
A Snapshot of Benzodiazepine and Related Drug Utilization in Alberta

Quarter 1, 2013



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

- To improve patient care by providing timely and relevant information on targeted drugs to prescribers, pharmacists and consumers.
- To reduce the misuse and abuse (non-medical use) of targeted medications.
- To monitor the prescribing and dispensing practices of physicians and pharmacists for the targeted medications.
- To provide timely, accurate information and feedback to prescribers and pharmacists regarding prescribing and dispensing practices and patterns for the targeted drugs.
- To identify potential areas of drug misuse or abuse and work with TPP partners to address issues.

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Suggested Citation:

Oreopoulos A, Eurich D, Ellehoj E, Samanani S. *A Snapshot of Benzodiazepine and Related Drug Utilization in Alberta, Quarter 1 2013*. Edmonton: OKAKI Health Intelligence Inc. 2013

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Introduction

In 2012, Alberta's Triplicate Prescription Program (TPP) migrated from triplicate prescriptions to the Pharmaceutical Information Network (PIN) as the primary source of data for monitoring opioid medication use in Alberta. This transition to an electronic data source creates an opportunity to include in the TPP, other classes of medications at high risk for misuse. Benzodiazepines and related medications are the first such class expected to be added in 2014.

Objective

The objective of this report is to provide a descriptive analysis of benzodiazepine and related medication utilization in Alberta from the first quarter (Q1) of 2013 (January to March, inclusive). The analysis is intended to assist with planning for the inclusion of benzodiazepines and related medications as part of the TPP.

Methods

- PIN data for Q1, 2013 was used for this report. The data excludes all reversals (dispenses captured in PIN that are later reversed) and includes all prescriber types.
- Medication categories were selected for analysis using the World Health Organization's Anatomical Therapeutic Classification (ATC) system for drugs. Medications include:
 - Anxiolytics that are benzodiazepine derivatives (ATC N05BA)
 - Hypnotics and sedatives that are benzodiazepine derivatives (ATC N05CD)
 - Antiepileptics that are benzodiazepine derivatives (ATC N03AE)
 - Hypnotics and sedatives that are benzodiazepine related drugs (ATC N05CF)
- Population drug utilization is measured using counts (patients, prescriptions, prescribers and pharmacies) and prescriptions per 1000 population.
- This report also uses the Defined Daily Dose (DDD), a standard measure of drug consumption defined by the World Health Organization:
 - DDD is the assumed average maintenance dose per day for a drug used for its main indication in adults.¹
 - The DDD for each patient is calculated as:
$$\frac{\text{quantity dispensed} \times \text{dose of drug}}{\text{DDD conversion factor}}$$
 - DDD is most commonly used for standard comparison of drug consumption in populations.

• DDD per thousand inhabitants per day provides a rough estimate of the population consumption of a particular drug or group of drugs², calculated as:

$$\frac{\text{Sum of patient DDDs}/90 \text{ days}}{1000 \text{ population}}$$

- PIN provides dispense and not prescription records. The number of prescriptions is determined by the number of unique pharmacy license and prescription number combinations in the dispense records. If the pharmacy prescription number is blank, the PIN prescription number is used instead.
- Measures are mapped using local geography, which is the smallest unit of geography available for health data analysis in Alberta. Local geographies have a minimum population of 5000.
- Population rates are calculated using the 2012 population from Alberta Health.
- Two maps are shown for various measures. The first map shows all local geography boundaries for the entire province. The second map highlights urban areas in more detail.
- Geography is based on pharmacy location as a surrogate of patient location. Names of local geographies can be found in Appendix B.
- Patient age is calculated at Jan 1, 2013.

Benzodiazepine Utilization for All Ages

This section analyzes data from the Q1 2013 PIN data extract provided by Alberta Health for the following ATC medication categories:

- Anxiolytics that are benzodiazepine derivatives (ATC N05BA)
- Hypnotics and sedatives that are benzodiazepine derivatives (ATC N05CD)
- Antiepileptics that are benzodiazepine derivatives (ATC N03AE)

A list of five digit ATC codes, drugs and ingredients found in the Q1 2013 extract are shown in Appendix A.

Patients

There were 97,527 patients with unique Personal Health Numbers (PHN) who received at least one benzodiazepine medication.

- 62,973 females (65%)
- 34,554 males (35%)

The distribution of patient age is shown in Figure 1 and Table 1.

Prescriptions

Between January 1, 2013 and March 31, 2013, there were 155,423 unique benzodiazepine prescriptions. The breakdown of prescriptions by ATC category is presented in Figure 2.

Figure 1: Age Distribution of Patients Receiving Benzodiazepines, Q1 2013

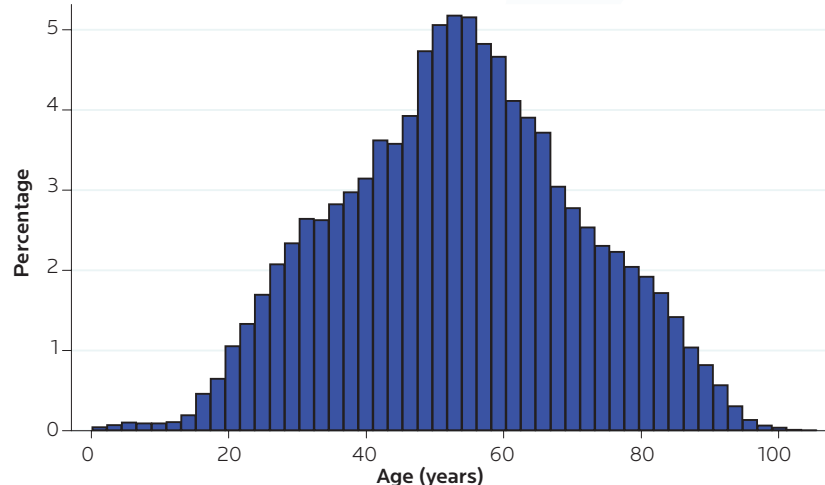
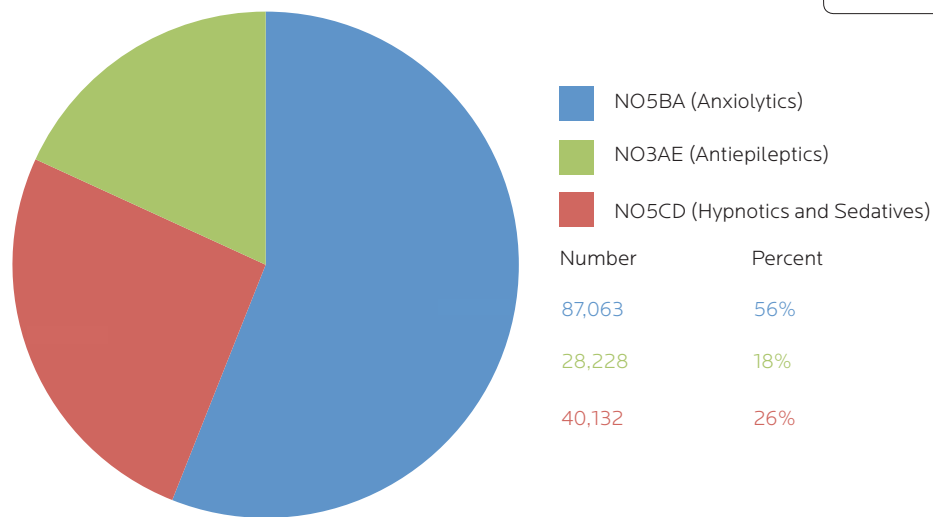


Table 1: Ranked Age Group of Patients Receiving Benzodiazepines, Q1 2013

Age Category	NumberPatients	Percent
51-60	22,301	22.9%
41-50	18,673	19.1%
61-70	15,829	16.2%
31-40	12,925	13.3%
71-80	10,134	10.4%
21-30	8,504	8.7%
81-90	5,787	5.9%
11--20	2,036	2.1%
91-100	926	0.9%
0-10	394	0.4%
101-110	18	0.0%

Figure 2: Benzodiazepine Prescriptions by ATC Category, Q1 2013



The number of benzodiazepine prescriptions is presented by ingredient in Table 2 and the top 30 dispensed benzodiazepine drugs are presented by brand name in Table 3.

Table 2: Benzodiazepines Prescribed by Ingredient, Q1 2013

Ingredient	Prescriptions	Percent
LORAZEPAM	60564	39.0%
CLONAZEPAM	40132	25.8%
TEMAZEPAM	22371	14.4%
DIAZEPAM	9903	6.4%
ALPRAZOLAM	6002	3.9%
BROMAZEPAM	4641	3.0%
NITRAZEPAM	3682	2.4%
CLOBAZAM	2909	1.9%
OXAZEPAM	2225	1.4%
TRIAZOLAM	1547	1.0%
CHLORDIAZEPOXIDE HYDROCHLORIDE	724	0.5%
FLURAZEPAM HYDROCHLORIDE	407	0.3%
MIDAZOLAM	221	0.1%
CLORAZEPATE DIPOTASSIUM	95	0.1%

Table 3: Top 30 Benzodiazepines Prescribed by Brand, Q1 2013

Drug Name	Prescriptions	Percent
ATIVAN 1 MG TABLET SL	20968	13.4%
PMS-CLONAZEPAM R 0.5 MG TAB	16681	10.7%
ATIVAN 0.5 MG TABLET SL	13787	8.8%
APO-LORAZEPAM 1 MG TABLET	10663	6.8%
APO-TEMAZEPAM 30 MG CAP	10474	6.7%
PMS-CLONAZEPAM 1 MG TABLET	6306	4.0%
APO-DIAZEPAM 10 MG TABLET	4601	2.9%
APO-DIAZEPAM 5 MG TABLET	4268	2.7%
APO-TEMAZEPAM 15 MG CAP	4265	2.7%
APO-LORAZEPAM 0.5 MG TABLET	3967	2.5%
CO TEMAZEPAM 30 MG CAPSULE	3743	2.4%
PMS-CLONAZEPAM 2 MG TABLET	3481	2.2%
PMS-CLONAZEPAM 0.25 MG TAB	3465	2.2%
MYLAN-CLONAZEPAM 0.5 MG TABLET	3000	1.9%
PMS-CLONAZEPAM 0.5 MG TABLET	2995	1.9%
APO-LORAZEPAM 2 MG TABLET	2537	1.6%
APO-ALPRAZ 0.5 MG TABLET	2257	1.4%
CO TEMAZEPAM 15 MG CAPSULE	2173	1.4%
ATIVAN 2 MG TABLET SL	2139	1.4%
APO-BROMAZEPAM 6 MG TABLET	1937	1.2%
NOVO-LORAZEM 1 MG TABLET	1737	1.1%
ATIVAN 1 MG TABLET	1694	1.1%
APO-CLOBAZAM 10 MG TABLET	1582	1.0%
TRIAZOLAM 0.25 MG TABLET	1428	0.9%
APO-BROMAZEPAM 3 MG TABLET	1360	0.9%
NOVO-TEMAZEPAM 30 MG CAPSULE	1265	0.8%
APO-CLONAZEPAM 0.5 MG TABLET	1187	0.8%
MYLAN-ALPRAZOLAM 0.5 MG TABLET	1097	0.7%
SANDOZ NITRAZEPAM 10 MG TAB	1015	0.6%
APO-OXAZEPAM 30 MG TABLET	1011	0.6%

Prescribers

Dispense records can be submitted with a named prescriber (first name and last name) or they can be missing the name. Both named and unnamed prescribers have a prescriber type, or this may also be missing. Table 4 shows prescriptions by named and unnamed prescriber and prescriber types. The count of named prescribers is based on the unique combination of first name, last name and prescriber type.

For the unnamed prescribers, there is no way to determine the number of unique prescribers for each type.

79.4% of benzodiazepine prescriptions were submitted by known MDs in Q1 2013. As of May 2013, only dentists, nurse practitioners and MDs are authorized to prescribe benzodiazepines. Prescriptions with any other prescriber type are due to either data entry or pharmacist error.

Pharmacies

There were 997 pharmacies providing benzodiazepine dispenses in Q1 2013, based on unique pharmacy license number. The top 30 prescription counts by pharmacy city are presented in Figure 3.

Multiple Benzodiazepine Use

Table 5 shows the number of patients by the number of benzodiazepine ingredients dispensed in Q1 2013. It does not necessarily indicate concurrent or overlapping use, which is more difficult to determine from dispense records. Nevertheless, use of multiple benzodiazepines in a short time period may reflect higher risk use and should be closely monitored.

Table 4: Benzodiazepine Prescriptions by Prescriber Type, Q1 2013

Prescriber Type	Prescribers	Prescriptions	Percent of Prescriptions
Named MD	3995	117,885	75.8%
Named Unknown prescriber type	60	629	0.4%
Named Pharmacist	59	68	0.0%
Named Dentist	1	9	0.0%
Named Nurse Practitioner	1	1	0.0%
Unnamed Unknown prescriber type	-	29,677	19.1%
Unnamed MD	-	5,527	3.6%
Unnamed Dentist	-	1,600	1.0%
Unnamed Nurse Practitioner	-	39	0.0%
Unnamed Dental Hygienist	-	2	0.0%
Unnamed Pharmacist	-	1	0.0%

Figure 3: Top 30 Benzodiazepine Prescription Counts by Pharmacy City, Q1 2013

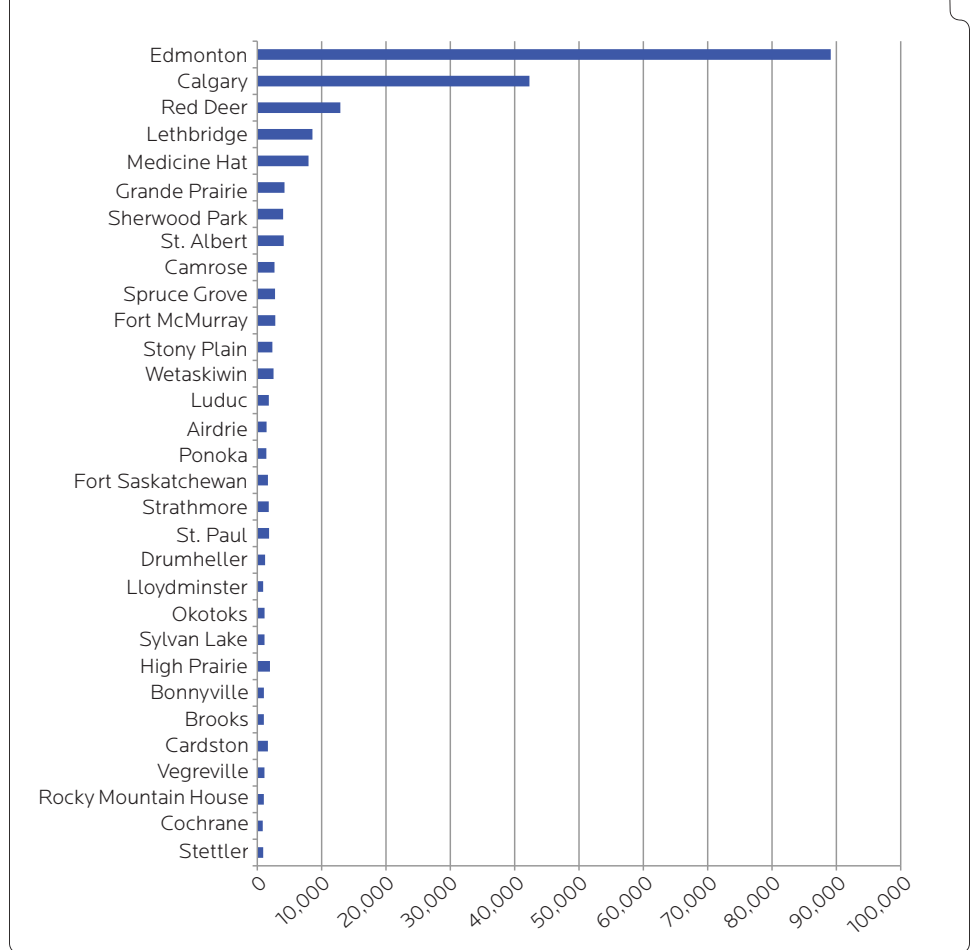


Table 5: Patients Receiving Multiple Benzodiazepine Ingredients, Q1 2013

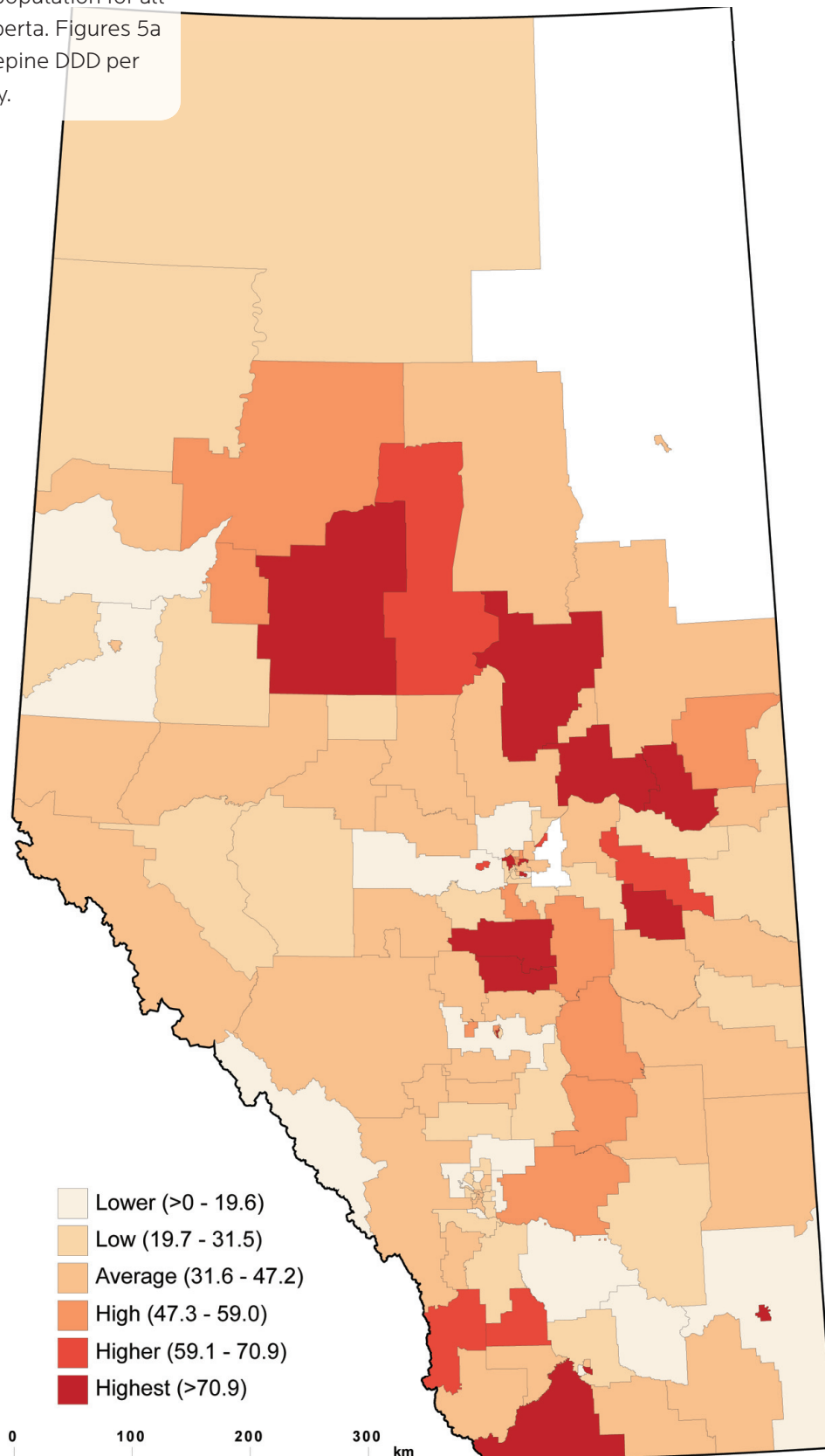
Benzodiazepine Ingredients	Patients	Percent
1	87,431	89.7%
2	9,134	9.4%
3	850	0.9%
4	96	0.1%
5	12	0.0%
6	4	0.0%

Population Utilization Measures

Figures 4a and 4b map benzodiazepine prescriptions per 1000 population for all local geographies in Alberta. Figures 5a and 5b map benzodiazepine DDD per 1000 inhabitants per day.

Figure 4a:

Benzodiazepine Prescriptions per 1000 Population by Local Geography, Q1 2013



tion for All Ages

Figure 4b:
Benzodiazepine Prescriptions per 1000 Population by Urban Local Geography, Q1 2013

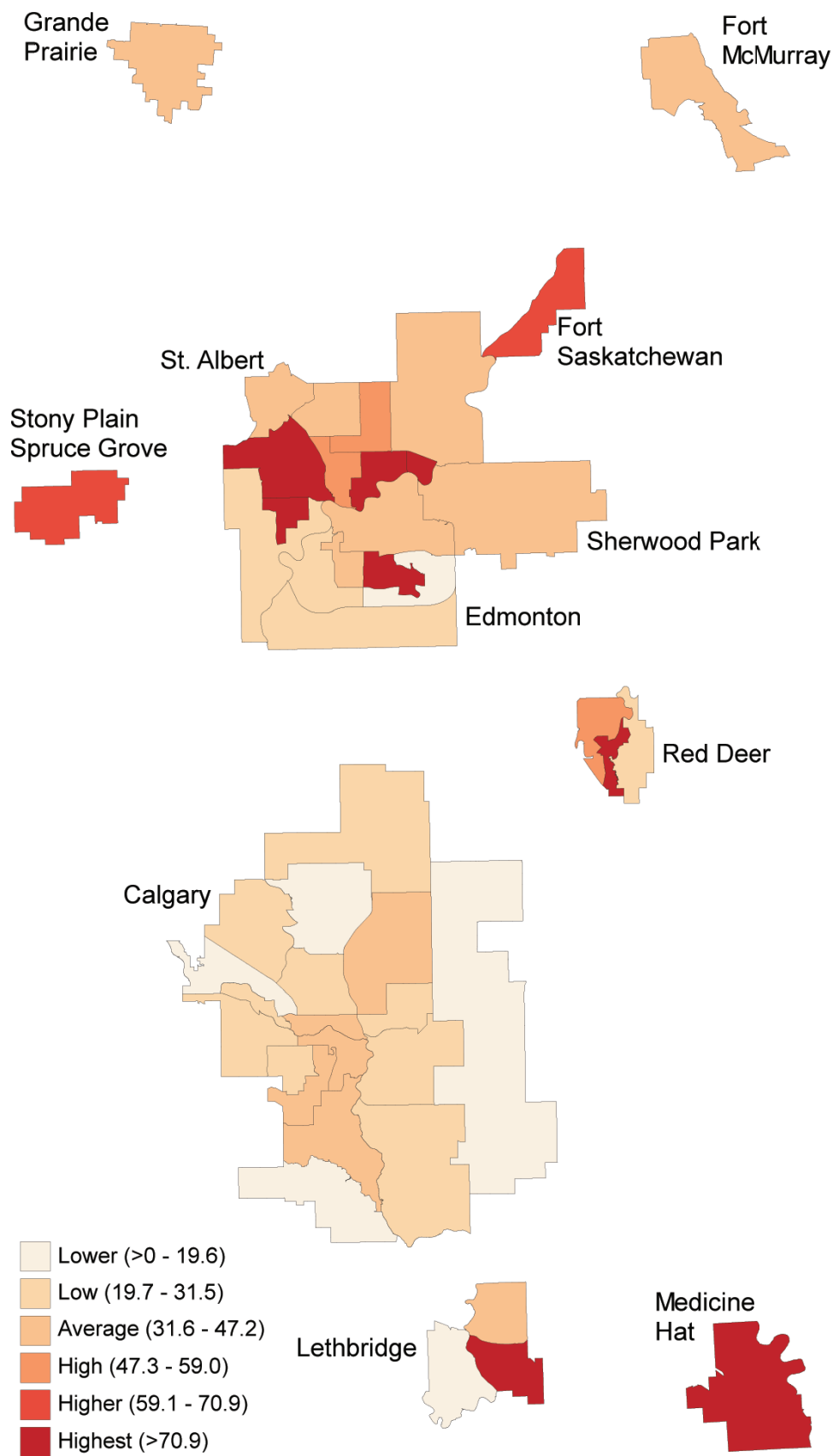
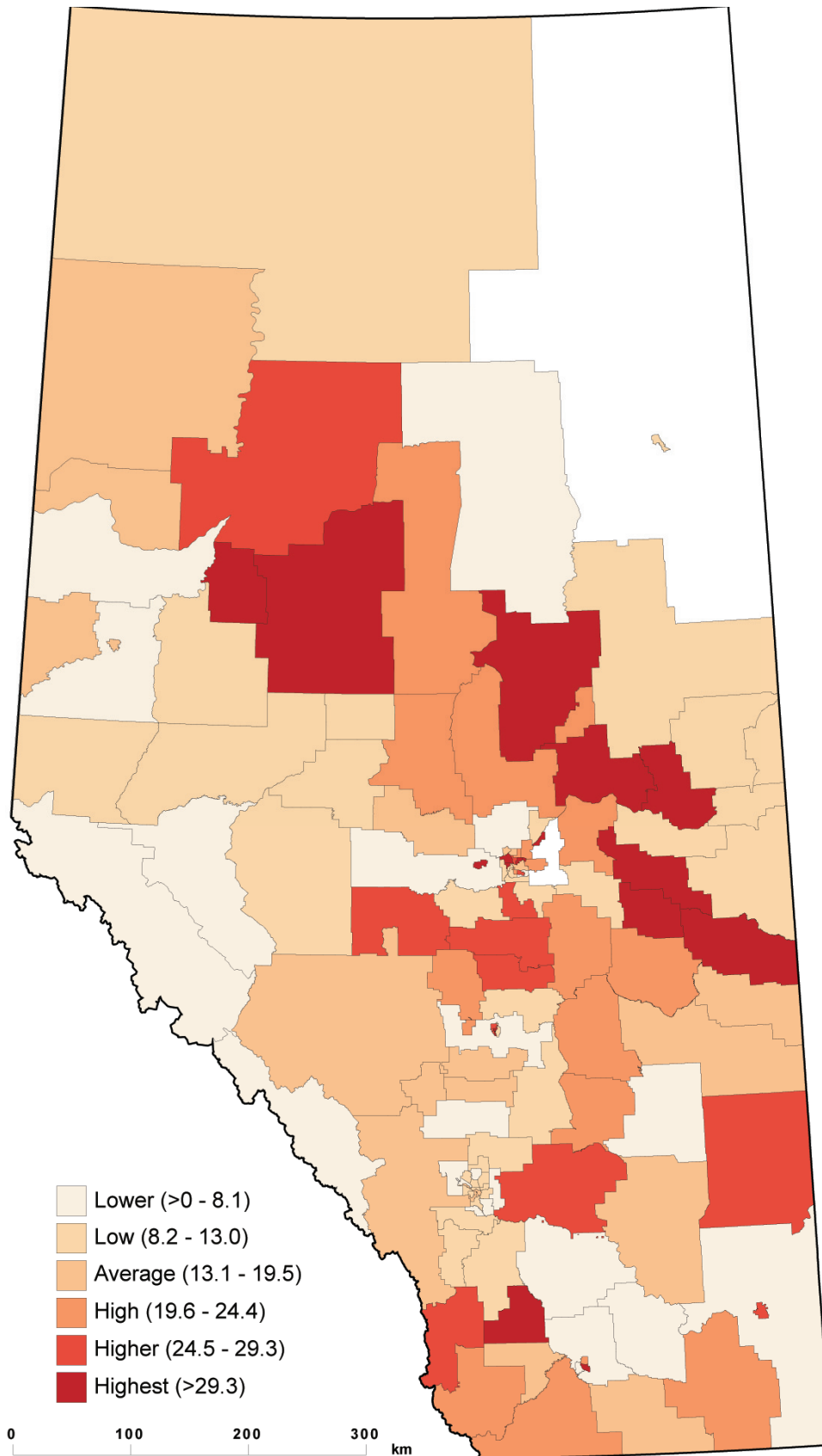
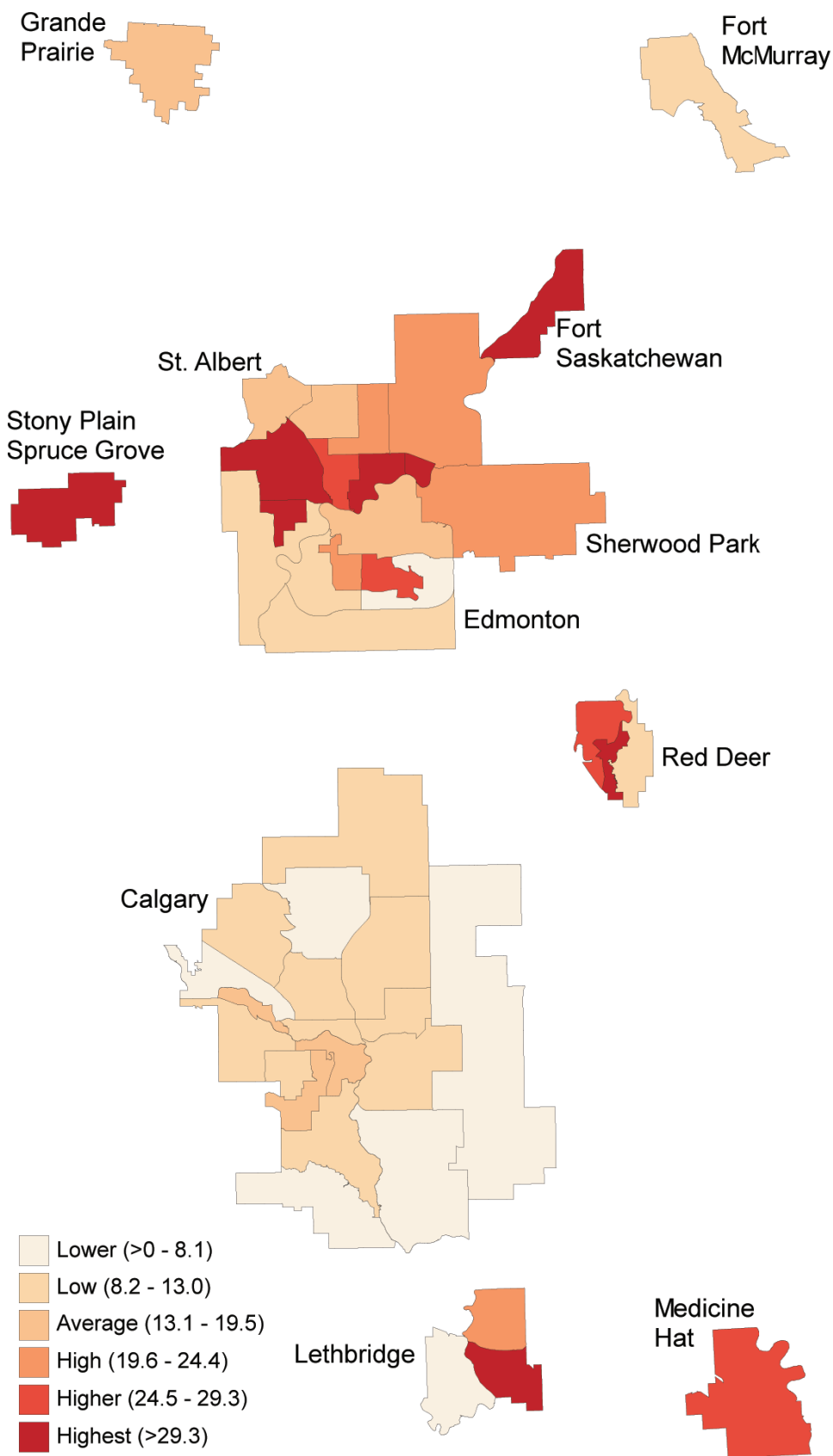


Figure 5a:
Benzodiazepine DDD per 1000 Inhabitants per Day by Local Geography, Q1 2013



tion for All Ages

Figure 5b:
Benzodiazepine DDD per 1000 Inhabitants per Day by Urban Local Geography, Q1 2013



Benzodiazepine Utilization in the Elderly

Benzodiazepines may be prescribed to the elderly (65 and older) for a variety of conditions, including anxiety or insomnia. However, the adverse effects of benzodiazepine use in the elderly are well known and include increased risk of falls/fractures and cognitive impairments. As in younger ages, prolonged use of benzodiazepines also leads to dependence.

Patients

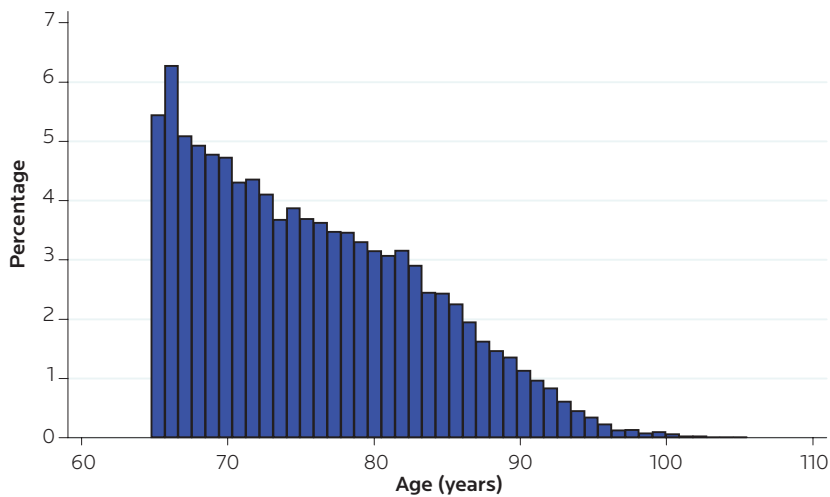
There were 25,772 elderly patients with unique PHN who received at least one benzodiazepine medication in Q1 2013.

The sex distribution was:

- 17,374 females (67.4%)
- 8,398 males (32.6%)

The patient age distribution of elderly benzodiazepine recipients is presented in Figure 6.

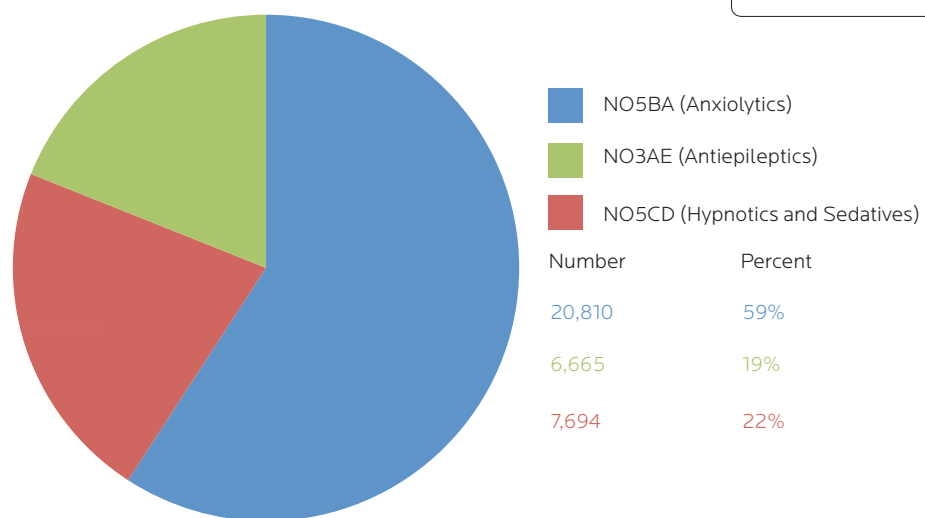
Figure 6: Age Distribution of Elderly (65+) Patients Receiving Benzodiazepines, Q1 2013



Prescriptions

Between January 1, 2013 and March 31, 2013, there were 35,169 benzodiazepine prescriptions to elderly patients. Figure 7 shows prescriptions by ATC category.

Figure 7: Benzodiazepine Prescriptions in the Elderly by ATC Category, Q1 2013



The number of benzodiazepine prescriptions is presented by ingredient in Table 6 and the top 30 dispensed benzodiazepine drugs are presented by brand in Table 7.

Table 6: Benzodiazepines Prescribed to the Elderly by Ingredient, Q1 2013

Ingredient	Prescriptions	Percent
LORAZEPAM	15135	43.0%
CLONAZEPAM	7694	21.9%
TEMAZEPAM	5387	15.3%
ALPRAZOLAM	1669	4.7%
DIAZEPAM	1543	4.4%
OXAZEPAM	1056	3.0%
BROMAZEPAM	896	2.5%
NITRAZEPAM	606	1.7%
TRIAZOLAM	395	1.1%
CLOBAZAM	305	0.9%
FLURAZEPAM HYDROCHLORIDE	164	0.5%
CHLORDIAZEPOXIDE HYDROCHLORIDE	160	0.5%
MIDAZOLAM	113	0.3%
CLORAZEPATE DIPOTASSIUM	46	0.1%

Table 7: Top 30 Benzodiazepines Prescribed to the Elderly by Brand, Q1 2013

Drug Name	Prescriptions	Percent
ATIVAN 1 MG TABLET SL	3827	10.8%
ATIVAN 0.5 MG TABLET SL	3621	10.2%
APO-LORAZEPAM 1 MG TABLET	3373	9.5%
PMS-CLONAZEPAM R 0.5 MG TAB	3318	9.4%
APO-TEMAZEPAM 30 MG CAP	1998	5.6%
APO-LORAZEPAM 0.5 MG TABLET	1486	4.2%
APO-TEMAZEPAM 15 MG CAP	1326	3.7%
PMS-CLONAZEPAM 0.25 MG TAB	1111	3.1%
CO TEMAZEPAM 30 MG CAPSULE	955	2.7%
APO-DIAZEPAM 5 MG TABLET	918	2.6%
PMS-CLONAZEPAM 1 MG TABLET	763	2.2%
CO TEMAZEPAM 15 MG CAPSULE	742	2.1%
MYLAN-CLONAZEPAM 0.5 MG TABLET	714	2.0%
ATIVAN 1 MG TABLET	611	1.7%
PMS-CLONAZEPAM 0.5 MG TABLET	565	1.6%
NOVO-LORAZEM 1 MG TABLET	540	1.5%
APO-LORAZEPAM 2 MG TABLET	537	1.5%
APO-OXAZEPAM 15 MG TABLET	525	1.5%
APO-ALPRAZ 0.5 MG TABLET	524	1.5%
APO-DIAZEPAM 10 MG TABLET	417	1.2%
APO-OXAZEPAM 30 MG TABLET	399	1.1%
PMS-CLONAZEPAM 2 MG TABLET	393	1.1%
TRIAZOLAM 0.25 MG TABLET	366	1.0%
APO-BROMAZEPAM 3 MG TABLET	353	1.0%
APO-ALPRAZ 0.25 MG TABLET	311	0.9%
APO-CLONAZEPAM 0.5 MG TABLET	286	0.8%
MYLAN-ALPRAZOLAM 0.5 MG TABLET	274	0.8%
PMS-LORAZEPAM 1 MG TABLET	267	0.8%
ATIVAN 2 MG TABLET SL	262	0.7%
NOVO-TEMAZEPAM 30 MG CAPSULE	232	0.7%

Prescribers

Overall, 82% of benzodiazepines were prescribed to elderly patients by known MDs in Q1 2013. Table 8 shows prescriptions by prescriber type.

Pharmacies

There were 978 pharmacies that dispensed benzodiazepines to the elderly in Q1 2013, based on unique pharmacy license number. The top 30 prescription counts by pharmacy city are shown in Figure 8:

Multiple Benzodiazepine Use

Use of multiple benzodiazepines in a short time period may reflect higher risk use and should be closely monitored. Table 9 shows the breakdown of elderly patients by the number of benzodiazepine ingredients dispensed in Q1 2013. Multiple ingredients do not necessarily indicate concurrent or overlapping use, which is more difficult to determine from dispense records.

Table 8: Benzodiazepine Prescriptions to the Elderly by Prescriber Type, Q1 2013

Prescriber Type	Prescribers	Prescriptions	Percent of Prescriptions
Named MD	2807	27,969	79.5%
Named Unknown prescriber type	22	166	0.5%
Named Pharmacist	11	11	0.0%
Named Dentist	1	3	0.0%
Unnamed Unknown Prescriber Type	-	6,056	17.2%
Unnamed MD	-	864	2.5%
Unnamed Dentist	-	88	0.3%
Unnamed Nurse Practitioner	-	11	0.0%
Unnamed Pharmacist	-	1	0.0%

Figure 8: Top 30 Elderly Benzodiazepine Prescription Counts by Pharmacy City, Q1 2013

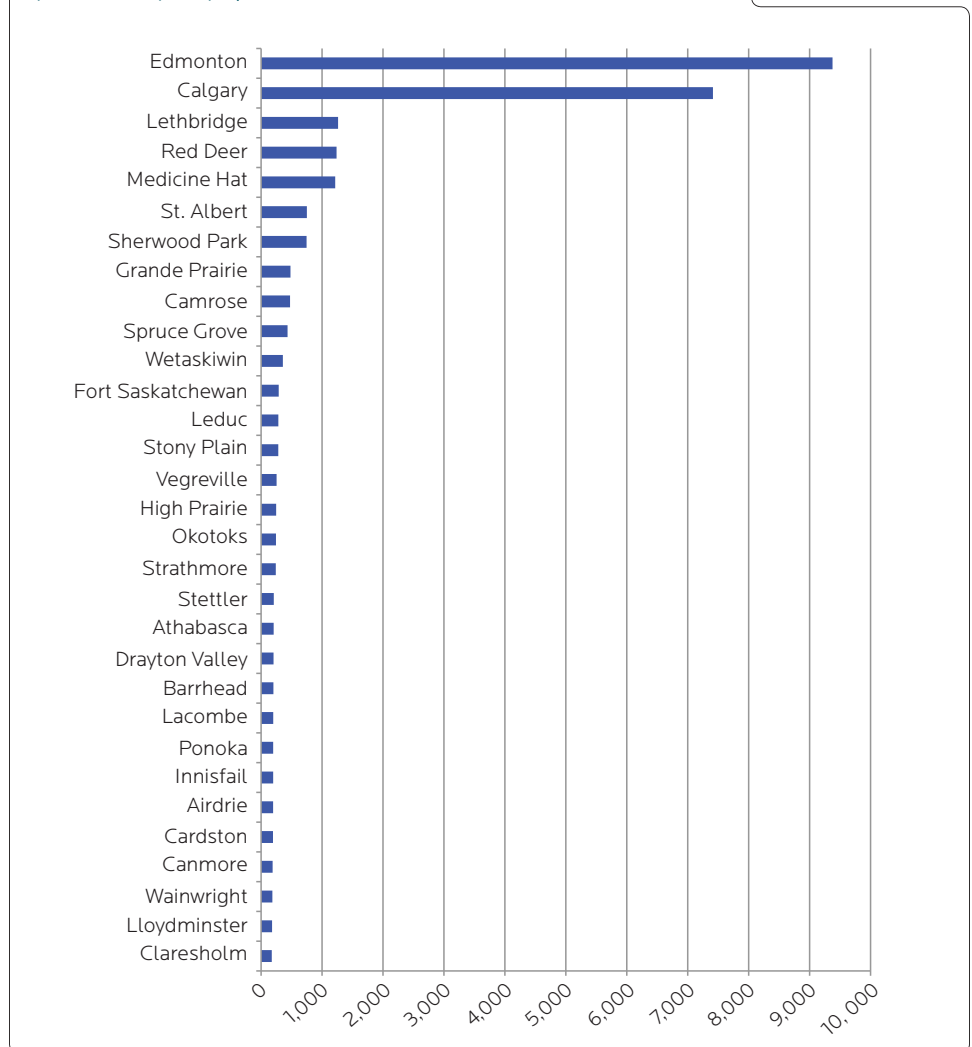


Table 9: Elderly Patients Receiving Multiple Benzodiazepine Ingredients, Q1 2013

Benzodiazepine Ingredients	Patients	Percent
1	25,772	93.4%
2	1,736	6.3%
3	77	0.3%
4	5	0.0%

Population Utilization Measures

Figures 9a and 9b map elderly benzodiazepine prescriptions per 1000 population for all local geographies in Alberta. Figures 10a and 10b map elderly benzodiazepine DDD per 1000 inhabitants per day.

Figure 9a: Elderly Benzodiazepine Prescriptions per 1000 Population by Local Geography, Q1 2013

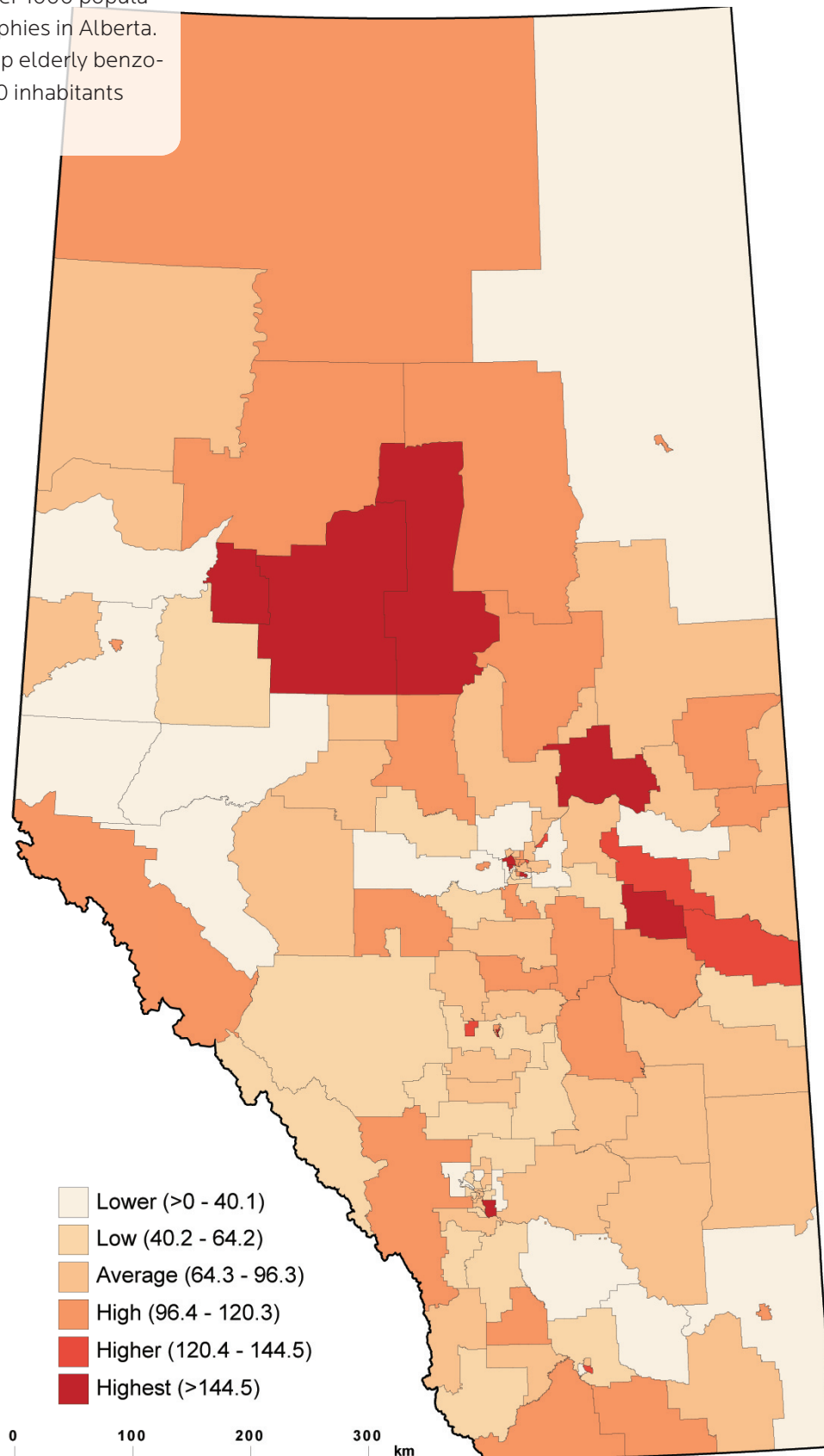


Figure 9b: Elderly Benzodiazepine Prescriptions per 1000 Population by Urban Local Geography, Q1 2013

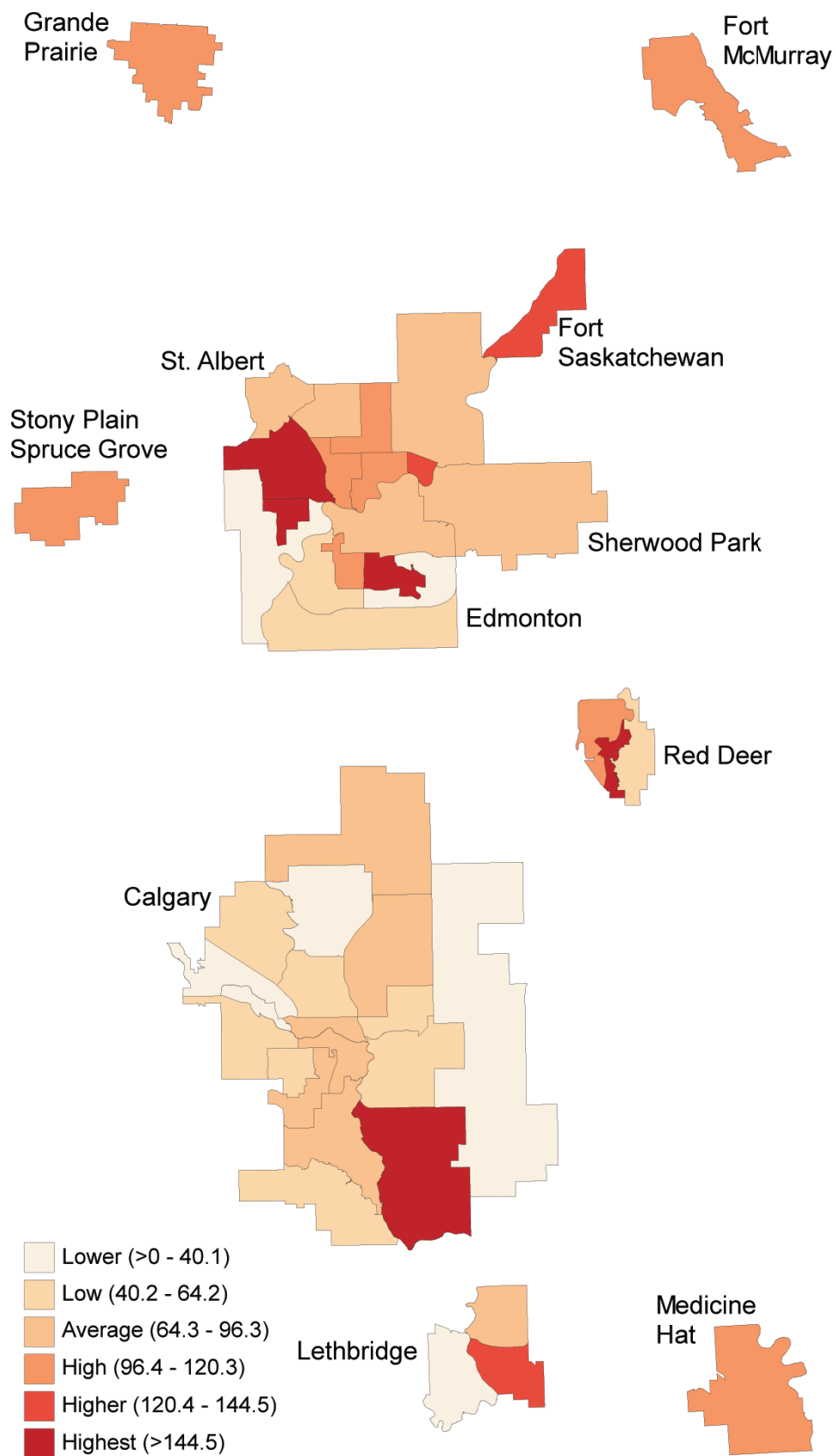


Figure 10a: Elderly Benzodiazepine DDD per 1000 Inhabitants per Day by Local Geography, Q1 2013

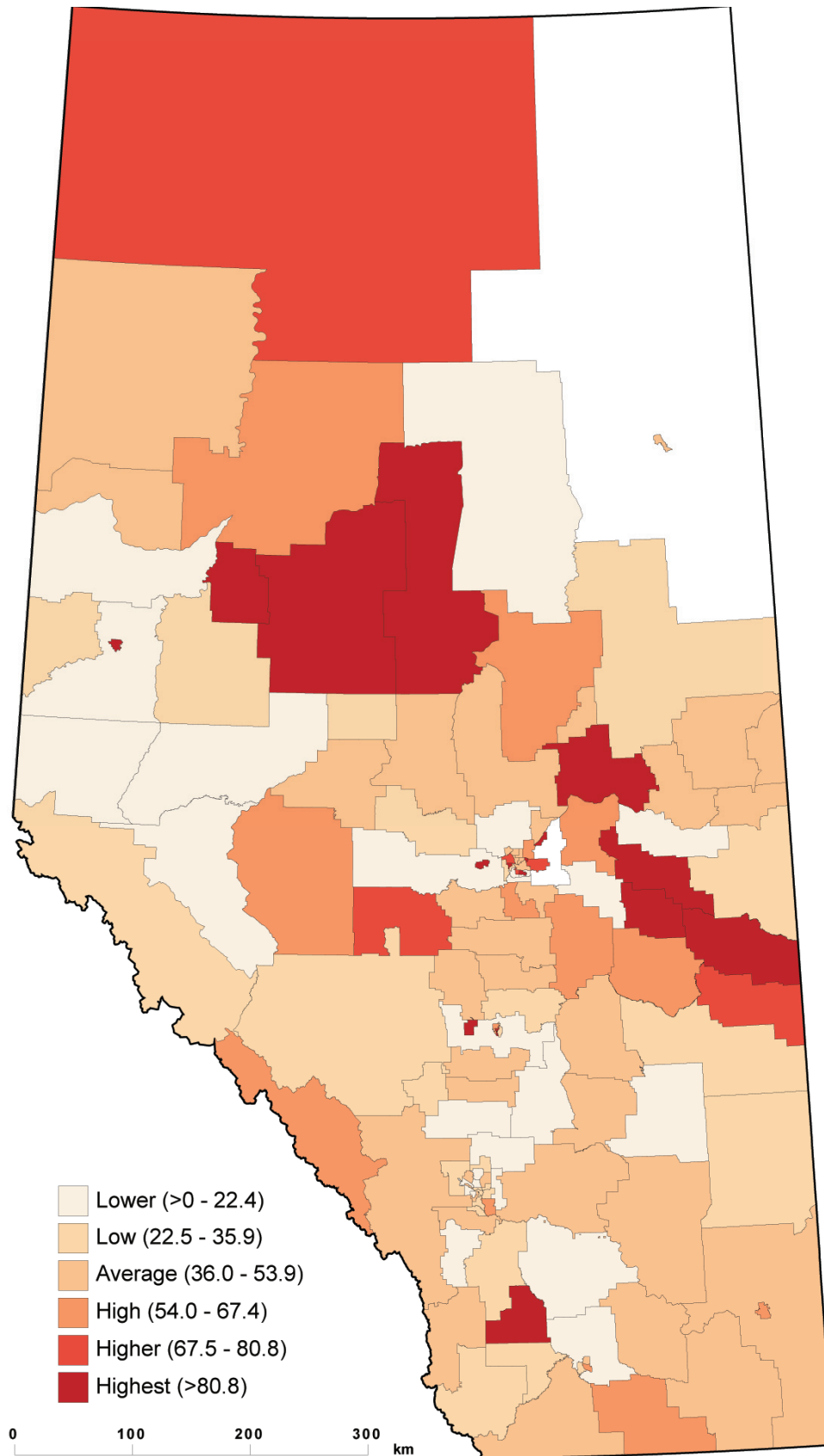
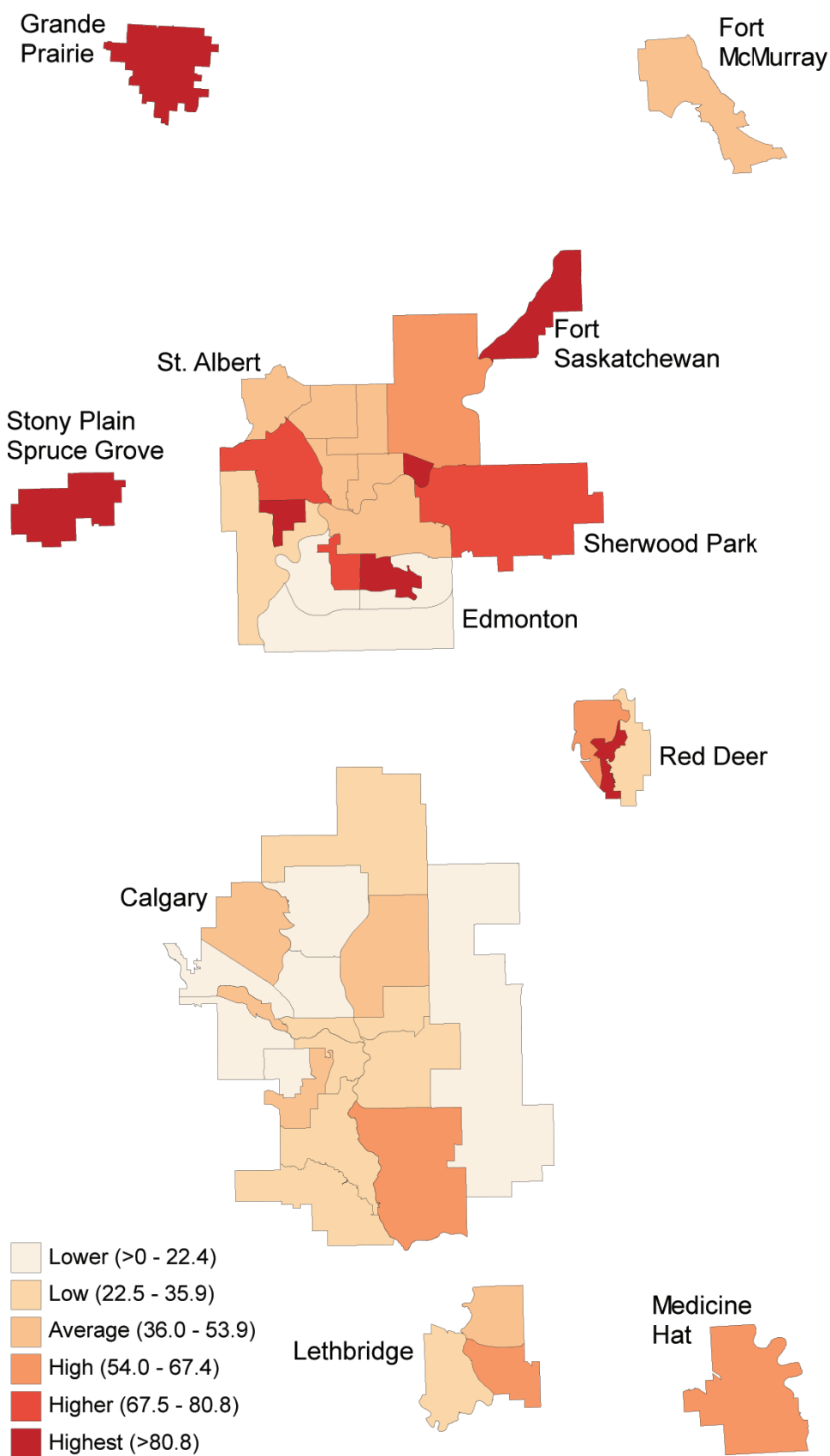


Figure 10b: Elderly Benzodiazepine DDD per 1000 Inhabitants per Day by Urban Local Geography, Q1 2013



Benzodiazepine Related Drugs

This section focuses on zopiclone use, as it was the only benzodiazepine related drug in the Q1 2013 PIN data extract provided by Alberta Health.

Patients

91,586 patients with unique PHN received at least one zopiclone prescription. The sex breakdown was:

- 57,715 females (63%)
- 33,871 males (37%)

The distribution of patient age is shown in Figure 11 and Table 10.

Figure 11: Age Distribution of Zopiclone Patients, Q1 2013

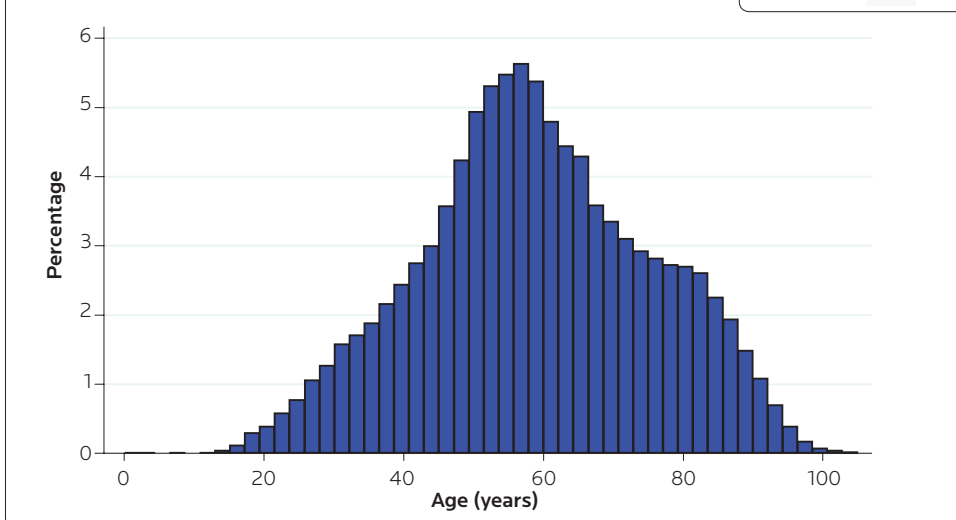


Table 10: Ranked Age Group of Zopiclone Patients, Q1 2013

Age Category	Patients	Percent
51-60	23,076	25.2%
61-70	17,045	18.6%
41-50	15,690	17.1%
71-80	12,196	13.3%
31-40	8,578	9.4%
81-90	8,555	9.3%
21-30	4,040	4.4%
91-100	1,707	1.9%
11--20	660	0.7%
101-110	34	0.0%
0-10	5	0.0%

Table 11: All Prescribed Zopiclone Drugs, Q1 2013

Zopiclone Brand Name	Prescriptions	Percent
PMS-ZOPICLONE 7.5 MG TABLET	35067	29.0%
APO-ZOPICLONE 7.5 MG TAB	31186	25.8%
ZOPICLONE 7.5 MG TABLET	22881	18.9%
MYLAN-ZOPICLONE 7.5 MG TABLET	8391	6.9%
CO ZOPICLONE 7.5 MG TABLET	7433	6.2%
RAN-ZOPICLONE 7.5 MG TABLET	3947	3.3%
APO-ZOPICLONE 5 MG TABLET	3188	2.6%
PMS-ZOPICLONE 5 MG TABLET	2050	1.7%
ZOPICLONE 5 MG TABLET	1731	1.4%
RATIO-ZOPICLONE 7.5 MG TAB	1694	1.4%
RHOVANE 7.5 MG TABLET	1359	1.1%
IMOVANE 7.5 MG TABLET	823	0.7%
RAN-ZOPICLONE 5 MG TABLET	453	0.4%
CO ZOPICLONE 5 MG TABLET	255	0.2%
MYLAN-ZOPICLONE 5 MG TABLET	114	0.1%
RATIO-ZOPICLONE 5 MG TABLET	83	0.1%
IMOVANE 5 MG TABLET	71	0.1%
SANDOZ ZOPICLONE 5 MG TABLET	24	0.0%
NOVO-ZOPICLONE 7.5 MG TABLET	9	0.0%
SANDOZ ZOPICLONE 7.5 MG TAB	6	0.0%
NOVO-ZOPICLONE 5 MG TABLET	5	0.0%
COMPOUND PRESCRIPTION: Zopiclone/ Unspecified Ingredient(s)	3	0.0%
COMPOUND PRESCRIPTION: Zopiclone, Unspecified Ingredient(s)	2	0.0%

Prescriptions

Between January 1, 2013 and March 31, 2013, there were 119,445 zopiclone prescriptions. All prescribed zopiclone drugs by brand name are presented in Table 11.

Prescribers

Overall, 80% of zopiclone drugs were prescribed by known MDs in Q1 2013. Table 12 shows zopiclone prescriptions by prescriber type.

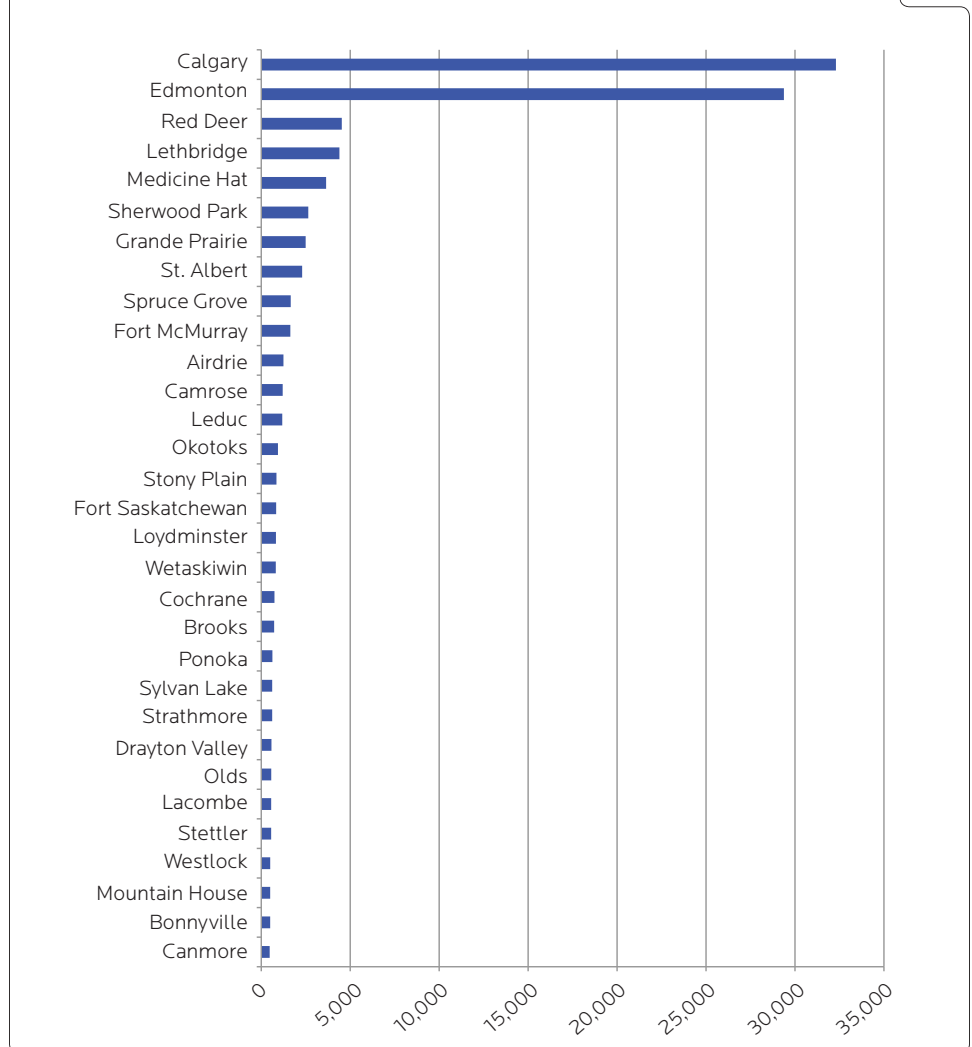
Pharmacies

There were 994 pharmacies that dispensed zopiclone in Q1 2013, based on unique pharmacy license number. The top 30 prescription counts by pharmacy city are shown in Figure 12.

Table 12: Zopiclone Prescriptions by Prescriber Type, Q1 2013

Prescriber Type	Prescribers	Prescriptions	Percent of Prescriptions
Named MD	3902	90,604	75.9%
Named Unknown prescriber type	67	352	0.3%
Named Pharmacist	76	1805	1.5%
Named Nurse Practitioner	2	2	0.0%
Named Registered Dietician	1	1	0.0%
Unnamed Unknown Prescriber Type	-	21,653	18.1%
Unnamed MD	-	4522	3.8%
Unnamed Dentist	-	50	0.0%
Unnamed Nurse Practitioner	-	376	0.3%
Unnamed Dental Hygienist	-	3	0.0%
Unnamed Dietician	-	3	0.0%
Unnamed Pharmacist	-	1	0.0%

Figure 12: Top 30 Zopiclone Prescription Counts by Pharmacy City, Q1 2013

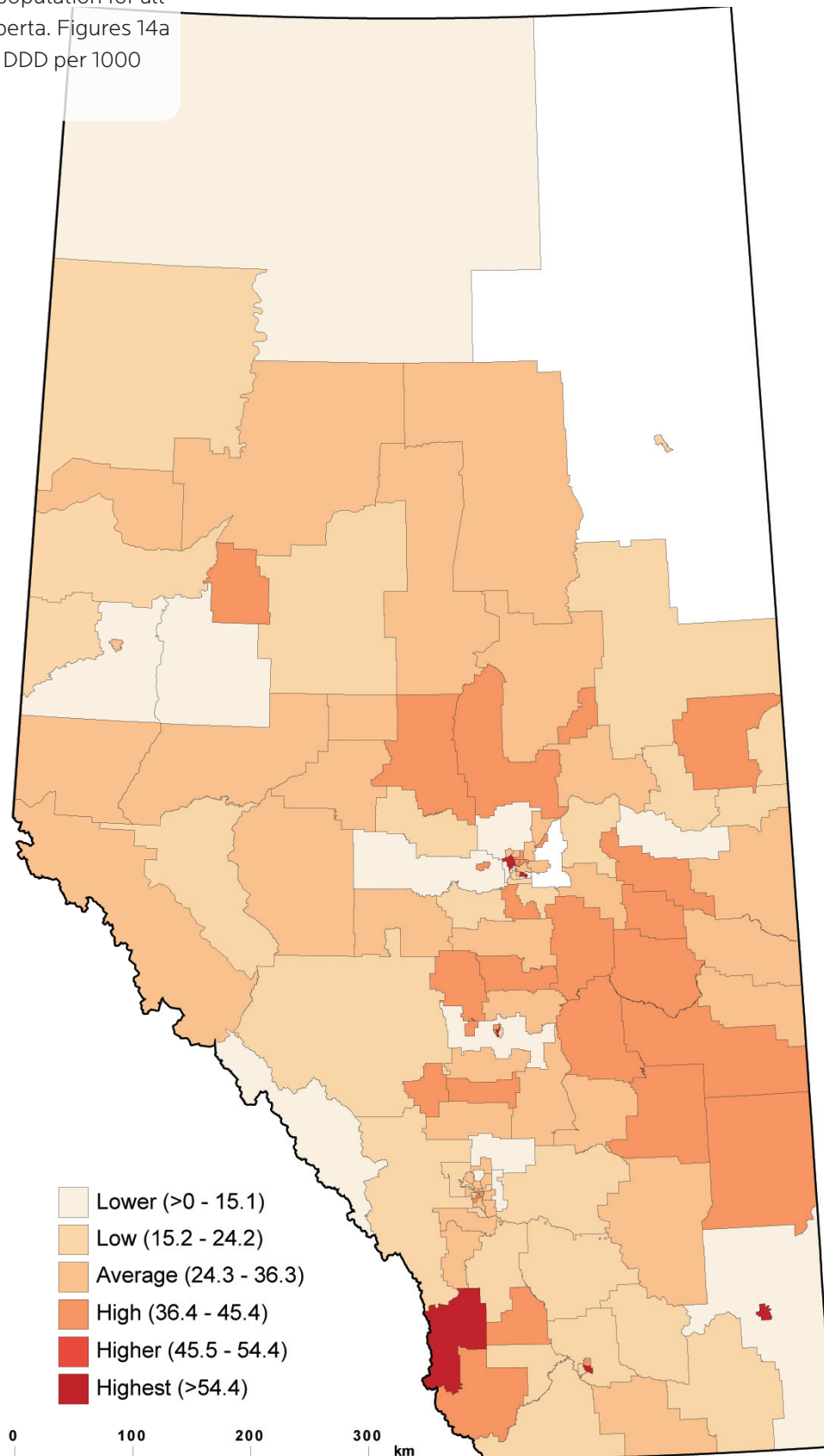


Population Utilization Measures

Figures 13a and 13b map zopiclone prescriptions per 1000 population for all local geographies in Alberta. Figures 14a and 14b map zopiclone DDD per 1000 inhabitants per day.

Figure 13a:

Zopiclone Prescriptions per 1000 Population by Local Geography, Q1 2013



relatedDrugs

Figure 13b:
Zopiclone Prescriptions per 1000 Population by Urban Local Geography, Q1 2013

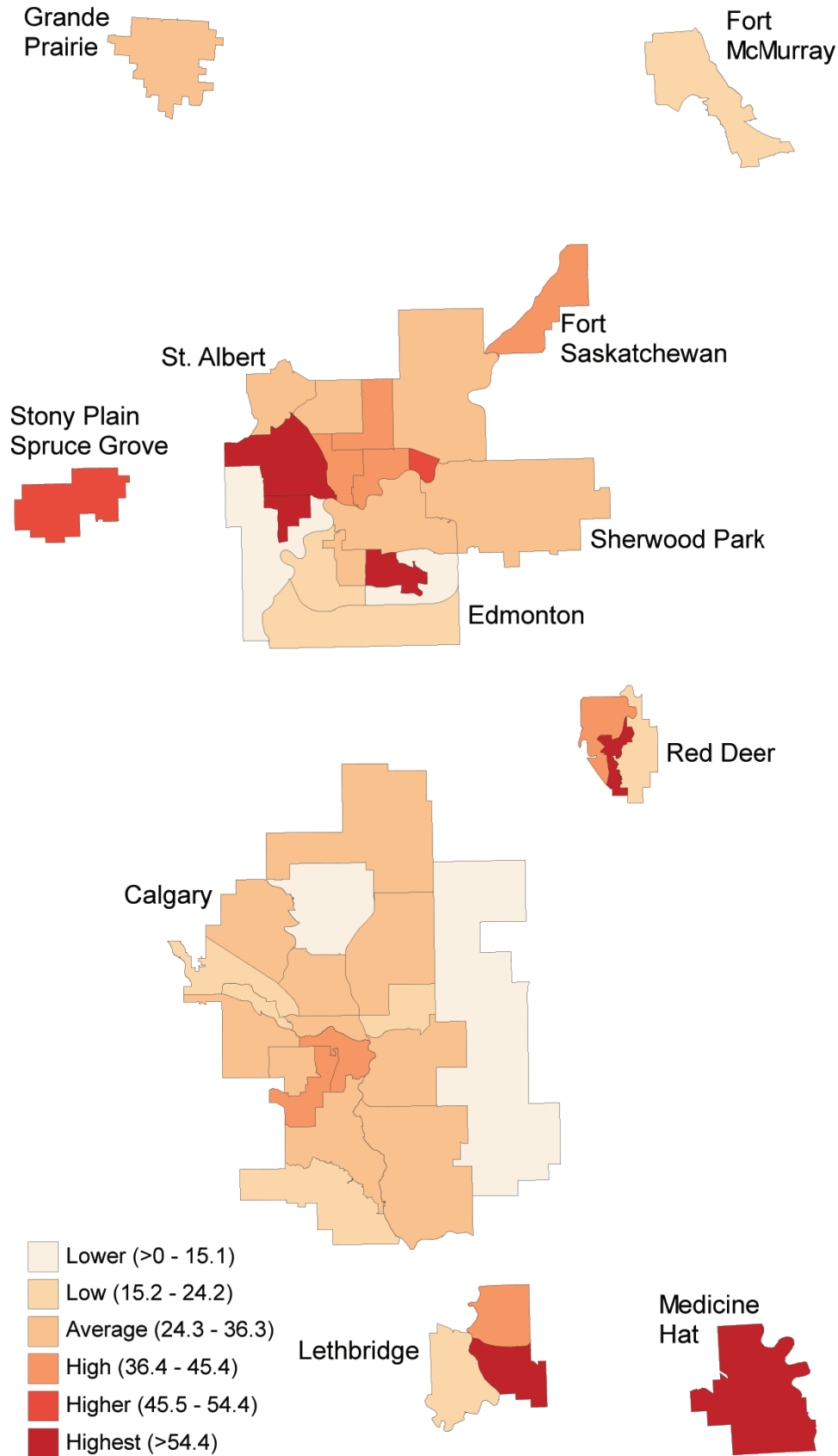
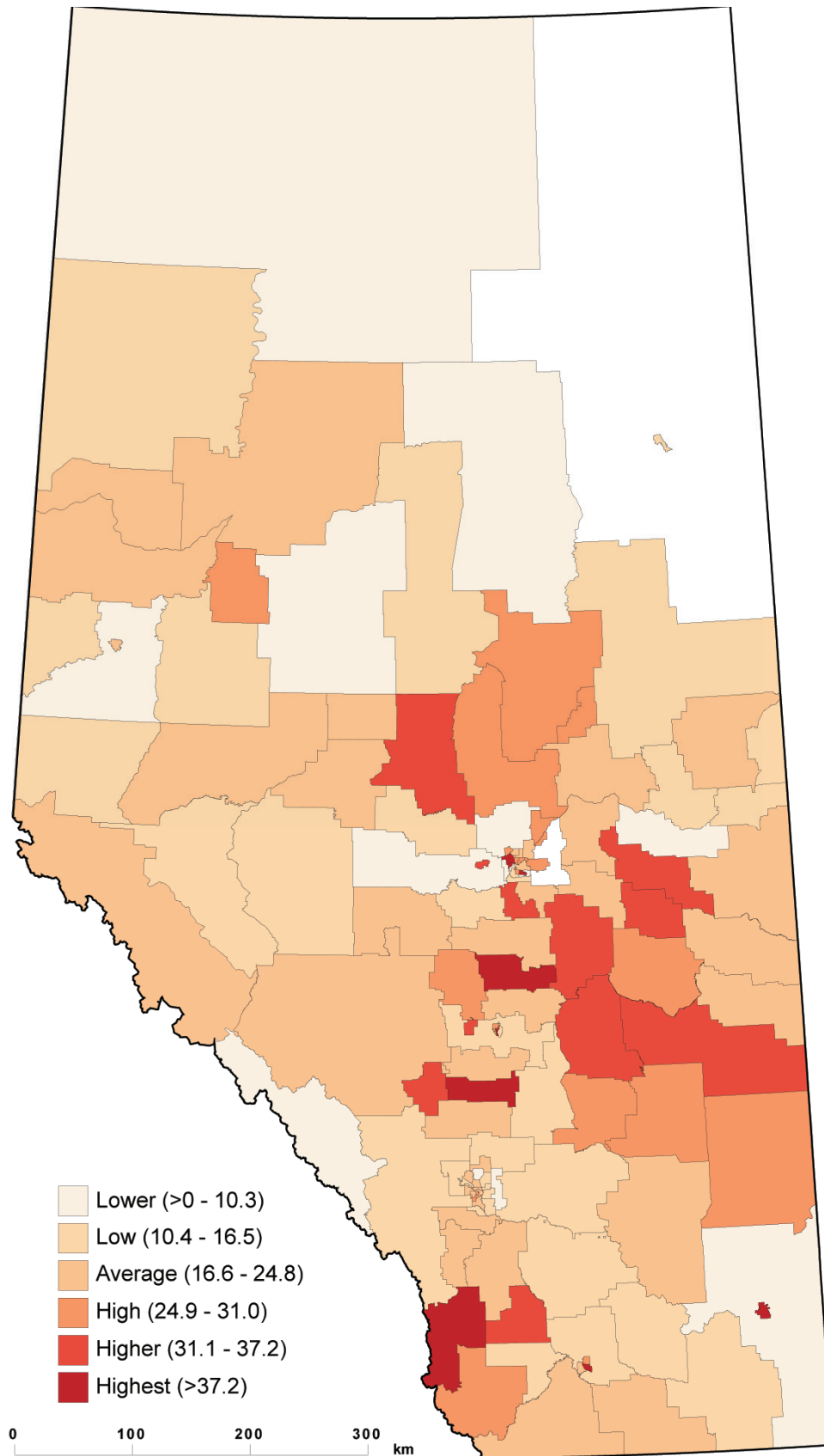
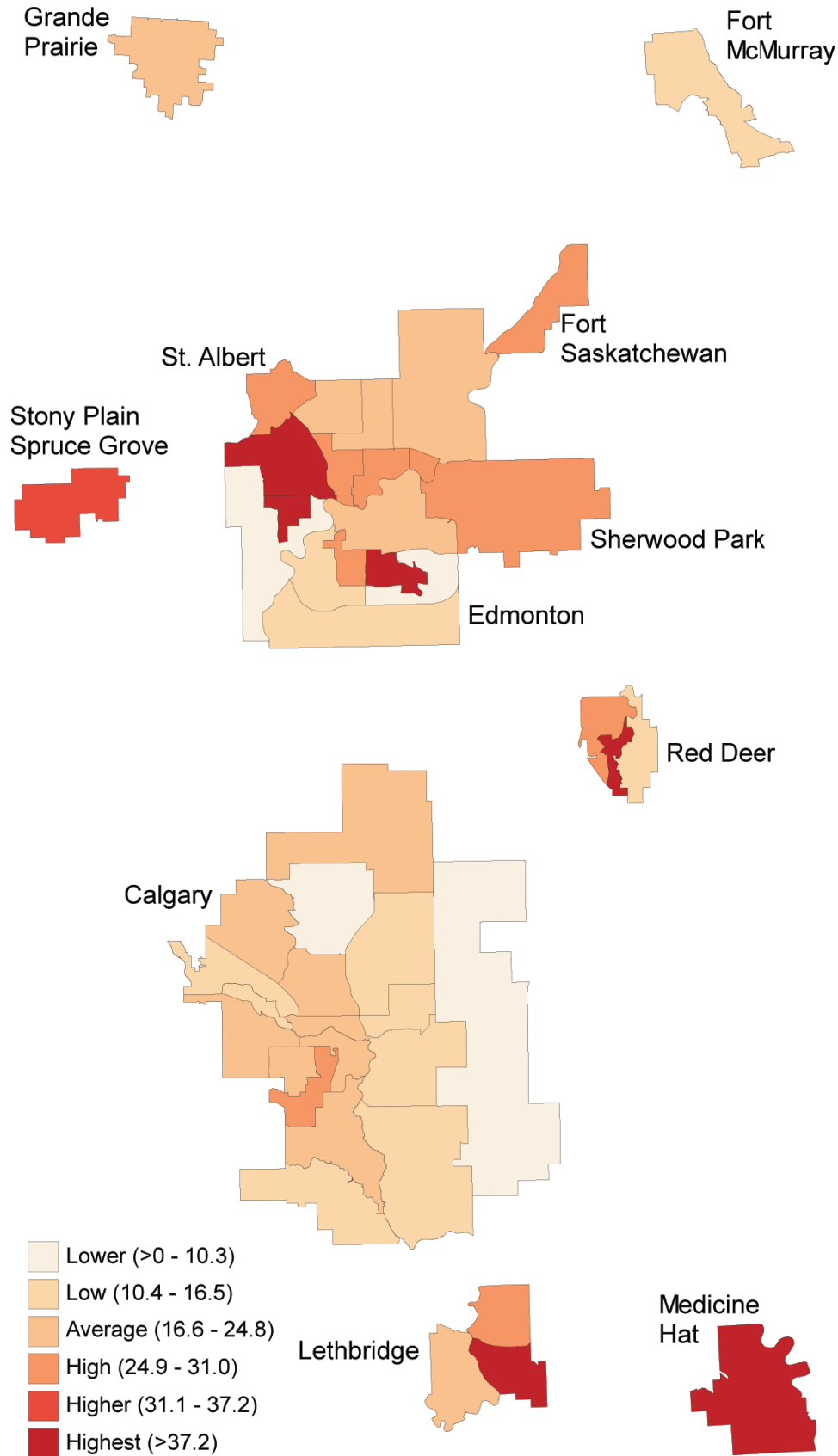


Figure 14a:
Zopiclone DDD per 1000 Inhabitants per Day by Local Geography, Q1 2013



Related Drugs

Figure 14b:
Zopiclone DDD per 1000 Inhabitants per Day by Urban Local Geography, Q1 2013



Appendix A: Benzodiazepine and Related Drugs by ATC Category and Ingredient – PIN Q1 2013 Data Extract

ATC Code	Dispensed Drug Name	Ingredient
N03AE	APO-CLONAZEPAM 0.5 MG TABLET	CLONAZEPAM
N03AE	APO-CLONAZEPAM 2 MG TABLET	CLONAZEPAM
N03AE	CO CLONAZEPAM 0.5 MG TABLET	CLONAZEPAM
N03AE	CO CLONAZEPAM 1 MG TABLET	CLONAZEPAM
N03AE	CO CLONAZEPAM 2 MG TABLET	CLONAZEPAM
N03AE	COMPOUND PRESCRIPTION: Clonazepam	CLONAZEPAM
N03AE	COMPOUND PRESCRIPTION: Clonazepam, Unspecified Ingredient(s)	CLONAZEPAM
N03AE	COMPOUND PRESCRIPTION: Clonazepam/ Clonazepam/Unspecified Ingredient(s)	CLONAZEPAM
N03AE	COMPOUND PRESCRIPTION: Clonazepam/ Unspecified Ingredient(s)	CLONAZEPAM
N03AE	COMPOUND PRESCRIPTION: Glycerin/ Clonazepam/Unspecified Ingredient(s)	CLONAZEPAM
N03AE	MYLAN-CLONAZEPAM 0.5 MG TABLET	CLONAZEPAM
N03AE	MYLAN-CLONAZEPAM 2 MG TABLET	CLONAZEPAM
N03AE	NOVO-CLONAZEPAM 0.5 MG TAB	CLONAZEPAM
N03AE	NOVO-CLONAZEPAM 2 MG TABLET	CLONAZEPAM
N03AE	PMS-CLONAZEPAM 0.25 MG TAB	CLONAZEPAM
N03AE	PMS-CLONAZEPAM 0.5 MG TABLET	CLONAZEPAM
N03AE	PMS-CLONAZEPAM 1 MG TABLET	CLONAZEPAM
N03AE	PMS-CLONAZEPAM 2 MG TABLET	CLONAZEPAM
N03AE	PMS-CLONAZEPAM R 0.5 MG TAB	CLONAZEPAM
N03AE	RIVOTRIL 0.5 MG TABLET	CLONAZEPAM
N03AE	RIVOTRIL 2 MG TABLET	CLONAZEPAM
N03AE	SANDOZ CLONAZEPAM 0.5 MG TAB	CLONAZEPAM
N03AE	SANDOZ CLONAZEPAM 1 MG TAB	CLONAZEPAM
N03AE	SANDOZ CLONAZEPAM 2 MG TAB	CLONAZEPAM
N05BA	APO-ALPRAZ 0.25 MG TABLET	ALPRAZOLAM

Appendix A: Benzodiazepine and Related Drugs by ATC Category and Ingredient – PIN Q1 2013 Data Extract ...cont.

ATC Code	Dispensed Drug Name	Ingredient
N05BA	APO-ALPRAZ 0.5 MG TABLET	ALPRAZOLAM
N05BA	APO-ALPRAZ 1 MG TABLET	ALPRAZOLAM
N05BA	APO-ALPRAZ TS 2 MG TABLET	ALPRAZOLAM
N05BA	APO-BROMAZEPAM 1.5 MG TABLET	BROMAZEPAM
N05BA	APO-BROMAZEPAM 3 MG TABLET	BROMAZEPAM
N05BA	APO-BROMAZEPAM 6 MG TABLET	BROMAZEPAM
N05BA	APO-CLOBAZAM 10 MG TABLET	CLOBAZAM
N05BA	APO-DIAZEPAM 10 MG TABLET	DIAZEPAM
N05BA	APO-DIAZEPAM 2 MG TABLET	DIAZEPAM
N05BA	APO-DIAZEPAM 5 MG TABLET	DIAZEPAM
N05BA	APO-LORAZEPAM 0.5 MG TABLET	LORAZEPAM
N05BA	APO-LORAZEPAM 1 MG TABLET	LORAZEPAM
N05BA	APO-LORAZEPAM 2 MG TABLET	LORAZEPAM
N05BA	APO-OXAZEPAM 10 MG TABLET	OXAZEPAM
N05BA	APO-OXAZEPAM 15 MG TABLET	OXAZEPAM
N05BA	APO-OXAZEPAM 30 MG TABLET	OXAZEPAM
N05BA	ATIVAN 0.5 MG TABLET	LORAZEPAM
N05BA	ATIVAN 0.5 MG TABLET SL	LORAZEPAM
N05BA	ATIVAN 1 MG TABLET	LORAZEPAM
N05BA	ATIVAN 1 MG TABLET SL	LORAZEPAM
N05BA	ATIVAN 2 MG TABLET	LORAZEPAM
N05BA	ATIVAN 2 MG TABLET SL	LORAZEPAM
N05BA	CHLORDIAZEPOXIDE 10 MG CAPSULE	CHLORDIAZEPOXIDE HYDROCHLORIDE
N05BA	CHLORDIAZEPOXIDE 25 MG CAPSULE	CHLORDIAZEPOXIDE HYDROCHLORIDE

Appendix A: Benzodiazepine and Related Drugs by ATC Category and Ingredient – PIN Q1 2013 Data Extract ...cont.

ATC Code	Dispensed Drug Name	Ingredient
N05BA	CHLORDIAZEPOXIDE 5 MG CAPSULE	CHLORDIAZEPOXIDE HYDROCHLORIDE
N05BA	CLORAZEPATE 15 MG CAPSULE	CLORAZEPATE DIPOTASSIUM
N05BA	CLORAZEPATE 3.75 MG CAPSULE	CLORAZEPATE DIPOTASSIUM
N05BA	CLORAZEPATE 7.5 MG CAPSULE	CLORAZEPATE DIPOTASSIUM
N05BA	COMPOUND PRESCRIPTION: Clobazam	CLOBAZAM
N05BA	COMPOUND PRESCRIPTION: Clobazam, Unspecified Ingredient(s)	CLOBAZAM
N05BA	COMPOUND PRESCRIPTION: Clobazam/Sirop Simple Liquid (Laboratoires Atlas...)/Unspecified Ingredient(s)	CLOBAZAM
N05BA	COMPOUND PRESCRIPTION: Clobazam/ Unspecified Ingredient(s)	CLOBAZAM
N05BA	COMPOUND PRESCRIPTION: Diazepam	DIAZEPAM
N05BA	COMPOUND PRESCRIPTION: Diazepam/ Unspecified Ingredient(s)	DIAZEPAM
N05BA	COMPOUND PRESCRIPTION: Lorazepam, Unspecified Ingredient(s)	LORAZEPAM
N05BA	COMPOUND PRESCRIPTION: Lorazepam/ Unspecified Ingredient(s)	LORAZEPAM
N05BA	DIAZEPAM 5 MG/ML AMPOULE	DIAZEPAM
N05BA	FRISIUM 10 MG TABLET	CLOBAZAM
N05BA	LECTOPAM 3 MG TABLET	BROMAZEPAM
N05BA	LECTOPAM 6 MG TABLET	BROMAZEPAM
N05BA	LORAZEPAM INJ 4 MG/ML VIAL	LORAZEPAM
N05BA	MYLAN-ALPRAZOLAM 0.25 MG TAB	ALPRAZOLAM
N05BA	MYLAN-ALPRAZOLAM 0.5 MG TABLET	ALPRAZOLAM
N05BA	MYLAN-ALPRAZOLAM 1 MG TABLET	ALPRAZOLAM
N05BA	NOVO-BROMAZEPAM 3 MG TABLET	BROMAZEPAM
N05BA	NOVO-BROMAZEPAM 6 MG TABLET	BROMAZEPAM
N05BA	NOVO-CLOBAZAM 10 MG TABLET	CLOBAZAM
N05BA	NOVO-LORAZEM 0.5 MG TABLET	LORAZEPAM

Appendix A: Benzodiazepine and Related Drugs by ATC Category and Ingredient – PIN Q1 2013 Data Extract ...cont.

ATC Code	Dispensed Drug Name	Ingredient
N05BA	NOVO-LORAZEM 1 MG TABLET	LORAZEPAM
N05BA	NOVO-LORAZEM 2 MG TABLET	LORAZEPAM
N05BA	PMS-CLOBAZAM 10 MG TABLET	CLOBAZAM
N05BA	PMS-DIAZEPAM 10 MG TABLET	DIAZEPAM
N05BA	PMS-DIAZEPAM 2 MG TABLET	DIAZEPAM
N05BA	PMS-DIAZEPAM 5 MG TABLET	DIAZEPAM
N05BA	PMS-LORAZEPAM 0.5 MG TABLET	LORAZEPAM
N05BA	PMS-LORAZEPAM 1 MG TABLET	LORAZEPAM
N05BA	PMS-LORAZEPAM 2 MG TABLET	LORAZEPAM
N05BA	TEVA-ALPRAZOLAM 0.25 MG TABLET	ALPRAZOLAM
N05BA	TEVA-ALPRAZOLAM 0.5 MG TABLET	ALPRAZOLAM
N05BA	VALIUM 5 MG TABLET	DIAZEPAM
N05BA	XANAX 0.25 MG TABLET	ALPRAZOLAM
N05BA	XANAX 0.5 MG TABLET	ALPRAZOLAM
N05BA	XANAX 1 MG TABLET	ALPRAZOLAM
N05CD	APO-FLURAZEPAM 15 MG CAPSULE	FLURAZEPAM HYDROCHLORIDE
N05CD	APO-FLURAZEPAM 30 MG CAPSULE	FLURAZEPAM HYDROCHLORIDE
N05CD	APO-NITRAZEPAM 10 MG TABLET	NITRAZEPAM
N05CD	APO-NITRAZEPAM 5 MG TABLET	NITRAZEPAM
N05CD	APO-TEMAZEPAM 15 MG CAP	TEMAZEPAM
N05CD	APO-TEMAZEPAM 30 MG CAP	TEMAZEPAM
N05CD	CO TEMAZEPAM 15 MG CAPSULE	TEMAZEPAM
N05CD	CO TEMAZEPAM 30 MG CAPSULE	TEMAZEPAM
N05CD	COMPOUND PRESCRIPTION: Midazolam HCL, Not Available, Unspecified Ingredient(s)	MIDAZOLAM

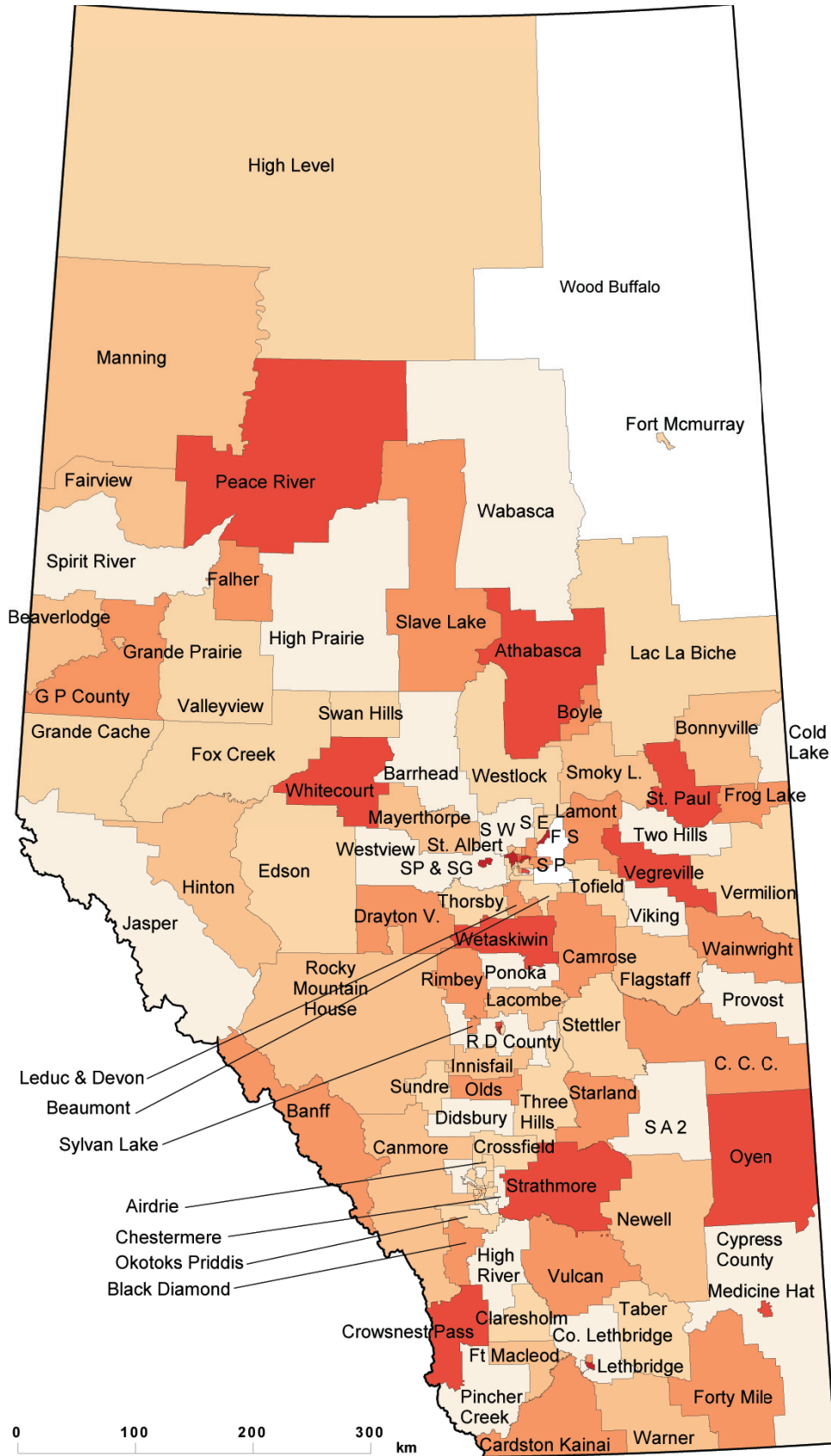
Appendix A: Benzodiazepine and Related Drugs by ATC Category and Ingredient – PIN Q1 2013 Data Extract ...cont.

ATC Code	Dispensed Drug Name	Ingredient
N05CD	COMPOUND PRESCRIPTION: Midazolam HCL/ Sirop Simple Liquid (Laboratoires Atlas...)/ Unspecified Ingredient(s)	MIDAZOLAM
N05CD	COMPOUND PRESCRIPTION: Midazolam HCL/ Sirop Simple Liquid Oral (Laboratoires Atlas...)/ Unspecified Ingredient(s)	MIDAZOLAM
N05CD	COMPOUND PRESCRIPTION: Midazolam HCL/ Unspecified Ingredient(s)	MIDAZOLAM
N05CD	COMPOUND PRESCRIPTION: Nitrazepam, Unspecified Ingredient(s)	NITRAZEPAM
N05CD	COMPOUND PRESCRIPTION: Nitrazepam/ Psp - Glycerin Solution Oral (RW Packaging Ltd.)/ Unspecified Ingredient(s)	NITRAZEPAM
N05CD	COMPOUND PRESCRIPTION: Nitrazepam/ Unspecified Ingredient(s)	NITRAZEPAM
N05CD	COMPOUND PRESCRIPTION: Temazepam/ Unspecified Ingredient(s)	TEMAZEPAM
N05CD	MIDAZOLAM 1 MG/ML VIAL	MIDAZOLAM
N05CD	MIDAZOLAM 5 MG/ML VIAL	MIDAZOLAM
N05CD	MIDAZOLAM INJECTION 5 MG/ML	MIDAZOLAM
N05CD	MOGADON 10 MG TABLET	NITRAZEPAM
N05CD	MOGADON 5 MG TABLET	NITRAZEPAM
N05CD	NITRAZADON 10 MG TABLET	NITRAZEPAM
N05CD	NITRAZADON 5 MG TABLET	NITRAZEPAM
N05CD	NOVO-TEMAZEPAM 15 MG CAPSULE	TEMAZEPAM
N05CD	NOVO-TEMAZEPAM 30 MG CAPSULE	TEMAZEPAM
N05CD	RATIO-TEMAZEPAM 30 MG CAP	TEMAZEPAM
N05CD	RESTORIL 15 MG CAPSULE	TEMAZEPAM
N05CD	RESTORIL 30 MG CAPSULE	TEMAZEPAM
N05CD	SANDOZ NITRAZEPAM 10 MG TAB	NITRAZEPAM
N05CD	SANDOZ NITRAZEPAM 5 MG TAB	NITRAZEPAM
N05CD	TRIAZOLAM 0.125 MG TABLET	TRIAZOLAM
N05CD	TRIAZOLAM 0.25 MG TABLET	TRIAZOLAM

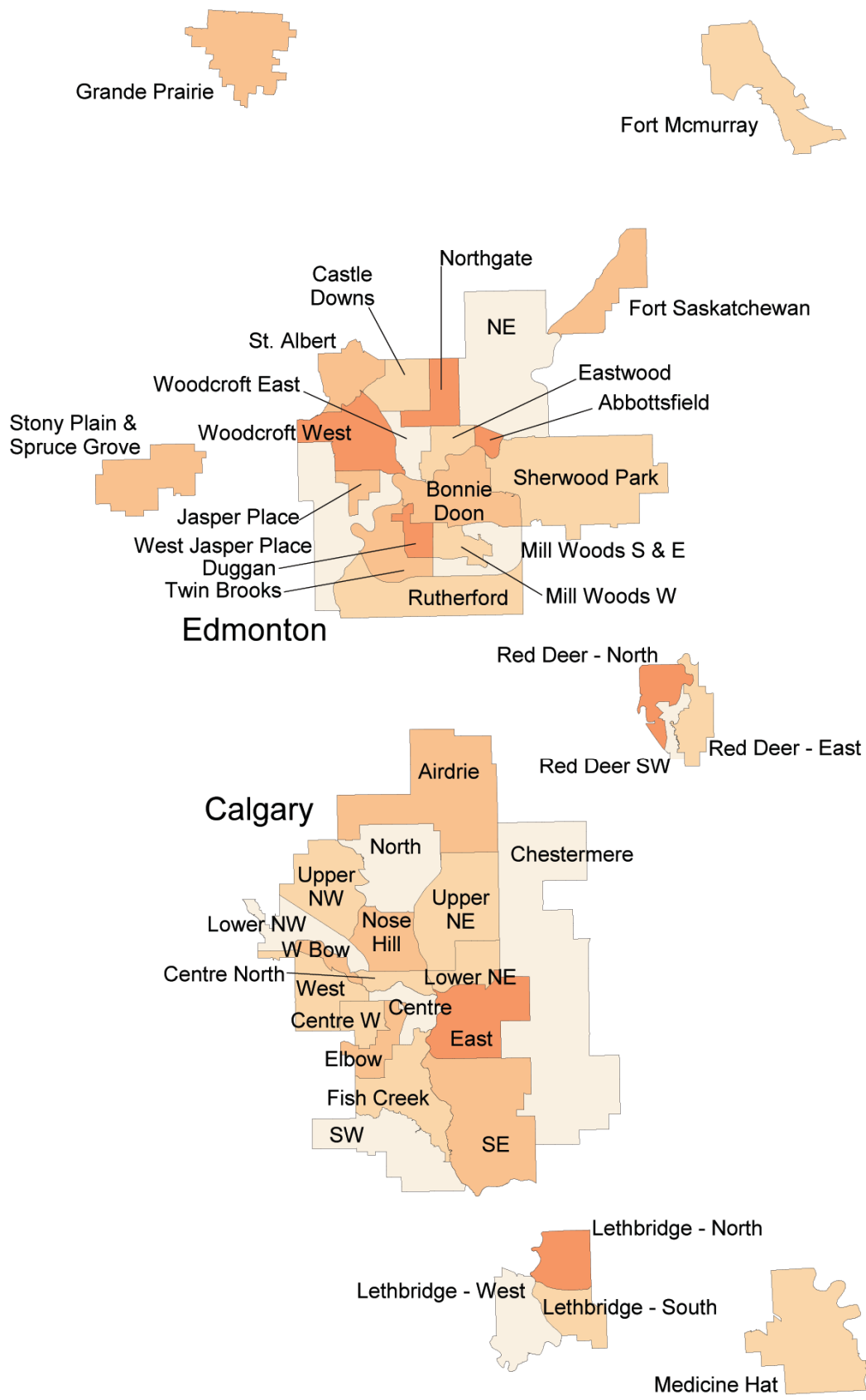
Appendix A: Benzodiazepine and Related Drugs by ATC Category and Ingredient – PIN Q1 2013 Data Extract ...cont.

ATC Code	Dispensed Drug Name	Ingredient
Benzodiazepine-related		
N05CF	APO-ZOPICLONE 5 MG TABLET	ZOPICLONE
N05CF	APO-ZOPICLONE 7.5 MG TAB	ZOPICLONE
N05CF	CO ZOPICLONE 5 MG TABLET	ZOPICLONE
N05CF	CO ZOPICLONE 7.5 MG TABLET	ZOPICLONE
N05CF	COMPOUND PRESCRIPTION: Zopiclone, Unspecified Ingredient(s)	ZOPICLONE
N05CF	COMPOUND PRESCRIPTION: Zopiclone/ Unspecified Ingredient(s)	ZOPICLONE
N05CF	IMOVANE 5 MG TABLET	ZOPICLONE
N05CF	IMOVANE 7.5 MG TABLET	ZOPICLONE
N05CF	MYLAN-ZOPICLONE 5 MG TABLET	ZOPICLONE
N05CF	MYLAN-ZOPICLONE 7.5 MG TABLET	ZOPICLONE
N05CF	NOVO-ZOPICLONE 5 MG TABLET	ZOPICLONE
N05CF	NOVO-ZOPICLONE 7.5 MG TABLET	ZOPICLONE
N05CF	PMS-ZOPICLONE 5 MG TABLET	ZOPICLONE
N05CF	PMS-ZOPICLONE 7.5 MG TABLET	ZOPICLONE
N05CF	RAN-ZOPICLONE 5 MG TABLET	ZOPICLONE
N05CF	RAN-ZOPICLONE 7.5 MG TABLET	ZOPICLONE
N05CF	RATIO-ZOPICLONE 5 MG TABLET	ZOPICLONE
N05CF	RATIO-ZOPICLONE 7.5 MG TAB	ZOPICLONE
N05CF	RHOVANE 7.5 MG TABLET	ZOPICLONE
N05CF	SANDOZ ZOPICLONE 5 MG TABLET	ZOPICLONE
N05CF	SANDOZ ZOPICLONE 7.5 MG TAB	ZOPICLONE
N05CF	ZOPICLONE 5 MG TABLET	ZOPICLONE
N05CF	ZOPICLONE 7.5 MG TABLET	ZOPICLONE

Appendix B: Alberta Local Geography



Names Appendix B



References

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2. World Health Organization. Introduction to Drug Utilization Research. 2003: Page 38. <http://apps.who.int/medicinedocs/en/d/Js4876e/7.html>. Accessed May 23, 2013.

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A
Snapshot of
Benzodiazepine and
Related Drug Utilization
in Alberta Quarter 1, 2013
