PAIN MEDICINE
Volume 7 • Number 2 • 2006

# PAIN AND AGING SECTION

## Low Back Pain in Older Adults: Are We Utilizing Healthcare Resources Wisely?

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**ABSTRACT**

*Objectives.* 1) To examine recent change in prevalence and Medicare-associated charges for non-invasive/minimally invasive evaluation and treatment of nonspecific low back pain (LBP); and 2) to examine magnetic resonance imaging (MRI) utilization appropriateness in older adults with chronic low back pain (CLBP).

*Design.* Two cross-sectional surveys of 1) national (1991–2002) and Pennsylvania (2000–2002) Medicare data; and 2) patients aged ≥65 years with CLBP.

*Setting.* Outpatient data.

*Participants.* Patients aged ≥ 65 years with LBP.

*Measurements.* Study 1: Outpatient national and Pennsylvania Part A Medicare data were examined for number of patients and charges for all patients, and for those with nonspecific LBP. Total number of visits and charges for imaging studies, physical therapy (PT), and spinal injections was also examined for Pennsylvania. Study 2: 111 older adults with CLBP were interviewed regarding presence of red flags necessitating imaging and history of having a lumbar MRI, neurogenic claudication (NC), and back surgery.

*Results.* Study 1: Between 1991 and 2002, there was a 42.5% increase in total Medicare patients, 131.7% increase in LBP patients, 310% increase in total charges, and 387.2% increase in LBP charges. In Pennsylvania (2000–2002), there was a 5.5% increase in LBP patients and 33.2% increase in charges (0.2% for PT, 59.4% for injections, 41.9% for MRI/CT, and 19.3% for X rays). Study 2: None of the 111 participants had red flags and 61% had undergone MRIs (29% with NC, 24% with failed back surgery syndrome).

*Conclusion.* LBP documentation and diagnostic studies are increasing in Medicare beneficiaries, and evidence suggests that MRIs may often be ordered unnecessarily. Injection procedures appear to account for a significant proportion of LBP-associated costs. More studies are needed to examine the appropriateness with which imaging procedures and non-invasive/minimally invasive treatments are utilized, and their effect on patient outcomes.

*Key Words.* Low Back Pain; Aging; Resource Utilization; Imaging

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 1526-2375/06/$15.00/143 143–150

## Introduction

Low back pain (LBP) affects more than 30% of community-dwelling older adults [1], and is one of the most common reasons for physician visits [2]. When presenting to a physician, patients may expect to receive an explanation for their pain from imaging studies, but will receive none 85% of the time because radiographic findings are poorly predictive of clinical symptoms [3]. Causative underlying pathology is difficult to determine because LBP is a complex clinical syndrome derived from a multitude of causes, such as mechanical and nonmechanical factors and visceral disease [4]. Among these, mechanical LBP is the most prevalent and because of its complexity, it is most often designated as idiopathic [4]. It has been estimated that physicians overutilize advanced imaging studies such as magnetic resonance imaging (MRI) and computed tomography (CT) 66% of the time and plain radiographs 26% of the time for patients with acute LBP [5]. The rate of overutilization of imaging studies in patients with chronic LBP (CLBP) has not been estimated, but for reasons discussed below, it is likely to be at least as high as, if not higher than, that for acute LBP.

MRI and CT are sensitive modalities for visualizing structural abnormalities of the lumbar spine, but are often diagnostically nonspecific, with findings such as lumbar disc herniation and degenerative pathology present in asymptomatic as well as symptomatic individuals [4,6–10]. One small study demonstrated that in patients aged 60 years and over, the prevalence of asymptomatic lumbar spinal stenosis is 20% [9]. The poor predictive validity of radiographic pathology for clinical symptoms is also apparent with plain radiographs, which are often used by primary care physicians because they are relatively inexpensive and easily accessed [4,7,11].

Guidelines that address the poor correlation between clinical findings in patients with LBP and imaging results have been published by the United States Department of Health and Human Services. These guidelines state that imaging studies should not be performed within the first month of symptoms unless red flags such as infection or malignancy are present. Plain X rays may be used to rule out fractures, and MRI or CT may be used after 1 month if a serious condition is suspected or surgery is being contemplated [12]. According to Boden et al. advanced imaging is only indicated in 20% of cases [13]. Despite this fact, utilization of MRI and CT for patients with LBP has become increasingly common. Between 1993 and 1998, use of spine MRI in Medicare beneficiaries increased by 83% [14].

Official guidelines that address when imaging studies should be ordered in patients with CLBP have not been established, thus these patients may be especially vulnerable to undergoing advanced imaging studies without a clear indication. For the vast majority of patients, CLBP is a syndrome with physical and psychosocial contributors that requires a multiprong approach to management rather than "curative" treatment [15]. Advanced imaging is typically not necessary. It is our impression that as physicians are poorly trained in pain management in general [16–20] and in musculoskeletal assessment in particular [21], advanced imaging is frequently relied upon to provide "diagnostic" clues. Given the high prevalence of incidental imaging-identified spinal pathology in older adults, however, advanced imaging may well contribute to imprecision of treatment prescribing (e.g., surgery for incidental MRI-documented spinal stenosis) and protracted pain-related suffering and morbidity.

The purpose of our investigation was: 1) to examine the rates of basic and advanced imaging utilization in older Medicare beneficiaries with nonspecific LBP during the past decade; 2) to examine the relationship between advanced imaging utilization and non-invasive/minimally invasive treatment prescribing in these individuals; and 3) to gain clues about the appropriateness of advanced imaging utilization in older adults with CLBP. We performed two separate studies to address these aims. In Study 1, we used national (1991–2002) and Pennsylvania (2000–2002) Medicare data from patients aged ≥65 years to examine the changing prevalence of nonspecific LBP itself, "diagnostic" imaging studies (Xray, CT, MRI), and utilization of non-invasive/minimally invasive treatment modalities (physical therapy [PT] and spinal injections). In Study 2, we interviewed a group of older adult outpatients with CLBP to examine MRI ordering patterns in relation to clinical symptoms. We hypothesized that national Medicare data would reveal a disproportionate increase in imaging rates as compared with number of beneficiaries with nonspecific LBP; that Pennsylvania Medicare data would reveal a disproportionate increase in imaging rates as compared with that of non-invasive/minimally invasive treatment prescribing rates; and that for the majority of older adults with CLBP interviewed, there

**Table 1** Imaging procedure codes used for Medicare data extraction

| Code* | Description of Procedure |
|---|---|
| 72100 | Lumbosacral spine X rays, 2–3 views |
| 72110 | Lumbosacral spine X rays, minimum of 4 views |
| 72114 | Lumbosacral spine X rays, complete, including bending views |
| 72120 | Lumbosacral spine X rays, bending views only, minimum of 4 views |
| 72148 | Lumbar MRI without contrast |
| 72149 | Lumbar MRI with contrast |
| 72158 | Lumbar MRI without contrast followed by MRI with contrast |
| 72131 | Lumbar CT scan without contrast |
| 72132 | Lumbar CT scan with contrast |
| 72133 | Lumbar CT scan without contrast, followed by CT scan with contrast and further sections |

* Codes represent those of Current Procedural Terminology 2003 (see [16]). MRI = magnetic resonance imaging; CT = computed tomography.

would be a significant discrepancy between the prevalence of MRIs ordered and the prevalence of "red flag" symptoms.

## Methods

### *Study 1*

We used national Medicare data to explore how nonspecific LBP charges have changed in relation to all diagnoses and charges from 1991 to 2002. We also used Pennsylvania Medicare data to examine trends in diagnosis of nonspecific LBP, outpatient therapeutics, and imaging from 2000 to 2002. All data were provided by Veritus Medicare Services, a Centers for Medicare and Medicaid Services (CMS) contracted fiscal intermediary, with hospital facilities primarily in Pennsylvania, and other facilities in additional states. The data, both local Pennsylvania data and national CMS data, are the traditional, fee-for-service Medicare population data billed under Part A (payment to facilities such as hospitals), for outpatient services provided by facilities. Managed care data are not included; for the time frames used here, the overwhelming preponderance of beneficiaries used the fee-for-service Medicare system. In the time frame under study, there was no significant change in the age of the population, nor any changes in Medicare eligibility affecting the characteristics of the population under study.

Nonspecific LBP was operationally defined as being present if patients were assigned one of two International Classification of Diseases, 9th revision, Clinical Modification (ICD-9-CM) diagnostic codes [22]: 1) lumbago (ICD-9 code 7242), or 2) nonspecific backache (ICD-9-CM code 724.5). The ICD-9-CM codes available in the data were the primary diagnoses—that diagnosis considered to be the primary reason for the care delivered. We chose to study nonspecific LBP because for the vast majority of patients, this condition is thought to be caused by mechanical factors that do not require imaging for proper management [4]. The diagnostic code for lumbar spinal stenosis therefore was purposely not selected because of the specialized approach to evaluation and treatment of this condition.

Therapeutics and imaging codes were obtained from Current Procedure Terminology (CPT) 2003 [23]. CPT codes usually used to bill for spinal injections and PT were selected based on interviews with a physical therapist that specializes in treating patients with persistent pain conditions and two pain medicine physicians. The imaging codes that were used are listed in Table 1, those for injections in Table 2, and those for PT in Table 3.

**Table 2** Invasive procedure codes used for Medicare data extraction

| Code* | Description of Procedure |
|---|---|
| Non-neurolytic injections | |
| 20552 | Trigger point, 1 or 2 muscle groups |
| 20553 | Trigger point, 3 or more muscle groups |
| 62311 | Epidural |
| 62319 | Epidural with catheter |
| Neurolytic injections | |
| 64622 | Facet joint, 1st level |
| 64623 | Facet joint, additional level |
| Joint injections | |
| 27096 | Sacroiliac joint |
| Radiological procedures | |
| 76005 | Flouroscopic guidance for spinal or paraspinal |
| Transforaminal epidural nerve injections | |
| 64483 | Transforaminal epidural, 1st level |
| 64484 | Transforaminal epidural, additional level |
| Reservoir/pump services | |
| 62350 | Implant/revise/reposition tunneled intrathecal/epidural catheter |
| 62355 | Remove intrathecal epidural catheter |
| 62360 | Implant/replace subcutaneous infusion reservoir |
| 62361 | Implant/replace nonprogrammable infusion pump |
| 62365 | Remove implanted subcutaneous reservoir/pump |
| 62367 | Analysis, programmable pump |
| 62368 | Analysis and reprogramming of pump |
| 96530 | Refill and maintenance of implantable pump/reservoir |
| Neurostimulator services | |
| 63650 | Percutaneous electrode array insertion (epidural) |
| 63660 | Revise/remove electrode array |
| 63685 | Incision/subcutaneous placement SCS generator/receiver |
| 63688 | Revise/remove implanted SCS generator/receiver |
| 95970 | Analysis, neurostimulator system |
| 95971 | Analysis and reprogramming, neurostimulator system |

* Codes represent those of Current Procedural Terminology 2003 (see [16]). SCS = spinal cord stimulation.

**Table 3** Physical therapy codes used for Medicare data extraction

| Code* | Description of Intervention |
|---|---|
| 97001 | Evaluation |
| 97010 | Hot/cold pack |
| 97014 | Electrical stimulation |
| 97035 | Ultrasound |
| 97110 | Therapeutic exercise |
| 97116 | Gait training |
| 97124 | Massage |
| 97140 | Soft tissue or spinal mobilization |
| 97530 | Therapeutic activities |
| 97535 | Self-care management/training |
| 97750 | Evaluation with written report |
| W9715 | Initial 30 minutes |
| W9720 | Additional 15 minutes |

* Codes represent those of Current Procedural Terminology 2003 (see [16]).

### *Study 2*

The purpose of this portion of the study was to focus on community-dwelling older adults with CLBP in whom we performed primary clinical data collection to help gain insights into the national Medicare data trends on LBP found in Study 1. A total of 111 community-dwelling older adults with CLBP participated. Participants were recruited from the University of Pittsburgh Pain Evaluation and Treatment Institute (Older Adult Pain Management Program [OAPMP]) as well as from two ongoing research studies of older adults with CLBP. The clinic patients were interviewed on their first visit to the OAPMP, and were referred by their primary care physicians. The subjects that were recruited from the research studies had moderate or greater pain intensity for three or more months that occurred on most days. They were excluded from study participation if they had red flags indicative of serious underlying illness (e.g., fever, significant unintentional weight loss, sudden recent change in the character or intensity of pain, or trauma that preceded the onset of pain), known spinal pathology other than osteoarthritis, symptoms of severe spinal stenosis, dementia (according to clinical evaluation and/or Folstein mini-mental state examination score), acute illness, or acute pain. They were recruited via newspaper and radio advertisements, mass mailings, and fliers posted in the community.

All subjects were asked 1) whether they had an MRI during the course of their LBP; 2) a clinical history was obtained to determine whether subjects had evidence of underlying "red flags" (unexplained weight loss, fever, bowel/bladder disturbance, sudden onset of pain, history of cancer); 3) whether they were experiencing neurogenic claudication (i.e., increased pain with standing or walking that was relieved with rest and/or forward spinal flexion) indicative of lumbar spinal stenosis; and 4) whether they had undergone spinal surgery. MRIs were not part of either of the research study protocols. The investigator (D.K.W.) was masked to the MRI results at the time of the intake history, when subjects were classified regarding the presence or absence of neurogenic claudication.

## Results

### *Study 1*

The national Medicare outpatient data from 1991 to 2002 indicate that the number of patients and charges associated with nonspecific LBP increased out of proportion to other diagnoses, with a 131.7% increase in the total number of LBP patients as compared with a 42.5% increase in the total number of Medicare patients (all diagnoses), and a 387.2% increase in total LBP charges as compared with 310% increase in all outpatient Medicare charges (Table 4).

**Table 4** Comparison of prevalence and charges in Medicare patients with any diagnosis versus nonspecific low back pain (LBP)

| Year | Total Patients | Total Charges ($) | Total LBP Patients | Total LBP Charges ($) |
|---|---|---|---|---|
| 1991 | 16,067,386 | 23,437,974,174 | 462,278 | 204,318,399 |
| 1992 | 17,088,116 | 28,986,344,911 | 525,014 | 255,043,046 |
| 1993 | 18,021,334 | 33,610,772,236 | 577,579 | 301,258,482 |
| 1994 | 18,865,557 | 38,729,840,298 | 645,437 | 364,547,341 |
| 1995 | 19,652,799 | 43,708,085,718 | 703,096 | 417,172,259 |
| 1996 | 20,099,417 | 48,310,020,390 | 786,049 | 487,084,667 |
| 1997 | 20,326,859 | 52,511,998,567 | 847,549 | 554,221,101 |
| 1998 | 20,435,026 | 54,845,037,206 | 895,583 | 616,410,840 |
| 1999 | 20,572,393 | 56,480,529,121 | 925,905 | 612,881,723 |
| 2000 | 21,039,207 | 52,631,299,474 | 954,328 | 544,179,557 |
| 2001 | 22,153,102 | 75,153,892,284 | 1,034,008 | 823,927,590 |
| 2002 | 22,892,876 | 96,101,089,267 | 1,070,979 | 995,428,064 |
| Change (%) | 42.5 | 310.0 | 131.7 | 387.2 |

**Table 5** Prevalence and costs of imaging for nonspecific low back pain in Pennsylvania Medicare beneficiaries

| Year | Total Patients | Total Charges ($) | Patients (N) That Had MRI and/or CT | MRI/CT Charges ($) | Patients (N) That Had Plain Radiographs | Radiograph Charges ($) |
|---|---|---|---|---|---|---|
| 2000 | 32,616 | 26,625,254 | 4,940 | 6,174,525 | 15,884 | 3,792,689 |
| 2001 | 35,946 | 32,167,740 | 5,850 | 7,850,310 | 17,485 | 4,302,831 |
| 2002 | 34,408 | 35,464,292 | 5,949 | 8,761,563 | 16,529 | 4,525,893 |
| Change (%) | 5.5 | 33.2 | 20.4 | 41.9 | 4.1 | 19.3 |

MRI = magnetic resonance imaging; CT = computed tomography.

In order to take a preliminary step toward dissecting the components contributing to the significant increase in nonspecific LBP-associated charges, we examined Pennsylvania Medicare data. Outpatient charges from 2000 to 2002 were examined, with results shown in Tables 5 and 6. These data corroborated a disproportionate increase in total charges (33.2%) as compared with total patients (5.5%).

Imaging data (Table 5) show that approximately three times more X rays were performed relative to MRI/CT during the investigated time period. The increase in MRI/CT rates and charges, however, outpaced that of X rays. X-ray rates and charges increased by 4.1% and 19.3%, respectively, while MRI/CT rates and charges increased by 20.4% and 41.9%, respectively. Comparing advanced imaging modalities, MRI utilization and charges grew faster than that of CT. MRI rates and charges increased by 40.5% and 72.5%, respectively, while CT rates remained unchanged and charges increased by 15%.

With regard to treatment (Table 6), hospital-based PT was performed more frequently than injections, except during 2001. Injection utilization and charges climbed by 18.7% and 59.4%, while PT experienced smaller increases, by 8% and 0.2%, respectively. In addition, treatment rates consistently lagged behind imaging rates. For example, in 2002, 22,478 imaging studies were performed compared with 4,606 treatments. In addition, imaging charges exceeded treatment charges.

### *Study 2*

Mean age of the participants was 74.8 years (SD 6.3), they had a mean LBP duration of 158.4 months (SD 159.3), 58.6% were female, and 15.5% had undergone prior surgery of the lumbar spine. Forty-four subjects (39.6%) were recruited from the pain clinic, and 67 were recruited from the research studies. Of the 111 participants with CLBP, none had historical evidence of red flags. Sixty-eight MRIs had been conducted on the 111 participants, 20 of who gave a history of neurogenic claudication and 48 did not. Seventeen had FBSS, four of who also gave a history of neurogenic claudication. Sixteen of the 17 with FBSS had undergone a diagnostic MRI since the time of surgery.

## Discussion

Documentation of nonspecific LBP in Medicare beneficiaries is growing in epidemic proportions. Whether this increased documentation is because of a true increase in LBP prevalence, because of heightened awareness of pain in older adults by practitioners and patients, or because of more widespread availability of advanced imaging technology that is driving "assessment" and documentation of long-standing conditions cannot be determined from our data. Charges related to nonspecific LBP have also skyrocketed, but the primary factor driving these increased costs relates to the increased prevalence of LBP Medicare claims, with national data indicating that per

**Table 6** Prevalence and treatment costs associated with nonspecific low back pain in Pennsylvania Medicare beneficiaries

| Year | Patients (N) That Received Injections | Injection Charges ($) | Patients (N) That Received Physical Therapy | Physical Therapy Charges ($) |
|---|---|---|---|---|
| 2000 | 1,928 | 4,164,214 | 2,146 | 2,954,617 |
| 2001 | 2,535 | 5,740,085 | 2,241 | 2,807,015 |
| 2002 | 2,289 | 6,635,819 | 2,317 | 2,960,801 |
| Change (%) | 18.7 | 59.4 | 8.0 | 0.2 |

patient LBP care costs are rising more slowly than general healthcare costs.

While it is difficult to draw a meaningful conclusion from the limited Pennsylvania Medicare data, several points are worthy of discussion. The total number of patients with LBP rose in 2001, but then fell in 2002. Despite this, there was a steady rise in the total charges, the number of patients that had advanced imaging procedures, and the advanced imaging-associated charges. The number of patients that received injections rose in 2001 but fell slightly in 2002, yet the injection-related charges increased steadily. Changes in PT charges were insignificant. The increase in outpatient Part A charges therefore appears to be attributable to a combination of increased utilization and cost of MRI/CT (20.4% increase in the number of patients that had MRI/CTs and a 41.9% increase in the associated charges) and injection procedures (18.7% increase in number of patients that had injections and 59.4% increase in associated charges).

Although radiographic findings are poorly predictive of clinical symptoms and imaging is only indicated when surgery is being contemplated or red flags are present, more than 20,000 imaging studies are performed in Pennsylvania each year. The number of these studies that are duplicative (i.e., more than one imaging study on the same patient), for example, in patients with FBSS, cannot be determined from our data. Given that the vast majority of patients that present to their primary practitioners have mechanical LBP that does not require imaging, and given the lack of guidelines regarding imaging procedures in patients with FBSS, it appears that the utilization of advanced imaging in Pennsylvania Medicare beneficiaries is excessive. Data from our Study 2 corroborate this.

Before an advanced imaging study is ordered, the practitioner must consider its potential impact, both beneficial and deleterious, on patient outcomes [24]. Because physicians are poorly trained in musculoskeletal assessment [21] and short on patient encounter time, imaging studies may be ordered as a substitute for careful history-taking and physical examination, which ideally should serve as the primary diagnostic tools in patients with LBP, and the way to determine whether imaging is necessary [25]. While plain radiographs add to societal costs, they likely do not appreciably contribute to deleterious patient-related outcomes. This may not be the case, however, with advanced imaging procedures. MRI and CT may reveal "surgical" pathology in older adults with and without LBP [6,8,9]. It is entirely possible that some advanced imaging-identified pathology in those with LBP is also incidental. Thus when these studies are relied upon as a substitute for a clinical history and physical examination, the end result may be referral of patients to surgical specialists for nonsurgical problems [26]. Whether this practice contributes to the 5–40% estimated prevalence of FBSS [27–33] is unknown. Additional studies should be performed to further examine this question.

Our rationale for using lumbar spinal stenosis as an exclusion criterion for Study 1 is worthy of further discussion. Our premise was that patients with clinical evidence of lumbar spinal stenosis would be more likely to undergo advanced imaging as a confirmatory procedure, that is, in preparation for the possibility of surgical intervention. This approach stands in distinct contrast to that of advanced imaging that is performed in many patients with nonspecific LBP, in which studies may be ordered as exploratory procedures in search of a diagnosis. Our Study 2 results suggest that diagnostic healthcare resource overutilization in older adults with CLBP is widespread, occurring in patients with nonspecific symptoms as well as those with a clinical history supportive of lumbar spinal stenosis. Because of the lack of guidelines regarding how to utilize imaging procedures for treatment guidance in older adults with CLBP, it is not surprising that a clear-cut rationale could not be identified for the majority of MRIs performed in the Study 2 patients.

While our investigation raises several interesting questions, its limitations should be pointed out. Because our Study 1 data were extracted from Medicare claims, important clinical information such as symptom acuity and other red flags that would warrant imaging could not be taken into account. Therefore, we were unable to determine the appropriateness of the imaging studies ordered, although as noted above, our Study 2 data indicate that a significant percentage of MRIs ordered for older adults with LBP appears to be exploratory rather than confirmatory. Further, as we only analyzed Medicare claims data related to LBP as a primary diagnosis, the magnitude of the healthcare resource misappropriation problem suggested by our data is likely an underestimate.

Because of our methodologic constraints, it is also unclear whether treatments were prescribed appropriately. For example, in the case of epidural corticosteroids, randomized controlled clinical

trials have only suggested their efficacy for acute disc herniation associated with radicular symptoms [34]. Without corroborating clinical data, we cannot determine the percentage of injections that were performed according to evidence-based information. In the same way, we cannot determine the appropriateness with which PT was prescribed, whether it had been prescribed previously and failed, and/or whether a change in clinical symptoms occurred that mandated a different therapeutic approach. We also were unable to examine interindividual variations in provider/regional practice patterns related to the prescription of PT and other modalities.

Another study limitation is that we only had access to Part A Medicare data. This means that only hospital-based PT was taken into account. As office-based and freestanding PT clinics represent a substantial portion of PT prescribed, our data very likely substantially underestimate the amount of PT actually prescribed for older adults with LBP. For similar reasons, the number of injection procedures also may have been underestimated. Future studies should examine both Part A and Part B Medicare data.

More detailed analyses of national data that examine evaluation and treatment prescribing patterns for older adults with nonspecific LBP are needed to answer several important questions. 1) Is the striking national increase in LBP documentation on outpatient Medicare claims related to a true increase in the prevalence of the disorder or an increase in practitioners' tendencies to order diagnostic studies? Pennsylvania data support the rising utilization of advanced imaging for LBP patients, but the pathways of care that result from this imaging must be established so as to determine the beneficial and deleterious effects of advanced imaging on patient outcomes. Specifically, 2) To what extent has the increased utilization of advanced imaging in patients with nonspecific LBP affected rates of FBSS? 3) To what extent is advanced imaging being utilized as a *substitute* for clinical examination, as opposed to being *directed* by careful clinical examination? 4) If advanced imaging is being used as a substitute for examining patients, then how can primary practitioners be taught careful but efficient evaluative techniques to facilitate appropriate triage and possibly reduce the likelihood of FBSS? 5) Are non-invasive and minimally invasive treatments being prescribed in an appropriate and cost-effective way for older adults with nonspecific LBP?

Nonspecific LBP is one of the most common and therapeutically challenging conditions with which older adults suffer. While analysis of Medicare data can provide clues about practice tendencies and trends, more rigorous observational epidemiological studies are needed to better understand the trends suggested by our preliminary data. Clinical trials are required to permit the evaluation of diagnostic and treatment strategies and of educational programs directed toward primary providers. If the substantial increase in prevalence of nonspecific LBP among older adult Medicare beneficiaries is related to heightened pain awareness among patients and practitioners, concerted efforts must be made to help translate this awareness into rational evaluation and management of this frequently debilitating condition.

#### Acknowledgment

This work was funded by grant T32 MH19986, R01 AT000985, and R01 AG18299 from the National Institutes of Health.

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