

The Lifestyle Claims Analyses (LCAs) conducted in 1990 and 1995 addressed the question "How many health care claims are related to known lifestyle habits/characteristics?" The 1990 analysis revealed 29% of our claims were lifestyle related. The 1995 LCA noted a 5% decrease (24%) in claims related to lifestyle converting to a \$2 million savings in lifestyle related health care claims.

While two different vendors conducted the analyses, the methodology used in both was nearly identical. The illnesses associated with the ICD-9 codes are linked to the identified lifestyle habits. A percentage of the claim is then allocated to the particular lifestyle condition associated with it. Due to updated research, there were some differences in the percentage allocations between vendors. The overall percentage of claims linked to lifestyle conditions was not affected, only the allocation within lifestyle habits. However, an argument could be made that the 1995 LCA could have possibly allocated more claims dollars towards lifestyle habits due to the application of the latest research findings.

Both reports separated out each lifestyle habit by actual and projected cost breakdowns. However, the 1995 LCA conducted some additional analyses: statistical significant differences between lifestyle versus non-lifestyle claimants and single versus multiple risks claimants, cost per claimant among different crafts, and predictive characteristics of a lifestyle claimant.

The 1995 report distinguished between a lifestyle and non-lifestyle claimant. A lifestyle claimant is defined as someone whose condition/claim (e.g. emphysema) is linked to a lifestyle habit. A non-lifestyle claimant is defined as someone whose condition/claim (e.g. neo-natal care) is not linked to a lifestyle condition. The average cost per lifestyle claimant equaled \$2,519 while \$1,443 represented the average cost per non-lifestyle claimant. The difference between the two is statistically significant ($p < .001$). Secondly, those claimants classified as having multiple risk factors are significantly ($p < .001$) more costly than employees with single risks. In short, claimants with poor lifestyle habits cost significantly more money. While these results make intuitive sense, having the empirical data along with the significance testing provides more insight into the cost of poor lifestyle habits and provides justification for the health promotion program.

Historically, the Engineering Department has been the greatest supporter of our program, both in participation and management support. The 1995 LCA noted that the Engineering Department had the lowest per employee lifestyle related claimant cost. Further, the regression model used to predict a lifestyle claimant noted that the two crafts with the lowest participation and support traditionally, along with age and region were the most predictive variables of lifestyle claimants. Finally, 20% of the variance in total claim payments can be attributed to the factors of age, region, skill class and lifestyle habits. This two step regression model was statistically significant ($p < .001$). While we are not suggesting and cannot be sure

that the health promotion program is solely responsible for the reduced health care claims costs related to lifestyle; it should be noted that per employee costs by craft suggested that the health promotion program had an impact over the last five years. The tables on page 2 graphically display the LCA findings.

Fatigue Management- Pilot Study

The fatigue management pilot study called SleepWell is a behavior changed educational program designed for those employees needing assistance coping with shift work fatigue. The SleepWell program is designed to address: 1) poor sleep, and 2) sleepiness at work.

The model UPRR uses to address cardiovascular disease was applied to address the issue of fatigue. More specifically, an assessment was completed asking employees about their sleep habits and other behaviors related to fatigue. Those employees identified as needing assistance with their sleep were asked to voluntarily participate in an intervention program called 21 Nights to Better Sleep. The 21 Nights program is designed to help participants improve their sleep by addressing priority areas related to sleepiness and having them complete a series of activity steps.

The evaluation of the pilot focused on the efficacy of the intervention for those individuals identified as needing assistance. The results from the pilot demonstrate that the personal behavior and sleep health of this limited population can be changed by a program of education, self-help and focused intervention.

- During the pre-assessment of the pilot program 27% of the participants qualified for the intervention, whereas only 12% of the post-intervention group were eligible.
- Among the intervention participants, inappropriate sleepiness was improved by 30%, sleep continuity improved 44%, while 87% reduced their fatigue to within normal limits. Reduced stress and anxiety was reported (30 & 42% respectively) by those who improved their sleep continuity.
- While the prevalence of snoring was unaltered, reports of sleep apnea increased dramatically (72%) almost certainly reflecting better awareness and education.
- By using fatigue related costs reported in literature, conservative assumptions and projected cost savings, UPRR used the following data for evaluating the cost effectiveness of the program and determine whether to expand this initiative.

Projected Benefit: Cost Ratio

Estimated annual financial consequences of up to \$2,035 per employee may be fatigue related.

Approximately 35% of these costs relate to lower performance attributed to fatigue. The total annual cost attributable to fatigue for this population of 878 is \$1.78 million. Forty-nine participants qualified for the intervention and 43 improved to within normal limits after the intervention. Assuming 80% of the costs attributable to fatigue can be allocated to those who qualify for the intervention (80% of \$1.78 million = \$1.44 million), the estimated project savings could range from 18% (\$259,000) to 87% (\$1.25 million) of the \$1.44 million. The program costs were \$80,000 of which \$40,000 was a one time start-up cost. The

cost per participant was \$46. Using the lowest end of the projected savings yields a benefit:cost ratio of \$3.23:1.

Project Health Track

In 1993-1994 a pilot study was conducted on the effectiveness of Project Health Track (Union Pacific Railroad's cardiovascular disease risk identification/risk reduction program). A group of 794 employees located in three states completed a health risk assessment (HRA) and enrolled in the high-risk follow-up intervention program. The one year follow-up program consisted of monthly mailings and phone counseling. At the end of one year, the employees completed another health assessment to determine the efficacy of the follow-up program from both a behavior change and cost effectiveness standpoint. A benefit:cost ratio of \$3.24:1 was forecasted for five years among those employees completing both assessments.

A follow-up study was completed in 1995 to track the progress of those individuals participating in the initial intervention program. Re-examining program outcome results is often not performed in worksite health promotion. The intent was to adjust the cost:benefit ratio to reflect the relapse rates that may have occurred among this group. From the original 794 pilot study group, 384 employees completed this study. The same HRA and biometric measures were used. The revised forecasted benefit:cost ratio (\$2.18:1) still remained positive in the second year and is considered extremely conservative.

The pilot study results from 1994 helped us receive top management approval for system-wide delivery of the Project Health Track program. The pilot study numerous key learnings that were incorporated into the revised system-wide program.

One major change incorporated and studied was the expansion of the follow-up interventions made available to the high-risk participants. Similar to the pilot, our objective in this study was to review the behavior change and cost-effectiveness outcomes from the expanded menu. Participants were asked to choose from the following intervention options: independent study guide, independent study guide with counseling, or counseling with monthly mailings.

The participant review protocol was another change made to the program prior to system-wide delivery. If a participant does not complete at least half of the activity steps provided by their counselor, they are dropped from the program. This revision is justified from a self-efficacy and cost standpoint. The person may re-enter after six months. A projected benefit: cost ratio based on the behavior change outcomes from all the interventions in the expanded menu is reported at \$4.53:1. Some of the reasons for the higher benefit:cost ratio over the pilot may be due to lower program costs achieved through volume purchasing for

the assessment and counseling, the participant review protocol, better application of our counseling model, and increased awareness among our population concerning health risks as noted in our health culture audit on page 8. It is expected that this projected benefit:cost ratio will decrease due to relapse as reported earlier. However, we are constantly taking advantage of cost efficiencies on the front end as well as putting in measures to address relapse rates to ensure cost savings are realized from our programs now and in the future.

Health Culture Audit Findings

The importance of establishing a workplace culture conducive to positive health behaviors is one of the greatest challenges faced by the health promotion professionals. Without a supportive health culture, it is unlikely that an organization can: 1) achieve the level of positive health changes needed among the population and 2) provide individuals the ongoing support needed to maintain the change or adhere to their positive lifestyle practices over time. For these reasons, UPRR has conducted two health culture audits in 1992 and 1997. The audit in 1992 was intended to establish a baseline on our health culture. The 1997 audit asks the same questions as in 1992 and some additional items are added to enhance our understanding of health culture. Also, in 1997, a better mechanism is in place for distribution of the audits. When possible, comparisons are made between the two audits. The findings from the 1997 report are preliminary as the cutoff for completion is two weeks after the deadline for this application. At the time of this report, the majority of audits are completed.

Comparison Reports

The vendor (Human Resources Institute) analyzing the results noted in the preliminary findings that: "Comparisons between the 1992 and 1997 data reveal stronger health supporting norms in all areas except those associated with stress. The largest positive change is evident in the norm to not smoke or use tobacco products". The norms related to stress are likely related to the recent mergers UPRR is currently going through resulting in employee relocations. A graph provided by the vendor shows improvement in nine norms related to exercise, smoking and nutrition. Similarly, improvement is noted in 7 of 9 substance abuse and safety norm comparisons. Balancing work, rest and play and not taking on too much responsibility are the two that did not improve, again possibly being merger related. Medical self-care norms stayed about the same over the five year period, possibly providing evidence supporting another company-wide medical self-care initiative. Finally, work climate norms stayed about the same over the five year period.

Peer support, organizational support and values were the three areas added in the 1997 audit. Five questions determined the extent to which rewards, training, orientation, resource commitment and

leadership modeling support healthy lifestyles. A scale ranging from 1 (almost never) to 3 (almost always) was used. The average score across the five factors was 1.91 indicating a moderate level of organizational support. Consistent organizational support along with employees' perceptions is very difficult to achieve in a large multi-site company. Five questions determined the extent family, friends, coworkers, supervisors and top management provide consistent support for efforts to adopt healthy lifestyle practices. Using the same scale (1-3), family, friends and coworkers rate a 2 or higher, while supervisors and top management were just under 2 (1.93).

Preliminary survey responses indicate that employees value healthy lifestyle choices. Over two-thirds of respondents (71.1%) agree that achieving and maintaining good health is a priority. A majority of respondents (74.6%) report they had attempted one or more health supporting lifestyle changes in the prior year. The survey results will be shared with employees and a plan of action to address the areas for improvement will be implemented in 1997.

Disability Management

Disability Management at UPRR is a program/process containing three primary components: pre-injury prevention, Medical Quality Assurance (MQA), and vocational rehabilitation. The end result for all three components is the return of employees with disabilities that result in functional limitations to productive work.

Pre-injury Prevention involves identification of and partnering with medical providers in the areas our employees work and live. This includes emergency rooms, hospitals, occupational health clinics, treating network providers, and work conditioning/work hardening centers. These medical providers agree to treat our employees with the highest professional quality of medical care that facilitates returning to work at the appropriate time, thus minimizing unnecessary time loss. In addition, UPRR partners with work conditioning/work hardening centers that will treat employees before an injury takes place. These facilities establish programs for our Engineering Department employees to participate in, when they are identified as having a potential for being at-risk for injury. At one location, an entire crew of employees in the Engineering Department, all with a history of back and other musculoskeletal injuries, participated in this preventative work hardening program. After a three year follow-up study, not one new injury was reported by any of the crew members.

Medical Quality Assurance (MQA) is our injury management program which directs the medical care and treatment for our injured workers starting at point of injury. The MQA program is a medical management process developed in the fall of 1990 to provide the highest quality of medical care and management for the

injured railroad workers at UPRR. Medical Quality Assurance is a linear concurrent review process that tracks treatment by referring to occupational medicine protocols, while allowing for strategic medical management intervention as appropriate. The MQA process starts at the point of injury, and directs all medical care and treatment during the initial days of injury (usually day one to 120 days post injury) during which time medical decisions are still driving the outcome of the case. Every case has a goal of returning to work with a medically appropriate Anticipated Return to Work date (ARTW) set on every case. All parties: the medical providers, claims representatives, supervisor, and the employee are aware of the ARTW date. The primary individuals involved in the MQA process are: the regional consulting physician, the stage 2 review nurse and the claims representative. Vocational Rehabilitation is described on page 6.

Results

Since January 1991, over 3,000 UPRR employee cases have been closed from the MQA process. Over 80% returned to work at their previous craft during the injury management phase. Approximately 11% were referred to Vocational Rehabilitation from MQA or retired/ resigned from UPRR. Only 4% of the employees have been closed out from MQA for being Out of Medical Process. These cases are handled as business decision cases by the Claims Department. In addition, when comparing the post MQA injury population to the pre-MQA group, the average number of physicians per case declined from 1.9 to 1.4, while the average number of lost work days decreased to 39 days. With the majority of cases returning to their pre-injury job during these early days of injury, UPRR maintains a healthier and more productive workforce.

Vocational Rehabilitation Services

Vocational rehabilitation services are made available to UPRR employees experiencing a disability resulting in functional limitations. On-duty injured employees are the primary recipients of these services however, personnel with off-duty injury/illness may also take advantage of this program. Moreover, employees on Long-Term Disability (LTD) benefits are also being offered vocational rehabilitation services.

The purpose of UPRR's vocational rehabilitation program is to facilitate the return of our disabled employees to productive work inside the company, or to transition them to the best available external option. Successful job placement substantially reduces costs to the company resulting from Federal Employers' Liability Act (F.E.L.A.) and American with Disabilities Act (A.D.A.) lawsuits, and LTD payments. Successful internal job placement provides the retention of experienced, capable employees who exchange their productivity for wages rather than expensive out-of-service settlements or years of LTD benefits with no real productive outcome for UPRR or the employee.

A network of independent, private vocational rehabilitation counselors (VRC) are assigned to work with UPRR employees on a one-one basis. There are approximately 80 vocational rehabilitation counselors in the network providing services to employees throughout 25 states. Rehabilitation counselors in our network must be masters degreed, certified, and experienced in providing services to industrial workers with disabilities. Services provided by our Network VRC's include initial evaluation/vocational testing and evaluation, labor market analysis, retraining plan development, resume preparation, and job seeking skills assistance.

Network vocational rehabilitation counselors are selected and trained on UPRR policies/ procedures and monitored by UPRR's Rehabilitation Manager within the Health Services Department. Standard vocational rehabilitation practices are followed with efforts first directed at returning to work in the pre-injury job with or without accommodation, followed by consideration of job placement within the employee's existing seniority or job classification. The third option is to develop plans for placement of training for a job within the community outside of UPRR.

Since the program began in 1989 there have been 191 internal job placements. Twenty-one percent (21%) of our internally placed employees have annual salaries over \$50,000, while 30% have been promoted beyond their initial placement. A financial analysis performed on the program since its inception in 1989 revealed a total savings in reduced or eliminated FELA, ADA or LTD payouts of over \$16 million. For example, the placement of one LTD employee resulted in a \$1 million savings. Union Pacific's long-standing philosophy has been that it's employees are their most important resource. Union Pacific's vocational rehabilitation program puts this philosophy into practice resulting in a win-win situation for both the employee and the employer.

Future Direction

Union Pacific Railroad is committed to further enhancing its current program. To illustrate our future direction, overriding themes and proposed or newly underway programs will be discussed.

In the past, the Health Promotion Division mainly in isolation from other departments within the company and other groups within the Health Services Department. The integration model on page 10 illustrates our plan to become more integrated on those two fronts (within the department and company). Our Benefits Departments on both the union and non-union side also operated virtually in isolation. Within the last year, progress toward integrating health promotion initiatives into our benefits package is getting closer to realization. A verbal commitment has been made by the corporate Benefits Department to include an incentive in the non-union benefits package for participation and compliance with health promotion

initiatives starting in 1998. The Health Services Department has held preliminary discussions with one of our larger PPOs covering union employees. The PPO has committed to examining the link between health promotion and benefits. Finally, the National Rail Labor Committee has expressed interest in this topic.

Developing partnerships is another central theme to our future direction. We recently completed a survey among our managed care providers for the non-union population asking them about their current initiatives in the areas of health promotion, screening, prevention and immunizations. Our plan is to avoid duplication and have each party exclusively provide their best programs and services. We are doing the same with our union providers and currently working on a plan to outline the next steps for partnering with our health care providers.

System Health Facilities - System Health Facilities Injury Protocol (SHIP)

Our future System Health Facilities programs tie into our central themes, build on our successes in the past, and are driven by our data.

Currently UPRR has over 110 company-sponsored fitness facilities available to employees throughout the system. Close to 40% of the eligible population are members. The System Health Facilities have been our most popular program. A study demonstrating the relationship between exercise adherence and perceived worker productivity was part of our 1994 application and has been published in a peer review journal.

System Health Facilities

We are expanding the use of our System Health Facilities through the SHIP (System Health Facilities injury protocol) program. There are currently two SHIP programs underway. SHIP I is designed to help employees who return to work after an injury to continue with their rehabilitation program. The SHIP manual contains a number of stretching and strength training exercises at various levels of difficulty for each major joint (shoulder, knee, back and neck). An Exercise Specialist works one-one with the employee for up to 3 sessions. The Exercise Specialist will ensure the employee is comfortable with their exercise prescription and in using the facility. SHIP II is designed for employees who may be at-risk for an on-duty injury. Eligible employees may self select themselves into the program, be referred by their supervisor, co-worker(s), safety committee or meet defined protocol (presence of risk factors) for a particular worksite or job.

Future Direction (CONT.) Ongoing Past/Programs

SHIP II is intended to prevent an injury from occurring by helping employees with low fitness levels begin a regular exercise or risk reduction production. Each SHIP II participant will be offered up to six one-one

sessions with an exercise specialist. Both programs are company sponsored and voluntary. An evaluation project is underway that will review re-injury among SHIP I candidates and injury rates among SHIP II participants and non-participants.

Health Assessment and Interventions Strategies

Our health assessment and follow-up program was part of our 1994 application. The behavior change efficacy and benefit:cost data were reported. Also, these results have been published in the professional literature. In 1997, we are expanding the areas for identifying at-risk participants to include: physical inactivity, asthma, diabetes, high health care users and fatigue. Currently, we identify those at-risk for cardiovascular disease (tobacco users, hypertensives, hypercholesterolemia, and 30+ BMI). Additional intervention strategies will be made part of our current menu to address these additional at-risk areas,

Fatigue Management

There are several projects underway to address fatigue. The Health Services Department has played a major role in this project. The Health Promotion Division is developing an educational seminar, that in the future, will be offered to all employees working shifts. Also, employees identified as needing assistance with fatigue related problems will be identified through the revised health assessment.

Other fatigue management projects include: crew scheduling, lodging facilities, cab design and headsets, safety valve strategies (e.g. napping), and hours of service revisions. All aspects seen as contributing to fatigue are being examined and addressed. The Health Services Department is an integral part of this comprehensive strategy to address this issue.

Ongoing/Past Program Highlights

- System Health Facilities - company sponsored exercise facilities - outcome data reported in 1994 and published results.
- Medical Self-Care - providing employees/families with the necessary knowledge and skills to care for minor medical problems at home and ensure appropriate use of health care services - outcome data reported in 1994 and published.
- By The Numbers: 0-1-2-4- program designed to provide employees with quantitative guidelines to follow when choosing to use alcohol while off-duty and away from the worksite - process evaluation results reported in 1994 and published description.
- Project Health Track - high risk identification/risk reduction program for cardiovascular disease - outcome data reported in 1994 and published results.
- Warm-Up-To-Work - series of exercises and stretches that are to be performed prior to work or after a major rest period.
- Safety meeting presentations on various health topics and current programs.