2017 Alberta Triplicate Prescription Program Atlas

College of Physicians & Surgeons of Alberta

The Alberta Triplicate Prescription Program (TPP) was established in 1986 to monitor the use of certain medications prone to misuse and abuse.

The mandate of the TPP is:

- To monitor prescribing, dispensing and utilization practices regarding targeted medications;
- To provide timely and relevant information on targeted medications to prescribers, dispensers, consumers, regulatory bodies and stakeholders;
- To work with stakeholders to enable system level change to ensure appropriate use of targeted medications;
- To ensure efficient and effective functioning of the TPP program.

Funded primarily by the province of Alberta, the TPP is a partnership administered by the College of Physicians & Surgeons of Alberta. The complete list of partners includes:

Alberta College of Pharmacy
Alberta Dental Association and College
Alberta Health
Alberta Health Services
Alberta Medical Association
Alberta Pharmacists' Association
Alberta Veterinary Medical Association
College and Association of Registered Nurses of Alberta
College of Physicians & Surgeons of Alberta
College of Podiatric Physicians of Alberta
Yukon Medical Council

This work was produced by OKAKI™ for the Alberta Triplicate Prescription Program.

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Background and Methods

About the Atlas

The purpose of this Triplicate Prescription Program (TPP) Atlas is to provide an overview of provincial TPP medication utilization for the year 2017. As with the 2016 Atlas, provincial utilization will be summarized for two analytic classes of medications: opioids (including codeine containing medications) and benzodiazepines (including zopiclone and zolpidem). The source of information on medication utilization continues to be dispenses from community pharmacies found within Alberta's Pharmaceutical Information Network (PIN). New in the 2017 Atlas are 5 year trends for several measures, a summary of prescribing by clinical specialty groupings, and revised geographies for population drug utilization measures (described below).

TPP Data Source

2017 PIN data were used for the analyses. On January 1, 2013, the TPP officially switched from physical triplicate prescriptions to PIN as the primary data source for prescription monitoring. The only exceptions were compounded opioid medications that were not reliably captured in PIN. PIN data consist of dispense records from community pharmacies in Alberta. PIN data prior to 2013 are limited by less complete levels of record submission. The primary source for methadone information switched from triplicate prescriptions to PIN data in August 2015, when it was found that virtually all methadone, which was previously prescribed as a compound, switched to Methadose™, a pre-compounded liquid with a Drug Identification Number (DIN) captured in PIN. Ongoing gaps within PIN data include dispensing information from hospital pharmacies and facilities such as hospices.

All prescriber types are included in the analyses. In 2017, physicians prescribed 81.5% of all opioid prescriptions (including codeine) and 96.8% of all benzodiazepine prescriptions (including z-drugs). As PIN records consist of dispenses (not prescriptions), prescriptions were determined using the unique combination of pharmacy license and prescription numbers. PIN prescription numbers were used for missing pharmacy numbers. PIN data do not distinguish between medications actually dispensed from those awaiting release to the patient. As pharmacy records may be modified or reversed before the actual dispense, PIN data are dynamic. In an effort to capture actual dispensing as closely as possible, data from June 29, 2018, by which time most modifications and reversals would have occurred, were used for this Atlas.

Pharmacy Local Aggregated Geography

The 2016 Atlas used local geographies, with a minimum population of 5,000, which are used by Alberta Health and Alberta Health Services for analysis of geographic differences throughout the province. The populations assigned to local geographies are based on the postal code of residence of those residing in the geography. Population drug utilization in the Atlas is based on the postal codes of the pharmacies where patient medications are dispensed. This can result in a mismatch between the geography assigned to where medications are used (for the numerator of rate calculations) and that of the population in which they are used (for the denominator of rate calculations). As a result, some local geographies with small residential populations were assigned very high drug utilization rates when the geographies had a high concentration of dispensing pharmacies. Conversely, there were local geographies with low or zero drug utilization rates when the geographies had few or no dispensing pharmacies, even if they contained residents receiving the medications of interest. For example, the city of Red Deer is divided into three local geographies. Most of the pharmacies are located in the local geography with the smallest population, incorrectly resulting in very high utilization rates for that local geography compared to the others. As another example, the northern Wood Buffalo local geography had no dispensing pharmacies and a drug utilization rate of zero.

The new pharmacy local aggregated geography (PhLAG) merge local geographies with neighboring geographies where their residents are dispensed medications. The merging of geographies has primarily occurred in smaller cities such as Red Deer, Lethbridge, Medicine Hat, Grande Prairie, Fort McMurray, Spruce Grove, etc. The total number of geographic units has been reduced from 132 local geographies to 106 pharmacy local aggregated geographies. The methods used to develop PhLAG were consistent with those used to develop other aggregated local geography boundaries, like subzones. Appendix A summarizes the new PhLAG. In this Atlas, drug utilization rates count patients in the numerator for each PhLAG where they received prescription dispenses.

Analytic Drug Class

Analyses of medication utilization were carried out by analytic drug classes, based on the main ingredient of interest within each drug. In the case where a drug had two ingredients of interest, one was chosen as the main ingredient. The two analytic drug classes included in the Atlas are opioids and benzodiazepines. Opioids consist of all opioids and some non-opioid drugs (with a potential for misuse or harm) currently requiring a triplicate prescription. Consistent with the 2015 and 2016 Atlas, codeine-containing medications which were dispensed from a regular prescription or available over the counter (8 mg codeine formulations) were included in the opioid analytic class. Benzodiazepines consist of all benzodiazepines and z-drugs currently monitored by TPP but not requiring a triplicate prescription. Appendix B shows 2017 TPP prescriptions for opioids by main ingredient and route of administration. Appendix C shows 2017 TPP prescriptions for benzodiazepines by main ingredient and route of administration.

Atlas Measures

TPP utilization is presented in this Atlas using population counts and rates. Rates were calculated either as crude rates, or as standardized rates using 2017 age and sex specific Alberta population estimates at the PhLAG level. Patient age was calculated at July 1, 2017.

Opioids

For the opioid analytic class, oral morphine equivalents (OME) were used as the standard measure of dose. Drug OME values were obtained primarily from the Centers for Disease Control[1], the previous Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain[2] and the Compendium of Pharmaceuticals[3]. Some drugs within the opioid analytic class have an OME of zero (i.e., they do not contribute towards a patient's total measured dose of opioids). These include compound drugs (because dose and route were unknown), methadone (used for treatment of opioid dependence), buprenorphine (used for treatment of opioid dependence), naloxone (used for treatment of opioid overdose), and other drugs for which the OME was unknown. Drugs with an OME of zero still contribute to measures for use of multiple ingredients.

The OME for a specific drug dispense was calculated as:

Dispense OME = strength x quantity x drug OME

A patient's total OME per day was calculated as:

Patient OME/day = the sum of the OME for all drug dispenses to the patient in the time period analyzed / days in the time period analyzed[4]

Population utilization of opioids was presented using the three measures below.

Opioid consumption = the sum of all patient OME/day in the time period analyzed / 1000 population

Opioid patients = the number of patients who received at least one opioid prescription in the time period analyzed / 1000 population

High dose opioid patients = the number of patients who received 90 OME/day or greater in the time period analyzed / 1000 population

The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain set a watchful opioid dose of 90 OME/day[5]. This threshold is congruent with CDC Guidelines published in 2016[6], and replaces the previous Canadian Guideline threshold of 200 OME/day[7] (published in 2010).

Benzodiazepines

The defined daily dose (DDD), as defined by the World Health Organization (WHO), is the assumed average daily maintenance dose for a drug used for its main indication in adults[8]. Drug DDD values were obtained primarily from the WHO DDD/ATC Index[9]. The number of DDDs (i.e., the dose in multiples of the DDD) was used as the standard measure of dosing across all drugs and routes of administration within the benzodiazepines (BDZ) analytic class.

The DDDs for a specific drug dispense were calculated as:

Dispense DDDs = strength x quantity / drug DDD

A patient's total DDDs was calculated as:

Patient DDDs = the sum of the DDDs for all drug dispenses to the patient in the time period analyzed / days in the time period analyzed[4]

Population utilization of BDZ was presented using the four measures below. Population rates were age and sex standardized for comparison between PhLAG.

BDZ consumption = the sum of all patient DDDs received in the time period analyzed / 1000 population

BDZ patients = the number of patients who received at least one BDZ prescription in the time period analyzed / 1000 population

High dose BDZ patients = the number of patients who received 2 DDDs[10] or greater in the time period analyzed / 1000 population

Elderly BDZ patients = the number of patients 65 years and older who received at least one BDZ prescription in the time period analyzed / 1000 elderly population

1 National Center for Injury Prevention and Control. CDC compilation of benzodiazepines, muscle relaxants, stimulants, zolpidem, and opioid analgesics with oral morphine milligram equivalent conversion factors, 2016 version. Atlanta, GA: Centers for Disease Control and Prevention; 2016. Available at: http://www.pdmpassist.org/pdf/BJA_performance_measure_aid_MME_conversion.pdf.

2 http://nationalpaincentre.mcmaster.ca/opioid/cgop_b_app_b08.html

3 https://222.e-therapeutics.ca/login.action?language=en

4 "Days in time period analyzed" is used because the "days of supply" information in the dispense record is often inaccurate within PIN data

5 2017 Canadian Guideline for Opioids for Chronic Pain. Available at: https://nationalpaincentre.mcmaster.ca/guidelines.html

6 Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain – United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1-49. DOI: http://dx..doi.org/10.15585/mmwr.rr6501e1

7 https://www.nationalpaincentre.mcmaster.ca/opioid

8 Norwegian Institute of Public Health. WHOCC – Definition and General Considerations [Internet]. WHO Collaborating Centre for Drug Statistics Methodology. 2009 [cited 2014 Oct 7]. Available from: http://www.whocc.no/ddd/definition_and_general_considera/

9 http://www.whocc.no/atc_ddd_index/

10 For the purpose of this Atlas, 2 DDDs was used as the watchful dose of BDZ

Medication Use – Opioids

Table 1. Utilization of Prescription Opioids in Alberta, 2013-2017

Year	Prescriptions	Patients	Prescribers	Pharmacies	Population	OME per Day per 1000 Population	Patients per 1000 Population	Patients ≥90 OME per Day per 1000 Population
2013	1,709,194	547,929	12,027	1,287	4,007,042	1,530	136.7	3.4
2014	1,746,216	562,640	12,625	1,361	4,121,532	1,544	136.5	3.5
2015	1,753,275	563,549	13,310	1,367	4,196,192	1,514	134.3	3.5
2016	1,814,818	577,890	14,167	1,413	4,252,720	1,480	135.9	3.5
2017	1,702,052	547,819	14,577	1,374	4,285,997	1,277	127.8	3.0
5 year trend								

Table 2. Opioid Patients by Age and Sex, 2017*

Age Group	Females	Percent	Males	Percent	Total Patients	Percent	Unknown Sex
0-9	497	0.2	556	0.2	1,053	0.2	
10-19	10,183	3.5	9,283	3.6	19,466	3.6	
20-29	35,738	12.2	28,964	11.3	64,702	11.8	3
30-39	49,713	17.0	40,460	15.8	90,173	16.5	2
40-49	49,380	16.9	43,461	17.0	92,841	16.9	5
50-59	54,707	18.7	51,035	20.0	105,742	19.3	3
60-69	45,846	15.7	44,765	17.5	90,611	16.5	2
70-79	27,021	9.2	24,198	9.5	51,219	9.3	3
80-89	14,394	4.9	10,459	4.1	24,853	4.5	
90+	4,966	1.7	2,113	0.8	7,079	1.3	
Total	292,465	100.0	255,336	100.0	547,819	100.0	

*20 female patients of unknown age, 42 male patients of unknown age

Figure 1. Opioid Patients by Age and Sex, 2017

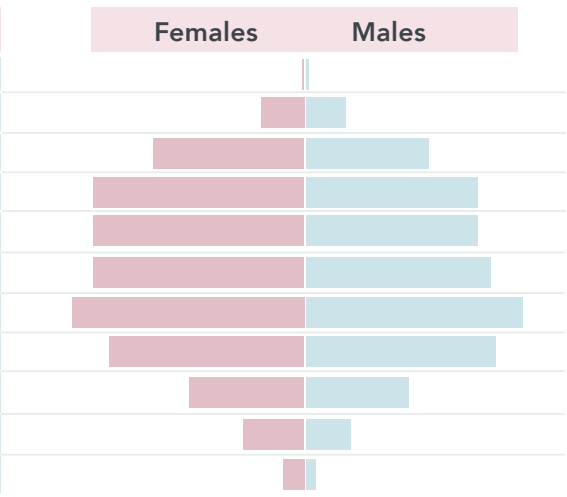
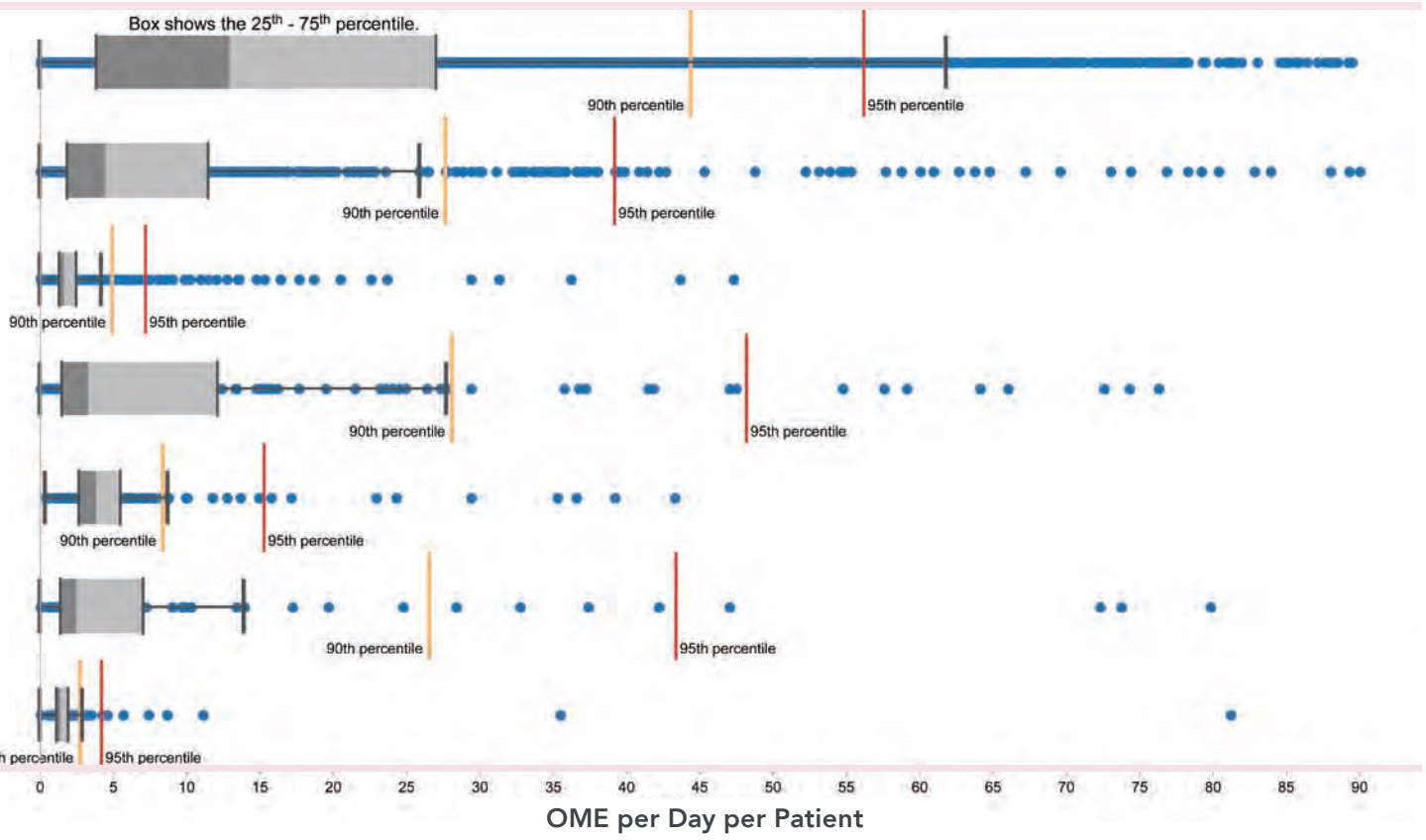


Table 3. Opioid Prescriptions, Patients, Prescribers and Pharmacies by Prescriber Type, 2017

Prescriber Type	Prescriptions	Patients	Prescribers	Pharmacies
Physician	1,376,321	430,135	10,295	1,374
Pharmacist	204,524	81,022	3,521	1,249
Dentist	97,329	81,279	447	1,316
Nurse Practitioner	10,360	5,213	311	737

Figure 2. OME per Day per Patient by Specialty Group[11], 4th Quarter, 2017

Specialty Group	Prescribers
Family Medicine[12]	4585
Medicine[13]	717
Surgery excl. Orthopedics[14]	674
Psychiatry[15]	173
Orthopedic Surgery[16]	172
Anesthesiology[17]	86
Emergency Medicine[18]	161



[11] Not all clinical specialties were assigned to a comparison group.

[12] Family Medicine specialty group includes family medicine, family medicine (sport and exercise medicine) and general practice.

[13] Medicine specialty group includes cardiology, endocrinology & metabolism, gastroenterology, general internal medicine, hematology, nephrology, neurology, physical medicine & rehabilitation, respirology and rheumatology.

[14] Surgery excluding Orthopedics specialty group includes cardiovascular & thoracic surgery, general surgery, neurosurgery, obstetrics & gynecology, ophthalmology, otolaryngology - head and neck surgery, plastic surgery, thoracic surgery, urology and vascular surgery.

[15] Psychiatry specialty group includes psychiatry.

[16] Orthopedic Surgery specialty group includes orthopedic surgery.

[17] Anesthesiology specialty group includes anesthesiology and family medicine (family practice anesthesia).

[18] Emergency Medicine specialty group includes emergency medicine and family medicine (emergency medicine).

Table 4. Opioid Prescriptions by Main Ingredient, 2013-2017

Main Ingredient	2013	2014	2015	2016	2017	2017	5 Year Trend
Codeine	1,226,276	1,228,743	1,195,410	1,202,665	1,099,156		
Oxycodone	260,360	274,321	286,217	302,925	273,836		
Hydromorphone	76,778	85,474	100,249	120,619	123,085		
Morphine	61,431	65,343	65,217	65,750	61,053		
Methadone Hydrochloride	37,614	40,807	48,187	53,284	60,552		
Buprenorphine	12,451	16,230	23,376	36,760	54,365		
Fentanyl	20,092	21,233	22,115	21,506	19,821		
Tapentadol	4,438	5,347	4,668	4,017	3,638		
Meperidine	4,362	3,741	3,172	2,835	2,361		
Butalbital	3,225	2,990	2,806	2,726	2,492		
Hydrocodone	1,238	1,082	1,007	943	728		
Butorphanol	536	484	480	438	385		
Opium			1		294		
Pentazocine	304	313	296	272	225		
Ketamine	36	46	34	53	34		
Normethadone Hydrochloride	50	35	28	32	23		
Sufentanil	3	32	11	9	3		
Remifentanil			1	1	2		

Table 5. Opioid Patients by Main Ingredient, 2013-2017

Main Ingredient	2013	2014	2015	2016	2017	2017	5 Year Trend
Codeine	490,527	499,749	495,383	503,463	474,179		
Oxycodone	66,287	69,664	71,760	74,038	63,352		
Hydromorphone	16,963	20,116	24,281	29,663	31,267		
Morphine	14,740	15,809	16,263	16,465	15,273		
Methadone Hydrochloride	4,428	4,693	5,027	5,363	5,705		
Buprenorphine	3,666	4,419	5,587	6,673	7,757		
Fentanyl	4,800	5,121	5,164	4,743	4,351		
Tapentadol	1,399	1,563	1,278	1,001	886		
Meperidine	1,336	1,092	986	863	691		
Butalbital	1,127	1,078	992	908	831		
Hydrocodone	927	823	744	704	518		
Butorphanol	131	121	115	99	92		
Opium			1		193		
Pentazocine	71	75	63	65	51		
Ketamine	13	10	13	18	12		
Normethadone Hydrochloride	47	34	26	28	21		
Sufentanil	1	6	3	3	2		
Remifentanil			1	1	2		

Table 6. Opioid Prescribers by Main Ingredient, 2013-2017

Main Ingredient	2013	2014	2015	2016	2017	2017	5 Year Trend
Codeine	11,689	12,218	12,802	13,543	13,808		
Oxycodone	4,887	5,077	5,425	5,939	5,933		
Hydromorphone	3,782	4,054	4,556	5,142	5,495		
Morphine	3,611	3,792	3,949	4,231	4,235		
Methadone Hydrochloride	443	433	456	524	596		
Buprenorphine	1,145	1,310	1,518	1,727	1,796		
Fentanyl	2,002	2,095	2,126	2,181	2,058		
Tapentadol	501	622	619	574	517		
Meperidine	868	770	701	618	507		
Butalbital	804	759	739	698	660		
Hydrocodone	426	423	415	383	329		
Butorphanol	160	134	133	122	111		
Opium			1		182		
Pentazocine	68	63	57	70	58		
Ketamine	9	11	13	19	15		
Normethadone Hydrochloride	19	19	16	18	16		
Sufentanil	1	8	3	5	2		
Remifentanil			1	1	1		

Medication Use – Opioids

Table 7. Opioid Patients and Associated Prescribers by Dose, 2013-2017

Patients

Patient Dose*	2013		2014		2015		2016		2017	
	Patients	Percent	Patients	Percent	Patients	Percent	Patients	Percent	Patients	Percent
Total Patients	547,929		562,640		563,549		577,890		547,819	
≥ 50 OME/day	22,070	4.0	23,311	4.1	24,093	4.3	24,695	4.3	22,325	4.0
≥ 90 OME/day	13,674	2.5	14,365	2.6	14,496	2.6	14,681	2.5	12,962	2.4
≥ 100 OME/day	12,492	2.3	13,108	2.3	13,204	2.3	13,310	2.3	11,668	2.1
≥ 200 OME/day	6,459	1.2	6,663	1.2	6,624	1.2	6,500	1.1	5,450	1.0
≥ 400 OME/day	2,592	0.5	2,621	0.5	2,527	0.5	2,382	0.4	1,898	0.4
≥ 600 OME/day	1,276	0.2	1,296	0.2	1,227	0.2	1,144	0.2	863	0.2
≥ 800 OME/day	749	0.1	759	0.1	681	0.1	602	0.1	448	0.1
≥ 1,000 OME/day	470	0.1	499	0.1	430	0.1	373	0.1	277	0.1
≥ 2,000 OME/day	85	0.0	75	0.0	67	0.0	48	0.0	40	0.0

Prescribers

Patient Dose*	2013		2014		2015		2016		2017	
	Prescribers	Percent	Prescribers	Percent	Prescribers	Percent	Prescribers	Percent	Prescribers	Percent
Total Prescribers	12,027		12,625		13,310		14,167		14,577	
≥ 50 OME/day	7,237	60.2	7,401	58.6	7,581	57.0	7,914	55.9	7,538	51.7
≥ 90 OME/day	6,195	51.5	6,210	49.2	6,218	46.7	6,498	45.9	5,977	41.0
≥ 100 OME/day	5,968	49.6	5,944	47.1	5,978	44.9	6,216	43.9	5,672	38.9
≥ 200 OME/day	4,355	36.2	4,344	34.4	4,256	32.0	4,328	30.5	3,683	25.3
≥ 400 OME/day	2,494	20.7	2,439	19.3	2,343	17.6	2,257	15.9	1,743	12.0
≥ 600 OME/day	1,441	12.0	1,474	11.7	1,388	10.4	1,323	9.3	917	6.3
≥ 800 OME/day	922	7.7	939	7.4	812	6.1	735	5.2	515	3.5
≥ 1,000 OME/day	582	4.8	663	5.3	513	3.9	485	3.4	317	2.2
≥ 2,000 OME/day	110	0.9	98	0.8	74	0.6	53	0.4	52	0.4

* can include prescriptions from multiple prescribers

Figure 3. Opioid Patients by Dose, 2013-2017

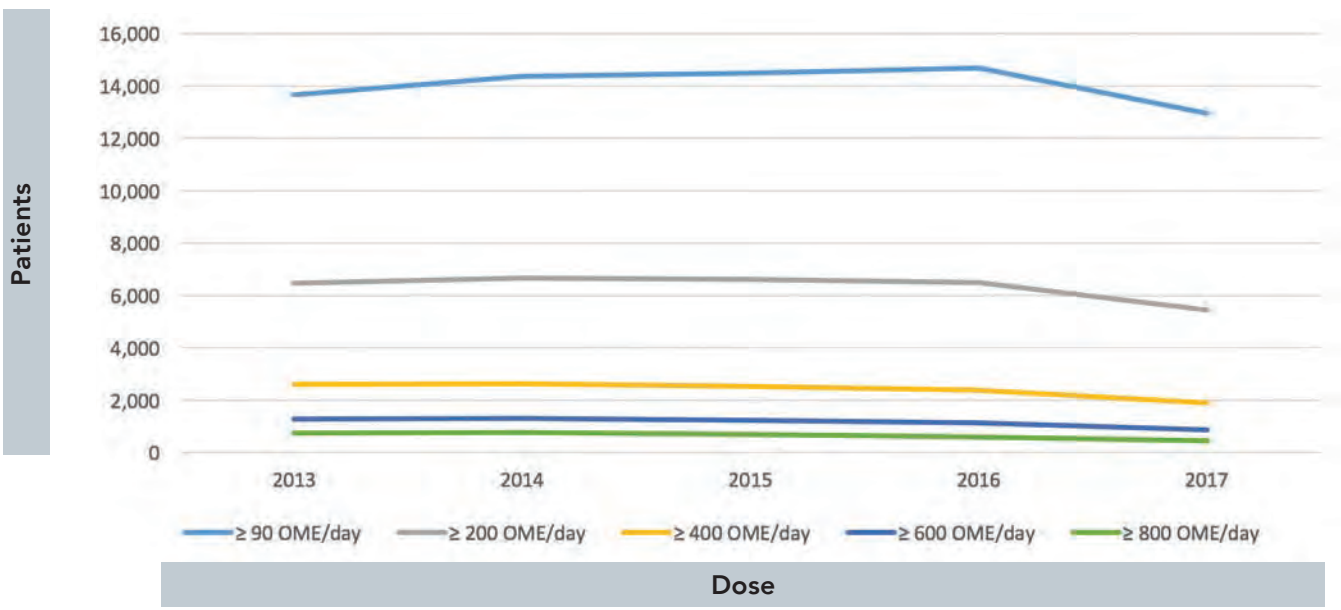


Figure 4. Opioid Prescribers by Dose, 2013-2017

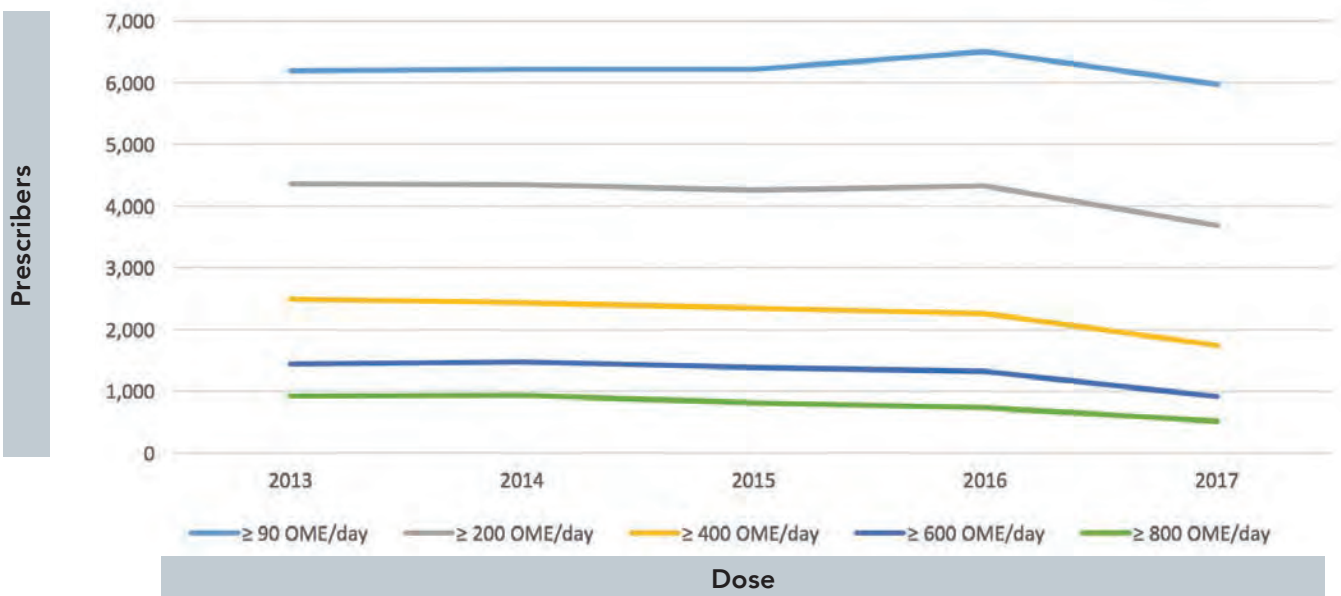


Table 8. Opioid Patients and Associated Prescribers by Number of Ingredients, 2013-2017

Patients

Number of Ingredients	2013 Patients	2013 Percent	2014 Patients	2014 Percent	2015 Patients	2015 Percent	2016 Patients	2016 Percent	2017 Patients	2017 Percent	2017	5 Year Trend
Total Patients	547,929		562,640		563,549		577,890		547,819			
2+	49,359	9.0	52,304	9.3	54,381	9.6	56,454	9.8	49,189	9.0		
3+	7,487	1.4	7,779	1.4	8,115	1.4	8,164	1.4	6,940	1.3		
4+	1,401	0.3	1,367	0.2	1,401	0.2	1,351	0.2	1,076	0.2		
5+	243	0.0	240	0.0	220	0.0	215	0.0	138	0.0		
6+	39	0.0	37	0.0	20	0.0	23	0.0	20	0.0		

Prescribers

Number of Ingredients	2013 Prescribers	2013 Percent	2014 Prescribers	2014 Percent	2015 Prescribers	2015 Percent	2016 Prescribers	2016 Percent	2017 Prescribers	2017 Percent	2017	5 Year Trend
Total Prescribers	12,027		12,625		13,310		14,167		14,577			
2+	9,153	76.1	9,586	75.9	10,122	76.0	10,731	75.7	10,706	73.4		
3+	6,294	52.3	6,373	50.5	6,753	50.7	6,951	49.1	6,610	45.3		
4+	2,872	23.9	2,894	22.9	2,904	21.8	3,063	21.6	2,538	17.4		
5+	774	6.4	699	5.5	777	5.8	779	5.5	564	3.9		
6+	149	1.2	127	1.0	90	0.7	99	0.7	85	0.6		

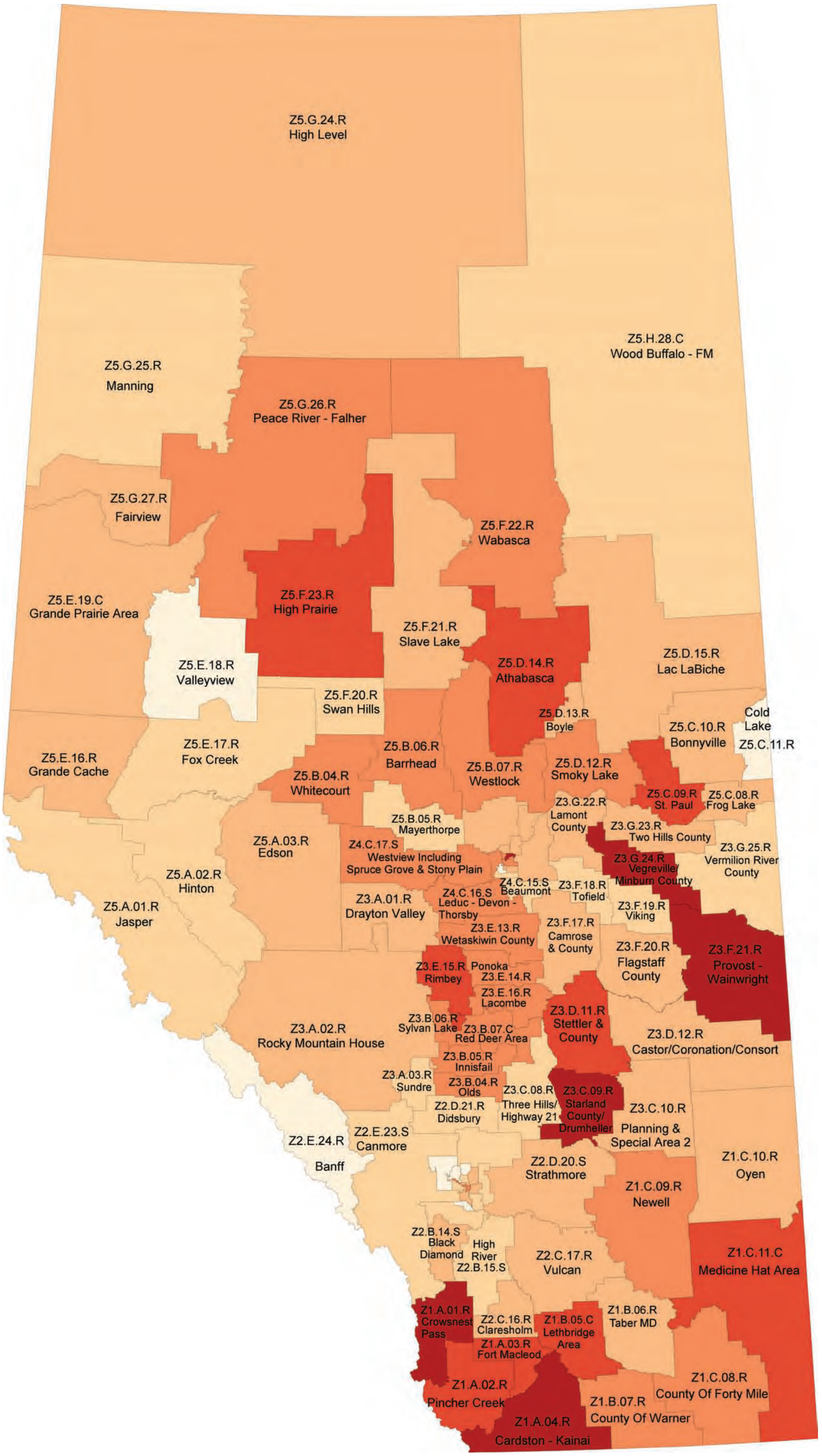
Table 9. Opioid Patients by Number of Prescribers, 2013-2017

Number of Prescribers	2013 Patients	2013 Percent	2014 Patients	2014 Percent	2015 Patients	2015 Percent	2016 Patients	2016 Percent	2017 Patients	2017 Percent	2017	5 Year Trend
Total Patients	547,929		562,640		563,549		577,890		547,819			
2+	157,030	28.7	163,369	29.0	163,644	29.0	168,088	29.1	151,251	27.6		
3+	70,537	12.9	72,707	13.0	72,436	12.9	72,885	12.6	62,632	11.4		
4+	40,214	7.3	40,357	7.2	39,520	7.0	38,588	6.7	31,497	5.7		
5+	26,121	4.8	25,204	4.5	24,082	4.3	22,743	3.9	17,250	3.1		
6+	18,057	3.3	16,784	3.0	15,369	2.7	14,037	2.4	9,978	1.8		
7+	12,921	2.4	11,620	2.1	10,165	1.8	8,904	1.5	6,010	1.1		
8+	9,512	1.7	8,187	1.5	6,844	1.2	5,807	1.0	3,738	0.7		

Table 10. Methadone and Buprenorphine Patients by Ingredient and Year, 2013-2017

Ingredient(s)	2013	2014	2015	2016	2017	2017	5 Year Trend
Buprenorphine	3,105	3,550	4,182	4,337	3,763		
Buprenorphine, Naloxone	643	947	1,472	2,417	4,148		
Methadone Hydrochloride	4,428	4,693	5,027	5,363	5,705		

Figure 5. Age and Sex Standardized, Total OME per Day per 1,000 Population, by Pharmacy Local Aggregated Geographies, 2017

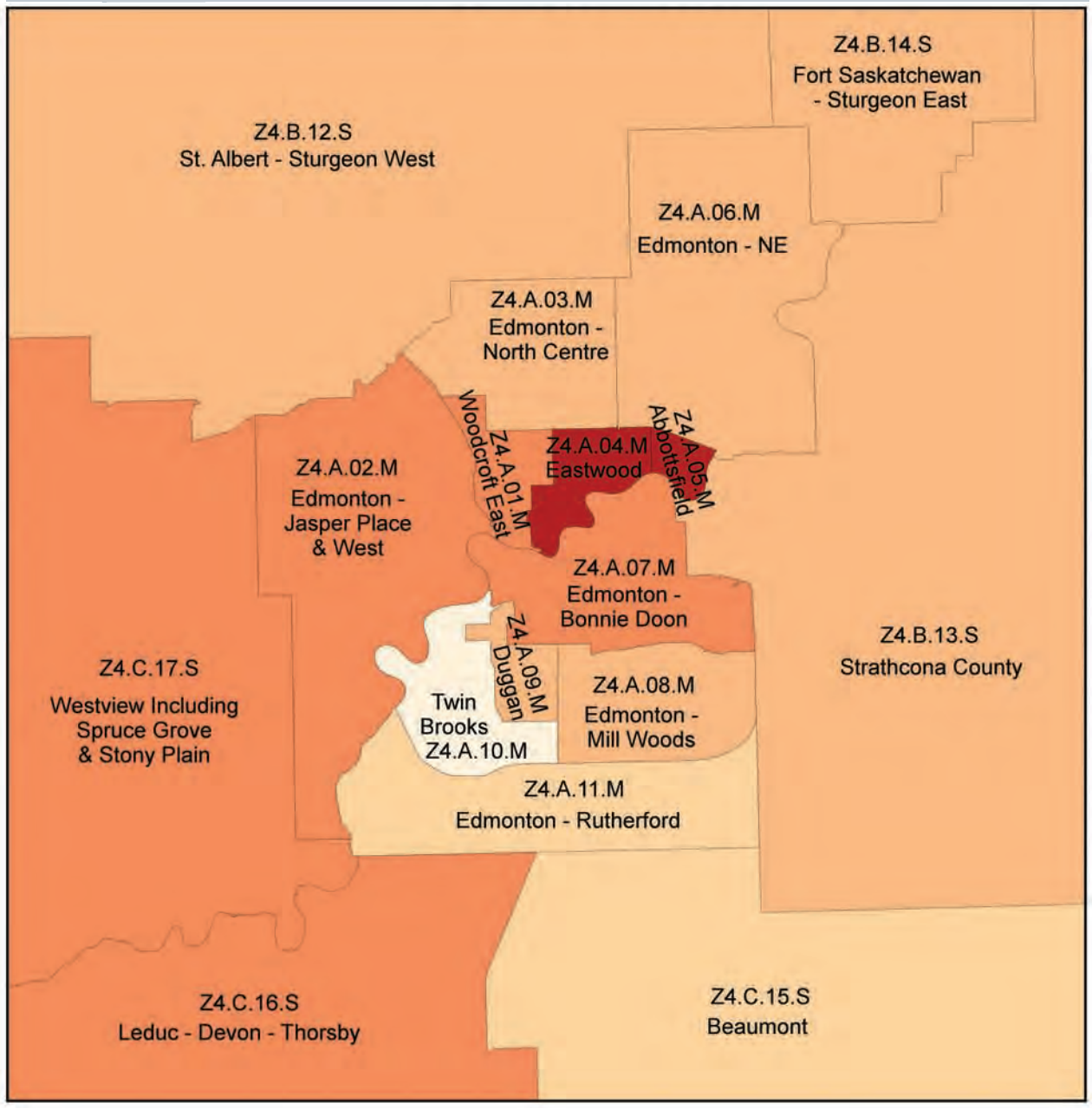


Legend: Provincial and Urban Maps

Total OME per Day per 1,000 Population

- Highest (>2,289)
- High (1,909 to 2,289)
- Above Average (1,527 to 1,908)
- Average (1,018 to 1,526)
- Low (636 to 1,017)
- Lowest (<636)

Edmonton



Calgary

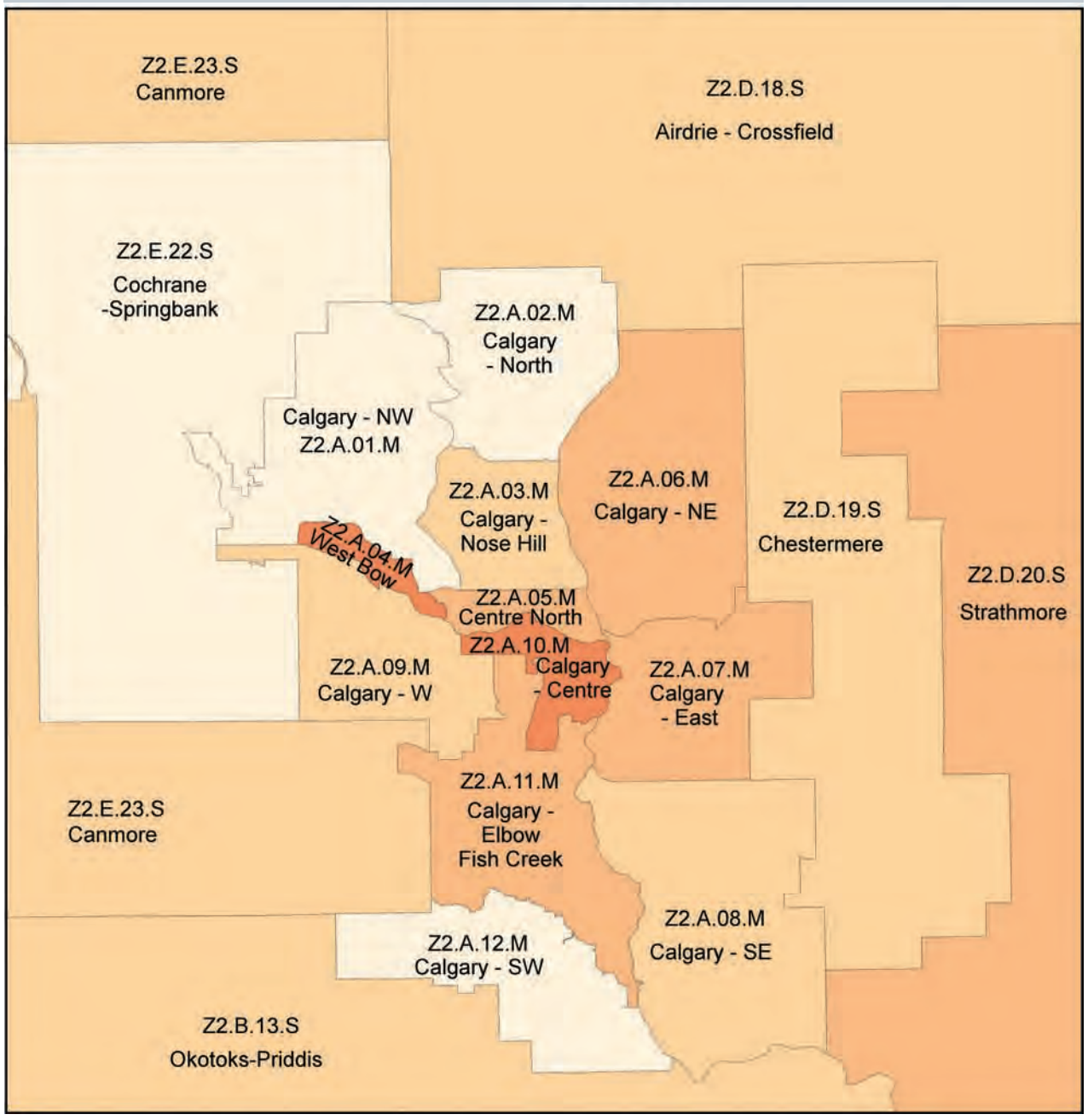
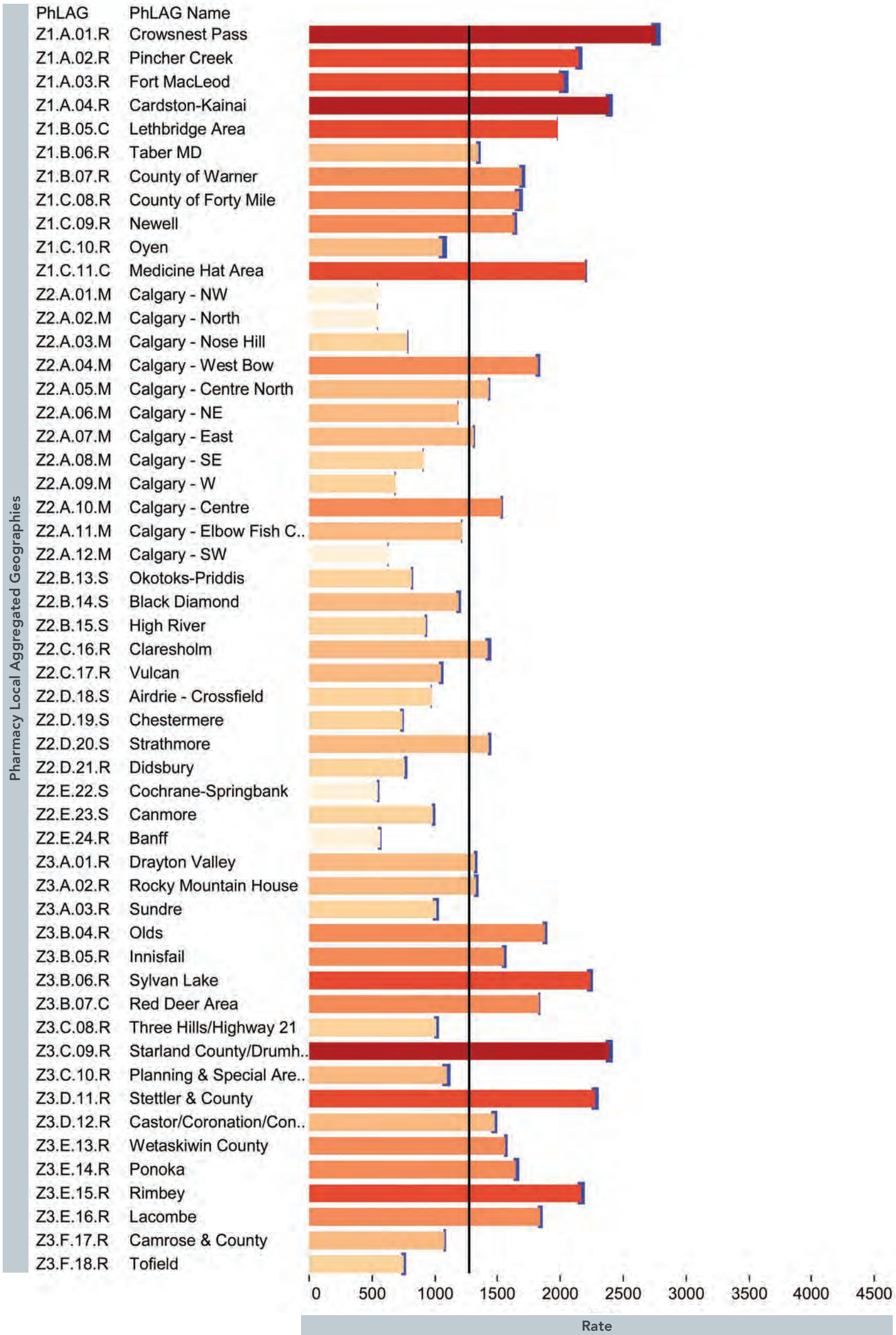


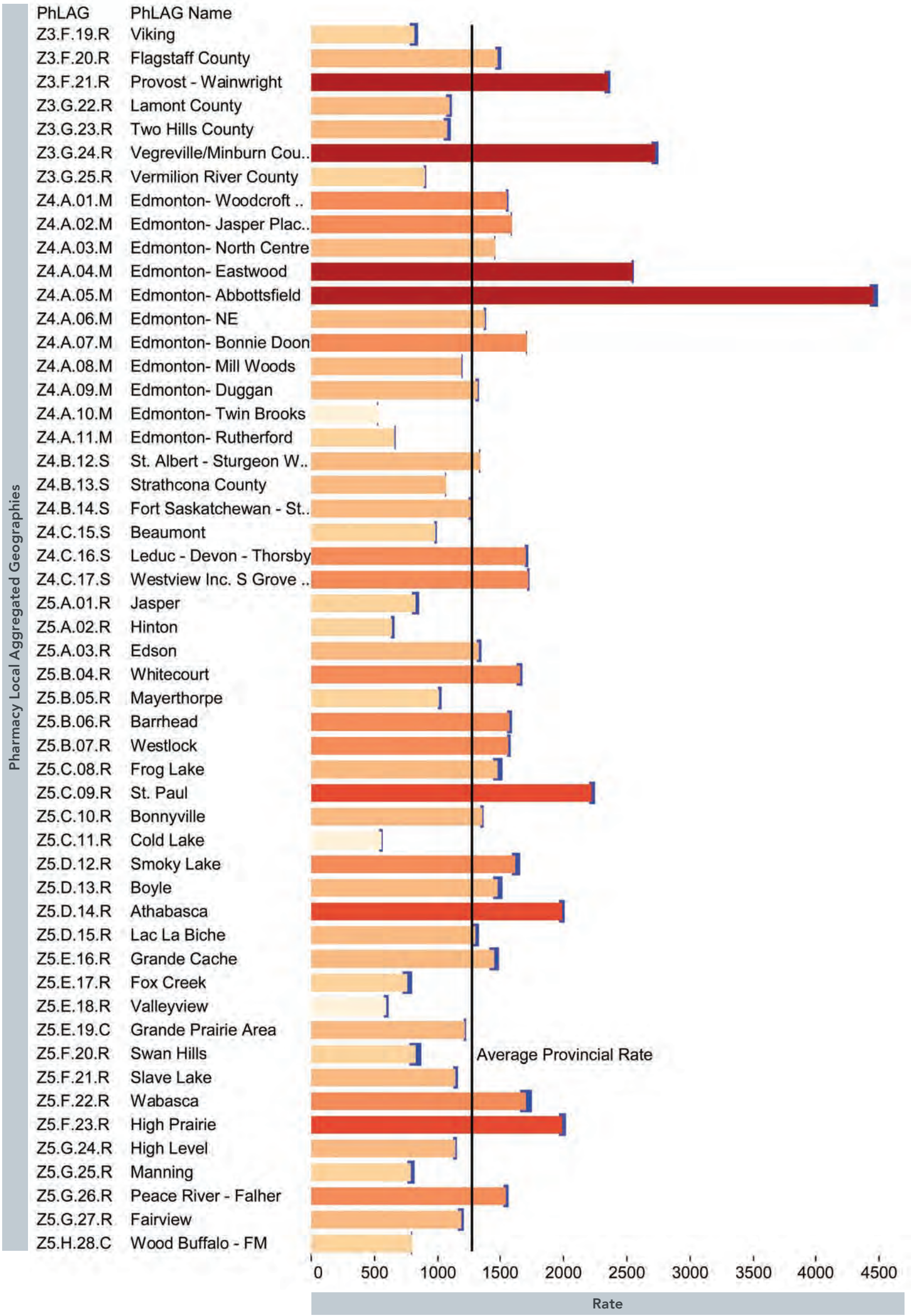
Figure 6. Age and Sex Standardized, Total OME per Day per 1,000 Population, by Pharmacy Local Aggregated Geographies, 2017



MEDICATION USE – *Opioids*

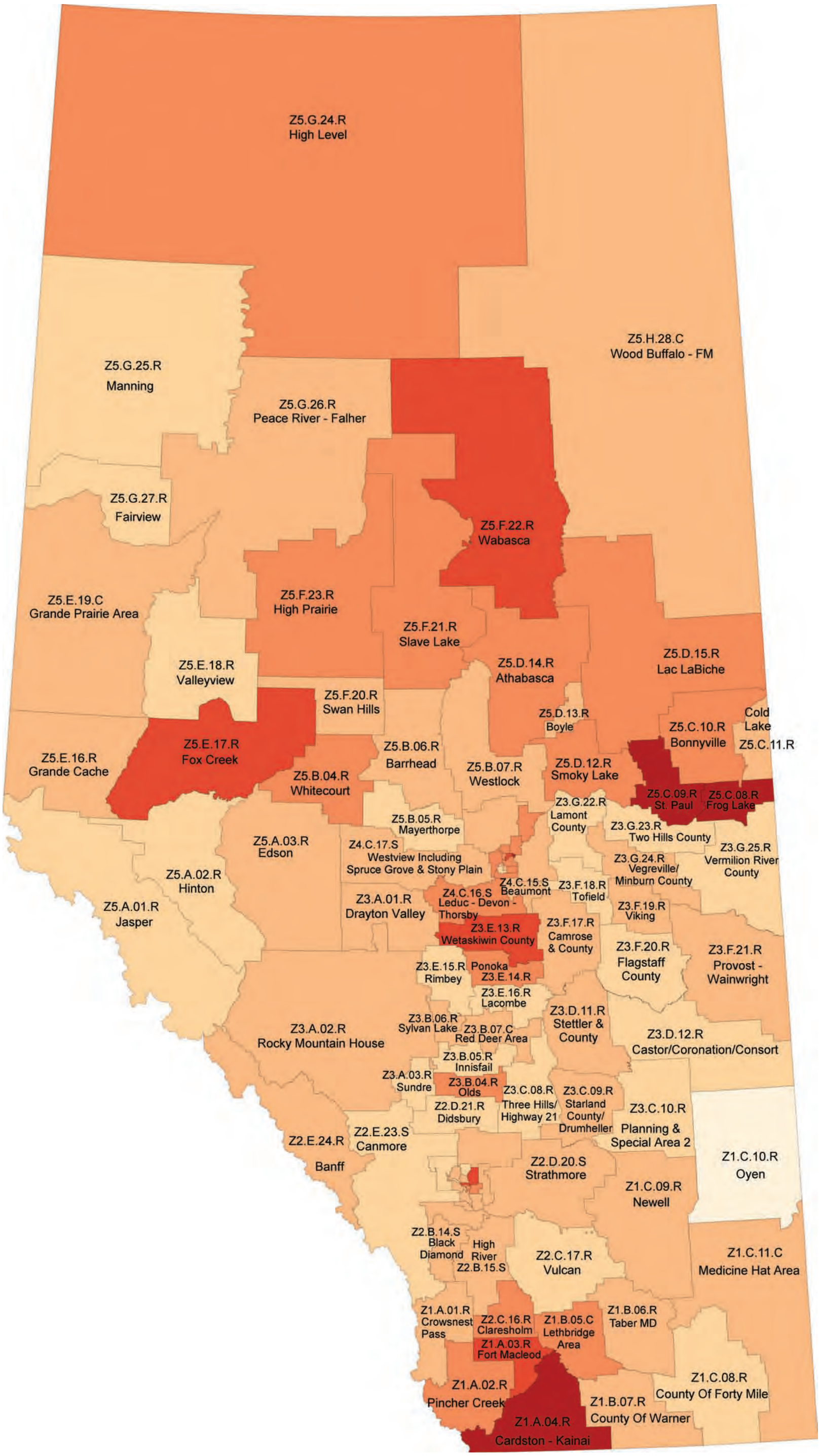
Total OME per Day per 1,000 Population

- Highest (>2,289)
- High (1,909 to 2,289)
- Above Average (1,527 to 1,908)
- Average (1,018 to 1,526)
- Low (636 to 1,017)
- Lowest (<636)



Pharmacy Local Aggregated Geographies

Figure 7. Age and Sex Standardized, Opioid Patients per 1,000 Population, by Pharmacy Local Aggregated Geographies, 2017

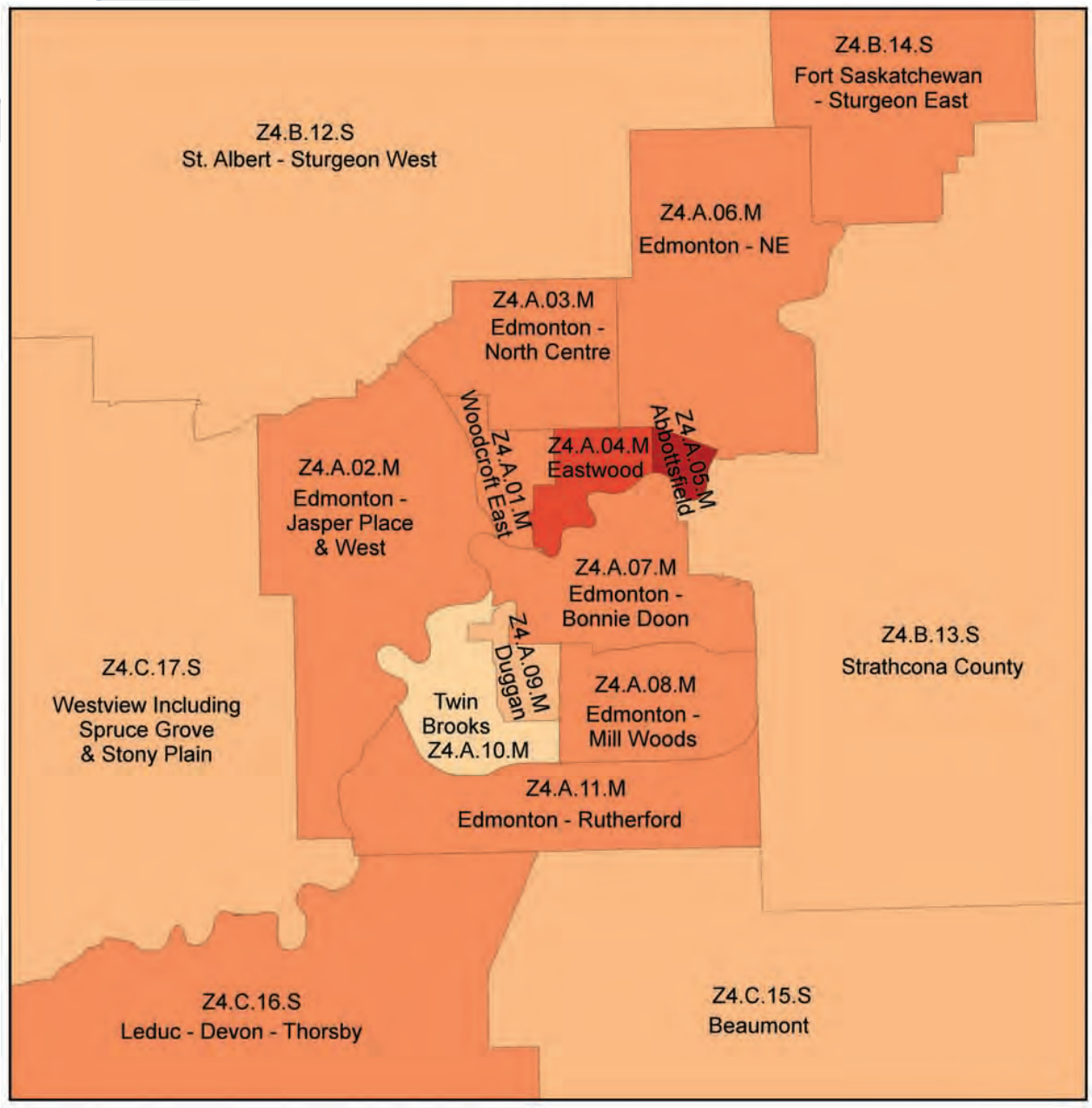


Legend: Provincial and Urban Maps

Patients per 1,000 Population

- Highest (>229.0)
- High (191.0 to 229.0)
- Above Average (152.8 to 190.9)
- Average (101.9 to 152.7)
- Low (63.6 to 101.8)
- Lowest (<63.6)

Edmonton



Calgary

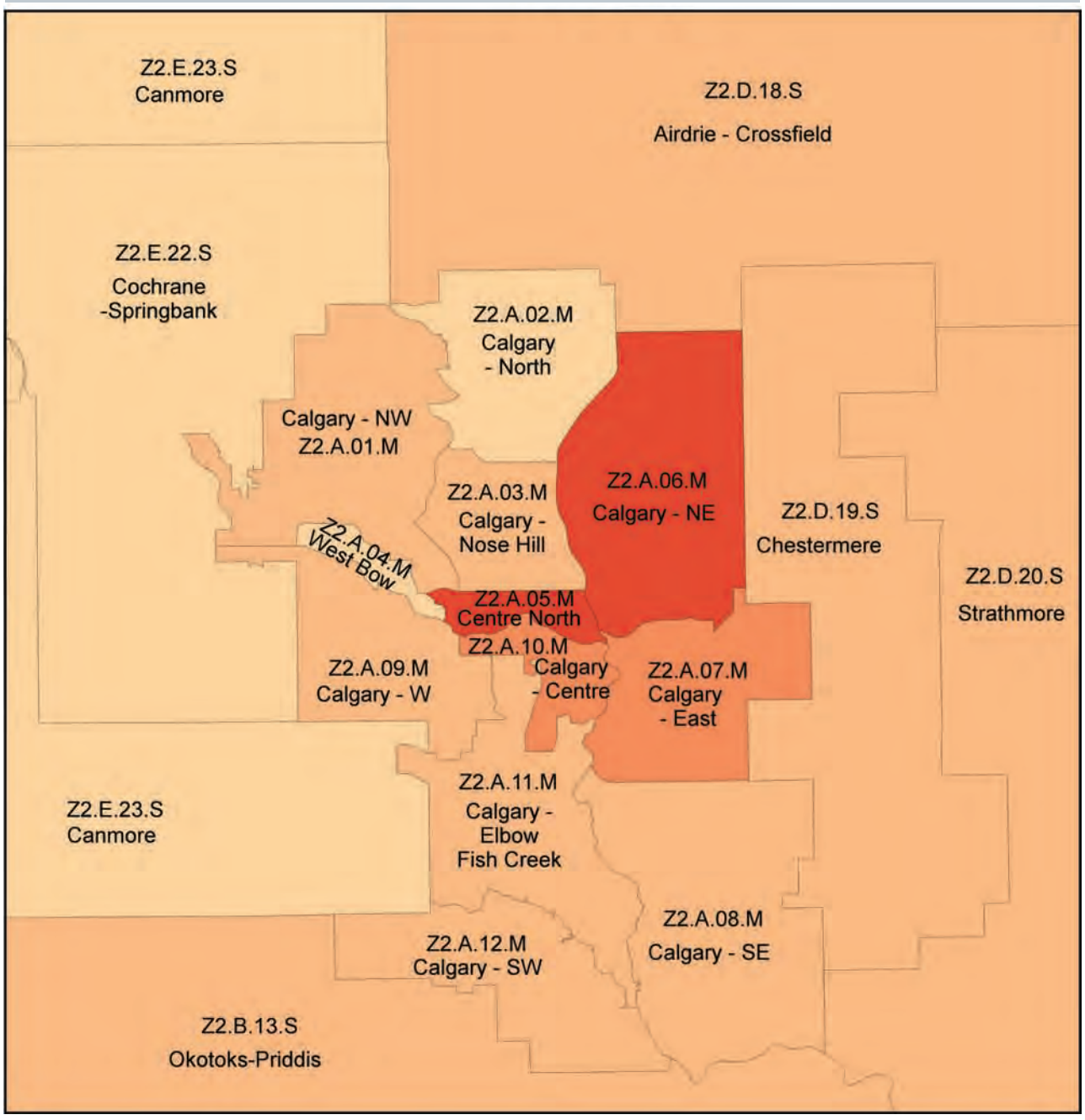
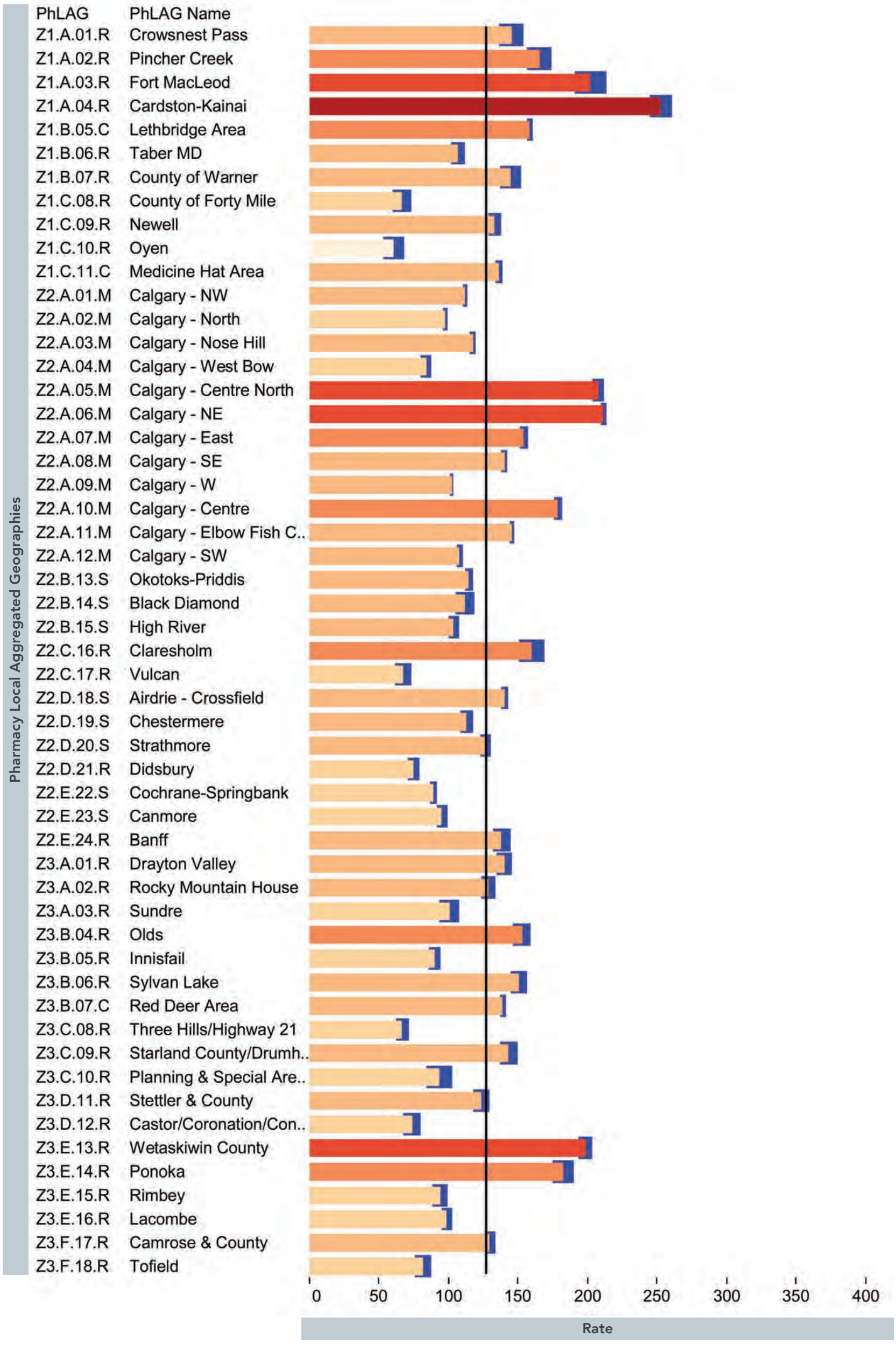


Figure 8. Age and Sex Standardized, Opioid Patients per 1,000 Population, by Pharmacy Local Aggregated Geographies, 2017



MEDICATION USE – Opioids

Patients per 1,000 Population

- Highest (>229.0)
- High (191.0 to 229.0)
- Above Average (152.8 to 190.9)
- Average (101.9 to 152.7)
- Low (63.6 to 101.8)
- Lowest (<63.6)

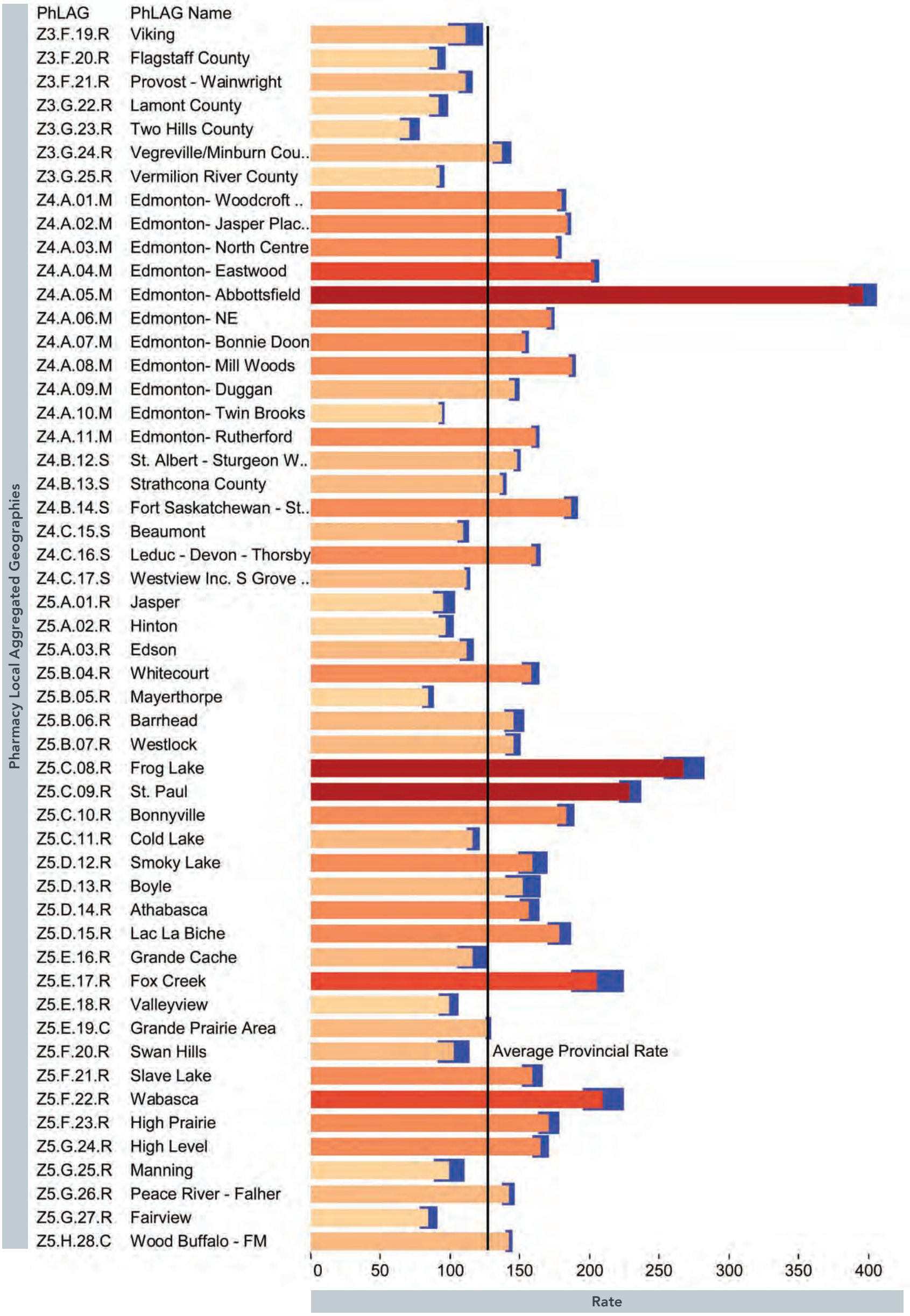
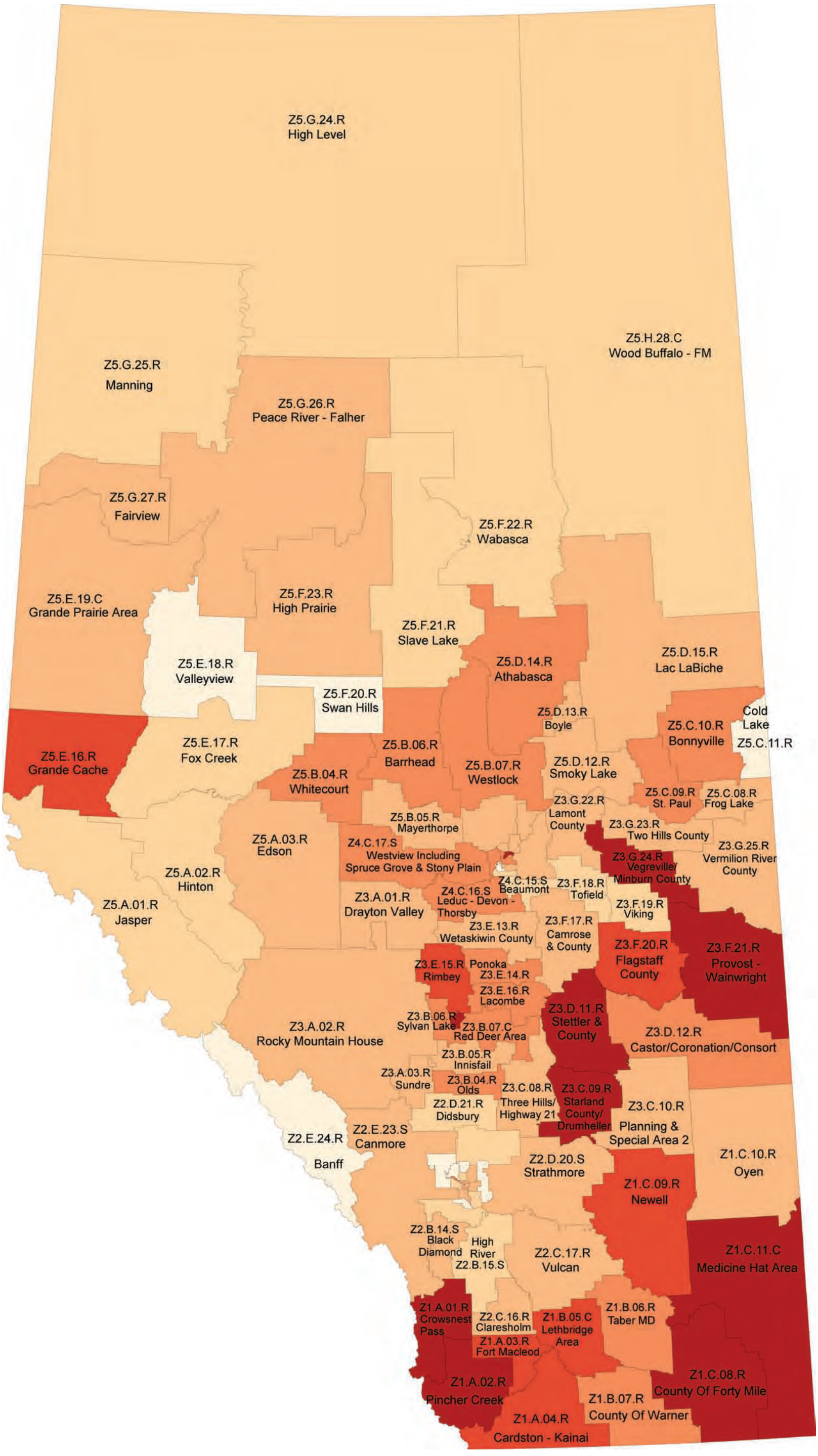


Figure 9. Age and Sex Standardized, Opioid Patients Who Received 90 OME per Day or Greater per 1,000 population, by Pharmacy Local Aggregated Geographies, 2017

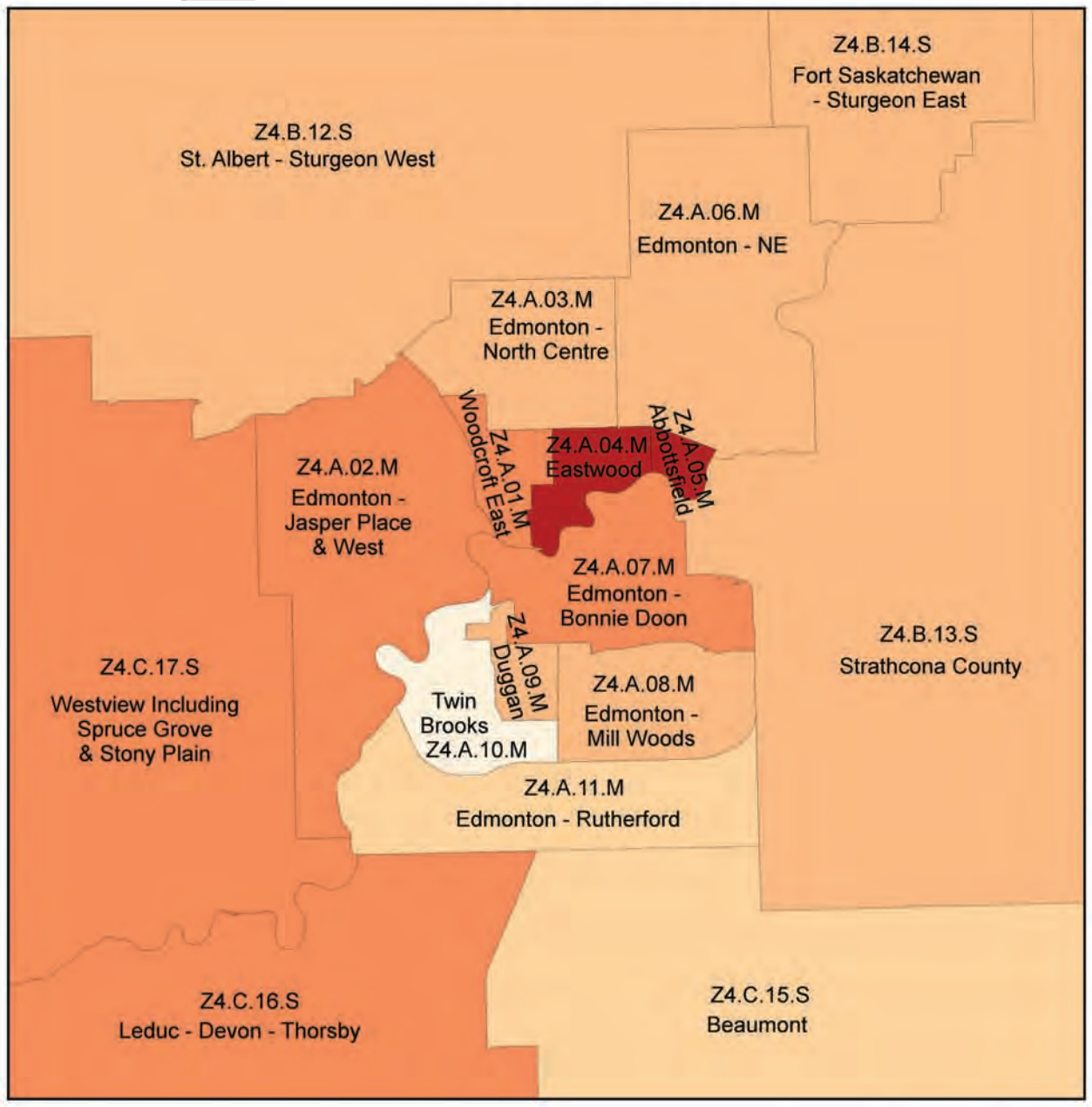


Legend: Provincial and Urban Maps

Patients ≥90 OME per Day per 1,000 Population

- Highest (>5.2)
- High (4.5 to 5.2)
- Above Average (3.6 to 4.4)
- Average (2.4 to 3.5)
- Low (1.5 to 2.3)
- Lowest (<1.5)

Edmonton



Calgary

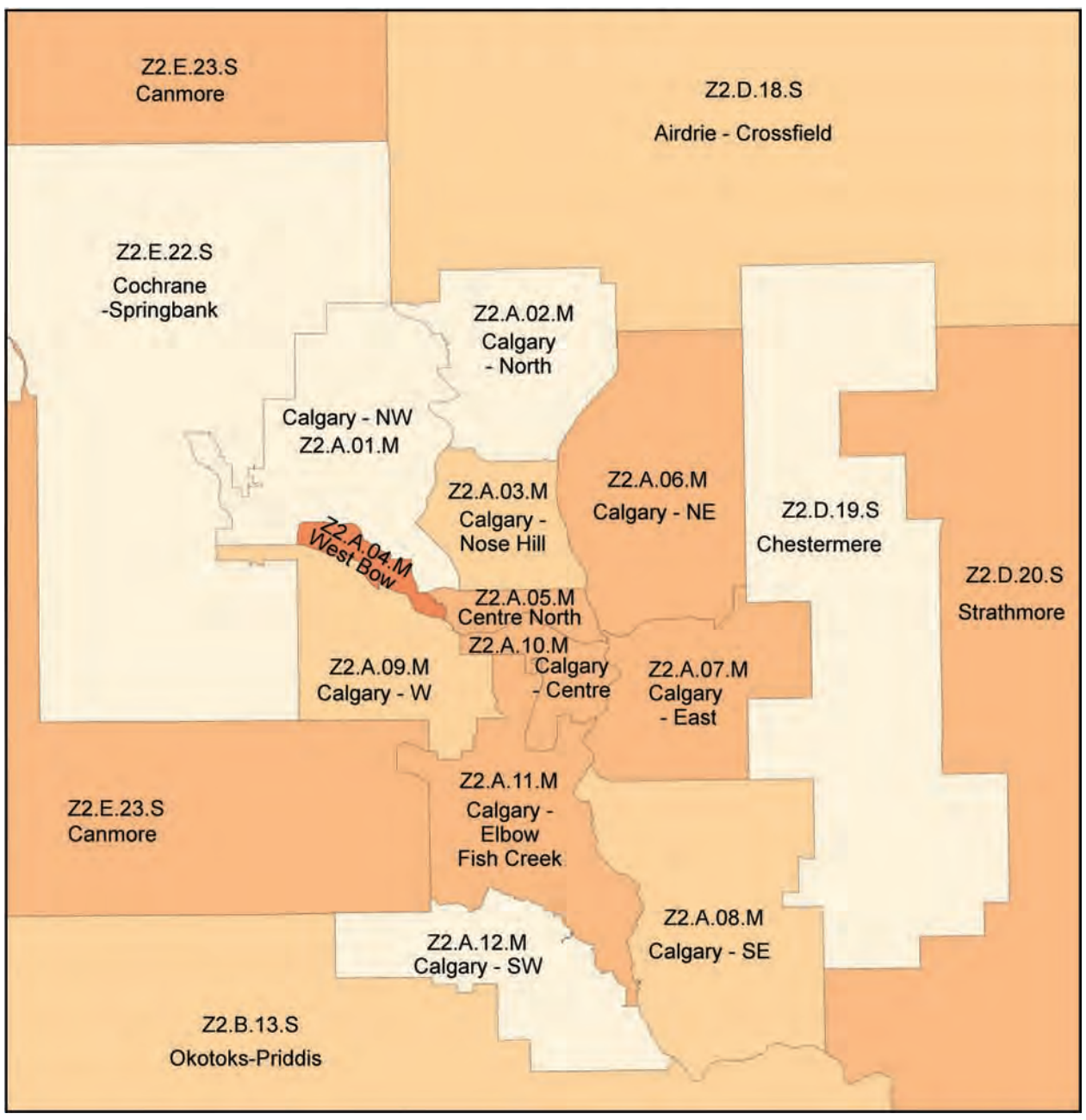
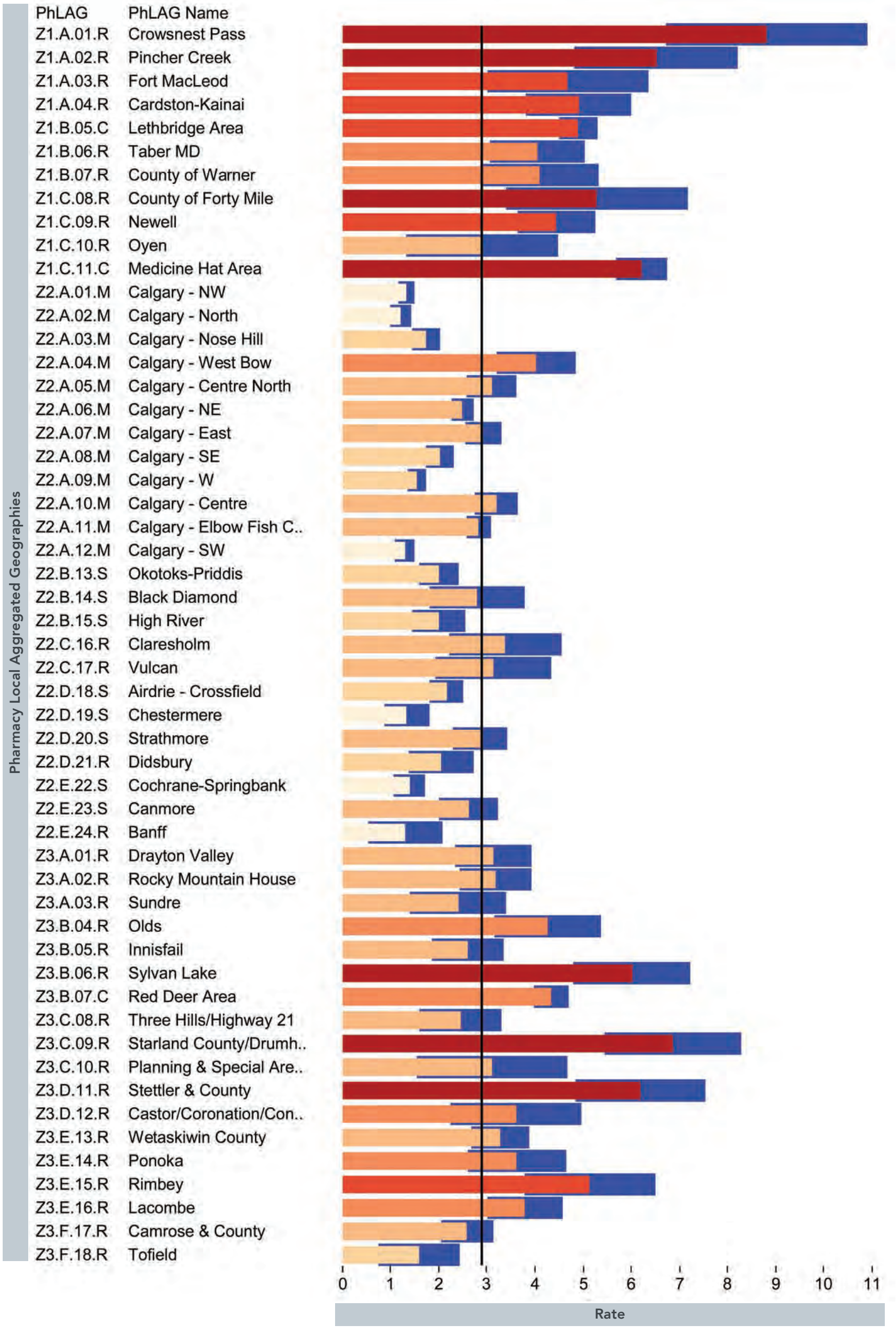


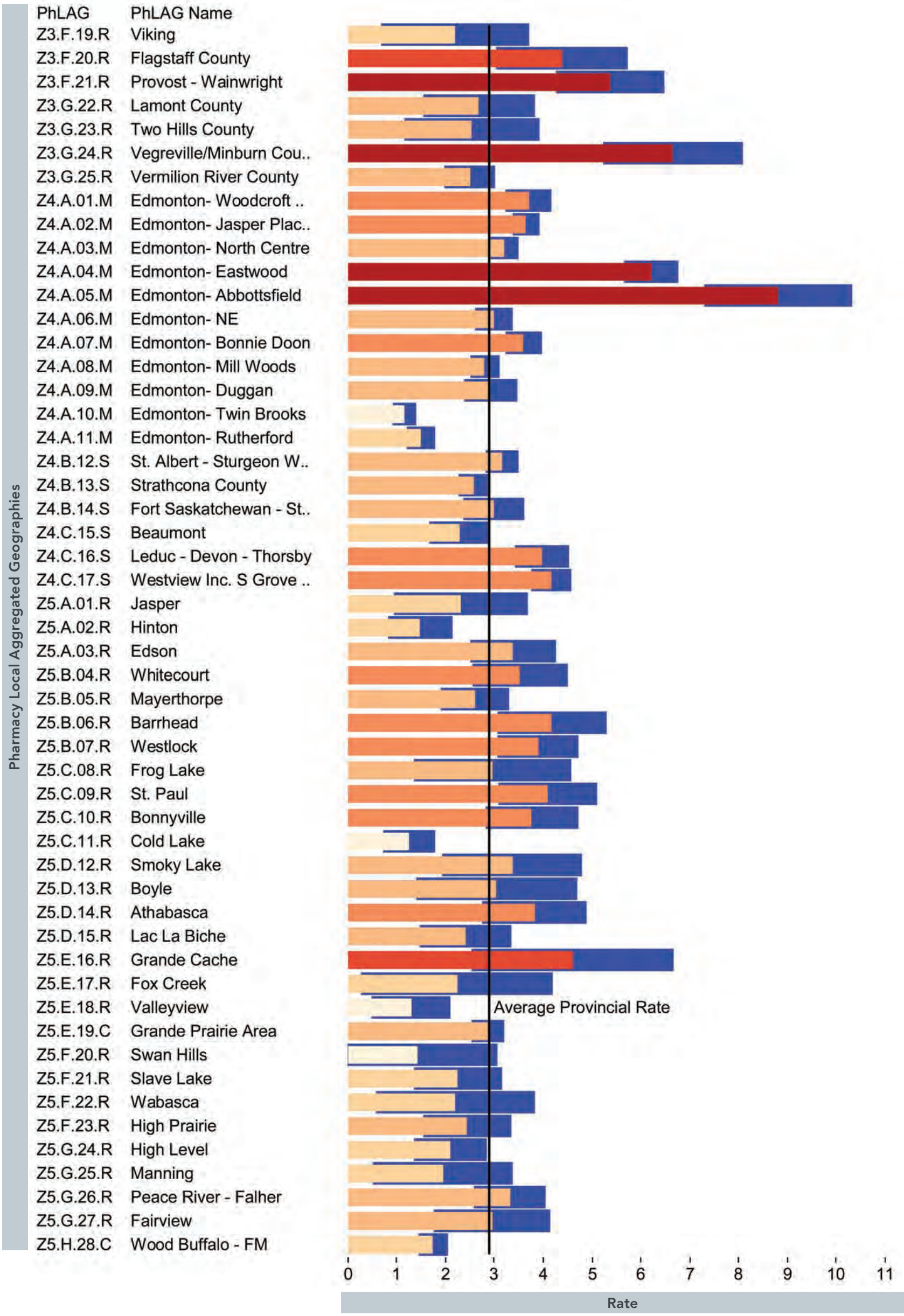
Figure 10. Age and Sex Standardized, Opioid Patients Who Received 90 OME per Day or Greater per 1,000 population, by Pharmacy Local Aggregated Geographies, 2017



MEDICATION USE – *Opioids*

Patients ≥90 OME per Day per 1,000 Population

- Highest (>5.2)
- High (4.5 to 5.2)
- Above Average (3.6 to 4.4)
- Average (2.4 to 3.5)
- Low (1.5 to 2.3)
- Lowest (<1.5)



Pharmacy Local Aggregated Geographies

Medication Use – Benzodiazepines

Table 11. Utilization of Prescription Benzodiazepines in Alberta, 2013-2017

Year	Prescriptions	Patients	Prescribers	Pharmacies	Population	DDDs per 1000 Population	Patients per 1000 Population	Elderly Patients per 1000 Elderly Population	Patients ≥ 2 DDDs per 1000 Population
2013	1,102,842	341,327	10,784	1,064	4,007,042	41.6	85.2	218.3	3.7
2014	1,178,213	358,752	11,369	1,332	4,121,532	42.3	87.0	218.2	3.8
2015	1,220,798	373,696	12,033	1,344	4,196,192	41.6	89.1	217.0	3.6
2016	1,284,730	386,901	12,739	1,414	4,252,720	41.1	91.0	214.7	3.5
2017	1,204,326	369,831	13,148	1,377	4,285,997	36.6	86.3	202.1	2.9
5 year trend									

Table 12. Benzodiazepine Patients by Age and Sex, 2017*

Age Group	Females	Percent	Males	Percent	Total Patients	Percent	Unknown Sex
0-9	343	0.1	434	0.3	777	0.2	
10-19	3,061	1.3	1,777	1.3	4,838	1.3	
20-29	18,977	8.2	9,744	7.1	28,722	7.8	1
30-39	31,392	13.5	18,558	13.5	49,950	13.5	
40-49	35,296	15.2	21,743	15.8	57,041	15.4	2
50-59	46,577	20.0	28,372	20.6	74,951	20.3	2
60-69	43,987	18.9	27,598	20.1	71,587	19.4	2
70-79	29,406	12.7	17,500	12.7	46,907	12.7	1
80-89	17,311	7.5	9,462	6.9	26,773	7.2	
90+	5,991	2.6	2,252	1.6	8,243	2.2	
Total	232,357	100.0	137,464	100.0	369,831	100.0	

*16 female patients of unknown age, 24 male patients of unknown age, 2 patients of unkown age or sex

Figure 11. Benzodiazepine Patients by Age and Sex, 2017

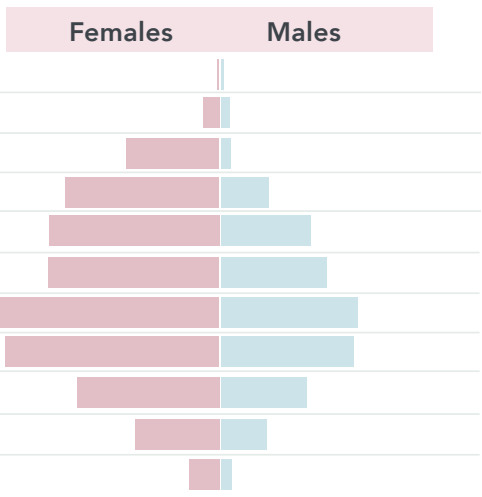
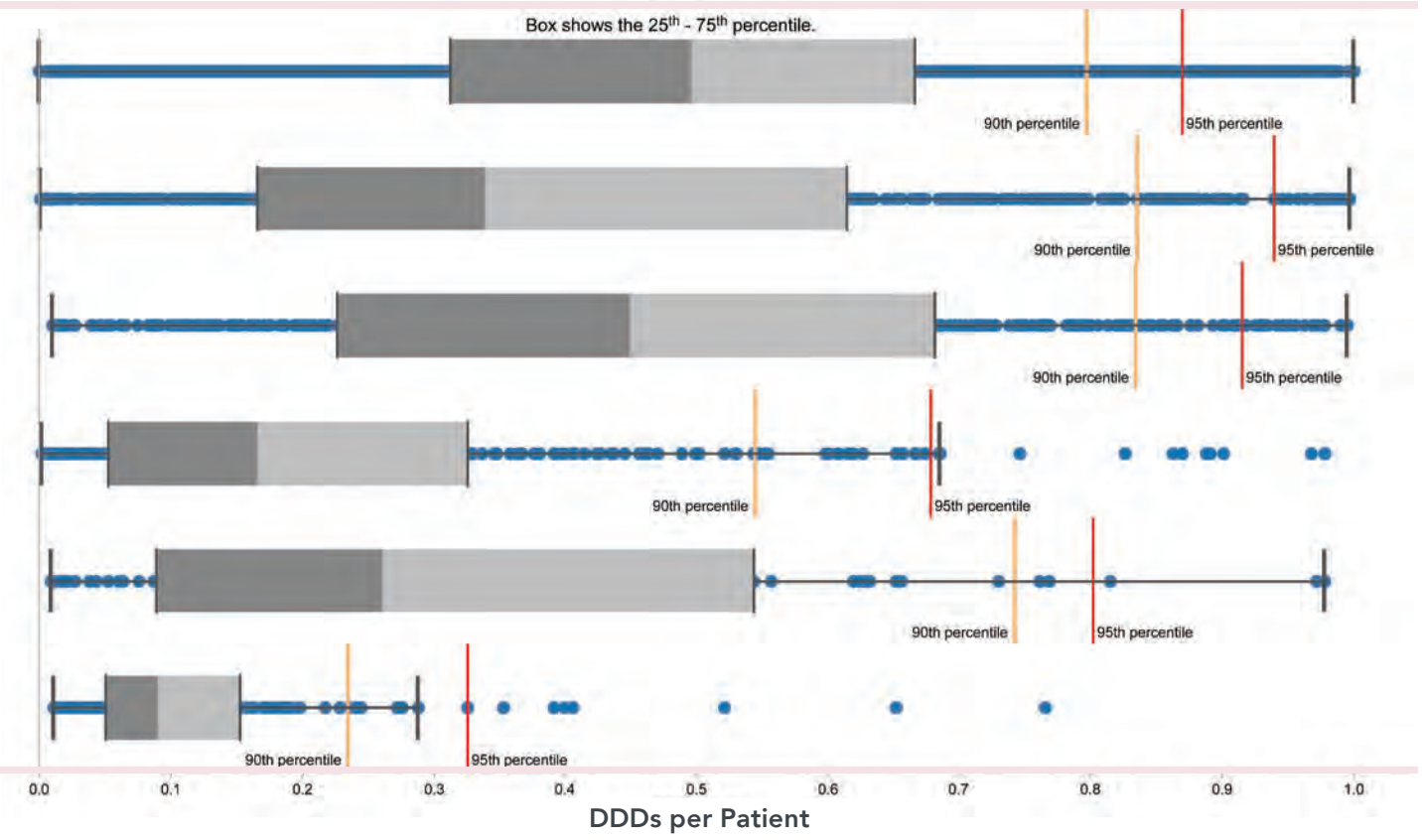


Table 13. Benzodiazepine Prescriptions, Patients, Prescribers and Pharmacies by Prescriber Type, 2017

Prescriber Type	Prescriptions	Patients	Prescribers	Pharmacies
Physician	1,158,021	360,543	9,935	1,376
Pharmacist	22,644	14,453	2,874	1,201
Dentist	7,535	6,015	87	1,018
Nurse Practitioner	7,482	3,677	251	656

Figure 12. DDDs per Patient by Specialty Group[19], 4th Quarter, 2017

Specialty Group	Prescribers
Family Medicine[20]	4589
Medicine[21]	918
Psychiatry[22]	486
Surgery[23]	438
Anesthesiology[24]	78
Emergency Medicine[25]	143



[19] Not all clinical specialties were assigned to a comparison group.

[20] Family Medicine specialty group includes family medicine, family medicine (care of the elderly, sport and exercise medicine) and general practice.

[21] Medicine specialty group includes cardiology, clinical immunology & allergy, dermatology, endocrinology & metabolism, gastroenterology, general internal medicine, hematology, infectious diseases, nephrology, neurology, physical medicine & rehabilitation, respirology and rheumatology.

[22] Psychiatry specialty group includes psychiatry.

[23] Surgery specialty group includes cardiac surgery, cardiovascular & thoracic surgery, colorectal surgery, general surgery, neurosurgery, obstetrics & gynecology, ophthalmology, orthopedic surgery, otolaryngology - head and neck surgery, plastic surgery and urology.

[24] Anesthesiology specialty group includes anesthesiology and family medicine (family practice anesthesia).

[25] Emergency Medicine specialty group includes emergency medicine and family medicine (emergency medicine).

Table 14. Benzodiazepine Prescriptions by Main Ingredient, 2013-2017

Main Ingredient	2013	2014	2015	2016	2017	2017	5 Year Trend
Zopiclone	441,801	467,328	483,696	510,137	490,340		
Lorazepam	271,250	293,247	308,643	330,235	308,312		
Clonazepam	149,824	159,635	164,850	172,181	169,368		
Temazepam	88,626	95,353	91,817	86,453	68,673		
Zolpidem	18,487	28,923	35,051	40,285	42,111		
Diazepam	41,837	42,619	43,259	48,233	40,837		
Alprazolam	28,118	28,164	28,448	28,932	26,767		
Bromazepam	19,561	21,972	22,356	21,872	16,666		
Nitrazepam	15,370	15,625	16,322	18,063	14,804		
Clobazam	8,173	9,022	8,891	10,110	10,068		
Oxazepam	7,545	7,117	6,639	6,630	5,463		
Triazolam	6,293	3,422	4,896	5,507	4,999		
Chlordiazepoxide	3,123	2,956	2,849	2,885	2,640		
Midazolam	1,344	1,406	1,817	1,825	1,976		
Flurazepam	1,492	1,423	1,264	1,264	1,043		
Clorazepate Dipotassium	1			124	258		
Zaleplon		1	1		1		

Table 15. Benzodiazepine Patients by Main Ingredient, 2013-2017

Main Ingredient	2013	2014	2015	2016	2017	2017	5 Year Trend
Zopiclone	174,888	181,877	186,654	192,238	180,560		
Lorazepam	124,537	134,577	143,258	151,539	144,676		
Clonazepam	48,596	51,031	52,256	53,689	50,208		
Temazepam	25,578	26,136	25,431	24,095	19,555		
Zolpidem	10,250	14,603	16,673	17,648	17,470		
Diazepam	14,185	14,493	15,191	15,964	14,097		
Alprazolam	10,051	10,114	10,117	10,066	9,121		
Bromazepam	4,546	4,524	4,350	4,146	3,253		
Nitrazepam	3,625	3,565	3,647	3,801	2,972		
Clobazam	2,910	3,097	3,233	3,400	3,380		
Oxazepam	2,840	2,610	2,413	2,493	1,925		
Triazolam	3,594	2,260	3,038	3,400	3,135		
Chlordiazepoxide	1,519	1,480	1,418	1,403	1,302		
Midazolam	950	1,041	1,313	1,305	1,517		
Flurazepam	589	553	512	508	393		
Clorazepate Dipotassium	1			78	89		
Zaleplon		1	1		1		

Table 16. Benzodiazepine Prescribers by Main Ingredient, 2013-2017

Main Ingredient	2013	2014	2015	2016	2017	2017	5 Year Trend
Zopiclone	9,356	9,763	10,295	10,855	11,196		
Lorazepam	6,842	7,220	7,646	8,129	8,367		
Clonazepam	5,212	5,365	5,687	5,984	6,157		
Temazepam	3,613	3,696	3,810	3,949	3,890		
Zolpidem	2,214	2,869	3,389	3,774	3,904		
Diazepam	3,369	3,557	3,767	4,074	4,093		
Alprazolam	2,892	3,000	3,118	3,265	3,239		
Bromazepam	1,599	1,609	1,595	1,639	1,529		
Nitrazepam	1,195	1,272	1,273	1,381	1,255		
Clobazam	1,701	1,800	1,858	1,997	2,122		
Oxazepam	1,619	1,503	1,508	1,501	1,340		
Triazolam	868	679	678	691	680		
Chlordiazepoxide	919	918	848	887	825		
Midazolam	199	205	230	266	340		
Flurazepam	456	420	414	418	338		
Clorazepate Dipotassium	1			82	106		
Zaleplon		1	1		1		

Medication Use – Benzodiazepines

Table 17. Benzodiazepine Patients and Associated Prescribers by Dose, 2013-2017

Patients

Patient Dose*	2013		2014		2015		2016		2017	
	Patients	Percent	Patients	Percent	Patients	Percent	Patients	Percent	Patients	Percent
Total Patients	341,327		358,752		373,696		386,901		369,831	
≥ 1 DDDs	53,134	15.6	56,354	15.7	56,246	15.1	55,955	14.5	49,871	13.5
≥ 2 DDDs	14,959	4.4	15,810	4.4	15,227	4.1	14,727	3.8	12,254	3.3
≥ 4 DDDs	2,240	0.7	2,258	0.6	2,102	0.6	1,862	0.5	1,327	0.4
≥ 6 DDDs	615	0.2	591	0.2	516	0.1	449	0.1	301	0.1
≥ 8 DDDs	211	0.1	207	0.1	154	0.0	122	0.0	75	0.0
≥ 10 DDDs	73	0.0	79	0.0	64	0.0	49	0.0	34	0.0

Prescribers

Patient Dose*	2013		2014		2015		2016		2017	
	Prescribers	Percent	Prescribers	Percent	Prescribers	Percent	Prescribers	Percent	Prescribers	Percent
Total Prescribers	10,784		11,369		12,033		12,739		13,148	
≥ 1 DDDs	7,629	70.7	8,107	71.3	8,455	70.3	8,888	69.8	8,896	67.7
≥ 2 DDDs	5,287	49.0	5,697	50.1	5,705	47.4	5,928	46.5	5,613	42.7
≥ 4 DDDs	2,325	21.6	2,332	20.5	2,253	18.7	2,127	16.7	1,558	11.8
≥ 6 DDDs	1,113	10.3	1,054	9.3	832	6.9	752	5.9	435	3.3
≥ 8 DDDs	564	5.2	500	4.4	327	2.7	266	2.1	85	0.6
≥ 10 DDDs	225	2.1	234	2.1	129	1.1	134	1.1	37	0.3

* can include prescriptions from multiple prescribers

Figure 13. Benzodiazepine Patients by Dose, 2013-2017

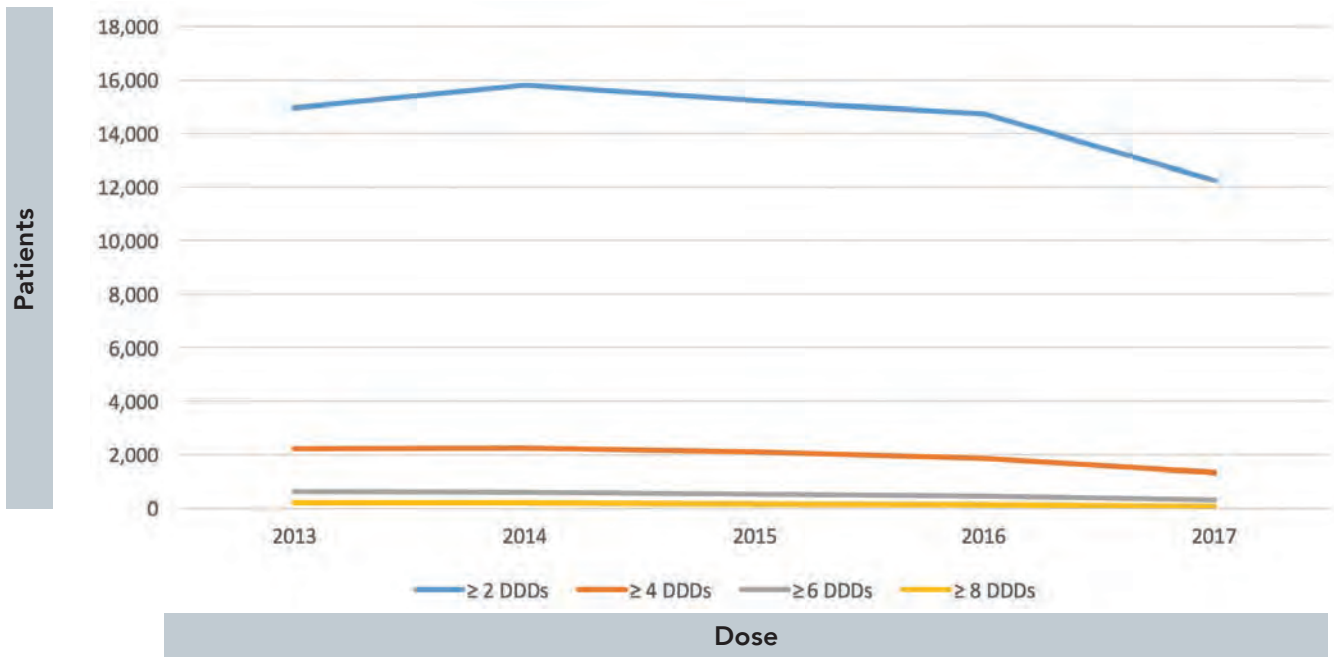


Figure 14. Benzodiazepine Prescribers by Dose, 2013-2017

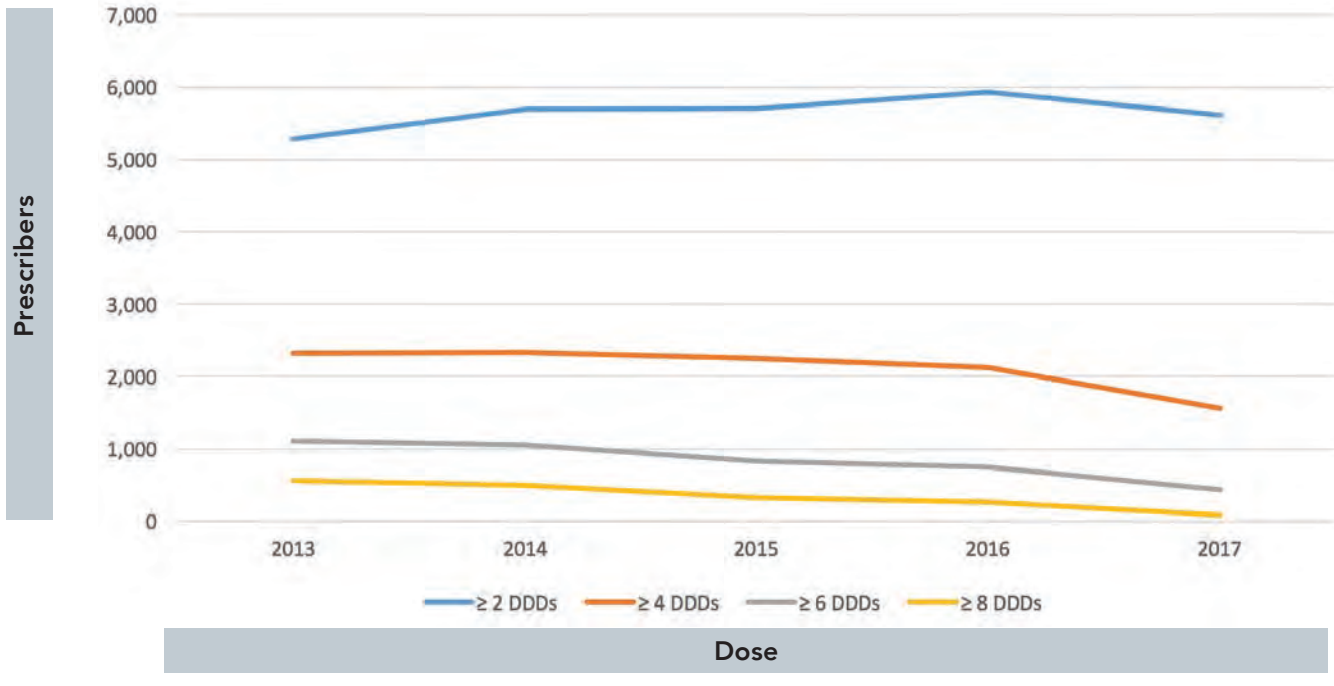


Table 18. Benzodiazepine Patients and Associated Prescribers by Number of Ingredients, 2013-2017

Patients

Number of Ingredients	2013 Patients	2013 Percent	2014 Patients	2014 Percent	2015 Patients	2015 Percent	2016 Patients	2016 Percent	2017 Patients	2017 Percent	2017	5 Year Trend
Total Patients	341,327		358,752		373,696		386,901		369,831			
2+	70,382	20.6	75,098	20.9	77,796	20.8	80,267	20.7	70,268	19.0		
3+	13,568	4.0	14,442	4.0	14,541	3.9	15,051	3.9	11,437	3.1		
4+	2,696	0.8	2,919	0.8	2,774	0.7	2,854	0.7	1,783	0.5		
5+	544	0.2	594	0.2	550	0.1	552	0.1	274	0.1		
6+	109	0.0	115	0.0	116	0.0	119	0.0	50	0.0		

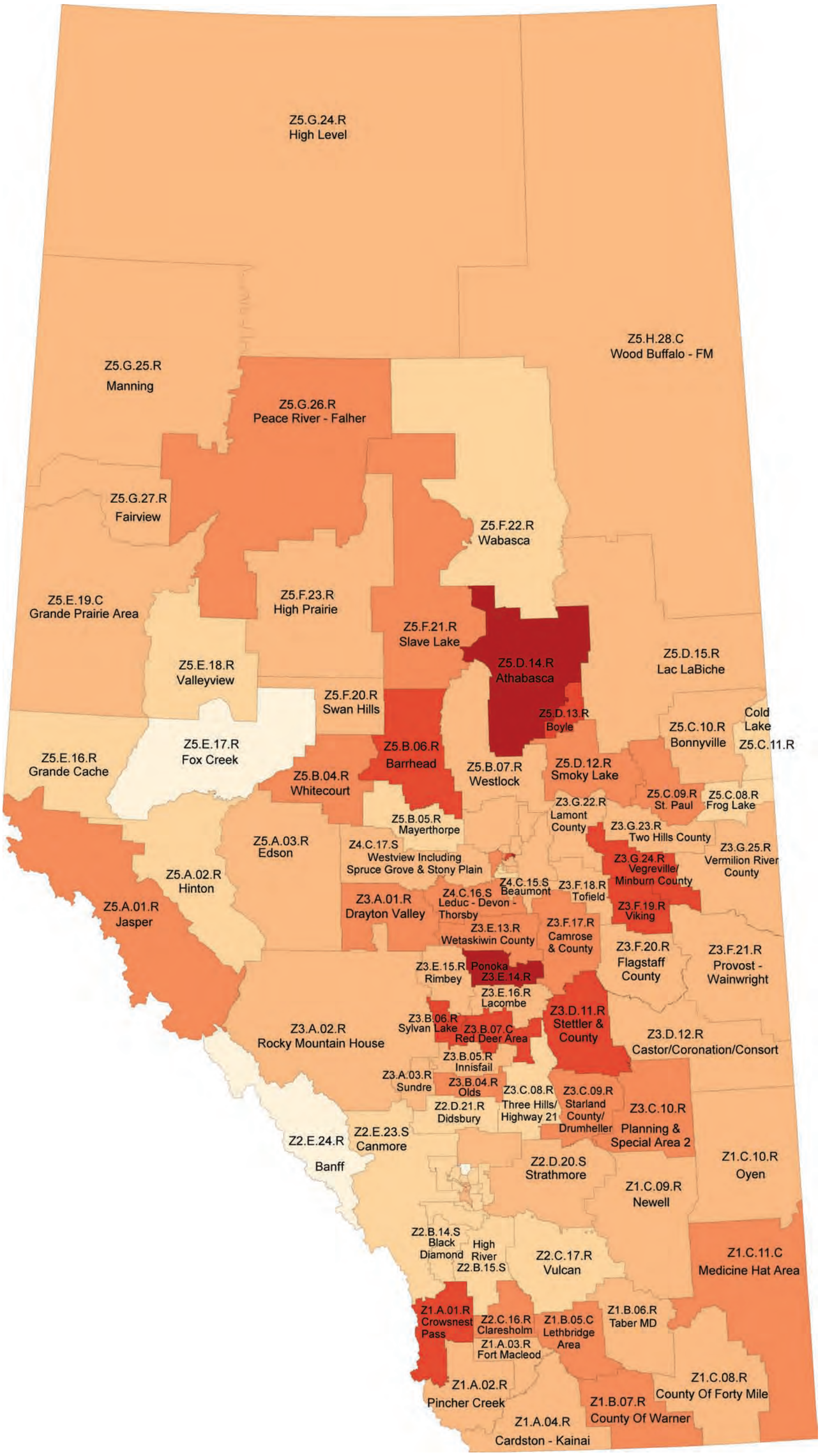
Prescribers

Number of Ingredients	2013 Prescribers	2013 Percent	2014 Prescribers	2014 Percent	2015 Prescribers	2015 Percent	2016 Prescribers	2016 Percent	2017 Prescribers	2017 Percent	2017	5 Year Trend
Total Prescribers	10,784		11,369		12,033		12,739		13,148			
2+	8,285	76.8	8,883	78.1	9,358	77.8	9,909	77.8	9,975	75.9		
3+	5,521	51.2	5,955	52.4	6,181	51.4	6,584	51.7	6,338	48.2		
4+	3,003	27.8	3,208	28.2	3,231	26.9	3,440	27.0	2,943	22.4		
5+	1,292	12.0	1,462	12.9	1,333	11.1	1,419	11.1	879	6.7		
6+	448	4.2	501	4.4	497	4.1	478	3.8	206	1.6		

Table 19. Benzodiazepine Patients by Number of Prescribers, 2013-2017

Number of Prescribers	2013 Patients	2013 Percent	2014 Patients	2014 Percent	2015 Patients	2015 Percent	2016 Patients	2016 Percent	2017 Patients	2017 Percent	2017	5 Year Trend
Total Patients	341,327		358,752		373,696		386,901		369,831			
2+	84,102	24.6	89,103	24.8	94,270	25.2	100,830	26.1	95,117	25.7		
3+	26,804	7.9	28,556	8.0	30,919	8.3	33,512	8.7	30,583	8.3		
4+	10,059	2.9	10,943	3.1	11,911	3.2	13,159	3.4	11,193	3.0		
5+	4,360	1.3	4,896	1.4	5,298	1.4	5,754	1.5	4,571	1.2		
6+	2,210	0.6	2,531	0.7	2,688	0.7	2,780	0.7	2,093	0.6		
7+	1,223	0.4	1,407	0.4	1,538	0.4	1,508	0.4	1,048	0.3		
8+	730	0.2	865	0.2	924	0.2	862	0.2	548	0.1		

Figure 15. Age and Sex Standardized, Total DDDs per 1,000 Population, by Pharmacy Local Aggregated Geographies, 2017

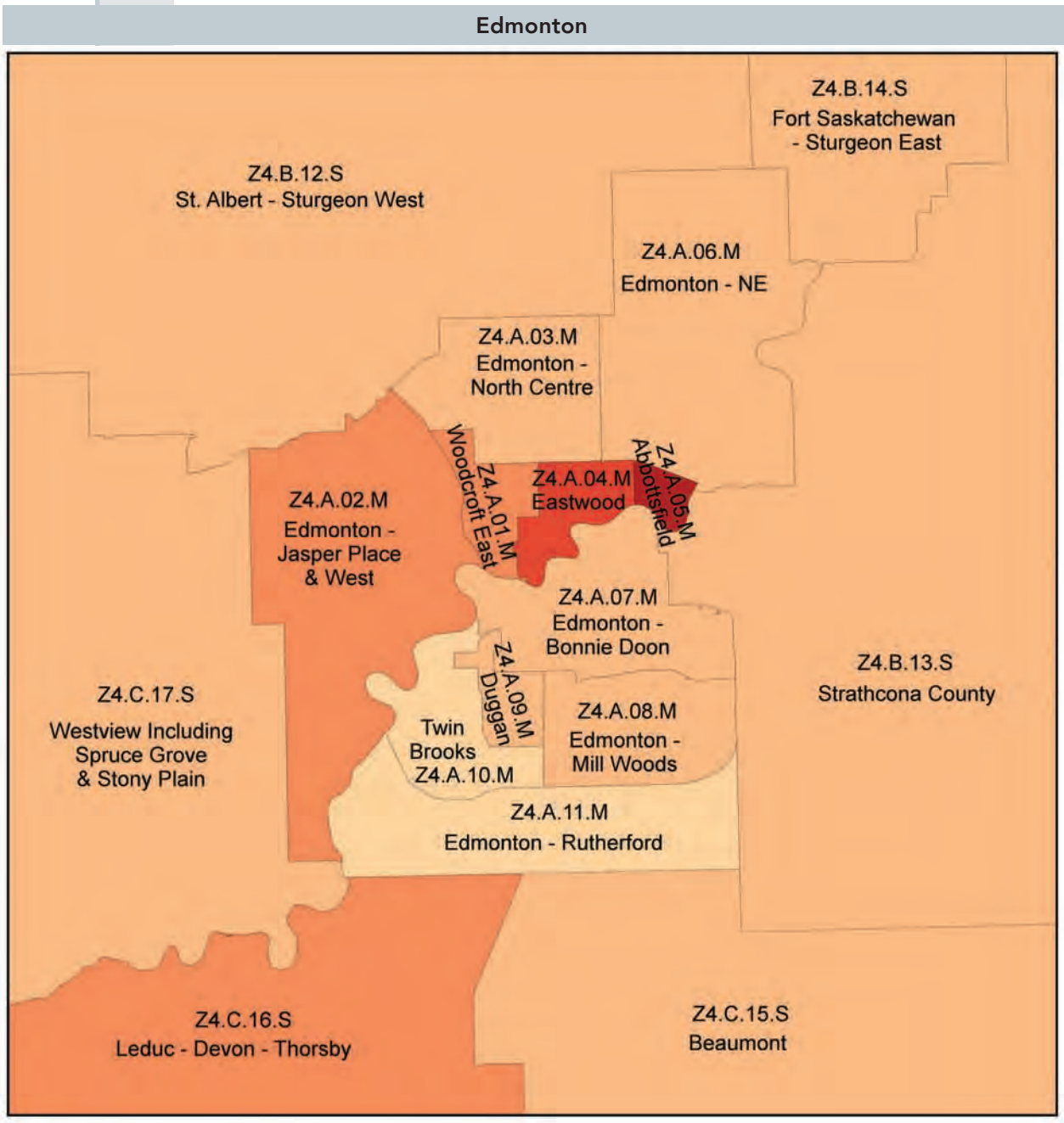


Legend: Provincial and Urban Maps

Total DDDs per 1,000 Population

- Highest (>65.7)
- High (54.9 to 65.7)
- Above Average (43.9 to 54.8)
- Average (29.3 to 43.8)
- Low (18.3 to 29.2)
- Lowest (<18.3)

Edmonton



Calgary

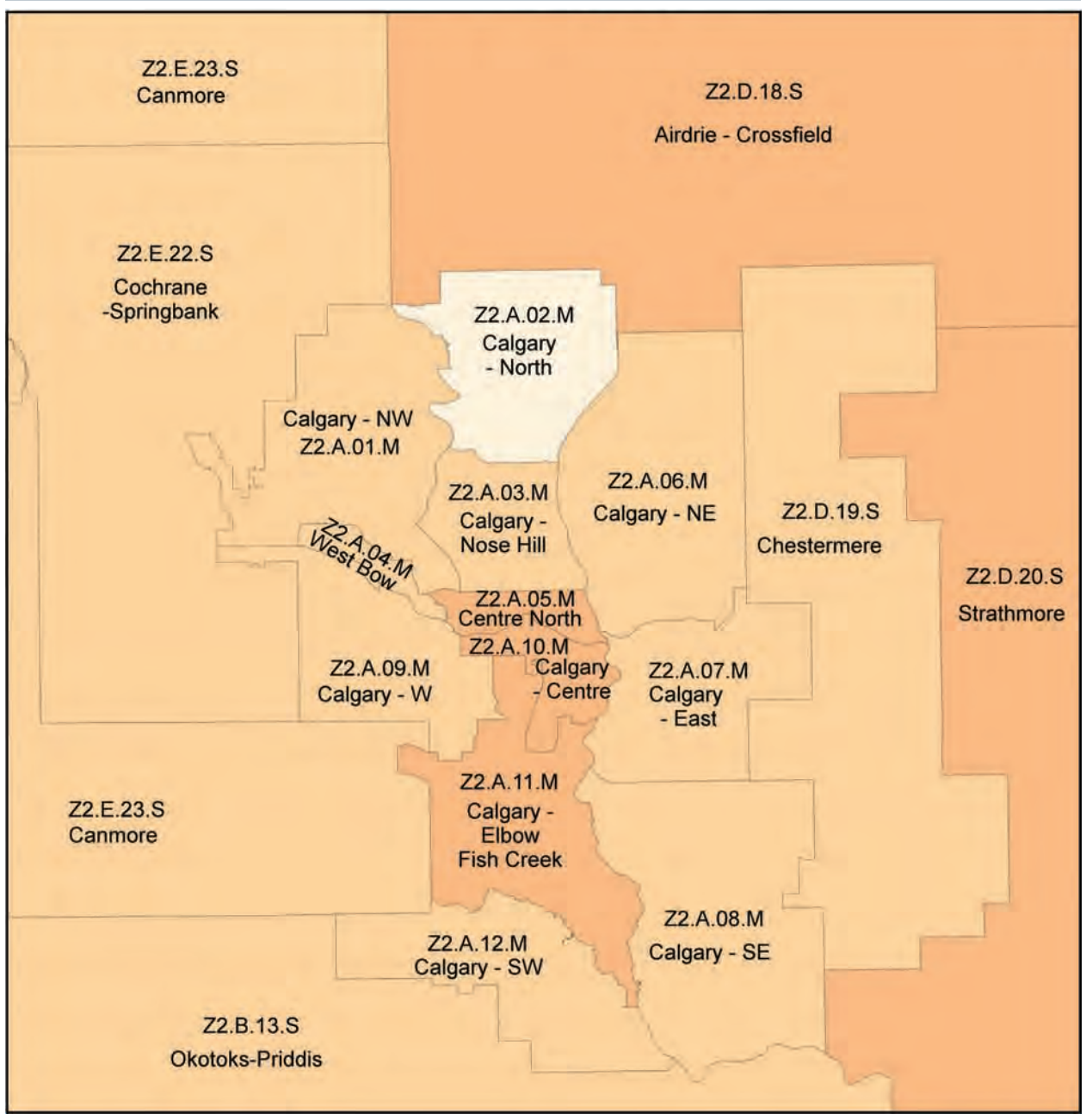
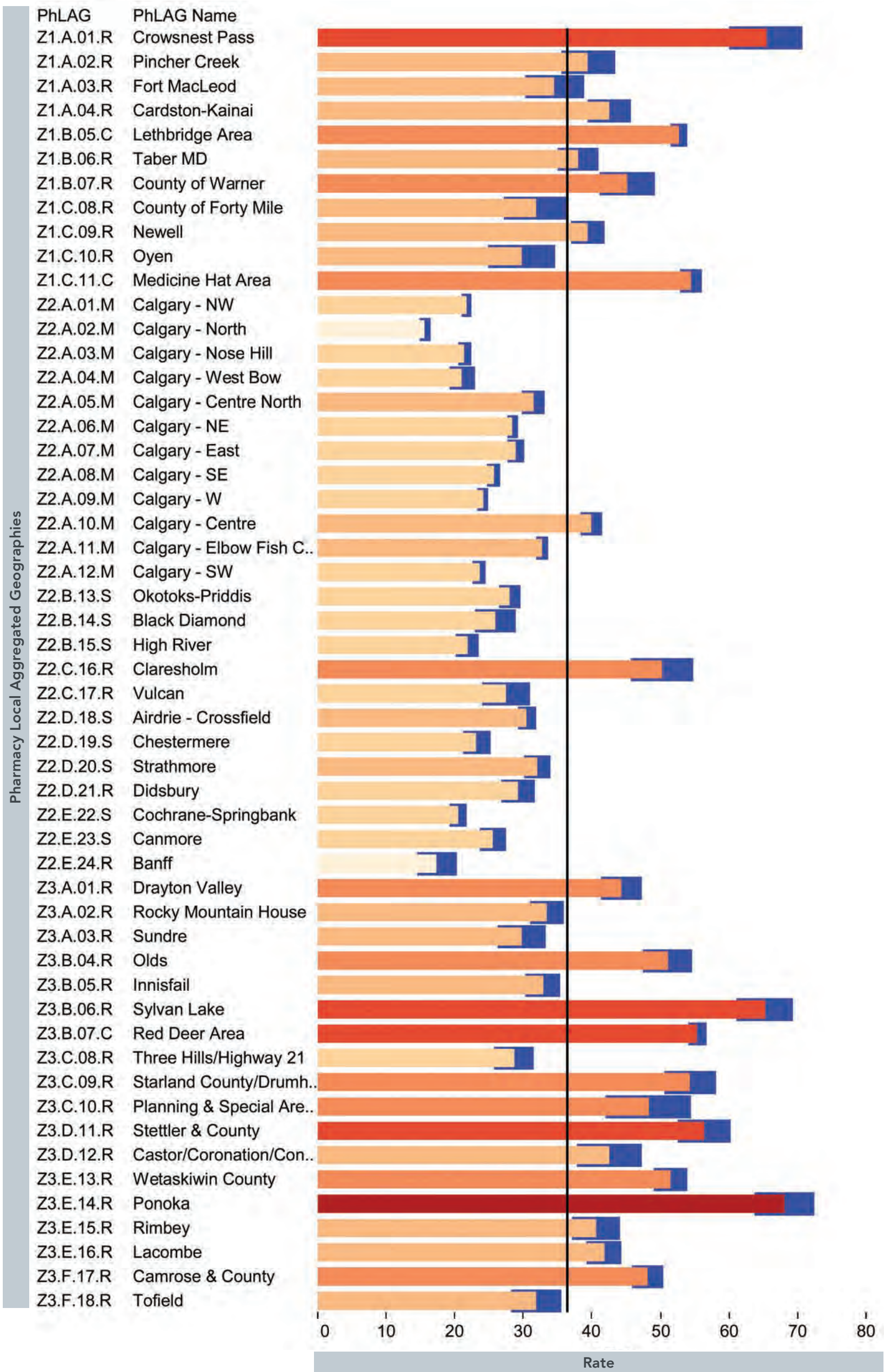


Figure 16. Age and Sex Standardized, Total DDDs per 1,000 Population, by Pharmacy Local Aggregated Geographies, 2017



MEDICATION USE — *Benzodiazepines*

Total DDDs per 1,000 Population

- Highest (>65.7)
- High (54.9 to 65.7)
- Above Average (43.9 to 54.8)
- Average (29.3 to 43.8)
- Low (18.3 to 29.2)
- Lowest (<18.3)

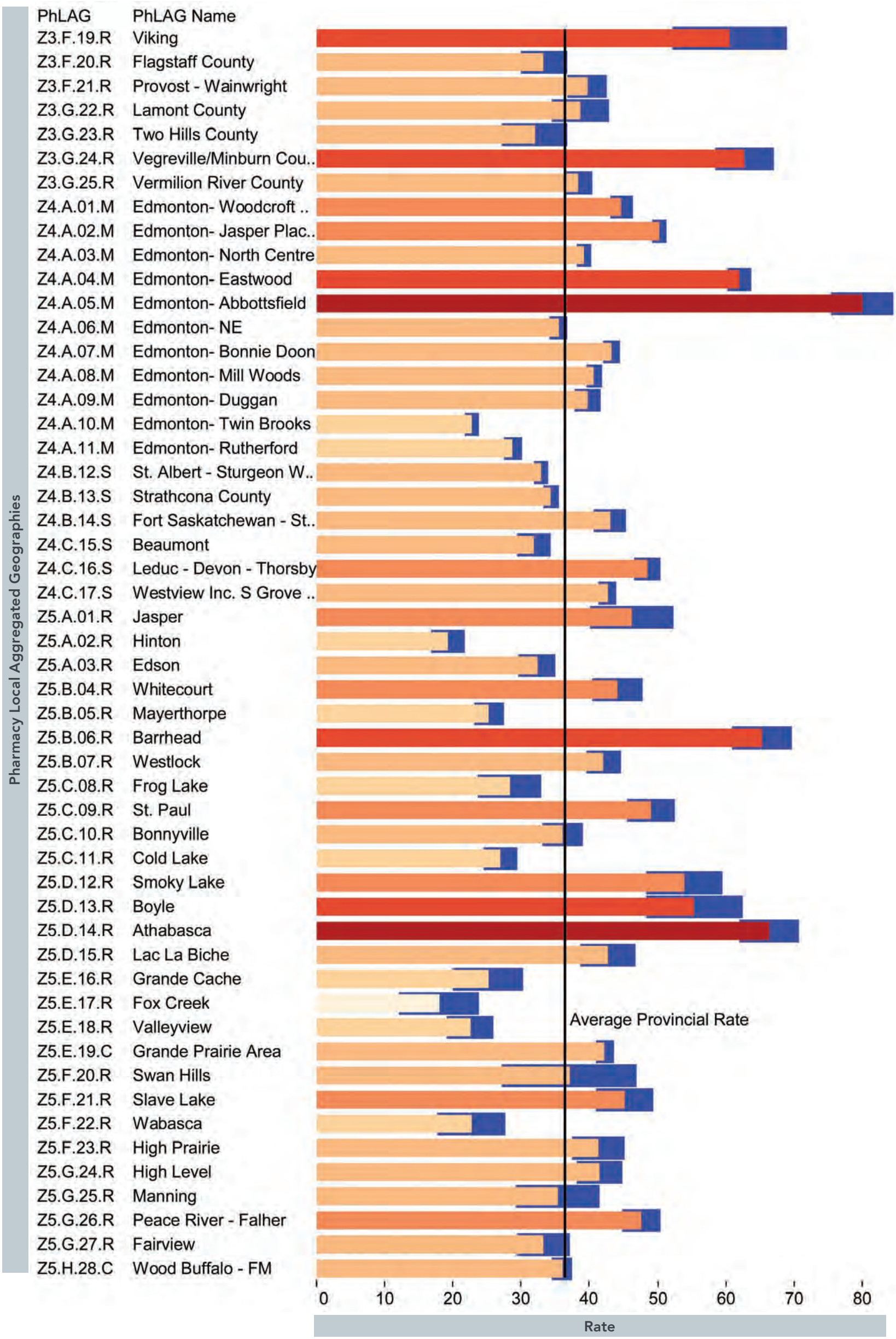
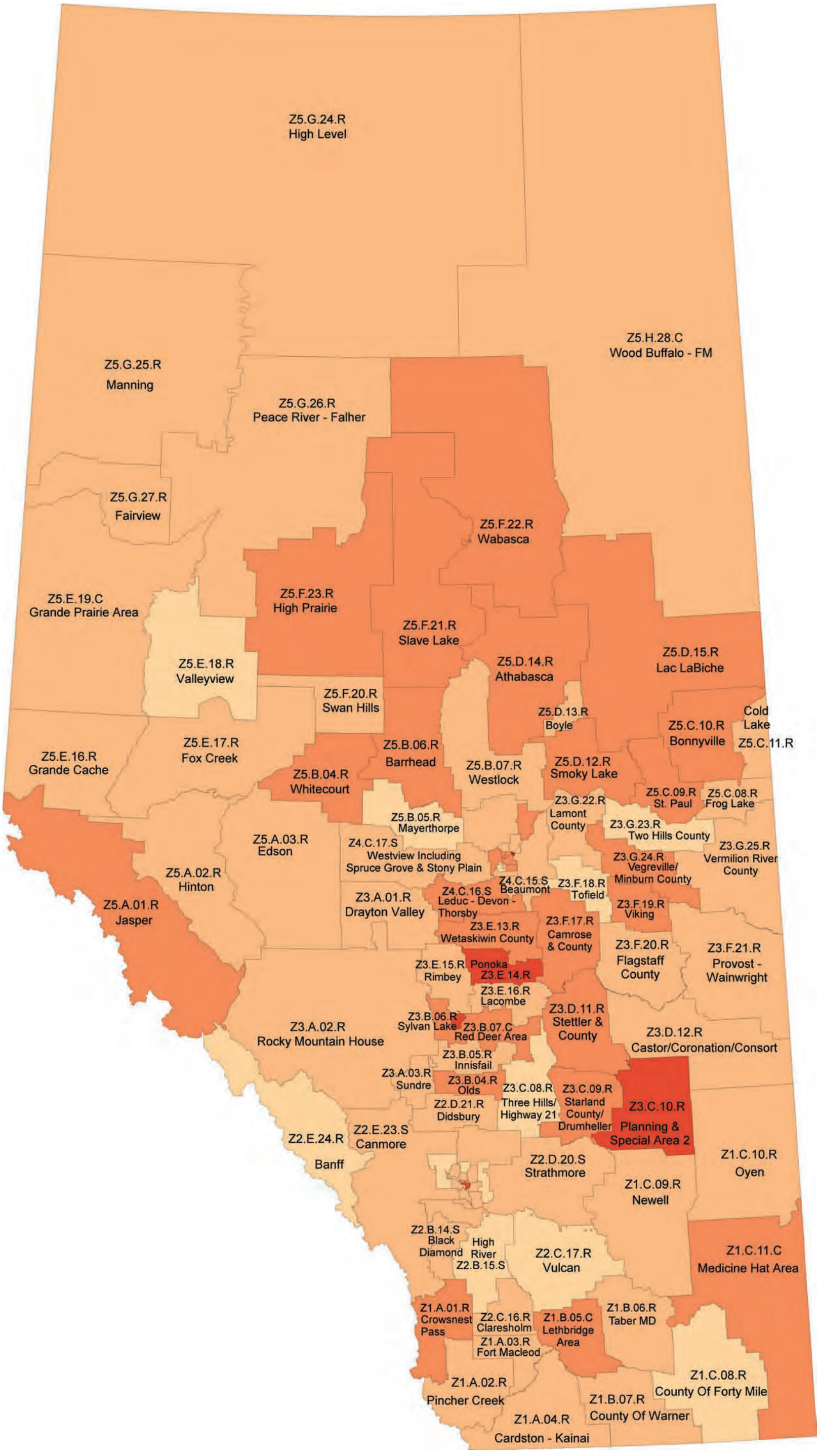


Figure 17. Age and Sex Standardized, Benzodiazepine Patients per 1,000 Population, by Pharmacy Local Aggregated Geographies, 2017

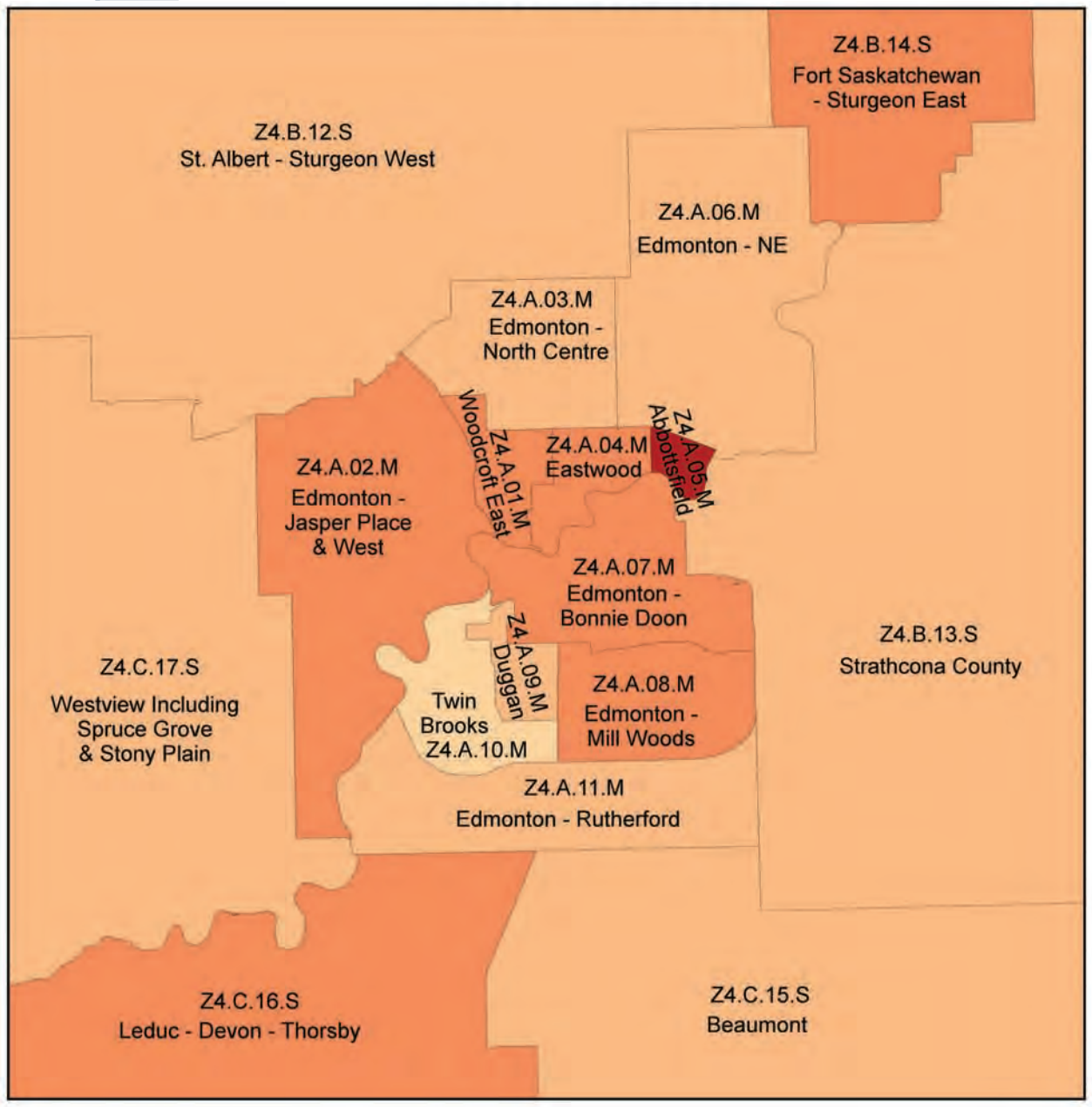


Legend: Provincial and Urban Maps

Patients per 1,000 Population

- Highest (>154.8)
- High (129.1 to 154.8)
- Above Average (103.3 to 129.0)
- Average (68.9 to 103.2)
- Low (43.0 to 68.8)
- Lowest (<43.0)

Edmonton



Calgary

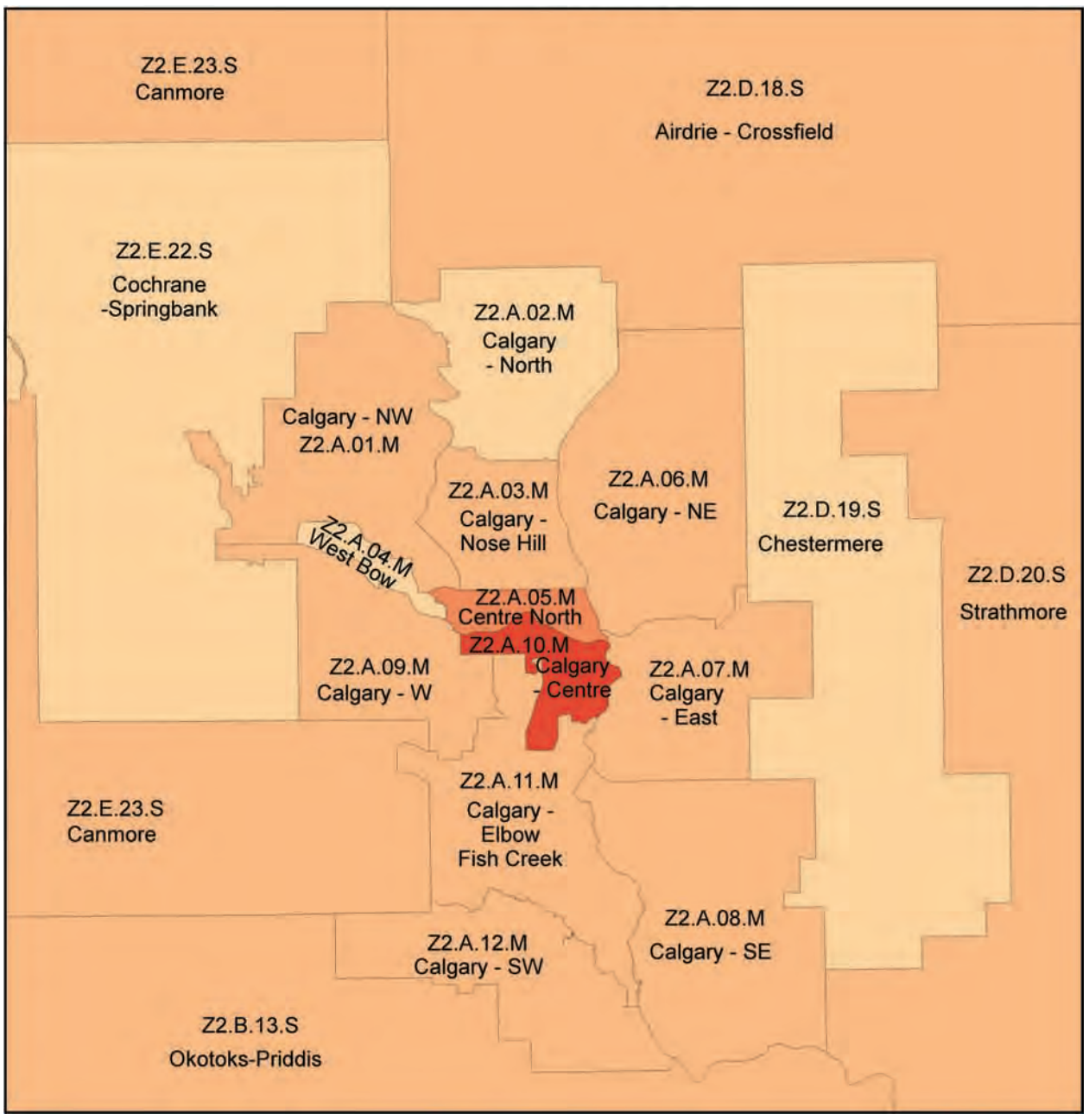
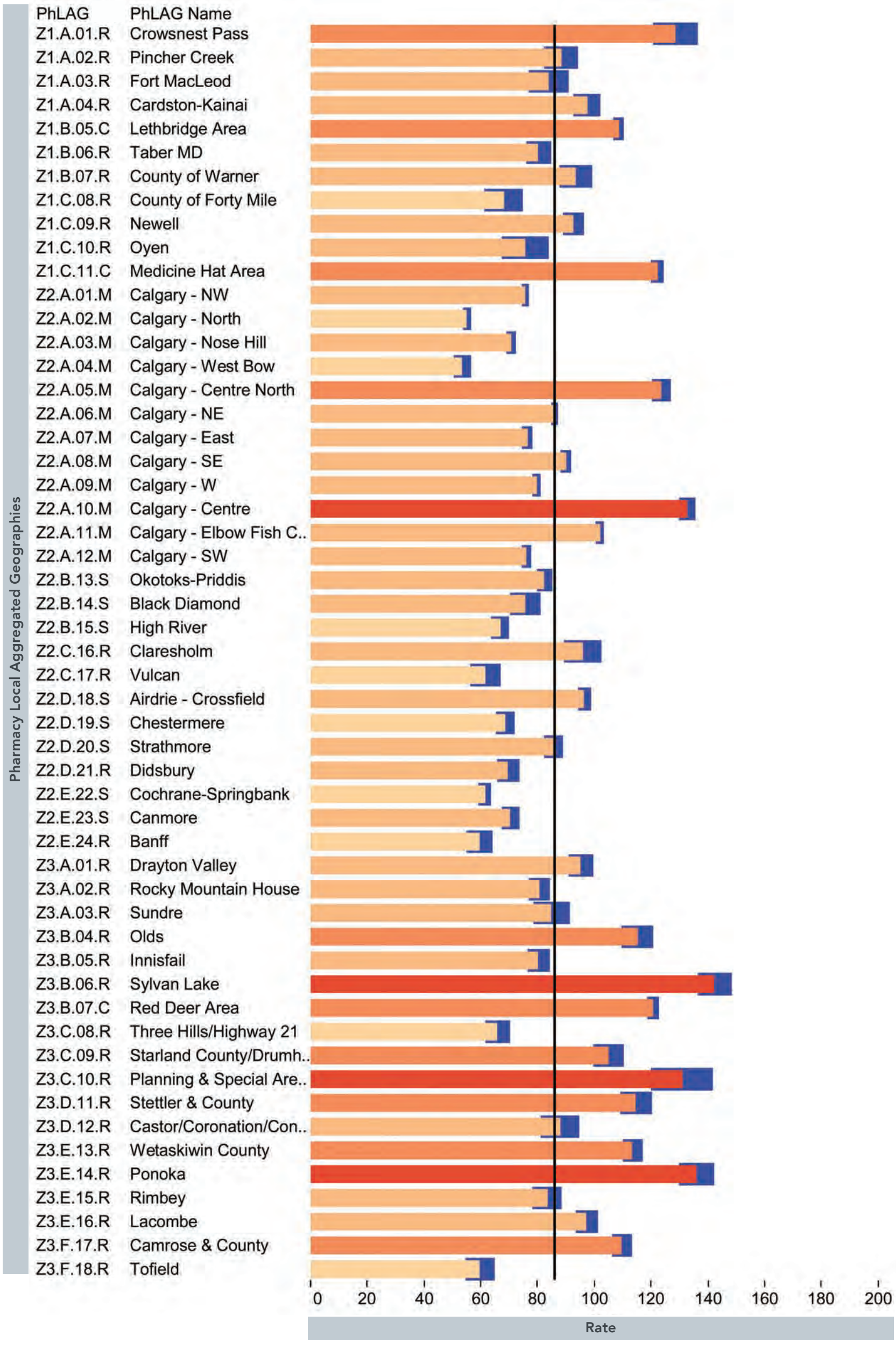


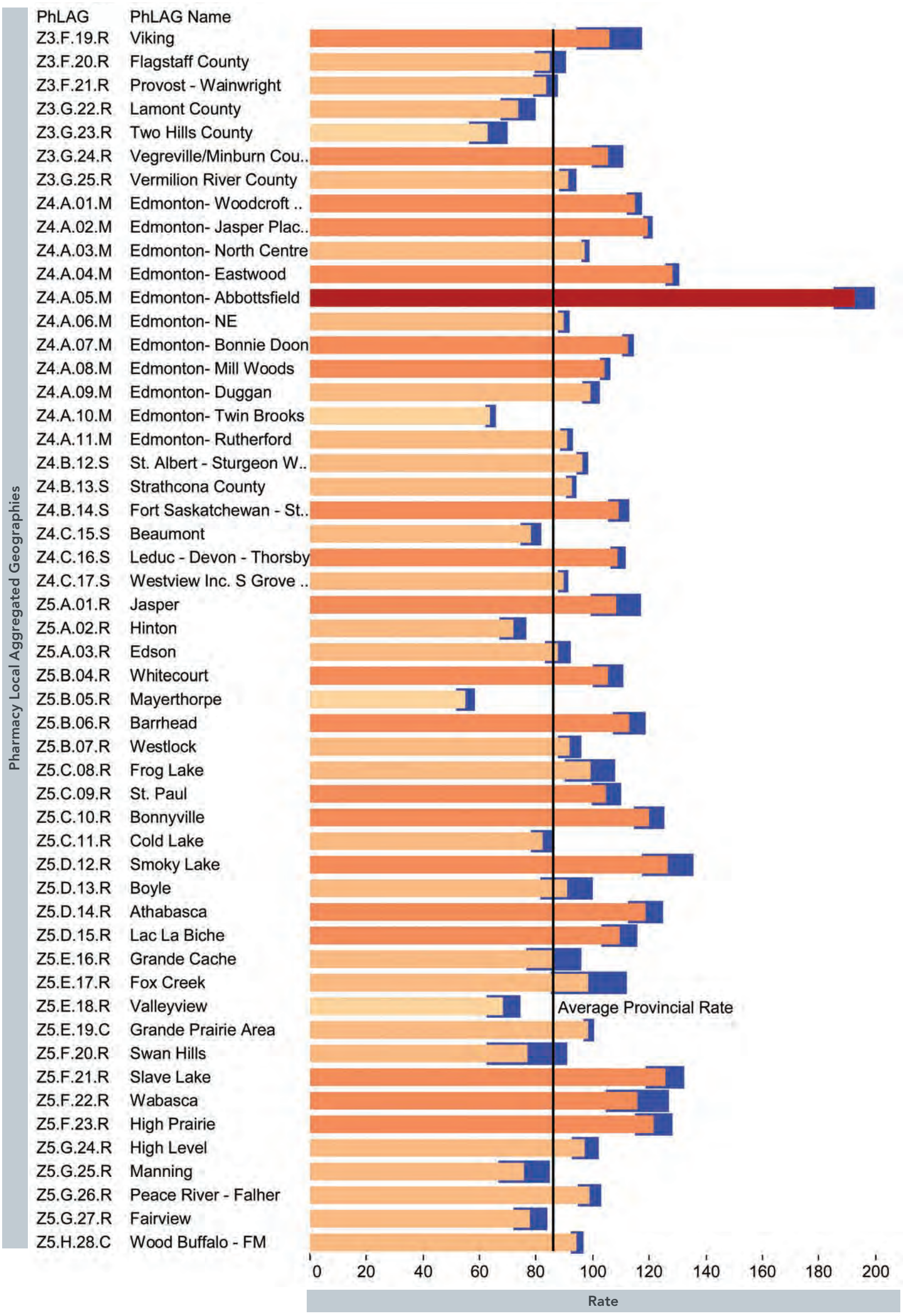
Figure 18. Age and Sex Standardized, Benzodiazepine Patients per 1,000 Population, by Pharmacy Local Aggregated Geographies, 2017



MEDICATION USE – *Benzodiazepines*

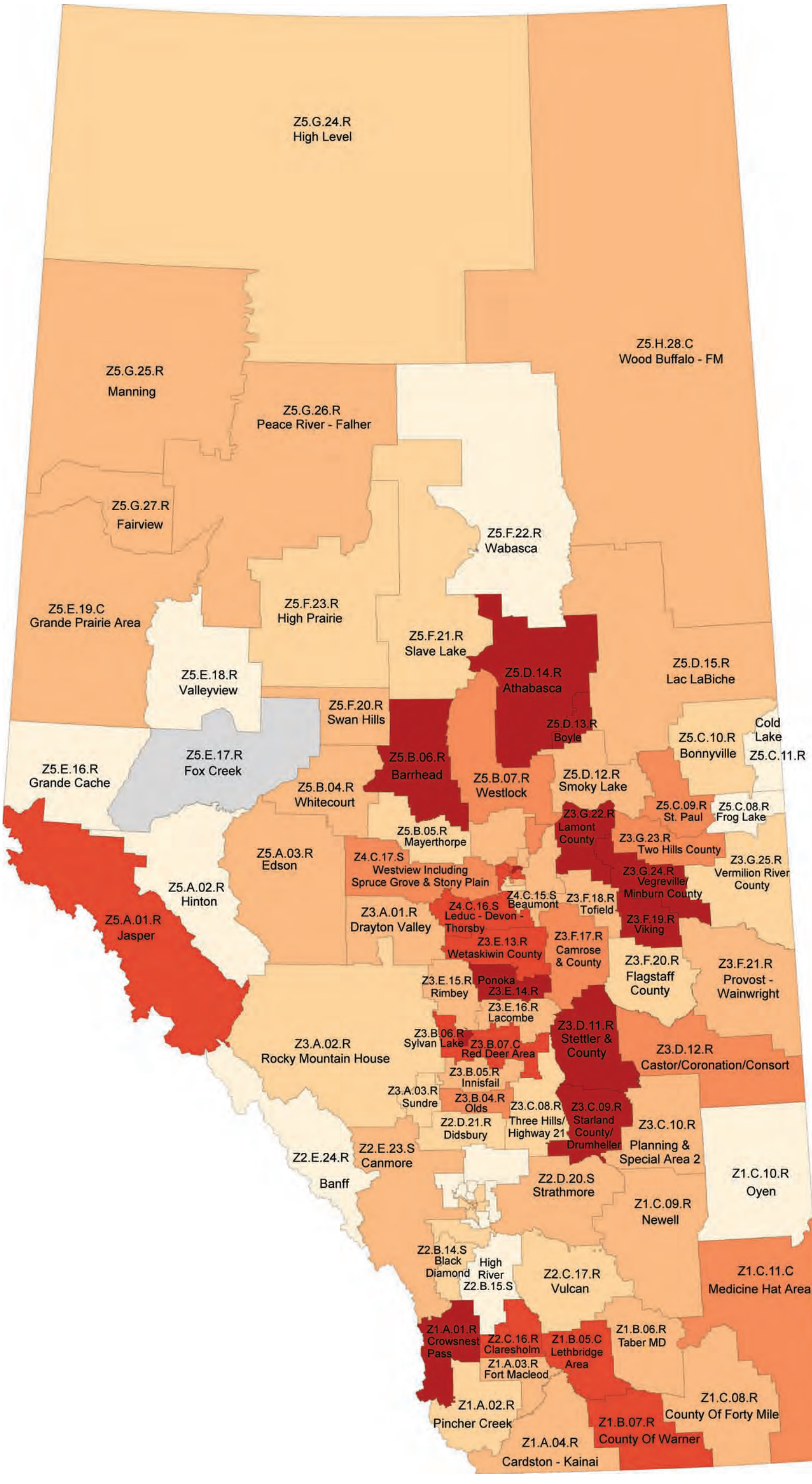
Patients per 1,000 Population

- Highest (>154.8)
- High (129.1 to 154.8)
- Above Average (103.3 to 129.0)
- Average (68.9 to 103.2)
- Low (43.0 to 68.8)
- Lowest (<43.0)



Pharmacy Local Aggregated Geographies

Figure 19. Age and Sex Standardized, Benzodiazepine Patients Who Received 2 DDDs or Greater per 1,000 Population, by Pharmacy Local Aggregated Geographies, 2017

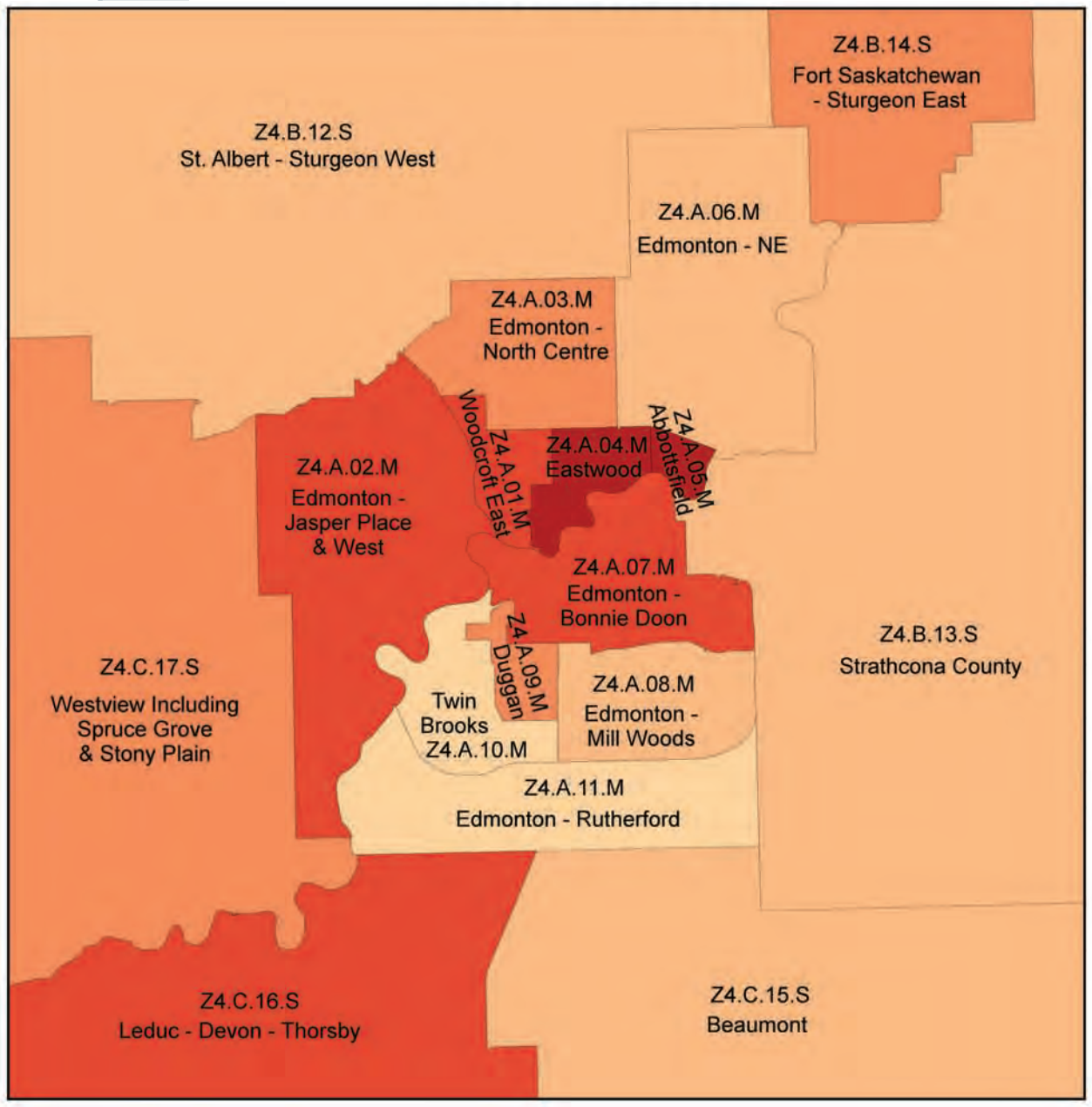


Legend: Provincial and Urban Maps

Patients ≥2 DDDs per 1,000 Population

- Highest (>4.7)
- High (4.0 to 4.7)
- Above Average (3.2 to 3.9)
- Average (2.2 to 3.1)
- Low (1.3 to 2.1)
- Lowest (<1.3)
- No Cases

Edmonton



Calgary

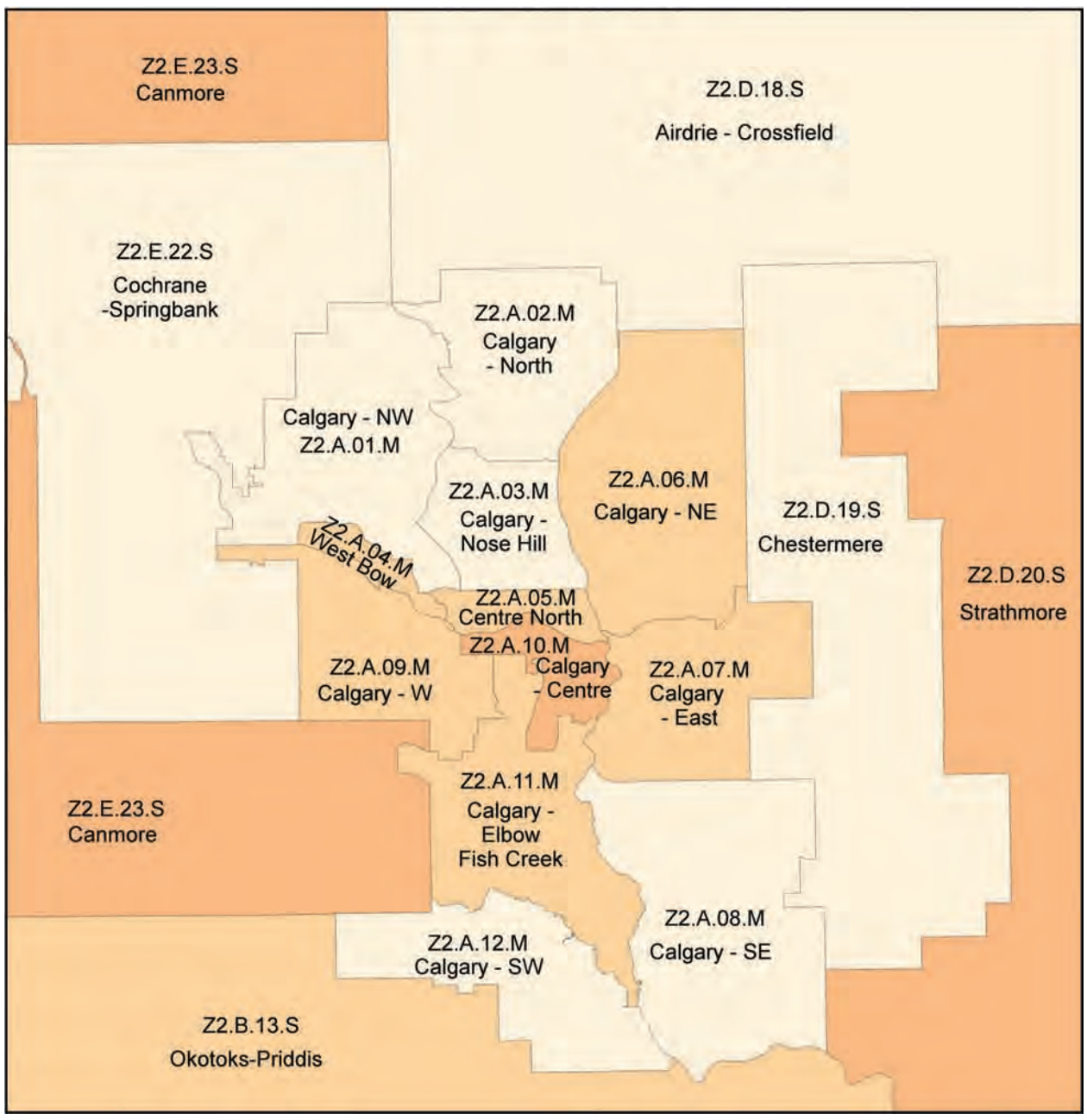
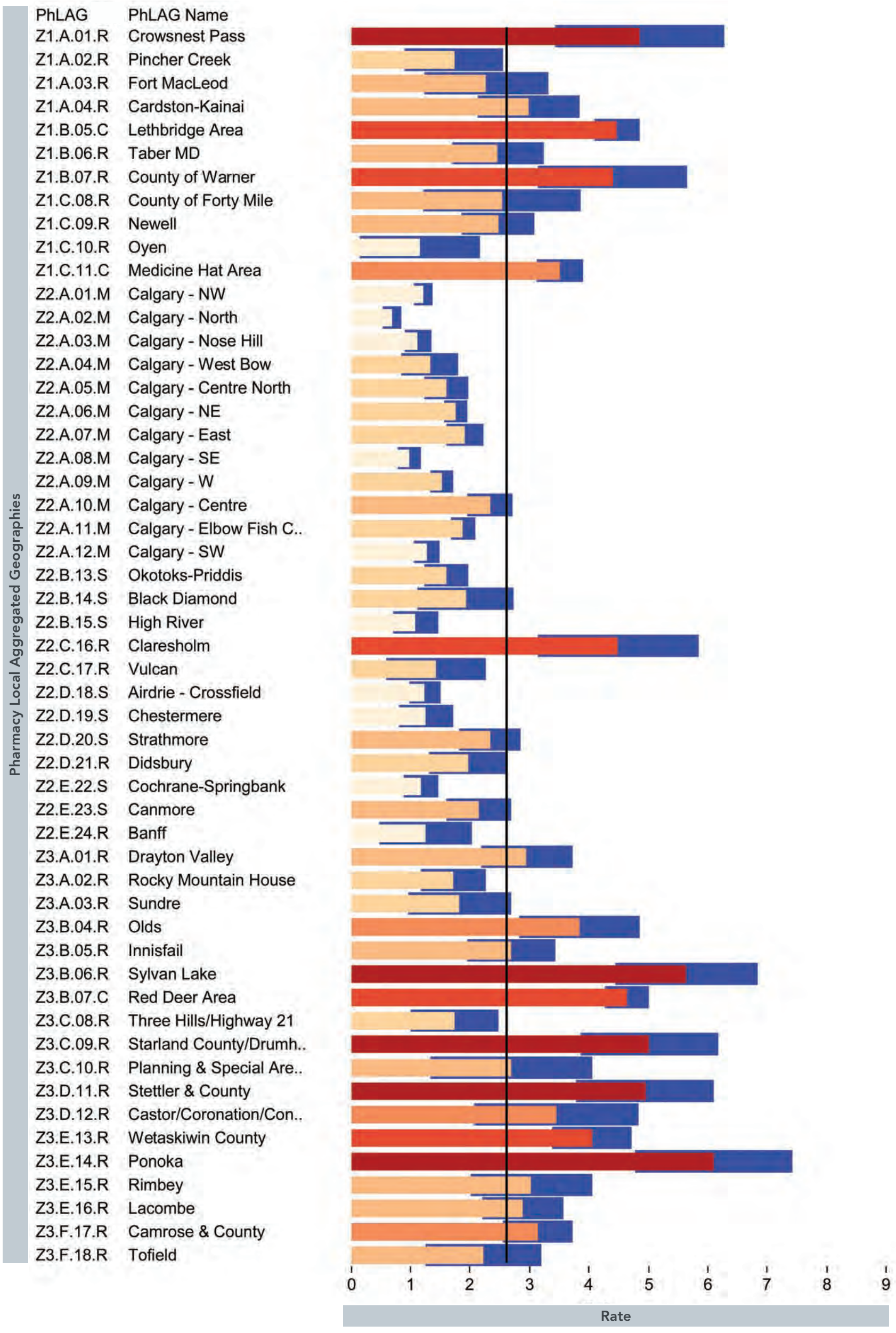


Figure 20. Age and Sex Standardized, Benzodiazepine Patients Who Received 2 DDDs or Greater per 1,000 Population, by Pharmacy Local Aggregated Geographies, 2017



MEDICATION USE — *Benzodiazepines*

Patients ≥2 DDDs per 1,000 Population

- Highest (>4.7)
- High (4.0 to 4.7)
- Above Average (3.2 to 3.9)
- Average (2.2 to 3.1)
- Low (1.3 to 2.1)
- Lowest (<1.3)
- No Cases

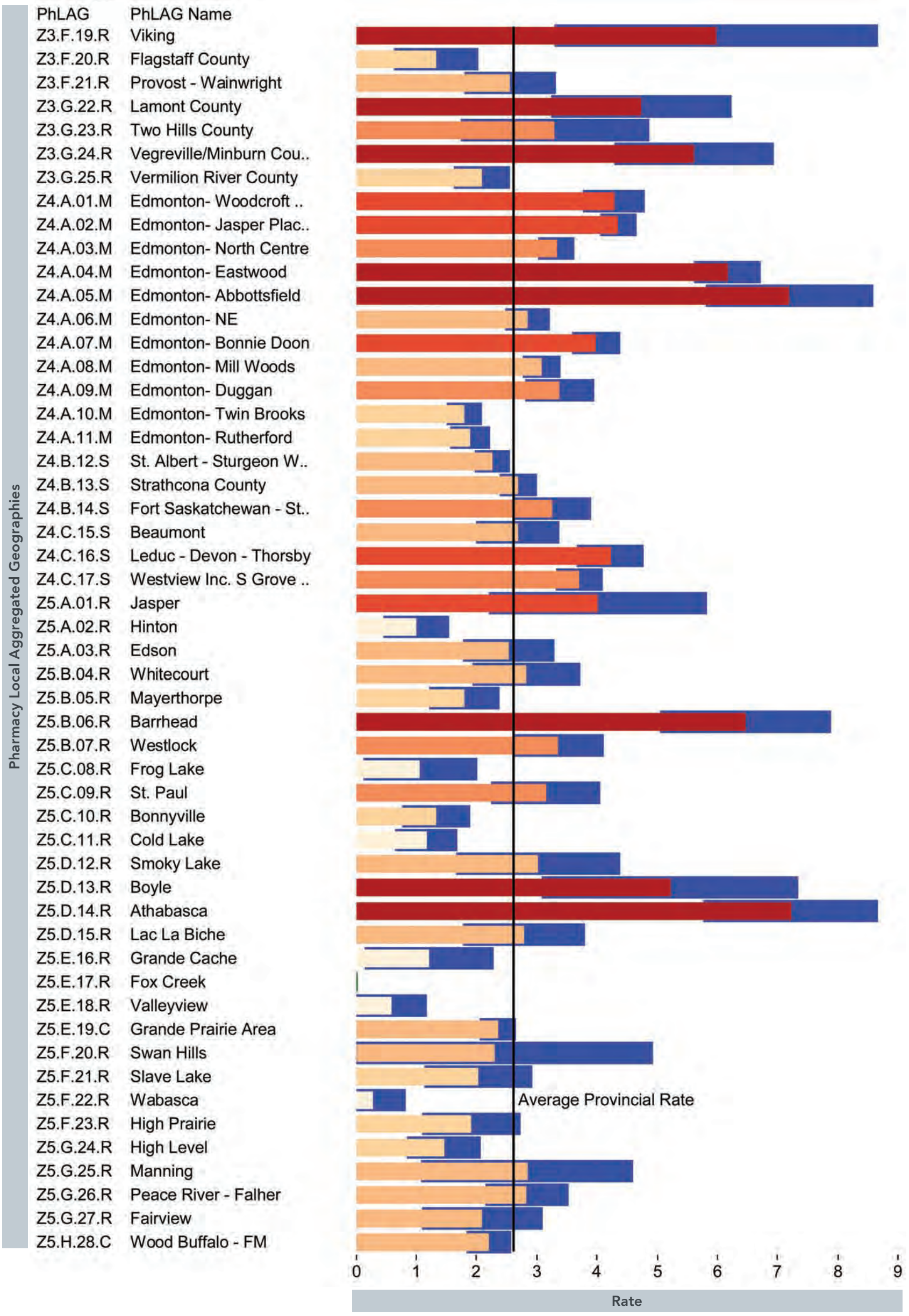
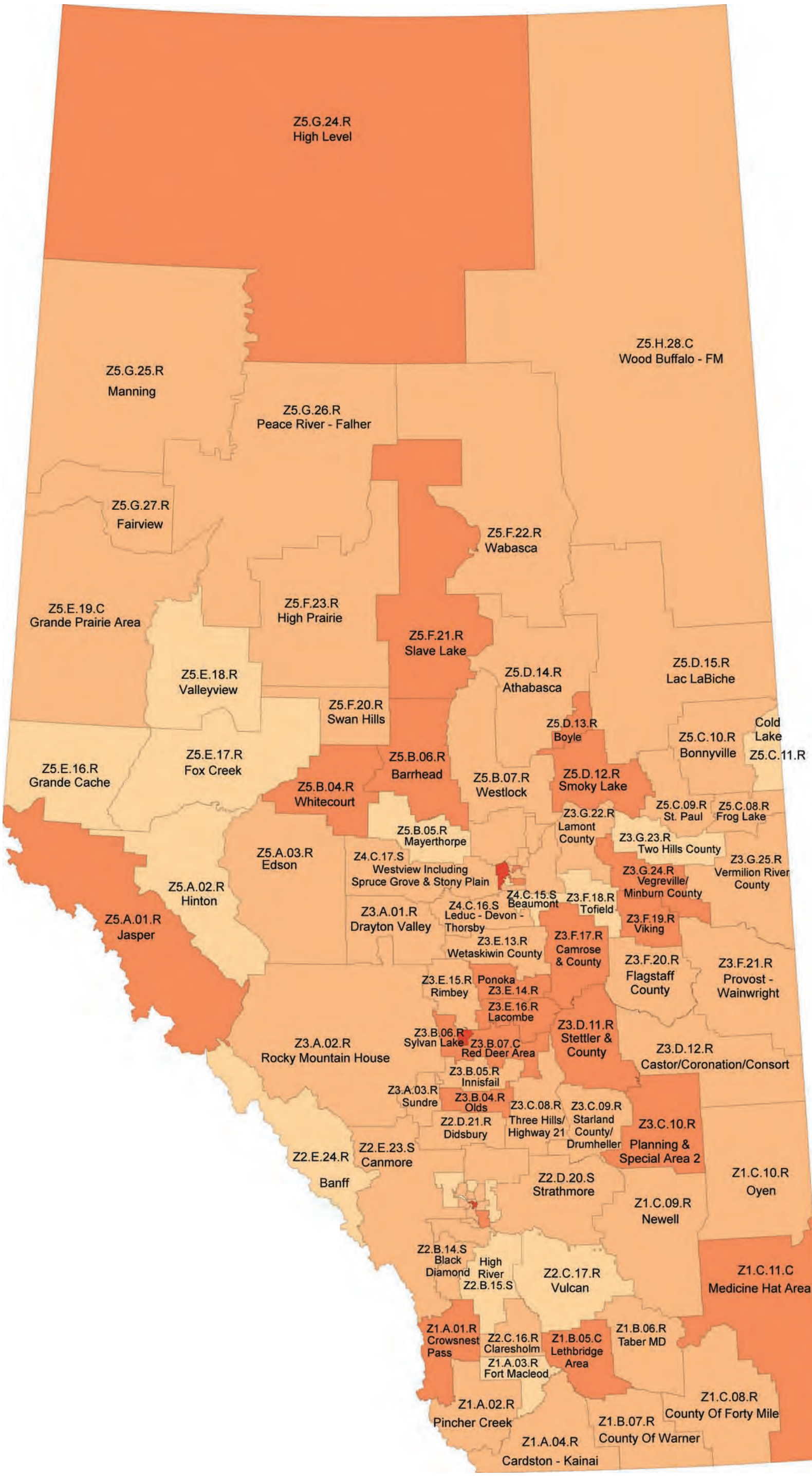


Figure 21. Benzodiazepine Patients 65 Years and Over per 1,000 Elderly Population, by Pharmacy Local Aggregated Geographies, 2017

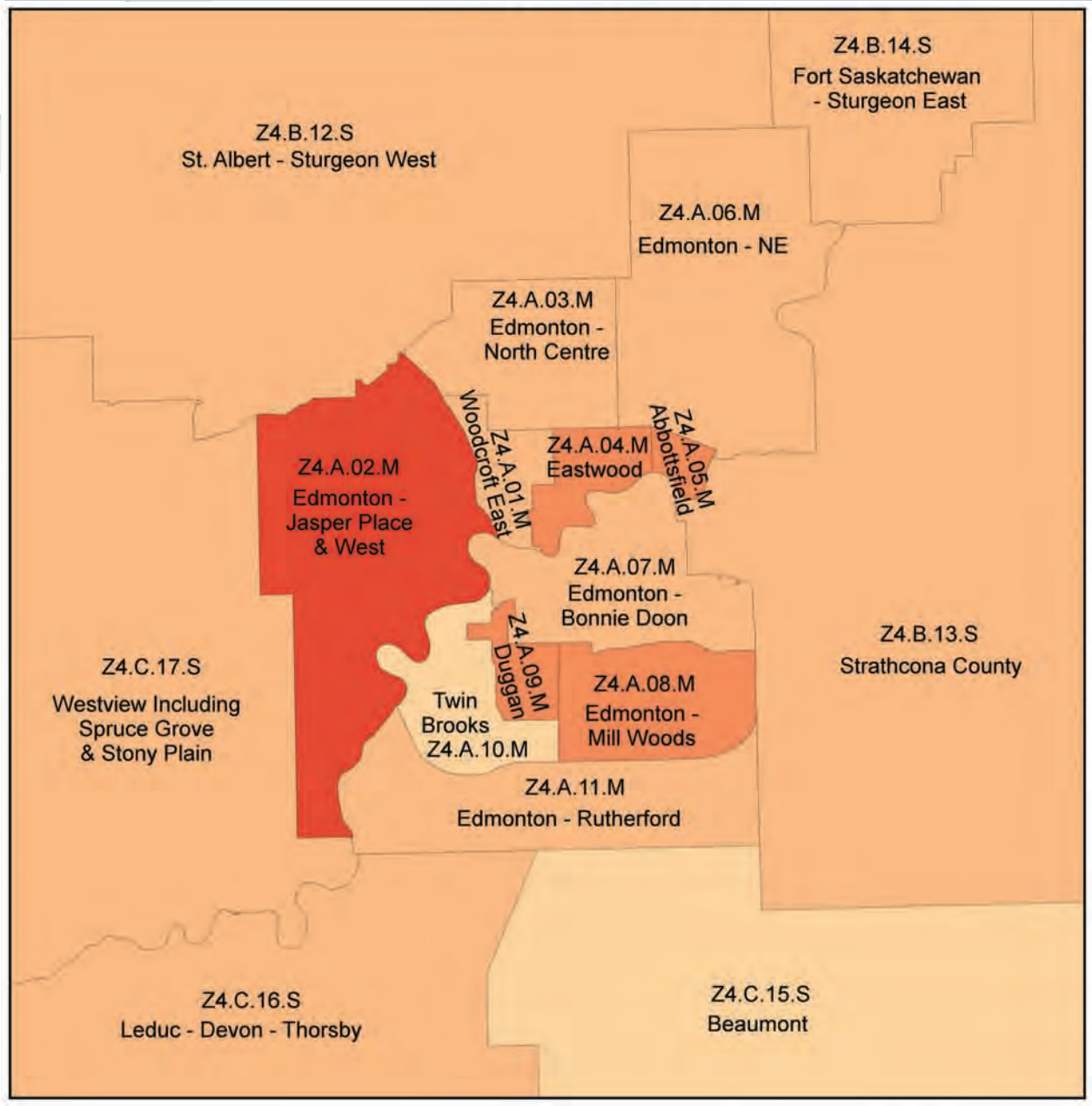


Legend: Provincial and Urban Maps

Elderly Patients per 1,000 Elderly Population

- Highest (>363)
- High (303 to 363)
- Above Average (243 to 302)
- Average (162 to 242)
- Low (101 to 161)
- Lowest (<101)

Edmonton



Calgary

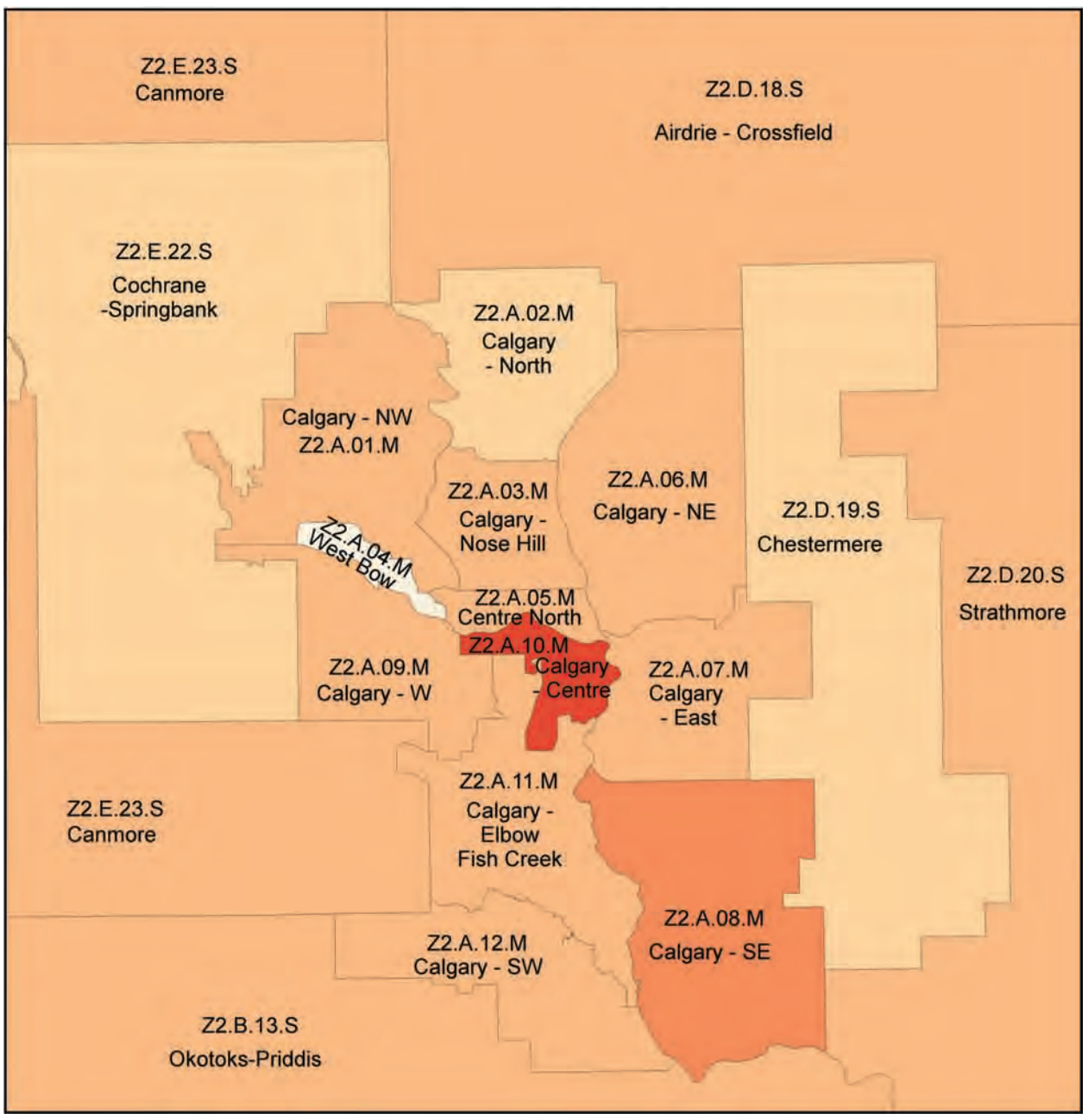
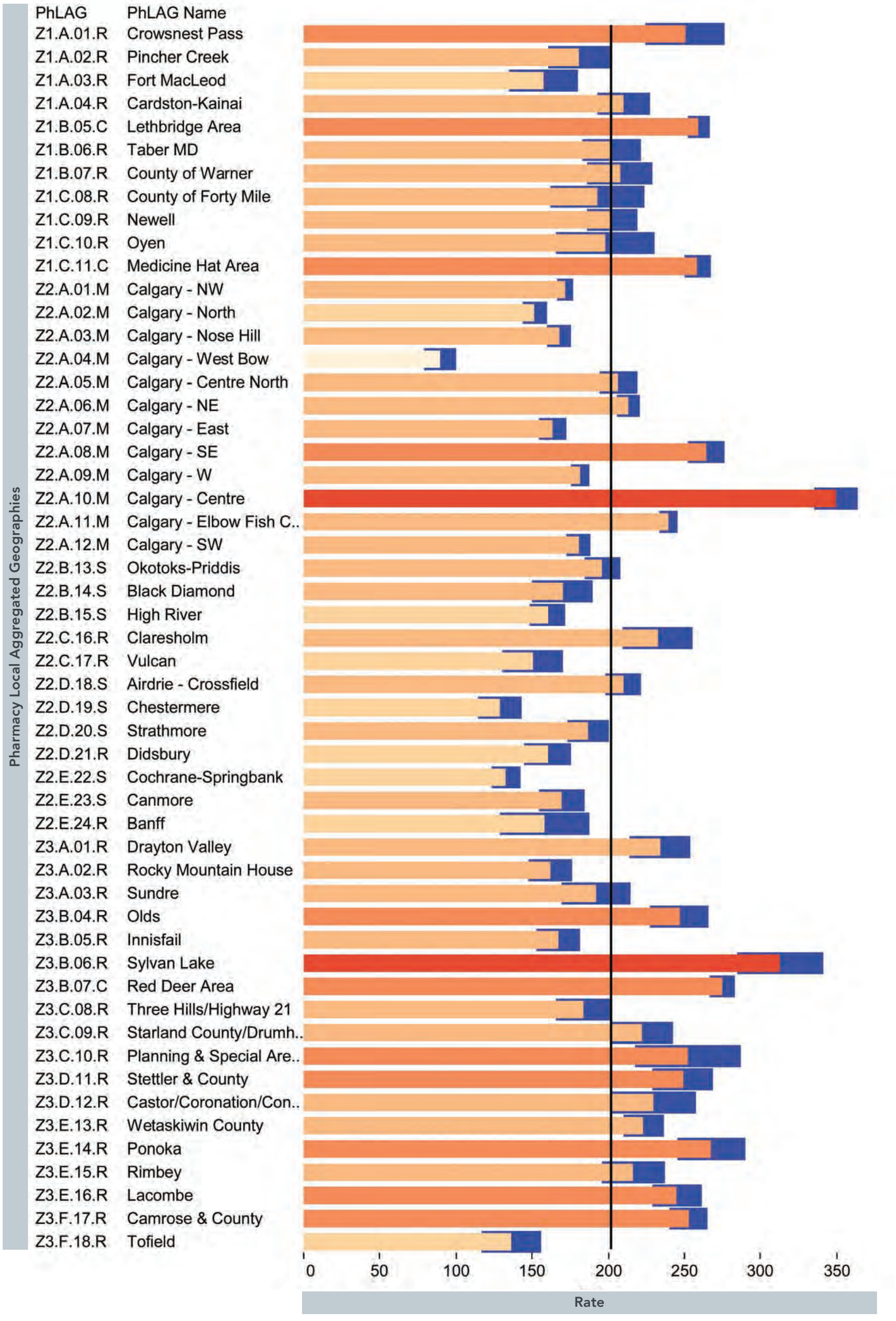
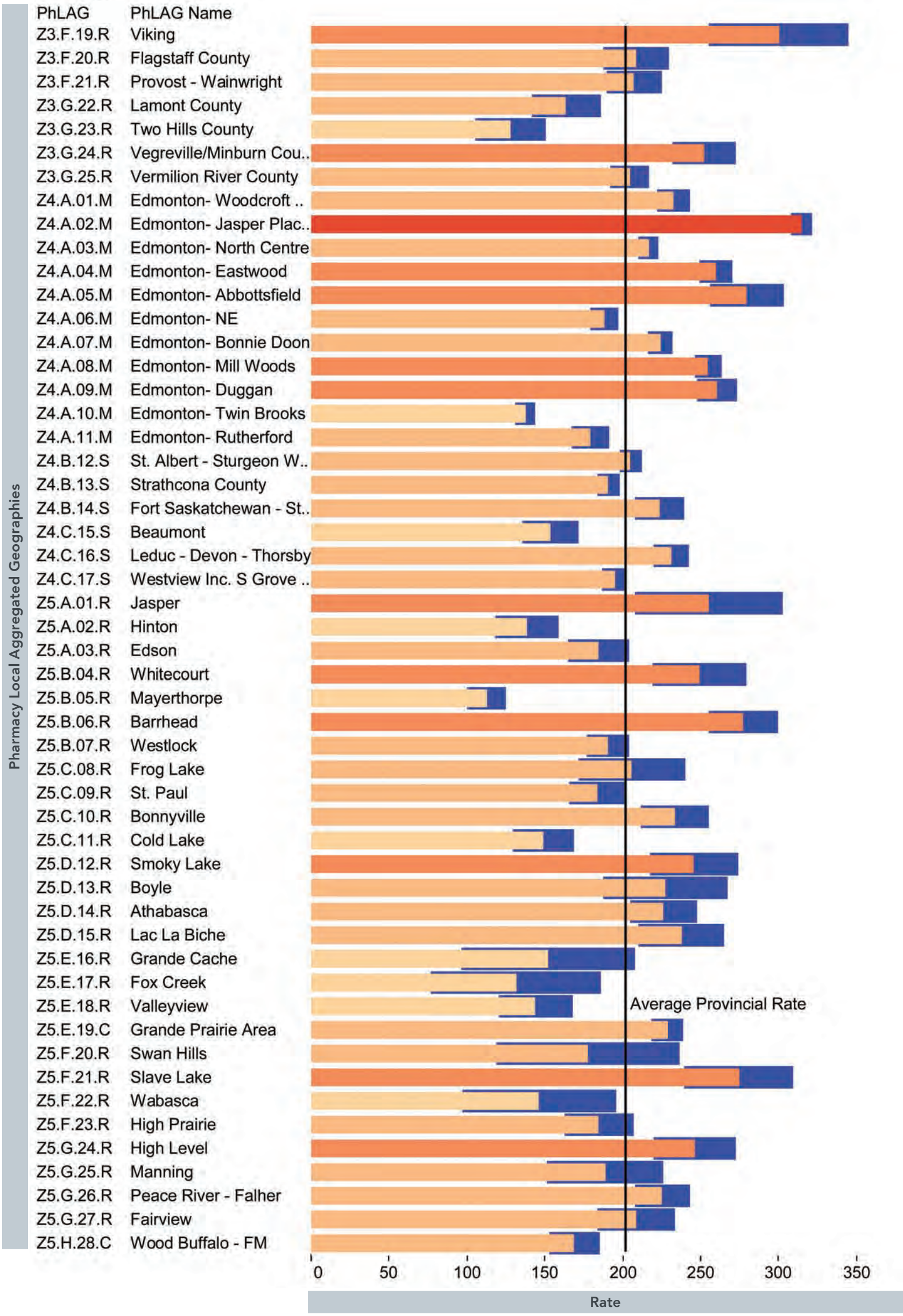


Figure 22. Benzodiazepine Patients 65 Years and Over per 1,000 Elderly Population, by Pharmacy Local Aggregated Geographies, 2017



Elderly Patients per 1,000 Elderly Population

- Highest (>363)
- High (303 to 363)
- Above Average (243 to 302)
- Average (162 to 242)
- Low (101 to 161)
- Lowest (<101)



Appendix A – Alberta Pharmacy Local Aggregated Geography

Figure 23. Map Showing Provincial Pharmacy Local Aggregated Geography Boundaries.

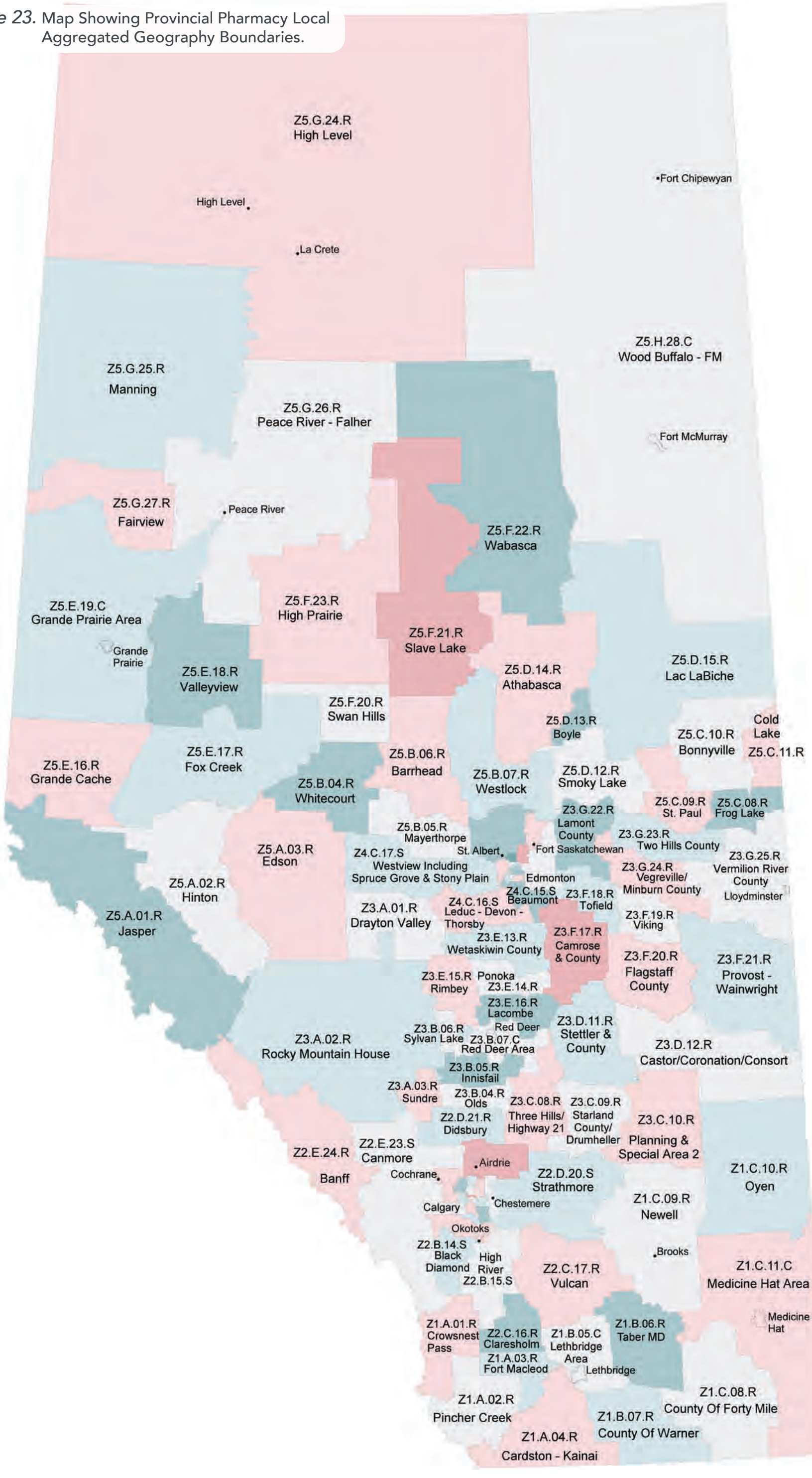
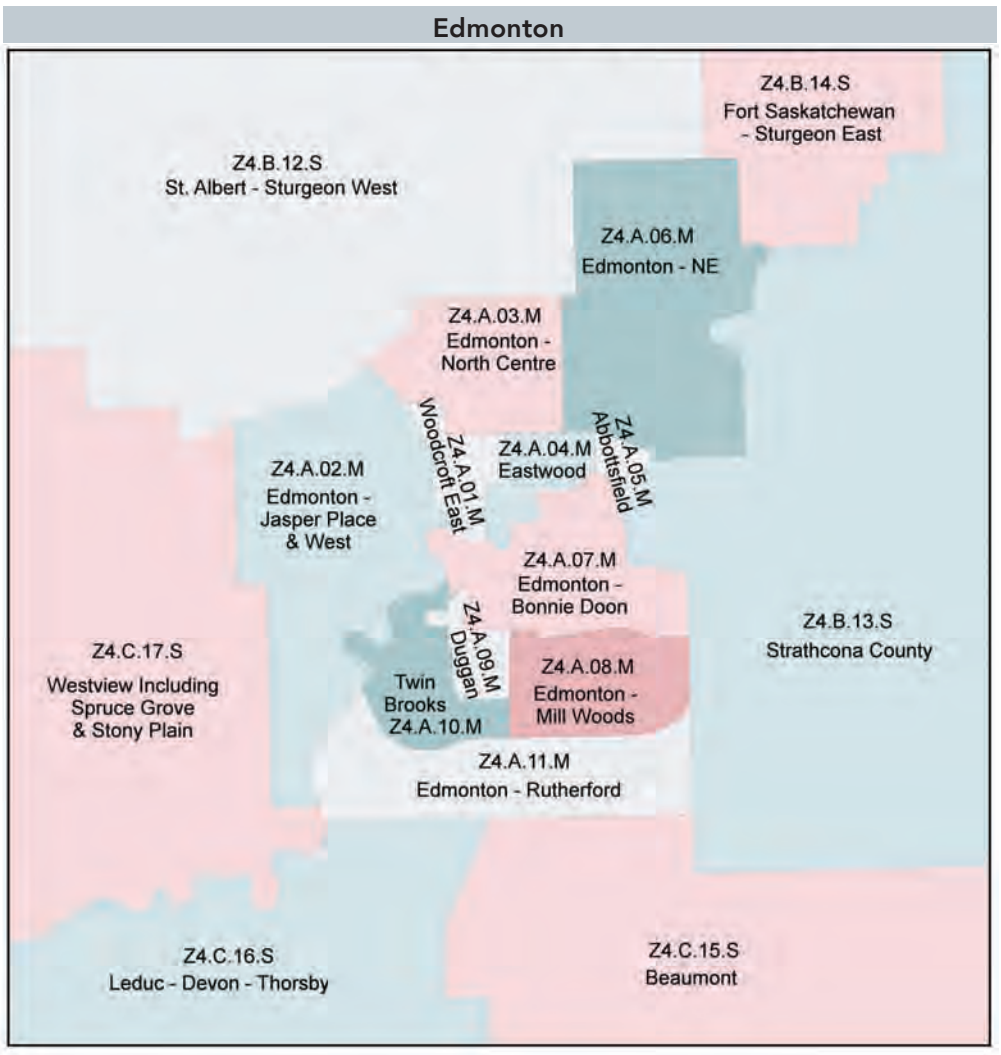
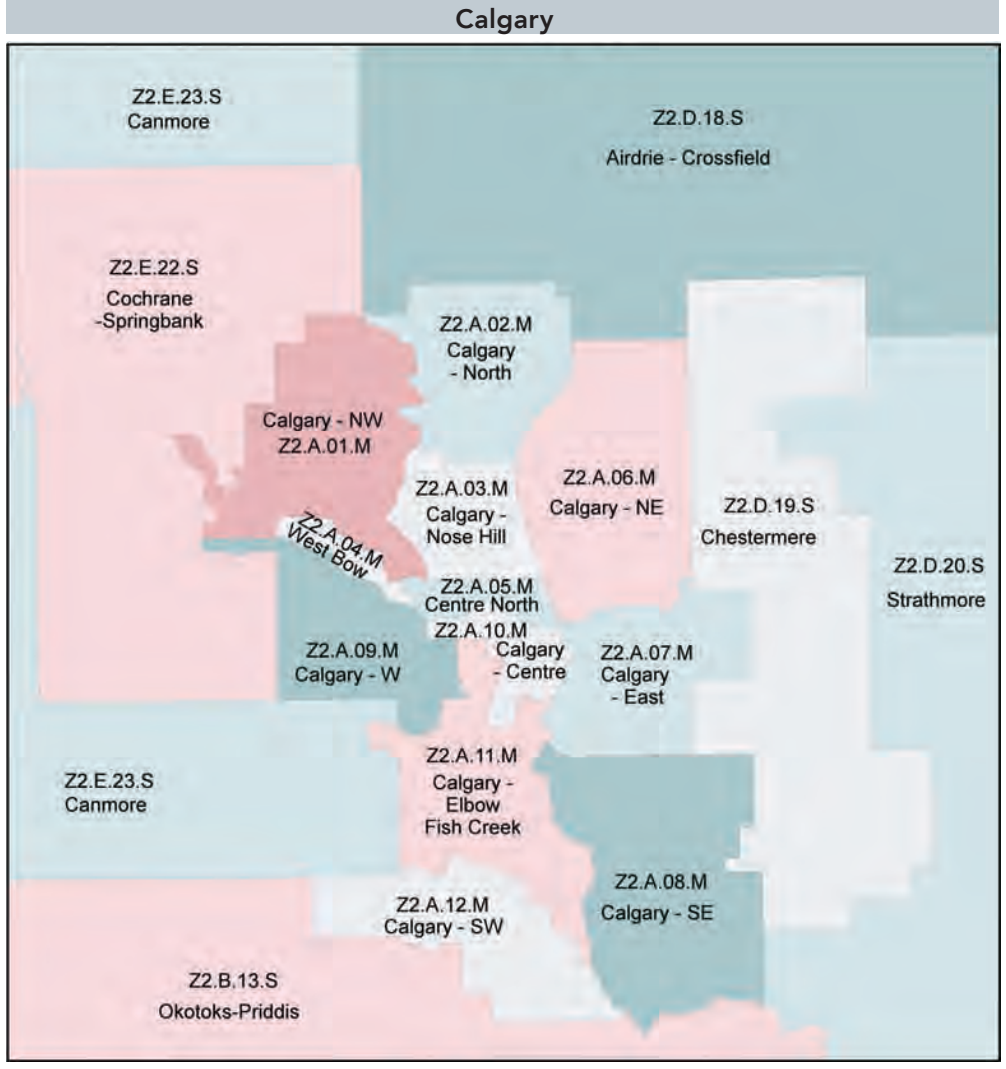
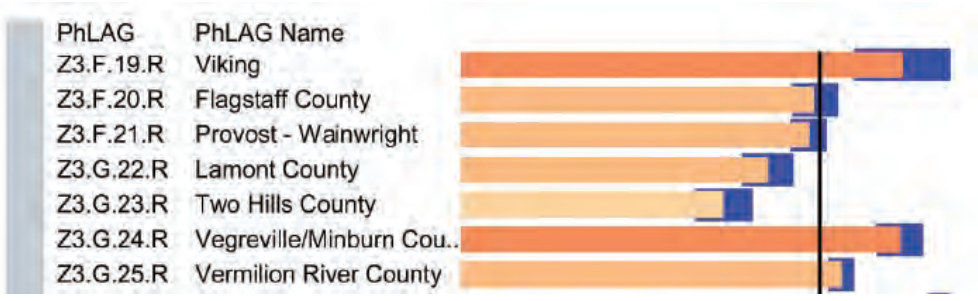


Figure 24. Maps Showing Urban Pharmacy Local Aggregated Geography Boundaries.





Example section of the graph showing individual pharmacy local aggregated geography rates with 95% confidence intervals.



Blue bar represents the 95% confidence limits

Black line represents average provincial rate.

Highest
High
Above Average
Average
Low
Lowest

Colour of bar in graph corresponds to rate ratio category.

Appendix B – Opioid Analytic Class, 2017

Table 20. Opioid Analytic Class Prescriptions, Patients, Prescribers and Pharmacies by Main Ingredient, ATC Code and Route of Administration, 2017

Main Ingredient	ATC Code Description	Route	Prescriptions	Patients	Prescribers	Pharmacies
BUPRENORPHINE	N02AE01-BUPRENORPHINE	TRANSDERMAL	12,007	3,748	1,526	915
BUPRENORPHINE	N07BC51-BUPRENORPHINE, COMBINATIONS	SUBLINGUAL	42,038	4,120	552	773
BUTALBITAL	N02AA79-CODEINE, COMBINATIONS WITH PSYCHOLEPTICS	ORAL	2,155	709	582	461
BUTALBITAL	N02BA71-ACETYLSALICYLIC ACID, COMB WITH PSYCHOLEPTICS	ORAL	326	129	125	119
BUTORPHANOL	N02AF01-BUTORPHANOL	NASAL	385	92	111	103
CODEINE	M03BB53-CHLORZOXAZONE, COMBINATIONS EXCL PSYCHOLEPTICS	ORAL	54	29	27	19
CODEINE	N02AA59-CODEINE, COMBINATIONS	ORAL	6,225	3,283	1,779	760
CODEINE	N02AJ06	ORAL	839,537	337,076	13,248	1,368
CODEINE	N02AJ07	ORAL	5,132	2,822	1,437	594
CODEINE	N02BE51-ACETAMINOPHEN, COMB EXCL PSYCHOLEPTICS	ORAL	7,564	3,532	1,814	734
CODEINE	R05DA04-CODEINE	INTRAMUSCULAR	26	5	4	4
CODEINE	R05DA04-CODEINE	ORAL	72,091	32,787	5,585	1,309
CODEINE	R05DA04-CODEINE	UNKNOWN	116	91	16	22
CODEINE	R05DA20-COMBINATIONS	ORAL	115,770	93,411	3,302	1,293
CODEINE	R05FA02-OPIUM DERIVATIVES AND EXPECTORANTS	ORAL	44,090	37,367	4,303	1,210
FENTANYL	N01AH01-FENTANYL	INTRAMUSCULAR	1,699	988	259	125
FENTANYL	N02AB03-FENTANYL	BUCCAL	50	12	17	16
FENTANYL	N02AB03-FENTANYL	TRANSDERMAL	17,851	3,546	1,974	932
FENTANYL	N02AB03-FENTANYL	UNKNOWN	31	12	7	2
HYDROCODONE	R05DA03-HYDROCODONE	ORAL	101	71	61	66
HYDROCODONE	R05DA20-COMBINATIONS	ORAL	622	444	279	274
HYDROMORPHONE	N02AA03-HYDROMORPHONE	INTRAMUSCULAR	4,252	2,116	693	208
HYDROMORPHONE	N02AA03-HYDROMORPHONE	ORAL	117,377	29,914	5,466	1,298
HYDROMORPHONE	N02AA03-HYDROMORPHONE	RECTAL	17	3	3	3
HYDROMORPHONE	N02AA03-HYDROMORPHONE	UNKNOWN	7	7	6	5
KETAMINE	N01AX03-KETAMINE	INTRAMUSCULAR	32	10	13	8
KETAMINE	N01AX03-KETAMINE	UNKNOWN	2	2	2	2
MEPERIDINE	N02AB02-PETHIDINE	INTRAMUSCULAR	536	120	101	98
MEPERIDINE	N02AB02-PETHIDINE	ORAL	1,814	582	447	418
METHADONE	N07BC02-METHADONE	ORAL	59,769	5,534	550	851
METHADONE	N07BC02-METHADONE	UNKNOWN	188	112	75	35
MORPHINE	N02AA01-MORPHINE	INTRAMUSCULAR	2,487	1,281	597	238
MORPHINE	N02AA01-MORPHINE	INTRAVENOUS	17	9	10	4
MORPHINE	N02AA01-MORPHINE	ORAL	57,749	14,223	4,170	1,228
MORPHINE	N02AA01-MORPHINE	PARENTERAL	134	93	56	6
MORPHINE	N02AA01-MORPHINE	RECTAL	109	25	31	25
MORPHINE	N02AA01-MORPHINE	UNKNOWN	76	46	35	19
NORMETHADONE	R05DA20-COMBINATIONS	ORAL	23	21	16	18
OPIUM	N02AA02-OPIUM	RECTAL	291	193	182	152
OXYCODONE	N02AA05-OXYCODONE	ORAL	120,248	21,799	4,501	1,294
OXYCODONE	N02AA05-OXYCODONE	RECTAL	85	8	11	9
OXYCODONE	N02AA05-OXYCODONE	UNKNOWN	14	2	4	2
OXYCODONE	N02AA55-OXYCODONE, COMBINATIONS	ORAL	1,791	555	374	389
OXYCODONE	N02AJ17	ORAL	149,708	46,796	5,304	1,335
OXYCODONE	N02AJ18	ORAL	104	36	42	39
PENTAZOCINE	N02AD01-PENTAZOCINE	ORAL	224	51	58	59
REMIFENTANIL	N01AH06-REMIFENTANIL	INTRAVENOUS	2	2	1	1
SUFENTANIL	N01AH03-SUFENTANIL	INTRAVENOUS	3	2	2	2
TAPENTADOL	N02AX06-TAPENTADOL	ORAL	3,619	880	517	485

Appendix C – Benzodiazepine Analytic Class, 2017

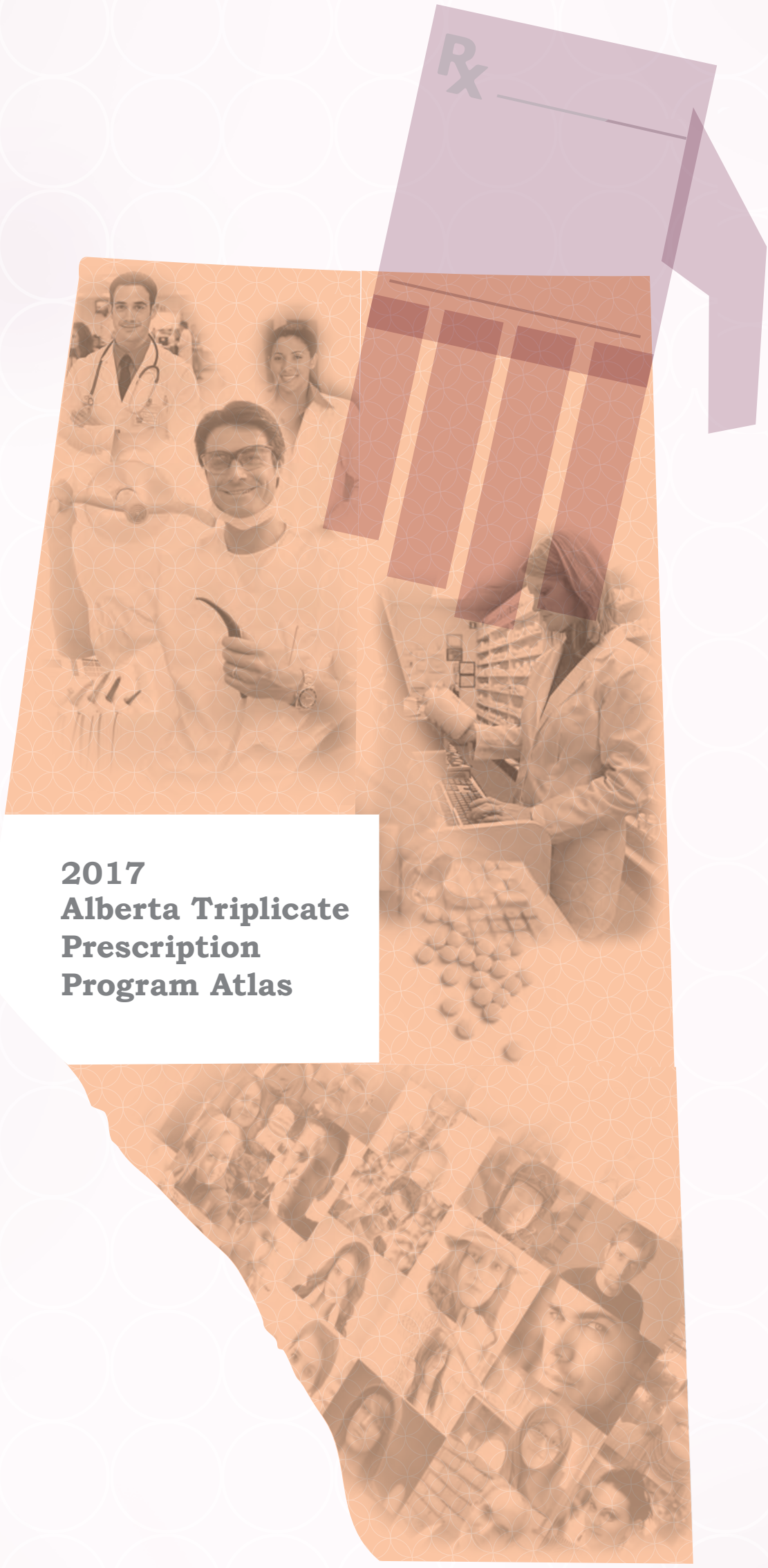
Table 21. Benzodiazepine Analytical Class Prescriptions, Patients, Prescribers and Pharmacies by Main Ingredient, ATC code and Route of Administration, 2017

Main Ingredient	ATC Code Description Route	Route	Prescriptions	Patients	Prescribers	Pharmacies
ALPRAZOLAM	N05BA12-ALPRAZOLAM	ORAL	26,627	9,069	3,239	1,228
BROMAZEPAM	N05BA08-BROMAZEPAM	ORAL	16,471	3,237	1,529	918
CHLORDIAZEPOXIDE	N05BA02-CHLORDIAZEPOXIDE	ORAL	2,626	1,295	824	639
CHLORDIAZEPOXIDE	N05BA02-CHLORDIAZEPOXIDE	UNKNOWN	1	1	1	1
CLOBAZAM	N05BA09-CLOBAZAM	ORAL	9,731	3,276	2,089	995
CLOBAZAM	N05BA09-CLOBAZAM	UNKNOWN	280	113	100	78
CLONAZEPAM	N03AE01-CLONAZEPAM	ORAL	168,061	49,892	6,140	1,343
CLONAZEPAM	N03AE01-CLONAZEPAM	UNKNOWN	135	57	59	40
CLORAZEPATE DIPOTASSIUM	N05BA05-CLORAZEPATE POTASSIUM	ORAL	258	89	106	94
DIAZEPAM	N05BA01-DIAZEPAM	INTRAMUSCULAR	36	16	13	14
DIAZEPAM	N05BA01-DIAZEPAM	ORAL	40,344	13,874	4,045	1,266
DIAZEPAM	N05BA01-DIAZEPAM	RECTAL	126	95	69	84
DIAZEPAM	N05BA01-DIAZEPAM	UNKNOWN	28	16	16	13
FLURAZEPAM	N05CD01-FLURAZEPAM	ORAL	1,022	388	338	320
LORAZEPAM	N05BA06-LORAZEPAM	INTRAMUSCULAR	132	113	94	37
LORAZEPAM	N05BA06-LORAZEPAM	ORAL	107,784	48,513	6,217	1,335
LORAZEPAM	N05BA06-LORAZEPAM	SUBLINGUAL	198,283	104,671	7,616	1,359
LORAZEPAM	N05BA06-LORAZEPAM	UNKNOWN	55	22	22	16
MIDAZOLAM	N05CD08-MIDAZOLAM	INTRAMUSCULAR	1,881	1,457	335	182
MIDAZOLAM	N05CD08-MIDAZOLAM	UNKNOWN	73	53	16	15
NITRAZEPAM	N05CD02-NITRAZEPAM	ORAL	14,697	2,945	1,247	831
NITRAZEPAM	N05CD02-NITRAZEPAM	UNKNOWN	29	13	12	14
OXAZEPAM	N05BA04-OXAZEPAM	ORAL	5,419	1,908	1,340	796
TEMAZEPAM	N05CD07-TEMAZEPAM	ORAL	68,171	19,463	3,888	1,277
TEMAZEPAM	N05CD07-TEMAZEPAM	UNKNOWN	21	13	13	13
TRIAZOLAM	N05CD05-TRIAZOLAM	ORAL	4,973	3,122	680	804
ZALEPLON	N05CF03-ZALEPLON	ORAL	1	1	1	1
ZOLPIDEM	N05CF02-ZOLPIDEM	SUBLINGUAL	41,870	17,387	3,904	1,231
ZOPICLONE	N05CF01-ZOPICLONE	ORAL	486,550	179,516	11,195	1,367
ZOPICLONE	N05CF01-ZOPICLONE	UNKNOWN	24	10	13	7

List of Tables and Figures

Tables

Figures



2017 Alberta Triplicate Prescription Program Atlas