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3 **1 The Number of Family Physicians and Service Provision in Ontario and Alberta between 2005/06 and**  
4 **2 2017/18: A Cross-Sectional Study**

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60**Abstract****Background:**

Five million Canadians lack a family doctor or primary care team. Our goal was to examine trends over time in family physician workforce and service provision in Ontario and Alberta, with a view to informing policy discussions on primary care supply and delivery of services.

**Methods:**

Cross-sectional analyses in Ontario and Alberta for 2005/06, 2012/13 and 2017/18 were used to examine family physician service provision by years since graduation and rurality. A service day was defined as 10 or more clinic visits of \$20 value or more on the same calendar day. All active family physicians who had evidence of billing in each fiscal year were included.

**Results:**

From 2005/06 to 2017/18 the number of family physicians increased by 35.3% in Ontario and 49.7% in Alberta, but with 10.5% fewer annual average service days in Ontario and 8.1% fewer in Alberta. Rural areas had the smallest increases in physicians and largest declines in average annual service days in both provinces. The largest increase in family physicians in both provinces was among those at least 30 years since graduation, who comprised more than one-third of all family physicians in both provinces in 2017/18.

**Interpretation:** Ontario and Alberta experienced rapid growth in the number of family physicians, but with the greatest increases at late career stages and the least in rural areas. The decline in service days in both provinces highlights the importance of measuring activity to inform workforce planning.

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56 63 **Introduction**  
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9 64 In Canada there are serious concerns about the current and future supply of family physicians  
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11 65 (FPs). Access to an FP is not uniform across the country, particularly in rural communities. With  
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13 66 an aging workforce of FPs, greater representation of women, and increasing preference for  
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15 67 part-time (PT) practice and urban locations, many challenges lie ahead for health planners and  
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17 68 decision-makers. Determining the optimal number of FPs is further complicated by an aging  
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19 69 patient population with complex care needs.  
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24 70 In the past, provincial health ministries and regional health authorities have relied on head  
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26 71 counts and income-based units of full-time equivalents to estimate physician supply and  
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28 72 physician-population ratios (1, 2). In addition, voluntary national physician surveys provide  
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30 73 general information on self-reported hours worked per week but remain cursory estimates of  
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32 74 work intensity patterns and are unable to inform planning on a geographic basis. Important  
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34 75 questions remain as to whether the service provision has diminished by provider and per  
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36 76 population while the supply of FP has increased. The ability to accurately predict the trend of  
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38 77 service provision remains an important issue for health planners. This work offers an unique  
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40 78 perspective and approach to estimating service provision in two large Canadian provinces.  
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46 79 **Methods**  
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50 80 *Study Population*  
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53 81 All FPs in active practice in Ontario and Alberta from 2005-2018 were included if they had any  
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55 82 evidence of billing (including shadow billing) in the fiscal year analyzed. In Alberta, a cohort of  
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3 83 FPs was used for the analysis from who had graduated from medical school from up until 2014.  
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5 84 Those without evidence of billings, *service days with minimum of 10 patient visits and those who*  
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8 85 *worked fewer than 46 days worked during the year* were excluded from the analysis.  
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## 10 11 86 *Data Sources*

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14 87 For Ontario, datasets were linked using unique encoded identifiers and analyzed at ICES. ICES is  
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16 88 an independent, non-profit research institute whose legal status under Ontario's health  
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18 89 information privacy law allows it to collect and analyze health care and demographic data,  
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20 90 without consent, for health system evaluation and improvement. The Ontario Health Insurance  
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22 91 Plan (OHIP) claims database contains information on inpatient and outpatient services provided  
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24 92 to Ontario residents eligible for the province's publicly funded health insurance system by fee-  
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26 93 for-service health care practitioners (FPs) and "shadow billings" for those paid through non-fee-  
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28 94 for-service payment plans. The main data elements include patient and physician identifiers  
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30 95 (encrypted), code for service provided, date of service, associated diagnosis, and fee paid. OHIP  
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32 96 billing data was used to determine the number of patient visits each FP had on each day f  
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34 97 From April 1, 2005 to March 31, 2018. A visit was defined as one billing per patient per  
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36 98 FP per day. Billings with locations of office, phone, home, long-term care, inpatient, and  
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38 99 emergency department were included. Billings with 'Undefined' locations were excluded.  
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40 100 Billings with amount paid \$25 or more in Alberta and \$20 or more in Ontario to account for  
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42 101 differences in the amount paid for a non-complex visit were included (3, 4). Similarly, we used  
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44 102 Alberta Health FP claims linked to all outpatient community FP clinic visits for the period April 1,  
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46 103 2005 to March 31, 2018. The physician claims database was used to determine the number of  
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48 104 patient visits each year. The physician claims table was linked for each provider to demographic  
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3 105 data from the College of Physicians and Surgeons of Alberta. These data include provider sex,  
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5 106 years since medical school graduation and country of medical school. All physicians under the  
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8 107 general practice and family medicine specialty were included.  
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### 10 108 *Geographic and Population Areas and Populations*

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14 109 The postal codes of the FP's practice address were used to determine geographic location in  
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16 110 both Ontario and Alberta. There are differences in how geographic areas are defined and  
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18 111 reported in Alberta compared to Ontario. For example: 'Metro' refers to two major  
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20 112 metropolitan areas of Edmonton and Calgary. Metro Influenced Areas are the  
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22 113 suburban/commuter cities and towns surrounding Edmonton and Calgary. 'Urban' are the 5  
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24 114 major urban centres with populations 25K-<500K: Grand Prairie, Fort McMurray, Red Deer,  
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26 115 Lethbridge and Medicine Hat and the Urban Influenced are the geographic areas surrounding  
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28 116 these 5 urban centres (5). The Ontario data uses the geographic classifications from Statistics  
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30 117 Canada based on the census. They are based on the census subdivision of the physician's  
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32 118 practice location postal code grouped as census metropolitan areas (CMA), census  
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34 119 agglomerations (CA) or CSDs outside both (Non-CMA/CA).  
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### 41 120 *Outcomes*

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45 121 Using a repeated cross-sectional design and provincial physician claims data from 2005/06-  
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47 122 2018/19, we calculated the number of service days using a previously published service day  
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49 123 methodology (6). This method defines a service day as 10 or more clinic visits of \$20 value or  
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51 124 more on the same calendar day.  
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3 **126 Results**  
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6 *127 Physician Characteristics*  
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9 *128 Ontario:* There were 8858 FPs or 7.1 FPs per 10,000 population in 2005/06, and 11,987  
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11 *129* physicians or 8.5 physicians per 10,000 population in 2017/18 (Table 1). There were more male  
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13 *130* FPs than female over the time period with a declining proportion overall (64.6% and 52.8%  
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15 *131* male in 2005/06 and 2017/18, respectively). The proportion of the most experienced FPs grew  
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17 *132* over this timeframe, with 29.3% with 30+ years since graduation in 2005/06 and 34.6% in  
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19 *133* 2017/18; the proportion of early career FPs also grew from 12.7% in 2005/06 and 23.7% in  
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21 *134* 2017/18. Information on international medical graduates in Ontario was not available for the  
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23 *135* time periods examined.  
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29 *136 Alberta:* There were 2207 FPs or 6.6 FPs per 10,000 population in 2005/06, and 3304 physicians  
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31 *137* or 7.8 FPs per 10,000 population in 2017/18 (Table 1). There were more male FPs than female  
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33 *138* over this time period with a slight decline in proportion overall (61.9% male and 58.3% male in  
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35 *139* 2005/06 and 2017/18, respectively). The proportion of the most experienced FPs (30+ years  
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37 *140* since medical school graduation grew by 60% over this time period and accounted for 33.8% of  
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39 *141* all FPs in 2017/18. By contrast, the proportion of early career FPs remained relatively constant  
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41 *142* over the same time period at 14-18%, as did the proportion of IMGs (31.3-34.6%).  
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47 *143 Service Provision*  
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50 *144* In almost every group, for both Alberta and Ontario, the average number of service days per  
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52 *145* year declined between 2005/06 and 2017/18 (Table 2), with Alberta physicians having slightly  
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54 *146* more service days on average than for Ontario.  
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3 147 *Ontario:* The mean annual number of service days with at least 10 patients seen per day  
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5 148 declined from 170.7 to 152.6 (sd 71.7 and 67.7 respectively), a decline of 18 service days per  
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7 149 provider, between 2005/06 and 2017/18. This translates to a decline in weekly average service  
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9 150 days from 3.7 to 3.3 (sd 1.6 and 1.5) per provider over 46 weeks. This trend persisted across  
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11 151 different daily patient volume cut-points (data not shown but available on request).  
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16 152 *Alberta:* The total number of service days with at least 10 patients seen per day declined from  
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18 153 170.1 to 157.1 (sd 71.8 and 70.5 respectively), a decline of 13 service days per provider,  
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20 154 between 2005/06 and 2017/18. Over a 46 week work year, the average service days declined  
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22 155 from 3.7 to 3.3 (sd 1.6 and 1.5) per provider per week. This trend persisted across different  
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24 156 daily patient volume cut-points (data not shown but available on request).  
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#### 29 157 *Service Days Per Provider by Years in Practice*

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32 158 In both Alberta and Ontario, there was a gradient across years of experience with more  
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34 159 experienced physicians providing more service days. The decline in service days per provider  
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36 160 was most pronounced in those most experienced (30+ years) in Alberta and early/mid-career  
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38 161 FPs in Ontario (Table 3).  
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#### 42 162 *Average Service Days - Provider Sex*

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45 163 Male FPs worked more service days relative to females in both Alberta and Ontario, however,  
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47 164 the average service days per FP decreased across both male and female FPs, and across all  
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49 165 levels of experience, except early career FPs in Ontario with female FPs increasing service days  
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51 166 by 6.9 days on average (from 123.9 to 130.8) and male FPs remaining steady at 166 service days  
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55 167 (Table 3). From 2005 to 2018 female FPs with 30+ years experience reduced service days by  
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3 168 16.3 days on average (from 159.3 to 143.0) in Ontario and by 45.3 days on average (from 175.7  
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6 169 to 131.4) in Alberta while male FPs reduced service days by 7.5 on average in Ontario (172.0 to  
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8 170 164.5) compared to Alberta FPs of the same age that reduced their service days by 27.0 days on  
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10 171 average (from 194.4 to 166.1), respectively.

### 13 172 *Practice Location and Population Area Served*

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17 173 The total number of FPs meeting our inclusion criteria increased in both provinces by 36.7% in  
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19 174 Ontario and 49.7% in Alberta between 2005/06 and 2017/18, though average service days  
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21 175 declined across all geographic locations (Tables 4 & 5).

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24 176 *Ontario:* The relative increase in FP count was most pronounced in urban centres and lowest in  
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26 177 rural areas. The greatest change was in locations with 10k-100k populations, increasing 43.1%  
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28 178 (685 to 980), however, service days per FP in these areas declined 17.4 over this time period  
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30 179 (167 to 138 days) (Table 5). The next greatest increase in FP count was in populations >1.5M  
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32 180 (Toronto), with a 40.0% increase in FP counts meeting our inclusion criteria (3785 to 5298) and  
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34 181 service days declined by 9.4% (180 to 163 days) on average per FP over this time period. Rural  
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36 182 areas increased FP counts by 20.7% (227 to 274), while service days declined by 18.5% on  
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38 183 average per FP (124 to 101 days). Similar but less pronounced trends were seen across the  
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40 184 remaining geographies.

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47 185 *Alberta:* The relative increase in FP counts were also larger in urban centres and lower in rural  
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49 186 areas. The largest increase was in moderate metro locations (areas immediately surrounding  
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51 187 Calgary and Edmonton, i.e. commuter communities), with a 99.1% increase (219 to 436) in FP  
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53 188 counts between 2005 and 2018. However, average service days per FP declined by 6.3% over  
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3 189 this time (181 to 170 days). Metro FP counts increased by 49.8% (1238 to 1854), while service  
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5 190 days declined by 6.3% (164 to 154 days). Notably, rural remote areas recorded the lowest  
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7 191 increase in physician count with 7% (55 to 59), while the average service days per physician  
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9 192 declined by 18% (175 to 144 days). The remaining locations also increased head counts by 30-  
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11 193 47%, while service days declined 6-22%.

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16 194 ***Interpretation***

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19 195 This study explored trends over time in FP workforce numbers by geography for over 15000 FPs  
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21 196 in two populous Canadian provinces. The results offer an important perspective on both the  
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23 197 supply and distribution of FPs and lends insight into the dilemma facing health planners of the  
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25 198 paradoxical increase in FPs numbers and decline in service.

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29 199 In this study, we found a decline in service delivery broadly across levels of FP experience and  
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31 200 geographic locations in both provinces, with few exceptions. These results are important for  
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33 201 several reasons. From a geographic perspective, our results shed light on the imbalance of FP  
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35 202 supply and distribution and a trend in providing few days of service, the reasons for which are  
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37 203 multiple and complex and may include growing demand of administrative electronic tasks that  
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39 204 FPs face from direct patient care.

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44 205 Over the past several decades the FP demographics have changed considerably, with a growing  
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46 206 proportion of FPs and many physician providing less direct patient care (7, 8). These findings  
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48 207 should be interpreted in the context that a declining number of primary care physicians over  
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50 208 time have opted for comprehensive practice, with many opting for focused roles including  
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52 209 emergency physicians, hospitalists, psychotherapists, sports medicine, and palliative care. In  
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3 210 Ontario, just over two-thirds of primary care physicians could be characterized as  
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5 211 comprehensive (9). Taken together, these findings suggest that the growth in the primary care  
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7 212 physician workforce available to care for whole populations may be substantially over-stated  
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9 213 unless service provision, geographic distribution, career stage and comprehensiveness are  
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13 214 taken into account.

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16 215 Historically, provider age and sex have been shown to influence the level of their work intensity  
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18 216 (10). Previous research has shown that female FPs tend to report fewer work hours but spend  
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21 217 more time with their patients than their male counterparts (11-14). The proportion of female  
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23 218 FPs practicing from 2005-2018 increased in both provinces, and a greater reduction in service  
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26 219 over time was found among these cohorts. Overall our results align with more recent Canadian  
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28 220 studies that found an overall decline in clinical activity among FPs (10, 15, 16).

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31 221 The amount of service provision among some FP demographic categories, especially among  
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33 222 younger FP may be reflection of the how are they are paid, the amount of educational debt  
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35 223 they carry and practice overhead costs. (17) Ontario offers a broader choice in payment models  
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38 224 that include enhanced fee-for-service and blended capitation as well as team-based models of  
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41 225 care that are attractive for newer graduates (18) (19). By comparison, Alberta FPs are paid  
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44 226 predominantly (>80%) by fee-for-service, which incentivizes seeing a daily patient volume. (20)  
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46 227 (12) (21). Future work might focus on the preferences of FPs in the model of care they choose  
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48 228 to work in, such as the patient medical home where multiple FPs might cross-cover patient care  
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51 229 and shared patient care is a focus with allied health providers.

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3 231 *Limitations*  
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6 232 Our analyses are limited to FP billing claims in two provinces where billing codes and systems of  
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8 233 reimbursement are different. Our analysis of the Alberta data was limited by the fact that the  
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10 234 analysis included a cohort of FPs from who had graduated from medical school from up until  
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12 235 2014, so each year reported is reflective of this FP cohort only. For the Ontario analysis many  
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14 236 FPs work in blended capitation models that provide 15% of payment for in-basket services and  
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16 237 completeness of billing for those services has not been reported. Geographic definitions were  
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18 238 challenging to align in the two provinces and some differences in definitions remained so each  
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20 239 were reported separately. Information on international medical graduates in Ontario was not  
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22 240 available for the time periods examined. As health human resource planning normally accounts  
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24 241 for population health needs, we did not include measures of patient complexity, need for  
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26 242 primary care, or unmet need. We did not include measures of full-time and part-time practice  
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28 243 which we have reported elsewhere (6). Finally, given our inclusion criteria based on service  
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30 244 provision it is likely there are of number of FPs unaccounted for who have a limited or focused  
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32 245 practice, these were not considered in our analysis.  
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41 246 *Conclusion*  
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44 247 The total number of FPs increased substantially in Ontario and Alberta from 2005/06 to  
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46 248 2017/18, but at the same time service days declined differentially across all FP subgroups and  
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48 249 geographic locations in both provinces. The declines were differential by province and  
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50 250 geography. These results highlight important limitations in using physician head counts for  
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3 251 planning and suggest that service provision volumes may be more informative for  
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6 252 understanding issue related to accessing care and workforce planning.  
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9 253 *Data Sharing*  
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11 254 For the Ontario analyses, the use of the data in this project is authorized under section 45 of  
12 255 Ontario's Personal Health Information Protection Act (PHIPA) and does not require review by a  
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14 256 Research Ethics Board. For the Alberta analyses, approval was received by the Conjoint Health  
15 257 Research Ethics Board, University of Calgary (Certificate No. REB17-1301).  
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17 258 The dataset from this study is held securely in coded form at ICES. While legal data sharing  
18 259 agreements between ICES and data providers (e.g., healthcare organizations and government)  
19 260 prohibit ICES from making the dataset publicly available, access may be granted to those who  
20 261 meet pre-specified criteria for confidential access, available at [www.ices.on.ca/DAS](http://www.ices.on.ca/DAS) (email:  
21 262 [das@ices.on.ca](mailto:das@ices.on.ca)). The full dataset creation plan and underlying analytic code are available from  
22 263 the authors upon request, understanding that the computer programs may rely upon coding  
23 264 templates or macros that are unique to ICES and are therefore either inaccessible or may  
24 265 require modification. The Alberta data sets are maintained by the Clinical Research Unit,  
25 266 Cumming School of Medicine at the University of Calgary. Requests for the study data can be  
26 267 directed to Alberta Health.  
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	ONTARIO			ALBERTA		
	2005/06	2012/13	2017/18	2005/06	2012/13	2017/18
N	8,858	10,358	11,987	2,207	2,893	3,304
Population Census	12,528,663	13,390,632	14,070,141	3,321,768	3,874,548	4,241,100
Per capita number of physicians (per 10,000 population)	7.1	7.7	8.5	6.6	7.5	7.8
Male (%)	5,723 (64.6%)	5,958 (57.5%)	6,328 (52.8%)	1,367 (61.9%)	1,758 (60.8%)	1,925 (58.3%)
Female (%)	3,135 (35.4%)	4,400 (42.5%)	5,659 (47.2%)	840 (38.1%)	1,135 (39.2%)	1,379 (41.7%)
Years Since Grad - 0-9 (%)	1,122 (12.7%)	1,660 (16.0%)	2,840 (23.7%)	407 (18.4%)	423 (14.6%)	535 (16.2%)
Years Since Grad - 10-19 (%)	2,461 (27.8%)	2,065 (19.9%)	2,273 (19.0%)	754 (34.2%)	806 (27.9%)	788 (23.8%)
Years Since Grad - 20-29 (%)	2,679 (30.2%)	2,930 (28.3%)	2,730 (22.8%)	678 (30.7%)	833 (28.8%)	865 (26.2%)
Years Since Grad - 30+ (%)	2,596 (29.3%)	3,703 (35.8%)	4,144 (34.6%)	368 (16.7%)	831 (28.7%)	1,116 (33.8%)
International Medical Graduate*	-	-	-	691 (31.3%)	1,075 (37.2%)	1,143 (34.6%)

Population estimates taken from StatsCan Table 17-10-0005-01 ([Population estimates on July 1st, by age and sex \(statcan.gc.ca\)](#)) for years 2005, 2012, 2017.

\*Data from Ontario on International Medical Graduates was not available for analysis for the years examined.

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<b>Table 2: Mean Annual Service Days and Average Daily Patient Volume 2005/06, 2012/13 and 2017/18 Ontario &amp; Alberta</b>						
	<b>ONTARIO</b>			<b>ALBERTA</b>		
	2005/06	2012/13	2017/18	2005/06	2012/13	2017/18
<b>Service Days (mean ± sd)</b>						
Service Days with 10 patients seen per day minimum	170.7 ± 71.7	153.9 ± 65.5	152.6 ± 67.7	170.1 ± 71.8	159.7 ± 69.7	157.1 ± 70.5
Average Service Days per week with 10 patients seen per day minimum	3.7 ± 1.6	3.4 ± 1.4	3.3 ± 1.5	3.7 ± 1.6	3.5 ± 1.5	3.4 ± 1.5
<b>Average Daily Patient Volume (mean ± sd)</b>						
Average Daily Patient Volume	24.4 ± 9.8	24.8 ± 12.9	23.3 ± 12.1	27.5 ± 11.31	28.4 ± 12.22	26.4 ± 11.5

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**Table 3: Average Service Days by Sex and Years Since Medical School Graduation****Ontario**

Years Since Graduation	Female			Change in Average Service		Male			Change in Average Service	
	2005/06	2012/13	2017/18	Days	%	2005/06	2012/13	2017/18	Days	%
0-9	125.5	113.0	120.1	-5.4	-4.3%	168.9	141.5	151.5	-17.4	-10.3%
10-19	150.6	139.1	137.3	-13.3	-8.8%	189.2	169.1	165.8	-23.4	-12.4%
20-29	160.5	147.7	153.6	-6.9	-4.3%	195.4	175.7	178.3	-17.1	-8.8%
30+	159.3	146.4	143.0	-16.3	-10.2%	172.0	165.7	164.5	-7.5	-4.4%
Total	149.6	136.9	137.1	-12.5	-8.4%	182.7	166.3	165.2	-17.5	-9.6%

**Alberta**

Years Since Graduation	Female			Change in Average Service		Male			Change in Average Service	
	2005/06	2012/13	2017/18	Days	%	2005/06	2012/13	2017/18	Days	%
0-9	123.9	125.9	130.8	+6.9	5.6%	166.8	156.7	166.5	-0.3	0.0%
10-19	134.9	127.8	132.9	-2.0	-1.5%	185.9	173.1	173.3	-12.6	-6.8%
20-29	155.3	138.7	145.0	-10.3	-6.6%	193.9	184.2	185.3	-8.6	-4.4%
30+	177.6	144.4	132.2	-45.4	-25.5%	191.6	179.5	164.6	-27.0	-14.1%
Total	141.7	125.9	135.4	-6.3	-4.4%	187.6	156.7	172.5	-15.1	-8.0%

**Table 4: Total Family Physician Count and Average Service Day by Geography - Ontario**

	FP Count					Average Service Days 10 Patient Minimum Per FP				
	2005	2012	2018	Difference	% change	2005	2012	2018	Difference	% change
1.5M+	3,785	4,516	5298	1,513	+40.0%	180	165	163	-17	-9.4%
500K- <1.5M	1,546	1,840	2108	562	+36.4%	153	141	141	-12	-7.8%
100K - <500K	1,793	2,071	2370	577	+32.2%	176	155	153	-23	-13.0%
10K - < 100K	685	832	980	295	+43.1%	167	142	138	-29	-17.4%
NonCMACA/Strong MIZ	238	275	328	90	+37.8%	176	145	135	-41	-23.3%
NonCMACA/Mod MIZ	317	360	389	72	+22.7%	154	133	130	-24	-15.6%
NonCMACA/Weak MIZ	227	225	274	47	+20.7%	124	112	101	-23	-18.5%
Missing	-	-	-	-	-	168	148	140	-28	-16.7%
TOTAL	8,591	10,119	11,747	3,156	+36.7%	171	153	153	-18	-10.5%

Table 5: Family Physician Total Count and Average Service Day by Geography - Alberta

Total FP Counts						Average Service Day per FP				
	2005/06	2012/13	2017/18	Difference	% Change	2005/06	2012/13	2017/18	Difference	% Change
Metro (500K+)	1,238	1,564	1,854	616	+49.8%	164	154	154	-10	-6.3%
Mod. Metro Influence 100k-500k	219	352	436	217	+99.0%	180	173	170	-11	-6.3%
Urban 25k- 100k	238	325	342	104	+43.7%	180	168	158	-22	-12.2%
Mod. Urban Influence	18	22	24	6	+33.3%	210	202	164	-46	-22.8%
Rural Centre (10K - < 25K)	85	121	125	40	+47.1%	184	172	168	-16	-9.1%
Rural (<10K)	345	431	449	104	+30.1%	174	161	157	-17	-9.8%
Rural Remote	55	66	59	4	+7.3%	175	149	144	-31	-17.7%
Missing	9	12	15	6	+66.7%	107	128	149	-42	-39.3%
Total	2207	2893	3304	1097	+52.3%	1374	1307	1263	-111	-8.1%

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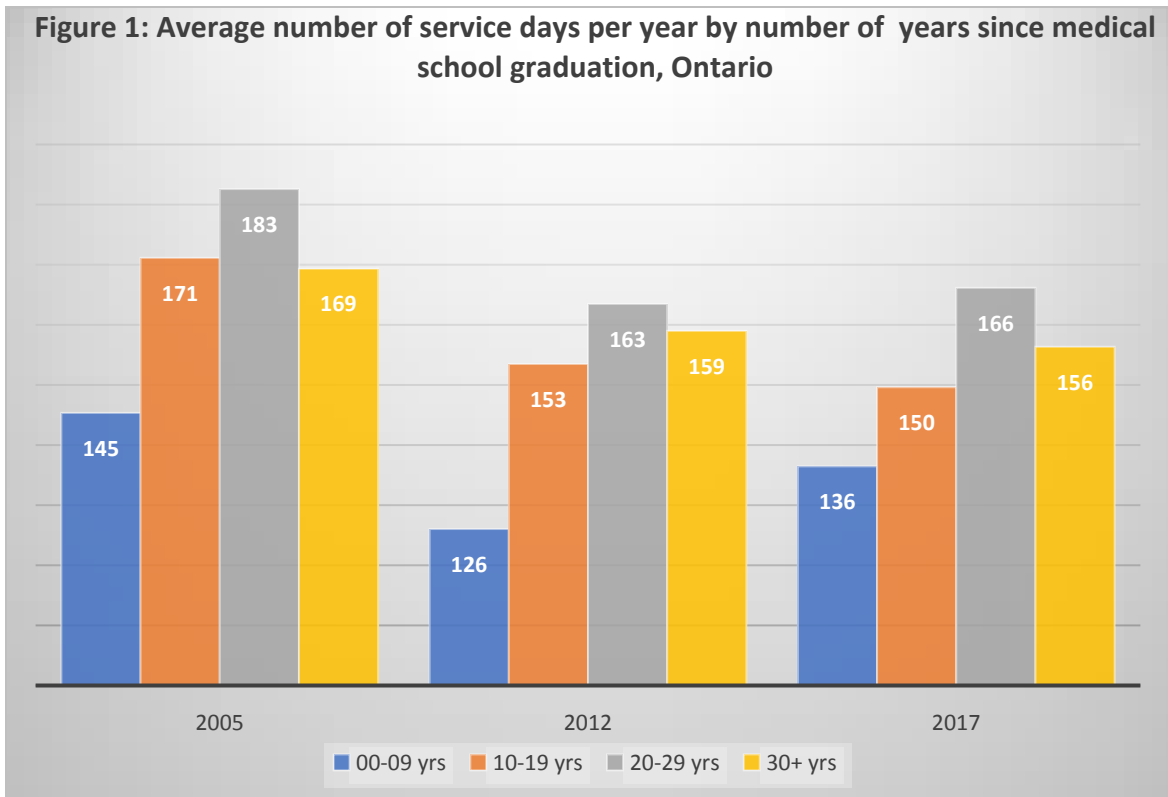


Figure 1. Mean number of service days provided by PCPs in Ontario 2005, 2012 and 2017

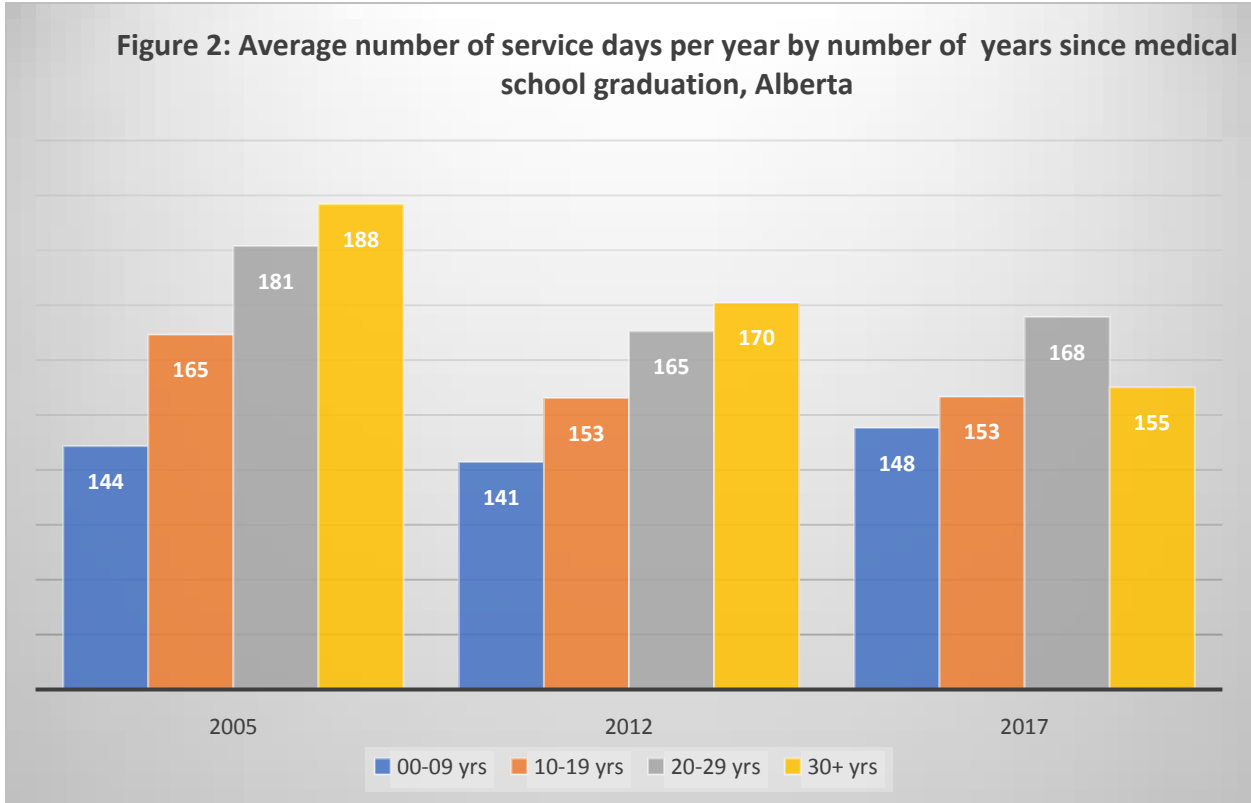


Figure 2. Mean number of service days provided by PCPs in Alberta 2005, 2012 and 2017

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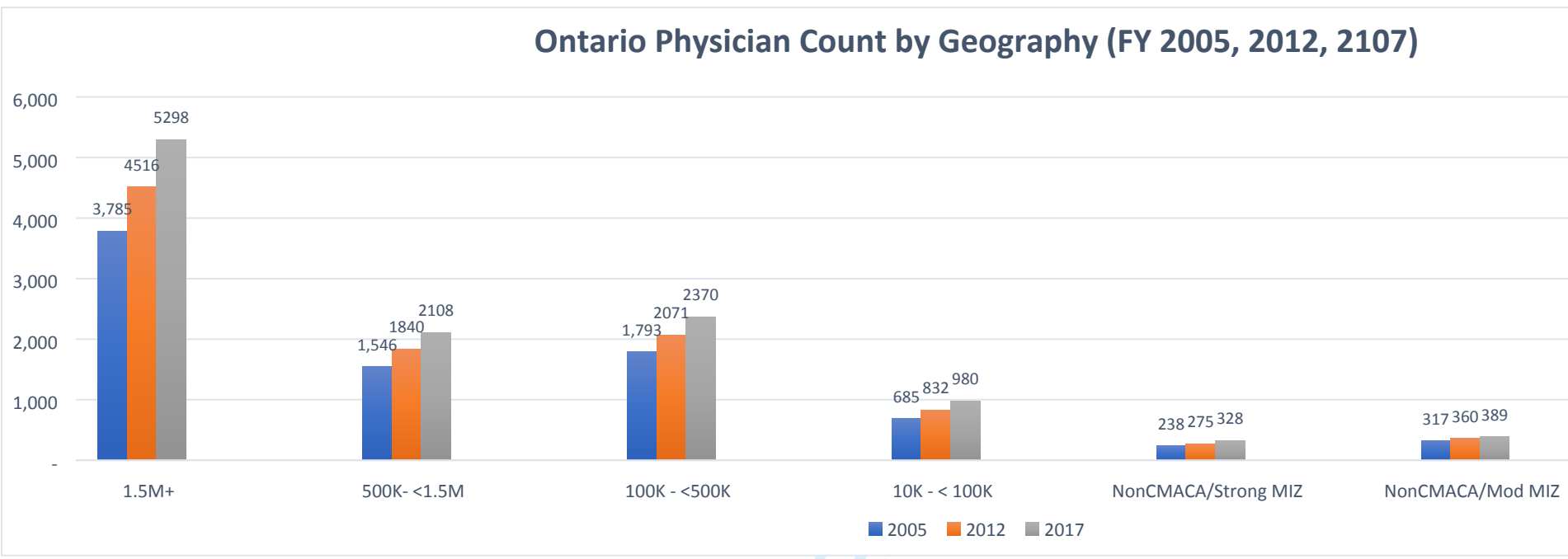
Geographic Definitions			
Ontario	Definition	Alberta	Definition
1.5M+	Physician practices in a CMA/CA of 1.5M population or more.		
500K-<1.5M	Physician practices in a CMA/CA of 500K to 1.5M population	Metro (500K+)	Population >500,000. Calgary and Edmonton proper.
100K-<500K	Physician practices in a CMA/CA of 100 to 500K population.	Mod. Metro Influence (100k-500k)	defined by AHS Local Geography areas immediately surrounding Calgary and Edmonton. These are deemed as commuter communities (live outside of Calgary/Edmonton but commute to Calgary/Edmonton for work and business).
10K-<100K	Physician's practice is located in a CMA/CA with at least 10K but less than 100K population	Urban (25K-<500K)/	5 major urban centres with populations > 25,000 but less and 500,000 (Grand Prairie, Fort McMurray, Red Deer, Lethbridge, Medicine Hat)
Rural/Strong Metro influence	Physician's practice is in a CSD outside a CMA/CA, but where at least 30% of the population is employed in a CMA/CA.	Mod. Urban influence	Local Geographic areas surrounding the 5 urban centres. These areas are typically considered rural given that their populations are low and the Local Geographic areas do not define these areas properly (refer to note below).
Rural/Moderate Metro influence	Physician's practice is in a Non-CMA/CA CSD but between 5-30% of employed people work in a CMA/CA	Rural Centre (10K - < 25K)	10,000 to less than 25,000 population (Brooks, Canmore, Wetaskiwin, Camrose, Lloydminster, Cold Lake). These areas are considered rural but are defined for the purpose of special studies. All 5 areas have unique populations and industries but belong to the rural area.

Rural/Weak Metro influence	Physician's practice is outside any CMA/CA and fewer than 5% of employed people work in a CMA/CA	Rural (<10K )	populations less than 10,000 and up to 200 kilometres from a Metro or Urban centre. These include towns, villages, hamlets, and agricultural areas.
		Rural Remote	greater than 200 kilometres from a Metro or Urban centre. Industries tend to include oil & gas, forestry, hunting/trapping, tourism and sometimes pockets of agriculture

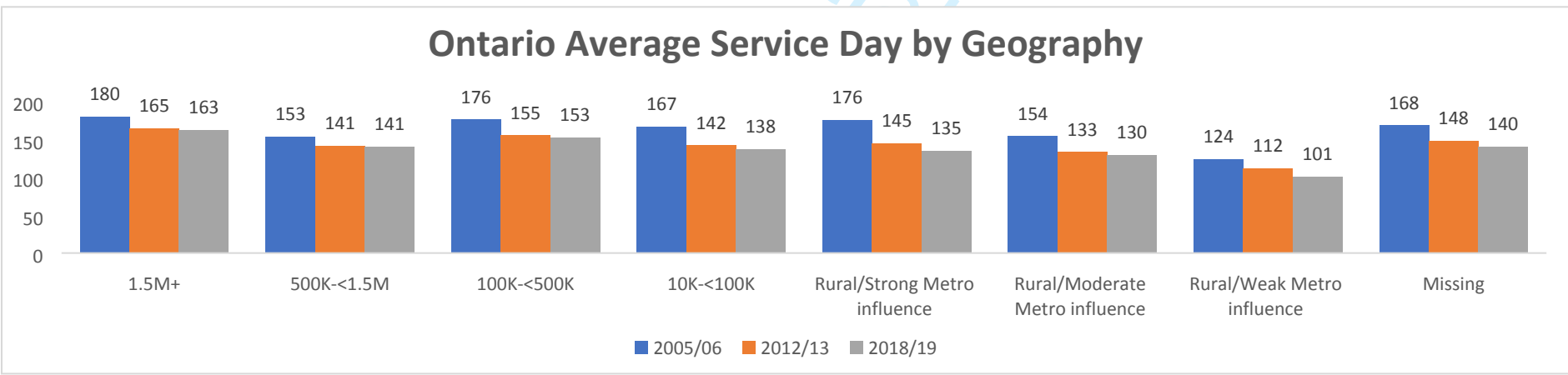
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### Ontario Physician Count by Geography (FY 2005, 2012, 2107)

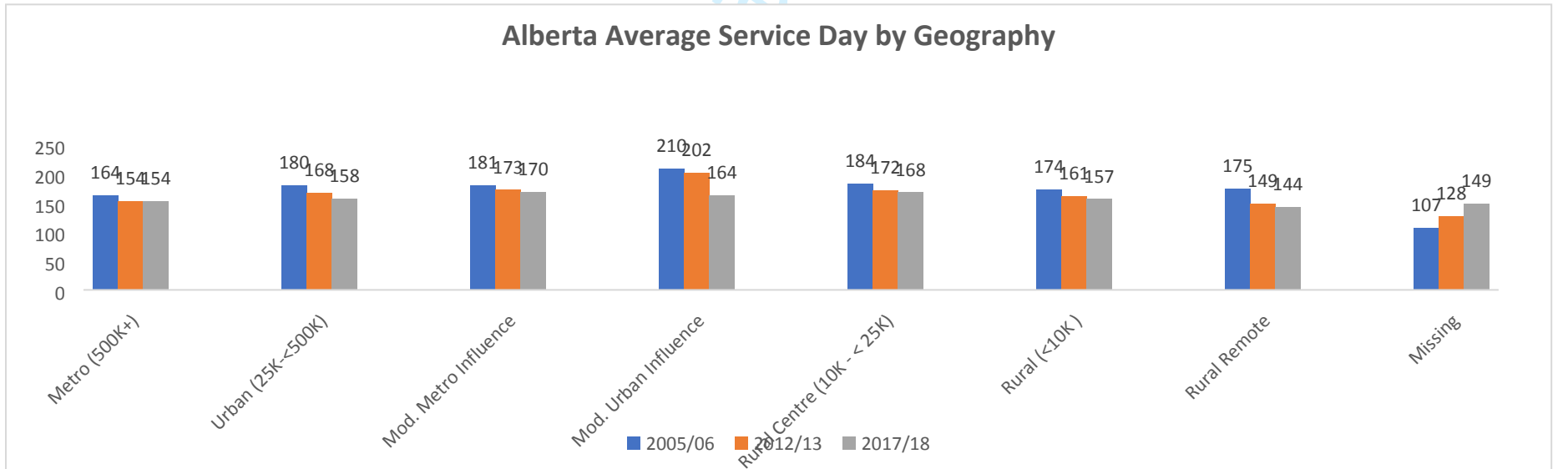
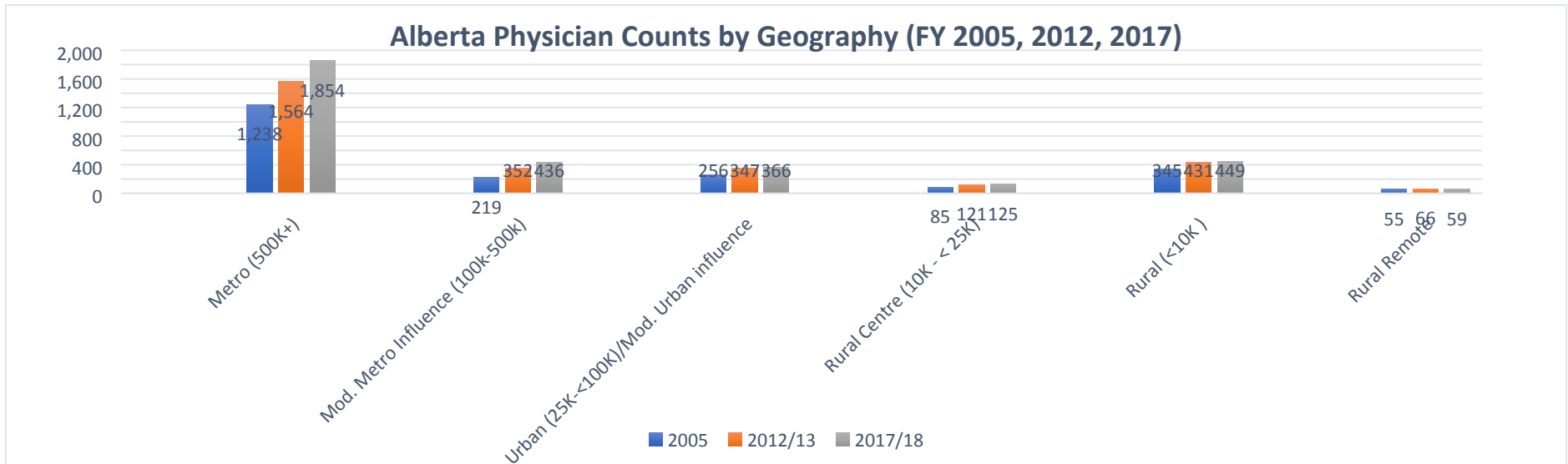


### Ontario Average Service Day by Geography

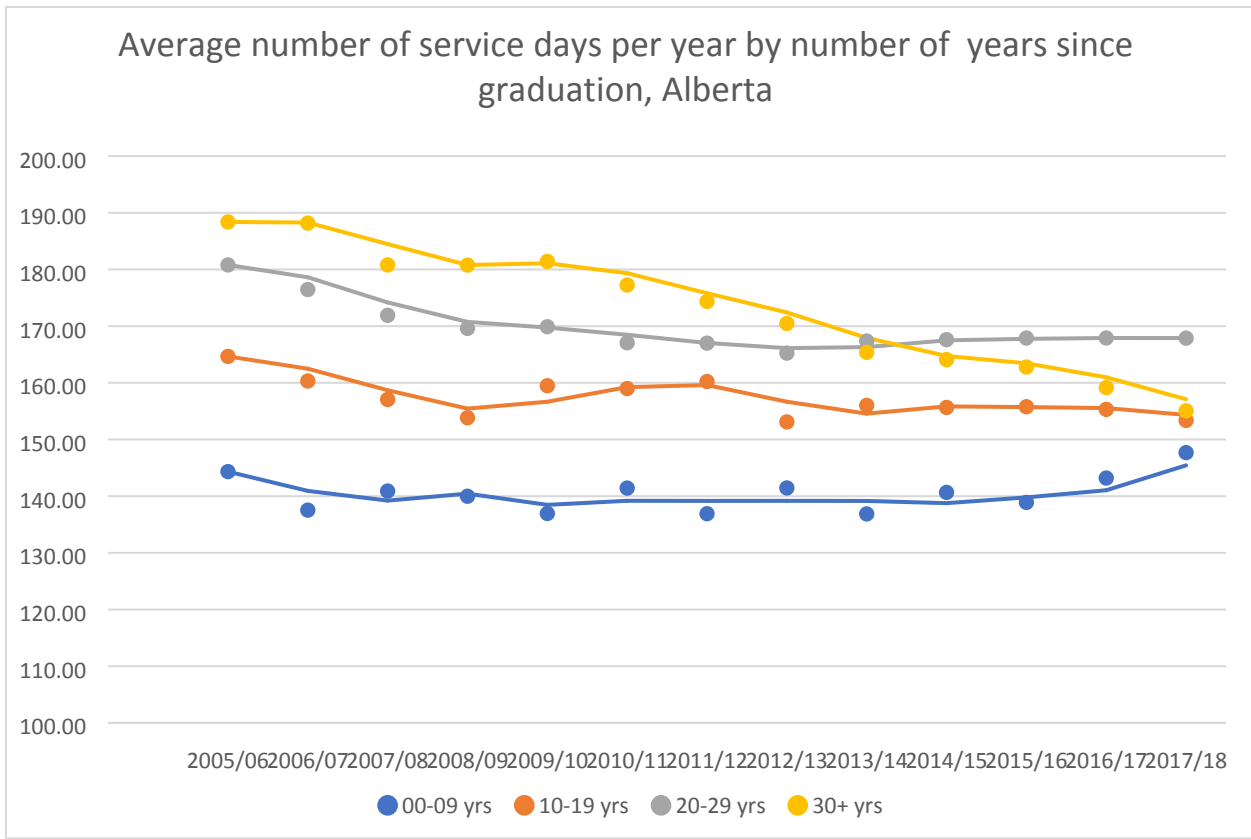




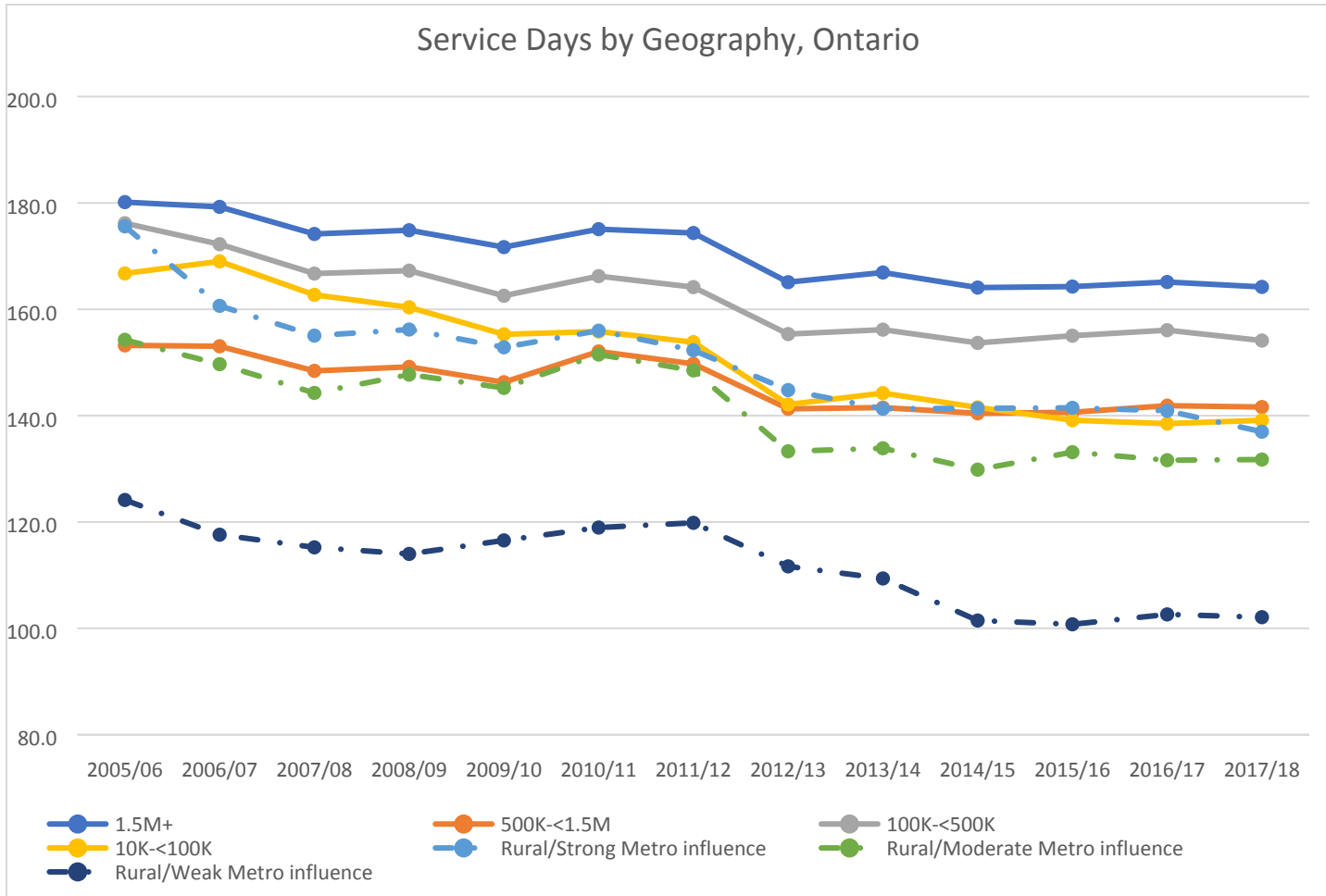
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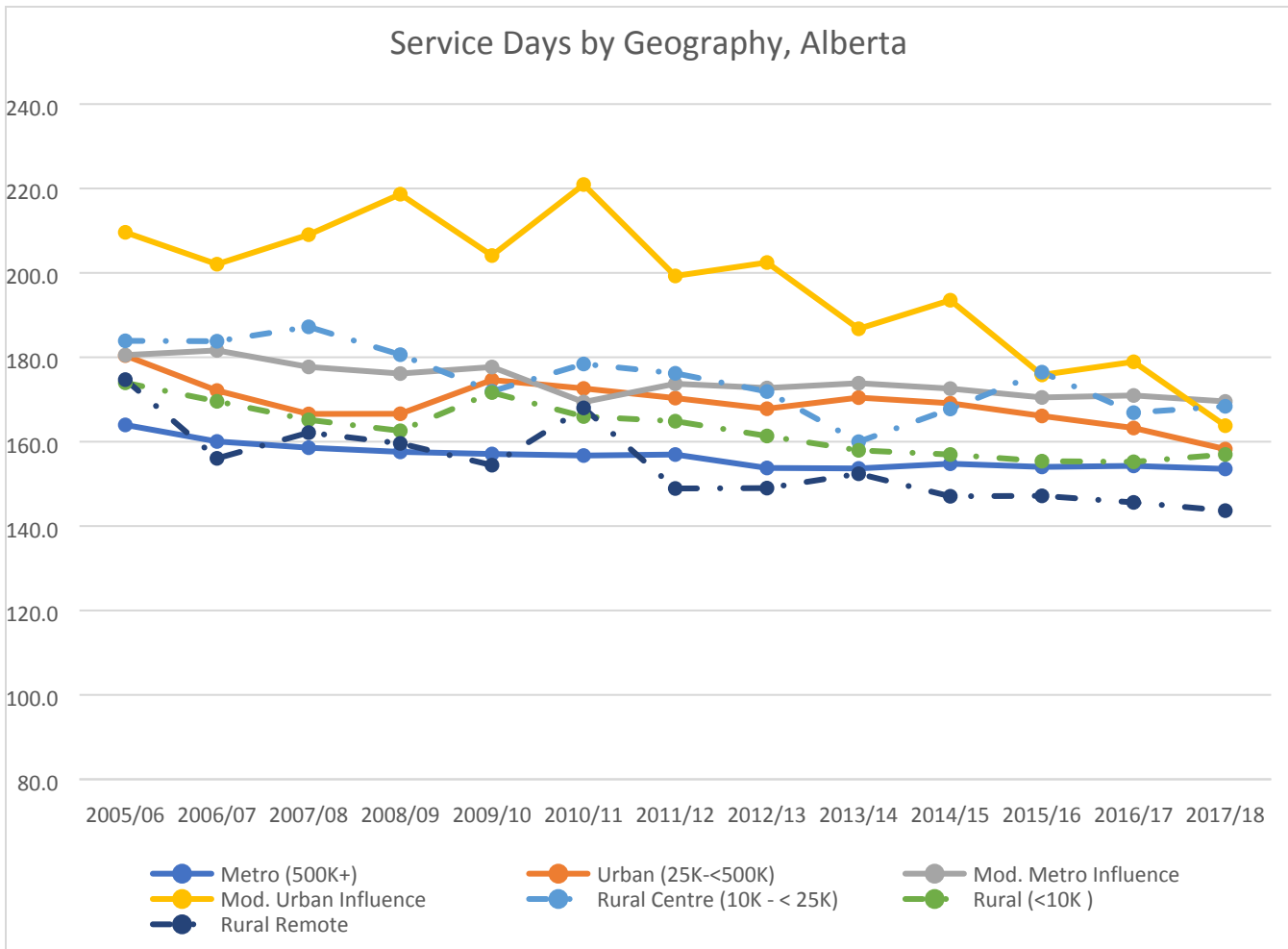
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\* Note – areas designated as rural in Alberta or Non-CMACA (outside a census metropolitan area or census aggregation) in Ontario are shown as broken lines. Urban areas and towns have solid lines.

