WHO IS PACT FOR?

Patient centeredness encourages patient engagement in care, shared decision-making, self-care, continuous quality improvement and patient feedback, effective use of inter-professional teams and technology, and increased access to care.

The Medical Home

The Patient's Medical Home (PMH) is a vision presented by the CFPC as the future of family practice in Canada.

The key components include Timely **Access**, **Attachment**, and **Continuity** of care. The PaCT initiative encourages attachment and continuity of care through **patient-centred team-based** care.

Care Planning

Care Planning is not a document signed by the patient and physician; it is not necessarily 03.04J. It is a proactive, systematic approach to empowering patients who have, or are at risk for having complex health needs to manage their own care.

Earlier Improvement Facilitator training and TOP initiatives addressed patient panelling, screening and systems improvements. PaCT builds on earlier initiatives and focuses on patient-centred team-based care planning for those with complex health needs.

Identifying PaCT patients

Although all our patients require Care Planning (CP), patients with complex health and rising needs are more likely to benefit from a comprehensive, team-based care. Many criteria contribute to a patient's complexity.

The key phases in the Patient collaborating with Teams (PaCT) initiative include: **Identify**, Prepare, Plan, and Manage. For effective CP, it is imperative to reliably define and select patient populations with complex health needs in a given community; the more objective or evidence-based the definition is, the more reliable or pragmatic the definition is.

PaCT Team

Team-based care leads to increased access, higher patient and provider satisfaction, and better resource utilization. Care burdens are shared and the risk of provider burn-out is lessened.

The team ideally consists of a physician, a CDM nurse, a MOA, and other improvement members. They meet regularly and test initiatives through PDSA cycles.

In the development stage, it is crucial to explore patient perspectives in PaCT initiatives by welcoming at least one patient representative to the team.

Patient-centred care

The true understanding of patient-centred care is best achieved through personal experiences! Patient-centred care addresses what matters **TO**, not **WITH** the patient - it is not necessarily about HbA1c, eGFR, all those biometric parameters. We are often amazed what patients come up with when we ask them, ***WHAT MATTERS TO YOU?***

Not every patient has complex health problems, with rising and sub-optimally managed health needs. Essentially, complex health needs are identified under 3 categories - clinical, risk factors, and utilization (under/overuse) parameters. In our experience, the definition of a patient with 'complex health needs' for the purpose of a team-based care can be quite vague and broad.

Patients with complex health issues can be identified either subjectively by guess, opportunistically or more accurately, objectively through EMR search. But, even with EMR search, how do you know for sure what types of patients to search for? Which patient with complex health needs will benefit the most from team-based care in my Practice? Which of the chronic diseases - diabetes, hypertension, COPD, CHF, IHD, mental health - should I prioritize for PaCT? Can healthcare utilization (emergency department visits, hospitalizations) help assist me in defining the patient with complex health needs? Am I able to utilize a evidence-based methodology to identify patients on my panel who will benefit the most from team-based care?

Aim

In this project, our aim is to retrospectively assess the emergency department (ED) utilization and hospitalization of our patients with chronic diseases (CD). The key outcomes were frequencies of ED utilization by and hospitalization of patients with specific CDs. We anticipate that our result will not only help us to objectively advocate for appropriate resource allocation within our PCN, but also correctly define patients who are most likely to benefit from a team-based patient-centred care. As one of the innovative hubs for PaCT, we intend to use this information to guide our definition of the patient with complex and rising health needs, and who is sub-optimally managed in our community. We also hope that other PCNs can potentially embark on similar evidence-based needs assessments in order to guide their innovations and assist them in objectively allocating resources appropriately in way that will benefit patients who are really in need.

Method

We obtained data from AHS of all patients who are panelled to the 6 family physicians in Life Medical Clinic, Whitecourt. We

analyzed basic descriptive statistics for panelled patients who attended the ED or were hospitalized within a 12-month period (October 2016 to September 2017). Patients were sorted by their ages, dates of attendance and hospitalization, reasons (diagnoses) for attending the ED or hospitalization, frequency of ED visits and hospitalizations, and their triage scores. Chronic Diseases considered include: Diabetes, Hypertension, Asthma, Coronary Heart Disease, Heart Failure, Chronic Obstructive Pulmonary Disease, Obesity, Mental Health (Anxiety Disorder, Depression, Psychosis, and Bipolar Disorder). All patients who attended the ED for chemotherapy-related reasons (intravenous medications such as antibiotics) were excluded. We included all panelled patients who also attended other EDs or were hospitalized in other institutions other than Whitecourt Healthcare Centre.

Results

Eight thousand, seven hundred and seventy six (8776) patients were panelled to the 6 physicians in this Group Practice as at the time of the study.

Emergency department visits based on health needs and frequency

Three thousand, eight hundred and thirty seven, 3837, (43.7%) of all panelled patients attended the ED within the 12-month period studied. 270 patients (3% of the panel) visited the ED due to their chronic diseases, for a total of 435 visits (figure 1; tables 1a & b). Patients with specific CDs were also categorized into numbers of ED visits; the CD with the highest ED visit numbers was Anxiety Disorders (n=163), followed by Asthma (n=78), and then Benign Hypertension (n=62). Mental Health conditions combined constitute the highest number of of ED visits (n=229; 84.8%).

Of all patients eligible for study, 10 visited the ED for at least 25 times within the 12-month period studied (figure 2 & table 2). Among these patients, mental health (65%) was the predominant reason for ED visits (table 3).

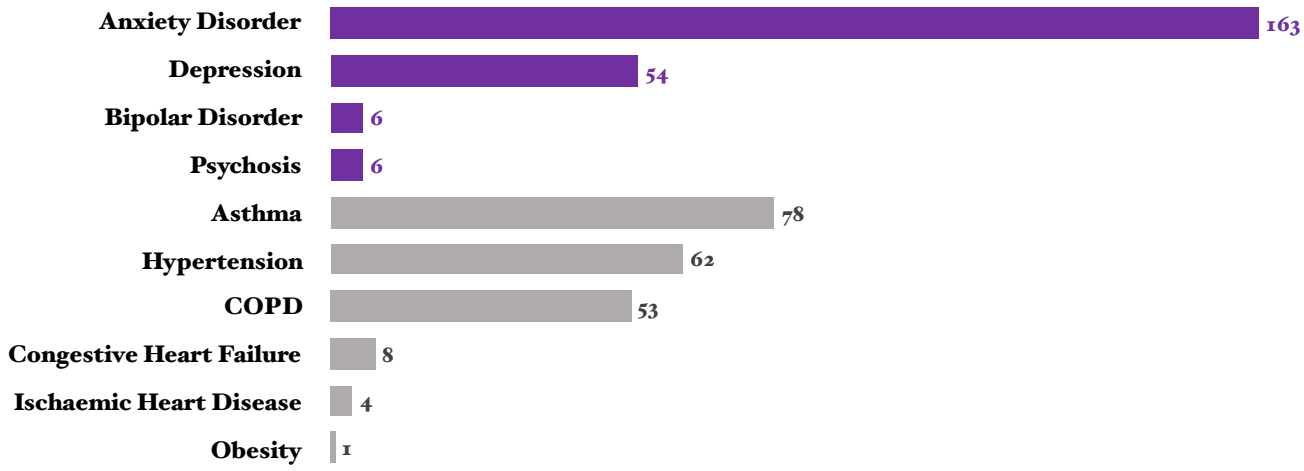

Figure 1: **Mental health** conditions were the most common of all chronic conditions for which patients were seen in an ED

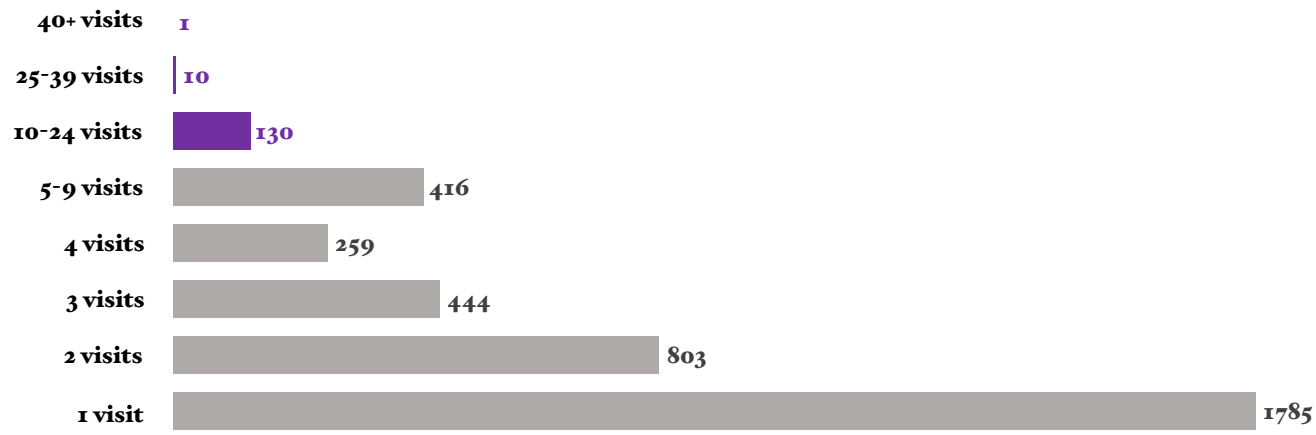

Figure 2: In the 1-year time frame, **130 patients** visited an ED at least 10 times

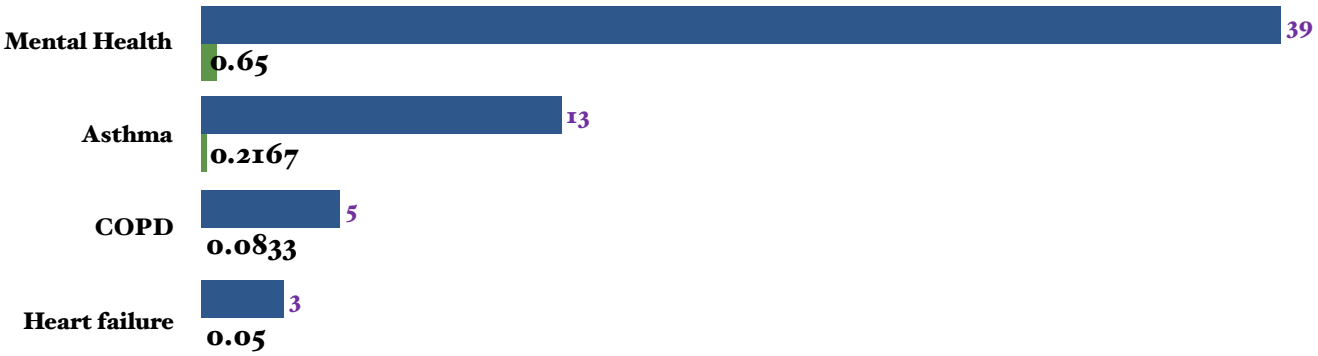

Figure 3: Among patients who had 25+ ED visits, **mental health** was the reason for visit in **65% of visits for chronic conditions**

Of all patients who visited the ED with chronic diseases, 79 attended twice or more (table 1b). Comparison within this group (table 2a) showed that those visiting for mental health (n=48; 65%) were significantly more that those visiting for other conditions (n=31). Females were more prevalent in both groups. Males made up 44% of the mental health group, and only 21% of the non-mental health group (table 2b. Those visiting for mental health also tended to be younger, with one patient only age 13 (figure 4).

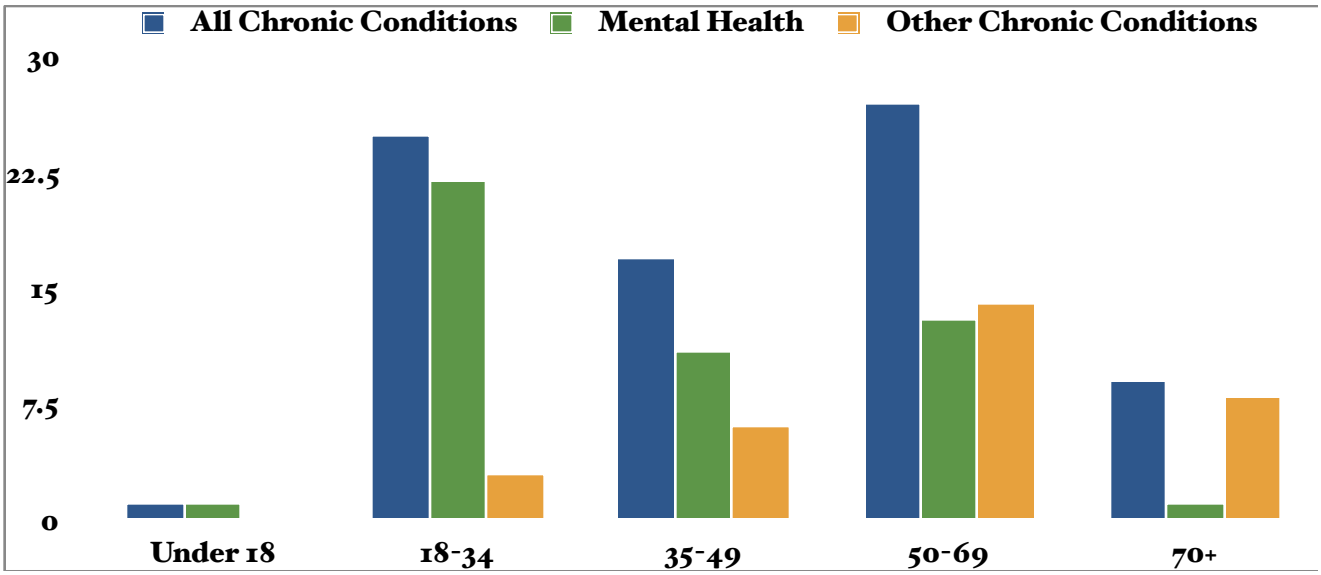

Figure 4: Among patients with chronic diseases who visited the ED twice or more, those with **mental health** tended to be younger with one patient only age 13

Hospitalizations based on health needs and frequency

Six hundred and fifty three (7.4%) of panelled patients were hospitalized within the 12 months studied. When hospitals outside Whitecourt were excluded, 245 (2.8% of panel size) were admitted. 39 patients (table 5) were hospitalized due to chronic diseases for a total of 57 admissions (table 6), and among all these patients with chronic diseases, those with mental health diagnoses were more frequently (n=32 admissions; 56%) hospitalized (figure 6 and table 6). Also, among all patients with chronic disease who were hospitalized for at least 5 times within the year (n=18), mental health diagnosis was still the predominant (n=13; 72%) reason for admission (figure 7 & table 7). Further analyzing data from all patients admitted for any reasons shows that patients with depression and anxiety were much more frequently admitted.

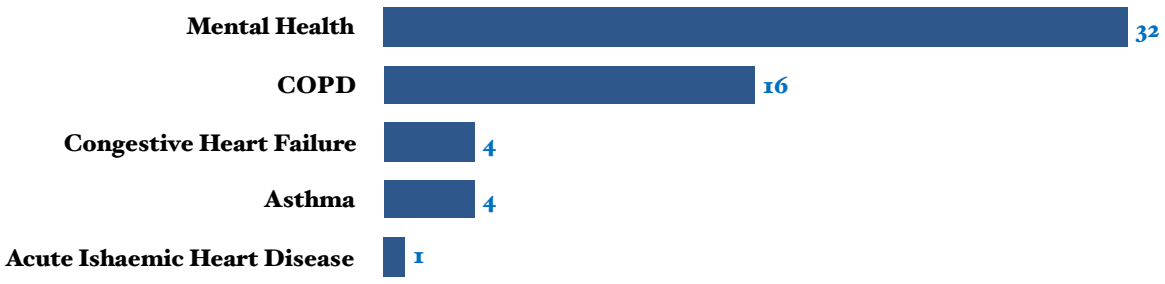

Figure 6: Of all chronic conditions for which patients were admitted, **mental health** conditions were most frequent. There were twice as many admissions for **mental health** as there were for COPD

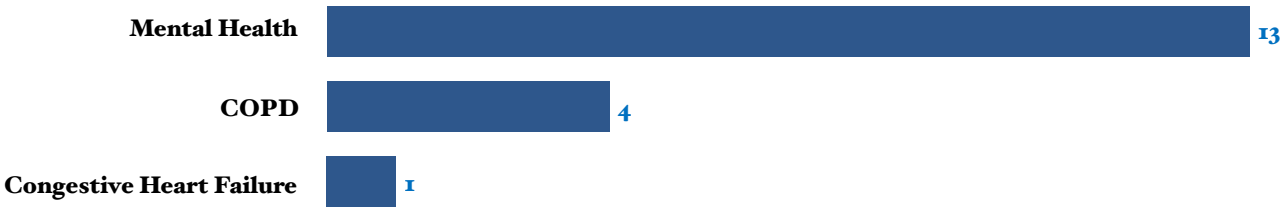

Figure 7: For patients with more than five admissions for chronic conditions, **mental health** accounted for the **highest number of admissions**

Discussion & Conclusion

In Canada, chronic diseases consume 67% of the health care budget, hence our focus on hospital utilization by patients with chronic diseases in this study. The results of this exercise are powerful eye-openers for our PaCT team. We learned the following:

First, the numbers of our panelled patients with chronic diseases who either utilized the emergency department or are hospitalized were significantly small (3% and 2.8% respectively). We believe that the financial burden of caring for this small number of people in our hospitals is huge. Our findings also indicate that patients who present with chronic medical conditions to the emergency department are more likely to hospitalized. It is possible that these patients are also more likely to be transferred to other centres for further care.

Second, mental health has repeatedly emerged as the predominant chronic disease that influences hospital utilization - ED visits and hospitalizations. No doubt, these are the patients who need to be prioritized for a team-based patient-centred care such as PaCT. It has emerged from this study that demand outstrips supply in terms of meeting the Mental Health needs of our patients in Whitecourt. Why? Maybe access is poor to the clinics, maybe our primary physicians need extra time with their patients, or maybe we need more physicians with CBT training. Maybe this is simply a reflection of understaffing issues in our local mental health office or maybe this is just a wake-up call for our PCN and other concerned parties to change direction as regards resource allocation.

We have never imagined that any patient would attend the emergency department up to 25 times in a one year period - an average of every two weeks. Again, the patients with the highest ED usage and hospitalization were those with mental health conditions.

We gained further insight after analyzing the demographics of patient with chronic conditions who attended the ED at least twice in a year. Our study concludes that **young** (18-34) and **middle-aged** (50-69) **females** with **mental health** conditions pose a huge care burden in our community and adequately caring for this group of patients should hopefully be the priority for our PCN and other community agencies. We can now confidently include this group of patients along with those with

Asthma or **COPD** in our definition of patients with Complex Health problems, rising needs, and not managed, due to their pattern of utilization of healthcare resources and hospitalizations. We anticipate that these findings will dominate our discussions with all healthcare providers in our community and drive program planning and resource allocations in our PCN. As a result of this study, we are of the opinion that PCNs need to transition from the paradigm of program-based patient care to evidence-based patient care; primary physicians need to transition from 03.04J mentality to that of a team-based patient-centred care. This transition is a process that requires both time and proactive efforts.

It will be interesting to see how our community compares to or differs from others in Alberta if similar studies were pursued.

Future research

With the introduction of a new initiative such as the Patient Collaborating with Teams (PaCT) project, which focuses on team-based patient-centred care of patients with chronic diseases, it will be interesting to see how results from prospective studies will show reduced emergency department utilization and hospitalizations - in addition to other outcomes such as patient satisfaction and quality of life measures. We hope that such indicators will reflect improved patient care and indeed prove the efficacy of a team-based approach to patient care.

Limitations

Potentially, there could be diagnostic and documentation errors in emergency departments and hospitals regarding reasons for visits and hospitalizations. We are hopeful that even if such errors exist, they are minimal and would not significantly alter our outcome measures in this study.

Acknowledgements

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Supplementary tables

Table 1a: number of visits due to chronic diseases

Chronic Disease	Number of visits
Anxiety Disorder	163
Depression	54
Bipolar Disorder	6
Psychosis	6
Asthma	78
Hypertension	62
COPD	53
Congestive Heart Failure	8
Ischaemic Heart Disease	4
Obesity	1
Total number of visits	**435**

Table 1b: number of patients who visited the ED with chronic disease

Number of visits	Number of Patients
10+ visits	2
5-9 visits	7
4 visits	6
3 visits	13
2 visits	51
1 visit	191
435	**270**

Table 2a: 79 patients who attended the ED twice or more with chronic diseases

	All Chronic Conditions	Mental Health	Other Chronic Conditions
Under 18	1	1	0
18-34	25	22	3
35-49	17	11	6
50-69	27	13	14
70+	9	1	8
		48	31

Table 2b: 79 patients who attended the ED twice or more with chronic diseases

	All Chronic Conditions	Mental Health	Other Chronic Conditions
Male	30	21	0
Female	49	27	3

Table 3: eligible patients who visited the ED for at least 25 times in 1 year

Number of Visits:	Number of Patients
40+ visits	1
25+ visits	10
10+ visits	130
5-9 visits	416
4 visits	259
3 visits	444
2 visits	803
1 visit	1785

Table 4: patients with chronic diseases who visited the ED for at least 25 times in 1 year

Chronic Medical Condition	Number of Patients	% of CD
Mental Health	39	**65%**
Asthma	13	21%
COPD	5	8.30%
Heart failure	3	5%

Table 5: hospital admissions due to chronic diseases within one year

Number of admissions	Number of patients with CD
5+ admissions	2
3+ admissions	3
2 + admissions	9
Any admissions	39

Table 6: types of patients with chronic diseases hospitalized within one year

Chronic Disease	Number of Admissions
Mental Health	32
COPD	16
Congestive Heart Failure	4
Asthma	4
Acute ischaemic heart disease	1
Total number of admissions	57

Table 7: patients with chronic diseases admitted for at least 5 times in 12 months

Chronic Disease	Admission Count
Mental Health	13
COPD	4
Congestive heart failure	1