Forged a team with clinical and data expertise/interest
2. Built a shared understanding of existing complexity measurements
 - Expanded our own understanding of SAMI
 - Literature review on existing complexity frameworks
 - In-service to leadership and clinicians
3. Self-directed up-skill (Excel, Power Query, Power BI)

How did we define complexity?

- Factors suggested by the literature were reviewed
- An initial list of factors was generated with consideration of EMR data query potential
- This list was reviewed with providers, who suggested an addition of *low health literacy* and *history of institutional trauma*

Final list of LIHC complexity factors

1	Unemployment
2	Low income
3	Pregnancy/65 years and older
4	4+ emerg visits (8 over 2 years)
5	High visits with the primary care team
6	Food insecurity
7	Institutional Trauma
8	Low literacy
9	Substance use
10	New to Canada
11	Autism/Learning Disability
12	Requires an interpreter
13	Child Protection/Adult Safeguarding
14	Unhoused
15	Mental Health Condition
16	Low compliance
17	10+ prescriptions
18	Dementia/Cognitive Decline
19	Multiple Health Links conditions
20	Unstable MH

Process for weighting our complexity factors



Providers individually rated each factor using a scale of 1-10, using the benchmarks:

1= no increase in time/energy needed

5= 50% more time/energy needed

10= 100% more time/energy needed



The top and bottom score were eliminated to reduce the impact of outliers, then an average for each factor was calculated



These scores were then given weights accordingly, so that the total possible score a client could receive is 20 points

LIHC complexity scoring system

Complexity Factor		Weighted Score	Complexity Factor		Weighted Score	
1	Unemployment	0.5	11	Autism/Learning Disability	1	
2	Low income	0.6	12	Interpreter	1.1	
3a	Pregnancy	0.7	13	Safeguarding	1.1	
3b	Aged 65 and older	0.7	14	Unhoused	1.1	
4	Food insecurity	0.8	15	Mental Health Condition	1.2	
5	High Emerge Visits	0.8	16	Low compliance	1.2	
6	High Primary Care visits	0.8	17	10+ prescriptions	1.2	
7	Institutional Trauma	0.8	18	Dementia/Cognitive Decline	1.2	
8	Low Health literacy	0.9	19	Unstable MH	1.5	
9	Substance use	1	20	Chronic/High-Cost Conditions	1.5	
10	New to Canada	1			<i>6+ conditions</i>	1
					<i>4-5 conditions</i>	0.5
					<i>3 conditions</i>	

Where did we pull the data from?

Complexity Factor	# of Encodes in Query	Complexity Factor	# of Encodes in Query
New to Canada	7	Requires an Interpreter	1
History of Health Care or Institutional Trauma	1	Low Health Literacy	1
Low Compliance with Medical Recommendations	2	Low Income	5
Unemployed	5	Food Insecurity	4
Substance Use	8	Child protection/ Adult Safeguarding	Too many! (jk 21)
Unstable housing/unhoused	3	Dementia/Cognitive Decline	7
Mental Health Condition	10	Unstable Mental Health	13
Learning Disability/Autism Spectrum Disorder	2	High Number of Primary Care Visits Any client who had visited with an RN/NP/MD at least monthly (on average) over a 2-year period	

Bio-medical factors

Factor	Source
Age	Over 65 years old at time of data pull
Pregnancy	Pregnancy-related encode charted in past 2 years by NP/MD
10+ Meds	10 or more distinct medications prescribed in past 2 years
Multiple Conditions	3 or more chronic or high-cost conditions charted in past 2 years
High Emergency Visits	8 or more visits to emergency room over past 2 years. Pulled through HRM reports

Methodology summary: Evaluating complexity



Review of conceptual models for evaluating clinical complexity

CHC practice profiles
Deep dive on SAMI
Literature review: psychosocial & contextual indicators



Adopted SAMI Indicators

Age
Pregnancy
Complex/High-cost conditions
High emergency room visits
High primary care visits
Instability of conditions considered



Initial list based on EMR data query capabilities

Data mapping based on available indicator and appropriate parameters (e.g. specific encodes input by NPs/MDs, over 2 year period, etc.)



Provider Consultation

NP/MD's reviewed inclusion & exclusion of initial list of complexity factors. Low health literacy, and institutional trauma added



Weighting Complexity Scores

Final list presented to providers for ranking each factor for their relative impact (time & energy) on clinical intensity on a scale of 1-10.

Limitations



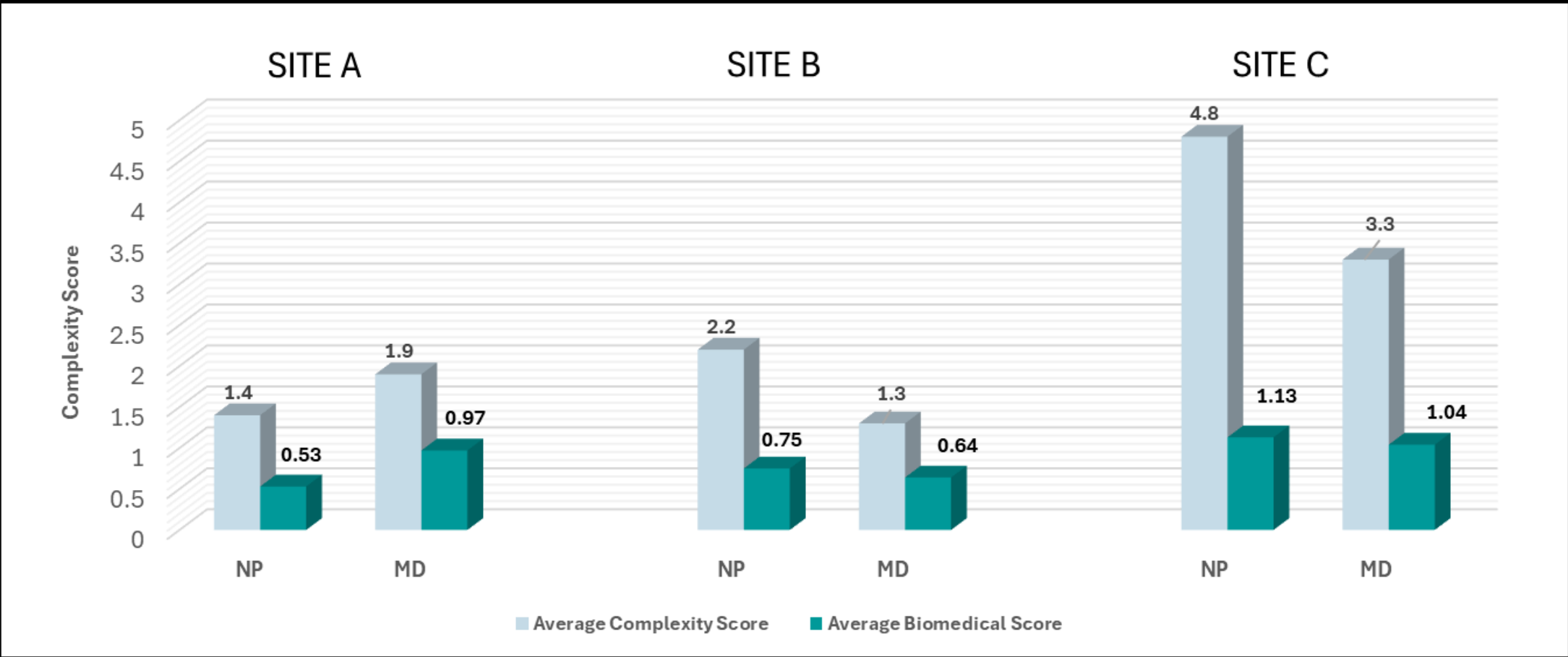
- Quality of Data in the EMR
- New complexity factors, are not habitual yet e.g. problem with health literacy
- Small roster sizes may inflate the complexity average for that roster
- Some complexity indicators are close proxies
- Weighting scale co-created with providers, however no external validation
- Roster targets adjusted to CHC & peer averages



Findings

Sample of results

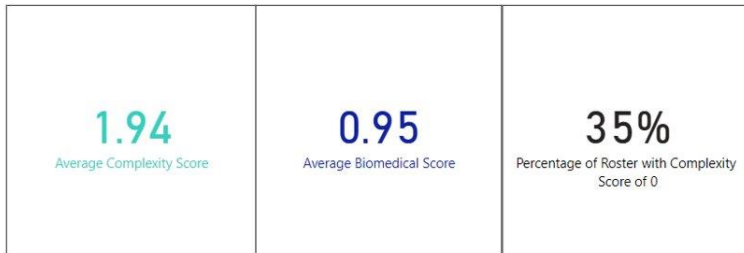
Role	Average Complexity Score	Average Biomedical Score
NP	2.32	0.7
MD	1.89	0.8
Total	2.05	0.78



Sample provider profile

Highest complexity clients

Your Current Roster Complexity



LIHC Average Roster Complexity Score by Role

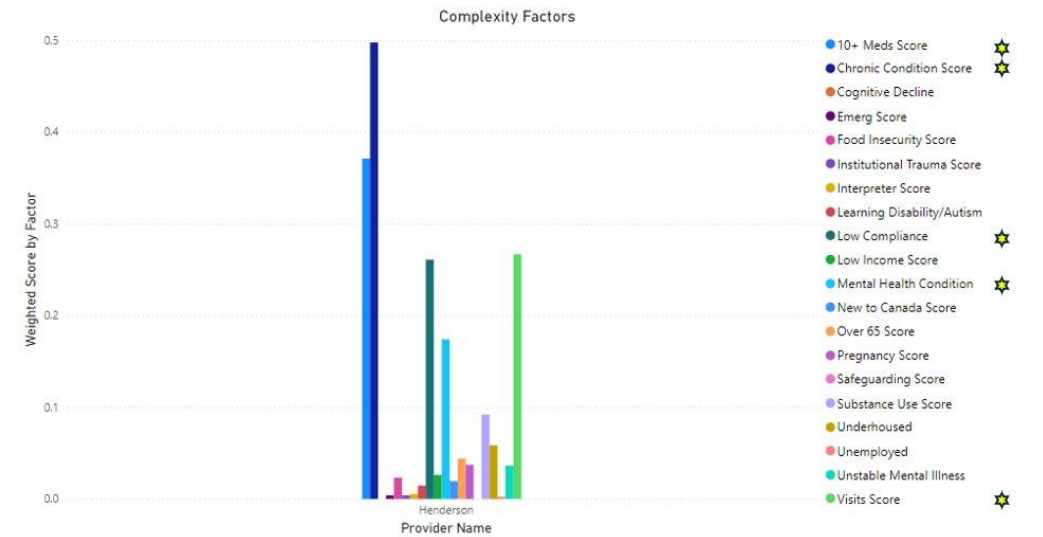
Role	Average Complexity Score	Average Biomedical Score
NP	2.32	0.70
MD	1.89	0.82
Total	2.05	0.78

Your top high complexity clients

Client Number	Client Complexity Score
24208	10.30
21167	8.80
20333	8.70
8084	8.40
42185	7.50
19608	6.80
19705	6.80
8683	6.40
2707	6.30
29661	6.20
22864	6.10
18582	5.90
2361	5.70
4738	5.70
21964	5.70
24158	5.70
5479	5.40
6977	5.40
7903	5.40
216	5.20

Top factors in roster complexity

Your Roster Complexity Factors



The factors contributing the most to your roster complexity score

Adjustment of roster targets

- Roster targets are adjusted based on 2 factors:
 - Provider Role (NP vs MD)
 - Roster Complexity Score
- As complexity increases, roster targets will be lowered. Therefore:
 - For every 0.5 that the complexity score is above the Role Adjusted Base Value, the Roster Target reduces by 5%
 - For every 0.5 that the complexity score is below the Role Adjusted Base Value, the Roster Target increases by 5%

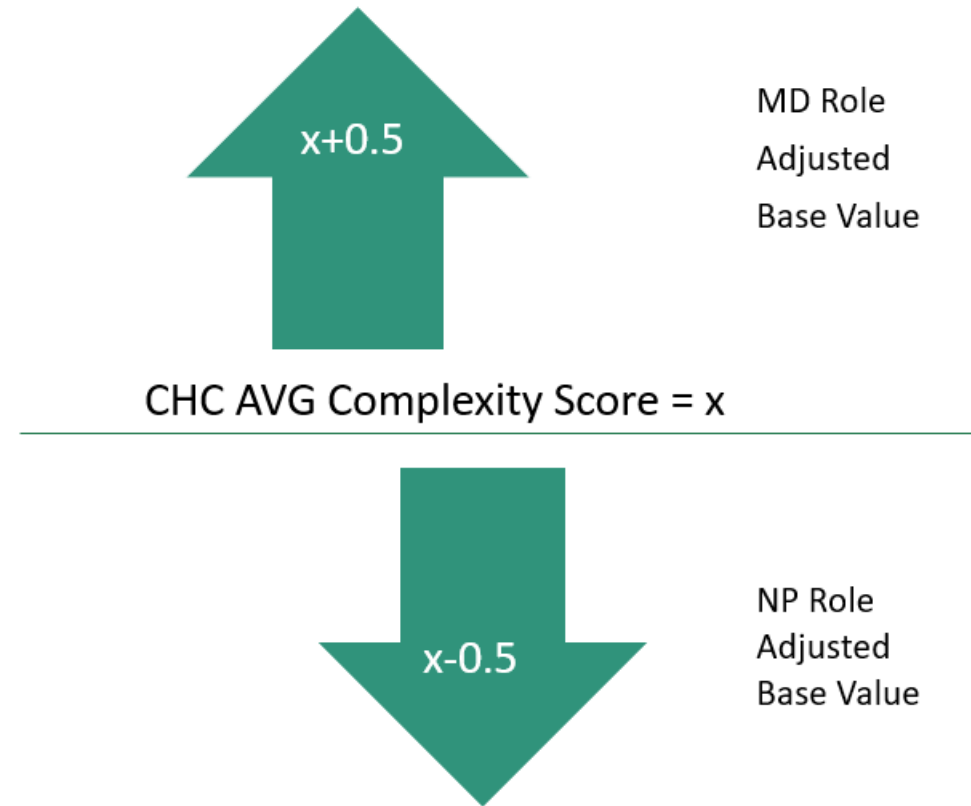


Figure 1: Role Adjusted Base Value

Roster adjustments illustrated

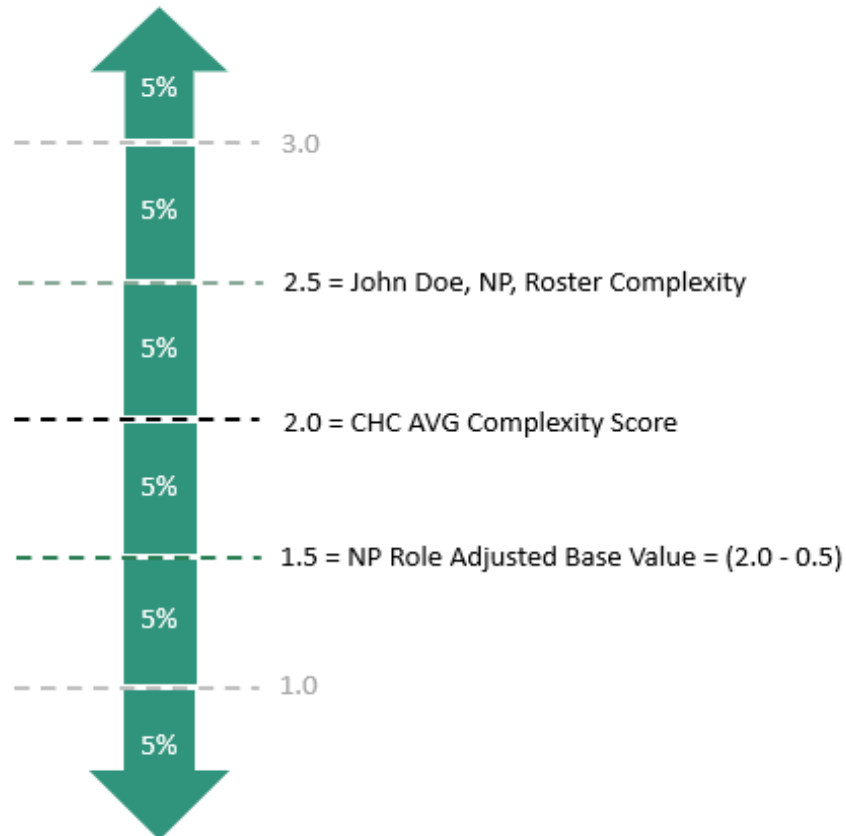


Figure 2: Example Roster Target Adjustment for John Doe, NP, to normalize his roster complexity score to meet Adjusted Base Value for NPs at the CHC = 10% reduction

Example of Roster Target Adjustment:

- The overall CHC Average Complexity Score = 2.0
- Therefore, NP Adjusted Base Value = 1.5
- John Doe's Roster Complexity Score = 2.5

John Doe's Roster Complexity Score (2.5) – NP Base Value (1.5) = 1. Therefore, the Roster Target for John will be reduced by 10%.

Examples of profile roster target adjustment

Provider A (MD)



Provider B (NP)



Provider C (MD)





How did it land?



Provider interpretation & integration support

Non-punitive messaging

Setting expectations

Precision review with individual providers

- Review of distribution of Complexity Factors in their roster
- Review of specific clients/results they expected/did not expect to see
- Review of documentation practices
- Review of use specific encodes

Our process commitments

- Update EMR tools
- Update intake processes
- Redistributing rosters

Inviting feedback on rollout

- Invited feedback
 - Email
 - Individual sessions with key providers
 - Hosted drop-ins for further Q&A
- Started Complexity 3.0
 - Updating the Encodes/Issues addressed list

So what?

- Insights on our different sites/models of care/populations served
- Enhance provider investment/engagement with their own roster targets and how it fits into our Centre-wide targets
- Redistribution of rosters according to scope of practice/complexity of the roster
- Staffing decisions for primary care team complements



Q & A?