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3 **Physicians cannot meet the need for publicly funded psychotherapy in Ontario: a population-**  
4 **based retrospective cohort study.**  
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## **Abstract**

**Introduction:** Psychotherapy is recommended as a first-line treatment for the management of common psychiatric disorders. The objective of this study was to evaluate the availability of publicly funded psychotherapy in Ontario by describing primary care physicians (PCPs) and psychiatrists whose practices focus on psychotherapy and comparing them to PCPs and psychiatrists whose practices do not.

**Methods:** We included all PCPs and psychiatrists in Ontario between April 1, 2015 and March 31, 2016 and categorized them as psychotherapists if at least 50% of their practice was devoted to psychotherapy. We measured practice characteristics such as total number of patients, new patients, and average visit frequency for each of the 4 physician categories. We also measured access to care for individuals with urgent need of mental health services.

**Results:** Of 12,772 PCPs, 3.2% were PCP psychotherapists; of 2150 psychiatrists, 27.3% were psychotherapists. Number of patients, number of new patients, and average number of visits per patient ranked from highest to lowest among: PCP non-psychotherapists, psychiatrist non-psychotherapists, PCP psychotherapists, and psychiatrist psychotherapists. Non-psychotherapist PCPs and psychiatrists saw approximately 25% of patients with urgent needs for mental health services, whereas PCP and psychiatrist psychotherapists saw between 1 and 3% of these patients.

**Conclusion:** Physicians who provide publicly-funded psychotherapy in Ontario see a small number of patients and they do not see those with urgent need for mental health services. Increasing the number of physicians providing psychotherapy is unlikely to improve access to psychotherapy in a publicly funded system.

## Introduction

Depressive and anxiety disorders are the most common psychiatric disorders; from a public health perspective, they are associated with the highest burden of disability<sup>1,2</sup>. Evidence-based treatment guidelines for these common psychiatric disorders recommend brief structured psychotherapies as first line treatment options, particularly for mild to moderate disorders<sup>3-5</sup>. In Ontario, access to publicly-funded psychotherapy is provided mostly by primary care physicians with psychotherapy-focused practices (PCP psychotherapists) and psychiatrists. In August 2018, the Coalition of Ontario Psychiatrists asserted there was a “crisis in access to mental health services” in Ontario and they attributed this crisis to a shortage of psychiatrists<sup>6</sup>. They made three recommendations, all with the goal of increasing the number of psychiatrists: to increase exposure to psychiatry in medical school; to train more psychiatrists; and to increase the payment for psychiatrists’ services. However, it is not known the extent to which current physician psychotherapists, which include both PCP psychotherapists and psychiatrists, meet demand for psychotherapy in Ontario and thus, how many additional physician psychotherapists would be needed to better meet this demand.

To address these two questions, we conducted a study of the existing physician-based availability of psychotherapy in Ontario. We categorized all Ontarian PCPs and psychiatrists as psychotherapists or non-psychotherapists, resulting in four physician categories. We characterized the practices of physicians within these four categories. Finally, we determined whether patients with urgent need for mental health services were seen within 30- or 180-days by physicians from each of these four groups.

## **Methods**

We conducted a retrospective cohort study of four Ontario physician categories between April 1, 2015 and March 31, 2016: 1) PCP non-psychotherapists (PCPs with <50% of billings related to psychotherapy); 2) PCP psychotherapists with  $\geq 50\%$  of billings related to psychotherapy; 3) psychiatrist non-psychotherapists (psychiatrists with <50% of billings related psychotherapy); and 4) psychiatrist psychotherapists ( $\geq 50\%$  of billings related to psychotherapy). Ontario Health Insurance Program (OHIP) billing codes used to capture psychotherapy are listed in Appendix Table 1.

### **Data Sources**

PCP and psychiatrist characteristics were obtained from the Institute for Clinical Evaluative Sciences (ICES) Physician Database (IPDB). Physician practice patterns and the characteristics of their patients were obtained from the OHIP database (outpatient billing information), the National Ambulatory Care Reporting System (information on ED visits), the Ontario Mental Health Reporting System and the Canadian Institute of Health Information Discharge Abstract Database (information on psychiatric hospitalizations), the Registered Persons Database (socio-demographic characteristics), and Immigration Refugee Citizenship Canada (immigration data). These datasets were linked using unique encoded identifiers and analyzed at ICES. The use of data in this study was authorized under section 45 of Ontario's Personal Health Information Protection Act, which does not require review by a Research Ethics Board.

### **Study Sample**

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3 PCPs and psychiatrists who submitted at least 1 billing claim to OHIP between April 1, 2015 and  
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5 March 31, 2016 were included. We focused on outpatients who were provided care and  
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7 excluded all billings related to inpatient care for both PCPs and psychiatrists.  
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### 10 **Physician Characteristics**

11  
12 We assessed the following characteristics per physician: sex ,age, medical school attended, and  
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14 region of practice (based on the 14 Ontario Local Health Integration Network (LHIN) boundaries  
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16 categorized as High Supply (Toronto and Champlain (Ottawa) LHINs), Medium Supply (South  
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18 West, South East, and Hamilton Niagara Haldimand Brant), and Low Supply (nine other LHINs)<sup>7</sup>.  
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21 We also determined whether physicians were full-time using the Health Canada definition:  
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23 having annual billings above the 30<sup>th</sup> percentile for all Ontario PCPs or psychiatrists,  
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25 respectively<sup>8</sup>. For each physician, we measured the number of unique outpatients, new  
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27 outpatients (defined as no visits in 12 months prior to the first visit in the study period), and  
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29 mean number of annual visits/patient. Finally, we measured the number of physicians in each  
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31 of the four physician categories with fewer than 200, 100 and 40 patients seen annually.  
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### 37 **Patient Characteristics for the Four Physician Categories**

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39 We measured characteristics of outpatients seen by physicians in the four categories. For  
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41 patients seen by more than one physician, the patient was assigned to the physician with the  
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43 highest visit frequency for that patient. We measured the following patient characteristics: sex,  
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45 age, income (neighbourhood income quintile based on Census information), and residential  
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47 region using the same categories applied to physicians. We also assessed in the 24 months prior  
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49 to April 1, 2015, the proportions of patients who experienced any of the following 4 events: a  
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3 psychiatric hospitalization, an ED visit for a mental health reason, an ED visit for self-harm, or  
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5 two or more ED visits for substance use.  
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### 7 **Access to Physicians for Patients with Urgent Need for Mental Health Services**

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9  
10 We measured the number of patients who had a psychiatric hospitalization, ED visit for a  
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12 mental health reason, ED visit for self-harm, or two or more ED visits for substance use  
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14 between April 1, 2014 and March 31, 2016. For patients seen twice in the ED for substance use,  
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16 the second of two visits was used to measure access to care. For other patient groups we used  
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18 the ED or hospital discharge date. These four patient groups were not mutually exclusive. We  
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20 assessed whether patients from these four groups were seen by physicians from each of the  
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22 four categories within 30- and 180-days. If a patient saw more than one type of physician, each  
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24 of the physicians they saw was credited for the visit he or she provided.  
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### 29 **Statistical Analysis**

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31 For each variable, we examined the mean and standard deviation, median, and interquartile  
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33 ratio (IQR), or number and proportion. We used standardized differences to assess differences  
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35 between psychotherapists and non-psychotherapists separately for PCPs and for psychiatrists.  
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37 A standardized difference of greater than 0.1 is considered clinically significant<sup>9</sup>. We used SAS  
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39 Version 9 for all statistical analyses<sup>10</sup>.  
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## 46 **Results**

### 47 **Physician Characteristics**

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49 Between April 1, 2015 and March 31, 2016, there were 12,772 primary care physicians who  
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51 were clinically active in Ontario, of whom 404 (3.2%) met our criteria as PCP psychotherapists  
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53 and 12,368 (96.8%) were PCP non-psychotherapists. During the same time period, there were  
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3 2150 psychiatrists in Ontario, of whom 586 (27.3%) were psychiatrist who met our criteria for  
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5 psychotherapist and 1564 (72.8%) were psychiatrist non-psychotherapists. The demographic,  
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7 practice patterns, medical school graduation, and regional characteristics of these four  
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9 physician categories are outlined in Table 1.  
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15 Both PCP and psychiatrist psychotherapists are approximately 9 to 10 years older than their  
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17 non-psychotherapist colleagues (Table 1), and a higher proportion of both types of  
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19 psychotherapists are in the oldest age category ( $\geq 60$  years). A smaller proportion of PCP  
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21 psychotherapists (54%) met the definition of a full-time physician than the other three  
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23 categories of physicians, which were all approximately 70% full-time. More than a quarter of  
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25 both types of psychotherapists graduated from the University of Toronto medical school,  
26  
27 whereas a higher proportion of non-psychotherapist physicians graduated from non-Canadian  
28  
29 medical schools. Psychiatrists, both psychotherapist and non-psychotherapist, were more likely  
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31 to practice in high supply LHINs than PCP non-psychotherapists. PCP and psychiatrist  
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33 psychotherapists were more likely to practice in the two LHINs (Toronto Central and Champlain)  
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35 with the highest supply of psychiatrists.  
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### 45 **Physician Practice Characteristics**

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47 The total number of patients, outpatients, or new outpatients were highest in PCP non-  
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49 psychotherapists, followed by psychiatrist non-psychotherapists, PCP psychotherapists, and  
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51 psychiatrist psychotherapists (Table 2). The visit frequency followed the reverse pattern, with  
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53 psychiatrist psychotherapists having the highest visit frequencies, and PCP non-  
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3 psychotherapists having the lowest. This pattern of patient number and visit frequency  
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5 translated into 24%, 20%, 13%, and 4% of psychiatrist psychotherapists, PCP psychotherapists,  
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7 psychiatrist non-psychotherapists, and PCP non-psychotherapists, respectively, seeing fewer  
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9 than 40 patients annually. The average visit frequency for non-psychotherapist physicians was  
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11 three times or fewer in a year, whereas the average visit frequency for psychotherapist  
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13 physicians was much higher, with some physicians with annual average visit frequencies per  
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15 patient as high as 40.  
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### 23 **Patient Characteristics**

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25 The patients of both types of psychotherapists were slightly more likely to be female than those  
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27 of non-psychotherapists (Table 3). The age of patients across the four physician categories were  
28  
29 similar. Psychotherapists saw a slightly higher proportion of patients from high income quintile  
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31 neighbourhoods and psychiatrist non-psychotherapists saw a slightly higher proportion of  
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33 patients from neighbourhoods with the lowest income quintile. The regional pattern of patients  
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35 was similar to the regional pattern of physician practices, with patients seen by  
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37 psychotherapists predominantly living in Toronto Central and Champlain LHINs. The two  
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39 categories of psychiatrists had similar proportions of patients who were in the four groups with  
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41 urgent need for mental health services. PCP psychotherapists had a smaller proportion of  
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43 patients in these four groups than the two categories of psychiatrists, but larger than PCP non-  
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45 psychotherapists. However, in terms of absolute number of patients, PCP non-psychotherapists  
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47 saw the highest number of patients for mental health and addiction reasons, including those in  
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49 our four groups with urgent needs, followed by psychiatrist non-psychotherapists. PCP  
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3 psychotherapists saw slightly more patients than psychiatrist psychotherapists, including more  
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5 patients with two or more substance-related ED visits in the past 12 months. However,  
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7 psychiatrist psychotherapists saw more patients in the other three groups of patients with  
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9 urgent need.  
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### 15 **Access to Physicians for Patients with Urgent Need for Mental Health Services**

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17 Table 4 shows the proportion of patients in the four urgent need patient groups who were seen  
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19 within 30 and 180 days by physicians within each of the four categories. In each of these  
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21 patient groups, approximately half of the patients did not have any physician visit within 30  
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23 days and one quarter to one third did not have any physician visit within 180 days. Non-  
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25 psychotherapist PCPs and psychiatrists saw a similar proportion of patients, approximately one  
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27 quarter, with the exception of the patients with two or more ED visits for substance-related  
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29 issues: non-psychotherapist PCPs saw more than twice as many of these patients than non-  
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31 psychotherapist psychiatrists (29.8% vs. 13.9%). PCP or psychiatrist psychotherapists saw very  
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33 few (2-3%) patients with urgent needs for mental health services.  
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### 42 **Discussion**

43  
44 There were just under 1000 physicians with practices focused on psychotherapy in Ontario in  
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46 fiscal year 2015. Approximately 60% of these psychotherapist physicians were psychiatrists. The  
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48 psychotherapist physicians were older than their non-psychotherapist colleagues and clustered  
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50 in two large cities (Toronto and Ottawa). They saw a much smaller number of patients and saw  
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3 them much more frequently. They served only a very low proportion (1-3%) of patients with  
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5 urgent need for mental health services.  
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10 Our findings address the question of whether physician psychotherapists can address  
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12 population need for psychotherapy in Ontario. Using a conservative one-year prevalence of  
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14 major depressive disorder of 4%<sup>11</sup> and the number of Ontarians older than 14 in 2016  
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16 (11,240,525<sup>12</sup>), there were 450,000 individuals with major depressive disorder. With at least a  
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18 similar number with anxiety disorders or adjustment disorders, one can estimate that 900,000  
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20 or more Ontarians could have benefitted from psychotherapy. Psychotherapist physicians saw  
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22 93,743 patients in 2015 and 2016, including a substantial number of patients seen only once.  
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25 The existing complement of Ontario psychotherapist physicians cannot meet the need for  
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28 psychotherapy for common mental disorders.  
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35 While there is a shortage of psychiatrists in certain Ontario regions, there is a surplus in Toronto  
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37 and Ottawa<sup>7,13</sup>. Our study suggests that psychotherapist physicians are similarly concentrated in  
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39 these two cities. Even if the number of psychiatrists trained in Ontario doubled over the next  
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41 ten years and all these new psychiatrists became psychotherapists, physician psychotherapists  
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43 still would not meet the psychotherapy-related needs of the population.  
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50 Furthermore, our findings demonstrate that existing PCPs and psychiatrists dedicating their  
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52 practice to psychotherapy have practice patterns that are not responsive to populations with  
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54 urgent mental health needs. As has been discussed in prior studies on psychiatrist supply in  
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3 Ontario<sup>7,14</sup>, the current OHIP payment process is entirely fee-for-service and does not stipulate  
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5 limits on visit frequency or the type of patient who should receive services. This largely explains  
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7 the low volume practices where patients are seen with high frequency. The low rate of access  
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9 observed more generally (for example, 50% and 60% of individuals with ED visits for self-harm  
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11 or substance use, respectively, saw no physician within 30 days of their ED visit discharge)  
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13 suggest a broader mental health service access problem.  
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20 Even if financial incentives were better aligned with population need, publicly funded physician  
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22 psychotherapists cannot meet the need for evidence-based psychotherapy. Other jurisdictions  
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24 have developed system responses to meet this need. In England, Increasing Access to  
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26 Psychotherapy (IAPT) is now a well-established system that uses teams of trained lay therapists  
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28 and measurement-based care processes to provide evidence-based psychotherapies such as  
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30 CBT and interpersonal psychotherapy<sup>15</sup> for a variety of mental disorders<sup>16</sup>. In the United States,  
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32 health maintenance organizations (HMOs) run by private insurance companies use non-  
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34 physicians to provide evidence-based psychotherapy, with psychiatrists largely providing  
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36 consultations and pharmacotherapy.  
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45 To our knowledge, this is the first study in Canada that measure the existing supply of publicly  
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47 funded psychotherapists, their practice patterns, and their ability to respond to urgent need.  
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49 Strengths of this study include the use of population-based data that captures all physicians in  
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51 Ontario providing psychotherapy and the patients they serve. There are several limitations to  
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53 this approach. There are non-physician psychotherapists in Ontario who work in hospital and  
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3 community settings who provide services free of charge by Ontario's Ministry of Health and  
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5 Long-term Care. We are unable to determine the scope of this supply of psychotherapy in  
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7 Ontario. Thus, our study underestimates the total supply of publicly-funded psychotherapists in  
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9 Ontario; but we do not believe the number of these therapists is large enough to invalidate our  
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11 main findings. Second, we do not know what type of psychotherapies were provided by  
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13 physician psychotherapists. It is likely that some of these psychotherapies are unstructured and  
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15 do not adhere to an evidence-based framework, which would further reduce the impact of and  
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17 access to psychotherapies. Third, we do not know whether the patients being seen by physician  
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19 psychotherapists actually need the services they are receiving. Finally, we do not know which  
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21 patients from the four groups with urgent need would benefit from access to psychotherapy.  
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23 However, we believe that a proportion far greater than the 1 in 33 to 1 in 85 who were seen by  
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25 physician psychotherapists would benefit from evidence-based psychotherapies.  
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35 In summary, evidence-based psychotherapy should be available to patients suffering from the  
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37 most prevalent mental disorders. Our study suggests that there are far too few publicly-funded  
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39 physician psychotherapists to meet the needs of these patients. Moreover, existing physician  
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41 psychotherapists are not equitably geographically distributed in Ontario, and most have  
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43 adopted practice styles that further impede access. The recommendation to increase the  
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45 number of psychiatrists in Ontario, while relevant to areas with critical shortages, will not  
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47 address the existing poor access to psychotherapy. The Ontario government is in the midst of a  
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49 pilot project that is based on a model of a population-based psychotherapy intervention that  
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51 has been extensively evaluated and shown to be successful<sup>16</sup>. This model of service delivery  
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3 adheres to evidence and uses non-physician psychotherapists. It may equitably and efficiently  
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5 increase access to publicly funded psychotherapy.  
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24 expressed in the material are those of the author(s), and not necessarily those of CIHI.  
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Confidential

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Table 1: Characteristics of Physicians Providing Psychotherapy in Ontario.

	PCP Psychotherapists	PCP non- psychotherapists	SD	Psychiatrist - psychotherapist	Psychiatrist non- psychotherapist	SD
<b>Physician Characteristics</b>	N=404	N=12,368		N=586	N=1,564	
Sex (%F)	206 (51.0%)	5,712 (46.2%)	0.10	239 (40.8%)	659 (42.1%)	0.03
Age, mean, (SDev)	59.8 (11.5)	51.2 (12.3)	0.73	63.0 (11.0)	52.9 (11.8)	0.88
<30, N(%)	0 (0.0%)	136 (1.1%)	0.15			
30-39, N(%)	24 (5.9%)	2,173 (17.6%)	0.37	16 (2.7%)	208 (13.3%)	0.40
40-49, N(%)	47 (11.6%)	2,628 (21.2%)	0.26	49 (8.4%)	386 (24.7%)	0.45
50-59, N(%)	121 (30.0%)	3,038 (24.6%)	0.12	146 (24.9%)	372 (23.8%)	0.03
60+, N(%)	204 (50.5%)	2,992 (24.2%)	0.57	367 (62.6%)	443 (28.3%)	0.73
Missing	8 (2.0%)	1,401 (11.3%)	0.38	8 (1.4%)	155 (9.9%)	0.38
Full-time N (%)	218 (54.0%)	8,721 (70.5%)	0.35	417 (71.2%)	1,088 (69.6%)	0.03
Medical School						
U of T, N(%)	115 (28.5%)	2,615 (21.1%)	0.17	148 (25.3%)	185 (11.8%)	0.35
Ottawa, N(%)	34 (8.4%)	914 (7.4%)	0.04	23 (3.9%)	82 (5.2%)	0.06
Queen's, N(%)	25 (6.2%)	656 (5.3%)	0.04	17 (2.9%)	82 (5.2%)	0.12
McMaster, N(%)	65 (16.1%)	1,104 (8.9%)	0.22	47 (8.0%)	145 (9.3%)	0.04
Western, N(%)	38 (9.4%)	1,140 (9.2%)	0.01	31 (5.3%)	76 (4.9%)	0.02
Northern ON, N(%)	0 (0.0%)	74 (0.6%)	0.11			
Other Cdn, N(%)	60 (14.9%)	1,433 (11.6%)	0.10	138 (23.5%)	251 (16.0%)	0.19
Non-Cdn, N(%)	67 (16.6%)	4,432 (35.8%)	0.45	182 (31.1%)	743 (47.5%)	0.34
LHINs						
Toronto/Champlain	178 (44.1%)	2,951 (23.9%)	0.44	401 (68.4%)	632 (40.4%)	0.59
South West, South East, Hamilton, Niagara Haldimand Brant	77 (19.1%)	2,515 (20.3%)	0.03	63 (10.8%)	363 (23.2%)	0.34
Other (i.e. Low Supply)	149 (36.9%)	6,901 (55.8%)	0.38	122 (20.8%)	569 (36.4%)	0.35

Abbreviations: PCP – Primary Care Physician; SD – Standard Difference; SDev – Standard Deviation; IQR – Interquartile Range



Table 2: Practice Patterns of Physicians Providing Psychotherapy in Ontario.

	PCP Psychotherapists	PCP non- psychotherapists	SD	Psychiatrist - psychotherapist	Psychiatrist non- psychotherapist	SD
<b>Practice Patterns</b>	N=404	N=12,368		N=586	N=1,564	
Total # outpatients (mean, SDev)	218.27 (300.20)	1,425.64 (1,416.39)	1.18	131.76 (165.34)	274.40 (286.26)	0.61
Total # outpatients (median, IQR)	105 (48-272)	1,118 (604-1,732)	1.76	77 (40-165)	189 (87-376)	0.74
Total # of new outpatients (mean, SDev)	125.12 (219.42)	869.31 (1,161.39)	0.89	55.74 (85.64)	162.06 (200.36)	0.69
Total # of new outpatients (median, IQR)	40 (14-146)	516 (278-939)	1.65	26 (9-69)	107 (41-210)	0.95
Total # of visits per outpatient patient (mean, SDev)	8.56 (7.50)	2.84 (2.80)	1.01	13.77 (12.72)	4.22 (3.97)	1.01
Total # of visits per outpatient patient (median, IQR)	7 (4-11)	2 (2-3)	1.31	10 (5-18)	3 (2-5)	1.49
Mean # of visits per patient						
1-3	112 (27.7%)	10,792 (87.3%)	1.51	77 (13.1%)	998 (63.8%)	1.22
4-16	244 (60.4%)	1,475 (11.9%)	1.17	340 (58.0%)	534 (34.1%)	0.49
17+	48 (11.9%)	101 (0.8%)	0.47	169 (28.8%)	32 (2.0%)	0.80
Total # of single visit outpatients (mean, SD)	84.23 (183.55)	772.25 (1,051.97)	0.91	31.95 (51.62)	117.78 (158.94)	0.73
# with < 200 outpts annually (N,%)	275 (68.1%)	1,383 (11.2%)	1.43	478 (81.6%)	810 (51.8%)	0.67
# with < 100 outpts annually (N,%)	198 (49.0%)	917 (7.4%)	1.04	350 (59.7%)	441 (28.2%)	0.67
# with < 40 outpts annually (N,%)	79 (19.6%)	525 (4.2%)	0.49	143 (24.4%)	201 (12.9%)	0.30

Abbreviations: PCP – Primary Care Physician; SD – Standard Difference; SDev – Standard Deviation; IQR – Interquartile Range

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Table 3: Patient Characteristics by physician type.

	PCP Psychotherapists	PCP non-psychotherapists	SD	Psychiatrists - psychotherapist	Psychiatrist non-psychotherapist	SD
<b>Panel Characteristics: All patients, N(%)</b>	N=95,569	N=10,600,008		N=80,028	N=403,929	
Sex (%F)	55,893 (58.5%)	5,743,955 (54.2%)	0.09	46,075 (57.6%)	217,493 (53.8%)	0.08
Age, mean, (SDev)	43.74 (19.77)	42.14 (23.08)	0.07	43.79 (18.44)	43.09 (20.26)	0.04
<18	9,030 (9.4%)	1,901,785 (17.9%)	0.25	8,029 (10.0%)	46,044 (11.4%)	0.04
18-29	15,675 (16.4%)	1,523,601 (14.4%)	0.06	12,276 (15.3%)	73,738 (18.3%)	0.08
30-39	15,213 (15.9%)	1,344,577 (12.7%)	0.09	11,651 (14.6%)	60,516 (15.0%)	0.01
40-49	16,578 (17.3%)	1,470,261 (13.9%)	0.10	13,875 (17.3%)	64,414 (15.9%)	0.04
50-64	24,838 (26.0%)	2,385,287 (22.5%)	0.08	24,122 (30.1%)	98,124 (24.3%)	0.13
>64	14,235 (14.9%)	1,974,497 (18.6%)	0.10	10,075 (12.6%)	61,093 (15.1%)	0.07
Immigrant	12,396 (13.0%)	1,643,862 (15.5%)	0.07	10,776 (13.5%)	48,013 (11.9%)	0.05
Income Quintile						
Q1	17,603 (18.4%)	1,903,886 (18.0%)	0.01	16,144 (20.2%)	96,729 (23.9%)	0.09
Q2	18,224 (19.1%)	2,024,154 (19.1%)	0.00	14,787 (18.5%)	81,261 (20.1%)	0.04
Q3	17,667 (18.5%)	2,134,174 (20.1%)	0.04	13,970 (17.5%)	74,383 (18.4%)	0.02
Q4	19,323 (20.2%)	2,331,854 (22.0%)	0.04	15,571 (19.5%)	75,913 (18.8%)	0.02
Q5	22,197 (23.2%)	2,150,212 (20.3%)	0.07	18,930 (23.7%)	72,734 (18.0%)	0.14
Missing	555 (0.6%)	55,728 (0.5%)	0.01	626 (0.8%)	2,909 (0.7%)	0.01
LHINs						
Toronto/Champlain	32,946 (34.5%)	1,882,733 (17.8%)	0.49	33,082 (41.3%)	87,269 (21.6%)	0.43
South West, South East, Hamilton, Niagara Haldimand Brant	17,824 (18.7%)	2,203,072 (20.8%)	0.05	8,448 (10.6%)	95,488 (23.6%)	0.35
Other (i.e. Low Supply)	44,718 (46.8%)	6,500,401 (61.3%)	0.29	38,366 (47.9%)	220,478 (54.6%)	0.13
Missing	81 (0.1%)	13,802 (0.1%)	0.01	132 (0.2%)	694 (0.2%)	0.00
MHA need*, N(%)						
MHA Hospital Discharge	4,086 (4.3%)	81,199 (0.8%)	0.23	6,713 (8.4%)	43,902 (10.9%)	0.08

ED MHA	5,819 (6.1%)	166,951 (1.6%)	0.24	9,659 (12.1%)	60,503 (15.0%)	0.09
ED Substance Abuse (2+ visits)	1,168 (1.2%)	13,421 (0.1%)	0.13	888 (1.1%)	5,714 (1.4%)	0.03
ED SH	1,149 (1.2%)	26,216 (0.2%)	0.11	1,784 (2.2%)	10,648 (2.6%)	0.03

Abbreviations: PCP – Primary Care Physician; SD – Standard Difference; SDev – Standard Deviation; IQR – Interquartile Range; MHA – Mental Health and Addictions; ED – Emergency Department; SH – Self-Harm

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Table 4: Follow-up by physician type within 30- and 180-days.

	MHA Hospital Discharge	ED MHA	ED SH	ED Substance Use (2+ visits)
Total Number of Index Event	N=96247	N=192641	N=28699	N=16022
Visit within 30 days, N (%)				
Visit to psychiatrist psychotherapist	3004 (3.12)	4232 (2.2)	835 (2.91)	187 (1.17)
Visit to psychiatrist non-psychotherapist	27625 (28.7)	44736 (23.22)	8311 (28.96)	2224 (13.88)
Visit to PCP Psychotherapist	1969 (2.05)	2443 (1.27)	450 (1.57)	436 (2.72)
MHA Visit to PCP Non-psychotherapist*	26465 (27.5)	53565 (27.81)	8098 (28.22)	4658 (29.07)
None of the above	47329 (49.17)	104563 (54.28)	14254 (49.67)	9654 (60.25)
Within 180 Days of Index Event, N(%)				
Visit to psychiatrist psychotherapist	5430 (5.64)	8759 (4.55)	1612 (5.62)	547 (3.41)
Visit to psychiatrist non-psychotherapist	45694 (47.48)	73462 (38.13)	12780 (44.53)	4707 (29.38)
Visit to PCP Psychotherapist	3835 (3.98)	5372 (2.79)	1016 (3.54)	1153 (7.2)
MHA Visit to PCP Non-psychotherapist*	45817 (47.6)	92053 (47.78)	14492 (50.5)	8655 (54.02)
None of the above	27228 (28.29)	65470 (33.99)	8367 (29.15)	5553 (34.66)

Abbreviations: MHA – Mental Health and Addictions; ED – Emergency Department; SH – Self-Harm

Appendix Table 1: OHIP billing codes used to capture psychiatrist and PCP psychotherapy.

Psychiatrist Psychotherapy Billing Codes	K197, K195, K208, K209, K203, K204, K205, K206, K192, K194 OR K198 (only counted if used $\geq 12$ times in a fiscal year period)
PCP Psychotherapy Billing Codes	K197, K195, K208, K209, K203, K204, K205, K206, K192, K194

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