Back Injury

WEST VIRGINIA HEALTH CARE AUTHORITY
LOW BACK PAIN INDICATORS
SEARCH SUMMARY

This report summarizes results of a search to identify indicators related to low back pain, in particular that occurring in relation to employment. A list of organization and other web sites that were searched together with a statement of findings, where applicable, is provided under separate cover.

In general, the search revealed a paucity of standardized, published indicators for low back pain. Conquest (Agency for Health Care Research and Quality), the primary warehouse of published indicators revealed only 12 indicators (see Attachment 1). They are calculated from data collected on specific survey instruments, the Low back pain type specification forms 6.3 or 6.4, completed by either the client or the provider. Another reference for published measures, The National Library of Healthcare Indicators (NLHI) - Health Plan and Network Edition, includes two measures specific to low back pain (Joint Commission on Accreditation of Healthcare Organizations, 1997). The first, developed by Sagamore Health Network, looks at discharged patients with a primary diagnosis of back pain who were admitted through the emergency room. A second measure developed by the Health Outcomes Institute utilizes data derived from the previously mentioned Low back pain type specification forms.

A search of the literature using Medline revealed some interesting research pertinent to occupational low back pain and performance measures. While common measure statements referring to care processes and outcomes appear in many articles, the methodology for calculating the measure, when provided, is frequently different. One of the most commonly referenced sources for determining measures is Workers' Compensation data. Two studies sponsored through grants from the National Institute for Occupational Safety and Health/Centers for Disease Control (NIOSH/CDC) explored the use Workers' Compensation data for calculating common outcomes of interest such as duration of disability, time to return to work or number of work days lost. In a three year study of 850 California low back claimants, Dasinger et al. (1999) compared self reported data with indemnity information from workers' compensation databases and found that 13% of workers reported they returned to work before their temporary disability benefits had ended and continued to work while collecting temporary disability. Alternatively, while some workers actually return before benefits expired, 30% had not returned to work a month after their last temporary disability payment. Similarly, at one-month post injury 47.9% of surveyed workers reported they were still off work while 38.6% had not had an administrative return to work. A second study by Krause et al. (1998) compared alternative approaches to calculating duration of disability using administrative workers compensation data. Their findings revealed that two of the commonly used methods to calculate lost workdays substantially underestimated the duration of work disability. Specifically, the use of 'time to first return to work' and 'time on temporary disability' substantially underestimated the duration of work

disability compared to measures based on all wage benefits. Overall their results supported the use of cumulative time on temporary disability (TD) benefits as a measure of temporary disability duration for cases that have not exceeded maximum periods of time allowed for TD. Similarly, the total duration of work disability is best calculated using all forms of wage replacement benefits.

Another study by Ferguson et al. (2000) examined the recovery of patients (n=28) comparing several outcome measures including use of disability (return to work). At initial evaluation, 78% (22/28) of the participants were working, and there was no significant change in this status during the 4 week study period. He states that work status may not be a responsive measure of LBP recovery hypothesizing that work status may be more of a function of the job than the severity of the person's impairment. These results highlight some of the challenges of using administrative data to calculate, or as a proxy for, clinical outcomes in health care and are concordant with similar research on the use of payment data. The challenge of obtaining clinical data in the absence of a universally accepted instrument and mandated data collection is a significant issue.

Additional studies identified indicators of interest but generally did not provide specifications for data sources, definitions or calculation. The AHRQ guideline for Low Back Pain is often referenced and may provide content for potential process measures. Since the guideline is more than 5 years old, it should be reviewed before developing measures from guideline recommendations. In general, there are several outcomes and care processes commonly referenced in the literature.
Outcomes of interest frequently mentioned in the literature include:

- *Calendar time to first return to work (length of disability - LOD)*
- *Cumulative time on temporary disability*
- *Point prevalence studies of work status post injury*
- *Costs (medical, lost work etc.)*
- *Recovery measures (change in symptoms, impairment/functional status, ADL)*

Process of interest frequently mentioned in the literature include:

- *Use of imaging (x-ray, CT, MRI)*
- *Specialty referrals*
- *Medication prescriptions (extended use of opioids, NSAIDs, muscle relaxants)*
- *Physical Therapy (bed rest)*
- *Surgery*

One research study of clinical indicators for physiotherapy used pain improvement as a measure of the outcome of care (Scott, 1995). Recognition and treatment of pain is of increasing import in health care and this author argues that since patients with low back pain are primarily seeking pain relief, this is a valid reflection of the outcome of care.

In a study of the relationship of health care utilization, physician's initial management of work-related low back pain (LBP) and disability duration, Mahmud et al. (2000) identified data

elements used to examine clinical and cost factors including job classification (by degree of physical demand according to the US Department of Labor), clinical severity status (LBP only versus LBP with leg pain), main site of care (the setting), main provider (primary care physician, specialists, chiropractor, PA, RN, unknown, multiple MDs), clinical management variables (X-ray, medications, back strengthening, back stretching exercises, bed rest), length of disability (LOD) and cost. Some of these data may be available from sources such as WC or OSHA and may serve as suggestions for variables to calculate indicators.

Factors impacting the recovery process are also noted in multiple studies and may provide additional measure points. For example, a variable that was statistically related to positive health outcomes in a sample of 340 workers in Oregon was continuation of physical fitness activities during the recovery process (Butterfield et al., 1998) while the effect of implementing early physical therapy on facilitating return to work was noted in studies by Zigenfus et al. (2000). Gilbert et al. (2000) examined 11 treatment-independent variables for their effect on return to work in a sample of 25 patients who returned to full-time pre-injury work and found two variables had an effect. The first was previous injury influencing the current injury, as documented by both previous surgery and the interval between the injuries and beginning of treatments. The second was compliance with the treatment schedule for the current injury. Another non-treatment variable of mention is the recognition and treatment of the patient's anxiety (IHI, 1997). Alternatively, treatment- related factors significantly associated with length of disability in a statistical analysis of 1995 workers' compensation data representing approximately 8% of the private US WC market in 44 state jurisdictions and the District of Columbia include specialty referrals, early use of imaging and use of opioids for greater than 7 days (Mahmud et al., 2000).

The Institute for Healthcare Improvement (IHI) Breakthrough Series for Low Back Pain (1998) included a list of measures. Several of these measures could be of interest to this initiative if data sources and calculation methodology are determined. The listed measures are:

- 1. For all patients under age 50 with a new visit for low back pain (no low back pain visits in past year), what fraction received a plain x-ray within 1 month of the visit?
- 2. For all patients with a new visit for low back pain, what fraction had a CT or MR scan within 1 month of the visit?
- 3. For all patients with a new visit for low back pain, what fraction had a surgical procedure within 6 weeks of the visit?
- 4. For all patients with a new visit for low back pain, what fraction had a visit for physical therapy within 1 month of the visit?

Remaining indicators relate to back surgery and are annual calculations but may be pertinent as evidenced in a study conducted across 6 countries. Investigators found the range of back surgery rates to be a low of 6% in Sweden to a high of 32% in the US (Hansson TH, Hansson EK. 2000). It is interesting that Sweden was the only country in which back surgery was shown to positively impact the outcome measures of interest, working/not working, back function and pain in this study. One state initiative of interest is in Minnesota where mandatory rules were established for low back pain treatment for workers compensation patients. . A study funded by the Robert Wood Johnson Foundation is examining the impact of these rules and looking at outcomes.

Attempts are underway to contact the investigator to see if they have performance measures and if data are available. Based on guidelines recommendations, the incidences of use of additional non-recommended procedures are cited in an analysis conducted by Medicode Inc. of Salt Lake City (Regional Data on Low Back Pain, 1998). In addition to outcomes of cost & episode length, their database of 60,525 episodes of uncomplicated low back pain was searched for incidence rate of the following treatment modalities: imaging within the first 30 days; traction; massage; TENS; and ultrasound. Data show specialty and regional variation clearly evident in the cost and utilization of services. For example, the average episode length (from time of diagnosis of the medical problem to resolution - defined as no longer seeking services) in the Northeast region was significantly longer at 23.6 days (18.5 to 23.6). Use of non-recommended treatments also varied by type of caregiver and region. These data were derived from indemnity and managed care providers and are not restricted to work related injury. Appropriateness of diagnostic imaging was also the subject of a study involving the retrospective review of 130 charts pulled randomly from referred patients with initial visits between January 1995 and June 1997 at a large spine center (Boden, 1998). Results showed that one third of the patients previously imaged (MRI, CT/myelogram, or CT scan) had no radicular symptoms and the vast majority had no neurological deficits, nerve root tension signs, or other objective findings.

Finally, several literature references cite investigational research that has been directed at understanding provider decision-making (Shye et al., 1998) and the use of various standardized instruments such as the Roland, or Oswestry Disability Scale, the SF-12 or EruoQo1 (Suarez-Almazor et al., 1999).

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Reference List

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