



Prescription Drug Dispensing in Oregon

January 1, 2012 - December 31, 2012

Schedules II-IV Medications Dispensed in Oregon
Statewide

Oregon
Health
Authority

PUBLIC HEALTH DIVISION
Prescription Drug Monitoring Program

Prescription Controlled Substance Dispensing in Oregon: January 1, 2012 – December 31, 2012

Selected Schedule II – IV Medications

Statewide Data Report

Prescription Drug Monitoring Program

Center for Prevention and Health Promotion

Oregon Public Health Division

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Executive Summary

In 2009, the Oregon Legislature passed Senate Bill 355 mandating the Oregon Health Authority to develop a Prescription Drug Monitoring Program (PDMP). The program became operational in September 2011. The PDMP is an electronic Web-based data system that collects data on the controlled prescription medications dispensed in the state by retail pharmacies.

Controlled substance prescription information collected by the PDMP includes opioids, sedative hypnotics, benzodiazepines, stimulants, and other drugs. Opioids are the most frequently prescribed controlled substance. Opioids are prescribed to control pain – pain that is the result of injury, ambulatory surgery, inpatient surgery, cancer care, pain that is a chronic problem, and end-of-life care. It is helpful to keep in mind the variety of conditions that these medicines are prescribed for when examining the PDMP data because the PDMP data do not include clinical diagnostic information. The following information can provide the reader with a frame of reference to use when considering the magnitude of medically necessary prescription of controlled substances:

- Twenty percent of Oregonians (about 760,000 people) live with chronic pain,¹
- More than 100,000 injuries are treated in emergency departments each year,²
- About 5.5 percent of Oregonians (213,000 people) had surgical visits,³
- An estimated 18 percent of adults ages 18 and older (about 500,000 people) have an anxiety disorder,⁴ and
- About 8,000 Oregonians die due to cancer each year and about 20,000 new cases of cancer are diagnosed among Oregonians each year.⁵

The statewide PDMP data provided below – and additional 36 county-level reports – examine the dispensing of the most-often prescribed controlled substances and selected prescription drugs.

Statewide Findings

Between January 1, 2012, and December 31, 2012:

More than 6.6 million prescriptions for Schedules II-IV controlled substances were dispensed by retail pharmacies to Oregonians; of these, almost 3.5 million prescriptions were for opioids.

¹ Institute of Medicine, 2011. *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*. Washington D.C.: The National Academies Press http://www.nap.edu/catalog.php?record_id=13172

² Estimate from unpublished analysis of Oregon All Payer All Claims healthcare data, 2010, Oregon Health Authority, Injury and Violence Prevention Program, Portland.

³ Russo, C.A. (Thomson Reuters), Elixhauser, A. (AHRQ), Steiner, C. (AHRQ), and Wier, L. (Thomson Reuters). *Hospital-Based Ambulatory Surgery, 2007*. HCUP Statistical Brief #86. February 2010. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb86.pdf>.

⁴ Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). *Archives of General Psychiatry*, 2005 Jun; 62(6):617-27.

⁵ Oregon Cancer Registry

More than 908,000 Oregonians received at least one prescription opioid. These patients received an average of almost four opioid prescriptions – 234 people per 1,000 residents received an opioid prescription (Table 2).

More than 1.8 million prescriptions for benzodiazepines were dispensed by retail pharmacies to more than 400,000 people (Table 11).

More than 182,000 Oregonians received prescriptions for both an opioid and a benzodiazepine (Table 18).

Seventy-eight percent of the total Schedule II-IV controlled substance prescriptions dispensed were prescribed by 4,000 prescribers (Figure 4). Among those 4,000 prescribers, 57 percent were registered PDMP system users.

Threshold measures that indicate potential drug seeking indicate: 4,481 patients filled prescriptions from at least 4 different prescribers and at 4 different pharmacies (Table 28).

Recommendations

- Form a task force to target the co-prescribing of opioid and benzodiazepine controlled substances to reduce the number of patients within this at-risk population.
- Develop a long-range, cost-benefit report on pain management that compares pharmacological care only, pharmacological care and complementary therapies combined, and complementary therapies only.
- Assure that 80 percent of the top 4,000 prescribers have system accounts.
- Produce and disseminate a tool for system users on how to use a PDMP report with a patient.
- Encourage health systems to adopt and implement evidence-based guidelines for use of the PDMP.
- Analyze data by CCO region to inform policy and practice.
- Use geocoding and mapping in future analysis.
- Analyze data in future reports to reflect acute versus chronic condition prescribing and to better understand where prescriptions for controlled substances are correlated with hospitalizations and deaths.

Background

Oregon-licensed retail pharmacies are required to submit prescription information to the PDMP system for all Schedule II – IV controlled substances dispensed. Prescribers are permitted to access PDMP information on their patients. Pharmacists are permitted to access PDMP information on their customers. The intent of the PDMP is to help healthcare providers improve care for their patients and prevent some of the problems associated with controlled substances.

The Oregon PDMP provides authenticated system users who are licensed to prescribe schedule II, III, and IV drugs electronic 24-hour, seven-day-a-week access to patient level data on controlled substances dispensed to patients by licensed pharmacies. The PDMP data allow a health care provider to see a report of the medicines that are dispensed to his or her patient and prescribed by any additional health care providers who serve his or her patient.

Health care providers can examine the purchasing history of a patient to monitor and discuss controlled substance use as part of pain management and screen for substance misuse and abuse. Opioids are the class of medicines that has the highest potential for overdose, misuse, dependence, and abuse. Other classes of controlled substance medicines are commonly prescribed in combination with opioids. The PDMP is a useful tool for health care providers who prescribe controlled substances as part of a patient treatment plan. The evaluation results of health care provider use of the system in the early implementation of the PDMP are not the topic of this report. Information on health care provider system use is the topic of the annual report to the PDMP Advisory Commission.

Introduction

Patient use of controlled prescribed medications is an important part of medically necessary treatment plans for many health problems. Patient use is monitored by health care providers because these medicines place patients at risk for overdose, side effects, potentiation when combined with alcohol and/or other drugs, risk for physical dependence, and risk for developing patterns of drug abuse.

Controlled substance prescription information collected by the PDMP includes opioids, sedative hypnotics, benzodiazepines, stimulants, and other drugs. Opioids are the most frequently prescribed controlled substance. Opioids are prescribed to control pain – pain that is the result of injury, ambulatory surgery, inpatient surgery, cancer care, pain that is a chronic problem, and end-of-life care. It is helpful to keep in mind the variety of conditions that these medicines are prescribed for when examining the PDMP data because the PDMP data do not include diagnostic information. The following information can provide the reader with a frame of reference to use when considering the magnitude of medically necessary prescribing of controlled substances:

- Twenty percent of Oregonians (about 760,000 people) live with chronic pain,⁶
- More than 100,000 injuries are treated in emergency departments each year,⁷
- About 5.5 percent of Oregonians (213,000 people) had surgical visits,⁸
- About 18 percent of adults ages 18 and older (about 500,000 people) have an anxiety disorder,⁹ and
- About 8,000 Oregonians die due to cancer each year and about 20,000 new cases of cancer are diagnosed among Oregonians each year.¹⁰

Certainly, not all of the individuals experiencing these and other conditions receive controlled substances throughout an entire year. However, many patients rely on controlled substances to heal from injury and surgery, to endure cancer and end-of-life pain, to mitigate symptoms of mental disorders, and to control chronic pain.

The statewide aggregated data report – and 36 county level reports – can be used to inform, develop, and implement population-based prevention approaches to reduce prescription drug overdose, such as public information campaigns and clinical guidance.

⁶ Institute of Medicine, 2011. *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*. Washington D.C.: The National Academies Press http://www.nap.edu/catalog.php?record_id=13172

⁷ Estimate from unpublished analysis of Oregon All Payer All Claims healthcare data, 2010, Oregon Health Authority, Injury and Violence Prevention Program, Portland.

⁸ Russo, C.A. (Thomson Reuters), Elixhauser, A. (AHRQ), Steiner, C. (AHRQ), and Wier, L. (Thomson Reuters). *Hospital-Based Ambulatory Surgery, 2007*. HCUP Statistical Brief #86. February 2010. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb86.pdf>.

⁹ Kessler RC, Chiu WT, Demler O, Walters EE. Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). *Archives of General Psychiatry*, 2005 Jun; 62(6):617-27.

¹⁰ Oregon Cancer Registry

Data Limitations

Diagnosis information is not included with the prescription information in the PDMP data. This limits any conclusions that could be drawn with respect to the underlying problems that medicines are prescribed to address.

The PDMP statute directs retail pharmacies dispensing schedule II-IV drugs to submit prescription data to the Oregon Health Authority within seven days of dispensing. Pharmacies began submitting data in June 2011. In January 2012, 95 percent of all pharmacies were submitting data. The compliance with data submission increased to 99 percent by the end of December 2012.

Data submitted by pharmacies can contain errors. Each data submission is checked for errors and if the data contains errors it is sent back to the pharmacy to be corrected and resubmitted. However, not all errors are found or corrected.

The sex of the patient, method of payment, diagnosis, days supplied, and refill information are not collected as they are not included in the data variables allowed in statute through 2012.

The system is not able to convert prescriptions to morphine equivalent doses (MEDs), so dosage information is omitted from these reports to avoid possible confusion.

Data in table cells containing counts of less than ten are suppressed. This is done to protect the privacy of individuals when reporting county-specific data for each of Oregon's 36 counties.

Data

Statewide Population

Table 1. Population and Number of Prescriptions by age, Statewide, OR, 1/01/12 to 12/31/12

Age (in years)	Population*	Total number of prescriptions
1 - 14	716,250	238,929
15 - 24	506,366	407,605
25 - 34	530,792	787,378
35 - 44	510,299	1,002,317
45 - 54	530,202	1,447,169
55 - 64	514,468	1,478,130
65 - 74	321,628	764,139
75 - 84	174,687	367,544
85+	79,042	160,115
TOTAL	3,883,735	6,653,326
*2012 population estimates, Population Research Center, Portland State University.		

Opiate Narcotic Analgesics

Table 2. Unique Recipient Count for Opioids by Age Group, Statewide, OR, 1/01/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	19,397	26,090	1.3	27.1	36.4
15 - 24	106,486	203,952	1.9	210.3	402.8
25 - 34	146,643	437,090	3.0	276.3	823.5
35 - 44	139,723	536,962	3.8	273.8	1052.2
45 - 54	161,818	794,583	4.9	305.2	1498.6
55 - 64	160,471	791,796	4.9	311.9	1539.1
65 - 74	98,491	418,965	4.3	306.2	1302.6
75 - 84	51,419	200,804	3.9	294.3	1149.5
85+	23,714	85,646	3.6	300.0	1083.6
TOTAL	908,162	3,495,888	3.8	233.8	900.1

Opioids include: Hydrocodone, Oxycodone, Morphine, Methadone, Fentanyl, and Hydromorphone.

Notes on Table Information

Column 2 includes data for: Prescription recipients – these are number of **unique individuals who received prescriptions** in six months

Column 3 includes data for: Number of **prescriptions dispensed in the area** – either state or county in six months

Column 4 includes data for: Number of **prescriptions dispensed per prescription recipient** (original and refills) in six months

Column 5 includes data for: A rate for prescription recipients – this rate is the number of **people** who received a prescription per 1,000 residents.

Column 6 includes data for: A rate for prescriptions dispensed – this rate is the number of **prescriptions that individuals** received per 1,000 residents.

Figure 1. Number of residents/10,000 receiving an opioid by county, OR, 1/1/12 to 12/31/12

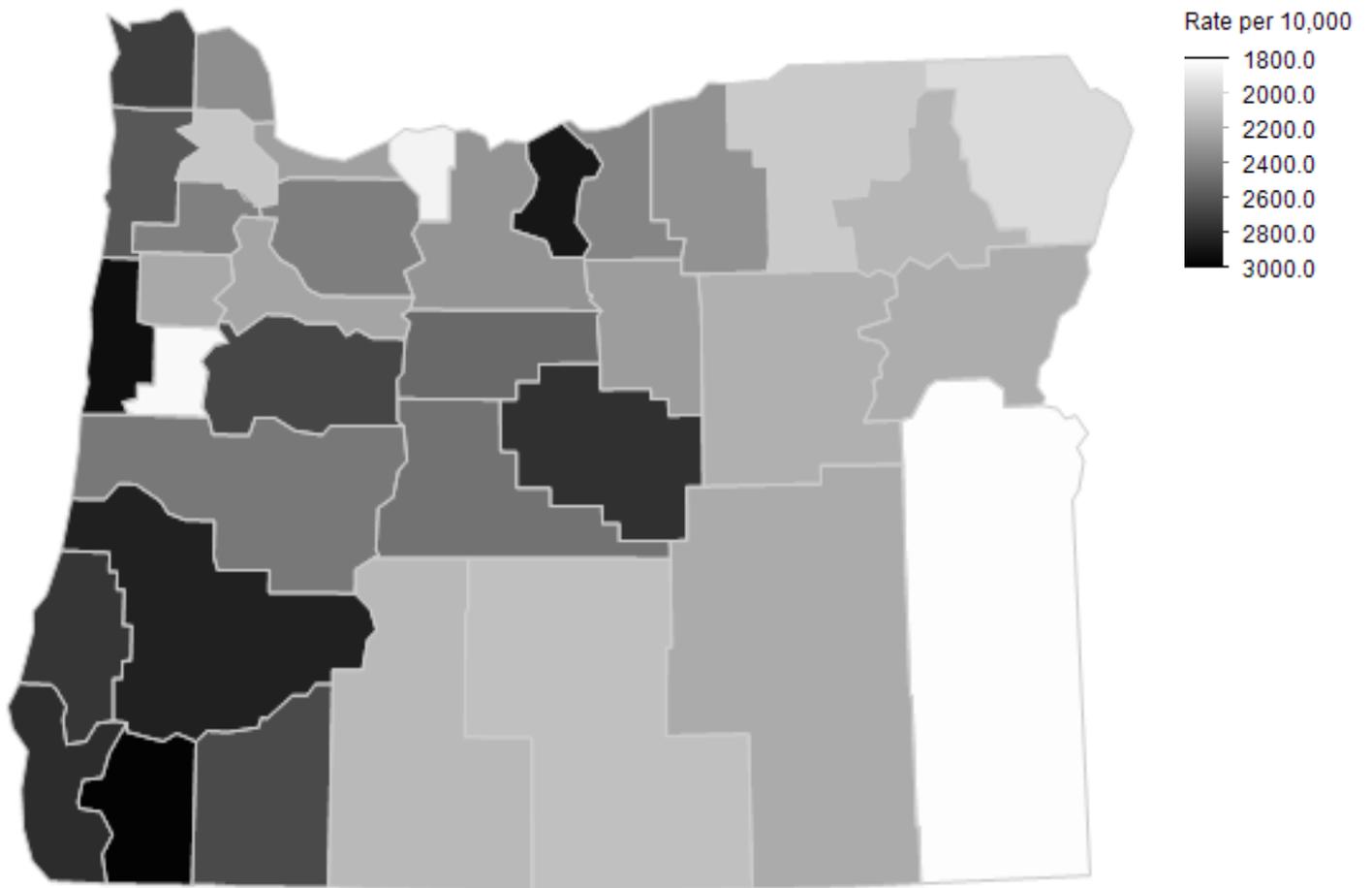


Table 3. HYDROCODONE by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	16,516	21,021	1.3	23.1	29.3
15 - 24	81,815	133,795	1.6	161.6	264.2
25 - 34	109,291	251,619	2.3	205.9	474.0
35 - 44	103,883	294,066	2.8	203.6	576.3
45 - 54	119,174	412,462	3.5	224.8	777.9
55 - 64	117,271	415,172	3.5	227.9	807.0
65 - 74	73,127	240,592	3.3	227.4	748.0
75 - 84	38,489	125,233	3.3	220.3	716.9
85+	16,539	53,114	3.2	209.2	672.0
TOTAL	676,105	1,947,074	2.9	174.1	501.3

Hydrocodone Hydrocodone is available only in combination with other ingredients, and different combination products are prescribed for different uses. Some hydrocodone products are used to relieve moderate to severe pain. Other hydrocodone products are used to relieve cough. Hydrocodone is in a class of medications called opiate narcotic analgesics and in a class of medications called antitussives. Hydrocodone relieves pain by changing the way the brain and nervous system respond to pain. Hydrocodone relieves cough by decreasing activity in the part of the brain that causes coughing.

Brand names: Vicodin, Lorcet, Lortab, Norco

Table 4. OXYCODONE by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	3,429	4,572	1.3	4.8	6.4
15 - 24	36,799	65,268	1.8	72.7	128.9
25 - 34	58,030	156,072	2.7	109.3	294.0
35 - 44	54,739	183,150	3.3	107.3	358.9
45 - 54	63,556	265,459	4.2	119.9	500.7
55 - 64	60,851	251,018	4.1	118.3	487.9
65 - 74	35,460	124,198	3.5	110.3	386.2
75 - 84	15,932	52,366	3.3	91.2	299.8
85+	6,009	20,539	3.4	76.0	259.8
TOTAL	334,805	1,122,642	3.4	86.2	289.1

Oxycodone Oxycodone is used to relieve moderate to severe pain. Oxycodone is in a class of medications called opiate narcotic analgesics. It works by changing the way the brain and nervous system respond to pain.

Brand names: Dazidox, Endocet, ETH-Oxydose, Endocodone, Oxecta, Oxy IR, Oxycontin, Oxyfast, Percocet, Percolone, Roxicodone

Table 5. MORPHINE by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	114	224	2.0	0.2	0.3
15 - 24	576	1,539	2.7	1.1	3.0
25 - 34	2,065	11,325	5.5	3.9	21.3
35 - 44	4,096	27,847	6.8	8.0	54.6
45 - 54	8,160	62,786	7.7	15.4	118.4
55 - 64	9,964	71,517	7.2	19.4	139.0
65 - 74	6,159	33,928	5.5	19.1	105.5
75 - 84	4,476	15,891	3.6	25.6	91.0
85+	4,394	9,176	2.1	55.6	116.1
TOTAL	40,004	234,233	5.9	10.3	60.3

Morphine Morphine is used to relieve moderate to severe pain. Morphine long-acting tablets and capsules are only used by patients who are expected to need medication to relieve moderate to severe pain around-the-clock for longer than a few days. Morphine is in a class of medications called opiate narcotic analgesics. It works by changing the way the body senses pain.

Brand names: Avinza, Kadian, MS Contin, Oramorph, Roxanol

Table 6. METHADONE* by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	28	139	5.0	0.0	0.2
15 - 24	212	1,048	4.9	0.4	2.1
25 - 34	1,545	10,535	6.8	2.9	19.8
35 - 44	2,684	20,581	7.7	5.3	40.3
45 - 54	4,519	37,037	8.2	8.5	69.9
55 - 64	4,459	36,497	8.2	8.7	70.9
65 - 74	1,695	11,981	7.1	5.3	37.3
75 - 84	722	4,066	5.6	4.1	23.3
85+	395	1,781	4.5	5.0	22.5
TOTAL	16,259	123,665	7.6	4.2	31.8

**Does not include methadone used to treat addiction.*

Methadone Methadone is used to relieve moderate to severe pain that has not been relieved by non-narcotic pain relievers. It also is used to prevent withdrawal symptoms in patients who were addicted to opiate drugs and are enrolled in treatment programs in order to stop taking or continue not taking the drugs. Methadone is in a class of medications called opiate narcotic analgesics. Methadone works to treat pain by changing the way the brain and nervous system respond to pain. It also works as a substitute for opiate drugs of abuse by producing similar effects and preventing withdrawal symptoms in people who have stopped using these drugs. Methadone has a very long half-life (stays in the body a long time).

Brand names: Dolophine, Methadose

Table 7. FENTANYL by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	138	274	2.0	0.2	0.4
15 - 24	126	538	4.3	0.2	1.1
25 - 34	651	3,664	5.6	1.2	6.9
35 - 44	1,402	9,437	6.7	2.7	18.5
45 - 54	2,648	18,532	7.0	5.0	35.0
55 - 64	3,367	22,232	6.6	6.5	43.2
65 - 74	2,618	14,020	5.4	8.1	43.6
75 - 84	2,260	11,256	5.0	12.9	64.4
85+	1,731	8,378	4.8	21.9	106.0
TOTAL	14,941	88,331	5.9	3.8	22.7

Fentanyl Fentanyl is a powerful synthetic opiate analgesic similar to but more potent than morphine. It is typically used to treat patients with severe pain, or to manage pain after surgery. It is also sometimes used to treat people with chronic pain who are physically tolerant to opiates. Fentanyl is in a class of medications called opiate narcotic analgesics. It works by changing the way the brain and nervous system respond to pain.

Brand names: Abstral, Actiq, Duragesic, Fentora, Onsolis, Sublimaze

Table 8. HYDROMORPHONE by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	77	134	1.7	0.1	0.2
15 - 24	1,153	2,302	2.0	2.3	4.5
25 - 34	2,943	7,539	2.6	5.5	14.2
35 - 44	3,898	11,318	2.9	7.6	22.2
45 - 54	5,080	16,837	3.3	9.6	31.8
55 - 64	5,251	17,591	3.4	10.2	34.2
65 - 74	2,997	8,266	2.8	9.3	25.7
75 - 84	1,218	3,251	2.7	7.0	18.6
85+	381	1,036	2.7	4.8	13.1
TOTAL	22,998	68,274	3.0	5.9	17.6

Hydromorphone Hydromorphone is used to relieve moderate to severe pain. It also may be used to decrease coughing. Hydromorphone is in a class of medications called opiate narcotic analgesics and in a class of medications called antitussives.

Brand names: Dilaudid, Exalgo, Hydrostat, Palladone

Table 9. OXYMORPHONE by Age Group, Statewide, OR, 1/1/2012 to 12/31/2012

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	0	0	0	0	0
15 - 24	43	219	5.1	0.1	0.4
25 - 34	171	892	5.2	0.3	1.7
35 - 44	307	1,667	5.4	0.6	3.3
45 - 54	448	2,878	6.4	0.8	5.4
55 - 64	432	2,877	6.7	0.8	5.6
65 - 74	170	863	5.1	0.5	2.7
75 - 84	56	291	5.2	0.3	1.7
85+	26	126	4.8	0.3	1.6
TOTAL	1,653	9,813	5.9	0.4	2.5

Oxymorphone Oxymorphone is an opioid pain medication. Oxymorphone is in a class of medications called opiate narcotic analgesics. It is used to treat moderate to severe pain. The extended-release form of this medication is for around-the-clock treatment of pain.

Brand names: Opana

Table 10. BUPRENORPHINE by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	20	39	2.0	0.0	0.1
15 - 24	1,463	9,835	6.7	2.9	19.4
25 - 34	2,622	26,503	10.1	4.9	49.9
35 - 44	1,811	16,047	8.9	3.5	31.4
45 - 54	1,646	11,735	7.1	3.1	22.1
55 - 64	1,164	8,304	7.1	2.3	16.1
65 - 74	306	1,570	5.1	1.0	4.9
75 - 84	115	351	3.1	0.7	2.0
85+	65	178	2.7	0.8	2.3
TOTAL	9,212	74,562	8.1	2.4	19.2

Buprenorphine Buprenorphine is a semi-synthetic, partial opioid agonist that is used to treat opioid addiction in higher dosages and to control moderate acute pain in non-opioid-tolerant individuals in lower dosages. Buprenorphine is a narcotic analgesic. It works by working in the brain and nervous system to decrease pain. A combination with other CNS depressants, such as alcohol, benzodiazepines, barbiturates, z-drugs, GHB, and any other substance that depresses the central nervous system, should be avoided.

Brand names: Suboxone, Subutex, Buprenex

Benzodiazepines

Table 11. Unique Recipient Count for Benzodiazepines by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	6,136	12,241	2.0	8.6	17.1
15 - 24	23,331	65,130	2.8	46.1	128.6
25 - 34	51,653	195,637	3.8	97.3	368.6
35 - 44	65,442	289,715	4.4	128.2	567.7
45 - 54	83,880	425,137	5.1	158.2	801.8
55 - 64	88,808	446,877	5.0	172.6	868.6
65 - 74	53,403	235,807	4.4	166.0	733.2
75 - 84	27,487	114,159	4.2	157.4	653.5
85+	13,614	48,723	3.6	172.2	616.4
TOTAL	413,754	1,833,426	4.4	106.5	472.1
<i>Benzodiazepines include: Alprazolam, Clonazepam, Diazepam, Lorazepam, Temazepam, and Zolpidem.</i>					
<i>*Cell sizes less than 10 for prescription recipient count have been suppressed.</i>					

Table 12. ZOLPIDEM by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	173	432	2.5	0.2	0.6
15 - 24	4,097	11,210	2.7	8.1	22.1
25 - 34	12,221	43,848	3.6	23.0	82.6
35 - 44	19,413	80,781	4.2	38.0	158.3
45 - 54	27,105	122,921	4.5	51.1	231.8
55 - 64	31,303	144,132	4.6	60.8	280.2
65 - 74	18,348	79,085	4.3	57.0	245.9
75 - 84	8,188	35,285	4.3	46.9	202.0
85+	2,976	12,791	4.3	37.7	161.8
TOTAL	123,824	530,485	4.3	31.9	136.6

Zolpidem Zolpidem is used to treat insomnia. Zolpidem belongs to a class of medications called sedative-hypnotics. It works by slowing activity in the brain to allow sleep.

Brand names: Ambien, Zolpimist

Table 13. LORAZEPAM by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	1,367	2,423	1.8	1.9	3.4
15 - 24	8,558	16,852	2.0	16.9	33.3
25 - 34	16,714	42,448	2.5	31.5	80.0
35 - 44	19,635	58,869	3.0	38.5	115.4
45 - 54	24,423	87,933	3.6	46.1	165.8
55 - 64	25,963	94,770	3.7	50.5	184.2
65 - 74	17,512	58,300	3.3	54.4	181.3
75 - 84	10,983	34,843	3.2	62.9	199.5
85+	7,550	19,864	2.6	95.5	251.3
TOTAL	132,705	416,302	3.1	34.2	107.2

Lorazepam Lorazepam is used to relieve anxiety. It is also used to treat irritable bowel syndrome, epilepsy, insomnia, and nausea and vomiting from cancer treatment and to control agitation caused by alcohol withdrawal. Lorazepam is in a class of medications called benzodiazepines. It works by slowing activity in the brain to allow for relaxation.

Brand names: Ativan

Table 14. ALPRAZOLAM by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	1,364	2,102	1.5	1.9	2.9
15 - 24	5,439	14,074	2.6	10.7	27.8
25 - 34	13,950	45,978	3.3	26.3	86.6
35 - 44	17,188	63,232	3.7	33.7	123.9
45 - 54	20,790	87,216	4.2	39.2	164.5
55 - 64	20,793	87,476	4.2	40.4	170.0
65 - 74	11,489	43,022	3.7	35.7	133.8
75 - 84	5,660	21,769	3.8	32.4	124.6
85+	2,351	8,740	3.7	29.7	110.6
TOTAL	99,024	373,609	3.8	25.5	96.2

Alprazolam Alprazolam is used to treat anxiety disorders and panic disorder (sudden, unexpected attacks of extreme fear and worry about these attacks). Alprazolam is in a class of medications called benzodiazepines. It works by decreasing abnormal excitement in the brain.

Brand names: Xanax

Table 15. CLONAZEPAM by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	726	2,741	3.8	1.0	3.8
15 - 24	4,421	15,906	3.6	8.7	31.4
25 - 34	9,592	43,284	4.5	18.1	81.5
35 - 44	11,346	58,192	5.1	22.2	114.0
45 - 54	14,089	81,828	5.8	26.6	154.3
55 - 64	13,072	75,008	5.7	25.4	145.8
65 - 74	6,624	33,842	5.1	20.6	105.2
75 - 84	2,922	13,255	4.5	16.7	75.9
85+	991	4,317	4.4	12.5	54.6
TOTAL	63,783	328,373	5.1	16.4	84.6

Clonazepam Clonazepam is used alone or in combination with other medications to control certain types of seizures. It is also used to relieve panic attacks. Clonazepam is in a class of medications called benzodiazepines. It works by decreasing abnormal electrical activity in the brain.

Brand names: Klonopin, Klonopin Wafer

Table 16. DIAZEPAM by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	2,863	4,543	1.6	4.0	6.3
15 - 24	4,250	7,088	1.7	8.4	14.0
25 - 34	9,276	20,079	2.2	17.5	37.8
35 - 44	11,739	28,641	2.4	23.0	56.1
45 - 54	14,781	45,240	3.1	27.9	85.3
55 - 64	14,723	45,490	3.1	28.6	88.4
65 - 74	8,186	21,558	2.6	25.5	67.0
75 - 84	3,460	9,007	2.6	19.8	51.6
85+	1,143	3,011	2.6	14.5	38.1
TOTAL	70,421	184,657	2.6	18.1	47.5

Diazepam Diazepam is used to relieve anxiety, muscle spasms, and seizures and to control agitation caused by alcohol withdrawal. Diazepam is also used to treat irritable bowel syndrome and panic attacks. Diazepam is in a class of medications called benzodiazepines.

Brand names: Valium

Table 17. TEMAZEPAM by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	17	54	3.2	0.0	0.1
15 - 24	330	817	2.5	0.7	1.6
25 - 34	925	2,852	3.1	1.7	5.4
35 - 44	1,663	6,089	3.7	3.3	11.9
45 - 54	2,889	12,931	4.5	5.4	24.4
55 - 64	4,001	19,288	4.8	7.8	37.5
65 - 74	2,874	12,841	4.5	8.9	39.9
75 - 84	2,061	9,200	4.5	11.8	52.7
85+	1,076	5,130	4.8	13.6	64.9
TOTAL	15,836	69,202	4.4	4.1	17.8

Temazepam Temazepam is used on a short-term basis to treat insomnia. Temazepam is in a class of medications called benzodiazepines. It works by slowing activity in the brain to allow sleep.

Brand names: Restoril

Prescription Drug Combinations

Table 18. OPIOID and BENZODIAZEPINE Combination by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving combination, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	850	2,199	2.6	1.2	3.1
15 - 24	9,412	32,645	3.5	18.6	64.5
25 - 34	23,441	125,270	5.3	44.2	236.0
35 - 44	29,598	182,680	6.2	58.0	358.0
45 - 54	39,057	284,283	7.3	73.7	536.2
55 - 64	38,919	270,018	6.9	75.6	524.8
65 - 74	22,793	130,510	5.7	70.9	405.8
75 - 84	11,859	57,872	4.9	67.9	331.3
85+	6,834	26,361	3.9	86.5	333.5
TOTALS	182,763	1,111,838	6.1	47.1	286.3

*Opioids include: Hydrocodone, Oxycodone, and Morphine.
Benzodiazepines include: Alprazolam, Clonazepam, Diazepam, and Lorazepam. Excludes Zolpidem that represents a chemically different class of drugs than benzodiazepines, and in which the risk of combination with opioids is thought to be somewhat lower.*

**Cell sizes less than 10 for prescription recipient count have been suppressed.*

Figure 2. Number of residents/10,000 receiving an opioid and benzodiazepine by county, OR, 1/1/12 to 12/31/12

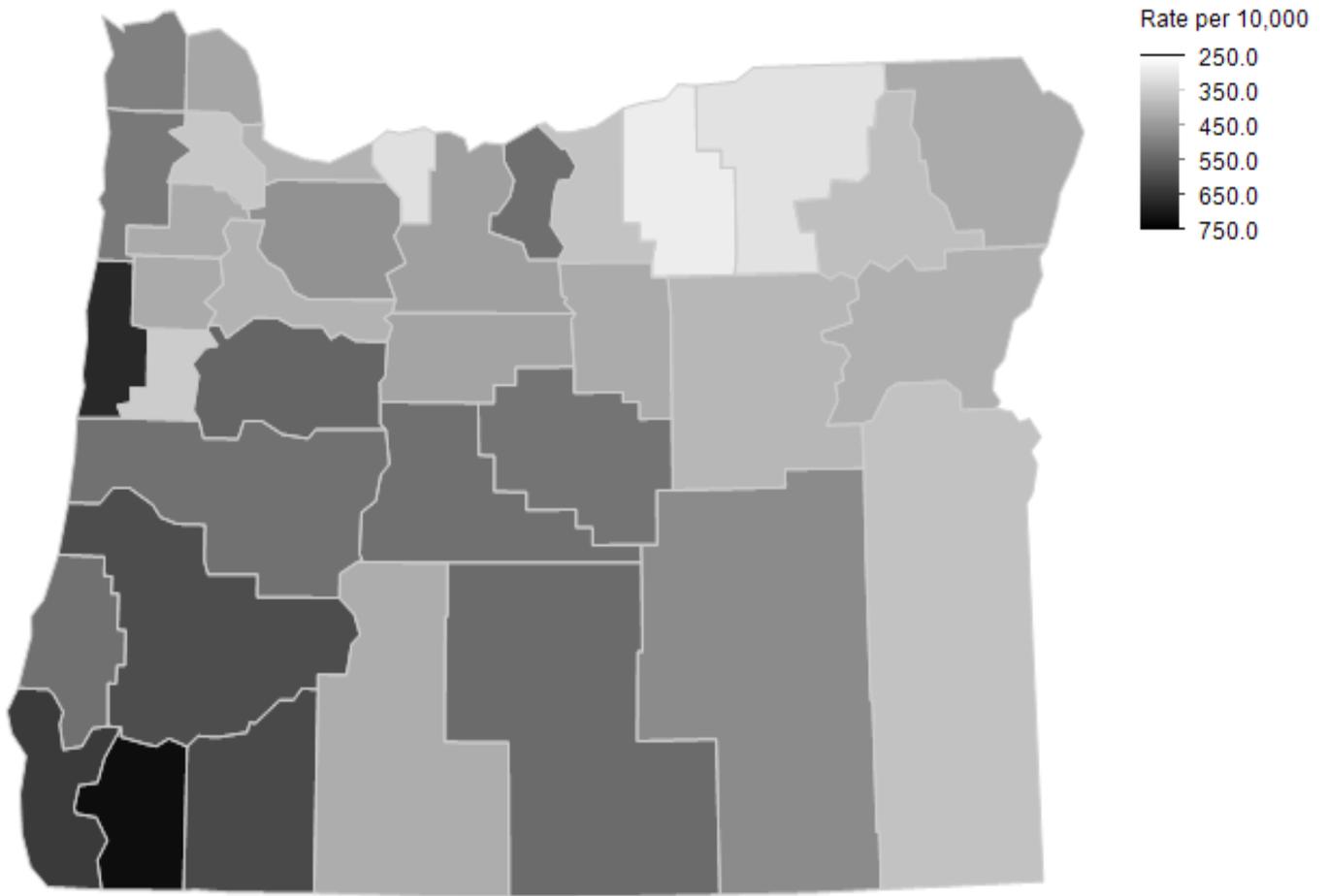


Table 19. OPIOID and ZOLPIDEM/ZALEPLON Combination by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving combination, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	55	510	9.3	0.1	0.7
15 - 24	1,844	8,160	4.4	3.6	16.1
25 - 34	6,295	37,276	5.9	11.9	70.2
35 - 44	9,867	61,673	6.3	19.3	120.9
45 - 54	14,410	100,569	7.0	27.2	189.7
55 - 64	16,371	106,229	6.5	31.8	206.5
65 - 74	9,984	55,053	5.5	31.0	171.2
75 - 84	4,229	21,562	5.1	24.2	123.4
85+	1,416	6,491	4.6	17.9	82.1
TOTALS	64,471	397,523	6.2	16.6	102.4
<p><i>Opioids include: Hydrocodone, Oxycodone, and Morphine. Benzodiazepines include: Zolpidem and Zaleplon.</i></p> <p><i>*Cell sizes less than 10 for prescription recipient count have been suppressed.</i></p>					

Table 20. Number of people receiving opioid prescriptions per 1,000 residents, by prescription type, county and statewide, OR, 1/1/12 to 12/31/12

	All Opioid Rate	Hydro-codone Rate	Oxy-codone Rate	Morphine Rate	Methadone Rate*	Hydro-morphone Rate	Opioid & Benzo Rate
Statewide	233.8	174.1	86.2	10.3	4.2	5.9	47.1
Baker	218.5	175.0	58.1	14.1	6.5	2.7	40.4
Benton	182.8	137.1	63.1	5.3	2.1	5.4	34.9
Clackamas	240.7	170.5	100.3	11.1	3.6	6.3	46.3
Clatsop	270.6	184.2	124.6	12.7	5.7	7.9	49.9
Columbia	233.0	164.2	97.8	11.9	4.5	6.5	42.4
Coos	275.3	230.0	68.7	13.8	6.9	7.7	53.0
Crook	277.2	224.5	89.0	10.6	5.3	6.1	52.2
Curry	279.1	238.1	59.8	16.7	6.3	6.1	63.6
Deschutes	246.5	191.5	84.6	11.4	2.8	5.2	53.0
Douglas	284.8	137.4	97.1	11.2	6.2	7.9	60.0
Gilliam	237.4	182.6	74.2	13.2	4.2	5.3	36.8
Grant	217.0	162.4	74.2	11.3	3.8	4.2	39.2
Harney	219.4	156.1	83.8	18.0	4.1	17.9	47.7
Hood River	185.7	142.6	57.9	8.4	5.8	3.7	31.0
Jackson	265.2	202.3	89.2	15.1	5.8	7.8	60.7
Jefferson	250.5	207.3	77.7	7.8	3.3	6.1	42.8
Josephine	298.7	231.8	97.7	16.0	10.0	6.9	72.4
Klamath	212.8	181.0	49.0	7.4	3.8	2.8	41.0
Lake	209.7	162.1	63.6	12.5	4.0	5.4	54.0
Lane	243.3	179.5	92.4	10.4	5.8	6.7	52.9
Lincoln	293.6	216.9	110.1	17.2	5.9	9.6	67.1
Linn	267.0	197.1	106.9	11.3	5.7	7.5	55.2
Malheur	181.1	163.6	29.0	7.4	4.8	1.5	36.9
Marion	222.5	169.4	77.4	8.9	3.9	5.8	40.0
Morrow	231.4	191.1	70.0	6.8	2.9	4.9	28.6
Multnomah	224.7	161.4	89.0	9.5	3.4	5.0	39.9
Polk	220.4	164.0	80.5	8.6	4.4	5.9	41.6
Sherman	289.5	224.4	90.1	13.6	29.5	6.2	53.3
Tillamook	258.7	189.2	95.4	15.6	8.9	8.1	51.3
Umatilla	204.7	167.4	61.6	6.7	2.3	5.3	30.7
Union	214.4	160.2	80.6	9.4	2.6	4.9	37.6
Wallowa	196.9	156.2	58.2	13.8	3.7	2.0	41.5
Wasco	230.4	175.4	78.6	12.9	9.2	4.4	43.7
Washington	206.2	149.0	80.4	8.0	2.3	5.4	36.0
Wheeler	226.0	169.1	73.0	12.6	2.8	5.6	41.4
Yamhill	239.9	174.7	95.4	12.0	4.4	5.6	41.4

*Does not include methadone used to treat addiction.

Other Drugs

Table 21. AMPHET by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	9,496	52,069	5.5	13.3	72.7
15 - 24	11,362	55,583	4.9	22.4	109.8
25 - 34	9,266	52,202	5.6	17.5	98.3
35 - 44	6,590	40,549	6.2	12.9	79.5
45 - 54	5,090	32,394	6.4	9.6	61.1
55 - 64	3,587	23,124	6.4	7.0	44.9
65 - 74	818	4,853	5.9	2.5	15.1
75 - 84	137	748	5.5	0.8	4.3
85+	36	163	4.5	0.5	2.1
TOTAL	46,382	261,685	5.6	11.9	67.4

Amphet Amphet is identified as amphetamine and dextroamphetamine extended release and is commonly used to treat ADHD, fatigue and narcolepsy. Amphet is in a class of medications called central nervous system (CNS) stimulants.

Brand names: Adderall

Table 22. METHYLPHENIDATE by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	18,850	117,753	6.2	26.3	164.4
15 - 24	8,067	39,208	4.9	15.9	77.4
25 - 34	3,695	17,083	4.6	7.0	32.2
35 - 44	3,514	18,804	5.4	6.9	36.8
45 - 54	3,472	19,981	5.8	6.5	37.7
55 - 64	3,080	18,880	6.1	6.0	36.7
65 - 74	1,092	5,946	5.4	3.4	18.5
75 - 84	350	1,467	4.2	2.0	8.4
85+	145	607	4.2	1.8	7.7
TOTAL	42,265	239,729	5.7	10.9	61.7

Methylphenidate Methylphenidate is used as part of a treatment program to control symptoms of ADHD in adults and children. It is also used to treat narcolepsy. Methylphenidate is in a class of medications called central nervous system (CNS) stimulants. It works by changing the amounts of certain natural substances in the brain.

Brand names: Concerta, Metadate, Methylin, Ritalin

Table 23. ACETAMINOPHEN WITH CODEINE by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	4,407	4,969	1.1	6.2	6.9
15 - 24	6,934	8,306	1.2	13.7	16.4
25 - 34	7,056	10,064	1.4	13.3	19.0
35 - 44	6,128	10,506	1.7	12.0	20.6
45 - 54	6,934	15,313	2.2	13.1	28.9
55 - 64	8,033	21,222	2.6	15.6	41.3
65 - 74	6,308	17,188	2.7	19.6	53.4
75 - 84	4,088	11,066	2.7	23.4	63.3
85+	2,223	5,605	2.5	28.1	70.9
TOTAL	52,111	104,239	2.0	13.4	26.8

Acetaminophen with Codeine Acetaminophen with Codeine is used to relieve mild to moderate pain and to reduce fever. It may also be used to relieve the pain of osteoarthritis (arthritis caused by the breakdown of the lining of the joints). Acetaminophen is a less potent pain reliever that increases the effects of codeine. Acetaminophen with Codeine is often combined with opiates to increase their pain relieving properties. Acetaminophen has liver toxicity at higher doses. Acetaminophen with Codeine is in a class of medications called opiate narcotic analgesics (pain relievers) and antipyretics (fever reducers). It works by changing the way the body senses pain and by cooling the body.

Brand Names: Tylenol w/Codeine

Table 24. CARISOPRODOL by Age Group, Statewide, OR, 1/1/12 to 12/31/12

Age (in years)	Prescription Recipient Count in 12 months	Number of prescriptions dispensed in 12 months	Number of prescriptions dispensed per prescription recipient in 12 months	Number of people receiving prescription, per 1,000 residents	Number of prescriptions dispensed per 1,000 residents
1 - 14	16	18	1.1	0.0	0.0
15 - 24	550	1,240	2.3	1.1	2.4
25 - 34	1,873	6,295	3.4	3.5	11.9
35 - 44	2,826	12,285	4.3	5.5	24.1
45 - 54	4,397	22,241	5.1	8.3	41.9
55 - 64	4,115	20,522	5.0	8.0	39.9
65 - 74	1,721	6,808	4.0	5.4	21.2
75 - 84	522	1,782	3.4	3.0	10.2
85+	88	240	2.7	1.1	3.0
TOTAL	16,108	71,431	4.4	4.1	18.4

Carisoprodol Carisoprodol, a muscle relaxant, is used with rest, physical therapy, and other measures to relax muscles and relieve pain and discomfort caused by strains, sprains, and other muscle injuries. It works by blocking pain sensations between the nerves and the brain and is a central nervous system (CNS) depressant.

Brand names: Soma

Prescribers Using the System

Figure 3. Number and percent of total providers with PDMP system accounts by discipline, Statewide, OR, as of 12/31/12, n = 5,270

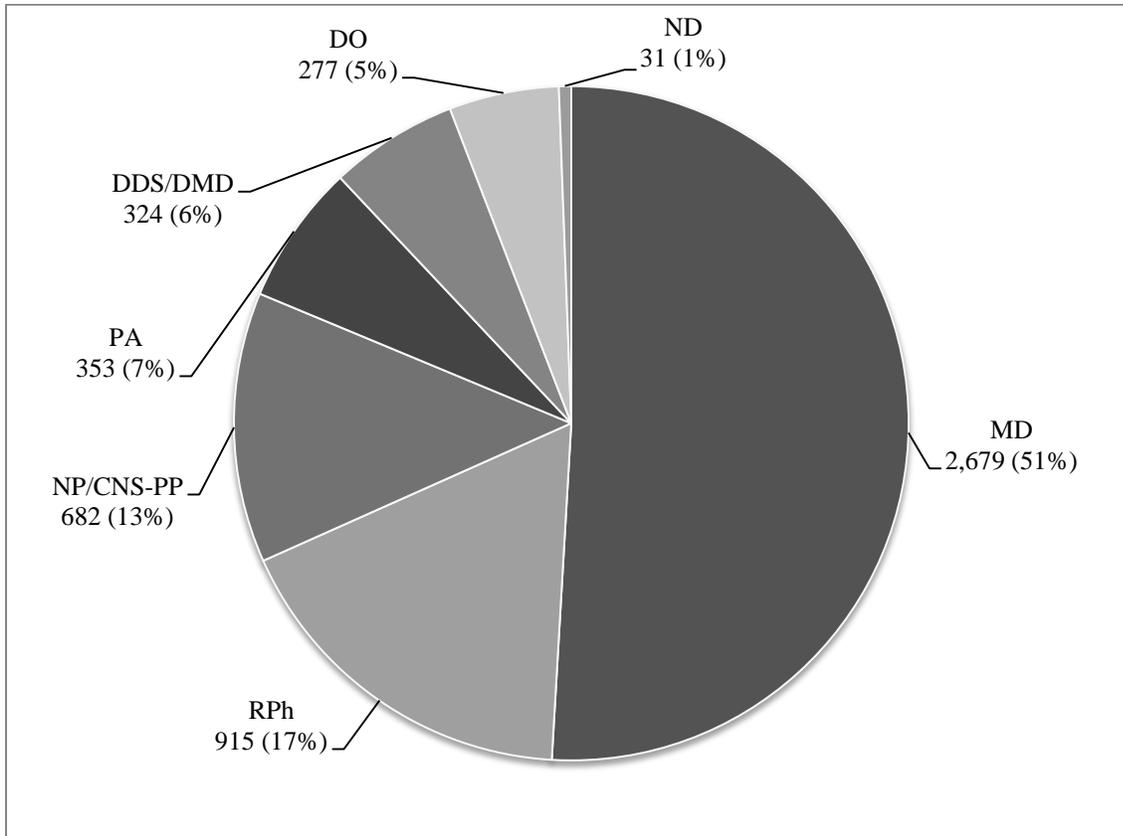
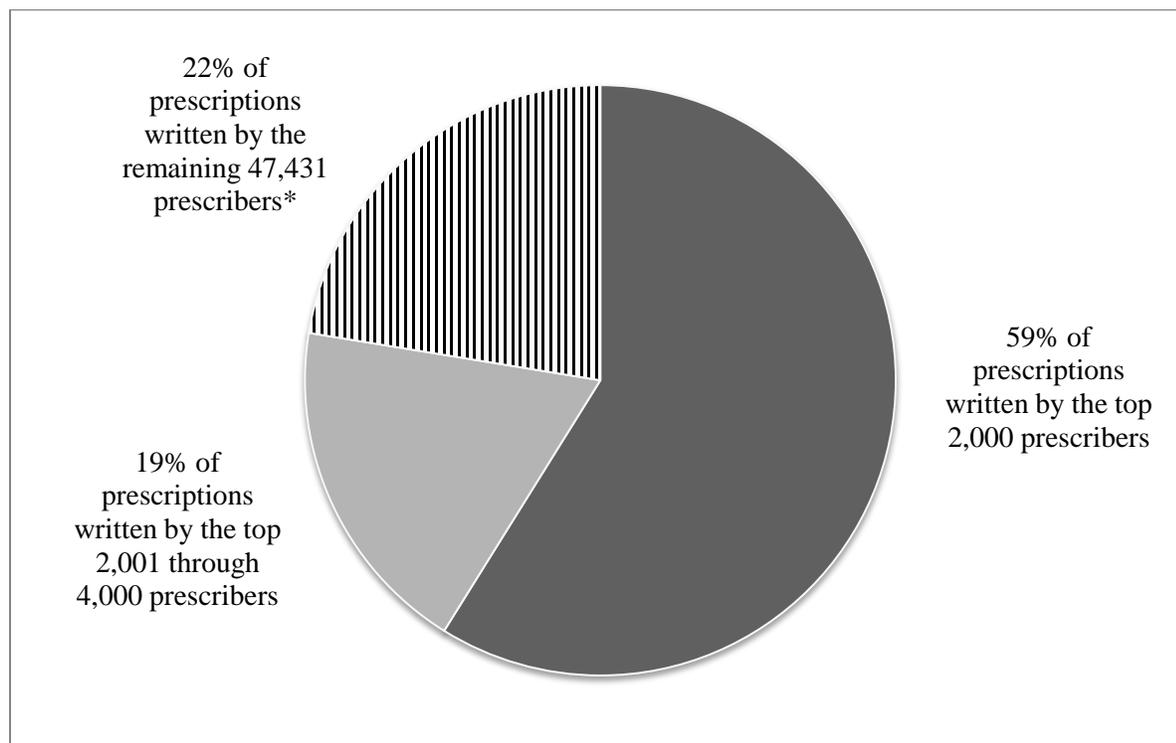


Table 25. Estimated number of prescribing providers registered for a PDMP account by county and statewide, OR, as of December, 31, 2012, n = 5,033

County	Number of prescribing providers with accounts	Number of prescribing providers who prescribed at least 1 Rx from 9/1/2011 to 12/31/2012	Percent of Registered Users Among Prescribing Providers
Statewide	5,033	17,223	29%
Baker	21	53	40%
Benton	139	602	23%
Clackamas	434	1,506	29%
Clatsop	61	144	42%
Columbia	36	75	48%
Coos	90	220	41%
Crook	18	38	47%
Curry	29	76	38%
Deschutes	234	873	27%
Douglas	141	358	39%
Gilliam	3	6	50%
Grant	12	21	57%
Harney	14	15	93%
Hood River	54	131	41%
Jackson	339	984	34%
Jefferson	31	52	60%
Josephine	109	286	38%
Klamath	74	240	31%
Lake	9	14	64%
Lane	343	1,498	23%
Lincoln	95	156	61%
Linn	102	145	70%
Malheur	28	115	24%
Marion	344	1,200	29%
Morrow	5	17	29%
Multnomah	1,390	5,011	28%
Polk	60	134	45%
Sherman	0	4	0%
Tillamook	35	80	44%
Umatilla	63	193	33%
Union	32	106	30%
Wallowa	9	24	38%
Wasco	16	128	13%
Washington	556	2,395	23%
Wheeler	0	3	0%
Yamhill	107	320	33%

Figure 4. Percentage of total CS II-IV prescriptions written by prescriber cohort, OR, 1/1/12 to 12/31/12, n = 51,431



*Number of remaining prescribers includes out-of-state prescribers who are not licensed in Oregon.

Table 26. Number and percent of prescriptions written by prescriber cohort and number and percent of prescriber cohort with PDMP accounts, OR, 1/1/12 to 12/31/12

	Number of prescriptions	% of total prescriptions per cohort	Number of prescribers with PDMP accounts per cohort	% of prescribers with PDMP accounts per cohort
Top 2,000 prescribers	4,090,273	59%	1,317	66%
Top 2,001 through 4,000 prescribers	1,300,460	19%	973	49%
Remaining prescribers, n = 47,431*	1,549,352	22%	2,494	5%
TOTAL	6,940,085		4,784	

*Number of remaining prescribers includes out-of-state prescribers who are not licensed in Oregon and therefore not eligible to obtain a PDMP system account. There are approximately 16,000 Oregon-licensed providers who prescribe controlled substances.

Table 27. Mean, median, and quartile of providers using the system by discipline, Statewide, OR, 1/1/12 to 12/31/12

Discipline	Total number of providers	Total number of queries	Mean	Median	Top cohort, 25% of total system queries		Second cohort, 25% of total system queries		Third cohort, 25% of total system queries		Fourth cohort, 25% of total system queries	
					# of providers	# of queries range	# of providers	# of queries range	# of providers	# of queries range	# of providers	# of queries range
RPh	579	21,876	38	6	19	173 - 643	44	76 - 169	108	27 - 74	408	1 - 26
NP/CNS-PP	532	48,731	92	12	18	1,196-373	45	182 - 370	91	75 - 177	378	1 - 74
MD, PA, and DO	2,251	212,359	94	10	30	574-5,979	151	223-569	358	82-222	1,712	1 - 81
ND	29	1,308	45	4	2	200-224	3	94-157	5	19-65	19	1 - 17
DDS/DMD	165	4,181	25	5	5	123-396	13	47-116	36	17-46	111	1 - 16
Total	3,556	288,455	81	7.4	74	453 - 1,523	256	124 - 276	598	44 - 117	2,628	1 - 43

Patients with High Use Profiles

Patients being dispensed controlled substances written by four or more prescribers and filled at four or more pharmacies have increased potential for misuse of medications and increased risk for adverse outcomes, e.g. overdose.^{11, 12}

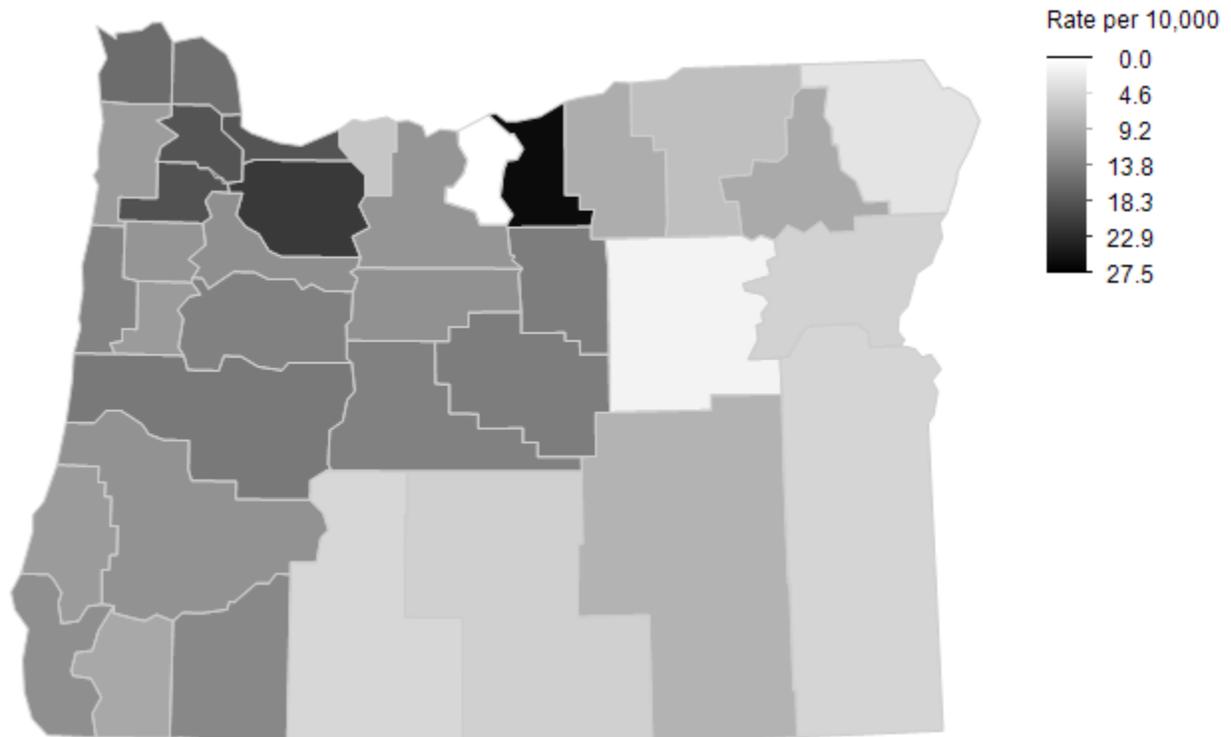
Table 28. Number of patients filling prescriptions from four or more prescribers and four or more pharmacies, Statewide, OR, 7/1/12 to 12/31/12*

	Count of patients
4 or more providers and pharmacies	4,481**
Total number of patients who received at least one prescription	866,383

* Evidence indicates that data for a six month time period is the best indicator.

** The count is most likely an overestimation because this is not measuring consecutive refills. These data should be interpreted with caution.

Figure 5. Number of residents/10,000 using four or more prescribers and four or more pharmacies by county, OR, 7/1/12 to 12/31/12



¹¹ Peirce, G., M. Smith, et al. (2012). "Doctor and pharmacy shopping for controlled substances." Med Care.

¹² Katz, N., L. Panas, et al. (2010). "Usefulness of prescription monitoring programs for surveillance---analysis of Schedule II opioid prescription data in Massachusetts, 1996--2006." Pharmacoepidemiol Drug Safety 19: 115-123.

Developing Concepts and Data Analysis

The statewide aggregated data report – and 36 county level reports – can be used to inform, develop, and implement population-based prevention approaches to reduce prescription drug overdose, such as public information campaigns and clinical guidance. Developing concepts are new means of analyzing PDMP to advance efforts to address the prescription drug overdose epidemic. These concepts stem from the work of the PDMP data workgroup, feedback and input from stakeholders including local health officials, and national PDMP and overdose data analysis efforts. Questions and input are welcome.

Opioid Prescribing Over Time Data

While there is some question regarding the efficacy of long-term use of opioids to treat chronic noncancer pain¹³, it is helpful to keep in mind the variety of conditions that these medicines are prescribed for when examining the PDMP data – see page 4. The following information is an initial look at opioid prescribing over time (Table 29). Keep in mind that PDMP data do not include diagnostic information nor does the current data contain days supplied which can be used to better distinguish opioid prescribing for various conditions.

¹³ Martell BA, O'Connor PG, Kerns RD, Becker WC, Morales KH, Kosten TR, et al. Systematic review: opioid treatment for chronic back pain: prevalence, efficacy, and association with addiction. *Annals of Internal Medicine*. 2007; 146(2):116–27.

Table 29. Number and percent of patients dispensed opioids for three or more consecutive months, county and statewide, OR, 1/1/12 to 12/31/12

	Number of unique recipients	Number of unique recipients dispensed opioids for three or more consecutive months	Percent of unique recipients dispensed opioids for three or more consecutive months
Statewide	908,162	320,738	35%
Baker	3,542	1,450	41%
Benton	15,860	4,756	30%
Clackamas	91,887	32,088	35%
Clatsop	10,065	3,800	38%
Columbia	11,573	4,741	41%
Coos	17,313	7,025	41%
Crook	5,724	2,181	38%
Curry	6,223	2,740	44%
Deschutes	39,477	13,176	33%
Douglas	30,809	11,767	38%
Gilliam	451	203	45%
Grant	1,617	658	41%
Harney	1,605	706	44%
Hood River	4,247	1,369	32%
Jackson	54,265	21,310	39%
Jefferson	5,495	2,180	40%
Josephine	24,723	10,593	43%
Klamath	14,199	5,222	37%
Lake	1,661	766	46%
Lane	86,187	32,321	38%
Lincoln	13,591	5,799	43%
Linn	31,520	12,175	39%
Malheur	5,685	2,259	40%
Marion	71,306	24,014	34%
Morrow	2,615	927	35%
Multnomah	168,163	55,332	33%
Polk	16,887	5,709	34%
Sherman	511	233	46%
Tillamook	6,547	2,755	42%
Umatilla	15,790	5,554	35%
Union	5,612	2,236	40%
Wallowa	1,381	563	41%
Wasco	5,871	2,395	41%
Washington	111,929	33,068	30%
Wheeler	322	123	38%
Yamhill	24,113	8,544	35%

CCO Data

The following information represents an initial look at controlled substance prescribing within Coordinated Care Organizations (CCOs) areas (Table 30). CCO service varies by zip code – see page 43. Among Oregon’s 470 zip codes, 190 zip codes are serviced by more than one CCO. For this reason, these numbers provide an overestimation of the total amount of prescription recipient counts. By providing data from these overlapping zip codes, we are able to report for all CCOs, that we would otherwise be limited to reporting on only a few CCOS where non-duplicated zip codes are served. While this provides us more breadth of data, caution must be used when interpreting the data due to this overestimation.

Table 30. Controlled substance dispensation by CCO, OR, 1/1/12 to 12/31/12

Name of CCO	Number of patients dispensed an Opioid Residing in Zip Code Covered by CCO	Number of patients dispensed an Opioid/Benzo Combo Residing in Zip Code Covered by CCO	Number of patients visiting 4 or more pharmacies and 4 or more health care providers, 7/1-12/31/2012
All Care	86,689	19,703	270
Cascade Health Alliance	14,030	2,634	20
Columbia Pacific	34,270	6,240	141
Eastern Oregon	42,609	7,091	90
Family Care	403,502	71,039	2,564
Health Share of Oregon	400,027	70,363	2,559
Intercommunity	73,412	14,612	278
Jackson Care Connect	74,769	17,418	245
Pacific Source: Central Oregon	63,391	12,452	235
Pacific Source: Columbia Gorge	11,799	1,930	25
Primary Health of Josephine	31,521	7,647	79
Trillium	90,893	19,297	408
Umpqua	28,694	6,112	97
Western Oregon Advanced	24,390	4,760	70
Willamette Valley	98,610	17,257	398
Yamhill County Care Organization	55,486	9,345	301
Statewide Totals**	929,509*	182,763	4,481
<i>The rows shaded in gray indicate CCO areas where all zip codes represented are served by that single CCO.</i>			
<i>*Includes all Opioids (e.g. Buprenorphine).</i>			
<i>**Columns will not total. These numbers provide an overestimation of the total amount of prescription recipient counts. By providing data from these overlapping zip codes, we are able to report for all CCOs.</i>			

Discussion

Prescription drug overdose, dependence, and addiction are serious public health problems. The PDMP provides health care providers with a tool to identify and address these problems. The PDMP mission is to use data to improve health care by offering health care providers and pharmacists information about prescription controlled substances, reduce prescription overdose, decrease “doctor shopping” – a patient obtaining controlled substances from multiple health care providers without the prescribers’ knowledge of the other prescriptions – and decrease misuse of prescription controlled substances. A balanced approach to this work includes an understanding of the need to preserve access to medicines for the management of pain while decreasing the misuse of prescription controlled substances. The PDMP data workgroup welcomes input and questions.

Recommendations

- Form a task force to target the co-prescribing of opioid and benzodiazepine controlled substances to reduce the number of patients within this at-risk population.
- Develop a long-range, cost-benefit report on pain management that compares pharmacological care only, pharmacological care and complementary therapies combined, and complementary therapies only.
- Assure that 80 percent of the top 4,000 prescribers have system accounts.
- Produce and disseminate a tool for system users on how to use a PDMP report with a patient.
- Encourage health systems to adopt and implement evidence-based guidelines for use of the PDMP.
- Analyze data by CCO region to inform policy and practice.
- Use geocoding and mapping in future analysis.
- Analyze data in future reports to reflect acute versus chronic condition prescribing and to better understand where prescriptions for controlled substances are correlated with hospitalizations and deaths.

Glossary of Terms

Acetaminophen with Codeine Acetaminophen with Codeine is used to relieve mild to moderate pain and to reduce fever. It may also be used to relieve the pain of osteoarthritis (arthritis caused by the breakdown of the lining of the joints). Acetaminophen is a less potent pain reliever that increases the effects of codeine. Acetaminophen with Codeine is often combined with opiates to increase their pain relieving properties. Acetaminophen has liver toxicity at higher doses. Acetaminophen with Codeine is in a class of medications called opiate narcotic analgesics (pain relievers) and antipyretics (fever reducers). It works by changing the way the body senses pain and by cooling the body.

Brand Names: Tylenol w/Codeine

Alprazolam Alprazolam is used to treat anxiety disorders and panic disorder (sudden, unexpected attacks of extreme fear and worry about these attacks). Alprazolam is in a class of medications called benzodiazepines. It works by decreasing abnormal excitement in the brain.

Brand names: Xanax

Amphet Amphet is identified as amphetamine and dextroamphetamine extended release and is commonly used to treat ADHD, fatigue and narcolepsy. Amphet is in a class of medications called central nervous system (CNS) stimulants.

Brand names: Adderall

Buprenorphine Buprenorphine is a semi-synthetic, partial opioid agonist that is used to treat opioid addiction in higher dosages and to control moderate acute pain in non-opioid-tolerant individuals in lower dosages. Buprenorphine is a narcotic analgesic. It works by working in the brain and nervous system to decrease pain. A combination with other CNS depressants, such as alcohol, benzodiazepines, barbiturates, z-drugs, GHB, and any other substance that depresses the central nervous system, should be avoided.

Brand names: Suboxone, Subutex, Buprenex

Carisoprodol Carisoprodol, a muscle relaxant, is used with rest, physical therapy, and other measures to relax muscles and relieve pain and discomfort caused by strains, sprains, and other muscle injuries. It works by blocking pain sensations between the nerves and the brain and is a central nervous system (CNS) depressant.

Brand names: Soma

Clonazepam Clonazepam is used alone or in combination with other medications to control certain types of seizures. It is also used to relieve panic attacks. Clonazepam is in a class of medications called benzodiazepines. It works by decreasing abnormal electrical activity in the brain.

Brand names: Klonopin, Klonopin Wafer

Diazepam Diazepam is used to relieve anxiety, muscle spasms, and seizures and to control agitation caused by alcohol withdrawal. Diazepam is also used to treat irritable bowel syndrome and panic attacks. Diazepam is in a class of medications called benzodiazepines.

Brand names: Valium

Fentanyl Fentanyl is a powerful synthetic opiate analgesic similar to but more potent than morphine. It is typically used to treat patients with severe pain, or to manage pain after surgery. It is also sometimes used to treat people with chronic pain who are physically tolerant to opiates. Fentanyl is in a class of medications called opiate narcotic analgesics. It works by changing the way the brain and nervous system respond to pain.

Brand names: Abstral, Actiq, Duragesic, Fentora, Onsolis, Sublimaze

Hydrocodone Hydrocodone is available only in combination with other ingredients, and different combination products are prescribed for different uses. Some hydrocodone products are used to relieve moderate to severe pain. Other hydrocodone products are used to relieve cough. Hydrocodone is in a class of medications called opiate narcotic analgesics and in a class of medications called antitussives. Hydrocodone relieves pain by changing the way the brain and nervous system respond to pain. Hydrocodone relieves cough by decreasing activity in the part of the brain that causes coughing.

Brand names: Vicodin, Lorcet, Lortab, Norco

Hydromorphone Hydromorphone is used to relieve moderate to severe pain. It also may be used to decrease coughing. Hydromorphone is in a class of medications called opiate narcotic analgesics and in a class of medications called antitussives.

Brand names: Dilaudid, Exalgo, Hydrostat, Palladone

Lorazepam Lorazepam is used to relieve anxiety. It is also used to treat irritable bowel syndrome, epilepsy, insomnia, and nausea and vomiting from cancer treatment and to control agitation caused by alcohol withdrawal. Lorazepam is in a class of medications called benzodiazepines. It works by slowing activity in the brain to allow for relaxation.

Brand names: Ativan

Methadone Methadone is used to relieve moderate to severe pain that has not been relieved by non-narcotic pain relievers. It also is used to prevent withdrawal symptoms in patients who were addicted to opiate drugs and are enrolled in treatment programs in order to stop taking or continue not taking the drugs. Methadone is in a class of medications called opiate narcotic analgesics. Methadone works to treat pain by changing the way the brain and nervous system respond to pain. It also works as a substitute for opiate drugs of abuse by producing similar effects and preventing withdrawal symptoms in people who have stopped using these drugs. Methadone has a very long half-life (stays in the body a long time).

Brand names: Dolophine, Methadose

Methylphenidate Methylphenidate is used as part of a treatment program to control symptoms of ADHD in adults and children. It is also used to treat narcolepsy. Methylphenidate is in a class of medications called central nervous system (CNS) stimulants. It works by changing the amounts of certain natural substances in the brain.

Brand names: Concerta, Metadate, Methylin, Ritalin

Morphine Morphine is used to relieve moderate to severe pain. Morphine long-acting tablets and capsules are only used by patients who are expected to need medication to relieve moderate to severe pain around-the-clock for longer than a few days. Morphine is in a class of medications called opiate narcotic analgesics. It works by changing the way the body senses pain.

Brand names: Avinza, Kadian, MS Contin, Oramorph, Roxanol

Oxycodone Oxycodone is used to relieve moderate to severe pain. Oxycodone is in a class of medications called opiate narcotic analgesics. It works by changing the way the brain and nervous system respond to pain.

Brand names: Dazidox, Endocet, ETH-Oxydose, Endocodone, Oxecta, Oxy IR, Oxycontin, Oxyfast, Percocet, Percolone, Roxicodone

Oxymorphone Oxymorphone is an opioid pain medication. Oxymorphone is in a class of medications called opiate narcotic analgesics. It is used to treat moderate to severe pain. The extended-release form of this medication is for around-the-clock treatment of pain.

Brand names: Opana

Temazepam Temazepam is used on a short-term basis to treat insomnia. Temazepam is in a class of medications called benzodiazepines. It works by slowing activity in the brain to allow sleep.

Brand names: Restoril

Zolpidem Zolpidem is used to treat insomnia. Zolpidem belongs to a class of medications called sedative-hypnotics. It works by slowing activity in the brain to allow sleep.

Brand names: Ambien, Zolpimist