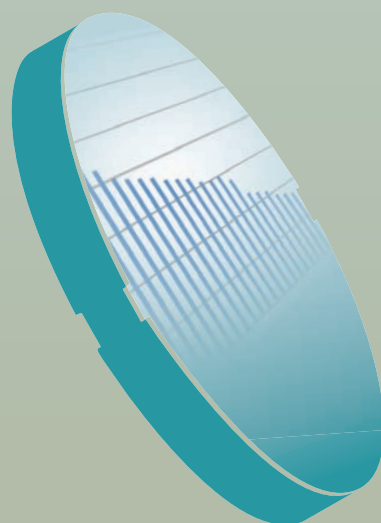
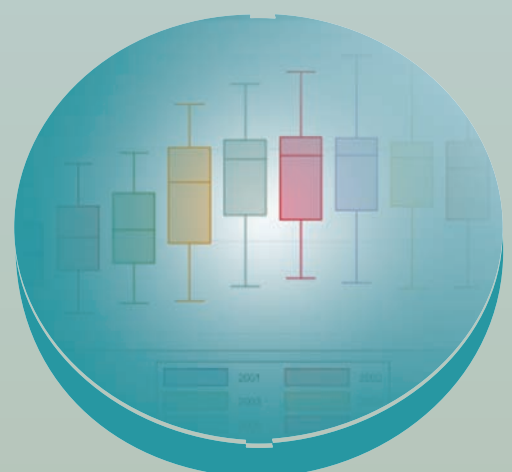
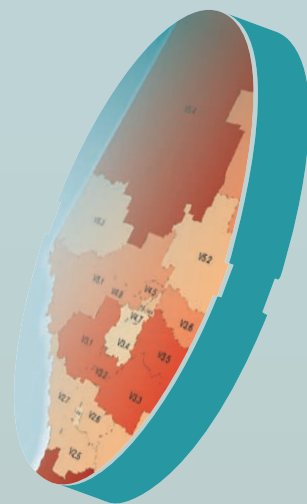
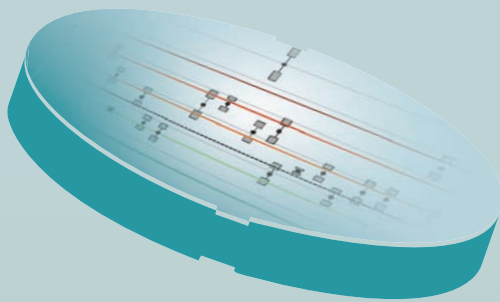
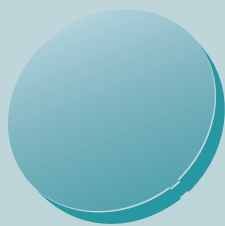
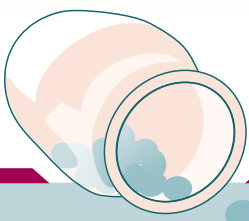


Alberta

Triplicate Prescription Program Atlas

2001-2010





In 1986, the Triplicate Prescription Program (TPP) was established 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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This work was produced by OKAKI™ for the Triplicate Prescription Program.

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Triplicate Prescription Program Practitioners, Pharmacies, Patients, and Prescriptions

Patients, Practitioners, and Prescriptions

The number of TPP practitioners, patients, and prescriptions by type of practitioner, is shown in Table 1. Of note, participation in the TPP only became mandatory for veterinary practitioners in 2010, hence the large increase in numbers for that practitioner group in 2010. The ten-year trend in utilization patterns are also shown for Alberta physicians, Alberta dentists, and Yukon physicians in Figures 1, 2, and 3, respectively.

Table 1. TPP prescribers, patients, and prescriptions, by practitioner type, 2001-2010.

Year	Alberta Physicians			Alberta Dentists			Yukon Physicians			Alberta Veterinarians		
	# Practitioners	# Patients	# Rx	# Practitioners	# Patients	# Rx	# Practitioners	# Patients	# Rx	# Practitioners	# Patients	# Rx
2001	3,392	70,095	272,039	374	3,836	4,575	74	715	3,118	29	48	104
2002	3,470	74,728	300,331	402	3,827	4,605	83	840	3,256	38	82	141
2003	3,639	78,435	327,292	396	3,932	4,726	80	781	3,329	36	70	112
2004	3,763	89,944	370,342	402	3,801	4,663	74	798	3,247	34	68	141
2005	3,913	94,201	389,686	413	4,377	5,256	80	825	3,398	25	54	105
2006	4,107	97,251	408,412	414	4,684	5,707	89	949	3,869	29	70	118
2007	4,233	95,176	397,509	402	4,445	5,575	86	1,026	4,265	25	76	109
2008	4,346	92,939	391,846	388	4,660	5,697	98	1,057	4,512	27	78	110
2009	4,490	93,215	404,146	370	4,280	5,276	92	1,088	4,657	25	60	78
2010	4,648	94,195	414,824	389	4,190	5,247	102	1,176	5,338	604	6,973	12,084

Figure 1. Number of TPP practitioners, patients, and prescriptions, Alberta physicians, 2001-2010.

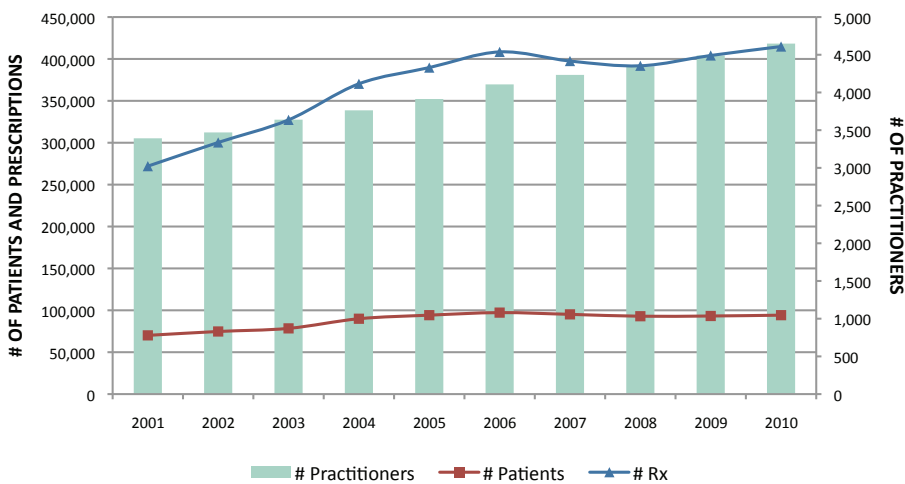


Figure 2. Number of TPP practitioners, patients, and prescriptions, Alberta dentists, 2001-2010.

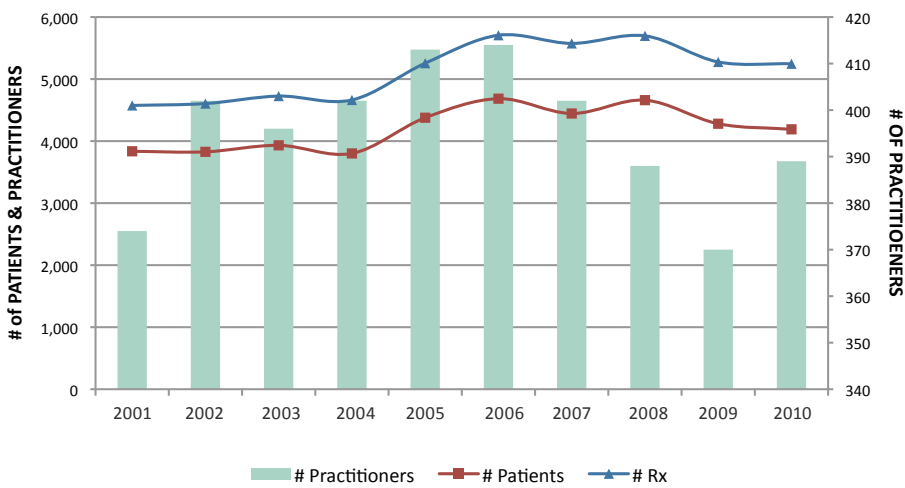


Figure 3. Number of TPP practitioners, patients, and prescriptions, Yukon physicians, 2001-2010.

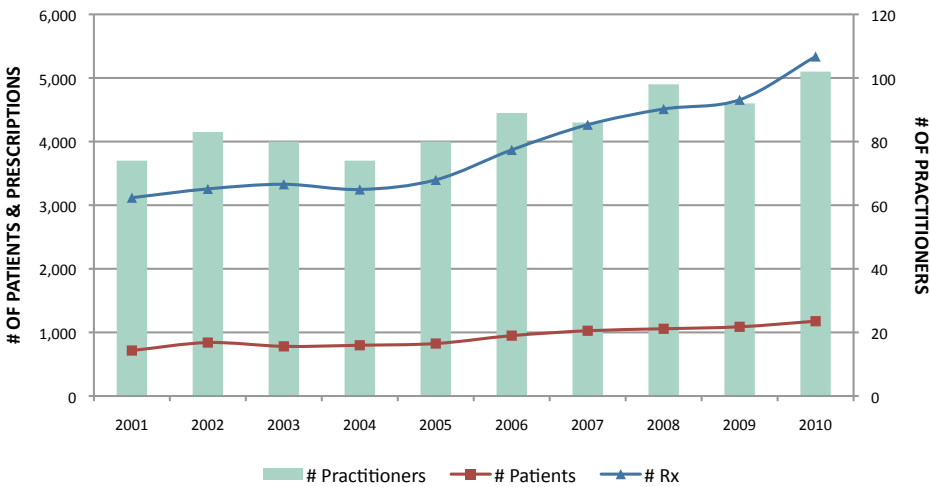
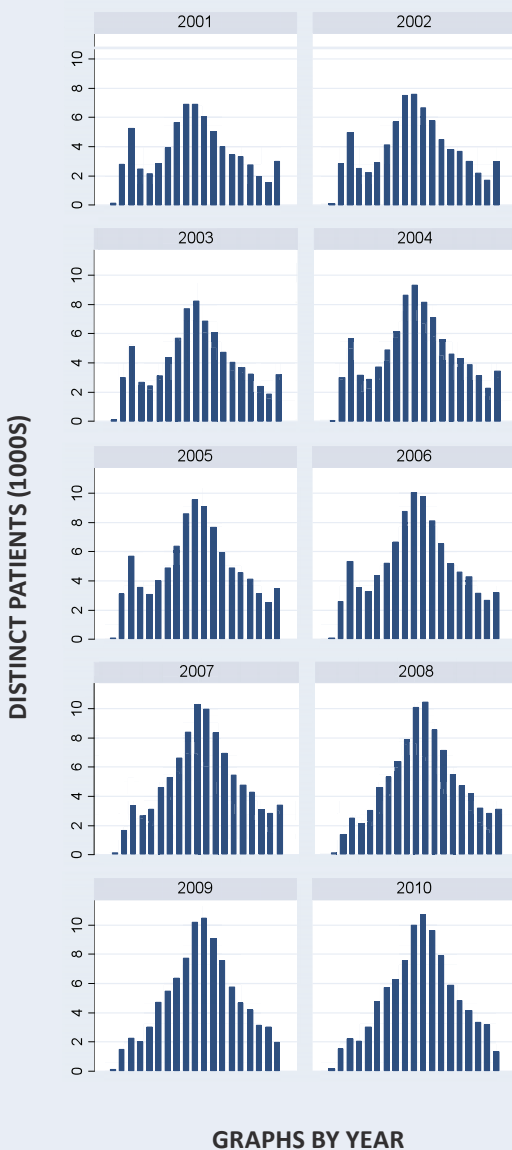


Figure 4. TPP patient age distribution, by year, 2001-2010.



Triplelicate Prescription Program Practitioners, Pharmacies, Patients, and Prescriptions

Geographic Distribution of Alberta Patients, Pharmacies, and Practitioners

Figures 5–8 present a summary of location information for all Alberta data within the TPP database up to and including 2009. Boundaries are shown for Alberta Health Services Zones.

Figure 5. All TPP patients, by location, to 2009 (inclusive).



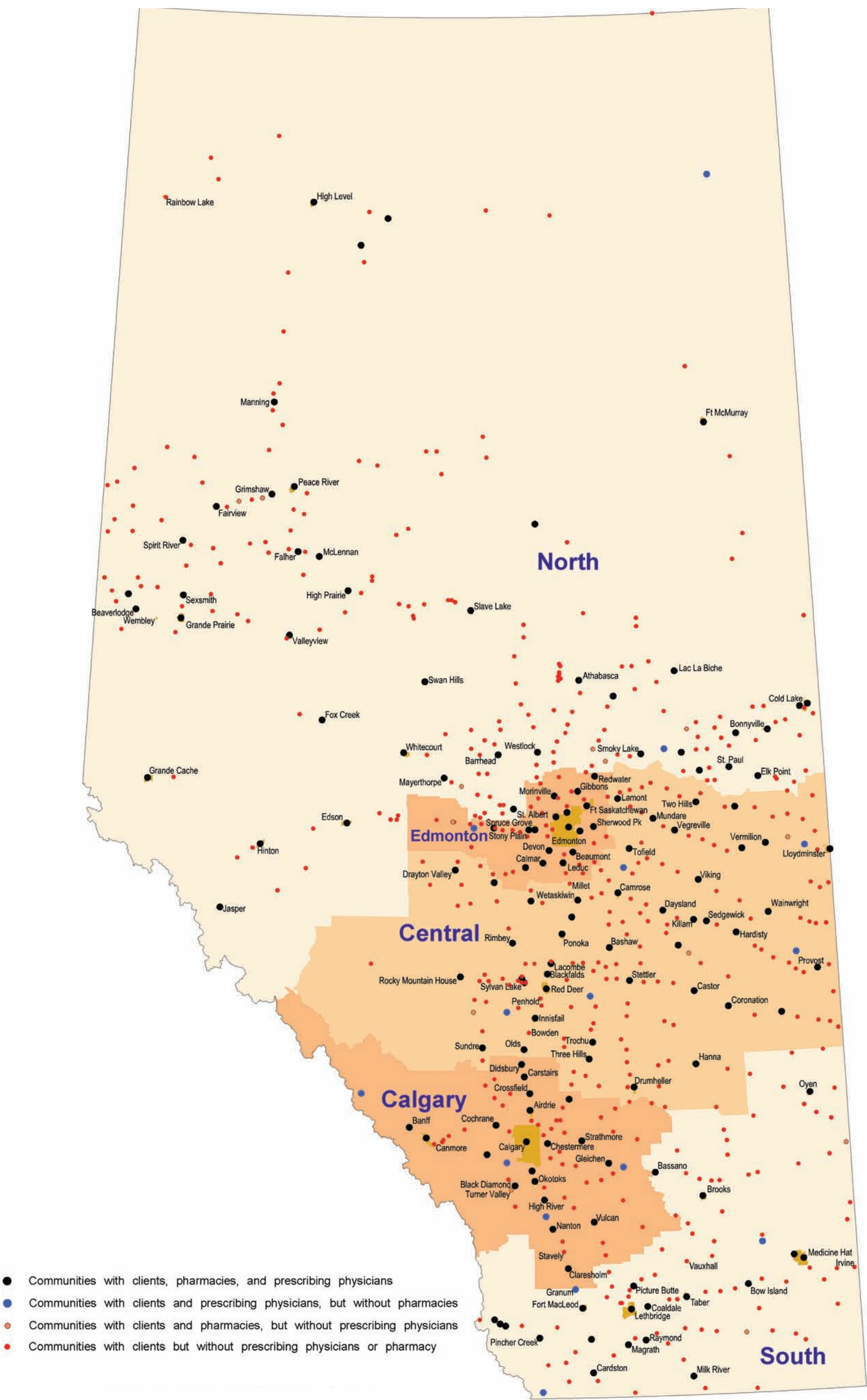


Triplicate Prescription Program Practitioners, Pharmacies, Patients, and Prescriptions

Figure 7. All TPP practitioners, by location, to 2009 (inclusive).



Figure 8. Comparison of TPP patient, pharmacy, and practitioner locations, to 2009 (inclusive).



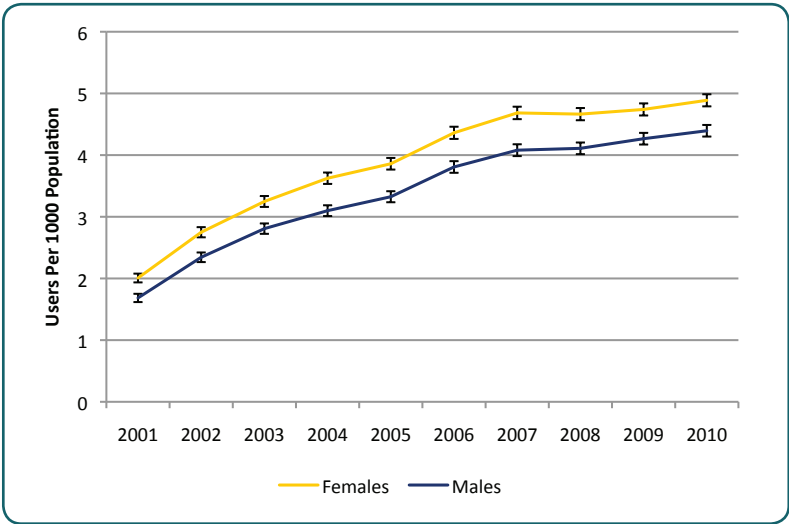
Triplicate Prescription Program Medication Utilization

Guide to Atlas Charts

The following sections give summary information on specific TPP medication categories. This section provides a guide to the six standard charts used to present this information.

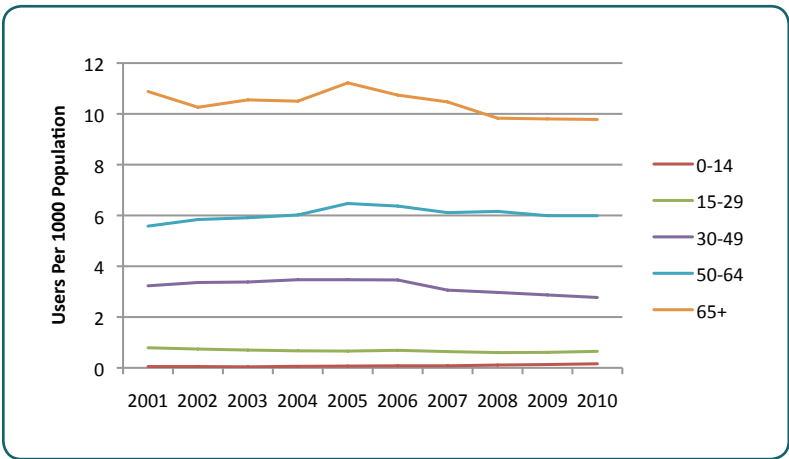
1. Age-standardized utilization, by sex, 2001-2010.

Age-standardized utilization (users per 1000 population with 95% confidence intervals) is shown, by sex, from 2001-2010. The 1991 Canadian census population was used as the standard population.



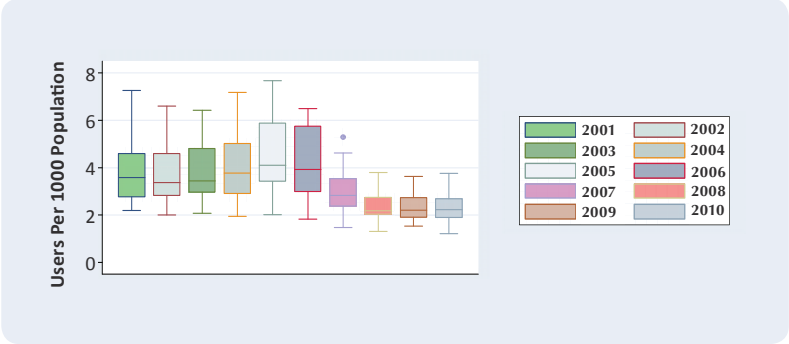
2. Age-specific utilization, 2001-2010.

Utilization (users per 1000 population) is shown from 2001-2010, for five different age groups (0-14, 15-29, 30-49, 50-64, 65+).



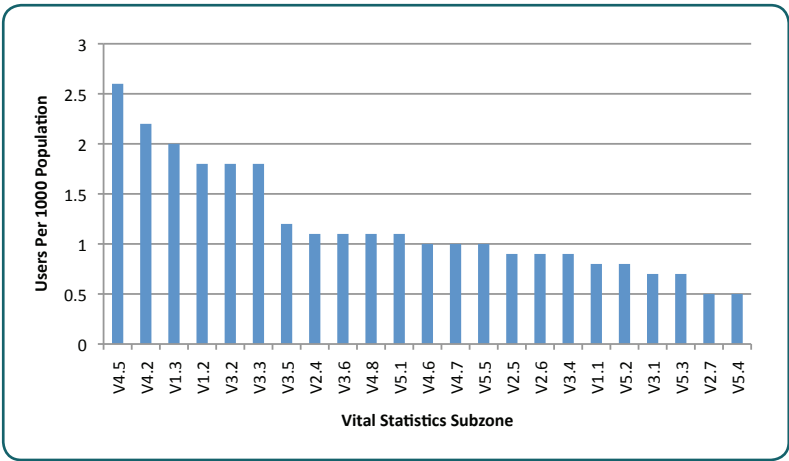
3. Distribution of utilization by year, 2001-2010.

The distribution of utilization (users per 1000 population) across all vital statistics subzones is shown using box plots. Each box plot shows one year between 2001 and 2010. The box represents 50% of the data points, with the line in the middle indicating the median (i.e., mid-point). The lines above and below the box show the ranges for the upper and lower 25% of the data points. Outliers that exceed 1.5 times the range of the upper or lower portion of the box, are shown as points.



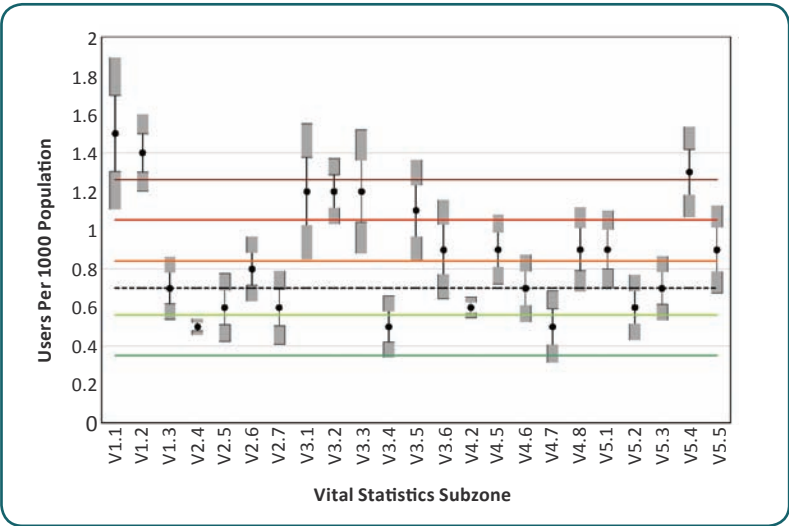
4. Ranked vital statistics subzone utilization, 2010.

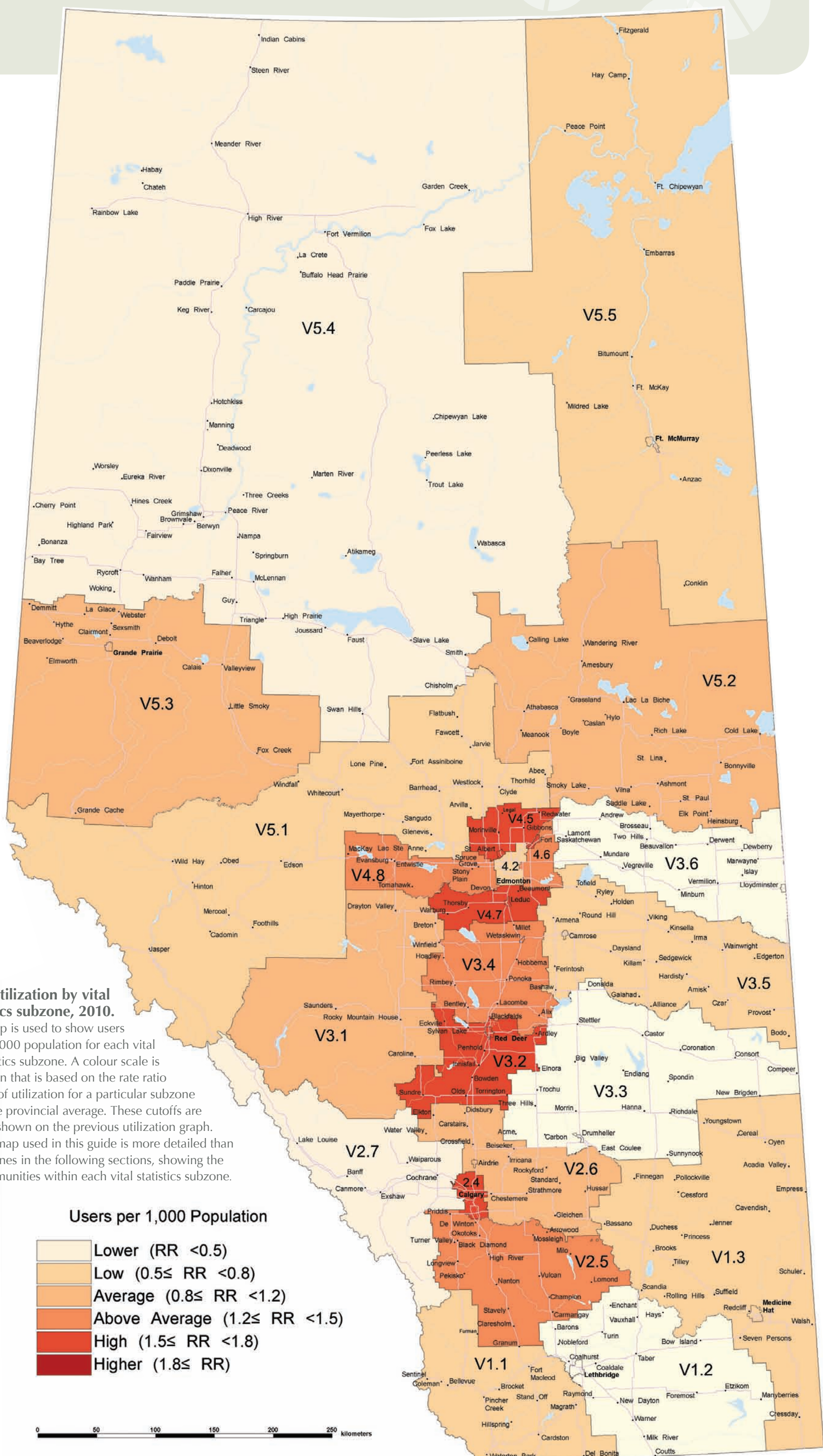
For the year 2010, the utilization (users per 1000 population) for each vital statistics subzone is ranked from highest to lowest. The ranked columns give another perspective on the shape of the distribution of utilization across all vital statistics subzones.



5. Utilization estimates by vital statistics subzone, 2010.

For the year 2010, the utilization (users per 1000 population with 95% confidence intervals) is shown for each vital statistics subzone. A hashed black line shows the provincial average. Coloured lines correspond to colour cutoffs on the following map. The cutoffs are based on the rate ratio of utilization for a particular vital statistics subzone to the provincial average.





6. Utilization by vital statics subzone, 2010.

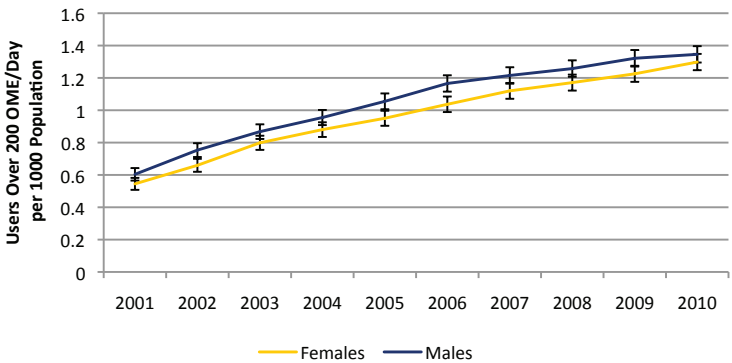
A map is used to show users per 1000 population for each vital statistics subzone. A colour scale is shown that is based on the rate ratio (RR) of utilization for a particular subzone to the provincial average. These cutoffs are also shown on the previous utilization graph. The map used in this guide is more detailed than the ones in the following sections, showing the communities within each vital statistics subzone.

Triplicate Prescription Program Medication Utilization

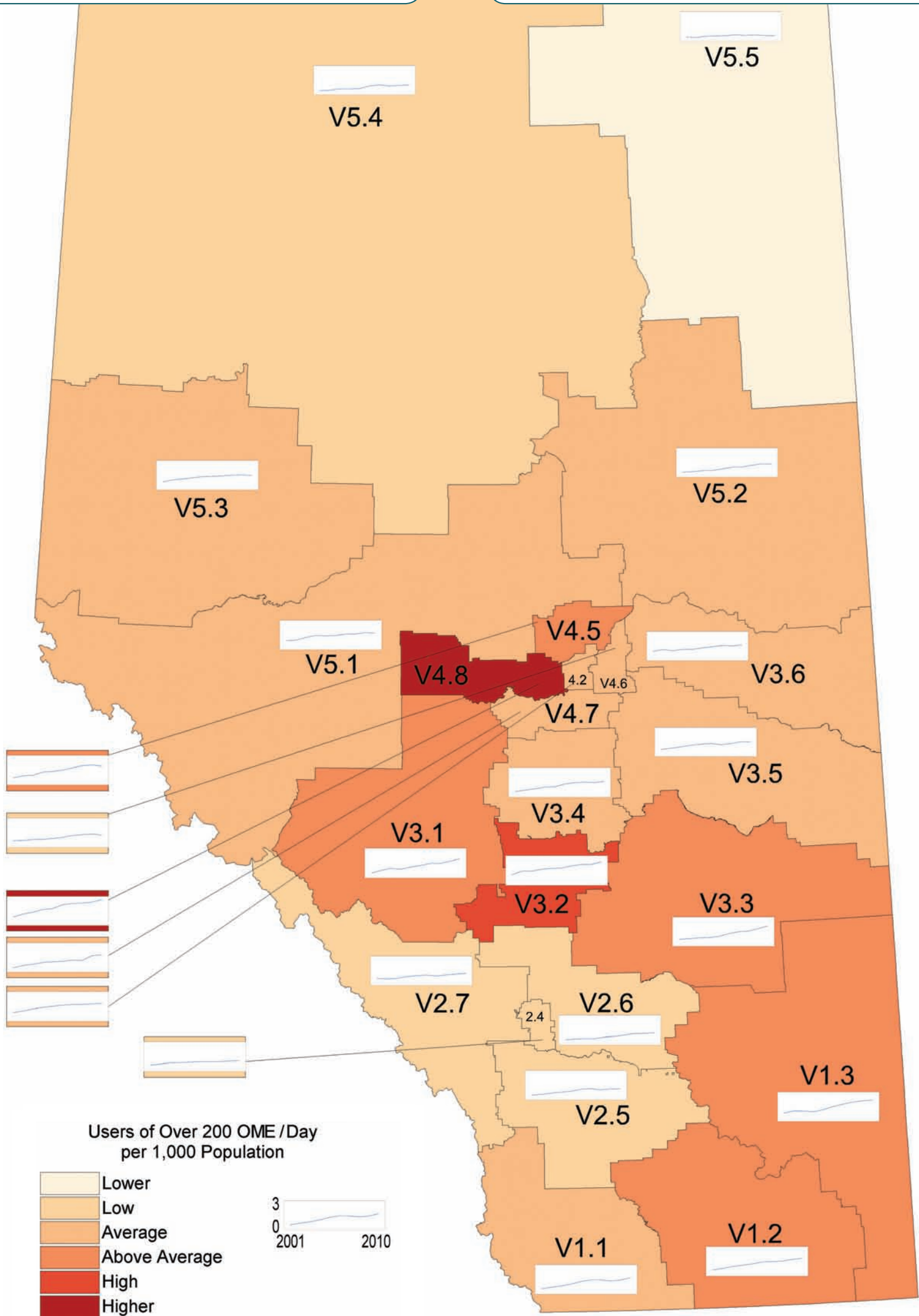
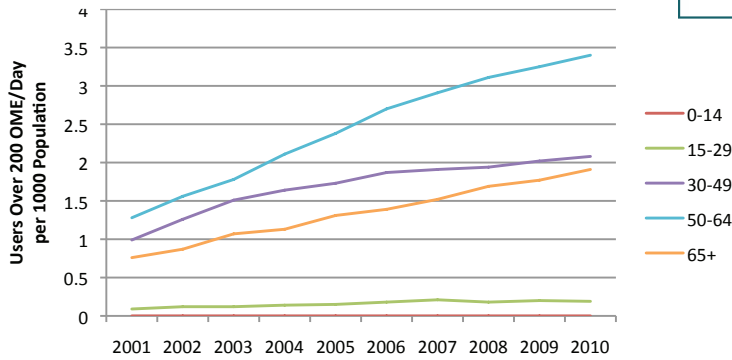
High-Dose Utilization of Opioids

Users of over 200 oral morphine equivalents per day (OME/day) per 1000 population.

Age-standardized utilization of high-dose opioids, by sex, 2001-2010.



Age-specific utilization of high-dose opioids, 2001-2010.



Medication Categories

Tables 2-4 show a breakdown of all TPP prescriptions for 2010, by Anatomical Therapeutic Classification (ATC) major categories and sub-categories.

Table 2. Number of TPP prescriptions by major Anatomical Therapeutic Classification category, 2010.

Major Anatomical Therapeutic Classification	Number of Prescriptions	Percent
N-Nervous System	411,192	99.1%
R-Respiratory System	2,362	0.6%
G-Genito-Urinary System & Sex Hormones	860	0.2%
A-Alimentary Tract & Metabolism	364	0.1%
M-Musculo-Skeletal System	44	0.0%
V-Various	1	0.0%
No ATC Code	1	0.0%
Total	414,824	100%

Table 3. Breakdown of nervous system prescriptions, 2010.

Nervous System Medication Category		Number of Prescriptions	Percent
N02-Analgesics	(Page 10)	358,668	87.2%
N07-Drugs for Addictive Disorders	(Page 12)	30,754	7.5%
N06-Psychoanaleptics	(Page 14)	21,072	5.1%
N01-Anesthetics		667	0.2%
N03-Antiepileptics		17	0.0%
N05-Psycholeptics		14	0.0%
Total		411,192	100%

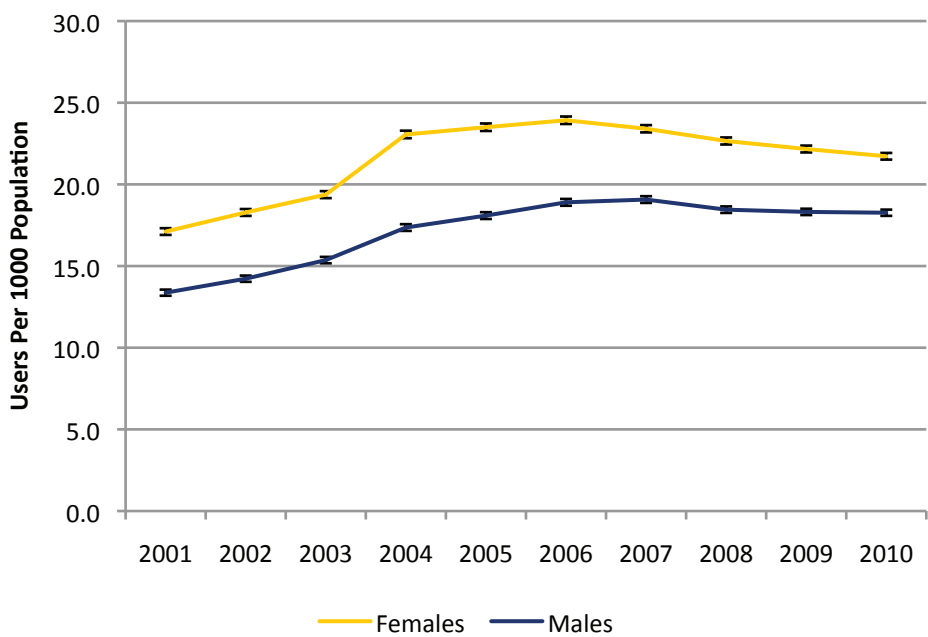
Table 4. Breakdown of analgesic prescriptions, 2010.

Nervous System Medication Category		Number of Prescriptions	Percent
N02BE51-Acetaminophen, comb excl. Psycholeptics	(Page 16)	136,311	38.0%
N02AA05-Oxycodone	(Page 18)	96,680	27.0%
N02AA01-Morphine	(Page 20)	50,175	14.0%
N02AA03-Hydromorphone	(Page 22)	45,202	12.6%
N02AB03-Fentanyl	(Page 24)	12,089	3.4%
N02AB02-Pethidine	(Page 26)	8,465	2.4%
N02AA79-Codein, combinations with Psycholeptics		3,810	1.1%
N02AC04-Dextropropoxyphene		2,756	0.8%
N02AF01-Butorphanol		876	0.2%
N02BA71-Acetylsalicylic Acid, comb with Psycholeptics		820	0.2%
N02BA51-Acetylsalicylic Acid, comb excl. Psycholeptics		717	0.2%
N02AD01-Pentazocine		441	0.1%
N02AA59-Codeine, combinations		197	0.1%
N02AA02-Opium		46	0.0%
N02AX02-Tramadol		46	0.0%
N02AX52-Tramadol, combinations		35	0.0%
N02AF02-Nalbufine		1	0.0%
N02CA52-Ergotamine, combinations excl. Psycholeptics		1	0.0%
Total		358,668	100%

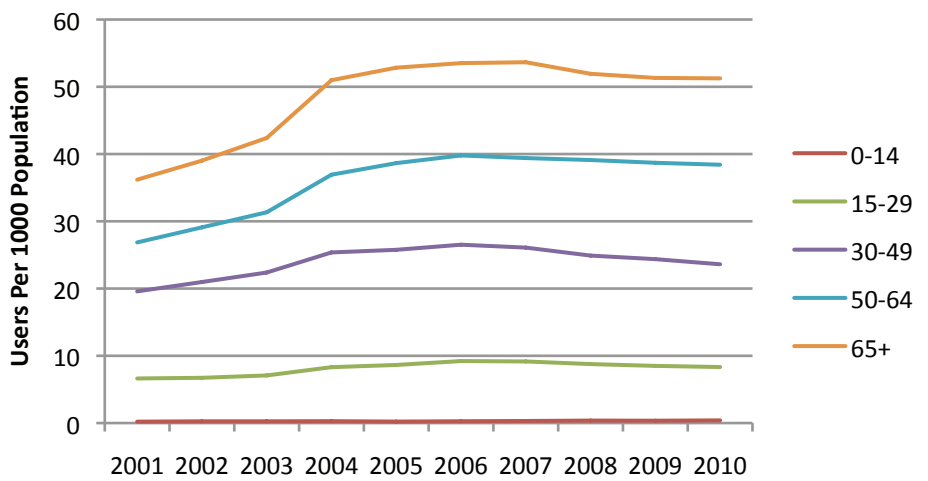
Triplicate Prescription Program Medication Utilization

Opioid Analgesics (N02)

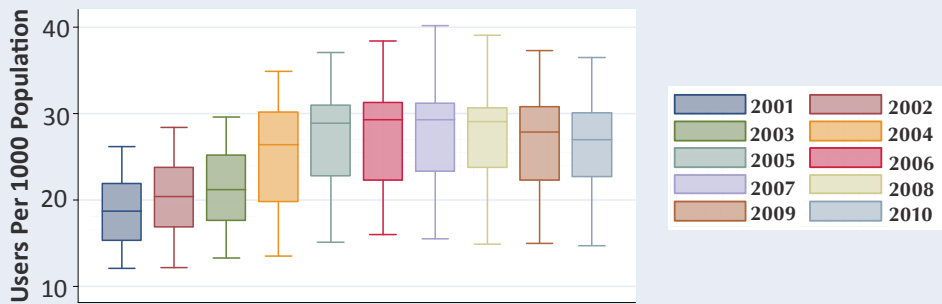
Age-standardized utilization of opioid analgesics, by sex, 2001-2010.



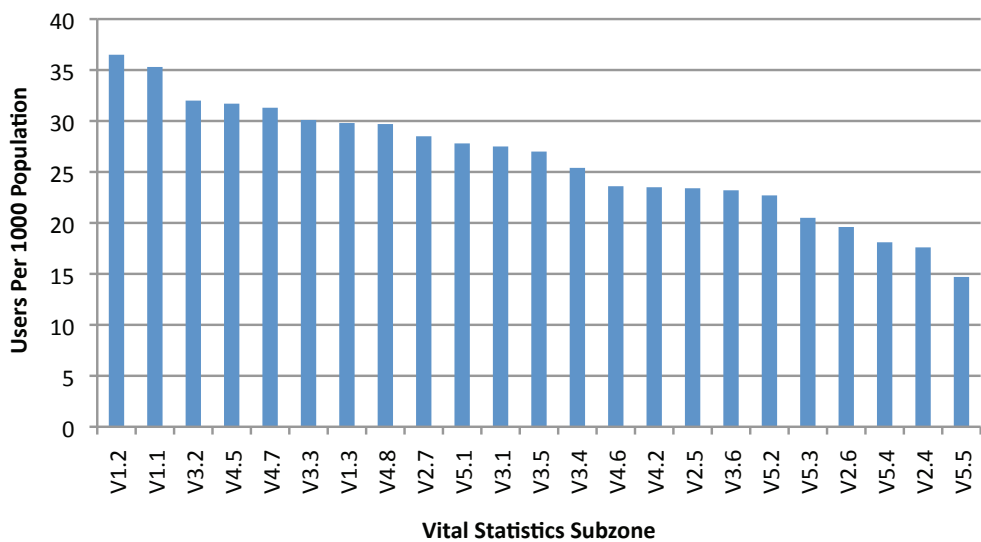
Age-specific utilization of opioid analgesics, 2001-2010.

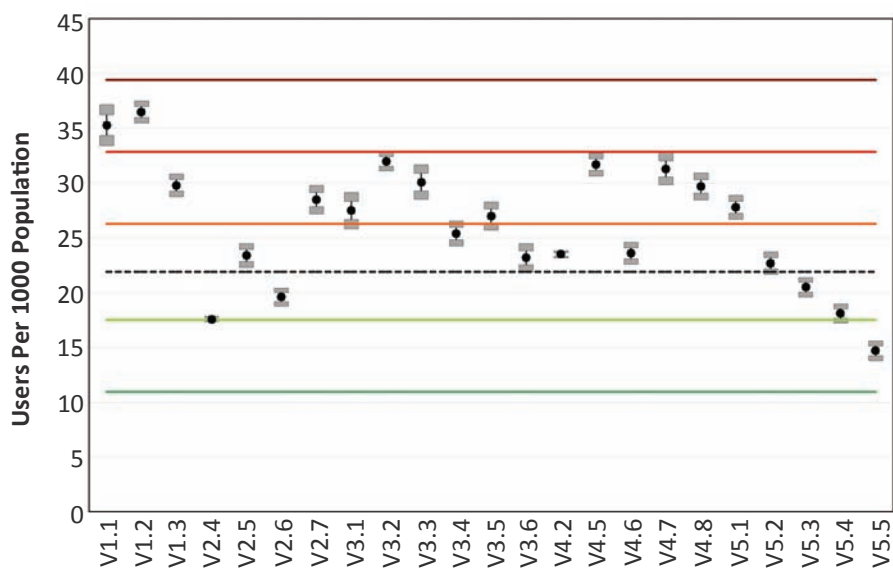


Distribution of vital statistics subzone utilization of opioid analgesics, 2001-2010.



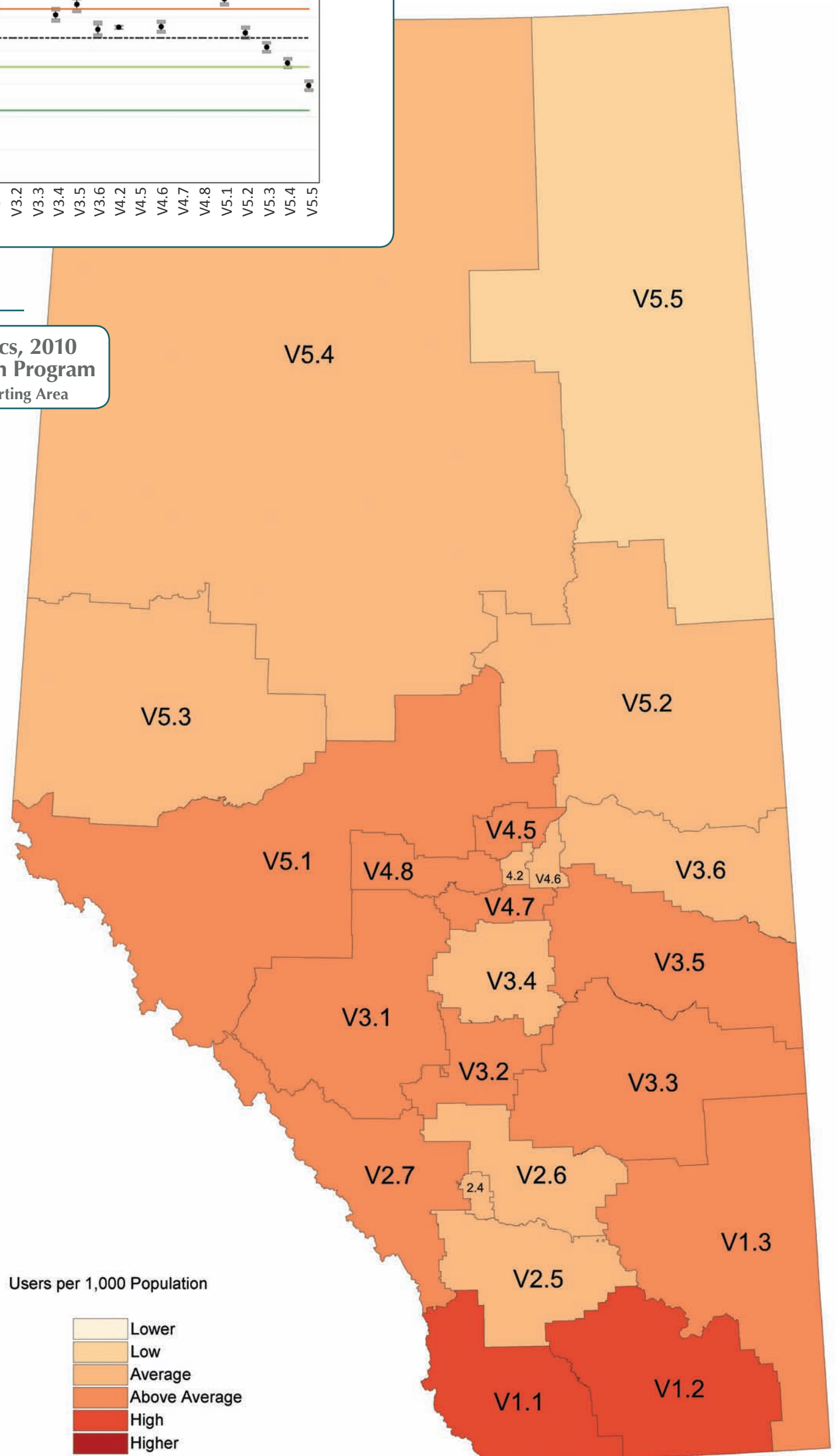
Ranked vital statistics subzone utilization of opioid analgesics, 2010.





Utilization of opioid analgesics with 95% confidence intervals, by vital statistics subzone, 2010.

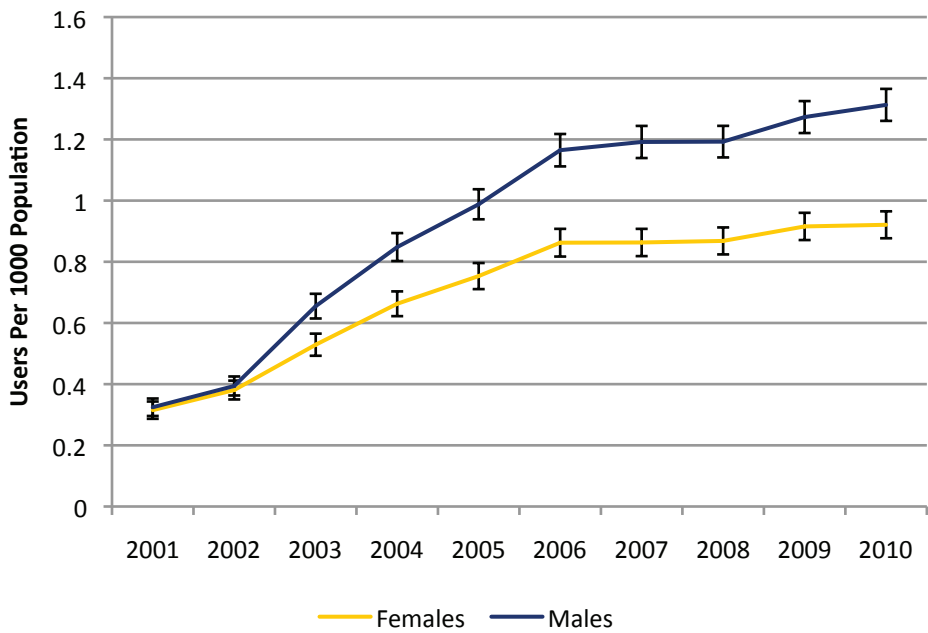
N02 Opioid Analgesics, 2010
Triplicate Prescription Program
 Vital Statistics Subzone Reporting Area



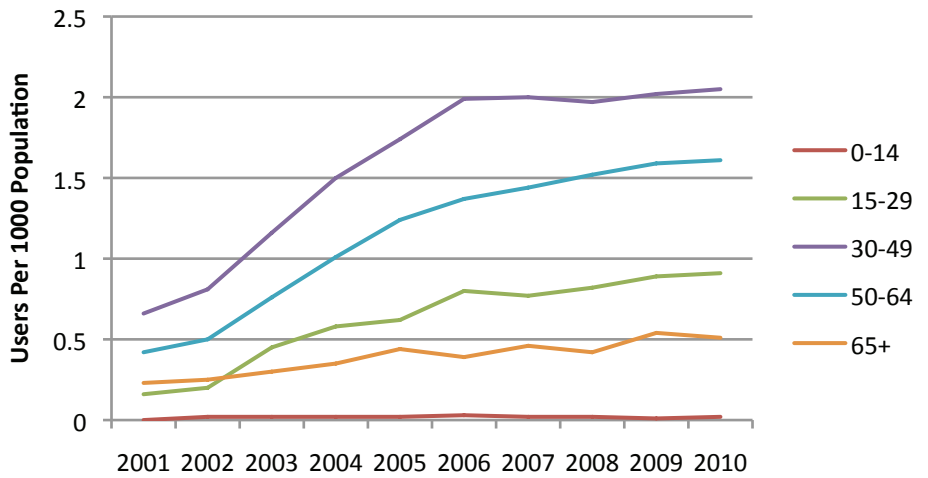
Triplicate Prescription Program Medication Utilization

Drugs for Addictive Disorders (N07)

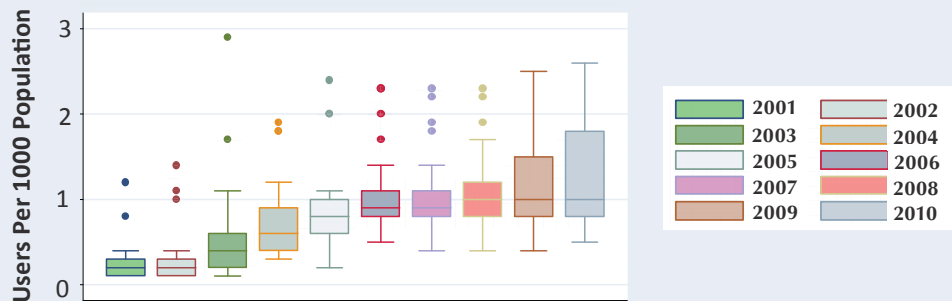
Age-standardized utilization of drugs for addictive disorders, by sex, 2001-2010.



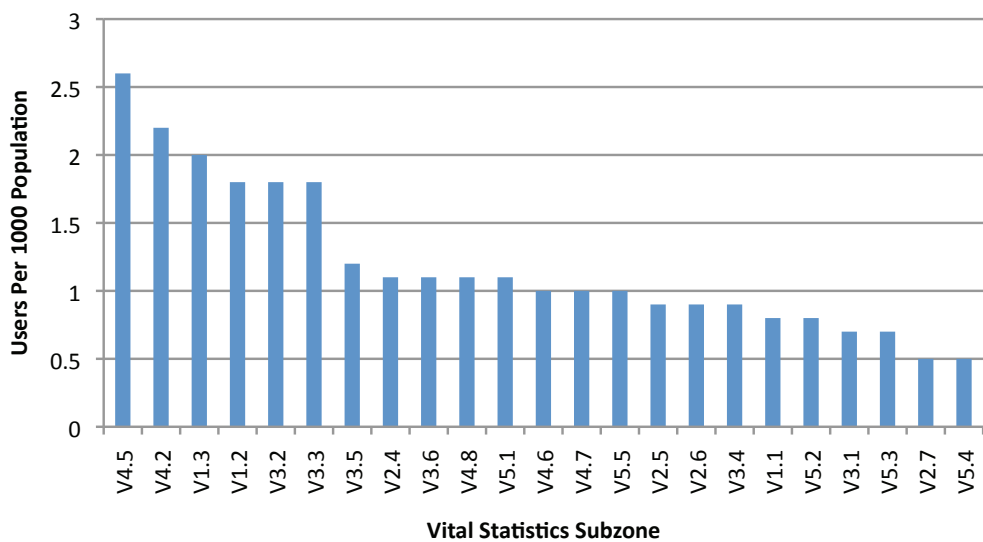
Age-specific utilization of drugs for addictive disorders, 2001-2010.

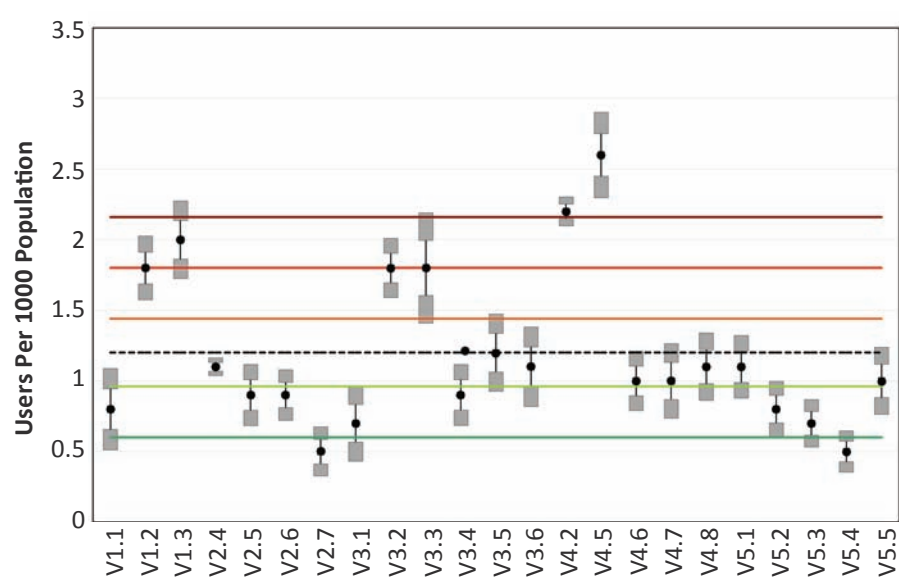


Distribution of vital statistics subzone utilization of drugs for addictive disorders, 2001-2010.



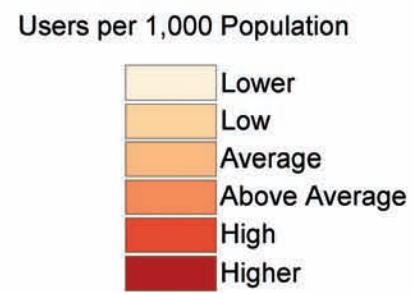
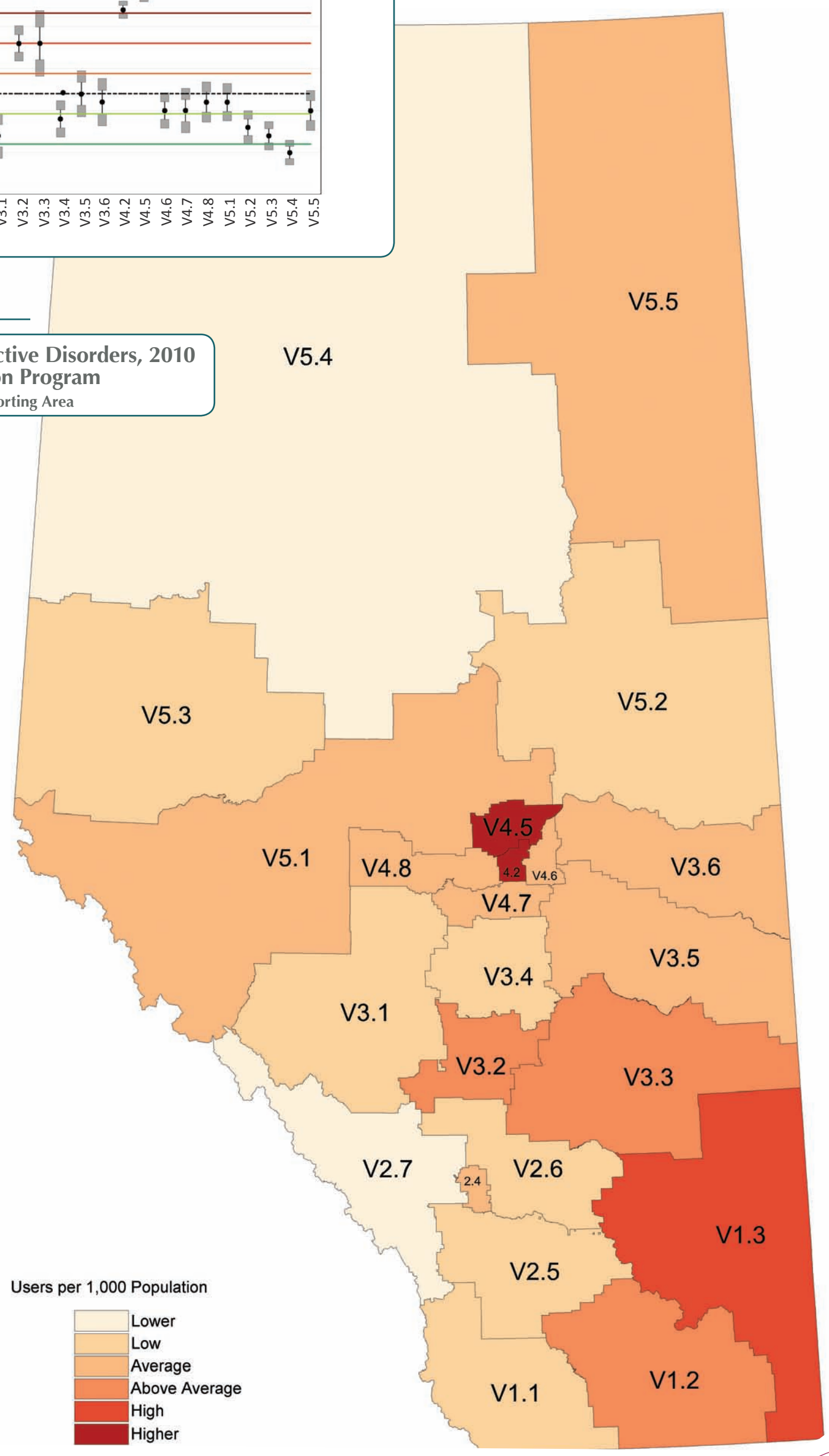
Ranked vital statistics subzone utilization of drugs for addictive disorders, 2010.





Utilization of drugs for addictive disorders with 95% confidence intervals, by vital statistics subzone, 2010.

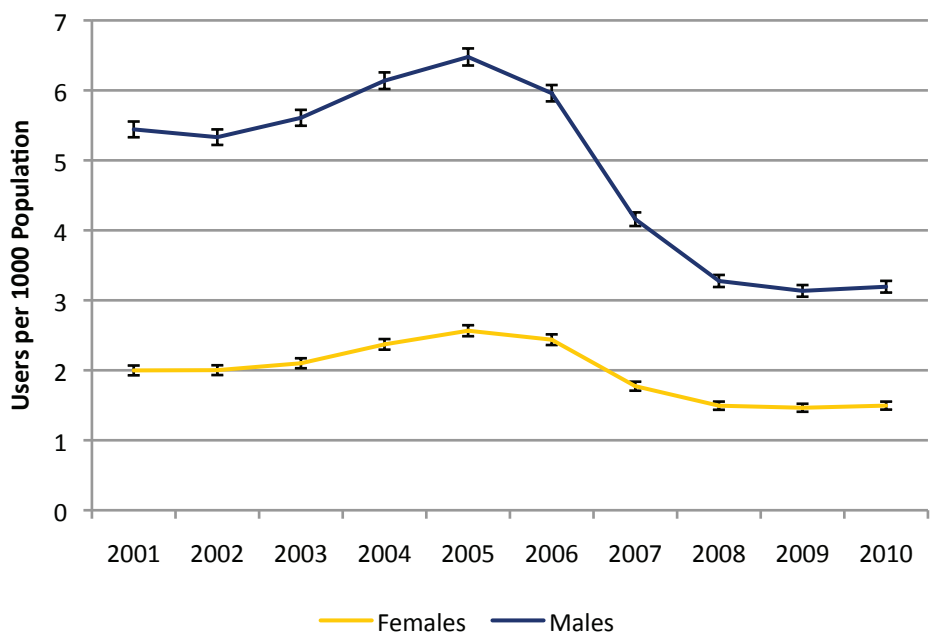
N07 Drugs for Addictive Disorders, 2010
Triplicate Prescription Program
 Vital Statistics Subzone Reporting Area



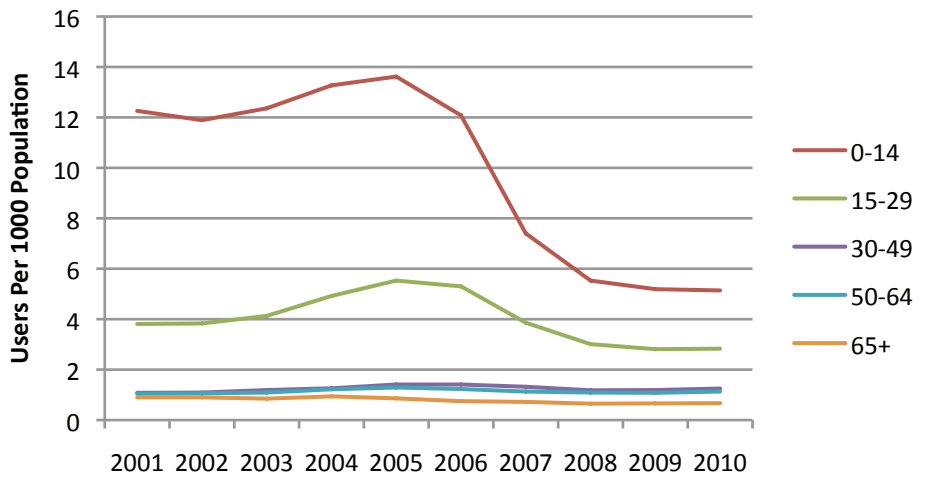
Triplicate Prescription Program Medication Utilization

Psychoanaleptics (N06)

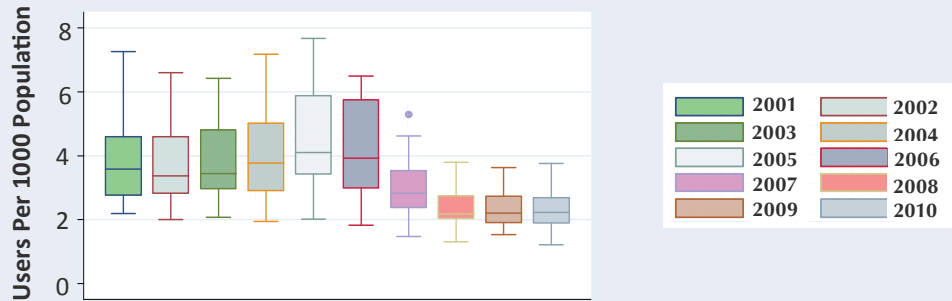
Age-standardized utilization of psychoanaleptics, by sex, 2001-2010.



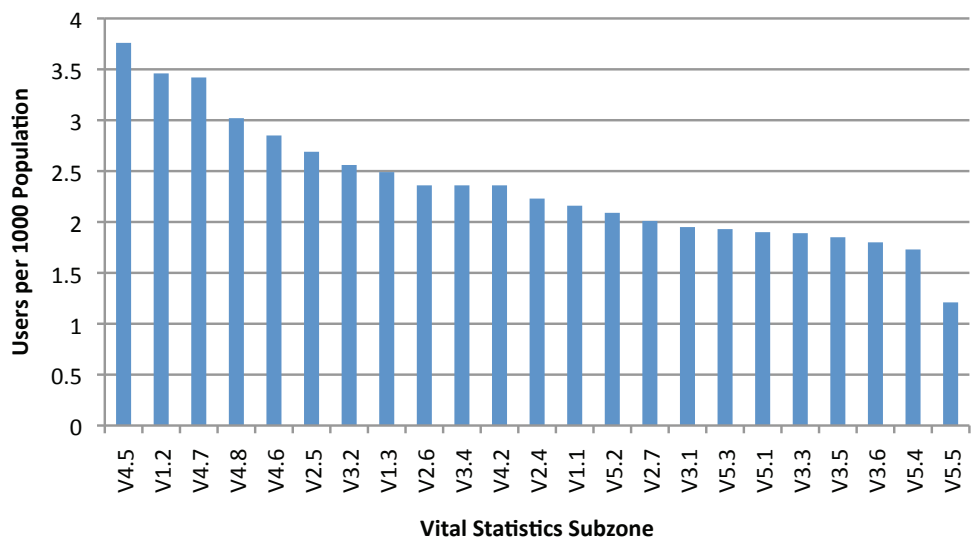
Age-specific utilization of psychoanaleptics, 2001-2010.

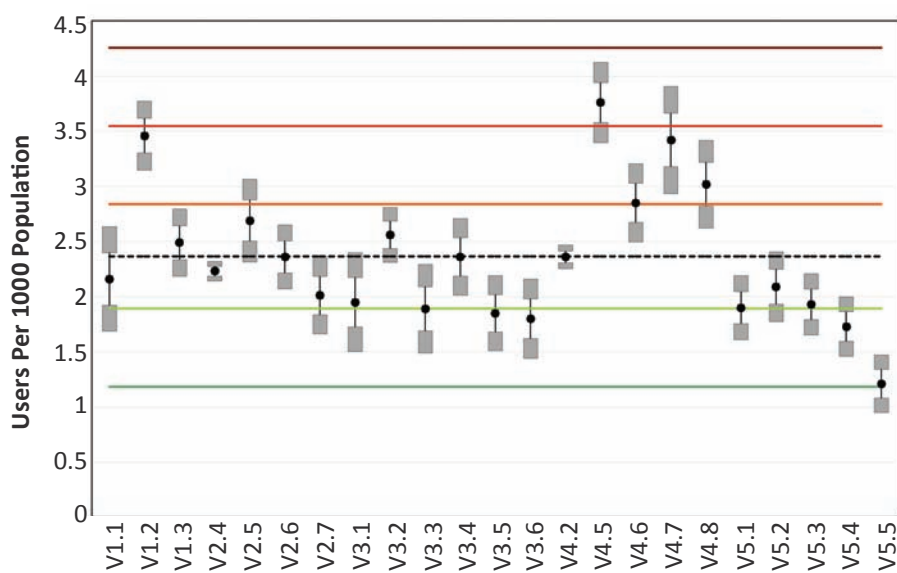


Distribution of vital statistics subzone utilization of psychoanaleptics, 2001-2010.



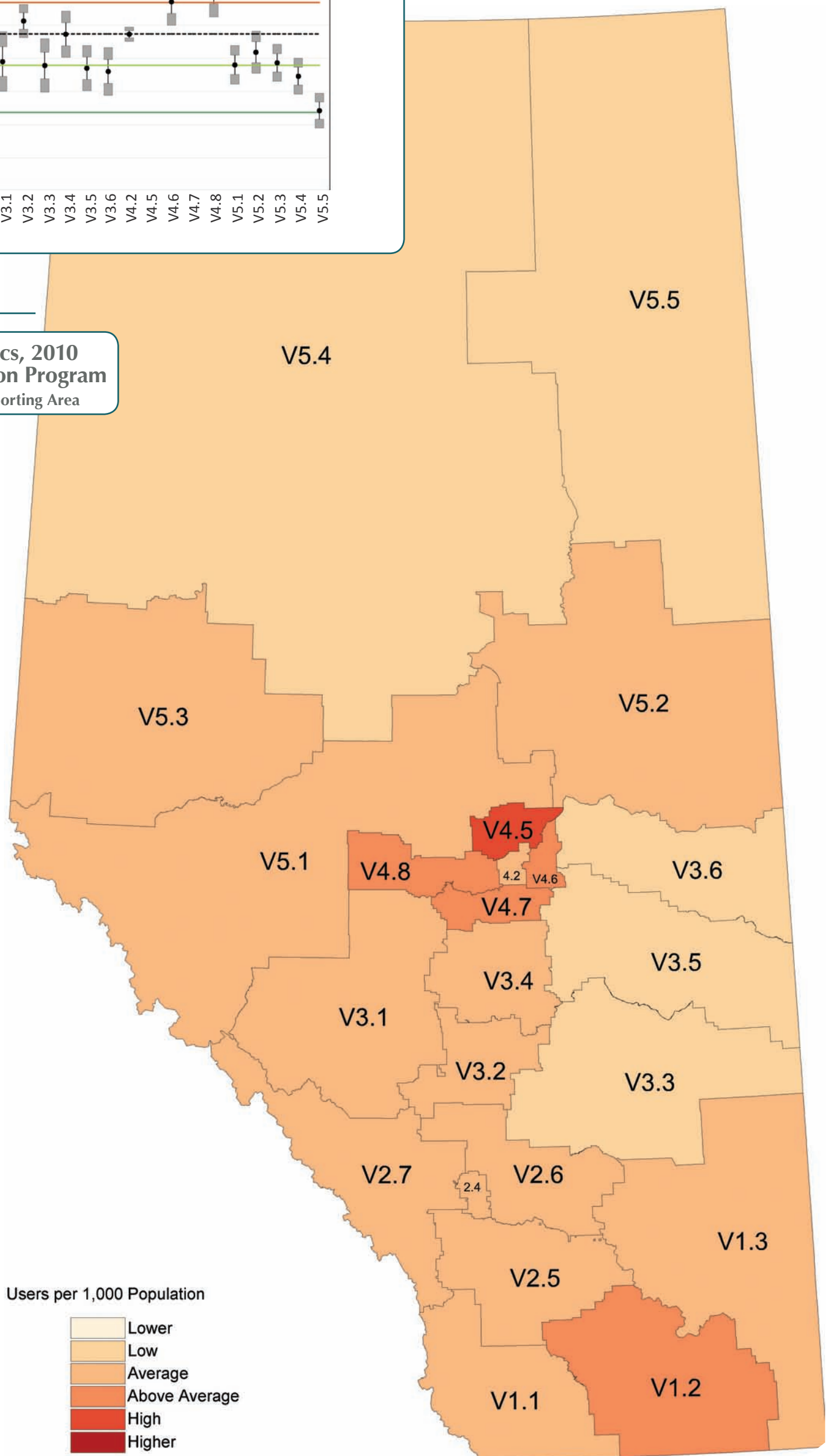
Ranked vital statistics subzone utilization of psychoanaleptics, 2010.





Utilization of psychoanaleptics with 95% confidence intervals, by vital statistics subzone, 2010.

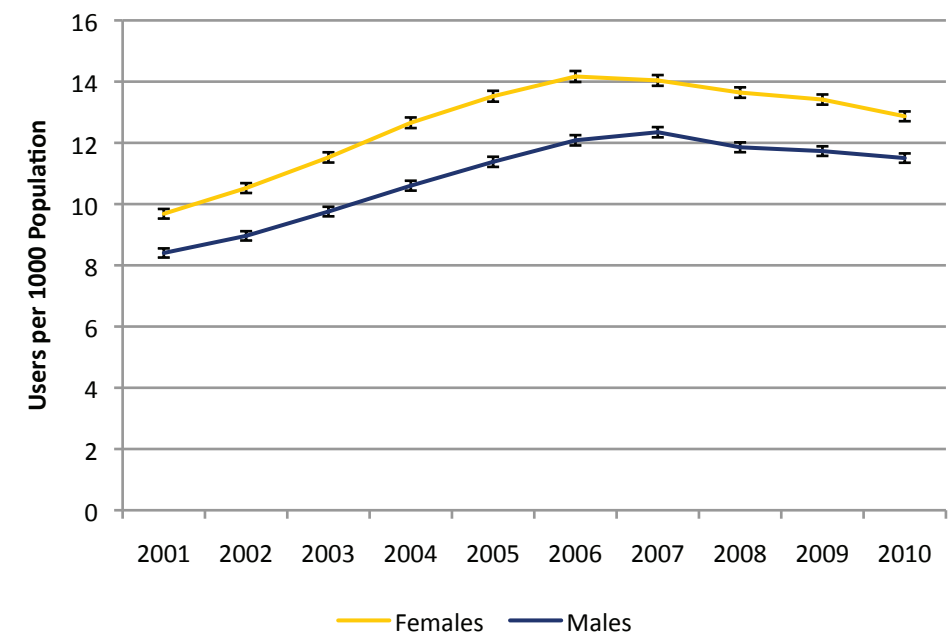
N06 Psychoanaleptics, 2010
Triplicate Prescription Program
 Vital Statistics Subzone Reporting Area



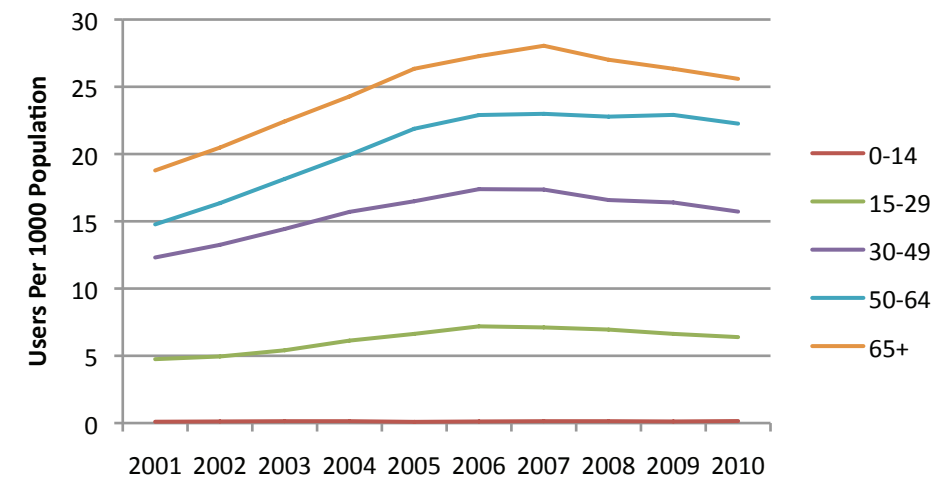
Comparison of Top Six Opioid Analgesics

Oxycodone-Acetaminophen Combinations (N02BE51)

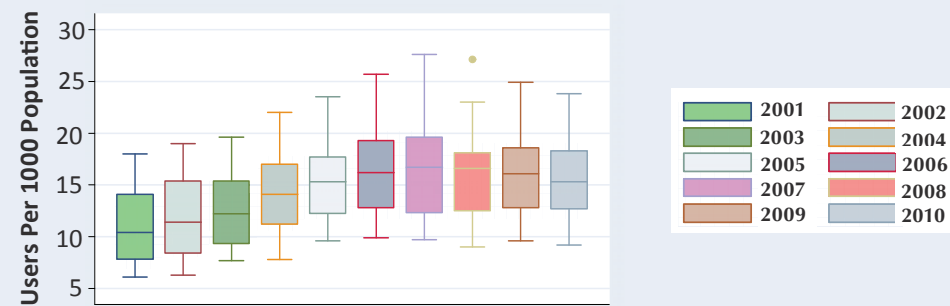
Age-standardized utilization of oxycodone-acetaminophen combinations, by sex, 2001-2010.



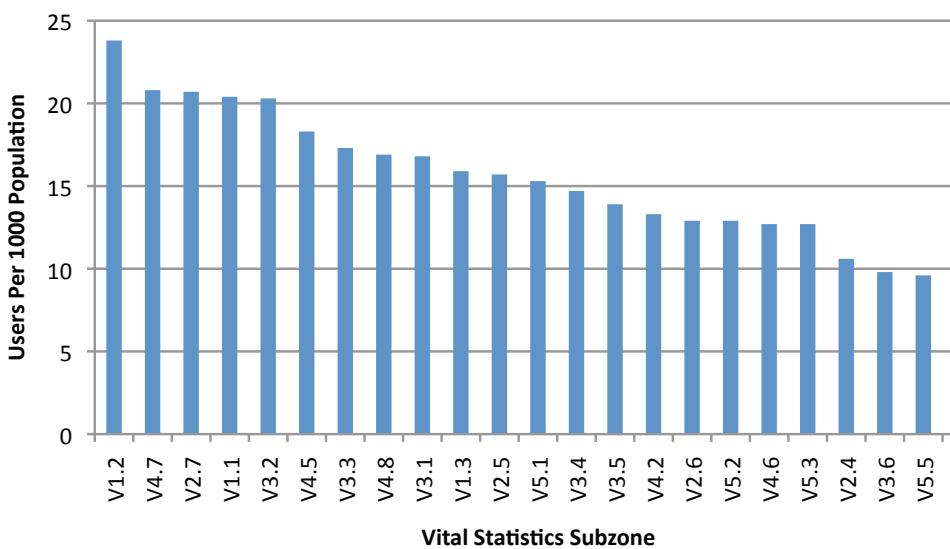
Age-specific utilization of oxycodone-acetaminophen combinations, 2001-2010.

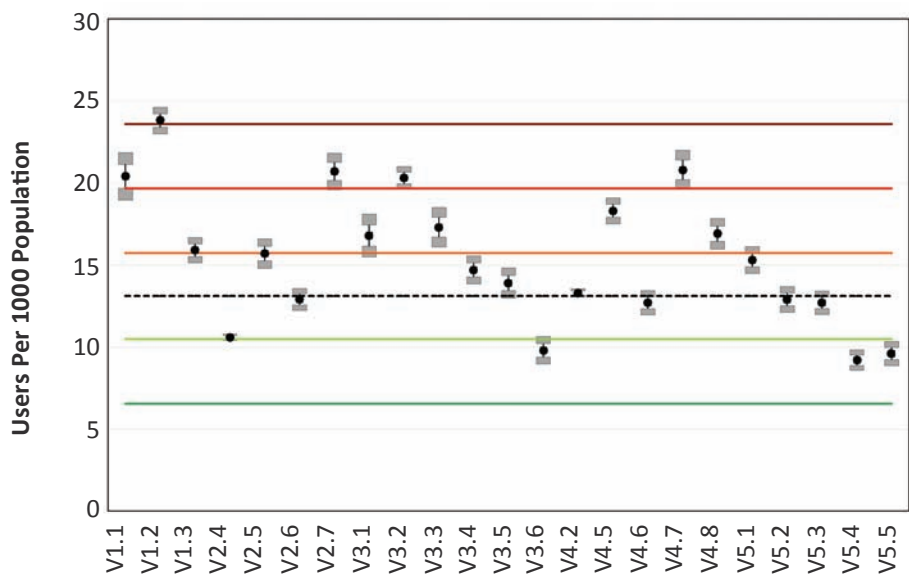


Distribution of vital statistics subzone utilization of oxycodone-acetaminophen combinations, 2001-2010.



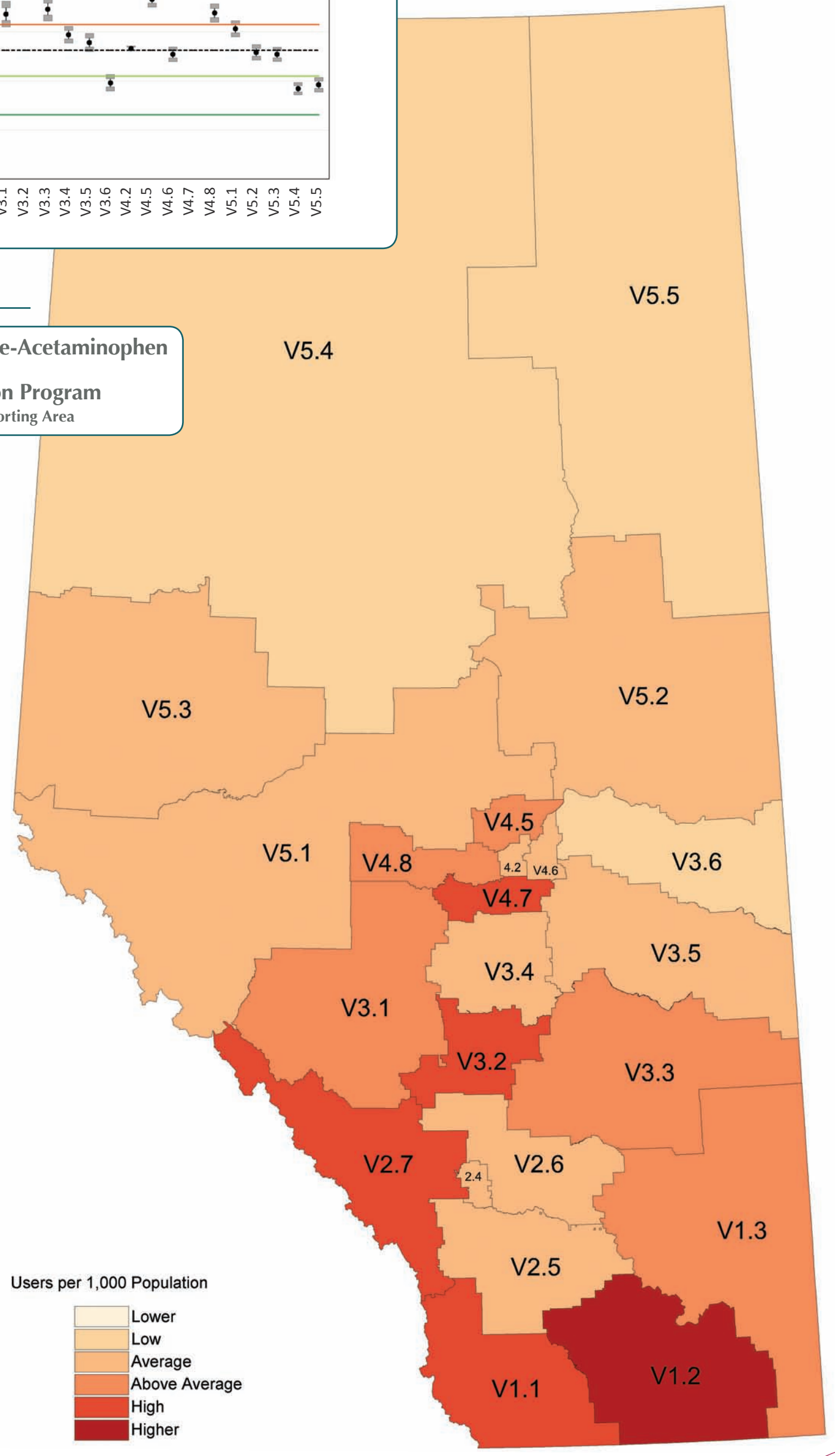
Ranked vital statistics subzone utilization of oxycodone-acetaminophen combinations, 2010.





Utilization of oxycodone-acetaminophen combinations with 95% confidence intervals, by vital statistics subzone, 2010.

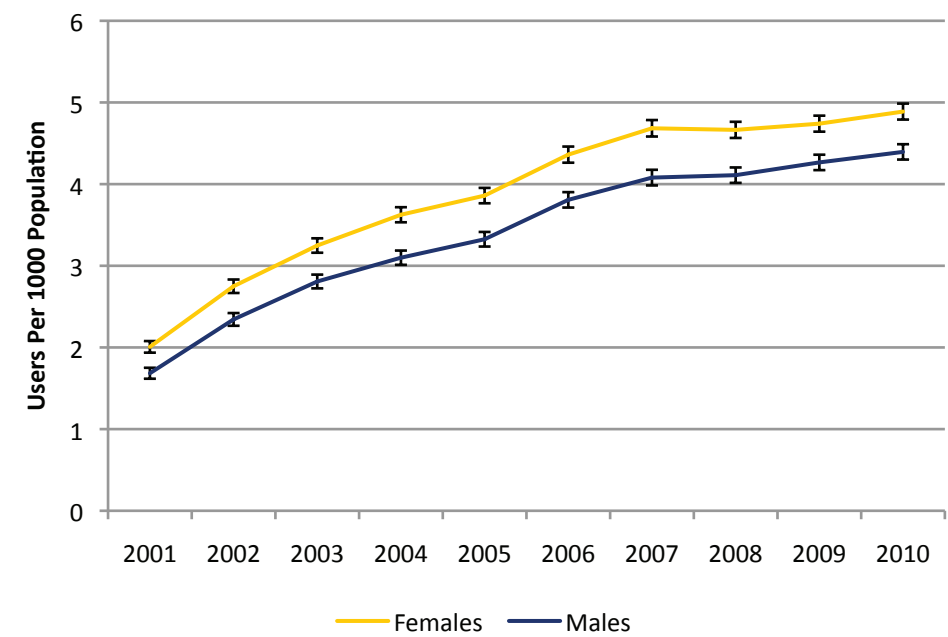
N02BE51 Oxycodone-Acetaminophen Combinations, 2010
Triplicate Prescription Program
 Vital Statistics Subzone Reporting Area



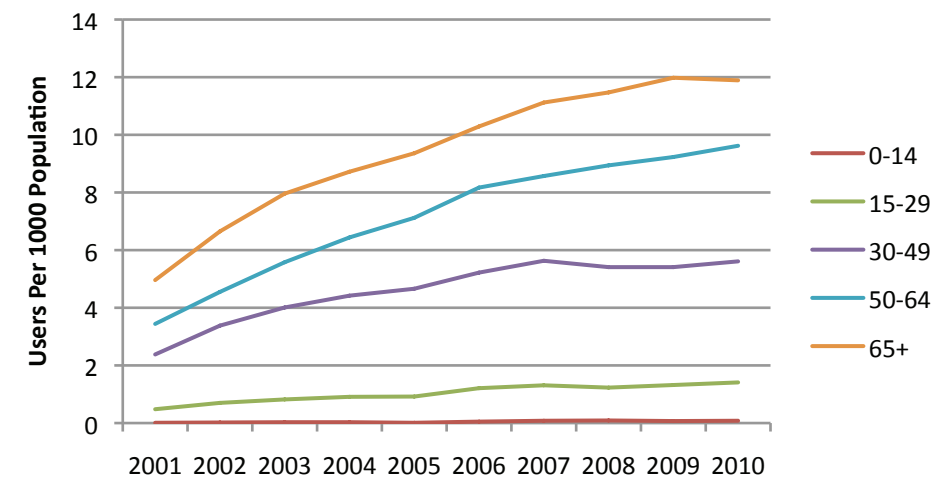
Comparison of Top Six Opioid Analgesics

Oxycodone (N02AA05)

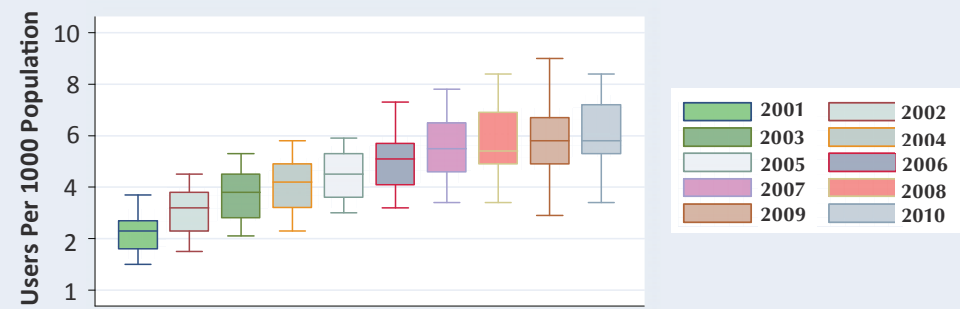
Age-standardized utilization of oxycodone, by sex, 2001-2010.



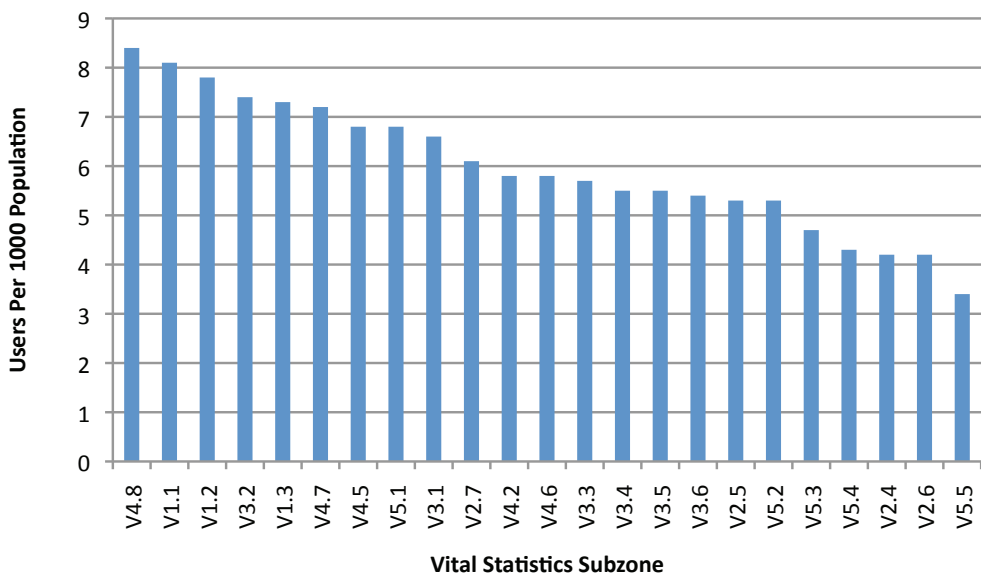
Age-specific utilization of oxycodone, 2001-2010.

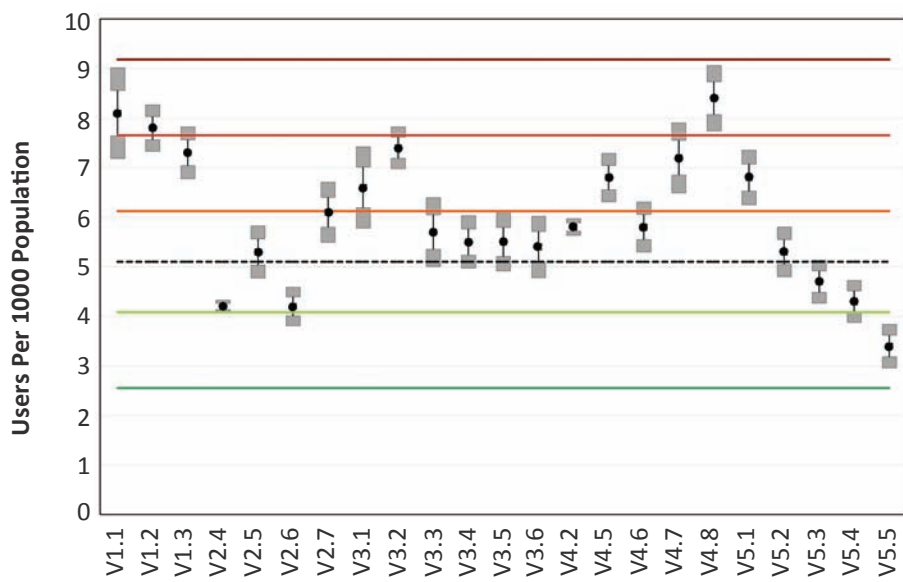


Distribution of vital statistics subzone utilization of oxycodone, 2001-2010.



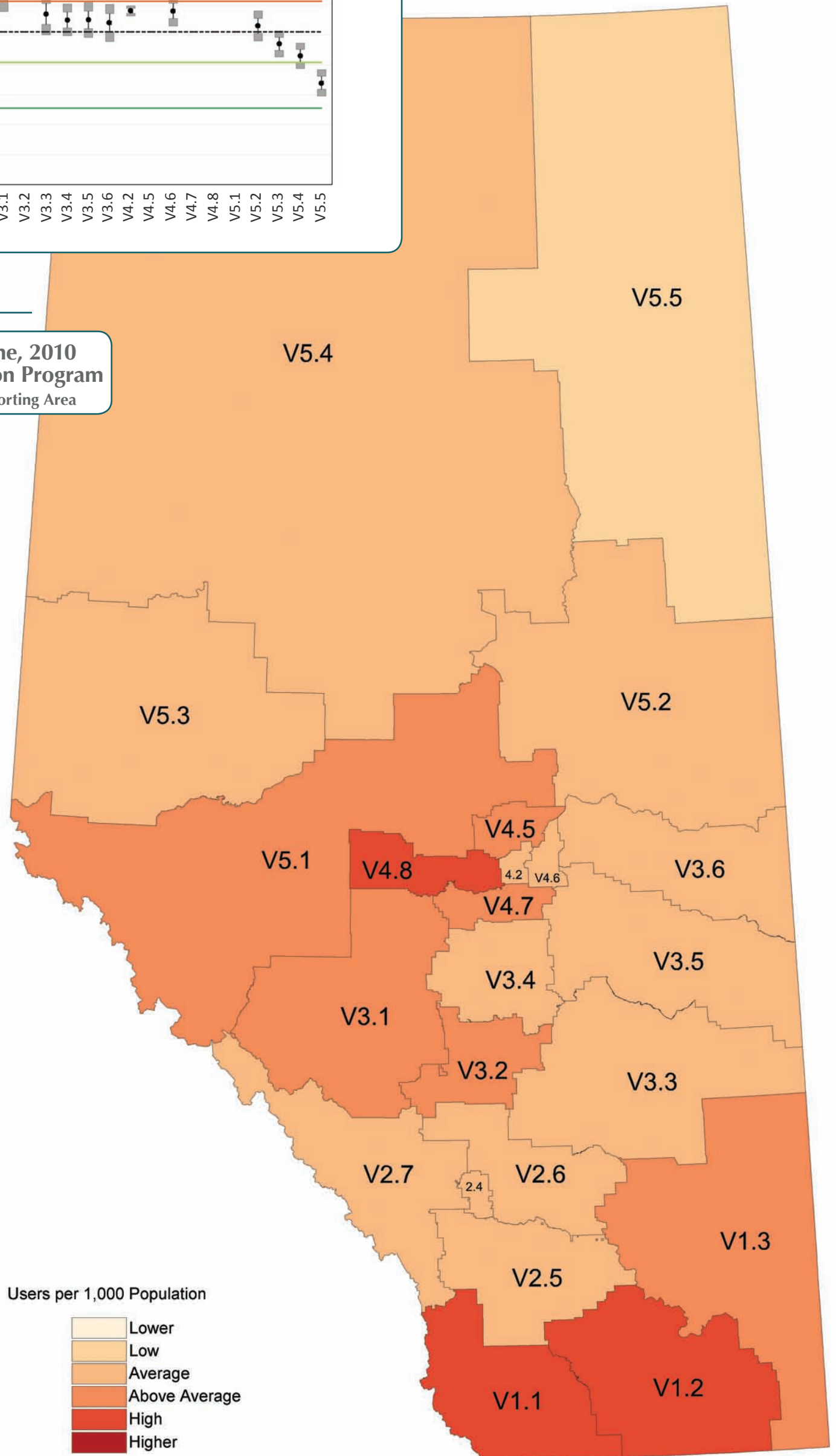
Ranked vital statistics subzone utilization of oxycodone, 2010.





Utilization of oxycodone with 95% confidence intervals, by vital statistics subzone, 2010.

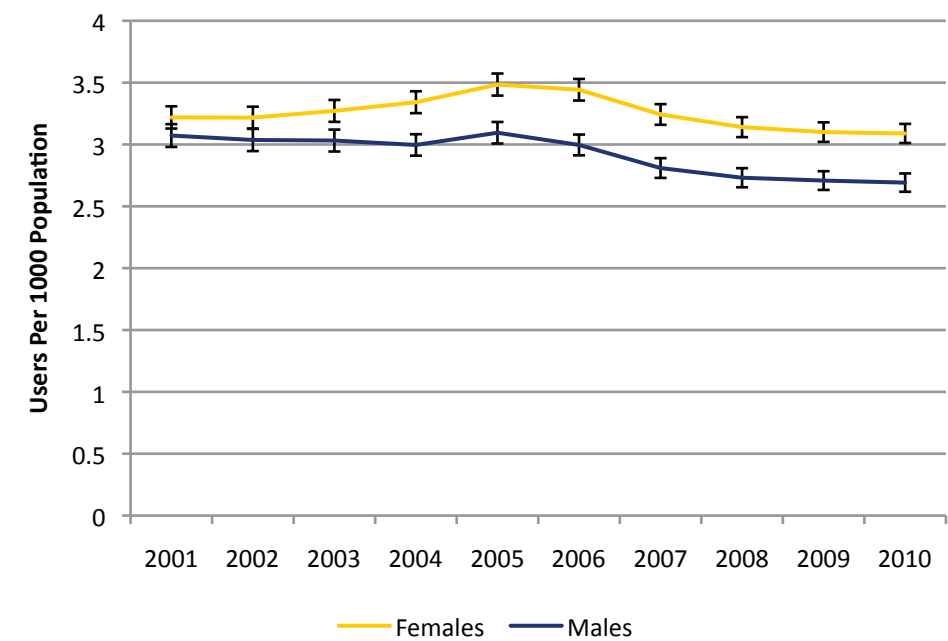
N02AA05 Oxycodone, 2010
Triplicate Prescription Program
 Vital Statistics Subzone Reporting Area



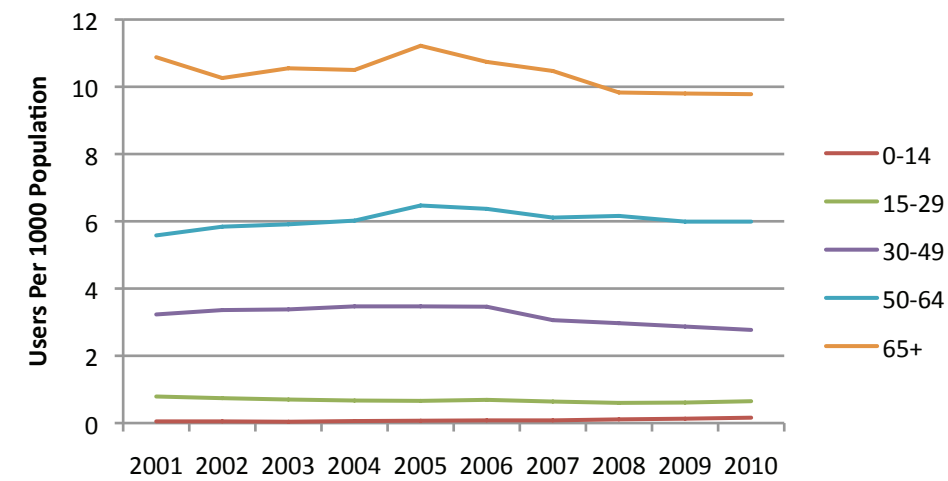
Comparison of Top Six Opioid Analgesics

Morphine (N02AA01)

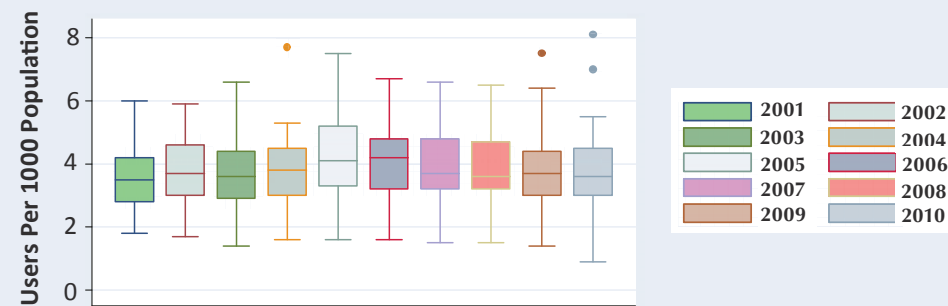
Age-standardized utilization of morphine, by sex, 2001-2010.



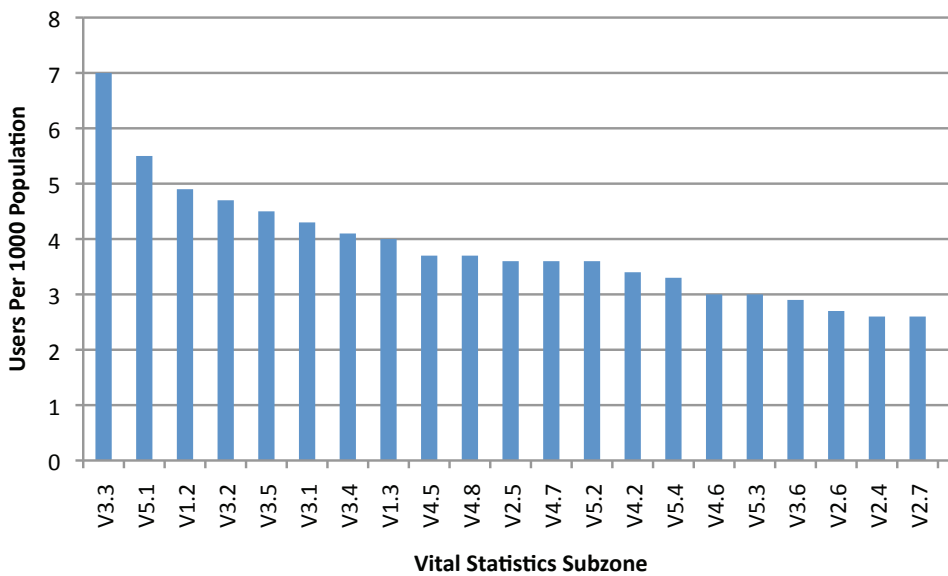
Age-specific utilization of morphine, 2001-2010.

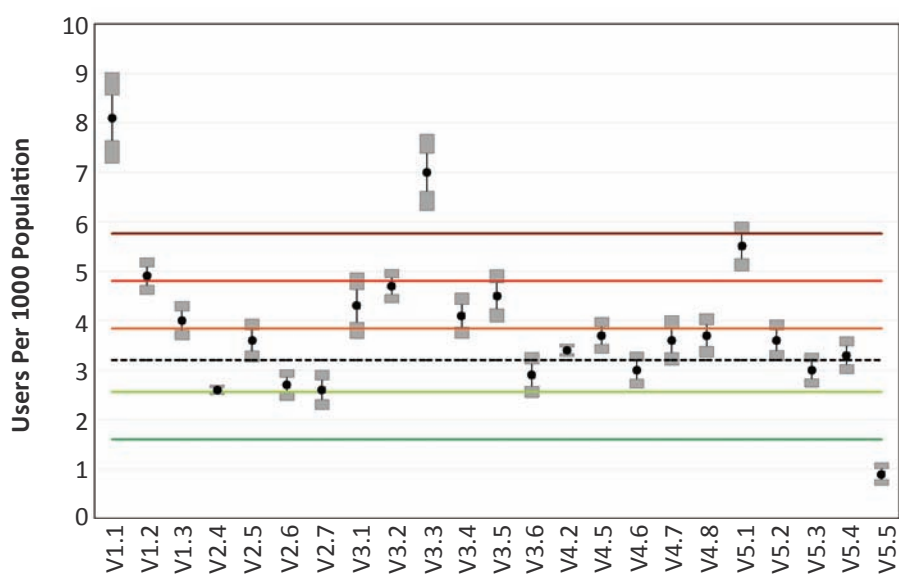


Distribution of vital statistics subzone utilization of morphine, 2001-2010.



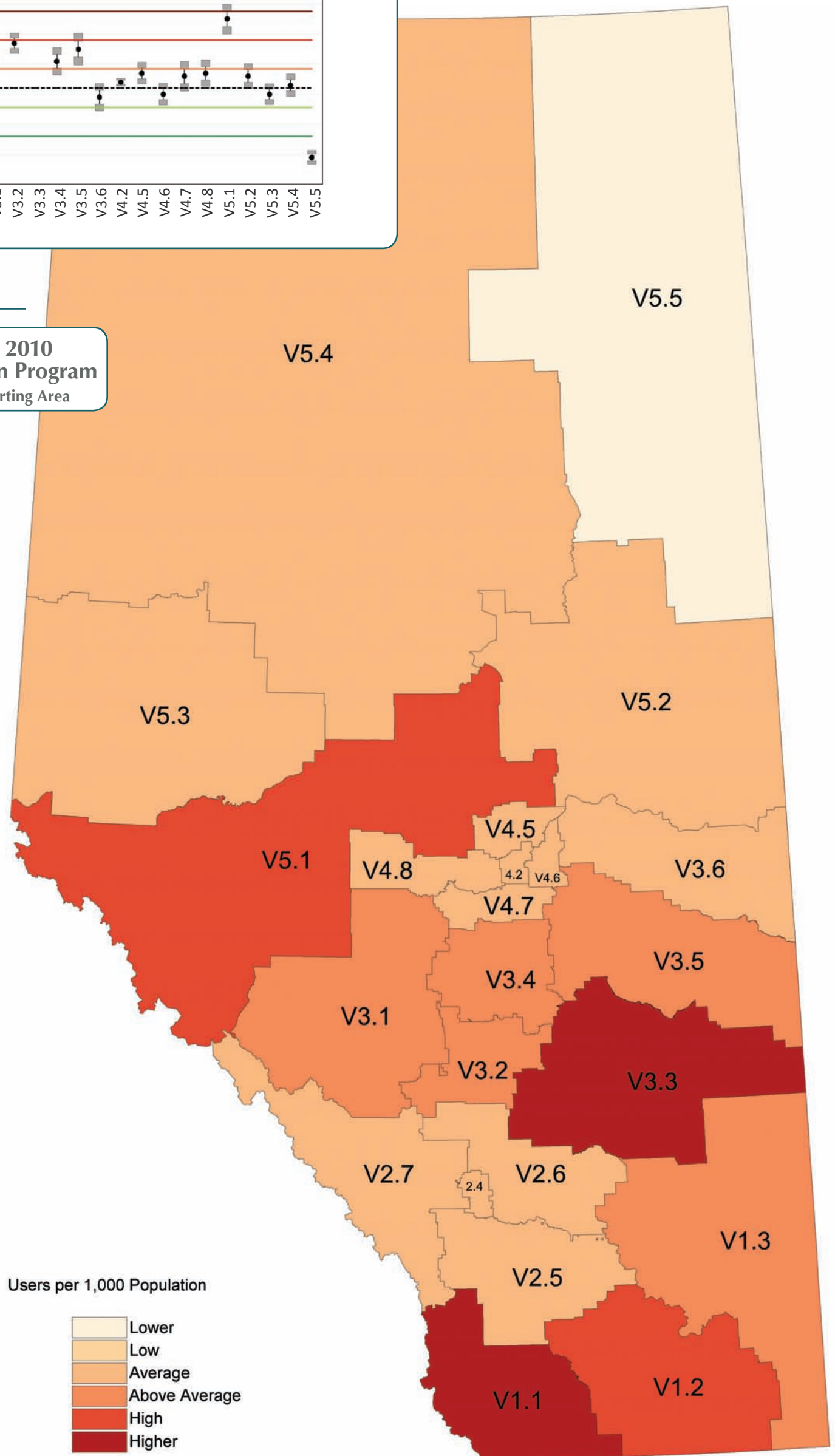
Ranked vital statistics subzone utilization of morphine, 2010.





Utilization of morphine with 95% confidence intervals, by vital statistics subzone, 2010.

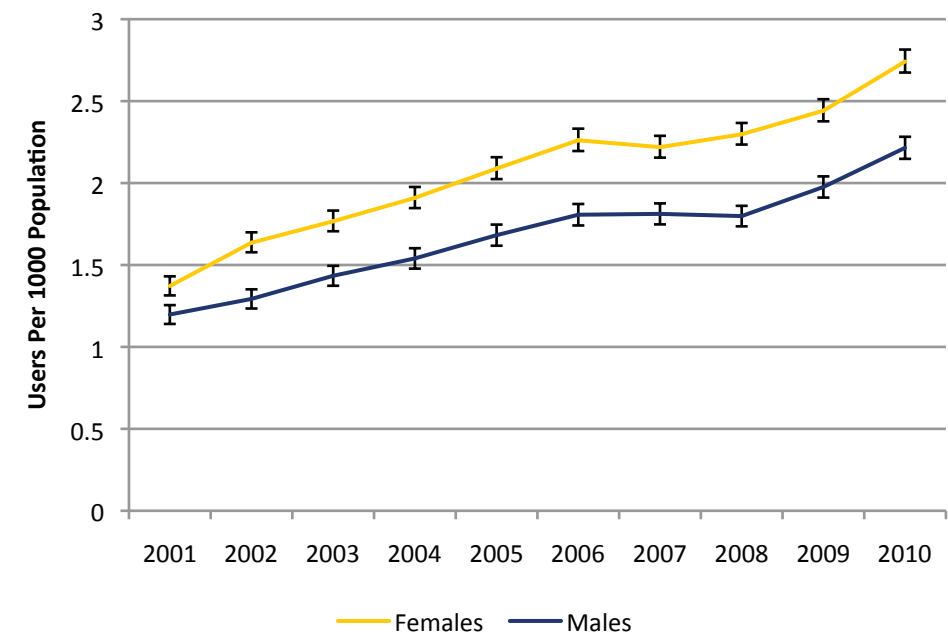
**N02AA01 Morphine, 2010
Triplicate Prescription Program
Vital Statistics Subzone Reporting Area**



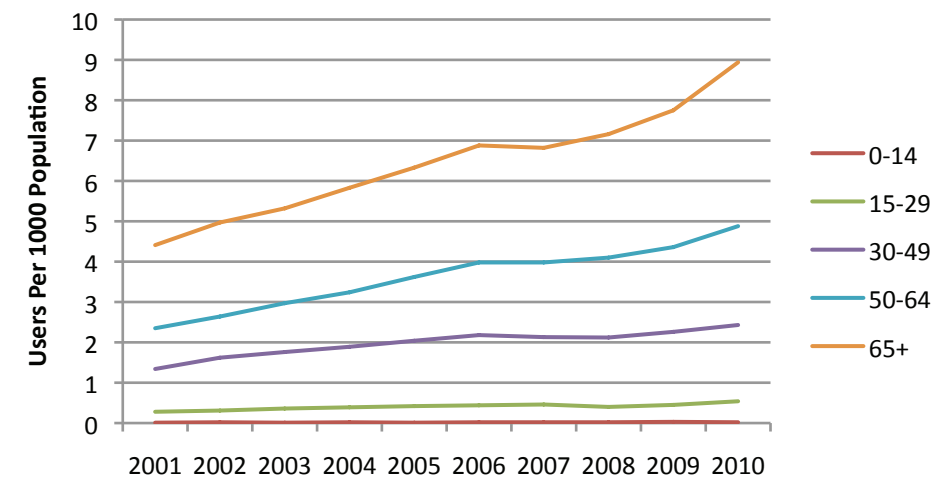
Comparison of Top Six Opioid Analgesics

Hydromorphone (N02AA03)

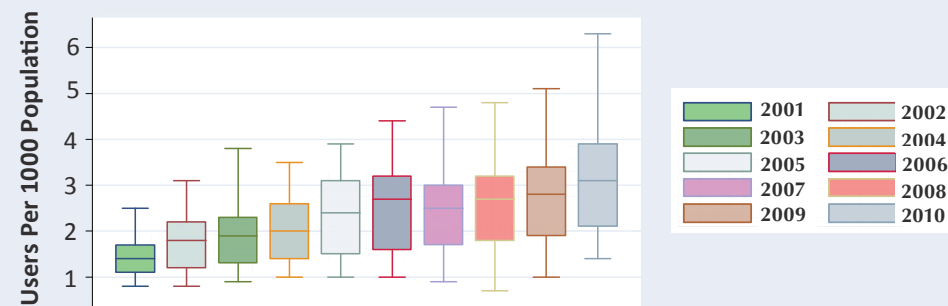
Age-standardized utilization of hydromorphone, by sex, 2001-2010.



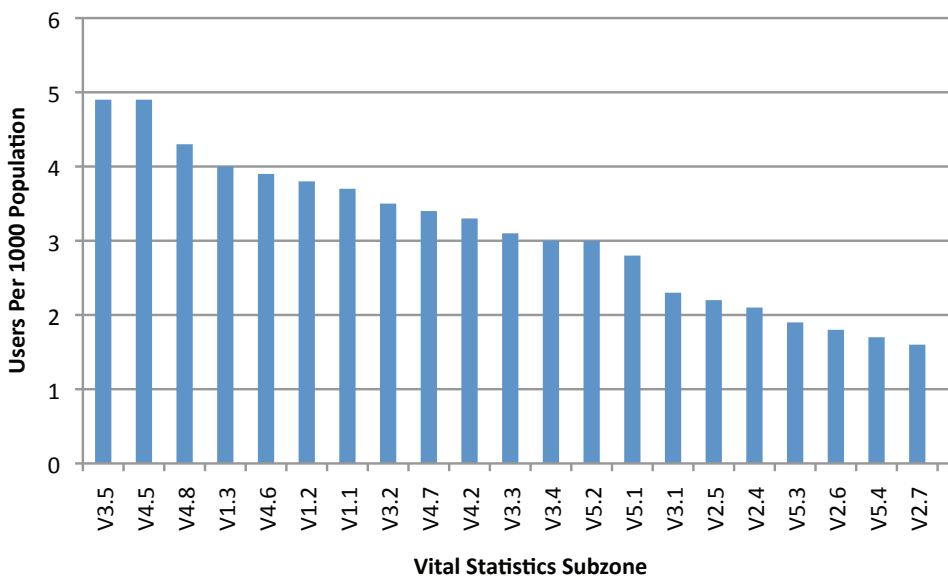
Age-specific utilization of hydromorphone, 2001-2010.

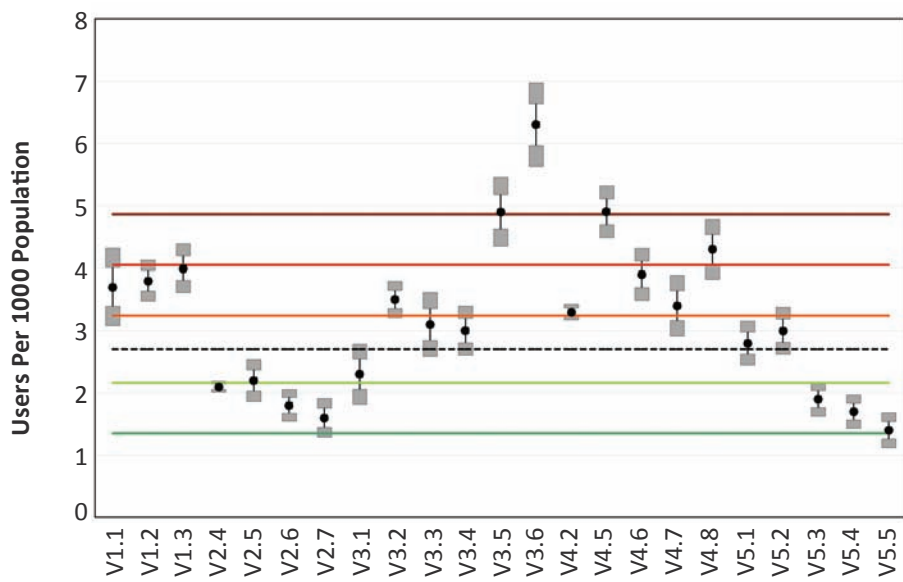


Distribution of vital statistics subzone utilization of hydromorphone, 2001-2010.

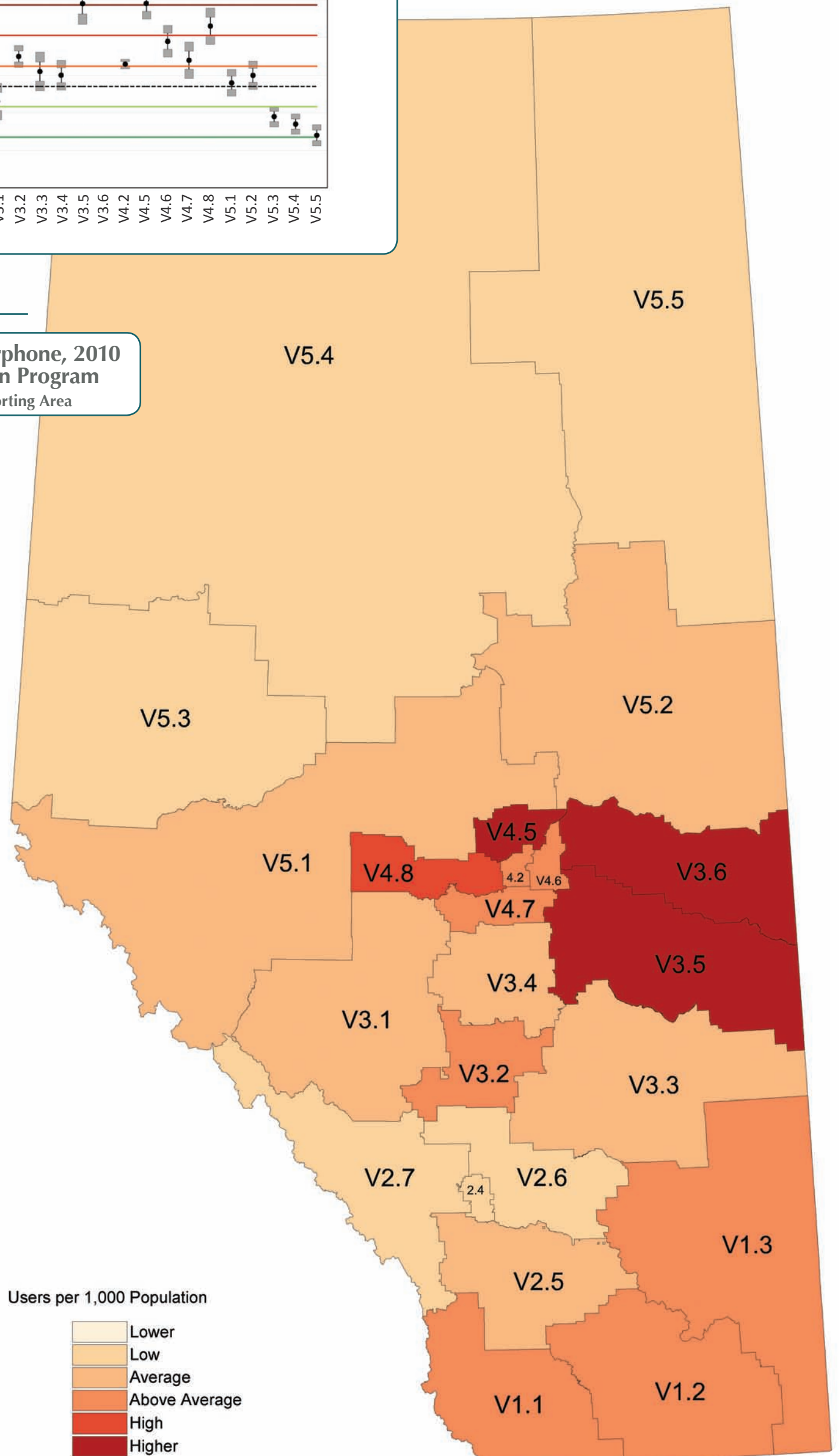


Ranked vital statistics subzone utilization of hydromorphone, 2010.





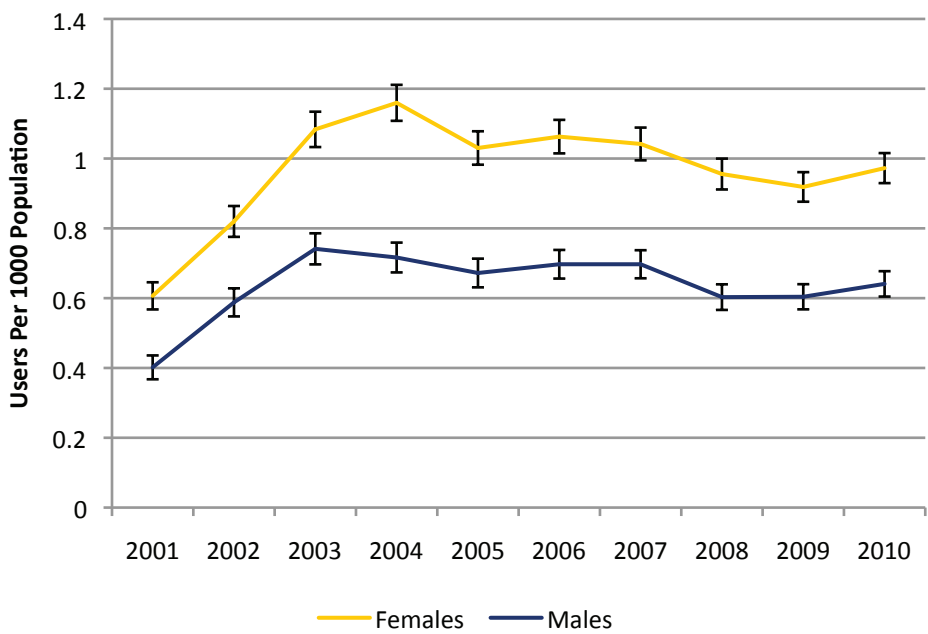
**N02AA03 Hydromorphone, 2010
Triplicate Prescription Program**
Vital Statistics Subzone Reporting Area



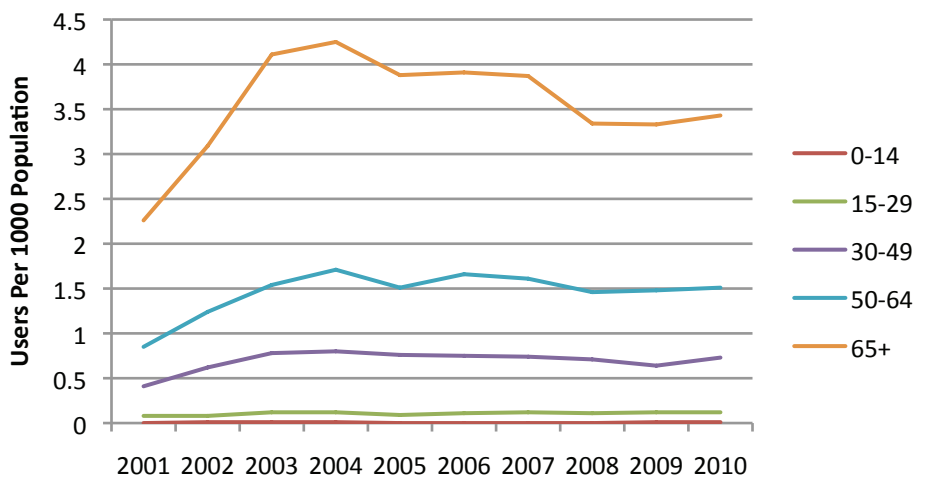
Comparison of Top Six Opioid Analgesics

Fentanyl (N02AB03)

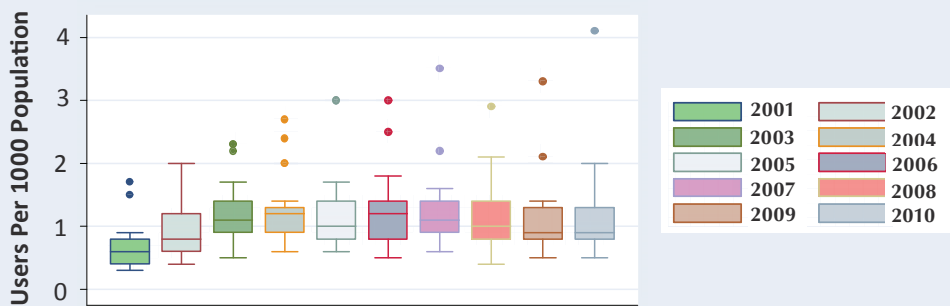
Age-standardized utilization of fentanyl, by sex, 2001-2010.



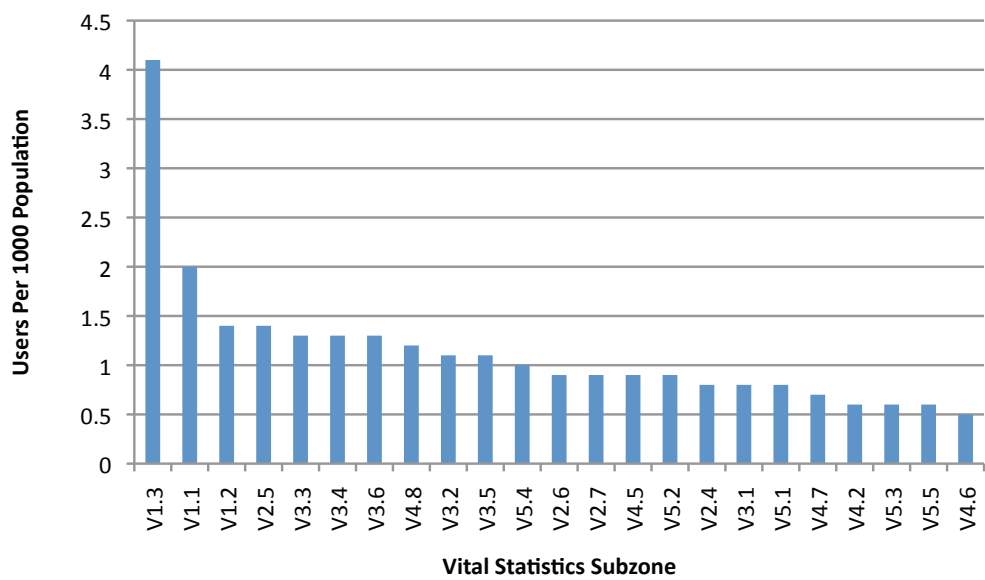
Age-specific utilization of fentanyl, 2001-2010.

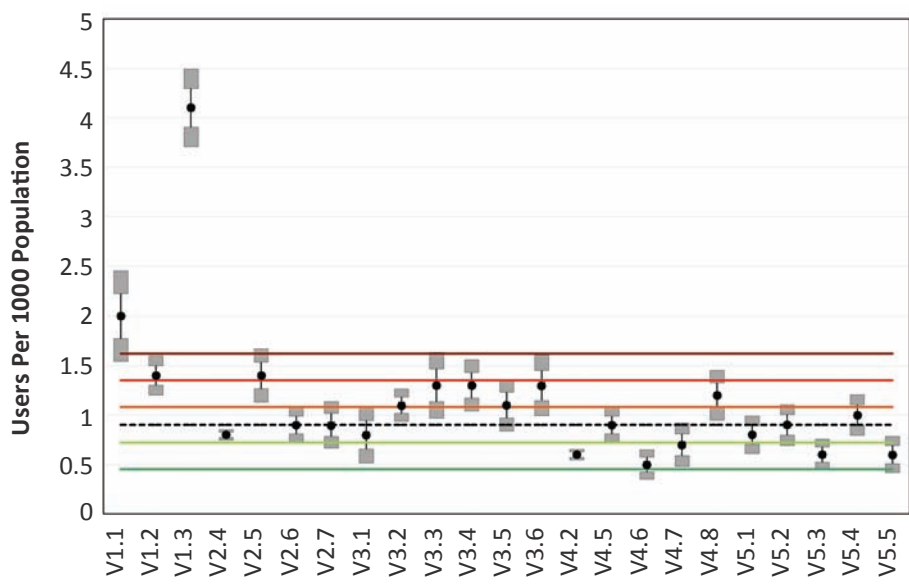


Distribution of vital statistics subzone utilization of fentanyl, 2001-2010.



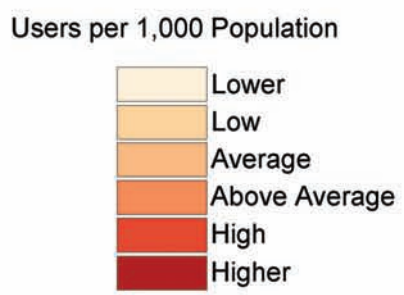
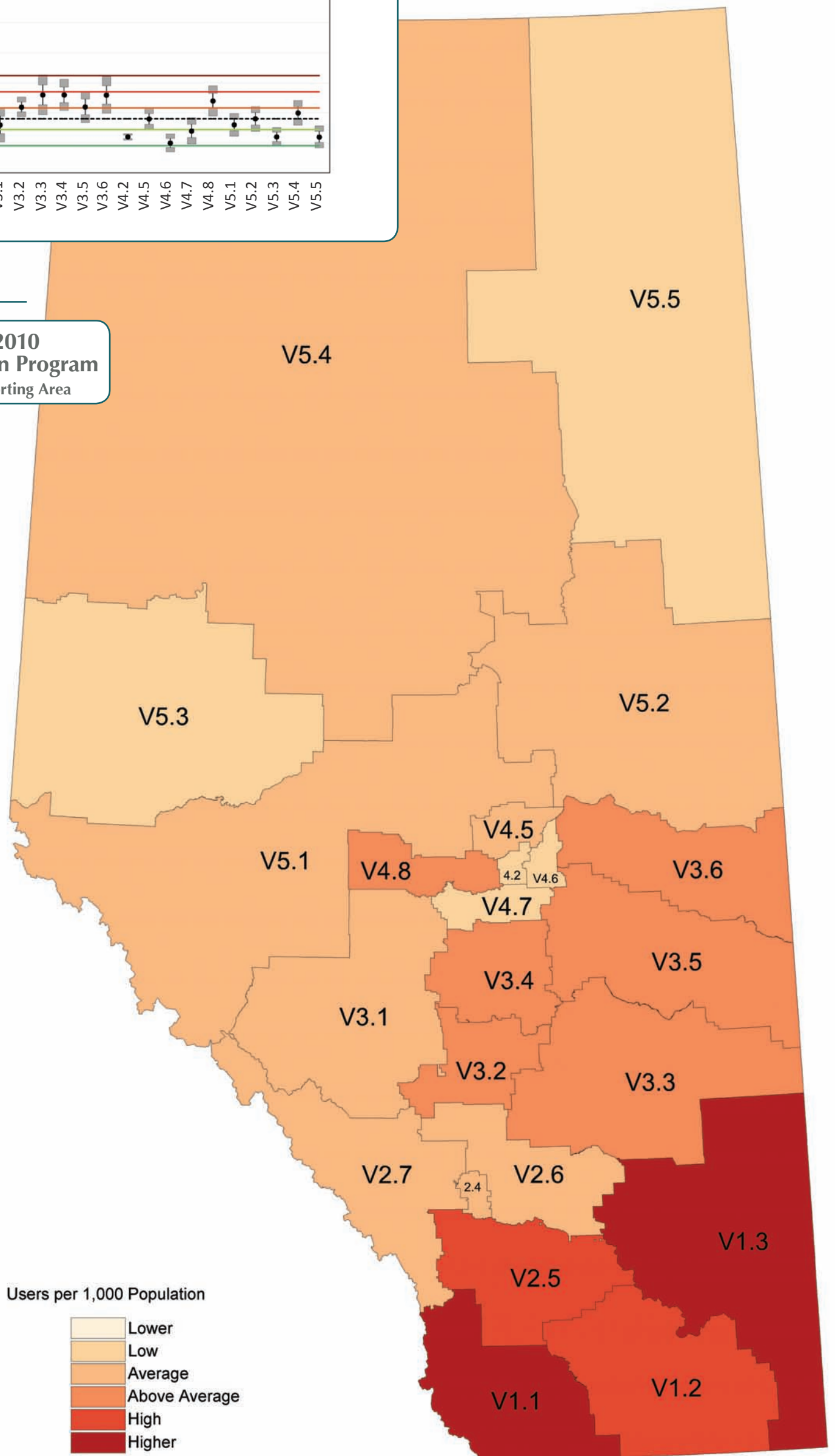
Ranked vital statistics subzone utilization of fentanyl, 2010.





Utilization of fentanyl with 95% confidence intervals, by vital statistics subzone, 2010.

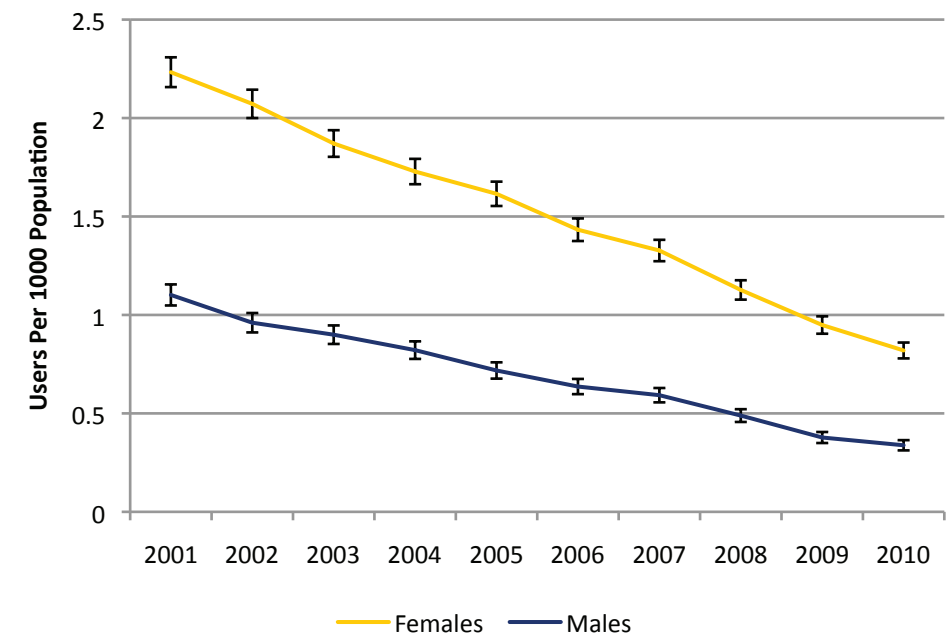
N02AB03 Fentanyl, 2010
Triplicate Prescription Program
 Vital Statistics Subzone Reporting Area



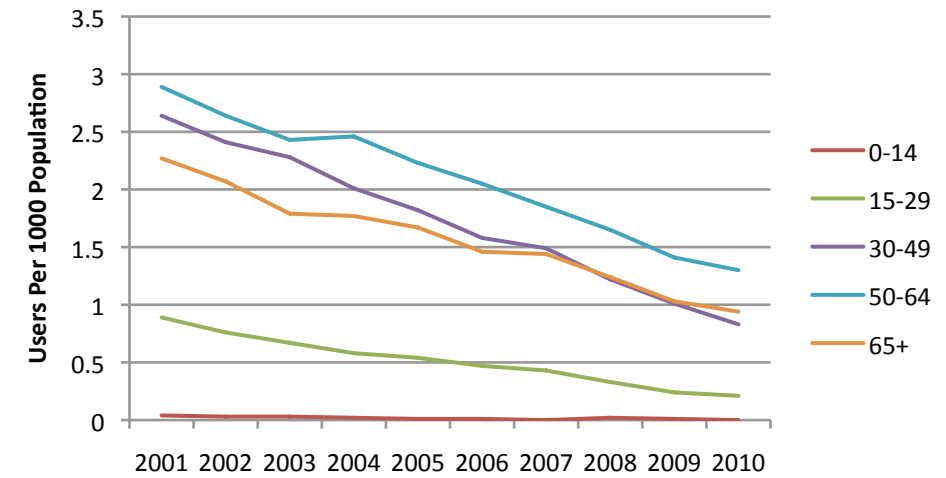
Comparison of Top Six Opioid Analgesics

Pethidine (N02AB02)

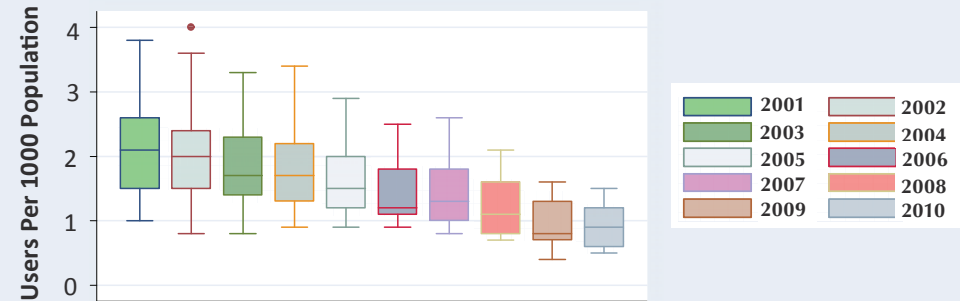
Age-standardized utilization of pethidine, by sex, 2001-2010.



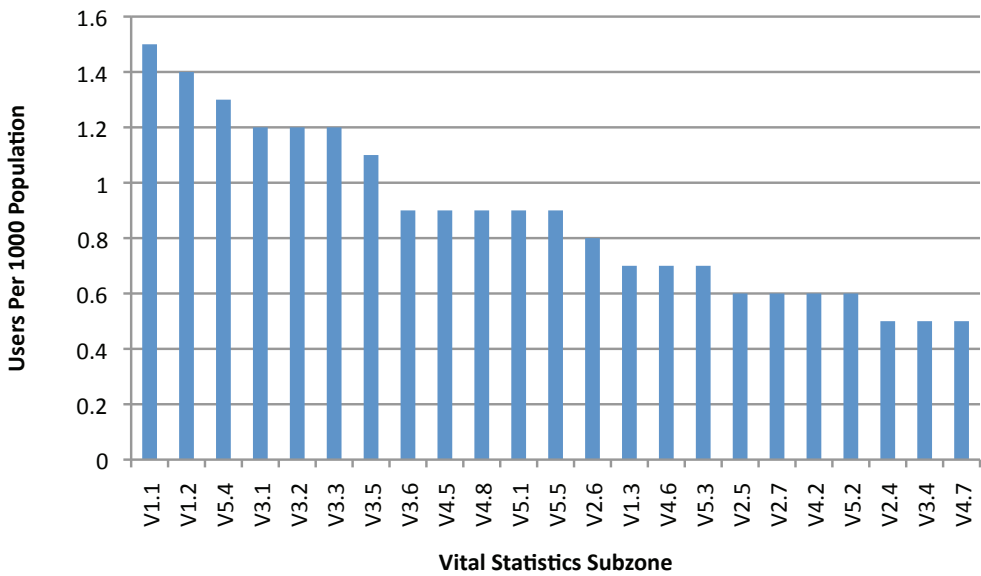
Age-specific utilization of pethidine, 2001-2010.

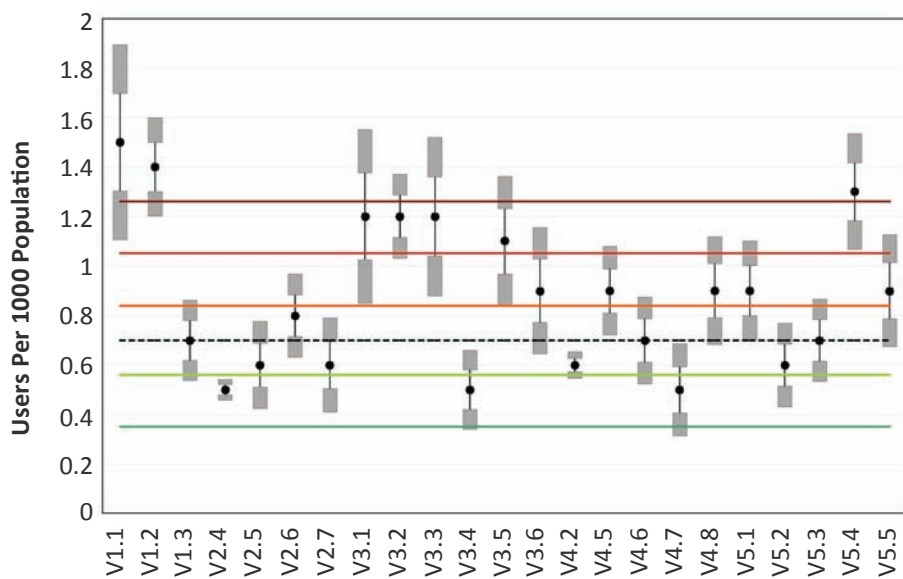


Distribution of vital statistics subzone utilization of pethidine, 2001-2010.



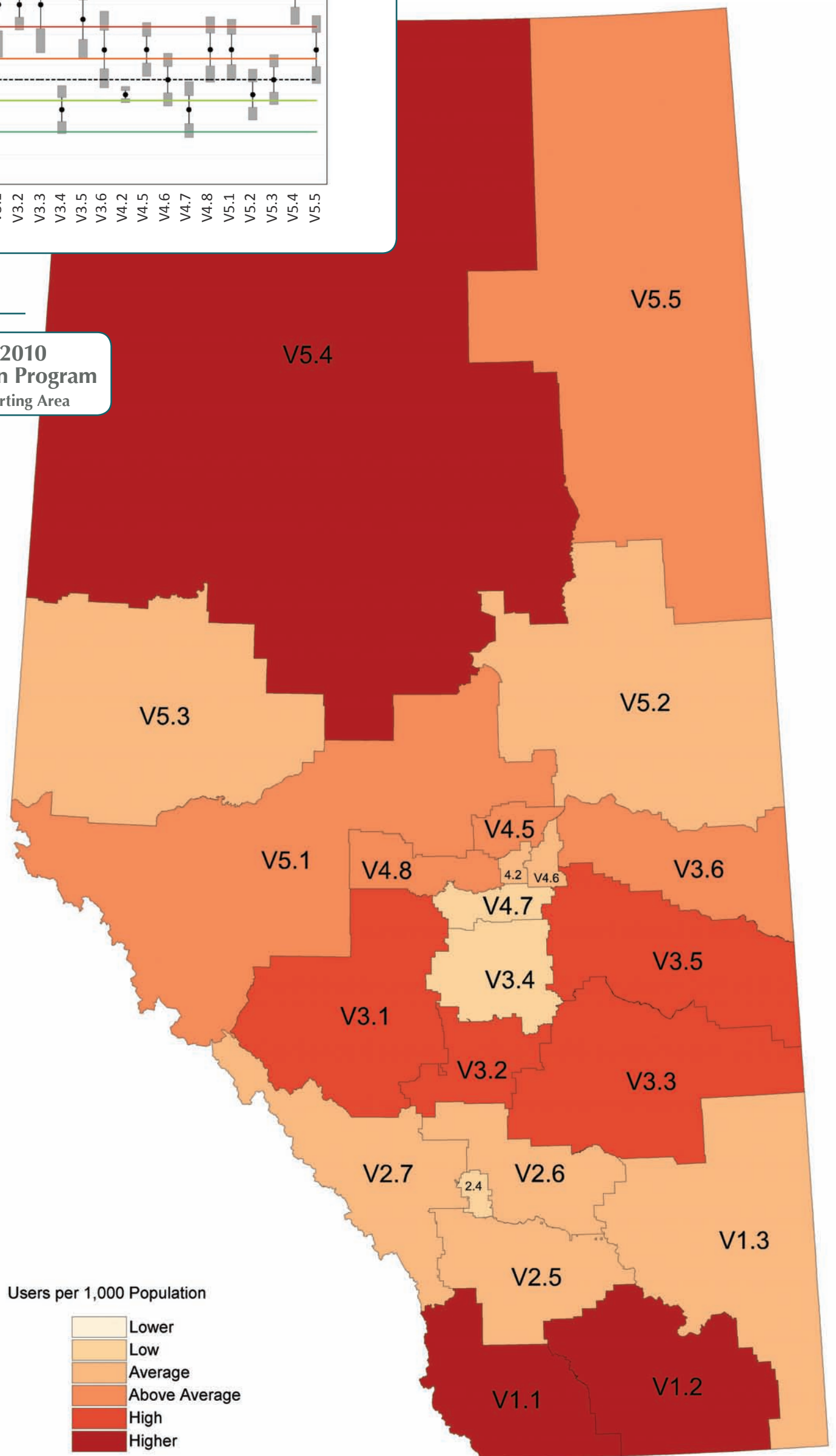
Ranked vital statistics subzone utilization of pethidine, 2010.





Utilization of pethidine with 95% confidence intervals, by vital statistics subzone, 2010.

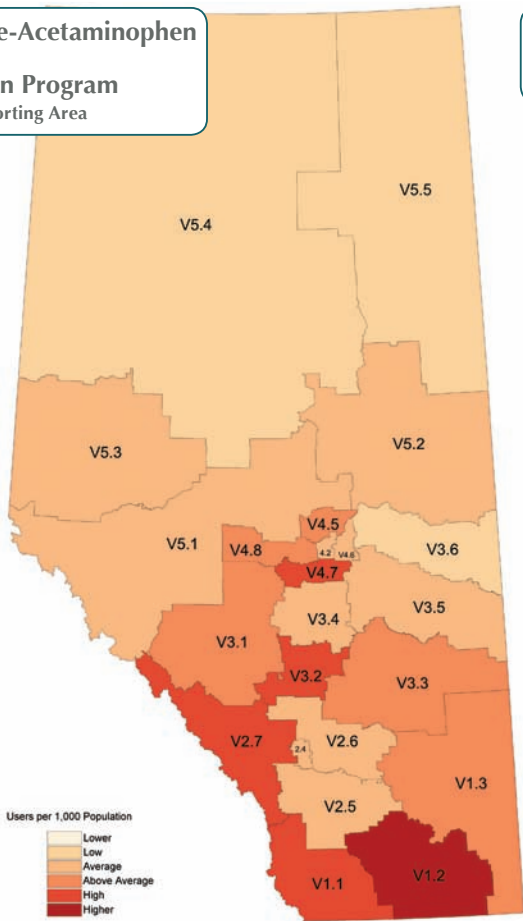
N02AB02 Pethidine, 2010
Triplicate Prescription Program
 Vital Statistics Subzone Reporting Area



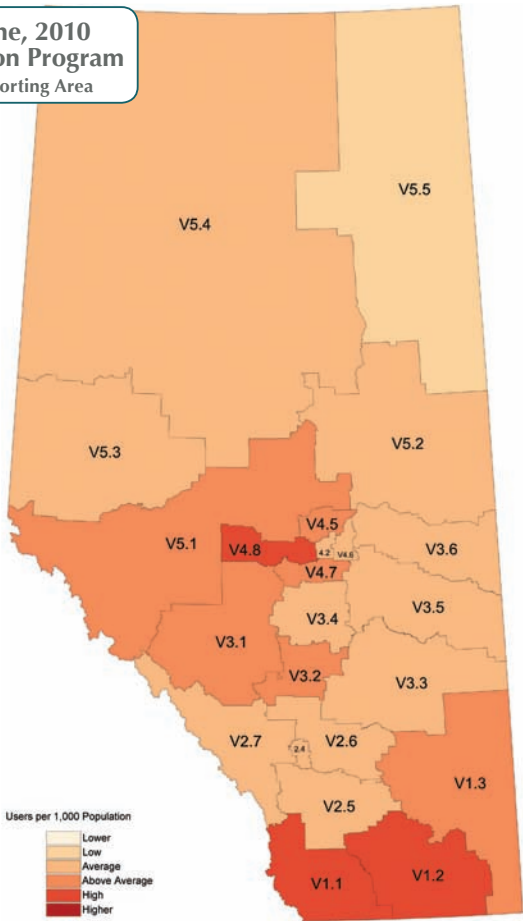
Comparison of Top Six Opioid Analgesics

Geographic Comparison of Top Six Opioid Analgesics (N02)

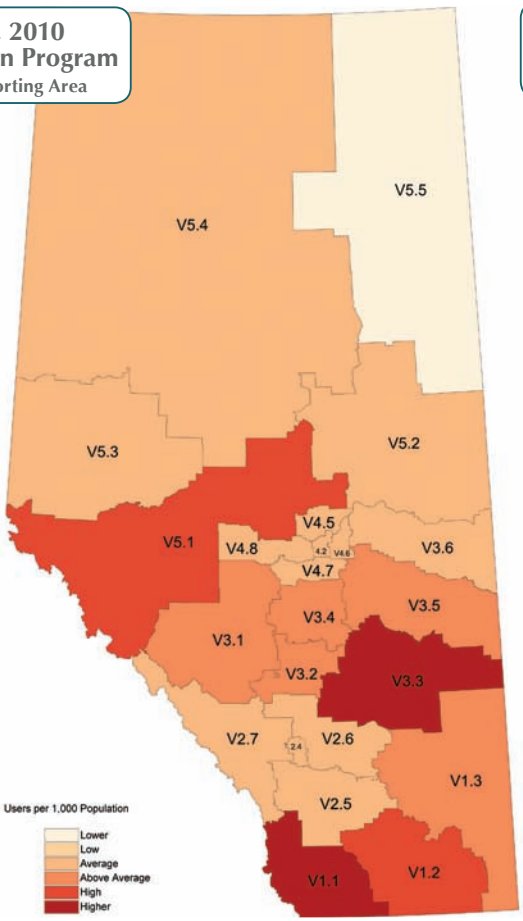
N02BE51 Oxycodone-Acetaminophen Combinations, 2010
Triplicate Prescription Program
Vital Statistics Subzone Reporting Area



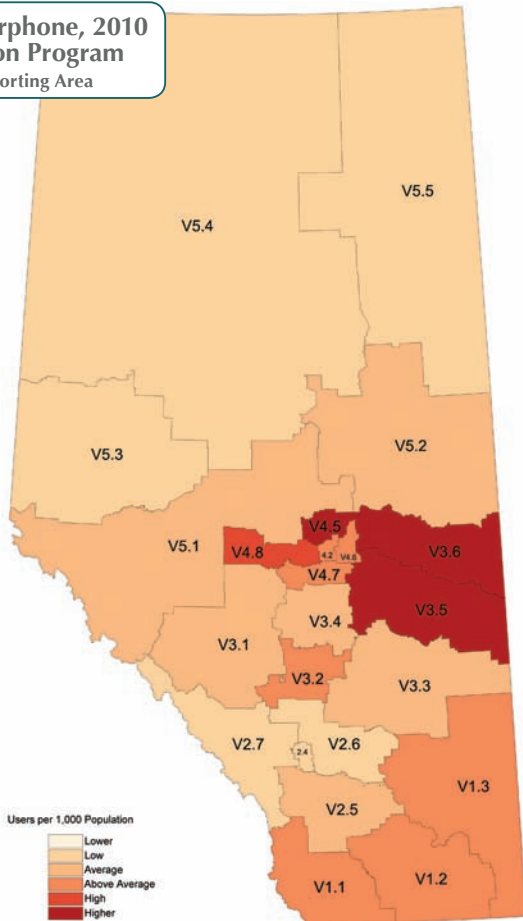
N02AA05 Oxycodone, 2010
Triplicate Prescription Program
Vital Statistics Subzone Reporting Area



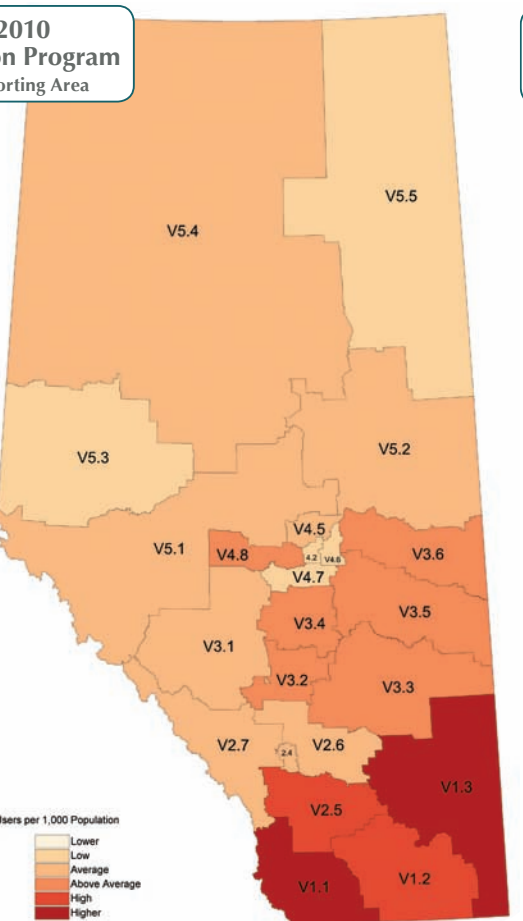
N02AA01 Morphine, 2010
Triplicate Prescription Program
Vital Statistics Subzone Reporting Area



N02AA03 Hydromorphone, 2010
Triplicate Prescription Program
Vital Statistics Subzone Reporting Area



N02AB03 Fentanyl, 2010
Triplicate Prescription Program
Vital Statistics Subzone Reporting Area



N02AB02 Pethidine, 2010
Triplicate Prescription Program
Vital Statistics Subzone Reporting Area

