

ICON Health & Fitness, Inc.

Healthcare Study: The Use of Meridian Stress Assessment
June 1998 through February 2000
March 22, 2000

OVERVIEW

ICON Health and Fitness is headquartered in Logan, Utah, and is the world's largest manufacturer of home exercise equipment, with annual sales of \$710 million and a staff of 4,239. The company operates a self-funded medical plan, which is overseen by its Human Resources Director, Douglas Younker. ICON contracts with Benefit Management Services, Inc. of Salt Lake City, Utah for medical plan consulting services.

The company has aggressively pursued an employee fitness and wellness program for the past several years. One of its most recent projects was an outcome study using meridian stress assessment. The project began on June 1, 1998 and ended May 31, 1999. The final project assessment was conducted in February 2000. The Benefit/Cost Ratio was 10.40/1 and participant satisfaction was very high.

Narrative by Douglas Younker, ICON's Human Resources Director

In January 1998, Dr. Brent Peterson of the Peterson Chiropractic Clinic tested me with the BEST (BioEnergetic Stress Test) System, a meridian stress assessment (MSA) device developed by BioMeridian Corporation. I was impressed by the health improvements I experienced. As the Director of Human Resources for a large company with a self-funded medical plan, I immediately recognized the potential this technology had to eliminate medical symptoms and reduce costs. I had to learn more. A few days later, I met with Mr. Reggie Hughes of BioMeridian. We decided that a study would help me determine the cost effectiveness of the BEST System.

I was not concerned about running a double blind, randomized test. In fact, I do not consider it appropriate for our company to ask its employees to participate in clinical trials, nor would it be an appropriate use of corporate funds. All I wanted to know could be summed up with two questions: First, would BEST System services improve the overall health of our employees? Second, would the services reduce medical plan expenses? With these questions in mind, I had healthcare professionals help me develop a process to track symptom reduction and dollar savings. Later, as I started to see significant success with the program, I began to measure other important factors: reduced sick days, increased productivity and improved quality of life.

The "bottom line" results of the study were very favorable. Participants evaluated in the final audit had experienced a 75% (93% for children) reduction in symptoms weighted for severity. For every dollar spent, savings were \$10.40 (80% to ICON and 20% to the participants). Hence, the Benefit/Cost Ratio was 10.40/1 over the one-year study period. The average total study cost per participant was \$373 (approximately 80% paid by ICON and the balance by participants). Annual gross and net savings per participant were \$3,878 and \$3,505 respectively. The average participant finished the course of treatment in about 8 weeks. Healthcare cost savings paid for the \$373 average cost per participant in 6 weeks (called the "Payback Period"). Participants reported improvement in the quality of their life ranging from 0% to 100% and averaging 45%. Most participants have continued to enjoy better health and lower healthcare costs beyond the one-year study period.

I waited 9 months after the completion of the study before making my final contact with 25 of the participants. The selection of participants was not done randomly, which will be discussed later in this report.

Of the 70 study participants entering the study, 9 did not complete the course of treatment, as described later in this report. Of the remaining 61, approximately 4 showed no improvement, and 4 improved, but retrogressed. (It is very possible that their improved state could be restored through further MSA services.) Hence approximately 53 (87%) of the 61 persons completing the study experienced significant and lasting improvement. However,

the final report is based primarily upon the results experienced by the 25 participants who were included in the final, more thorough evaluation.

Dr. Peterson and his staff encouraged participants to continue using dietary supplements started during their participation in the study. The clinic's staff also taught the participants to occasionally use their homeopathic medicines if old health problems seemed to be returning. Several participants reported that following this advice has worked well for them.

I classified savings into two categories: hard dollar savings and soft dollar savings. Hard dollar savings are objective and concrete, while soft dollar savings are more subjective and open to debate. Gross hard dollar savings in reduced medical and prescription expenses came to \$1,393 per participant. Increased productivity and reduced sick-leave make up the soft dollar savings which amounted to \$2,485 per participant. For the 25 participants carefully tracked and included in the final audit, aggregate net savings were \$87,630. For the 70 participants, total savings were approximately \$200,000. The cost of this study obviously paid for itself, but the real satisfaction has come from the gratitude expressed by employee participants and their family members. Some of their stories are provided in Appendix A of this report.

We did not try to calculate savings resulting from the avoidance of hospitalization. However, several of the participants said they avoided the need to be hospitalized because of the favorable results they experienced in the study. Total hospitalization savings might have been in the range of \$10,000 to \$20,000.

Twenty-one months have passed since we started the study. At this point, my observations are as follows:

- I really feel that Meridian Stress Assessment is most remarkable. Dr. Peterson says that the value of MSA is its apparent ability to delineate from countless remedies the few products that match an individual patient's needs. Dr. Peterson and his staff credit MSA for the high degree of success reported in this study.
- Overall, employees were very open with me about their health conditions and study results. I believe that their written and verbal reports have been honest and accurate. However, a few may have been reticent to admit that their performance prior to the study was less than it is now. For example, a co-worker of a female employee participant called me to ask if he too could participate. He had seen a significant improvement in his co-worker's energy level and productivity. She had also told me how much better she felt. But at a later date, when I asked if she had experienced any improvement in productivity as a result of the study, she said that there had been no change. My first thought about this seemingly contradictory statement was that she did not want the Human Resources Director to think that she had been less productive before the study.
- Two methods were used to select the study participants. First, I selected employees who spent a significant amount on prescriptions. Second, I placed an article in our company newsletter inviting employees to contact me if they or a family member had unresolved medical issues and wanted to consider participating in an alternative medicine study. Participation was voluntary. The two methods produced about 70 participants. A small number of employees volunteered to participate, not because they had major medical problems, but because I wanted them to be familiar with the new service.
- Since the completion of the study, we have continued to cover MSA services. Participants' co-payments for an MSA office visit are the same as they pay for a doctor's office visit. Their co-payment for dietary supplements is the same as they pay when purchasing prescription drugs.
- We are now writing a formal policy for the inclusion of MSA as a covered service of our self-funded medical plan. Included will be an MSA gatekeeper program with incentives for its use when plan participants are faced with certain challenging and potentially costly health problems. MSA will also be a covered service for our employees at our other manufacturing locations, where we will contract with local MSA providers for the service.

INFORMATION PERTINENT TO THE STUDY

- Plan Year: April 1 through March 31.
- Plan Benefits: Compared to other corporate self-funded medical plans, benefits and co-payments are about average. ICON covers approximately 80% of the costs and employees cover the balance.
- Cost/Employee: The annual cost per participating employee in 99/00 was \$2,455, which is 43% below the 1999 large employer national average of \$4,320 (William M. Mercer, Business Insurance, December 13, 1999). This cost includes plan administration and reinsurance. ICON's annual cost per participating employee excluding administration and reinsurance was \$2,220 (\$185/month) in 99/00, which was down from the 98/99 cost of \$2,352 (\$196/month), as illustrated by the chart in Appendix B.
- Covered Lives: ICON's average number of covered lives per enrolled employee is approximately 3.6. The national average is in the range of 2.8 to 3.1.

STUDY PROCESS INFORMATION

- Study Name: ICON Meridian Stress Assessment Pilot Project
- Type of Study: Outcome study without a control group. Voluntary participation.
- Purpose: To evaluate the degree to which sustainable health improvements and cost savings might be achieved when healthcare professionals use MSA technology as an assessment tool in the treatment of persons with long-standing, and/or unresolved illnesses.
- Study Period: June 1, 1998 to May 31, 1999
- Location: Peterson Chiropractic Clinic, Logan, Utah
- Sponsor: ICON Health & Fitness' self-funded medical plan. Authorization required for participation.
Douglas Younker, Human Resources Director, ICON Health & Fitness
Brent Peterson, DC, Peterson Chiropractic Clinic, Logan, Utah
- Planned by: Elmo Gruwell, MD, Chair, Dept. of Emergency Medicine, Utah Valley Regional Medical Center, Provo, Utah.
Richard Droubay, VP, Benefit Management Services, Salt Lake City, Utah
Reginald Hughes, VP, BioMeridian Corporation of Draper, Utah
- Participants: Covered lives with long-standing, and/or unresolved health problems having resulted in significant, ongoing healthcare costs.
Two technicians performed the MSA under the direction of a chiropractor experienced in complementary medicine. Both technicians were trained and experienced in the use of MSA. One was a Medical Assistant and the other a Registered Nurse. Dietary supplements and homeopathic medicines were used. Diet changes were sometimes recommended.
- Methods: Each participant agreed to report results by completing a Symptom Checklist and by answering study-related questions in telephone and/or personal interviews with the HR Director.
Participants co-paid for MSA office visits and remedies (dietary supplements and homeopathic medicines) at the same rates paid for routine doctor office visits and prescriptions. The clinic

discounted all services and products sold to ICON's participants.

Participants reported on changes in their symptoms at the beginning of each office visit. Participants also gave updates to the HR Director, usually by telephone. They rated each of their symptoms on a scale from zero (0) to five (5). A rating of 5 was assigned to extremely severe symptoms, a 1 was assigned to the least severe symptoms, and a zero was used to indicate that a symptom had disappeared. Participants also completed a medical history at the time of their first visit for MSA services.

Participants were advised to remain under the care of their primary care physician, and to cease using any MSA-related remedies if adverse side effects were experienced. Participants were advised by the clinic not to alter their use of any prescription medications without first consulting with their Medical Doctor.

ICON's Human Resources Director, who also serves as the director of the company's self-funded medical plan, personally tracked the progress of all participants through frequent phone calls.

STUDY RESULTS

ICON, assisted by Peterson Chiropractic Clinic, conducted several evaluation meetings at the clinic throughout the course of the study. BioMeridian did not participate in any of these meetings. The first audit was conducted on October 26, 1998. Records were reviewed and phone calls were made to 20 of the first 48 participants.

Results reported were:

- Average age of participants: 33
- Reduction in symptoms to date, weighted for severity: 64%
- Percentage of participants reporting health improvement: 94%
- Estimated net annual cost savings per participant – office visits and prescriptions only (80% of savings to the company and 20% to the participants): \$1,271

Participants who joined the study after the first audit experienced results similar to those presented above. When the one-year study period ended, 70 persons had participated. Nine months after completion of the study, the HR Director personally contacted 25 of the participants to gather information for the final report. As indicated earlier in this report, the 25 were not randomly selected. They were selected because they were:

- still employed by ICON at its Logan, Utah facilities,
- easily accessible,
- willing to be included in the final evaluation, and
- likely to have followed the MSA provider's suggestions.

A few participants did not wish to be included in the final evaluation, but reported favorable results. Others were not available during the evaluation, but have since reported outcomes similar to the 25 participants included in the final evaluation. At the time the 25 participants reported on their current health status, as presented below, more than one year had passed since some of them had completed their course of treatment. Generally, the 25 reported that their improvements remained unaltered. Results were:

- Average age of participants: 30
 - Reduction in symptoms weighted for severity: 70%
 - Percent of participants reporting health improvements: 100%
- (Case #15 reported very minor improvement. Case #31 was not treated, but conformed to the

dietary changes given to her parent, who was treated, resulting in significant health improvements for the child.)

- Average cost per participant (ICON and participant payments) \$373
- Estimated net annual savings per participant, office visits and prescriptions only, excluding any hospital cost savings (\$1,393 - \$373) \$1,020
- Gross annual savings per participant, hard and soft costs \$3,878
- Net annual savings per participant, hard and soft costs (\$3,878 - \$373) \$3,505
- Benefit/Cost Ratio (\$3,878/\$373): 10.40/1
- Average payback period per participant: 6 weeks

NOTE: The average Benefit/Cost Ratio of 8 pilot studies reported by Steven Aldana in *The Art of Health Promotion* was 3.35/1

A spreadsheet presentation of final report results is attached as Appendix C. Although the data is useful, it does not conform to the data collection standards of a clinical trial. However, the data has been considered adequate to help determine whether ICON and the participants benefited from the study.

Participants were also asked to rate any improvement they might have experienced in the quality of their life as a result of their participation in the study. Ratings ranged from zero to 100% and averaged 45%.

There was no attempt to measure the effect a spouse or a child's health improvement might have had on an ICON employee. However, it is possible that employees were able to perform better at work once a family member's health had significantly improved.

Of the 70 participants, the following withdrew from the study prior to completing the course of treatment:

- Participant #20, a 55-year old female diabetic who participated in the first audit, reported an 80% reduction in leg and knee pain, and an 80% decrease in pain and numbness in her feet. However, her blood sugar level became more erratic during the pilot project. She withdrew at the recommendation of her MD. This was the only adverse reaction reported.
- Approximately 4 people withdrew from the program without completing it due to lack of satisfaction.
- Approximately 4 others moved from the area prior to completing the program.

As noted earlier, no attempt was made to measure cost savings due to the avoidance of hospitalization. However, several participants commented that had the MSA services not been successful, they were anticipating receiving inpatient care.

Participants took natural and homeopathic remedies associated with the MSA service, but in most cases did not continue to take them routinely for more than 4 to 8 weeks. Thereafter, participants kept the homeopathic medicines and used them occasionally if their health problems began to resurface. Some participants were asked to consider using dietary supplements regularly and to consider making permanent changes in their. Participants who have followed these suggestions report positive results.

Conclusions and Actions:

Because of the savings, health improvements and employee satisfaction resulting from the study, ICON is in the process of adding MSA to its medical plan as a standard benefit. The company will also issue a gatekeeper policy pertaining to the use of MSA. Further, ICON will contract with additional physicians for MSA services for its employees living in other locations.

Information about MSA

BioMeridian Corporation of Draper, Utah manufactures and sells a meridian stress assessment device called the MSA-21, which is an upgrade of its BEST System. The MSA-21 is a FDA-registered, computerized galvanic skin response testing device used for meridian stress assessment. It is based upon the traditional acupuncture meridian system. Acupuncture works on the principle that there is a network of energy channels, called meridians, suffusing the body. In 1950, Reinhold Voll, M.D, of Germany, developed a means of electronically measuring electrical resistance in meridians. Computerized versions of the technology originated in the United States around 1980. The MSA-21 is one such device. It is not used to diagnose or treat disease, as defined by Western Medicine. Nor is it used to define disease based on clinically manifested symptoms. It is used to assess the body's energy balance, which may help a physician (Medical Doctor, Doctor of Chiropractic, Doctor of Osteopathy, Naturopathic Doctor or other licensed practitioner) in identifying energy imbalances and in selecting a course of action to restore balance. Because the technology is employed only as a topical evaluation, it is non-invasive and completely safe. MSA procedures and equipment are complements to – not replacements of - a conventional doctor's diagnostic and therapeutic procedures and equipment. Remedies used in conjunction with the MSA services are typically dietary supplements and homeopathic medicines.