Low Back Pain: Utilization of Health Care Services in Oregon
Oregon Health Care Quality Corporation Report

March 2013

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Introduction

Oregon is engaged in a variety of innovative health care transformation activities. The need for health care transformation is greater than ever before as quality is uneven, care is fragmented and costs are skyrocketing. Multiple organizations in Oregon are focusing on specific health conditions, such as low back pain, that have the potential to affect large numbers of Oregonians and where there are significant opportunities to improve care, reduce unnecessary or harmful care and decrease costs.

The most common type of low back pain usually requires very little medical intervention. Yet 2010 Oregon data shows that at least 35 percent of Oregonians who received care for a new episode of simple low back pain received an imaging test and approximately 14 percent filled prescriptions for narcotic pain relievers within 90 days. Despite evidence that suggests that surgery is only effective for about three percent of back pain patients, Oregon has the third highest rate of surgical intervention in the country. For these reasons and more, in 2010 the Oregon Health Care Quality Corporation (Quality Corp) launched a program to improve care for low back pain as part of the Robert Wood Johnson Foundation's *Aligning Forces for Quality* initiative.

Inside this report

This report provides a baseline analysis of the utilization and costs associated with health care services for low back pain in Oregon as compared to the recommendations in the State of Oregon Evidence-based Clinical Guideline for the Evaluation and Management of Low Back Pain. As part of Quality Corp's public reporting program, information on appropriate low back pain imaging can also be found at www.PartnerforQualityCare.org. Low back pain utilization data was initially run for claims submitted for 2010 dates of service. Recognizing the need to continuously evaluate efforts to effectively manage low back pain, utilization claims will be analyzed again for 2011 for a future report. Quality Corp will also continue to publicly report information on appropriate low back pain imaging.

Key findings

- Plain film x-ray imaging for low back pain is higher than expected across all payers, with 16 percent of all patients receiving a plain film x-ray.

- Emergency Department (ED) visits for low back pain vary greatly by payer. Patients covered by Medicaid had the highest percent of ED visits (22 percent).

- Within 90 days of a low back pain diagnosis, 16 percent of all patients filled a new prescription for a narcotic and 17 percent also filled a new prescription for a skeletal muscle relaxant.

- The use of complimentary care, especially chiropractic care, among patients with commercial coverage is high. For commercial patients with low back pain without a diagnosis of radiculopathy, 31 percent received chiropractic manipulation.

Oregon activities to improve care for low back pain

A variety of low back pain initiatives have recently launched in Oregon, including the development of an Oregon-based clinical guideline, a consumer campaign to help reset expectations of care, a program to disseminate the guideline to providers and a pilot project on early physical therapy intervention.

Oregon state clinical guidelines project: evaluation and management of low back pain

In December 2010, the Oregon Health Policy Board released Oregon's Action Plan for Health that includes a strategy to "identify and develop 10 sets of Oregon-based best practice guidelines and standards that can be uniformly applied across public and private health care to drive down costs and reduce unnecessary care." In November 2011, the first guideline, Evaluation and Management of Low Back Pain, was published. This guideline was developed in partnership by the Oregon Health Authority, Oregon Health Leadership Council, Quality Corp and the Center for Evidence-based Policy at OHSU.

Resetting expectations of care

As part of the Robert Wood Johnson Foundation's *Aligning Forces for Quality* initiative, Quality Corp convened a multi-stakeholder committee to work on efforts to reset consumer expectations for low back pain care and support the provider community to implement the guideline. In January 2012, the *Get Vertical: And Don't Take Back Pain Lying Down!* campaign launched, with a consumer booklet and online quiz to help people with low back pain better understand safe and effective care for the condition. To learn more about the campaign, visit www.PartnerforQualityCare.org/lowbackpain.

Working with providers

Quality Corp has been actively disseminating both the State of Oregon Evidence-based Clinical Guideline for the Evaluation and Management of Low Back Pain and the consumer booklet to provider groups and employers throughout Oregon. Both tools are available in print or as free downloads that can be shared with staff and patients. Initial dissemination activities were directed to provider professional groups. Additional allied organizations have subsequently been contacted and dissemination activities are currently being broadened to engage hospital systems and large clinic groups throughout the state. Hospital emergency departments, urgent care and sports medicine clinics are targeted for future rollout.

Early physical therapy intervention

The Oregon Health Leadership Council has launched a new initiative focused on the management of acute low back pain. The initiative began in January 2012 and helps employers implement a standardized care process for the early detection and treatment of employees with low back pain. Patients are allowed direct access to physical therapists participating in the pilot for a limited number of visits under a defined medical protocol centered on education, exercise and self-management.

Definition of acute low back pain episode

Quality Corp convened a multi-stakeholder Low Back Pain Steering Committee that first met in the fourth quarter of 2011 to define the requirements for utilization reporting. Committee members agreed that the report population (i.e., the denominator population) be defined to closely align with the population addressed by the State of Oregon Evidence-based Guideline. The steering committee also agreed that the episode for utilization reporting be clearly defined.

After a thorough discussion of the various denominator definitions currently utilized to identify low back pain patients, the steering committee decided to use a modified version of the HEDIS Relative Resource Use definition. To more closely match the Oregon guideline, exclusions for pregnancy, ankylosing spondylitis and spinal stenosis were added.

The guideline addresses the initial treatment of patients who present with simple mechanical back pain. The steering committee agreed to classify a patient who had not been treated for low back pain for 180 days as a newly diagnosed patient; the length of the episode would be 90 days following the initial diagnosis. Table 1 summarizes the steering committee's criteria for the analysis of utilization data.

Table 1. Denominator definition

	State of Oregon Evidence-based Clinical Guidelines	Criteria
Product Line	N/A	Commercial, Medicare, Medicaid
Age	Adults	18 and older
Negative diagnosis ("clean") period	N/A	180 days (6 months)
Length of episode	N/A	90 days
Enrollment Criteria	N/A	Continuously enrolled from the beginning of the "clean" period through the end of the episode.
Exclusions/red flag conditions	Pregnancy Cancer (any history) Vertebral infection Vertebral compression fracture Cauda equine syndrome Ankylosing spondylitis Nerve compression/disorders Spinal stenosis	HEDIS Relative Resource Use for LBP: • Cancer (any history) • Trauma (in previous 12 months) • Cauda equine syndrome (any history) • Neuralgia/Neuritis (in previous 12 months) • IV Drug Abuse (in previous 12 months) • ESRD (within measurement period) • Organ transplant (within measurement period) • HIV/AIDS (within measurement period) **PLUS** Additional exclusions for the following conditions: • Pregnancy (within measurement period) • Ankylosing spondylitis (any history) • Spinal stenosis (any history)
LBP Diagnosis Code	N/A	HEDIS definition

Description of utilization data

For initial utilization analysis, Quality Corp had used the Care Analysis Model for low back pain that was developed by Milliman, Inc. This model focuses on patients with chronic low back pain and is designed to track total cost over a longer period of time.Therefore Quality Corp worked with Milliman staff to develop a custom model that uses the denominator definition developed by the steering committee. Patients with evidence of radiculopathy, depression or osteoporosis were flagged to allow the data to be stratified for analysis. Milliman also provided information on additional utilization categories that were of interest to the steering committee.

In order to identify intervention strategies, several analyses were completed using the data generated by the custom model. Utilization was stratified by payer type, age, gender and geographic region to identify variation in care. Detailed analysis of office visit data was performed to understand which specialists were treating low back pain patients in the period following the initial diagnosis. Analysis was performed to gain insight into specialties most likely to order images.

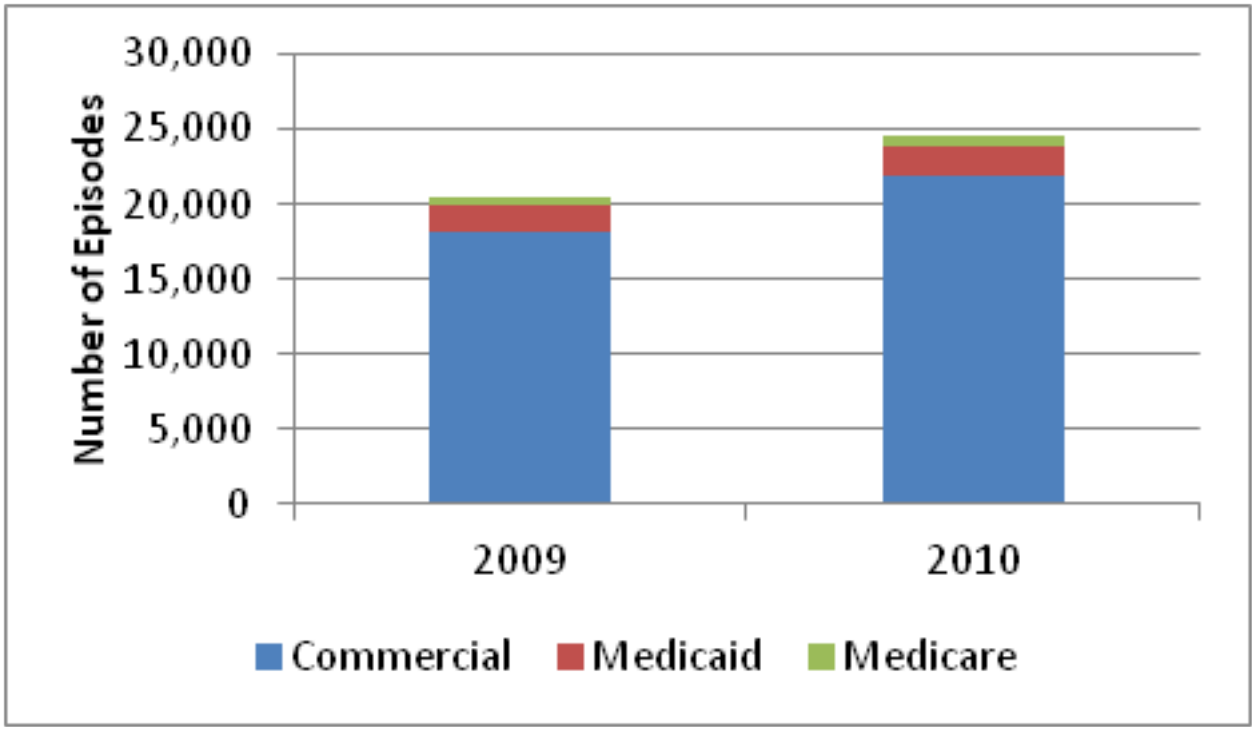
Key findings—utilization data

The following list of utilization categories was analyzed:

- Imaging (CT scans, MRIs and x-rays)
- Emergency Department Visits
- Evaluation and Management Visits (primary care and specialist)
- Prescriptions (anti-depressants, narcotics, NSAIDs and muscle relaxants)
- Surgeries (arthrodesis, discectomies, kyphoplasties and laminectomies)
- Complementary Care (acupuncture, chiropractic manipulation, massage, physical therapy, etc.)

Chart 1 reports the number of episodes that was included in the low back pain analysis after applying the denominator criteria. For 2010, 89 percent of the patients included were commercially insured, 9 percent were covered by Medicaid, and 4 percent were covered by Medicare Advantage plans.

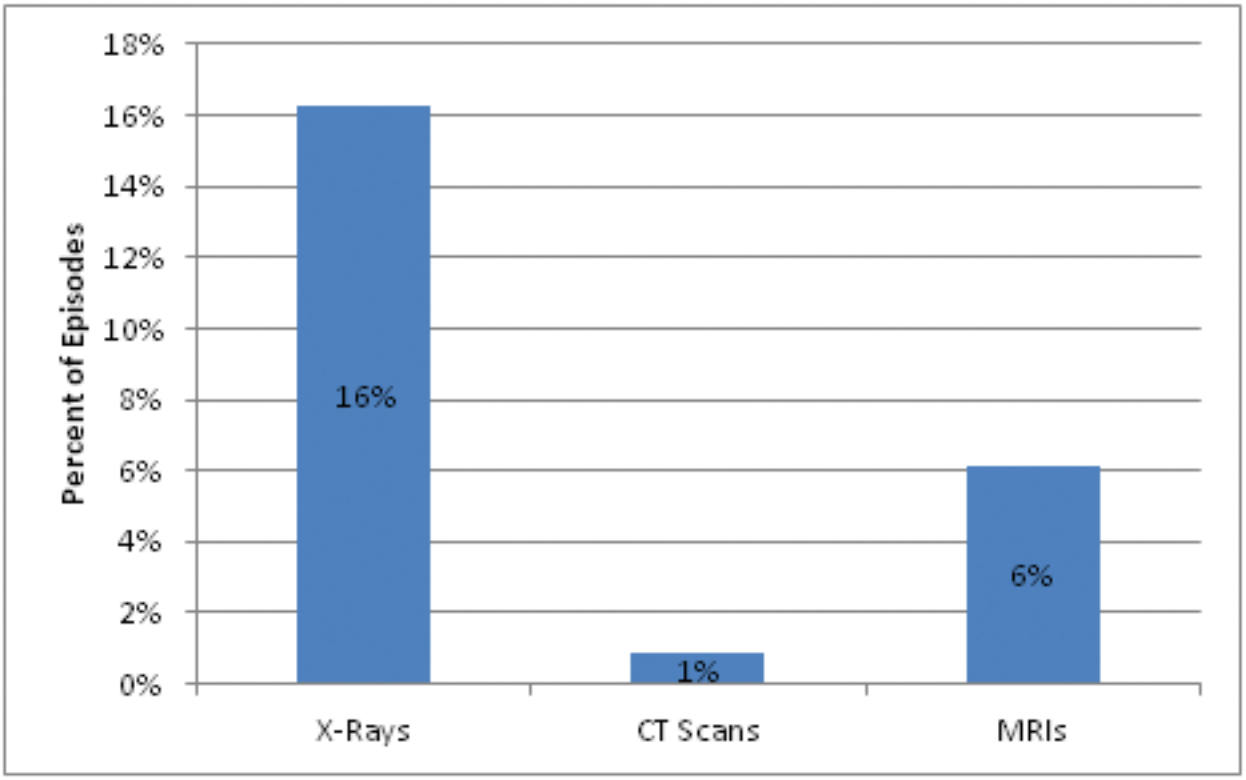
Chart 1. Newly diagnosed acute low back pain patients in Oregon by payer type



Key findings—imaging tests

Imaging tests are not indicated for most episodes of acute low back pain. However, the utilization data shows that in 2010, 16 percent of newly diagnosed patients received X-rays, 1 percent received CT scans, and 6 percent received MRIs within the first 90 days after the initial diagnosis. This represents a significant opportunity for reducing over utilization.

Chart 2. Percent of episodes with images by image type



Using claims data

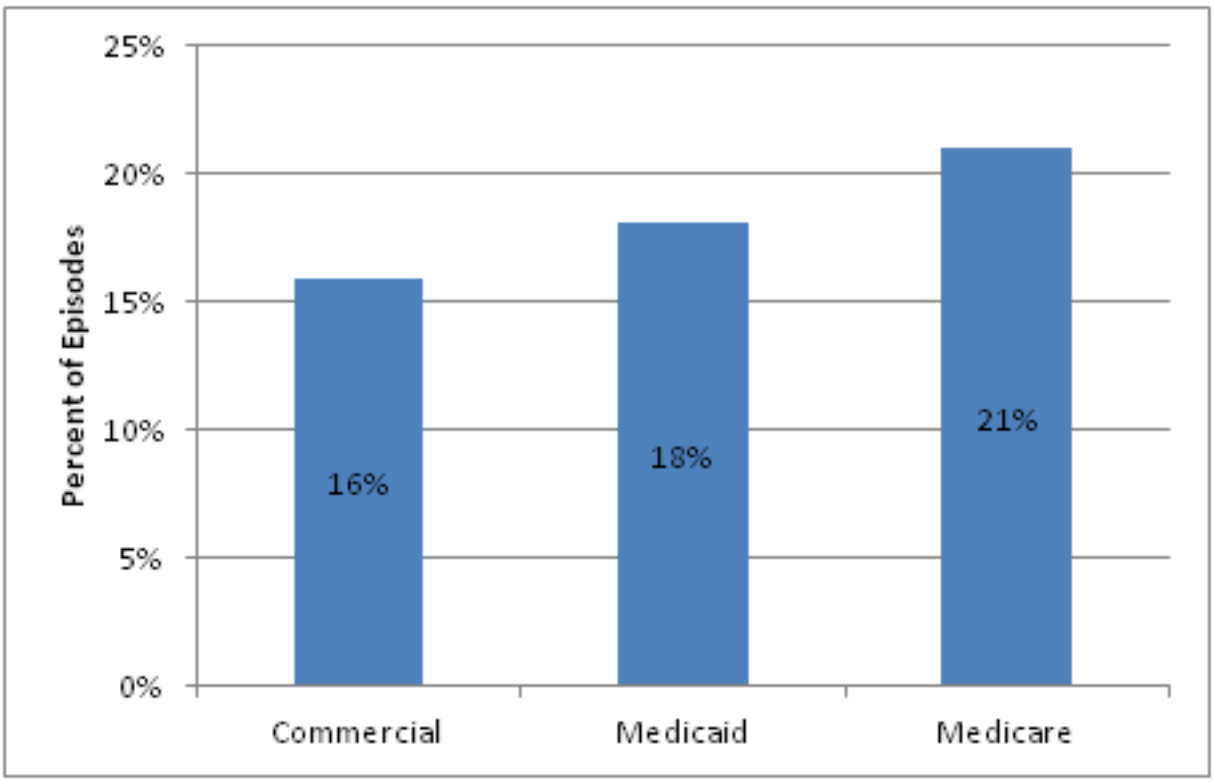
The information in this report comes from administrative (billing) claims. Claims data reflects information submitted by providers to payers as a part of the billing process. While claims data has limitations, it provides useful information about services provided by a very large segment of the Oregon health care delivery network.

Use of claims data assumes clinics and practices are billing accurately and comprehensively for services rendered. Limitations of claims data include timeliness and completeness of the information. For example, data in this report does not include uninsured patients, patients who pay for their own health care services, Medicare fee-for-service patients, or patients served by a health plan that is not providing data to Quality Corp. More information about claims data is available in the Technical Appendix, available online at Q-Corp.org.

Key findings—imaging tests

Plain film x-ray imaging is higher than expected across all payers. Across commercial, Medicaid and Medicare payers, 16 percent of all patients received a plain film x-ray. The rates broken out by payer for commercial, Medicaid and Medicare are 16 percent, 18 percent and 21 percent, respectively.

Chart 3. Percent of episodes with plain film x-rays by payer type



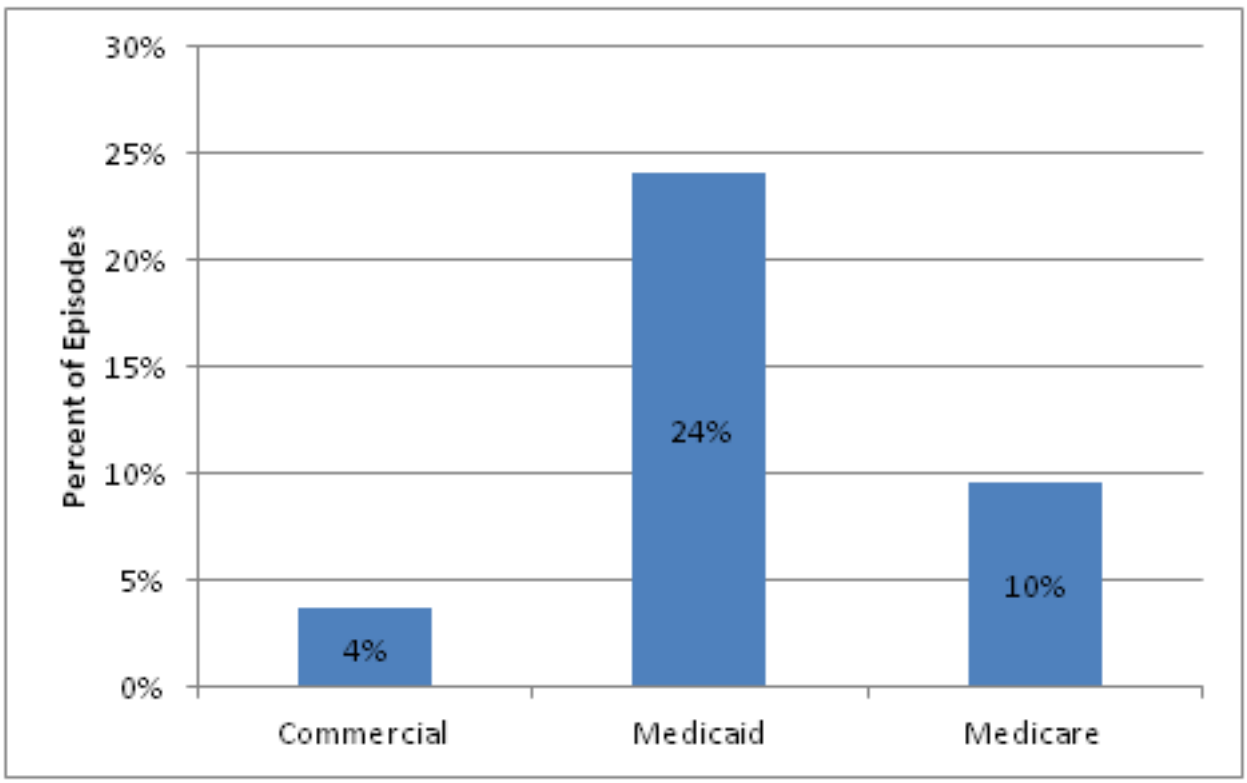
2011-2012 Funding Partners*

CareOregon
Center for Health Care Strategies
FamilyCare
Health Net of Oregon
Kaiser Permanente
LifeWise Health Plan of Oregon
ODS Health Plans
Oregon Health Authority Division of Medical Assistance Programs
PacificSource Health Plans
Providence Health Plans
Regence BlueCross BlueShield of Oregon
Robert Wood Johnson Foundation
Tuality Health Alliance
UnitedHealthcare
*Data suppliers for this report appear in **bold**.

Key findings—emergency department visits

For patients covered by Medicaid, 24 percent received care in the Emergency Department, compared with 10 percent for patients covered by Medicare and 4 percent for patients with commercial coverage.

Chart 4. Percent of episodes with emergency department visits by payer type



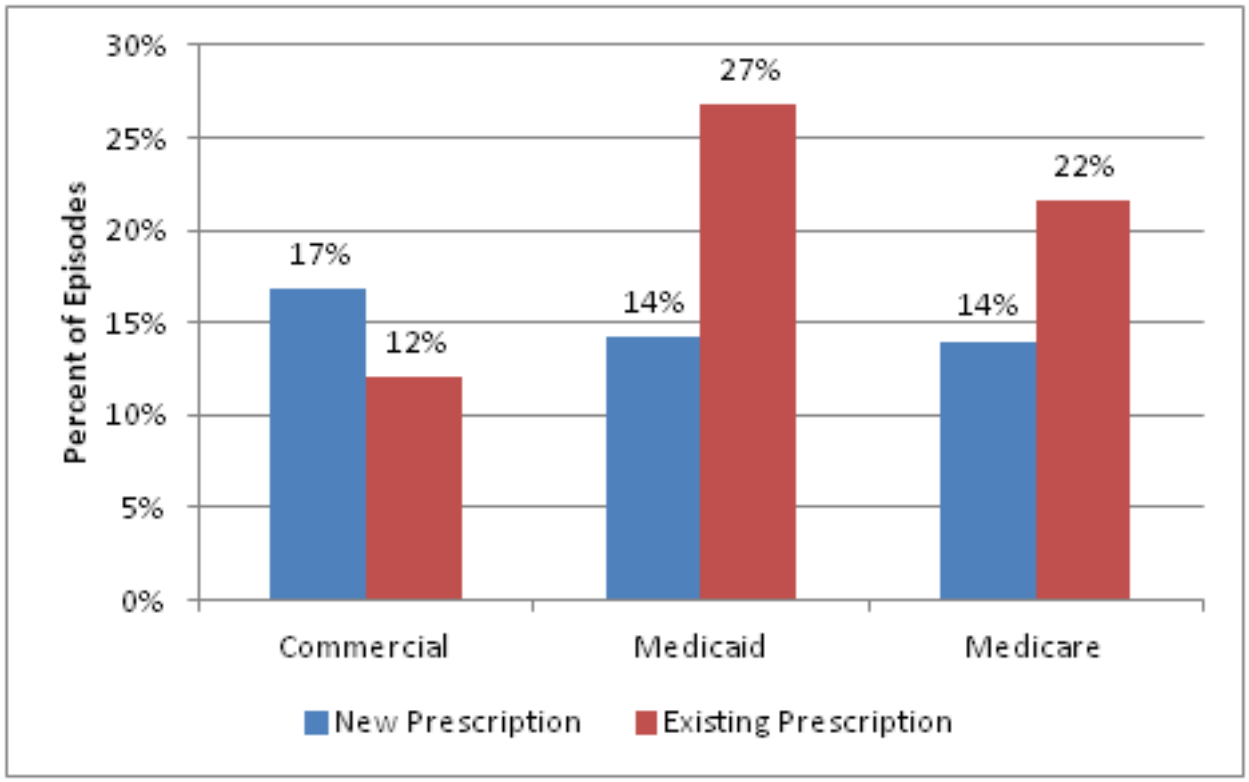
Key findings—prescription drug utilization

The pharmacy claims collected from the data suppliers do not include an ICD-9 diagnosis code. For this reason, caution must be used when interpreting the pharmacy results because the prescription may have been written for a condition other than low back pain. However, limiting the episode to 90 days decreases the likelihood that the prescription was written for another condition.

The steering committee requested that the reports differentiate between a new and existing prescription. If there was a prescription filled in the 180 days prior to the patient's low back pain diagnosis, the prescription was flagged as existing. Otherwise the prescription was flagged as new.

Looking across payers, 17 percent of commercial patients filled a new prescription for narcotics compared with 14 percent for Medicaid and 14 percent for Medicare. In contrast, 12 percent of commercial patients had an existing prescription for a narcotic at the time of diagnosis, compared to 27 percent for Medicaid and 22 percent for Medicare.

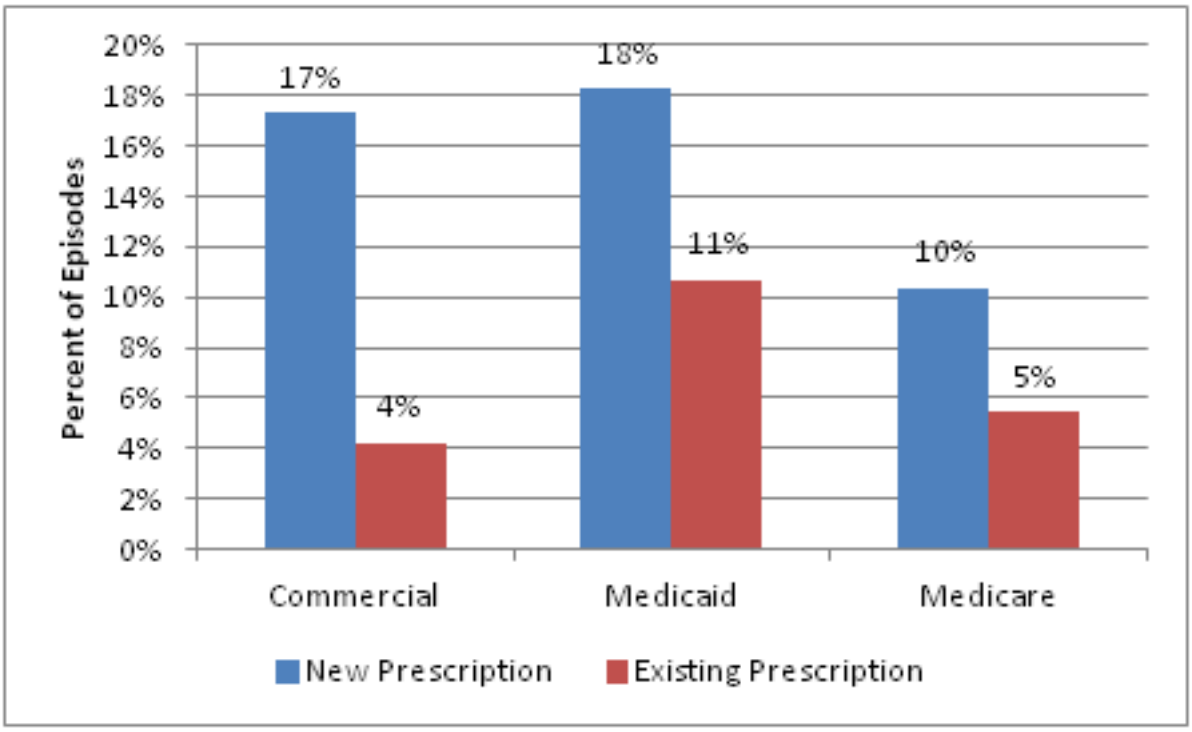
Chart 5. Percent of episodes with a narcotics prescription by payer type



Key findings—prescription drug utilization

New prescriptions for skeletal muscle relaxants varied from 17 percent of commercial patients, 18 percent of Medicaid patients and 10 percent of Medicare patients.

Chart 6. Percent of episodes with a skeletal muscle relaxant prescription by payer type

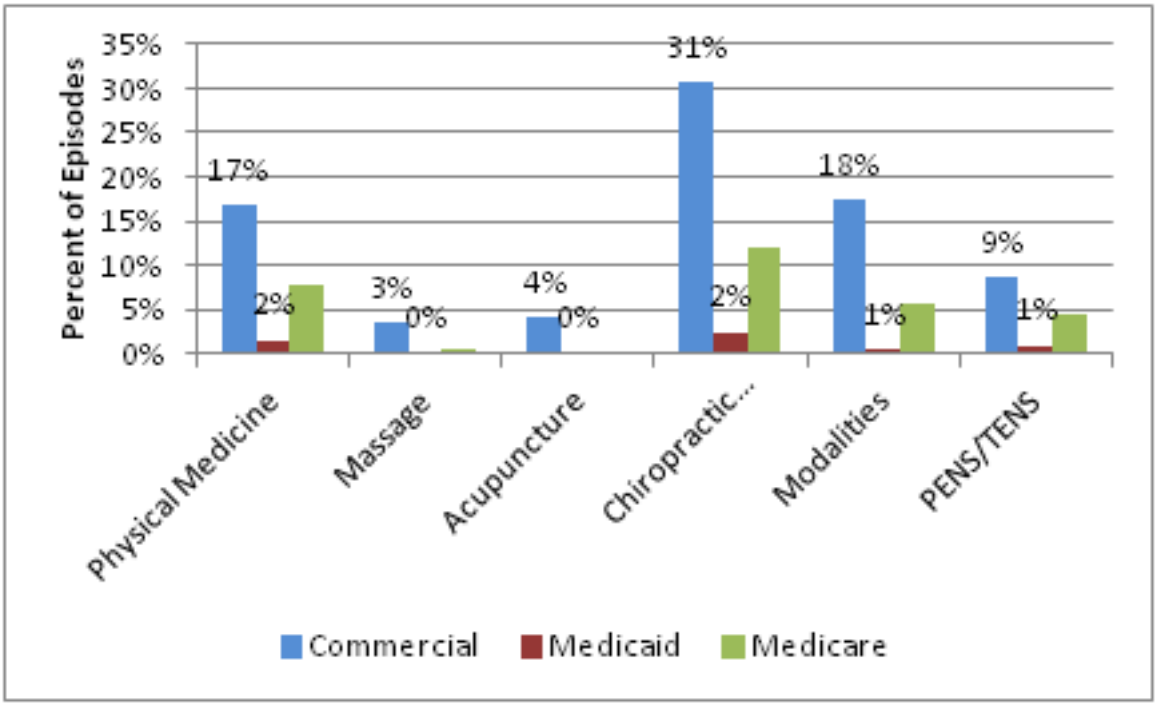


Key findings—complementary care

The complementary care category includes other services that a patient may seek following an onset of low back pain. Many insurance carriers and employers do not cover all of these services, and Quality Corp does not have data for patients who self-pay. Utilization is likely under-reported for these reasons.

The use of complimentary care, especially chiropractic care, among commercial patients is high. For example, 31 percent of commercial patients received chiropractic manipulation.

Chart 7. Percent of episodes with complementary care by payer type



Key findings—comorbidity of depression

The steering committee was interested in learning how depression impacted the utilization of services for newly diagnosed low back pain patients. In a thorough analysis of all utilization categories of treatment, the most striking differences were shown with the utilization of narcotic drugs and the use of chiropractic manipulation. For patients with a comorbidity of depression at the time of low back pain diagnosis, 21 percent were already receiving a prescription for a narcotic compared with 8 percent of patients without depression. Patients with depression are less likely to receive chiropractic manipulation; 21 percent for patients with depression compared with 31 percent for patients without depression.

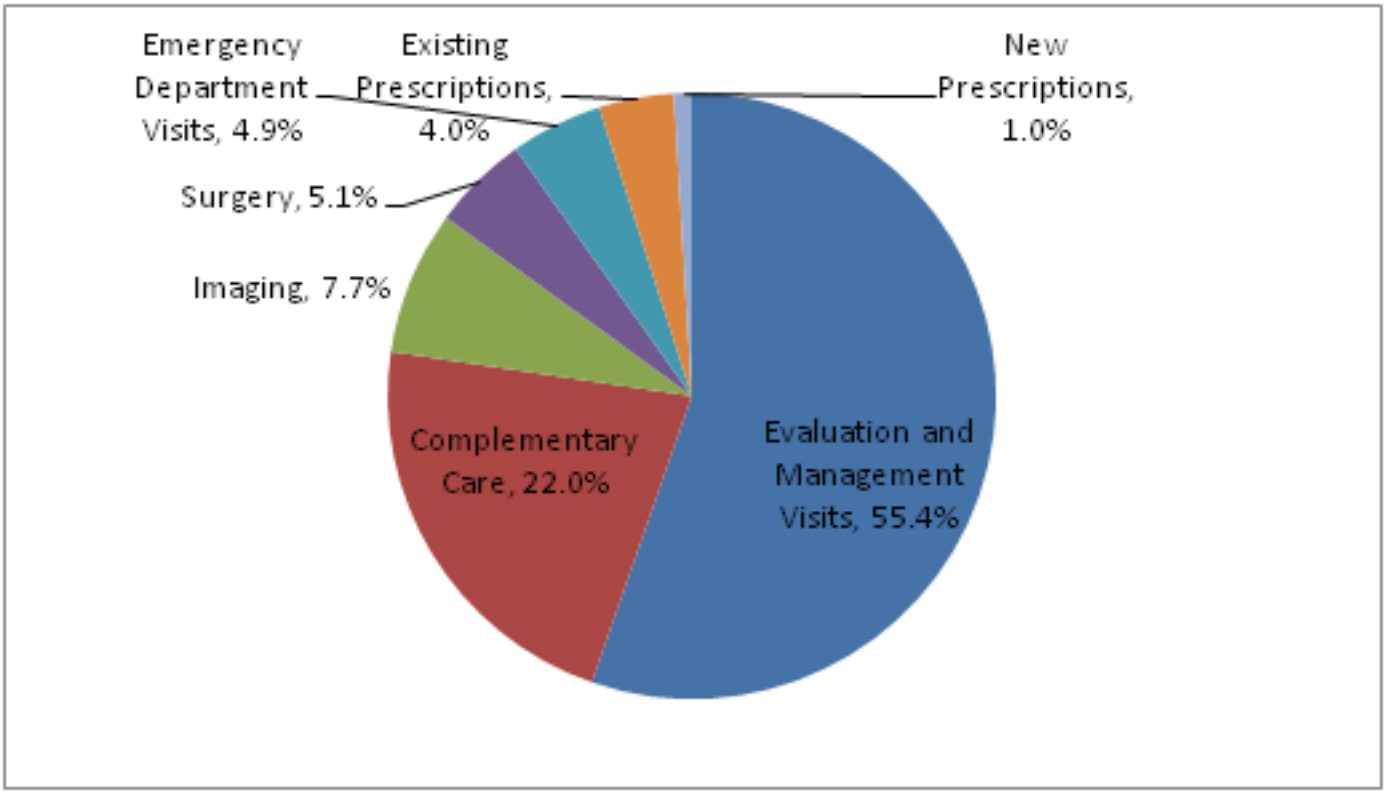
Key findings—cost data

The costs reported in this section represent estimates that were calculated using Milliman's propriety relative value unit (RVU) cost methodology. Milliman uses information on the claim to assign an RVU consistent with Medicare's Physician RBRVS RVUs. The Milliman model then uses the RVU assigned to the claim to calculate the Medicare allowed amount. Quality Corp staff adjusted this data using information provided by Milliman to more accurately reflect commercial and Medicaid pricing.

Chart 9 illustrates the distribution of these costs by utilization category. Evaluation and management visits account for the largest portion of the cost of initial low back pain treatment at 55.4 percent, followed by complementary care services (physical therapy, chiropractic manipulation, massage, etc.) which account for 22 percent of the cost. Imaging services account for 7.7 percent of the total cost.

Although use of unnecessary imaging is the focus of much work around low back pain utilization, the cost analysis shows that it is not a big expense category in the initial days of treatment. (It is also worth noting that prescription drugs are a relatively inexpensive utilization category.) The high utilization of plain film x-rays instead of the more expensive CT scans and MRIs likely keeps the total imaging costs relatively low compared to other utilization categories. Cost savings could be achieved by continuing to focus on initiatives that emphasize self care to reduce the number of unnecessary physician visits.

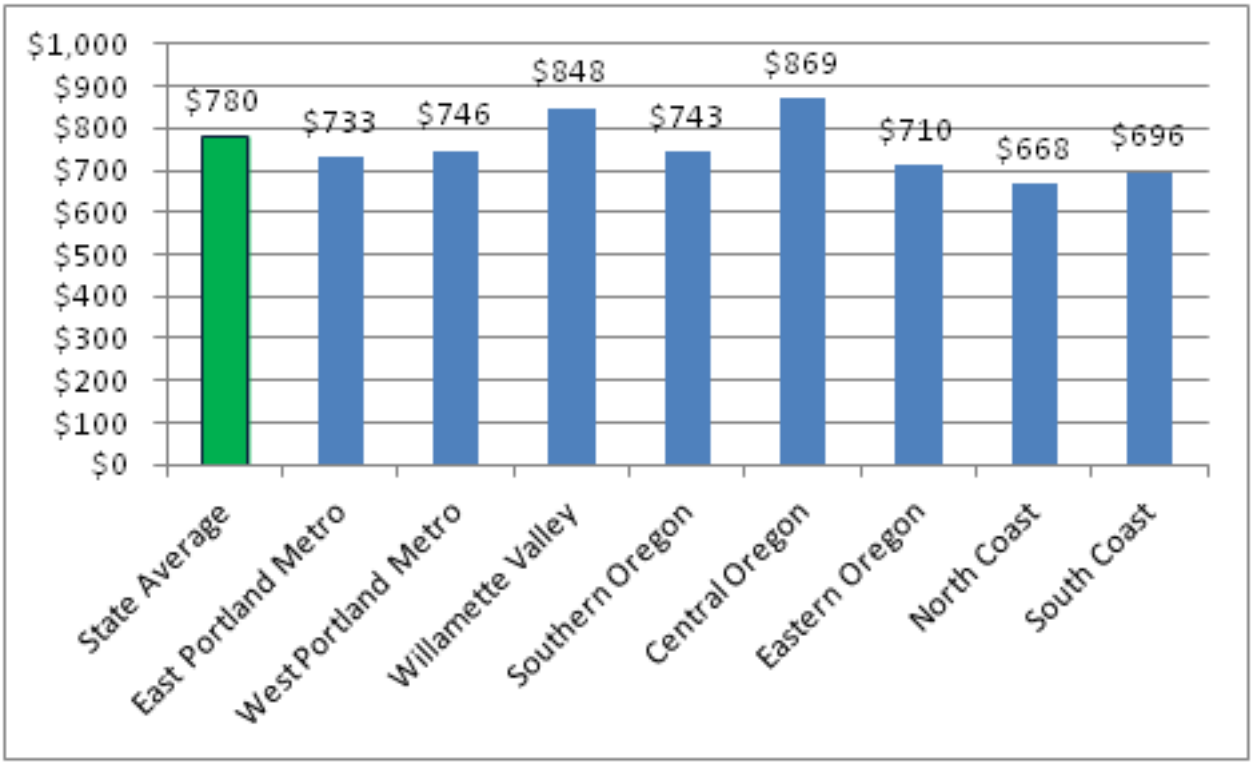
Chart 9. 2010 distribution of estimated costs for newly diagnosed low back pain episodes



Key findings—cost data

Chart 10 illustrates the variation of costs across geographic region. Central Oregon has the highest estimated cost at $869 per patient, followed by Willamette Valley at $848 per patient. The North and South Coast regions have the lowest estimated cost per patient at $668 and $696 respectively.

Chart 10. 2010 estimated cost per patient with low back pain by geographic region



About the Oregon Health Care Quality Corporation

The Oregon Health Care Quality Corporation is an independent, nonprofit organization dedicated to improving the quality and affordability of health care in Oregon by leading community collaborations and producing unbiased information. We work with the members of our community–including consumers, providers, employers, policymakers and health insurers–to improve the health of all Oregonians.

Quality Corp's work is nationally recognized. In 2007, Quality Corp became one of 16 organizations nationwide selected to participate in *Aligning Forces for Quality*, the Robert Wood Johnson Foundation's signature effort to improve the overall quality of health care in targeted communities. In 2008, Quality Corp received the Chartered Value Exchange designation from the U.S. Department of Health and Human Services in recognition of its leadership to improve care in Oregon. Quality Corp is also a member of the Network for Regional Healthcare Improvement, a national coalition of regional health improvement collaboratives working to improve the quality and value of health care delivery.

For more information, visit Q-Corp.org.

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