Gettin' in Gear

Design Development and Evaluation of Truck and Bus Driver Wellness Programs

Final Report

June 2000

Department of Transportation
United States of America

FMCSA
Federal Motor Carrier Safety Administration

This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States government assumes no liability for its contents or use thereof. This report does not constitute a standard, specification, or regulation.

The United States government does not endorse products or manufacturers. Trade and manufacturers' names appear in this report only because they are considered essential to the object of this document.

Design, Development and Evaluation of Driver Wellness Programs

Final Report

June 2000

Prepared for:

Federal Motor Carrier Safety Administration
Office of Research and Technology
MC-RTR
400 Seventh Street, SW
Washington, DC

Prepared by:

Sue Roberts
Sue Roberts Health Concepts
1515 Linden Street, Suite 220
Des Moines, IA 50309

Jim York
Private Fleet Management Institute
National Private Truck Council
66 Canal Center Plaza, Suite 600
Alexandria, VA 22314

Table of Contents

DESIGN, DEVELOPMENT, AND EVALUATION

OF

TRUCK AND BUS DRIVER WELLNESS PROGRAMS

FINAL REPORT

INTRODUCTION

In May, 1997, the National Private Truck Council's Private Fleet Management Institute (PFMI) began a research program in cooperation with Sue Roberts Health Concepts, Inc., ATA Foundation, Inc. and the Federal Highway Administration's Office of Motor Carriers (now the Federal Motor Carrier Safety Administration) to design, develop, and evaluate a model truck and bus driver wellness program. This wellness program was developed to provide a resource for addressing truck and bus industry challenges in the areas of driver safety, turnover, performance, job satisfaction, and industry competition. It is intended to provide strategies to give drivers opportunities for improved health.

This final report consolidates the three Technical Memorandums that were published reporting on the taskings of the project.

TECHNICAL MEMORANDUM ONE provides an overview of the driver health literature and a review of existing wellness programs and practices - both within and outside of the trucking industry. The results of the first two driver focus groups are also included in the memorandum.

TECHNICAL MEMORANDUM TWO provides a summary and analysis of the driver and executive surveys and presents a core wellness program.

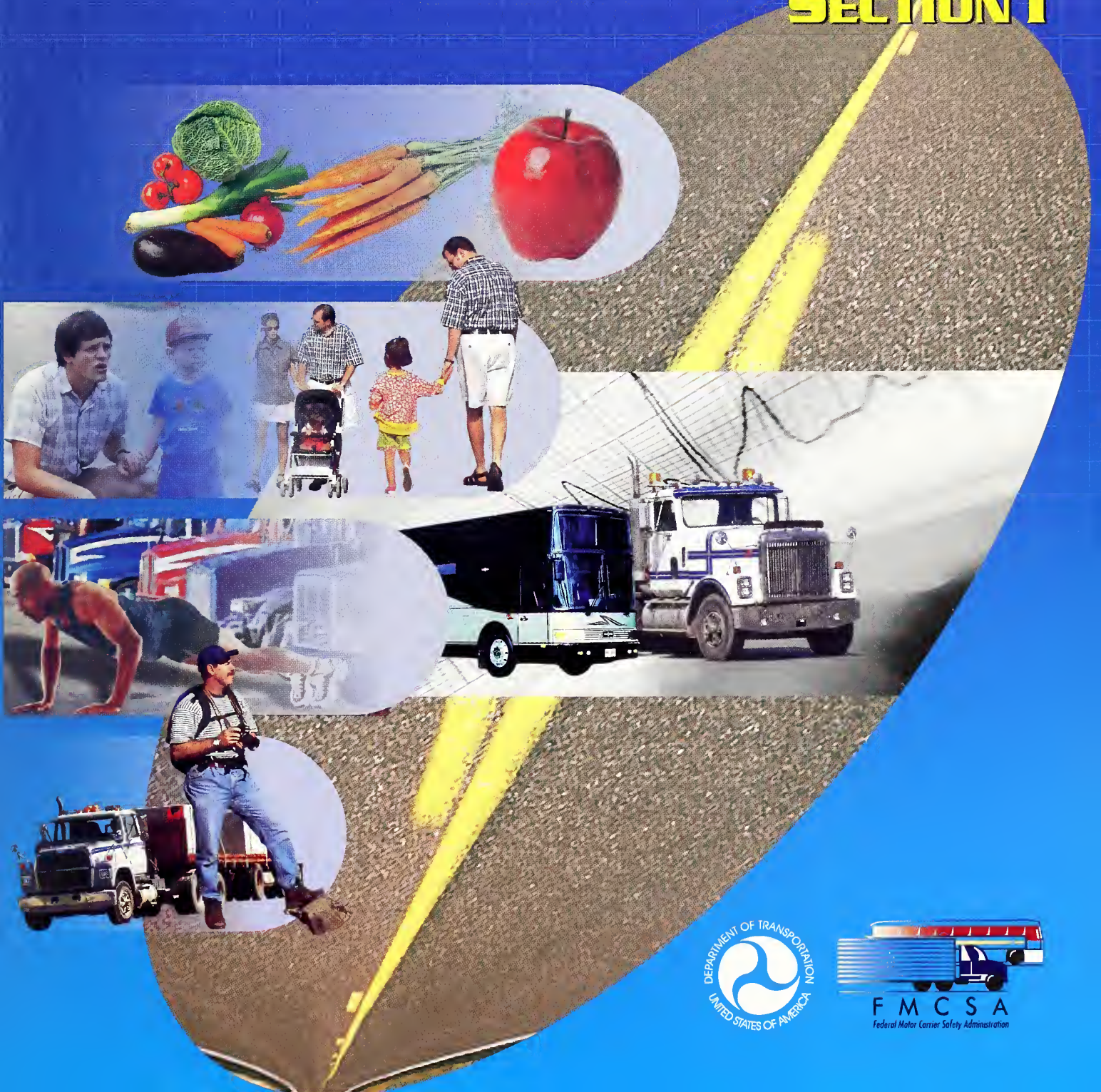
TECHNICAL MEMORANDUM THREE provides a review of Tasks 1 & 2 previously completed. The memorandum includes a description of the Core Wellness Program design, and a description, analysis and an evaluation of the data from the Pilot Test. Additionally, a marketing plan for the Wellness Program is provided.

Gettin' in Gear

Design Development and Evaluation of

Truck and Bus Driver Wellness Programs

Section I



DEPARTMENT OF TRANSPORTATION
UNITED STATES OF AMERICA

FMCSA
Federal Motor Carrier Safety Administration

Design, Development and Evaluation of Driver Wellness Programs

Technical Memorandum Number One: Wellness Literature and Programs Review

September 4, 1997

Prepared for:

Federal Motor Carrier Safety Administration
Office of Research and Technology
MC-RTR
400 Seventh Street, SW
Washington, DC

Prepared by:

Sue Roberts
Sue Roberts Health Concepts
1515 Linden Street, Suite 220
Des Moines, IA 50309

Jim York
Private Fleet Management Institute
National Private Truck Council
66 Canal Center Plaza, Suite 600
Alexandria, VA 22314

Table of Contents

Introduction

The initial step in designing a successful wellness program for commercial vehicle drivers is to review the current literature and practice with regards to the health status of the population and wellness programs in operation.

As the literature and practice review are presented it must be noted, that even though there are almost three million commercial motor vehicle drivers in the United States, little research has been done specifically to examine the health status of these workers. Likewise they are not a population that has had frequent opportunity to participate in company sponsored wellness programs. This is quite ironic and of significant importance considering the results of this review.

The following sections provide an overview of the driver health literature and a review of existing wellness programs and practices—both within and outside of the trucking industry. The results of the first two driver focus groups are also included in this document to provide a summary of research progress to date. A summary of this effort's research implications and next steps are also provided.

Overview of Driver Health Literature

A review of the academic and trade literature was conducted to determine the state of health, health behavior, and health care costs of commercial vehicle drivers. The results of this review are reported by risk factor, which is a clearly defined episode pattern or characteristic that has been associated with the increased rate of a subsequently occurring disease.[1] For each risk factor, the following paragraphs first establish its importance and/or correlation with subsequent recurring diseases. Second, the observed prevalence of that factor among commercial vehicle drivers is reported. Third its prevalence among the general population is cited. A summary of the direct (i.e., health care) and indirect (i.e., turnover and job satisfaction) costs associated with these risk factors is then reported.

Smoking

The use of tobacco products is the leading preventable cause of death in the United States and accounts for more than 400,000 deaths each year (e.g., about one out of every five deaths). Smoking substantially increases the risk of cardiovascular disease, is attributable to about 30 percent of all cancer deaths, and is the leading cause of chronic lung disease.[2]

The observed prevalence of smoking among truck drivers is noted below.

---

1 *Multilingual Glossary of Technical and Popular Medical Terms in Nine European Languages*. Austin Nutrition Research. The Virtual Nutrition Center. (http://sun2.lib.uci.edu/HSG/Nutrition.html#DICTION

2 *Healthy People 2000*

- A 1993 study of 2,945 truck drivers attending an industry trade show reported that 54 percent of the respondents reported smoking cigarettes or cigars.[3]
- A 1993 study of 125 truck drivers working for one company noted reported that 49 percent of population were smokers.[4]

General Prevalence: National statistics show 27.7 percent of all males and 25 percent of all men and women are smokers.[5]

Obesity

In scientific literature, the term obesity is defined as excess storage of energy in the body in the form of fat. It is a term often used interchangeably with the word overweight, which implies weighing more than a standard level for a given height and gender. Definitions of excess vary, but the overall result is too much body fat. Obesity is a well-established risk factor for many diseases such as stroke, cardiovascular disease, hypertension and diabetes. It also exacerbates problems with conditions such as arthritis or back pain. Evidence also suggests that obesity, in conjunction with other risk factors (such as menopausal status, low activity level and predisposition to insulin resistance), places men and women at a higher risk of cancer.[6]

The observed prevalence of obesity among truck drivers is summarized below.

- A 1993 study of 2,945 truck drivers attending a trade show noted that 73 percent of all respondents to a survey were either overweight or obese. Of these drivers, 33 percent were classified as obese (i.e., Body Mass Index Greater than 30) and 40 percent were classified as overweight (i.e., Body Mass Index between 25 and 30).[7]
- A 1993 study examining the prevalence of Sleep Apnea in 125 drivers working for one company revealed that 71 percent of the drivers were classified as obese (i.e., Body Mass Index greater than 28).[8]
- A 1994 study of a cross-sectional population of 90 long haul commercial truck drivers revealed that obese drivers with a BMI greater than or equal to 30 presented a two-fold higher accident involvement rate than non-obese drivers.[9]

---

3 James Korelitz et. Al "Health Habits and Risk Factors Among Truck Drivers Visiting A Health Booth During A Trucker Trade Show." American Journal of Health Promotion. Vol 8. No. 2. (November/December, 1993). Pp. 117-123.

4 Riccardo Stoohs, Christian Guilleminault, and William Dement. "Sleep Apnea and Hypertension in Commercial Truck Drivers." Sleep. Vol. 16 No. 8. (1993). American Sleep Disorders Association and Sleep Research Society. Pp. S11–S14, 1993.

5 The State Tobacco Control Highlights 1996. U.S. Department of Health and Human Services. Washington, D.C. 1997.

6 *Harvard Report on Cancer Prevention. Vol. 7: Causes of Human Cancer.* Official Journal of the International Association of Cancer Registries. Vol 7 (Supplement). November, 1996.

7 Korelitz Et Al. P120

8 Stoohs Et Al. S-12.

9 Ricardo A. Stoohs, Et Al. "Traffic Accidents in Commercial Long Haul Truck Drivers: The Influence of Sleep - Disordered Breathing and Obesity." Sleep. Vol. 17 No. 7. 1994. Pp. 619–623.

- A 1993 study examining the prevalence of back pain among 40 bus and 40 truck drivers noted that 55 percent of the truck drivers were overweight (i.e., as defined by a Brocas Index greater than 1.1).[10]

General Prevalence: Nationally, it is estimated 31.3 percent of men in the U.S are classified as overweight (i.e., greater than 130 percent of ideal body weight) and that 33 percent of men and women combined are classified as overweight.[11]

Hypertension (High Blood Pressure)

High blood pressure is a chronic disease in the United States, affecting over 50 million people. High blood pressure increases an individual's risk of heart disease, renal failure and stroke.[12] Excess body weight correlates closely with increased blood pressure. In fact, almost every prospective study of factors that influence blood pressure regulation has identified weight as the strongest predictor of blood pressure. It is estimated that in up to 50 percent of the adults in the United States whose hypertension is managed through pharmaceuticals, the need for drug therapy could be alleviated with only modest reductions in body weight.[13]

Part 391 of the Code of Federal Regulations prescribes the maximum blood pressure level of commercial vehicle drivers as 160/90 mm Hg. As a result, we would expect a lower prevalence of hypertension because of these requirements. However as noted below, studies revealed a high prevalence of hypertension in truck drivers.

- A 1993 study of 2,945 truckers attending a trade show noted through measurement that 33 percent of the respondents had blood pressure greater than 140/90 mm Hg and that 11 percent of the respondents had blood pressure greater than 160/95 mm Hg.[14]
- A recent insurance industry study noted that 20 percent of the drivers in one test group had high blood pressure.[15]
- A large cross-sectional study of black and white male bus drivers in San Francisco revealed elevated rates of hypertension compared to a national sample of similar individuals. This study also noted that the prevalence of hypertension increased with length of employment.[16]

---

[10] Mary Ann Magnusson. Et. Al. "Are Occupational Drivers at an Increased Risk For Developing Musculoskelatal Disorders." Spine Vol. 21, No. 6 1996. Pp 710-717.

[11] Robert J. Kuczmarski. Et Al. "Increasing Prevalence of Overweight Among U.S. Adults". Journal of American Medical Association (JAMA) Vol. 272 No. 3. 1994. Pp. 205.

[12] David Et Al. "Body Weight And Blood Pressure Regulation." American Journal of Clinical Nutrition. Vol. 63 (supplement). 1996. Pp.423-455.

[13] David Et Al. Pp. 431.

[14] Korelitz Et Al.

[15] Lisa Harrington, "To Your Driver's Health." Private Carrier Vol. 32, No. 2 (February, 1995). The National Private Truck Council. P 22-24.

[16] Gary Evans. "Working on the Hot Seat: Urban Bus Operators." Accident Analysis and Prevention. Vol. 26, No. 2. 1994. Elsevier Science Ltd. Pp 181-193.

- A Norwegian study comparing male bus and truck drivers to industrial workers noted a stronger correlation between length of employment and elevated blood pressure among commercial vehicle drivers.[17]
- Seventeen percent of the truck drivers in a 1993 Sleep Apnea study had blood pressure greater than 160/95 mm Hg.[18]

General Prevalence: Nationally, 26.3 percent of males and 25.0 percent males and females have blood pressure greater than 140/90 mm Hg.[19]

.

Alcohol and Drug Abuse

Alcohol and drug abuse undermines citizen's health directly and indirectly. Substance abuse is estimated to be the actual cause of some 120,000 deaths per year with 100,000 attributed to alcohol and 20,000 to other drug use.[20] Alcohol and other drugs contribute to unintentional injury (i.e., motor vehicle accidents), suicide, and other violent deaths as well as being factors in a high percentage of chronic diseases.[21]

Amphetamines produce strong central nervous system stimulation therefore increasing physical and mental alertness. The Physician's Desk Reference lists elevated blood pressure, restlessness, dizziness, euphoria, and headaches as side effects of amphetamine usage and warns that it may impair the ability of a person to engage in potentially hazardous activities such as operating machinery or vehicles.[22]

Besides the side effects, dependence on Amphetamines can cause irrational behavior, restlessness, anorexia, insomnia, agitation, tremors, increased motor activity, hallucinations, and some individuals may even be hostile and aggressive.[23]

The prevalence of drug and alcohol abuse among commercial drivers noted in the literature is summarized below:

- A 1993 study of the prevalence of drugs and alcohol in 168 fatally-injured truck drivers noted that *alcohol* was present in 12.5 percent of all these drivers. Additionally, this study noted that *alcohol impairment* was (BAC >0.04%) present in one percent of these drivers.[24]

---

17 Gary Evans. P. 183.

18 Ricardo Stoohs, Et Al. S12.

19 Heart and Stroke Facts: 1996 Statistical Supplement. American Heart Association. 1996.

20 *Healthy People 2000: Midcourse Review and 1995 Revisions.* U.S. Department of Health and Human Services Public Health Service. Washington, D.C.

21 Healthy People 2000.

22 *Physicians Desk Reference*. Medical Economics Company. Oradell, NJ. 1987.

23 Phanee Pidetcha et. Al. "Screening for Urinary Amphetamine in Truck Drivers and Drug Addicts." Journal of Medical Association in Thailand. Vol 78 No 10. (October, 1995). Pp. 554-558.

24 Dennis J. Crouch, Et Al. "The Prevalence of Drugs and Alcohol in Fatally Injured Truck Drivers." Journal of Forensic Sciences. Vol. 38, No. 6. (November, 1993). Pp. 1342–1353.

- A 1994 Finnish study of 168 fatal-to-the-truck driver accidents from 1984–1989 noted that less than one percent of these drivers were found to be driving while *intoxicated.*[25]
- A 1986 study of 317 truck drivers randomly-screened for drugs and alcohol in Tennessee revealed that *alcohol* was present in less than 1 percent of these drivers.[26]
- A 1993 study of 2,945 truck drivers attending a trade show revealed that 23 percent of all the drivers may have a *drinking problem* as defined by responses to defined questions regarding personal drinking perceptions.[27]
- A 1993 Australian study of 268 cited truck drivers revealed between 15 and 18 percent of these drivers had been *convicted for driving while under the influence of drugs and alcohol.*[28]
- A 1989 survey revealed that 26 percent of drivers were *perceived by their peers to be driving under the influence of drugs.*[29]
- The above cited 1993 study of fatally-injured truck drivers revealed that *Marijuana* was detected in 13 percent, *Cocaine* was detected in 8 percent, and *Stimulants* were detected in 11.3 percent of these cases.[30]
- The above-cited 1986 study of randomly screened truck drivers revealed that 15 percent had evidence of *Marijuana* , 2 percent had evidence of *Cocaine* and 15 percent had evidence of stimulants in their blood systems.[31]

General Prevalence: The most recent highway crash statistics indicate alcohol was a factor in 41 percent of all traffic fatalities.[32] The national average of reported binge drinking (e.g., more than five drinks at a time) is 21 percent.[33]

Stress

Stress is defined as a condition harmful to an individual which results from the inability to maintain a constant internal environment.[34] Each year, more than 51 million Americans are diagnosed with a mental disorder that includes such factors as stress or depression.[35] Stress can

---

25 Heikki Summal and Timo Mikkola. "Fatal Accidents Among Car and Truck Drivers: Effects of Fatigue, Age, and Alcohol Consumption." Human Factors. Vol. 36, No. 2. (June, 1994). Human Factors and Ergonomics Society. Pp. 315-326.

26 Adrian K. Lund, Et Al. "Drug Use by Tractor-Trailer Drivers." Journal of Forensic Sciences. Vol. 33, No. 3. (May, 1988). Pp. 648–661.

27 Korelitz Et Al. P. 120.

28 L.R. Hartley and J. El Hassani. "Stress, Violations, and Accidents." Applied Ergonomics. Vol. 25 (4). 1994. Pp. 221-230.

29 Dennis Crouch. Et Al. "The Prevalence of Drugs and Alchohol in Fatally Injured Truck Drivers." The Journal of Forensic Sciences. Vol. 38, No. 6. (November, 1993). Pp. 1342-1353.

30 Dennis J. Crouch, Et Al. Pp. 1347–1349.

31 Adrian K. Lund. Et Al. Pp. 652–655.

32 *Accident Facts: 1996 Edition.* National Safety Council. Itasca, IL. 1996. Pp. 86–87.

33 Pat Busick, BRFSS Coordinator, Iowa Department of Public Health. 1996 Data obtained from Iowa's Behavioral Risk Factor Surveillance System via conversation.

34 *Tabor's Cyclopedic Medical Dictionary, Edition 10.* F.A. Davis Co. 1965.

35 *Mental Health Statistics.* Mental Health Organization. (The World Wide Web Home Page). November 5, 1996.

also be defined as a mentally or emotionally disruptive or disquieting influence causing distress.[36] This influence, or stressor, stimulates the sympathetic nervous system's fight or flight response, neuroendocrine secretion of coricosteroids, and consequent cardiovascular, hypertensive, gastrointestinal, and immune system impairments. Stress-mediated immune system dysfunction may predispose the individual to types of arthritis, cancer, and diseases with autoimmune components.[37]

Generally stress is associated with other risk factors through an interaction in which these risk factors become a coping mechanism.

A Study examining stress among truck drivers is summarized below.

- A 1997 study examining psychological stress among 303 parcel delivery drivers revealed these drivers scored significantly higher than the U.S. population in four common measures of job stress. Additionally, this study noted these drivers had higher stress levels than 91 percent of the U.S population on the best single scale of psychological stress.[38]

Poor Eating Habits

C Everett Koop, former Surgeon General of the United States, noted that eight of the ten leading causes of death are related to what people eat. From heart disease to cancer, the food people put in their mouths has an influence on whether many chronic diseases develop. It is probably one of the most important influences in an individual's health, one of the greatest in need of change, and one of the hardest to change.

Studies noting the prevalence of poor eating habits among truck drivers are summarized below.

- A 1993 study of 2,945 truck drivers attending a trade show revealed over 80 percent of these drivers ate only one or two meals per day and 36 percent had three or more snacks per day.[39]
- A 1996 study of 30 drivers in a prototypical wellness program revealed that these drivers' favorite meal item while on the road was steak (1) and burgers (2).[40]
- The typical snacks of the drivers in the above 1996 study were:
    1) Chips
    2) Fruit
    3) Candy

---

[36] *The American Heritage Dictionary, Second College Edition.* Houghton Mifflin Company, 1985.

[37] Dr. Peter Orris Et Al., "Stress Among Package Truck Drivers." American Journal of Industrial Medicine. Vol.31. 1997, Pp. 202-210.

[38] Dr. Peter Orris, Et Al. Pp. 205–206.

[39] Korelitz Et Al. P 119.

[40] Susan M. Holmes, Mark L. Power, and Clyde Kenneth Walker. "A Motor Carrier Wellness Program: Development and Testing." Transportation Journal. (Winter 1996). American Society of Transportation Logistics. Pp. 31–48.

4) Donuts
5) Cookies

- Only 15 percent of these drivers ate five or more servings of fruits and vegetables per day.

General Prevalence: National statistics show 80.9 percent of all males do not eat five or more servings of fruits and vegetables per day.[41]

.

Physical Activity

Both epidemiological evidence and medical research demonstrate the ability of physical activity to reduce the risk of many physiological diseases, including heart disease, high blood pressure, osteoporosis, diabetes, and breast and colon cancer, as well as reduce the risk of psychological illnesses such as depression, anxiety, and stress.[42] [43]

Literature noting the prevalence of sedentary lifestyles among commercial vehicle drivers is shown below.

.

- Fifty percent of the truck drivers in a 1993 study never participated in "aerobic" exercises and only 8 percent of these drivers "regularly" participated in "aerobic" exercise.[44]

General Prevalence: Overall U.S., 57.2 percent of U.S men and 57.4 percent of men and women have sedentary lifestyles.[45]

.

Direct Medical Costs of Risk Factors

Table One provides a summary of the direct medical costs of specific risk factors as studied in a large manufacturing population.

---

[41] Pat Busick BRFSS Coordinator, Iowa Dept . of Public Health "conversation" Data from Behavioral Risk Factor Surveillance System (1996 data).

[42] *Exercise and Heart Disease*. American Heart Association. March 3, 1997

[43] *Healthy People 2000: Midcourse Review and 1995 Revisions*. U.S. Dept. of Health and Human Services. Washington, D.C. 1995.

[44] Korelitz Et Al. P. 121.

[45] Pat Busick. conversation

Table One: Direct Costs of Health Risks

Health Risk	Annual Excess Claim Costs
Poor eating habits	$498
Overweight (greater than 20 percent)	$529
Sedentary (exercise less than once per week)	$124
Hypertension (bp greater than 140/90)	$109
Smoking	$451
Stress	$342
Mental Health	$187

Source: S.D. Brink et. Al.. Health Risks and Their Impact on Health Costs. Milliman and Robertson. 1995. Data from The Chrysler Corporation—6000 life years 1989–1991. Note, costs do not include drug, vision, foot care, mental health, substance abuse, and outpatient pathology. Adjusted for inflation to 1994.

Table Two provides a summary of the absenteeism costs of these risk factors.

Table Two: Absenteeism Costs of Health Risks

Health Risk	Excess Illness Days
Smoking	0.90
Overweight (greater than 20 percent)	0.36
Sedentary (exercise less than once per week)	0.11
Hypertension (bp greater than 140/90)	0.32
Alcohol excess	0.37
Poor driving	0.30

Source: R.L. Berea. "The Effects of Behavioral Risks on Absenteeism and Health Care Costs in the Workplace." Journal of Occupational Medicine Vol. 33, No. 11 1991. Pp 11–19. Dupont Company—46,000 Employee lives from 1984 to 1988.

Indirect Costs Of Driver Health Associated Areas

Motor carrier managers and academicians have recently exhibited a high level of interest in driver retention strategies because the industry is experiencing excessive turnover rates. Turnover is very costly to a company in both employee morale and direct employee replacement costs. Driver turnover has been estimated to cost $1,000 per incident and the cost of recruiting, hiring, and training a new driver has been estimated at $5,000.[46] As a result, literature that examined driver behavior and perceptions that lead to turnover was reviewed and summarized below.

[46] James C. McElroy, Et Al. "Career Stage, Time Spent on the Road, and Truckload Driver Attributes." Transportation Journal. Vol. 33. No. 1. (Fall, 1993). The American Society of Transportation Logistics. Pp. 5–13.

- A 1994 study of 57 for-hire truckload carriers revealed the following driver turnover rates by segment.[47]
  - » Dry Van carriers: Average = 67 percent, Range = 30–110 percent
  - » Flatbed carriers: Average = 66 percent, Range = 37–117 percent
  - » Refrigerated carriers: Average = 69 percent, Range = 22–105 percent
  - » Tank carriers: Average = 49 percent, Range = 10–140 percent
- A recent study examining job satisfaction of 3,174 commercial vehicle drivers working for 13 truckload carriers throughout the U.S. noted 44.3 percent of drivers working for these companies expected better benefits packages.[48]
- A 1993 study of 3,379 drivers working for 13 truckload motor carriers revealed that drivers perceived diminishing "benefits adequacy" as their career stage progressed. In fact, career stage (e.g., early = 2 years or less, mid = 2–10 years, and late = more than 10 years experience) explained as much as 8.3 percent of the variation in these drivers' perceptions of benefits adequacy.[49]
- The above study also noted drivers' perceived attitude of the company towards their employees decreased with career stage and that career stage explained 3.1 percent of the variation in these drivers' perceived attitudes
- A 1994 study of 1,464 drivers employed by 57 truckload carriers revealed that "Better benefits" and "Increased pride in my trucking company" were the second and third-most important ("Increased annual pay" was ranked most important) of 37 reasons why drivers were likely to continue working for their present employer.[50]

General Prevalence: The median turnover rate of employees for all U.S. businesses in 1988 was 12 percent and the average national turnover rate of employees for all U.S. businesses in 1992 was 8.4 percent.[51] [52]

.

Review of Wellness Programs and Practices

Wellness programs in corporate America have come into existence in the last quarter of the century primarily to slow down the ever-escalating costs of medical care provided by employers. Improved recruitment, increased productivity, improved morale are among other wellness program benefits. This section provides a summary of wellness programs within the trucking and other industries.

---

47 Frederick J. Stephenson and Richard J. Fox. "Driver Retention Solutions: Strategies for For-Hire Truckload Employee Drivers." Transportation Journal. Vol. 35, No 4 (Summer, 1996). American Society of Transportation Logistics. Pp. 12-24.

48 Gene C. Griffin, Julene M. Rodriguez, and Brenda M. Lantz. *Job Satisfaction of U.S. Commercial Drivers.* UPTGI Report No. 90. The Upper Great Plains Transportation Institute, North Dakota State University. 1993. Pp. 49–51.

49 James C. McElroy, Et. Al. Pp. 9–11.

50 Stephenson and Fox. P. 20.

51 Stephen A. LeMay, G. Stephen Taylor, and Gregory B. Hunter. "Driver Turnover and Management Policy, A Survey of Truckload Irregular Route Carriers." Transportation Journal. Vol. 33, No. 2. (Winter, 1993). The American Society of Transportation and Logistics. Pp. 15–24.

52 Stepenson and Fox. P. 12.

Wellness Programs Within the Trucking Industry

A compilation of wellness programs within the trucking industry was developed through a review of the academic and trade literature.

Programs Documented in the Academic and Trade Literature

A review of the literature revealed only one documented wellness program that was designed for commercial truck drivers. This program was implemented by a firm with 3,000 employees which provides commercial vehicle and employee leasing services for private and for-hire trucking operations in 38 states.[53] The program was designed as part of a management team initiative to control rising health care costs. The subject company's health care claims experience showed heart problems were the largest cost category for two out of three observed years and costs associated with heart disease represented more than 10 percent of total health care costs.

In consultation with a wellness specialist, the company first identified the following factors which contribute to heart problems:

- Elevated blood cholesterol
- Elevated blood pressure
- Overweight
- Lack of exercise
- Smoking

.

Since the first three of the above risk factors are affected by nutrition, the company decided to first survey a sample population of 300 of the firm's truck drivers to determine their health and nutrition habits. Survey recipients were asked questions regarding meal and snack frequency and selection choices while on the road.

This survey revealed dinner as the most frequent meal eaten and "burgers and steaks" as the most common meal of choice. Additionally, 48 percent of the survey respondents indicated "snacking while on-the-road with potato chips" as the most frequent snack choice.

Using results of this survey, the management team next designed a nutrition intervention program and compared effectiveness of this program using a test and control group of drivers. The goal of the test was to determine if a wellness program emphasizing driver nutrition could significantly affect the risk factors attributable to heart problems.

The nutrition program consisted of nutrition and wellness counseling with the wellness consultant, printed information designed to educate drivers about healthy meal choices, and "healthy snack" bags containing such items as:

---

[53] Susan M. Holmes, Mark L. Power, and Clyde Kenneth Walker. "A Motor Carrier Wellness Program: Development and Testing." Transportation Journal. Vol. 35, No. 3. (Spring, 1996). American Society of Transporation Logistics. Pp. 33-48.

- Fresh fruit
- Juices
- Raisins
- Pretzels
- Fig cookies

.

Prior to implementing the test, health screening assessments were given to both the test and control group of drivers which measured:

- Weight
- Body composition
- Blood pressure
- Fitness level (e.g., Techumseh step test)
- Blood Glucose
- Smoking
- Blood Total and HDL Cholesterol

.

The test was conducted for a period of six months and drivers were again given health screening assessments to determine effectiveness of the program. The results of this indicated that the nutrition intervention program achieved *statistically significant* differences among the test and control group of drivers in the areas of:

- Weight reduction
- Improved fitness level
- Smoking cessation

The test also revealed somewhat improved scores in the areas of blood cholesterol levels, body fat, and blood glucose. Follow-up interviews with the drivers also noted improved feelings about the company. This result is consistent with other industries which have shown that wellness programs can improve health behavior, lower turnover rates, and improve job satisfaction.

Programs Documented Through On-Site and Telephonic Interviews

Since only one driver wellness program was cited in the literature, a cross section of the motor carrier industry was surveyed via on-site and telephone interviews to determine the nature and extent of wellness programs within the industry.

Motor Carrier Operation One

This Midwest based trucking company is the largest truckload carrier in the United States with approximately 14,000 drivers, 2,500 corporate support staff, and 2,000 other staff members based in 15 operations centers around the United States. This company provides a variety of trucking services including dry -van, flatbed, specialized, and dedicated operations. Corporate staff views driver turnover, increased shipper demands, and increased operating costs as the most significant challenges in the near future.

The company has a wellness program because of upper management interest and support. Based on the results of the phone interview, the most extensive employee program participation occurs at the corporate offices where wellness programming is administered.

Seventy five percent of the operations centers are equipped with fitness rooms and employee cafeterias. During a visit to one of these operations centers, there was no evidence of the usage of the fitness room even though approximately 800 drivers pass through this facility each day. The majority of the cafeteria food provided typical high-fat menu choices such as bacon and eggs and hamburgers and cheeseburgers. However, it was noted that some selection of deli sandwiches and prepackaged salads are available. This operations center did not have a local wellness coordinator.

According to the corporate wellness coordinator, cardiovascular claims are the number one medical cost for truck drivers. The interviewee stated that the company is implementing a disease management program, although specifics were not known. Other programs include a $30 reimbursement for smoking cessation, an employee health assessment program, stress management and aerobics classes. The interviewee noted that the program weakness was not reaching drivers or having wellness program representatives at local operations centers.

Motor Carrier Operation Two
This company is a regional for-hire flatbed operation with approximately 800 trucks based in the Midwest. The interviewee perceived the greatest challenge of the company as finding and keeping good drivers. The company began a wellness program to keep health care costs down even though the wellness coordinator has no concept of the company's health care costs and has not analyzed any data other than to know their costs are increasing.

The company's program has primarily reached office staff and not drivers. It is estimated by the interviewee that over $100 per office staff employee is spent on wellness, while almost nothing is spent on drivers. There is a large, beautiful fitness facility at the corporate headquarters along with a cafeteria and motel. Lunch seminars, health assessments and a newsletter are provided although it appears there is almost no driver participation. The fitness center had one member of the office staff working out over the lunch hour. The featured luncheon special in the employee cafeteria was a 16-ounce T-bone steak although they did have a salad bar with a very few healthy choice options.

The interviewee stated that the program strengths are employee interest (i.e., corporate office staff), modern facilities, and top management commitment. Weaknesses are inability to reach drivers, newness of program, and lack of personnel to administer the program.

Motor Carrier Operation Three
This refrigerated carrier is a large national operation based in the mid-south with 2,400 total employees. The workforce consists of 2,100 drivers and a staff of 300 operations/support staff. Driver turnover rates at this company were quoted to be in excess of 200 percent. This company is very interested in wellness programs as the recently appointed president believes health affects every part of the business. They have not, however, figured out how to reach the driver with wellness programs. They do provide a $200 wellness benefit for all employees and do develop and distribute a newsletter.

Motor Carrier Operation Four
This Midwest-based refrigerated carrier operates in all 50 states with an irregular route truckload operation. The company has approximately 2,000 independent owner-operators and 400 in-house corporate staff and shop support. They are in the beginning stages of developing a wellness program and currently provide limited health information through a company newsletter. Flu shots, health screenings and fitness membership reimbursements are available to all employees and operators. They are in the process of building a fitness center at the corporate headquarters. As with other trucking companies, reaching drivers is their biggest concern. This is reflected in their participation rates since nearly 20 percent of corporate staff and only one percent of drivers participate in their wellness programs.

Motor Carrier Operation Five
Four years ago, this private fleet operation consisting of 500 over-the-road refrigerated trucks implemented a fatigue/health education program designed for its truck drivers. The program included classroom instruction on fatigue and other health issues and a manual which provided information on exercise, diet, stress and fatigue. The program demonstrated very positive results with a 40 percent reduction in accidents and large program acceptance by the drivers.[54]

As often happens, the individual that developed, implemented, and championed the program left the company to take another position in a related field. Since that individual's departure, the corporation reorganized the fleet safety function and placed it under the control of corporate risk management. According to the interviewee, the program is no longer supported by the company and all program activities have been put on hold.

Motor Carrier Operation Six
This western based trucking company has approximately 300-500 corporate employees and over 3,000 truck drivers. Their current turnover percentage rate is in the high 90's; mainly attributed to the length of time truckers are away from their families. "Truck drivers do not realize that trucking is a lifestyle, not a job." The company is in the process of building a new facility for their drivers that will include sleeping quarters, a cafeteria, a theater, and a brand new fitness center. Currently, their fitness center is located in a trailer at the same facility as their headquarters. The interviewee feels that employee health is a high priority for the company as they desire to keep health care costs down.

---

[54] Lisa Harrington. "Fighting Driver Fatigue." Private Carrier. Vol. 32 . No. 7. (July,1995). The National Private Truck Council. Pp 24-28.

The wellness program was initiated as a benefit for the employees. They offer a variety of programs for their employees including health fairs, weight maintenance programs, exercise incentive programs, lunch and learns, etc. Outside professionals are brought in for the "lunch and learns," talking on subjects such as diabetes, healthy food choices, starting a fitness program, etc. Other activities offered are golf, basketball and volleyball tournaments and aerobics. A bulletin board with tips and facts on improving health is also maintained. Truck drivers are told of the program during their orientation and are given a manual with information about stress management, healthy eating and exercise tips. Nutrition packets are also available for the drivers which include facts on healthy snacking and calories.

The program's participation rate, based on a six month period, averaged 20-25 percent of office employees and 10 percent of drivers. The interviewee feels a strength of the program is the aim to target different populations (i.e. truck drivers vs. office employees). However, the interviewee perceives the resources are not available to reach the targeted populations.

Even though interviewee doesn't look at health care costs, she believes costs have come down or the company would not have kept the program.

It should be noted that 23 trucking companies were contacted during this research phase. Of those companies, only the above six firms said they had or were willing to discuss their wellness program.

Wellness Programs within Other Industries

Company One

This employee-owned Midwestern grocery retail company has 35,000 employees which includes approximately 175 truck drivers. The company is decentralized with nearly 250 locations in seven states. The company places much emphasis on employee health and started their wellness program as a benefit for the employees. The wellness program is available to all employees, spouses, and retirees. Although the program activities vary from location to location, often included are programs such as seminars, recreational activities, and yearly health risk assessments.

A popular component of the program, the health risk assessments, includes testing for blood total and HDL cholesterol, blood sugar, blood pressure, body fat, and fitness levels. After the employee finishes testing, a counselor explains the results and gives information on how to improve their overall health. The company is beginning to assess other factors affecting health (e.g., mind, work culture, relationships) and readiness to change health behavior. This information is used in the counseling session. Follow-up contacts are made with high risk employees within three to four months to help in the behavior change process.

The corporate office has "lunch and learns" covering topics from osteoporosis and arthritis to healthy eating and safety issues. Every employee is provided a monthly health newsletter published by the company.

The wellness program is staffed with a wellness coordinator, a consultant as needed, and five consultants for the health assessments and follow-ups.

Participation in the wellness program has increased substantially in the last few years. Currently, 78 percent of their full-time and regular-time employees participate in the health risk assessments. The company has experienced a reduction in health care costs since the initiation of the wellness program. Employees have also realized health care savings. Seven years have passed with no increase in premiums and, in two of the past ten years, employees have received a health insurance premium rebate (The employer is self-insured).

Company Two
This eastern-based manufacturing company employs approximately 1,100 employees. Due to the nature of the company, most of the employees are shift workers. This creates a challenge for the wellness program because the workforce is not readily available to participate in programs regularly offered during the day.

The wellness program consists of a fitness center, education on back safety, stress relief, heart disease, and heat exhaustion. There is a minimal monthly fee to employees for use of the fitness center. Physicals are performed every three years, free-of-charge, to the employee and family. Mandatory surveillance testing is also provided by the health/wellness department.

The wellness program staff includes a doctor, nurse, and emergency medical technician. The interviewee said that, at this time, not all programs are available due to the physical and surveillance testing that is currently being conducted.

The participation rate was estimated at approximately 40 percent of all employees. The use of the fitness center is measured electronically with employee gate passes. Health care costs or health statistics were not reviewed by the wellness staff, however, the interviewee hoped corporate staff were examining those costs.

Criteria for Successful Wellness Programs

The following fundamental elements are those generally considered necessary for successful wellness programing.[55] [56] [57]

Fundamental Program Elements

- Commitment from senior management
  - » Monetary and personnel support
  - » Philosophical support
  - » Participation in programs
- Clear statement of philosophy, purpose, and goals

---

[55] Michael O'Donnel. "Characteristics of the Best Workplace Health Promotion Programs." Wellness Management. Summer, 1997. Pp. 3-4.

[56] *Guidelines for Employee Health Promotion Programs.* Association for Fitness in Business. Human Kinetics Books. Champaign, Ill. 1992.

[57] Sue Roberts, President, Sue Roberts Health Concepts. Des Moines, Iowa.

- Needs assessment
- Strong program leadership
- Use of effective and qualified professionals
- Accurate, up-to-date, research-based information made available to participants
- Effective communication
  - » High visibility
  - » Successful marketing
  - » Motivating to employees
- Accessible and convenient for employees
- Realistic budget
- Fun, motivating, and challenging program philosophy
- Supportive work/cultural environment
  - » Company policies
  - » Company attitude toward employee
- Supportive physical environment
  - » Cafeteria and vending with healthy options
  - » Available fitness facility
  - » Windows/lighting/truck cab
- Individualized to meet the needs of each employee
- Defined evaluation system
- Shows results

.

Wellness Program Development Process

The development of successful wellness programs generally follows the process illustrated in Figure One and detailed in the following paragraphs.

Needs assessment: The first element of a needs assessment is to survey the employee base. This can be done with a written survey, focus groups, and/or one-on-one conversations. The second element includes a management survey. This is best done one-on-one to determine management goals and support. The third element of needs assessment is an in-depth analysis of employee health care costs, workers compensation costs, and absenteeism data. The fourth element is to examine the health status of the work force. This can be done with a survey, but the data collected must be interpreted as survey data. A better way to determine the health status of the population is to perform physical, biochemical, and written assessments on site. The fifth element of the needs assessment is a culture survey to determine if the underlying beliefs of the organization support a healthy lifestyle. When the workplace consists of a culture where worker health and psychological needs are important and met, the potential for increased productivity and improved well-being is enhanced.[58]

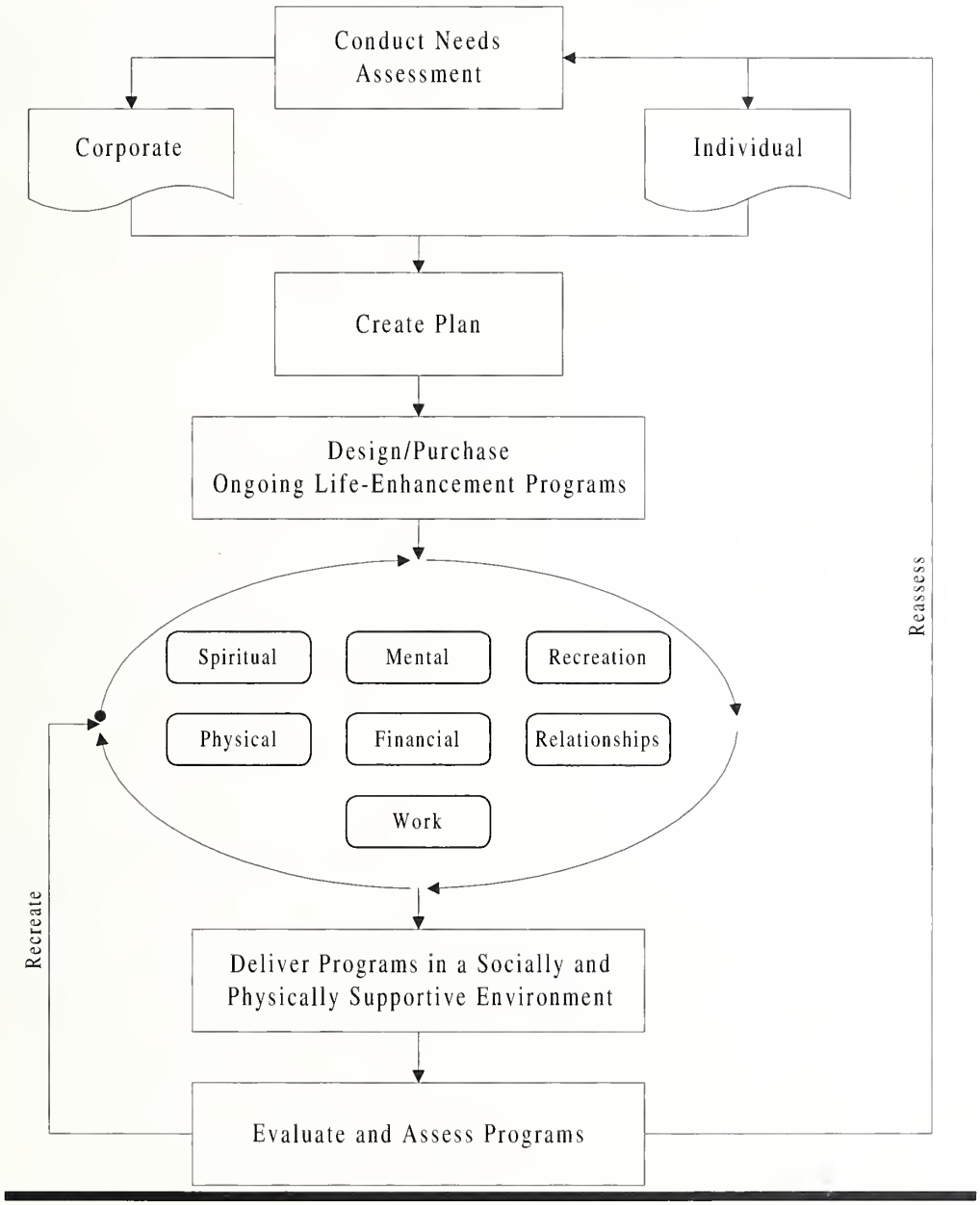
Creating the Plan: The plan is created including a mission statement and objectives. Steps and time line to accomplish the objectives are also part of the plan.

---

[58] Michael Peterson. "Work, Corporate Culture and Stress: Implications for Worksite Health Promotion." American Journal of Health Behavior Vol. 21 No.4. 1997. Pp. 243-252.

Design/Purchase Ongoing Life Enhancement Programs: Programs are used (whether designed in-house or purchased) to help individuals change behaviors. Emphasis is placed on caring and determination of the underlying issues in employees' lives that cause them to use

Figure One: Wellness Program Development Process



Source: Sue Roberts Health Concepts

coping mechanisms which are a detriment to their health (e.g., alcohol, tobacco, food). Less emphasis is placed on actual physical data and scare tactics (e.g., lose weight or else). Areas that

are covered in a well balanced program relate to the physical, relationship, financial, work, recreational, mental, and spiritual aspects of the employees' lives.

Deliver Programs in a Socially and Physically Supportive Environment: Program delivery is extremely important. Helping employees who are ready to change their behavior needs to be done in a compassionate manner. In addition, if employees are to make true behavior change which they can maintain, the work and home environment must also be developed to support the change. For example, if drivers are to eat better, the selections at the restaurants where they eat while working must provide healthy alternatives. It is also important to involve the spouse in wellness programming to assure better menu alternatives at home.

Evaluate and Assess Programs: Evaluation of each program to determine effectiveness in achieving goals and objectives is essential. This provides the opportunity for continuation, redesigning, or elimination of individual components.

Behavior Change Process

The design phase of the total program development is generally the most complex and time consuming component of the process. An integral element of this process is the study of how individuals change behavior.

Behavior change models are important because they can help explain the nature and dynamics of health behavior as well as possible effects of external influences on behavior. Additionally, they can help identify the best methods for accomplishing change and provide situation outcomes that can be used in the change process.[59] The behavior change process has been modeled in several ways as explained below.

Transtheoretical Model

The Transtheoretical Model (Stages of Change Model) grew out of research focusing on how people change behaviors in smoking cessation and treatment of drug and alcohol addictions.[60] The basic premise is that behavior change is a process, not an event and that individuals are at varying levels of readiness to change. As a result, individuals at different points in the process receive the most benefit from interventions matched to their behavior stage.[61] Movement through the stages of change is considered a mark of success. Changes for some behaviors (e.g., eating healthier) are more complex than for others (e.g., smoking cessation) because the behavior is not ceased and because more cognitive and preparation skills are necessary. The five stages of behavior change are summarized in Table Three and detailed below:

---

[59] K. Glanz and B.K. Rimer. *Theory at a Glance: A Guide for Health Promotion Practice.* National Cancer Institute. Washington, D.C. 1995.

[60] James O. Prochaska, Carlo C. DiClemente, and John C. Norcross. "In Search of How People Change: Applications to Addictive Behaviors." American Psychologist. Vol. 47, No. 9. (September, 1992). American Psychological Association. Pp. 1102-1114

[61] Glanz and Rimer.

Table Three: Summary of the Stages of Change [62]

Behavior Change State	General Characteristic or Behavior
Precontemplation	Unaware of problem, has not thought about change
Contemplation	Thinking about change in the near future
Preparation	Making a plan to change
Action	Implementation of specific action plans
Maintenance	Continuation of desirable actions

- **Pre-contemplation stage**: "I enjoy eating my double cheeseburgers and fries and have no intention of eating low fat."
  Individuals in this stage have no intention of changing their behavior in the next six months and may be unaware of a need to change, resist efforts to do so or, may be discouraged because of suffered relapses. Treatment strategies for this stage should focus on increasing awareness and concerns. No action tips would be provided in this stage because individuals are not yet ready for action.[63]
- **Contemplation stage**: "Maybe I could try a chicken sandwich instead of a double cheeseburger—if it tastes good and doesn't cost too much."
  Individuals are considering behavior change but are still ambivalent towards the considered change. They are aware of the need to change but not yet committed to action. In addition, individuals in this stage have doubts that the benefits of the change outweigh the short-term costs (e.g., convenience).
- **Preparation Stage**: "I try to use lower-fat versions of foods, like salad dressing, when I can, but I'd like to do more, I'm not exactly sure how to do it."
  Although this "decision-making" stage is characterized by actively planning to change within a nearby time period (e.g., the next 30 days), individuals are not actively making change yet. However, individuals in this stage believe that the benefits of the planned change outweigh the costs.[64]
- **Action Stage**: "I try to eat low fat food by not stopping at fast food restaurants, not using butter on potatoes and other low fat tricks. But sometimes it's hard when I eat out or travel."
  Change is initiated in this and has been sustained for a period of one-day–six-months.[65] This stage requires a commitment of time and energy and relapse is very possible.[66]
- **Maintenance Stage**: "I feel great since I follow my low fat eating plan. I enjoy the weight loss I have experienced and the knowledge that I have really improved my health."
  This stage is characterized by the continuation—not absence— of change. Generally,

---

62 *Project LEAN Resource Kit: Tips, Tools, and Techniques for Promoting Low-Fat Lifestyles.* Project LEAN and The American Dietetics Association. 1995. Pp. 142–170.

63 G. W. Greene, Et Al. "Transtheoretical Model for Redcing Dietary Fat to 30 Percent of Energy or Less." Journal of American Dietetics Association. 1994. Pp. 1105–1110.

64 L. Ruggerio and James Prochaska. Introduction. *Diabetics Spectrum.* Vol. 6. Pp. 22–24.

65 Rugerio and Prochaska. Pp. 22–24.

66 W. M. Sondoval Et Al. "Transtheoretical Model: A Model for Nutritional Counselling." Topics in Clinical Nutrition. Vol. 9. 1994. Pp. 64-69.

this stage is not entered until change has been sustained for six months or more. Individuals in this stage must continuously work to avoid relapses.[67]

Assessing Readiness to Change

Assessing a person's readiness to change is a critical step in changing behavior. This assessment should be part of the employee's initial health screening.

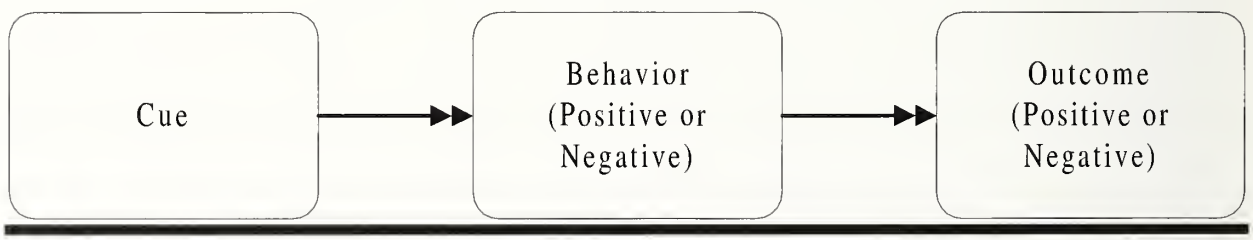
Strategies for Behavior Change

Depending on a person's health behavior stage, certain strategies are more likely to "spark" a shift in their behavior. The Social Cognitive Theory (SCT) is a basis for examining and classifying behavior change strategies. For each of the previously identified health behavior stages, Table Four provides a summary of strategies that can be applied following the Social Cognitive Theory.[68]

SCT is based on the premise that people learn not only through their own experiences, but also by observing the actions of others and the results of their actions. It uses concepts from cognitive, behavioristic, and emotional models of behavior change.

SCT assumes that people and their environments interact continuously and that many behaviors and outcomes are possibly based on the influence of different factors in the situation. As shown in Figure Two, SCT posits that outcomes, whether positive or negative, are the result of a linear process that is triggered by cues and subsequent positive or negative behaviors and then outcomes.

Figure Two: Social Cognitive Theory Process



[67] Ruggerio and Prochaska. Pp. 22–24.
[68] *Project LEAN Resource Kit.* Pp. 130–131.

Table Four: Summary of Behavior Change Strategies

Stage	Goal	Counseling Focus	Change Strategy
Precontemplation	Personalize risk	• Create a supportive climate for change • Discuss personal aspects of poor eating behavior • Assess nutrition knowledge and beliefs in myths	• Increase awareness of the need to change • Assess a person's current knowledge of and attitude toward health changes and work to increase the need or change as necessary
Contemplation	Increase self-confidence	• Identify problematic behaviors and barriers to change • Prioritize behaviors to change • Discuss coping strategies and solutions to barriers • Help motivate person to change • Encourage development of a specific plan for change • Enlist support from family and friends	• Self-monitoring • Goal setting • Contracting • Cue management • Cognitive restructuring • Reinforcement • Social support • Barriers counseling • Self-efficacy
Preparation	Initiate change	• Encourage small initial steps to change and set gradual goals • Discuss any earlier attempts to change and ways to succeed this time around • Help develop concrete plans	• Goal setting • Contracting • Barriers counseling • Cue management • Cognitive restructuring
Action	Commit to change	• Reinforce decision • Provide feedback and problem-solving advice • Encourage social support • Encourage self-rewarding behavior • Discuss relapse and coping • Reinforce self-confidence	• Self-efficacy • Cue management • Contracting • Social Support • Reinforcement
Maintenance	Continue commitment	• Plan follow-up support changes • Reinforce self-rewarding behaviors • Increase coping skills • Discuss relapse techniques	• Reinforcement • Cue management • Cognitive restructuring • Relapse prevention
Relapse	Reinforce commitment	• Reassess motivation and barriers • Discuss importance of maintaining change • Explore new coping strategies	• Barriers counseling • Relapse prevention • Cue management • Cognitive restructuring

SCT strategies help individuals control, plan for, and manage thoughts, feelings, and other situations that trigger unhealthy behavior. Examples of Social Cognitive Theory Strategies are provided below: [69]

- **Self Efficacy**: A Person's belief in the ability to perform a new behavior in a given situation. The importance of skill sets are reduced in individuals with self-efficacy. Strategies to increase self efficacy are:[70]
  - » Behavioral contracting
  - » Monitoring
  - » Reinforcement
  - » Skills mastery: Breaking down skills into manageable steps
  - » Modeling: Observation of another person accomplishing a goal (e.g., videos featuring coworkers)
- **Self-Monitoring**: Keeping records of health behavior.
- **Barriers Counseling**: Examines previous change attempts and reviews possible problem to develop alternative solutions.
- **Goal Setting**: Creates ownership in the change through setting realistic short and long-term goals and follow-up counseling.
- **Cue Management**: Identifying and changing environmental, social, and cognitive cues that trigger individual healthy habits by altering the learned association between a cue and learned behavior.[71]
- **Contracting**: Combines goal setting with positive reinforcement. This strategy establishes a ***signed written agreement*** that clearly describes the expected behavior to be achieved within a definite time period.[72]
- **Social Support**: Family, friends, and coworkers promote behavior change by offering praise and encouragement, and helping to eliminate cues.
- **Reinforcement**: Rewards are used to increase positive long-term healthy habits. At first, these rewards are provided more frequently than in later stages.
- **Cognitive Restructuring**: Process of altering "faulty thinking" habits by replacing them with positive coping thoughts.
- **Relapse Prevention**: It is critical to provide relapse prevention strategies during the action and maintenance stages. Relapses are "perceived lack of control" situations which can be minimized by using the model shown in Figure Three.

.

---

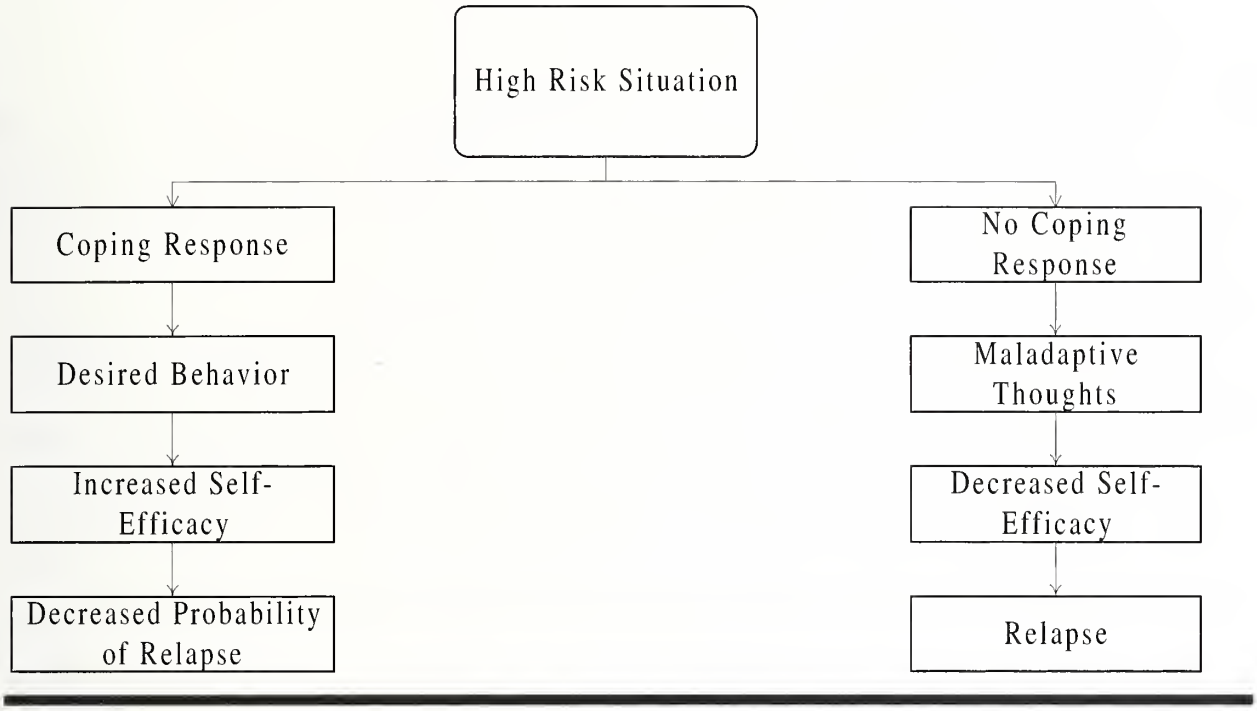
69 Glanz and Rimer.

70 A. Bandura. "Self-Efficacy Mechanism in Human Agency." American Journal of Psychology. Vol. 37. 1982. Pp. 122–147.

71 K. Glanz. "Nutritional Intervention: A Behavioral and Educational Perspective." *Prevention of Coronary Heart Disease*. Little and Brown Company. Boston, MA. 1992. Pp. 231-265.

72 B. B. Holli and R. J. Calabriese. *Communication and Education Skills: The Dietician's Guide, Second Edition.* Lea and Febiger. Philadelphia, PA. 1991.

Figure Three: Relapse Prevention Model

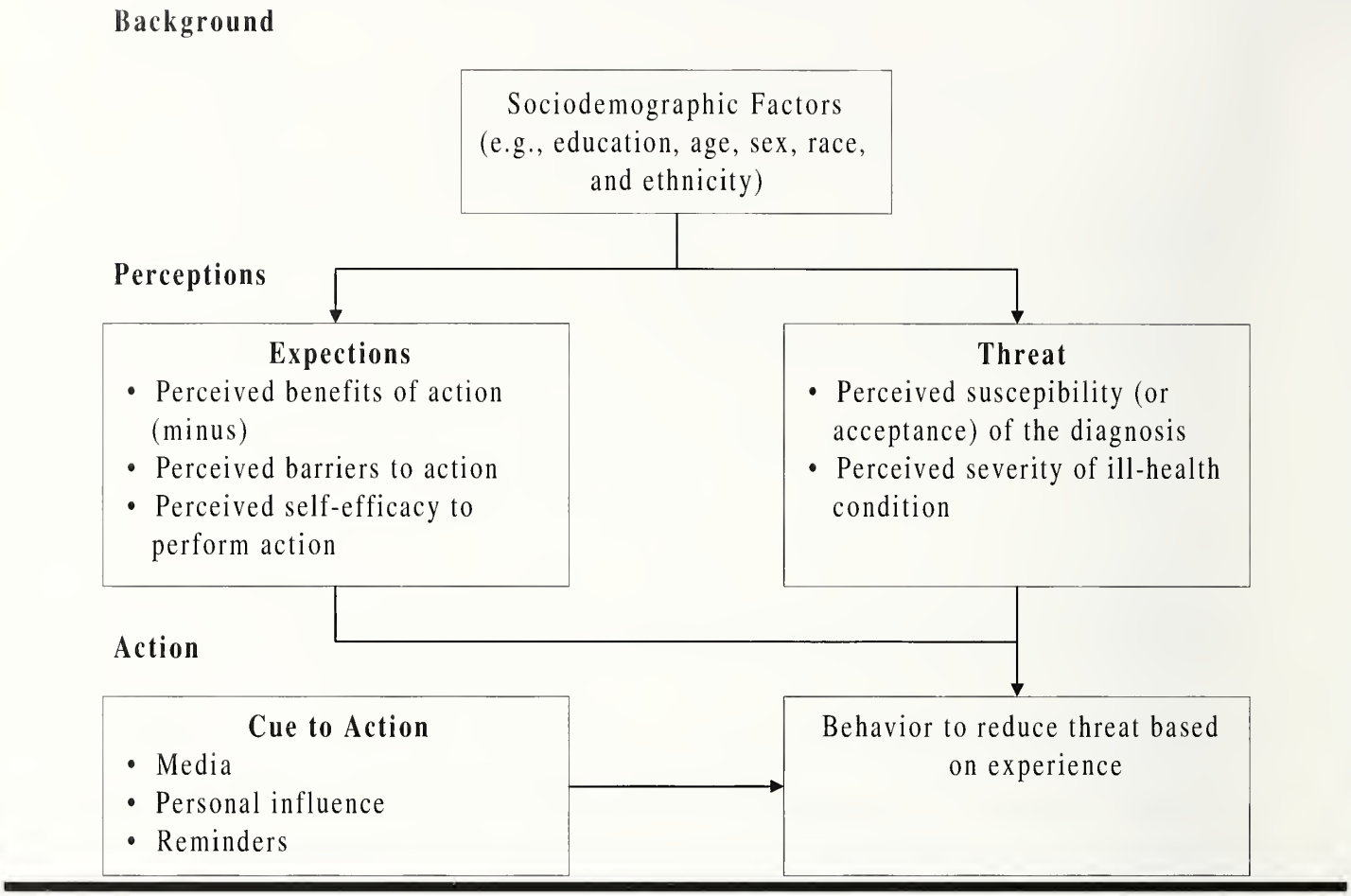


Health Beliefs Model

This model attempts to describe health behavior by focusing on the attitudes and beliefs of individuals. The model was first developed in the 1950's by psychologists to explain the lack of participation in prevention and health promotion programs and has since been expanded to test and examine short and long-term health behaviors in areas such as sexually-transmitted diseases. The model is illustrated in Figure Four and the key behavior variables included in the model are shown below.[73]

[73] Julie Dennison. Behavior Change: A Summary of the Four Major Theories. The Aids Control and Prevention Project, Family Health International, Behavioral Research Unit. Arlington, VA. 1997. Pp.1-18.

Figure Four: Health Beliefs Model



- **Perceived threat**: Individuals' assessment of a disease or conditions' threat consisting of:
  - » Susceptibility: One's subjective assessment of contracting a health condition
  - » Severity: One's subjective evaluation of the seriousness on contracting an illness and/or the ramifications of leaving it untreated.
- **Perceived benefits**: Individuals' believed effectiveness of the strategy proposed to reduce the illness threat.
- **Perceived barriers**: Potential negative consequences that may arise from taking a proposed course of action.
- **Cues to Action**: Bodily or environmental events that motivate people to take action.
- **Self Efficacy**: Belief in being able to successfully execute the behavior required to produce the outcome(s).

This model has been used effectively in smoking cessation and cardiovascular risk factor reduction programs because of the perceived susceptibility and severity associated with lung cancer and heart disease. However, most health beliefs model research suggests that there may

be more to individual motivation in sustaining long-term behavior change than can be explained by health beliefs alone.[74]

Driver Focus Groups

As described in the project workplan, driver focus groups are being conducted to gain an understanding of drivers attitudes and perceptions of their health and how they currently achieve the best health. Two focus group sessions, shown in Table Five, have been held as of this date.

Table Five: Driver Focus Group Descriptions

Session	Date	Location	Number of Drivers	Number of Spouses
One	June 18, 1997	Iowa Truck Driving Championships Ames, Iowa	16	9
Two	August 17, 1997	Collins and Aikman Corp. Albamarle, North Carolina	15	8

As planned, each of the above sessions was approximately one and one-half hours in length. It began with a 10-15 minute overview of the project, and addressed a predetermined list of questions. The drivers and their spouses were compensated for their attendance. Extensive notes were taken by individuals not part of the group discussions.

For each of the focus groups held to date, the following section provides an overview of the focus group attendees and a list of their responses to each of the questions.

Driver Wellness Focus Group One

Overview of Attendees

The group of 16 drivers and nine spouses was comprised of nine for-hire company drivers, five permanently-leased owner-operators, and two private company drivers. The companies represented by these drivers included a 100-truck for-hire flatbed truckload operation, a 750-truck for-hire less-than-truckload operation, several mid-sized refrigerated for-hire truckload fleets, and a 250 truck private fleet operated by a major mid-western grocery chain. The drivers were all men with an average age of 42 years. Most of these individuals in this group had been drivers for a number of years and all were contestants in the Iowa State Truck Driving Championships.

Generally, the group was keenly interested in the Wellness program and felt that just attending the focus group provided them with information to better-manage their health behaviors.

---

[74] Julie Fluery. "The Application of Motivational Theory to Cardiovascular Risk Reduction. IMAGE: Journal of Nursing Scholarship. Volume 24. No. 3. (Fall, 1992). Pp. 229-239.

Question Responses

Health Beliefs

1. What are your concerns as they relate to your health?

    - To live longer
    - Being overweight
    - High cholesterol level
    - High blood pressure
    - Live a productive life
    - Getting regular sleep
    - Bending over to tie shoes
    - Lowering stress
    - Getting enough exercise

2. Do you have any health behaviors you would like to improve? What?

    - Eating healthier
    - Consuming less caffeine
    - Increasing exercise
    - Having enough energy
    - Stop eating when full
    - Lower stress

3. What keeps you from improving your health behaviors?

    - Lack of time
    - Motivation
    - Too tired/ decreased energy
    - Too many things to do
    - Job duties are excessive
    - Lack of availability of healthy foods
    - Restaurants don't provide healthy foods/too expensive in restaurants
    - Lack of exercise facilities at truck stops
    - Unsafe neighborhood/ don't want to walk around in unfamiliar place and/or at night
    - Sitting and waiting to unload truck - waste time; think it's only going to be 20 min, ends up being 7 hours
    - In the time wasted (loading or unloading), we could have gone walking, but didn't know it was going to take so long
    - Can't leave the truck - might get robbed
    - On a different work cycle - get off work at 3am

4. Do you practice any self care? What?

- YMCA -1-1 ½ hr. exercise
- Lifting weights
- Walking ½ -1 hr
- Weights in room
- Watch fat grams, not kcal (makes me feel better mentally)
- Take vitamins
- Drink a lot of water
- Obtain enough sleep (so job can be safe)
- Relax after work (unwind by taking warm bath)
- Turn off television
- Hot tub at home or hotel
- Dentist
- Wear glasses
- Practicing hobbies

5. How would you rate the overall health of individuals in your profession?

Poor	Fair	Good
majority	II	I

How do you compare?

- A little bit better

6. Do you believe how you eat, exercise, manage stress and take care of your self affects your health on a daily basis? Why? Why not?

- Yes - absolutely

7. Are you concerned about developing a serious illness in the next five years? Why? Why not?

Yes	No
hereditary	keep improving
smoking	can't afford to (payments on truck)

8. Do you believe you can influence your chances of developing cancer, heart disease, diabetes, etc? Why? Why not?

- Yes, absolutely through changing lifestyle and living healthier

9. Do you believe you can afford to be healthy? Why? Why not?

Yes
How can you afford not to be?
Our grocery bill has gone down since we've started eating healthier
Produce is cheaper

No
Bottled water is more expensive than soda
Healthy foods at restaurants are more expensive and not as tasty
The portions are smaller, not healthier, and more expensive

Health Habits

1. Do you believe exercise affects your health, energy level, mood, stress, etc? Why? Why not?

    - Yes

2. Do you exercise? Why? Why not?

Yes	No
Walking	Tired
I try to	Lack of energy
	Poor time management
	Lack of facilities
	Location (dangerous, unfamiliar city)
	Cold season
	Done with work 10pm- too late to exercise

3. If not, would you ever exercise? Why? Why not?

    - Yes, absolutely

4. What can be done to help you exercise?

    - Exercise facilities at truck stop
    - Paved walking stops at rest stops
    - Healthy and inexpensive meals at restaurants
    - More information given to truckers about exercise (wellness)
    - Nutritional analysis given at restaurants
    - Terminals (home base) exercise facilities
    - Change the trucker log book to not work so many hours to have time to exercise
    - Provide truckers with more time

5. Do you believe what you eat affects your mood, motivation, energy level, ability to fight disease, overall health? Why? Why not?

    - Yes - feel better mentally and physically

6. What are typical foods you eat?

   - Turkey, chicken
   - Lettuce with low or nonfat dressing (if available - usually not at restaurants)
   - Popcorn cakes
   - Milk
   - Vending machine foods
   - Broiled chicken at restaurant
   - Subway (6 g. Fat or less sandwiches)
   - Eat once a day - Chinese food/deli
   - Tired of eating same food
   - Salad bars, maybe, but the produce looks bad

7. Where do you eat? Why? What are your options?

   - Restaurants/coffee shops/fast food
   - Options are high fat greasy food
   - Again, healthier is more expensive
   - Pack a lunch but found that snacking a lot from boredom
   - Healthy items at fast food (Subway, McDonald's has a lot of low fat foods)
   - Quick trip has bananas

8. What can be done to help you eat better?

   - Reasonable pricing (orange juice is expensive compared to soda or coffee)
   - Fresh fruit at terminals (home base)
   - Nutritional analysis at restaurant/fast food
   - National coupons for restaurants- healthy foods
   - Trucking company to pay for exercise membership
   - Have a wellness program or trucking company make lunches for you
   - Descriptive, colorful pamphlets on healthy eating

9. Does your job create stress in your life? How?

   - Yes
   - Dealing with 4-wheelers (reg. Cars) on the road pulling out in front, and coming to a stop
   - Weather, snow -harsh driving conditions
   - Dispatcher has an attitude
   - Management/supervisors have poor people skills - need to be more sensitive
   - Managers see us as "dumb truckers"
   - Pressure to make deliveries on time
   - Waiting around for 10 hrs to have delivery checked
   - Working approximately 70 hours per week

- Don't get paid by hour, but instead by mile - so lose money just sitting there
- Driving into unknown territory - the ghetto/bad neighborhood
- Feeling unsafe, going to get robbed
- The 16 individuals in this focus group have known seven truckers in the last 12 months who have been robbed

10. How do you deal with your stress?

- Drink alcohol
- Self-talk
- Never argue with a fool - he may think he's doing the same
- Sometimes talking to the dispatcher
- Listen to CB to avoid traffic
- Listen to music on radio or CD system
- Watching nonviolent "positive" movies at home - set good example for children
- Listen to Christian music
- Drink decaf coffee
- Going to church
- Work sometimes lowers stress because home life is stressful
- Hobbies
- Getting massage from spouse
- Just walking away

Program/Design/Delivery

1. What motivates you?

- Losing weight is a reinforcement
- Magic pill
- Rewarded with money for not using sick days
- Maintaining weight
- Takes more than money to motivate - need info and support

2. What kind of programs appeal to you?

- Eating programs - packing a lunch for the truckers
- Coupons for restaurants for healthy foods
- Fitness programs - pay for membership
- Annual/6 mos. physical/assessment of health
- Exercise facilities at truck stop or terminal
- Program to help quit smoking

3. How do we get programs to you?

    - Mail
    - Trucking magazines "Transport Topics" or "Overdrive" or "Truckers News"
    - Billboards
    - Cassettes
    - Newsletter (that comes along with paycheck)

4. How much do you and your family spend on your health care/month?

    - Not sure/ or weren't willing to discuss
    - Not a lot of responses on this question
    - Company is willing to pay for cancer treatment, but not the "nicotine patch"

5. If we sent out a wellness survey to you, would you send it back if we didn't send money?

    - If there was a stamped envelope
    - 5 people raised their hand

Driver Focus Group Two

Overview of Attendees

This focus group was comprised of 23 individuals consisting of 15 drivers (i.e., 14 men and one woman) and eight spouses. The drivers were all regular employees of a private fleet operation for a major automotive textile products manufacturer located in the Southeast. The average driver age was 54.5 ± 3 years. Generally, the drivers were long-tenured employees with an average length of employment in excess of 10 years (Range of employment: 1–25 years). Most of the drivers were solo operators although one husband and wife team was also present. Several of the drivers were on regular/short haul runs because of medical restrictions or job preferences.

Question Responses

Health Beliefs

1. What are your personal health concerns?
    - Diet
    - Cholesterol
    - Weight
    - Blood Pressure
    - Proper Rest
    - Blood Sugar
    - Heart
    - Obesity
    - Over eating
    - Lack of proper exercise
    - Adequate time to exercise

- Dedication to a health program
- Back injuries
- Behavior issues
- Neck injuries
- Want to feel fit and healthy so they can do the job
- Feeling good
- Healthy living after retirement
- Responsibility to job, self and family

2. What are your greatest fears concerning your health?

    - Heart Attack (One driver stated that a previous heart attack had strengthened his commitment to better health)
    - Stroke
    - Not being able to care for one's self and becoming a burden to the family
    - Becoming disabled, not being able to provide for the family
    - Phlebitis

3. How would you rate your profession on a health scale, with 10 being very healthy and one being the worst?

    - 8, 5, 4, 3 (The answer of eight later became a two or three, as the question was misunderstood)
    - Below the national average due to so many drivers being overweight, lack of exercise static posture, bad food on the road, high blood pressure, and tendency to smoke more.

4. Who influences how healthy you are?

    - Family (positive)
    - Job (both positive and negative)
    - Time and schedules
    - A constant exhausted state of being

5. Overall, who is responsible for your health?

    - We (drivers) are.

6. What responsibilities do you feel the company has toward your being healthy?

    - None, but our company is trying to do something
    - Our company takes the initiative but we don' t respond.

7. Why do you think your company is so concerned?

    - So we can work and do the job.
    - Safety
    - We are self-insured
    - It's our responsibility.

8. What if you had to pay for your own heath care?

    - We'd all be healthier.

9. What if the company offered you money in return for taking a $5,000 deductible for health care?

    - No. We wouldn't take it.

10. What do you think keeps you from being the healthiest you can be? In other words what gets in your way?
    - Time
    - Neglect (put it off until tomorrow)
    - Lack of discipline
    - Procrastination
    - Self invincibility
    - Wife's cooking (She cooks what the family likes, which is not necessarily healthy)
    - Lack of health food available on the road -- minimal options.
    - Stress

11. Do you believe you have control or are there other forces that control your health?

    - Yes - we have the control.

12. Do you think you can afford to be healthy?

    - Can't afford not to be
    - Costs less to be healthy
    - People need support and higher self esteem to want to be healthier,

Health Habits

1. If you could improve one behavior what would it be?

    - Commitment to exercise
    - Eating better

2. If we developed a program based within the company, what would it be and how could we help you exercise more?

- Develop a program to exercise in truck
- We have no access to showering if we exercise on the road—such as walking while waiting on loads. If we're gone two and a half days, we may not get to shower and working up a sweat adds to the problem.
- More time
- We don't want to do anything until we're ready to do it ourselves (self-motivated). We have to want to do it.

3. List your stressors.

- People, personalities
- Traffic
- Weather conditions
- Road construction
- Waiting in general
- Lack of information to do he job
- Lack or communication
- Family
- Living conditions
- Financial situation
- Customers
- Company equipment
- Holidays
- Lack of time in the day
- Self-imposed stress - trying to be perfect

4. What would help you deal with stress better?

- Exercise
- Eating better
- Proper rest

Program Design/Delivery

1. Would you participate if the company offered you a program?

- Don't have the time
- Company has tried but we don't have the time.
- No: too many things to do around the house.

2. What could your company do to make you think they care about you?

- Build exercise room with shower on the property (fitness center)
- Spouse involvement -allow them to accompany them on a trip
- A spouse rider program would improve family relations
- A raise (But when asked if they would trade their health for $10 million, they all answered 'No')

3. Do you experience problems with fatigue?

    - Yes!

4. How do you deal with it?

    - Sing
    - Stop and walk
    - Gum
    - Listening to a radio talk show
    - Speeding .. makes you look around for the law
    - Start an argument on the CE then sit back and listen to the argues
    - Cold soft drink - not necessarily with caffeine
    - Stop and take 30 minute nap. Need more pull-off areas for this purpose. Many rest areas are not safe.

5. What motivates you to do things?

    - Living
    - Spouse
    - Pride
    - Money
    - Incentives
    - Looking towards retirement

6. What is your passion?

    - Spouse
    - Children
    - Family
    - Travel
    - Beach
    - Hunting
    - Pets
    - Fishing
    - Working in general
    - Vacation
    - Shopping
    - TV surfing
    - Grandchildren
    - Farming
    - Weekends
    - Clowning
    - Outdoors
    - Crafts
    - Yard Work
    - Gardening
    - Boating

7. What would be the best way to deliver a health program if one were developed?

    - Videos
    - Audio tapes (motivational)
    - Seminars
    - Phone calls
    - Buddy system

- Entire family involvement

8. Would you be willing to pay for a service to improve yourself?

    - Yes

Summary and Research Implications

The purpose of this document was to provide a summary of the literature examining driver health, review existing driver wellness programs, and determine the essential elements and processes of effective wellness programs. The results of this summary revealed:

- There is a scarcity of research into the health and health behaviors of commercial vehicle drivers.
- Existing data shows a generally poor state of health of commercial drivers.
- There is sparse implementation of driver wellness programs and very low program participation rates where in existence.
- The effectiveness of any driver wellness program depends on how well that program can reach these individuals.
- Literature and behavior change theories exist to design and implement quality wellness programs
- It is important that management commit to driver wellness

Scarcity of Research

Compared to other populations such as airline pilots, this review revealed a dearth of information regarding the health and health behaviors of truck drivers. This may be partly attributable to differences in public perceptions concerning the responsibilities (i.e., in terms of human lives) of airline pilots versus truck drivers.

Poor State of Health

As shown in Table Five, the information located shows a poor state of health in these individuals.

Table Five: Health Statistics of Commercial Vehicle Drivers

Risk Factor	Driver Prevalence	U.S. Population Prevalence
Smoking	49–54 percent	25–28 percent
Obesity	70–73 percent	31–33 percent
Hypertension	33 percent	25 percent
Stress	Higher stress levels than 91 percent of the U.S. population	

This poor health was confirmed in the two driver focus groups. Drivers in these groups perceived their profession as less-healthy than the average U.S. population. However, many of these drivers would like to change their health behavior given information and motivation.

Sparse Program Implementation

Less than optimal health, defined as occurrence of at least one of the risk factors described in this paper, is very expensive both in terms of direct medical costs and indirect costs. This is an area which is costing the motor carrier industry much in terms of financial and human resources. The industry has been very successful in the truck safety arena by reducing accident involvement and improving performance during recent years and has realized paybacks for the resources invested. Assuming that companies understand and/or realize the positive benefits-to-costs ratios of a driver wellness program, a similar payback could be achieved.

Wellness programs in the industry are beginning, but still are not the norm. When they do exist, they often are used only by corporate staff, and not the drivers. In addition, the programs tend to be generic and not at all geared toward the drivers. The bottom line is that currently there are very few drivers participating in any wellness programs to improve their health.

Reaching the Drivers

The driver population has very specific needs based on their very demanding job. This makes the development of programs even more challenging. This is confirmed by the experience of the programs in existence which have very low driver participation—even though they need the help greatly. The focus groups showed, however, that these drivers were interested, but no one has figured out how to reach them. To make the project successful, the program must be appealing to drivers and provide assistance they can use.

Program Design

Behavior change theories need to be considered in the design of programs for commercial vehicle drivers. Not using the theories would likely result in programs which do not produce a very large behavior change or success rate.

Importance of Management Commitment

Several programs designed specifically for drivers, are not currently being delivered even though they showed positive results. It will be very important to determine and report the attitude of upper management from the management surveys (see Appendix Two) to be done this fall. It is hoped that the project team can learn whether the reason there are no programs is because of lack of support, lack of information on the need, or lack of methodology to implement these programs.

Appendix

Appendix One: Current Wellness Programs and Practices Survey

1. Can you give me some demographics on your company?

    - Number of employees:
    - Number of drivers:
    - Major work area:

2. Where do health care costs and the importance of keeping the workforce healthy fall in your company's list of priorities?

3. Does your company have a wellness program?

    - Why?
    - Why not?

(Stop if there is no program)

3. Do you believe employees take ownership and responsibility for their own health?

    - Why?
    - How do you think this could be improved?

4. Are healthy people rewarded?

5. How would you rate the health of your employees? (scale 1-10)

6. What benefits are provided for your employees?

7. What is available to spouses and retirees?

8. Do you look at health care costs?

9. Have you looked at spouses and retiree health care cost?

    - What did you find?

10. Have you seen costs come down since starting a wellness program?

11. What are worker's compensation costs per employee?

12. Do you have a budget?

13. What is your staffing?

14. Are your health promotion dollars divided equally as a benefit to all employees or are programs developed that work in areas where greatest impact can be made?

15. Are employees allowed to take work time to participate in health activities?

16. What programs do you have?

17. What would you like to do to improve your program?

18. Did you survey your drivers on what they need for wellness?

- Did you do a health behavior and attitudes survey?

19. What is your driver turnover rate?

20. How would you rate your wellness program? (scale 1-10)

21. What do you see as strengths of your program?

22. What do you see as weaknesses of your program?

23. How is the participation in you programs?

- How do you measure it?
- Is it different for corporate employees vs. drivers?

24. Do you have health data statistics on your truck drivers?

24. Have you reached your trucking population and how do you think you could better reach them?

Appendix Two: Draft Trucking/Bus Industry Executive Wellness Questionnaire

1. What does your company do?

2. What are the greatest challenges facing your industry today?

3. Where does the importance of your work force's health and health care costs fall in your list of priorities for your company?

4. Does your company have a wellness program?
   Why?

   Why not?

5. If you have a wellness program, how would you rate its effectiveness (scale 1-10)?

6. Do you believe your employees take ownership and responsibility for their own health?
   Why?

   How could this be improved?

7. Do you believe in rewarding healthy people? How would you or do you do it?

8. What benefits do you provide your employees?

   What about spouses?

   Retirees?

9. Do you know how much your company spends on health care costs per employee per year?

   Or workers compensation?

10. Do you analyze your health care costs? Do you know your major cost areas?

11. What percentage of the health care dollars do you believe should be spent on wellness?

    What do you spend?

12. Do you survey your drivers about their needs? If yes, what do you find?

13. What is your driver turnover? How do you think you can decrease this?

14. Research has defined the following characteristics of a 'healthy' organization. How does your company rate in these areas on a scale of 1 (lowest) to 5 (highest)?

a)	A clear stated mission, purpose, and reason for being	1	2	3	4	5
b)	Employee involvement in decision-making and control over job responsibilities	1	2	3	4	5
c)	Effective performance evaluation system with goal-setting and feedback	1	2	3	4	5
d)	Employee health promotion and services program	1	2	3	4	5
e)	An accessible EAP	1	2	3	4	5
f)	Corporate non-smoking and other positive health policies	1	2	3	4	5
g)	Active social support networks	1	2	3	4	5
h)	Effective communication channels	1	2	3	4	5
i)	Career and skill development programs	1	2	3	4	5
j)	Effective supervisor and leadership training skills	1	2	3	4	5
k)	An attitude that it's employees are appreciated and noticed for a job well done	1	2	3	4	5
l)	Attention to quality products and services	1	2	3	4	5

Gettin' in Gear

Design Development and Evaluation of

Truck and Bus Driver Wellness Programs

Section II

DEPARTMENT OF TRANSPORTATION
UNITED STATES OF AMERICA

FMCSA
Federal Motor Carrier Safety Administration

Design, Development and Evaluation of Driver Wellness Programs

Technical Memorandum Number Two: Survey Analysis and Core Program Design

May 28, 1998

Prepared for:

Federal Motor Carrier Safety Administration
Office of Research and Technology
MC-RTR
400 Seventh Street, SW
Washington, DC

Prepared by:

Sue Roberts
Sue Roberts Health Concepts
1515 Linden Street, Suite 220
Des Moines, IA 50309

Jim York
Private Fleet Management Institute
National Private Truck Council
66 Canal Center Plaza, Suite 600
Alexandria, VA 22314

Table of Contents

List of Tables

List of Figures

Introduction

In May, 1997, the National Private Truck Council's (NPTC) Private Fleet Management Institute (PFMI) began a research program in cooperation with Sue Roberts Health Concepts, Inc., ATA Foundation, Inc., and the Federal Highway Administration's Office of Motor Carriers (OMC) to design, develop, and evaluate a model truck and bus driver wellness program. This wellness program is being developed to provide a resource for addressing truck and bus industry challenges in the areas of driver safety, turnover, performance, job satisfaction, and industry competition. It is intended to provide strategies to give drivers opportunities for improved health. With improved health comes increased happiness, peace, and prosperity, benefiting the individual, the company, and the industry.

As envisioned in the project workplan, this program has five primary research tasks:[1]

- Task One: Wellness literature and programs review
- Task Two: Design core wellness program
- Task Three: Develop and pilot test programs for identified industry segments
- Task Four: Evaluate program effectiveness and make necessary revisions
- Task Five: Develop and implement program marketing and packaging strategy

This document is the product of the Task Two research efforts. Comprised of five sections, the document provides a summary and analysis of the driver and executive surveys and presents the core wellness program.

Driver Survey Description

The following paragraphs provide a brief description of the development of the survey instrument, target population and sample selection, survey distribution and response methods, and response rate.

Survey Development

The survey was designed to address each of the driver wellness issues shown below:

- Health concerns
- Health beliefs
- Health behaviors
- Health knowledge
- Program delivery preferences
- Demographics

For each issue, 5–15 Likert-scale response and open-ended questions were developed. Preliminary and final draft surveys were provided to Steering Committee members for review and approval. The survey was then distributed to 50 truck and bus drivers for pre-testing. Based

[1] Task 1A Report: Draft Detailed Workplan. June 8, 1997

on the results of the survey pre-test, necessary revisions were made to minimize misinterpretation of certain questions.

Target Population and Sample Selection

The survey was targeted for the nearly three million licensed commercial bus and truck drivers within the United States. The survey sample comprised 2,750 truck and bus drivers. Twenty-five-hundred (2,500) of the survey recipients were randomly selected from a pool of 6,500 driver names provided by 15 private and for-hire truck fleets and motor coach operators who agreed to participate in the project. Individuals in this pool were comprised of company drivers, owner-operators, and leased driver employees. Candidate companies were selected from the membership databases of National Private Truck Council (NPTC), American Trucking Associations (ATA), and American Bus Association (ABA). Two hundred and fifty (250) of the survey recipients were selected randomly from the membership database of the Owner Operators and Independent Drivers Association (OOIDA).

Generally, companies participating in the project agreed to provide their complete driver roster files which included the name and home address for every currently employed driver. However, three companies wishing to participate in the project could not provide their complete driver roster files because of security reasons. For these companies, a fixed quantity of surveys and instructions on selecting survey recipients were provided. For example, one company was asked to randomly select 50 drivers from their master file of 750 names.

Distribution and Response Methods

As shown in Appendix One, the eight-page survey was printed on 8.5 by 17 inch paper and center-folded to booklet format. The booklets were then folded and inserted into a six by nine inch envelope.

The surveys were mailed via first-class mail on December 9, 1997. Reminder post cards were mailed to each survey recipient on December 16, 1997.

After completing the questionnaire, respondents simply folded and taped the document and returned it via specially bar-coded business reply mail to Sue Roberts Health Concepts, Inc., (SRHC) where a first-class mail permit was established so that there was no postage fee for respondents.

Response Rate

As of January 16, 1998, 448 usable survey responses were received. Since 111 of the 2,750 surveys were undeliverable, the effective response rate was 17.0 percent. The average margin of error for the Likert Scale response questions was ± 3.4 percent (margin of error for proportions), considerably less than the initial margin of error tolerance of ± 5.0 percent.

Method of Analysis

The following sections provide a description of the data coding and entry techniques and analytical methods.

Data Coding and Entry
Completed surveys were forwarded by SRHC to NPTC offices for coding and entry. After being examined for completeness and usability, each survey was numbered and coded into a Lotus Approach database application, which had been developed for this project.

Likert-Scale response questions were assigned a value of one to five, based on the value circled for each question. Responses to the health behaviors (i.e., 29–40), health knowledge (i.e., 41–44), and demographics (i.e., 62–67) questions were entered as numeric values by converting a response value of ***"a"*** to a data value of one, response value of ***"b"*** to a data value of two, etc. *"True-false"* and *"yes-no-maybe"* questions were entered similarly. Program delivery preferences (i.e., question 61) were entered as either a value of one or zero, with each circled item assigned a value of one and each non-circled item a value of zero. Open-ended response questions (i.e., 55, 57, 59, 61, 68, and 69) were entered in a word processing document.

Analytical Methods
Once data coding and entry were completed, an in-depth analysis of the survey was conducted using the MINITAB statistical analysis package. First, descriptive statistics were computed for each of the survey questions. Products of the descriptive statistical analysis were:

- Mean response value
- Standard deviation
- Standard error of the mean
- 95 percent confidence interval

Next, an inferential statistical analysis was conducted to examine important relationships between various response sets. Specific statistical tools used included hypothesis tests and mulitvariate techniques. Two sample t-tests were used for assessing whether the observed difference between two mean responses was larger than could have occurred by chance alone. The multivariate technique of Principal Components was used to identify groups of correlated variables that could collected together to create improved measurements. For example, responses for questions 1–14 were combined to develop an overall "level of concern" measure. This combined measure was then used to compare "level of concern" among demographic groups (e.g., long-haul vs. local/short-haul drivers).

Survey Results and Analysis

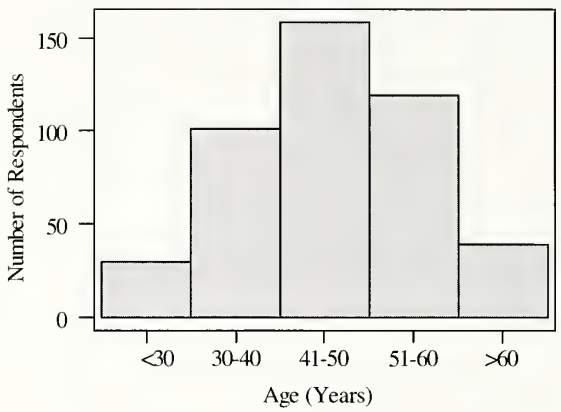
The survey analysis, provided below, includes demographics, descriptive statistics and analysis, and inferential analysis.

Demographics
Survey respondents were asked to indicate age, gender, driving experience, company size and job information. The response for each demographic category follows.

Age
Figure One shows the respondents age distribution among the five age categories provided in the survey. Similar to other industry surveys, the majority (e.g., 35 percent) of our survey

respondents were between 41 and 50 years.[2] This helps to verify that we received a representative sample of the population.

Figure One: Respondents Age



Gender

Respondents were 96 percent male and 4 percent female, which is comparable to the overall gender distribution of the profession.[3]

Experience

Figure Two illustrates the majority (68 percent) of survey respondents had more than ten years commercial vehicle driving experience. This is *typical* of other industry surveys. For example, one survey reported respondents average driving experience as nearly twelve years.[4] This distribution is beneficial to the project, since well-experienced drivers are a target driver wellness program audience, and since their observations would more likely resemble driver realities.

---

[2] In a 1993 job satisfaction survey of 3,910 commercial drivers, the average reported age was 41.2 years. Gene C. Griffin, Julene M. Rodriguez, and Brenda M. Lantz. *Job Satisfaction of U.S. Commercial Drivers.* UPTGI Report No. 90. The Upper Great Plains Transportation Institute, North Dakota State University. 1993. Pp Appendix A-18.

[3] Ninety one percent of the 3,910 respondents to a 1993 job satisfaction survey were male and 9 percent were female. Ibid. 1, P.13.

[4] The average driving experience of 3,910 respondents to a 1993 job satisfaction survey was reported as 11.92 years. Ibid. 1, P. A-19.

Figure Two: Driving Experience

Driving Job

Drivers were asked to indicate their primary job. As shown in Table One, the majority of respondents considered themselves long-haul truckload drivers. These individuals are a significant portion of the total driving population. They are primary candidates for wellness programs as they spend a significant portion of their lives on the road, which increases difficulty in maintaining a healthy lifestyle. Again, responses to this question are reflective of the overall industry. For example, a recent Office of Motor Carriers study estimates that local/short haul carriers comprise 20 percent of all registered interstate carriers.

Table One: Primary Driving Job

Job Description	Percent
Local/short haul (within 100 mile radius)	22.8
Long-haul, less-than-truckload	12.8
Long-haul, truckload	57.6
Motorcoach	6.8

Employment

Drivers indicated whether they were company drivers, owner operators, or leased employees. As shown in Table Two, the majority of respondents indicated they were employed as "company drivers."

Table Two: Employment

Employment Method	Percent
Company driver	77.2
Owner-operator	21.5
Leased employee	1.1

Company Size
Most drivers indicated they worked for a large company (50 or more drivers), as shown in Table Three.

Table Three: Company Size

Company Size (Number of Drivers)	Percent
One driver	1.2
2–10 drivers	9.9
11–49 drivers	17.5
50 or more drivers	71.5

Descriptive Statistics and Analysis
Descriptive statistics were computed for each of the previously noted "wellness issue" question sets. Results are provided below.

Health Concerns
Respondents were asked to indicate their level of concern in 14 health areas (questions 1–14). For those items perceived as "almost never a concern," respondents circled a value of one. For those items perceived as "almost always a concern," respondents circled a value of five. As shown in Figure Three and Table Four, drivers responding to this survey were most concerned about lack of family time, lack of exercise, weight, fatigue, poor diet and stress. They were less concerned about drug, alcohol, and tobacco usage, diabetes, and back/neck injuries.

Figure Three: Health Concerns

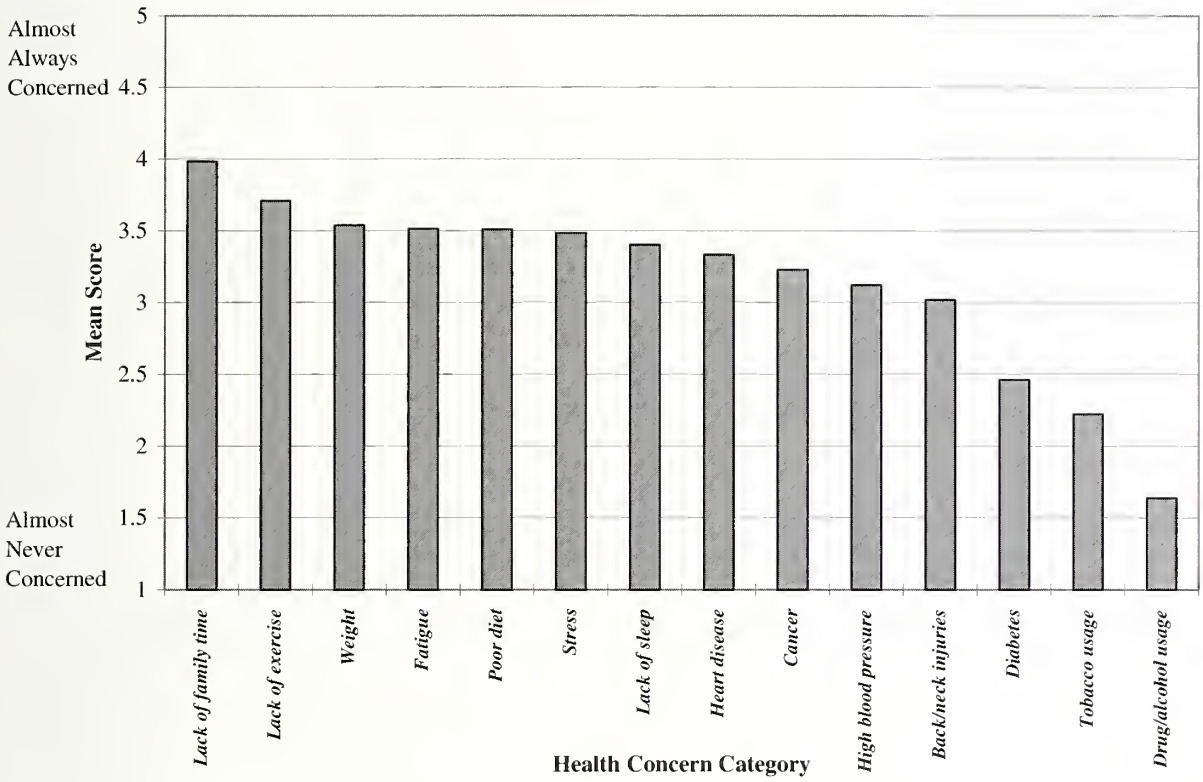


Table Four: Health Concerns

Health Concern	N	Mean	S.E. Mean	Lower C.I.	Upper C.I.
(7) Lack of Family Time	446	3.98	0.05	3.86	4.10
(5) Lack of Exercise	446	3.71	0.05	3.59	3.82
(1) Weight	448	3.54	0.06	3.42	3.65
(14) Fatigue	448	3.51	0.06	3.39	3.63
(4) Poor Diet	447	3.51	0.06	3.39	3.62
(13) Stress	446	3.48	0.06	3.35	3.60
(8) Lack of Sleep	444	3.40	0.06	3.27	3.52
(2) Heart Disease	448	3.33	0.06	3.20	3.46
(3) Cancer	448	3.22	0.06	3.10	3.35
(6) High Blood Pressure	445	3.12	0.07	2.98	3.26
(12) Back and Neck Injuries	447	3.02	0.06	2.88	3.15
(9) Diabetes	447	2.46	0.07	2.32	2.60
(10) Tobacco Usage	447	2.22	0.07	2.07	2.36
(11) Drug and Alcohol Usage	444	1.63	0.06	1.51	1.75
Average Std. Dev. Of Mean Response		1.37			

Health Rating

Drivers were also asked to rate their own health (question 15) and the health of the average driver (question 28) from 1–10, using a value of one for "very poor" and a value of 10 for "excellent." As shown in Figures Four and Five, drivers rated their own health higher than the average driver. In fact, respondents "own-health" rating was more than 2.0 points higher than the average driver. This difference is statistically significant. The p-value for this difference, a measure of the likelihood of a difference like this when there is, in fact, no real difference, is less than 1 in 10,000.

Figure Four: Self Health Rating

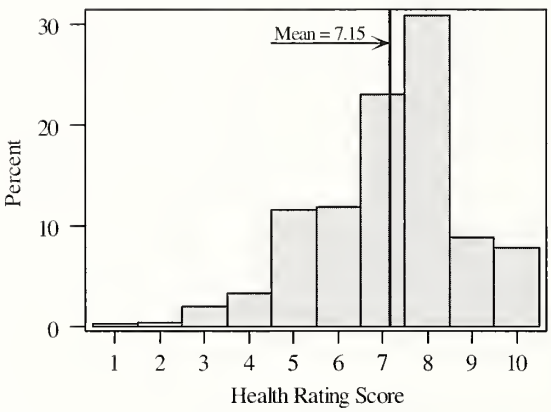
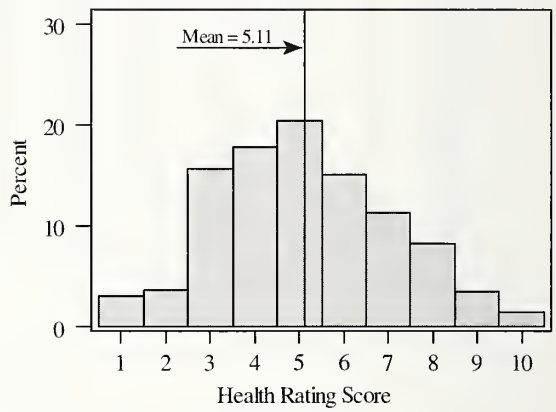


Figure Five: Health Rating of "Average Driver" in Professior



Health Beliefs and Behaviors

Respondents were next asked to indicate their level of agreement regarding 12 health beliefs and health behaviors (questions 16–27). For those items perceived as "strongly disagree," respondents circled a value of one. For those items perceived as "strongly agree," respondents circled a value of five. Respondents most strongly believed retirement, having enough energy, family, and work were important reasons for being healthy. They also exhibited a strong belief in their responsibility for and control of their own health.

This group of questions also addressed several health behaviors questions. As shown by data in Figure Six and Table Five, respondents indicated much lower "action" values (e.g., question 25; I exercise regularly) than "belief" values (e.g., question 20; Health is important for retirement).

Figure Six: Health Beliefs/Behaviors

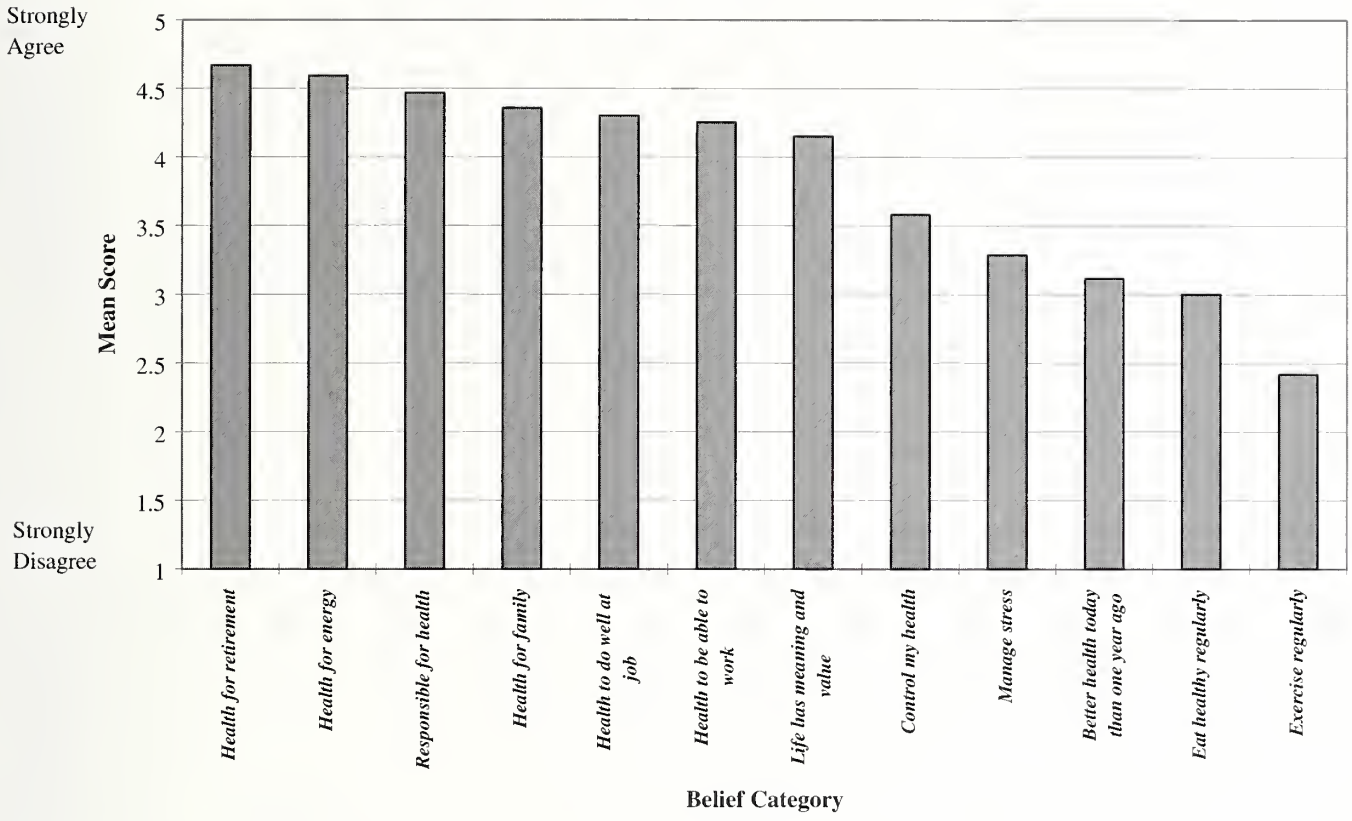


Table Five: Health Beliefs/Behaviors

Health Belief/Behavior	N	Mean	S.E. Mean	Upper C.I.	Lower C.I.
(20) Important for retirement	447	4.66	0.03	4.59	4.73
(27) Important for energy	447	4.59	0.03	4.52	4.65
(26) I am responsible for my health	446	4.47	0.04	4.38	4.55
(19) Important for family	447	4.35	0.04	4.26	4.45
(23) Well at my job	446	4.30	0.04	4.20	4.39
(22) Being able to work	447	4.25	0.04	4.15	4.35
(21) Life has meaning and value*	446	4.15	0.06	4.02	4.27
(18) I control my own health	447	3.58	0.05	3.47	3.68
(17) I manage stress well*	445	3.28	0.06	3.16	3.41
(16) I am in better health today	447	3.11	0.05	3.00	3.22
(24) I eat health regularly	447	3.00	0.06	2.88	3.12
(25) I exercise regularly	443	2.41	0.06	2.29	2.54
Average Std. Dev. Of Mean Response		1.08			

* Responses reverse coded

Health Behavior Stage

For questions 29–40, a variety of behaviors related to health, from eating to relationships, were adapted to the Transtheoretical Stages of Change Model.[5] For example, response choices for question 29 concerning healthy eating correspond to the stages shown below:

Choice	With regard to eating	Stage of Change
a	Eating without regard to health, no intention to change	Pre-contemplation stage
b	Should eat healthier, but not a priority or doesn't know how	Contemplation stage
c	Trying to eat healthier	Preparation and action stages
d	Eating healthier for six months or more	Maintenance stage

The responses for each of these questions are shown in Figures Seven through Eighteen.

Figure Seven: Eating

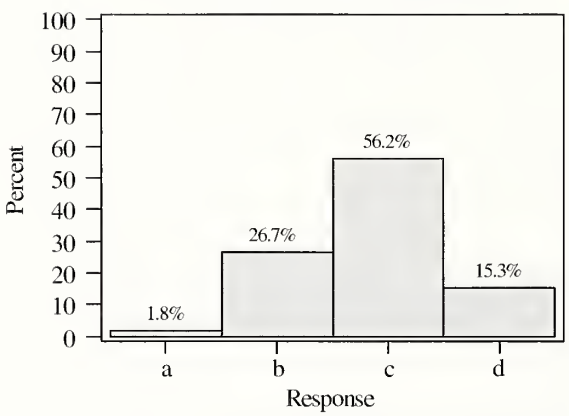
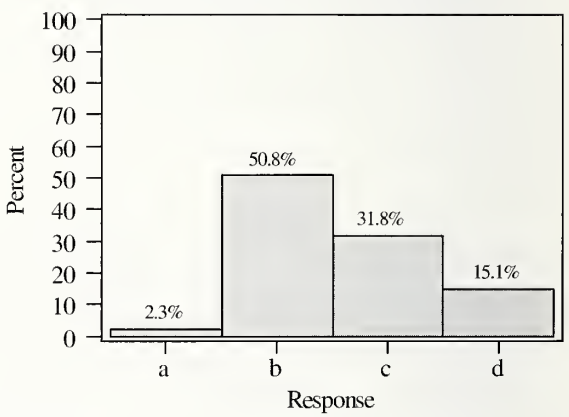


Figure Eight: Activity/Exercise



[5] An in-depth explanation of the Transtheoretical Model by James O. Prochaska is provided in *Draft Technical Memorandum One: Wellness Literature and Programs Review.* September 4, 1997. Pp.18–20.

Figure Nine: Manage Stress

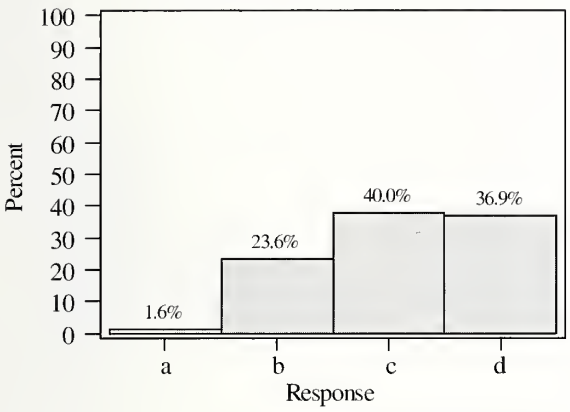


Figure Ten: Personal Finances

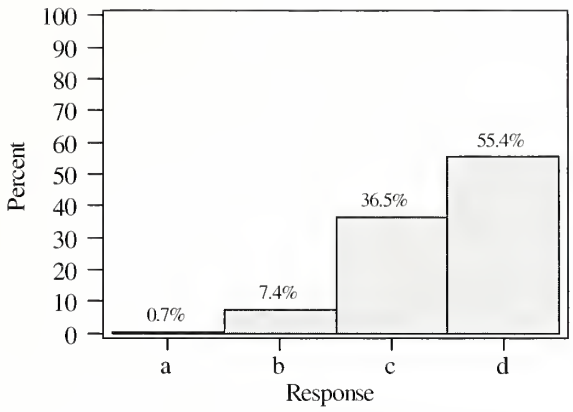


Figure Eleven: Self Care

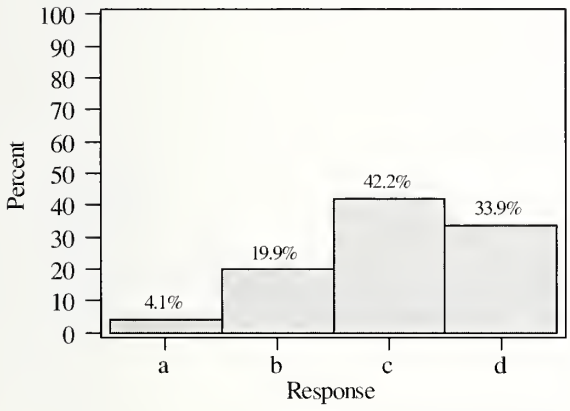


Figure Twelve: Sleep

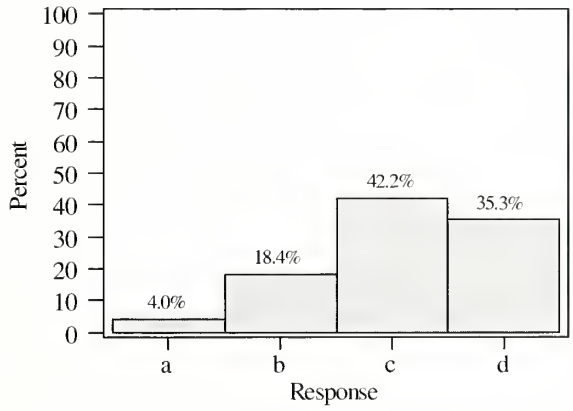


Figure Thirteen: Tobacco Use

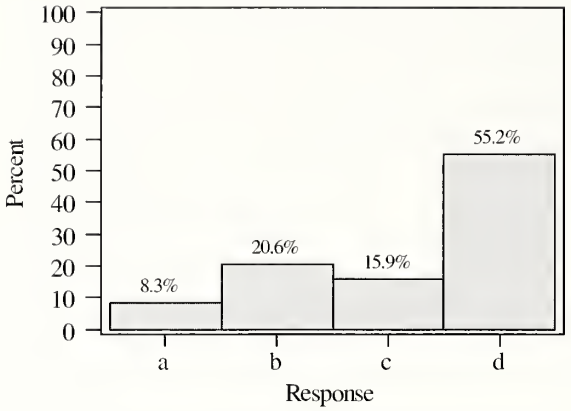


Figure Fourteen: Personal Relationships

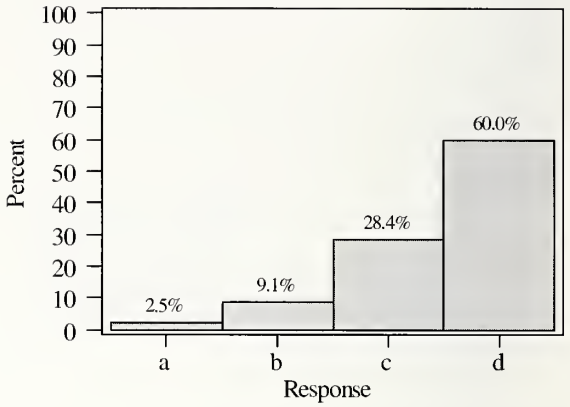


Figure Fifteen: Work

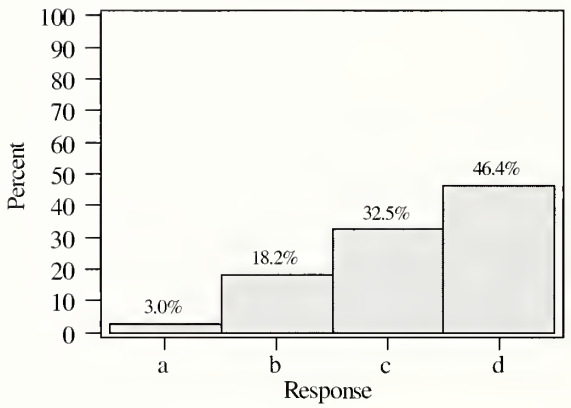


Figure Sixteen: Interests and Hobbies

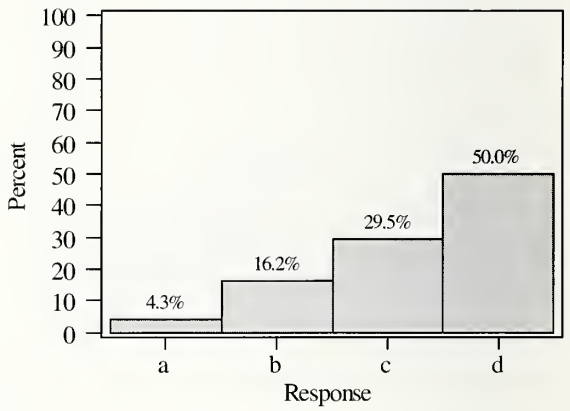


Figure Seventeen: Controlled Substances

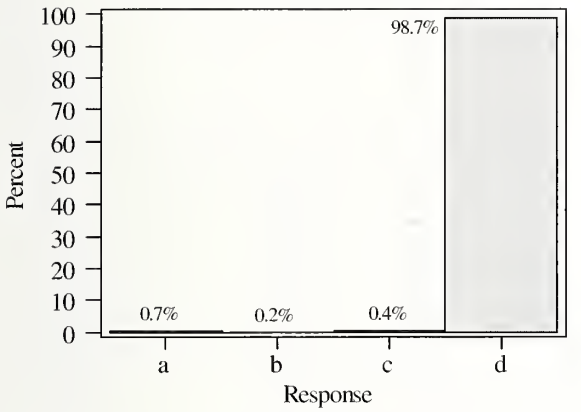
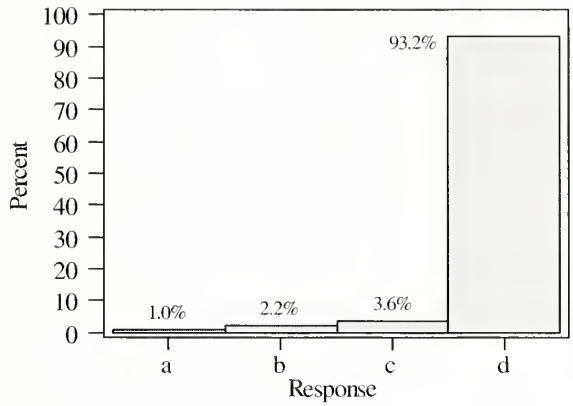


Figure Eighteen: Alcohol



Respondents are most likely to improve a behavior if they selected either "b" or "c." Therefore, these behaviors are more likely targets for programming. Those who respond with "a" are not interested in changing. This number was always small. Those who respond with "d" perceive themselves to be practicing the healthy behavior.

Behavioral areas where respondents are ready or are trying to improve behavior (i.e, those questions where "b" and "c" combined totaled more than 50 percent of responses) were:

- Eating
- Exercise
- Stress management
- Self care
- Sleep
- Work

These areas correspond directly with the areas of greatest concern from questions 1–14 (recall Figure Three and Table Four), which were exercise, weight, fatigue, diet, and stress. The only other area of major concern from questions 1–14 was "lack of family time." Since good relationships exist in this population (60 percent of respondents selected d—I have several very good relationships which I have maintained for six months or more), it follows that lack of time with these relationships would be a concern.

The areas where we believe we do not need to concentrate, because the majority of respondents reported already practicing the healthy behavior, are:

- Personal finances
- Tobacco usage
- Interests and hobbies
- Alcohol usage
- Controlled substance usage

Health Knowledge

Several questions (41–45) were asked regarding health knowledge. These questions examined two perspectives. Did the respondents know their own basic health parameters (e.g., weight, blood pressure, and cholesterol levels)? Could respondents answer basic health knowledge questions?

With regard to weight (question 41), all respondents reported a weight range. However, only 35 percent reported being within ten pounds of a healthy weight. This data confirms the research reported in the literature review, which revealed that over two-thirds of the population was overweight.[6]

With regard to other health parameter questions, 21 percent of respondents reported not knowing their blood pressure, and 50 percent reported not knowing their blood cholesterol level.

Approximately 75 percent of respondents were able to answer the two basic health knowledge questions (44 and 45) correctly.

Eating Behaviors/Beliefs

Specific questions regarding eating behaviors and beliefs were asked in questions 46–54. For each of these questions, respondents were asked how frequently their eating behaviors or beliefs agreed with eating statements. Respondents were instructed to indicate a value of one for *"almost never agree"* and five for *"almost always agree."*

As shown in Figure Nineteen and Table Six, respondents reported knowing how to eat healthy and having partners who cook healthy most of the time (mean response values greater than 3.8). However, the mean response values decrease significantly when respondents were asked about actual eating choices. For example, a two-sample t-test revealed a significant difference between the mean response for "Know how to eat healthy" (question 49) and than the mean response for. "Carry healthy food" (question 51). Stated more simply, nearly 72 percent of respondents selected values of 4 or 5 (almost always) when asked if they knew how to eat healthy while only 33 percent selected values of 4 or 5 (almost always) when asked if they carry healthy food.

---

[6] Research from several studies reported that between 71 and 73 percent of the truck driving population examined was classified as either overweight or obese. *Draft Technical Memorandum One: Wellness Literature and Programs Review.* September 4, 1997. Pp. 2–3.

Figure Nineteen: Eating Behaviors/Beliefs

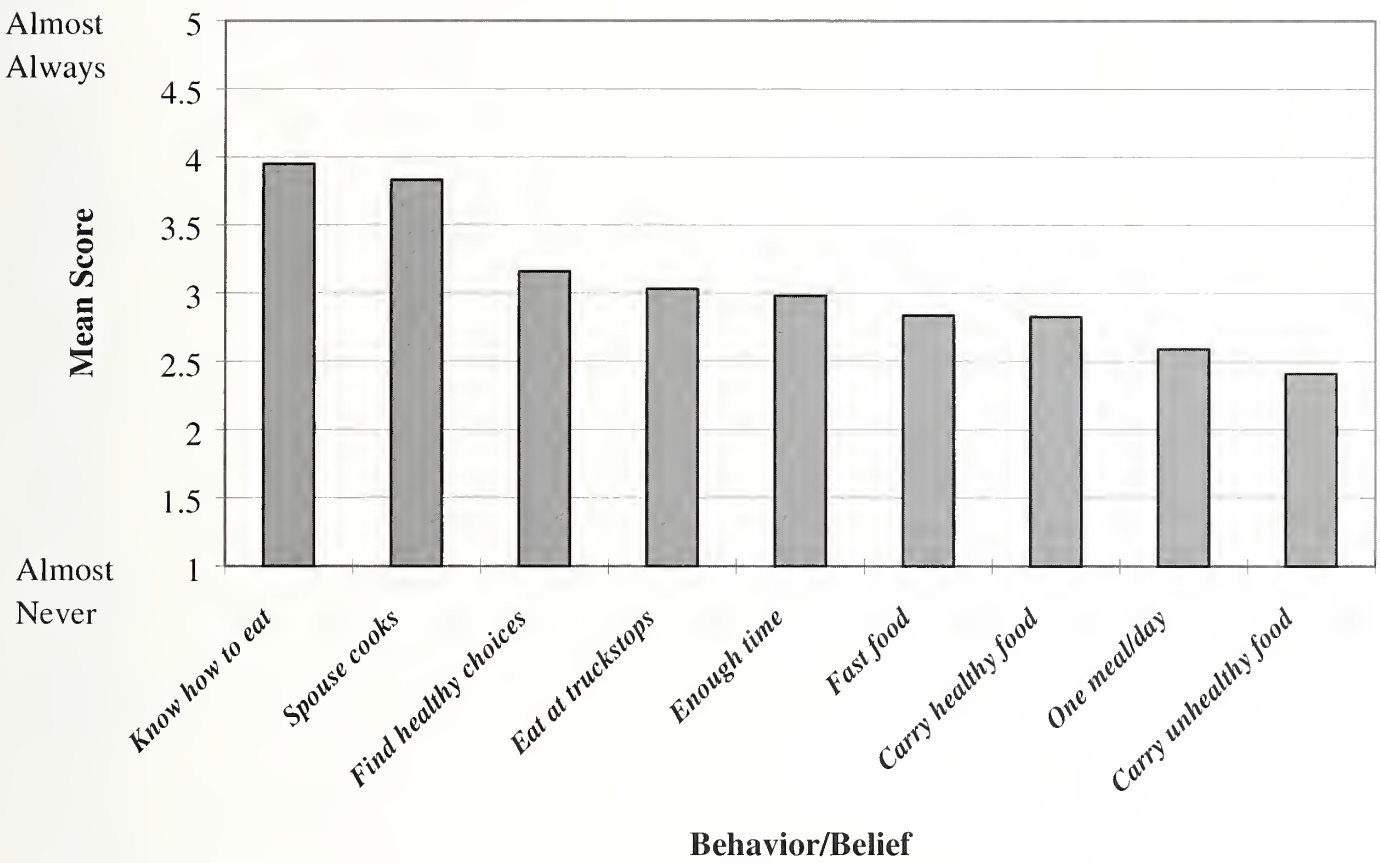


Table Six: Eating Behaviors/Beliefs

Variable	N	Mean	SE Mean	Upper CI	Lower CI
(49) Know how to eat healthy	438	3.94	0.05	3.84	4.04
(48) Spouse/partner cooks healthy	425	3.83	0.05	3.71	3.94
(46) Find healthy choices	441	3.15	0.05	3.04	3.27
(53) Eat at truckstops	442	3.03	0.06	2.90	3.15
(47) Enough time to eat healthy	444	2.98	0.06	2.86	3.10
(50) Eat at fast food restaurants	443	2.83	0.05	2.72	2.94
(51) Carry healthy food	444	2.82	0.06	2.70	2.95
(54) Eat one meal/day	444	2.59	0.06	2.46	2.72
(52) Carry unhealthy food	437	2.41	0.05	2.30	2.52
Average Std. Dev. Of Mean Response		1.25			

Inferential Analysis

The descriptive analysis of the survey results was used as a starting point for drawing inferences about the relationships of demographic factors and various survey responses. The purpose of the inferential analysis was to develop core program design concepts that best-matched the needs of both the various industry segments (e.g., long haul vs. short haul) and the various sub-populations of drivers (e.g., young vs. old) within industry segments.

Multivariate Analysis

Previous results examine one question at a time. It seems natural to examine multiple questions or variables at one time. This is known as multivariate analysis. The following brief definition of multivariate analysis, given by experts in the area, provides a basic understanding of the technique.[7]

> *Multivariate analysis means using many variables to forecast, predict, or understand a situation. For instance, if economists want to predict the likelihood of a recession, they might look at consumer spending. But spending is only one variable of many that affects the economy. To get a more accurate picture, a wide range of factors must be considered from financial variables to human behavior and psychology. Multivariate analysis gathers and puts together all possible information on numerous variables to make predictions and answer questions.*

Dr. Hal Stern, Professor of Statistics, Iowa State University Department of Statistics, guided this phase of the research.

First, using a multivariate statistical analysis technique known as Principal Components, responses from two or more questions were combined to develop and examine overall health measures among respondents, Responses from questions were first combined to develop the composite measures or "super variables" shown in Table Seven. For example, the average response to the first 14 items provides a measure of level of concern.

Table Seven: Wellness "Super Variables"

Survey Questions	Composite Measure
1–14	Level of Concern
16,18,19, 20, 22, 23, 26, and 27	Belief
46–54	Healthy Eating

A statistical method known as Analysis of Variance (ANOVA) was then used to compare and measure the mean responses for the above "super variables" among different sub-populations. ANOVA calculations provide a measure of how different the sub-populations are and identifies the sub-population means. For example, the "level of concern" was compared among the job

---

[7] The Center for Multivariate Analysis, Pennsylvania State University Department of Statistics. *http://www.stat.psu.edu/department/grad_handbook/centers/cma.html.* May 7, 1998.

description (question 64—My type of driving job is) responses. The results of that calculation are shown in Table Eight.

Table Eight: One-Way Analysis of Variance for "Level of Concern"

Source	Degrees of Freedom	Sum of Squares	Mean Square	F-statistic	p-value
Job Description	3	11.097	3.699	5.10	0.002
Error	420	304.347	0.725		
Total	423	315.444			

				Individual 95% "Concern" Confidence Intervals			
Response Level	**N**	**Mean**	**St. Dev.**	+	+	+	+
Local/Short haul	96	2.9195	0.7754			(------*------)	
Long haul LTL	55	3.1355	0.9070			(--------*--------)	
Long haul TL	244	3.2503	0.8361				(---*---)
Motorcoach	30	2.7970	1.0769	(----------*----------)			
				+	+	+	+
Pooled St. Dev.		0.8513		2.50	2.75	3.00	3.25

The above analysis provides the following useful information:

1. The mean "Level of Concern" differs across the four categories of Job Description. The difference is statistically significant, since the F-statistic is 5.10 with a p-value of 0.002
2. Long haul TL (truckload) drivers have higher "Level of Concern" scores than other job description types.
3. The mean for respondents in the long-haul TL job is well determined by these data, since the 95 percent confidence interval is narrow (i.e., 3.13–3.3).
4. Although motorcoach drivers have lower "Level of Concern" scores, there is more uncertainty about the mean for this group. (Note: This may be partly attributable to the low number of respondents who classified themselves primarily as motorcoach drivers.)

Summary results of similar ANOVA calculations are reported in Tables Nine–Eleven. Each table provides a summary of the relationship between one of the above super variables (e.g., concern in Table Nine) and certain demographic factors (e.g., age and job type) or health factors (e.g., interest in the program and eating vehavior). The strength (p-value) of the relationship and direction of correlation is also provided for each health issue.

Table Nine: Analysis of Variance—"Level of Concern"

Question	p-value	Relationship	
(64) Job Description			
	p=.0002	Most concern	Long haul TL
		↓	Long haul LTL
		Least concern	Local/short haul
(62) Age			
	p=.0000	Most concern	40-60 years
		↓	<40
		Least concern	>60
(56) Participation			
	p=.0000	Most concern	Would participate
		↓	↓
		Least concern	Would not participate
(25) Exercise regularly			
	p=.03	Most concern	Don't exercise
		↓	↓
		Least concern	Do exercise
(24) Eat healthy			
	p=.03	Most concern	Don't eat well
		↓	↓
		Least concern	Eat well

Table Nine shows those willing to participate in wellness programs are more con cerned than those who would not participate. Long haul truckload and those individuals between 40 and sixty years old are most concerned. Those with the most concern were also those who reported not exercising or poor diet.

Table Ten: Analysis of Variance—"Belief"

Question	p-value	Relationship		Question	p-value	Relationship	
(41) Weight				**(35) Tobacco Usage**			
	p=.000	Low belief	Highest weight		p=.000	Low belief	Tobacco use
		↓	↓			↓	↓
		High belief	Lowest weight			High belief	No tobacco use
(62) Age				**(36) Relationships**			
	p=.015	Low belief	Younger		p=.000	Low belief	Poor relationships
		↓	↓			↓	↓
		High belief	Older			High belief	Good relationships
(24) Eat healthy regularly				**(37) Work**			
	p=.000	Low belief	Poor eater		p=.000	Low belief	Unfulfilled by work
		↓	↓			↓	↓
		High belief	Healthy eater			High belief	Fulfilled by work
(25) Exercise regularly				**(38) Interests and hobbies**			
	p=.000	Low belief	Poor exerciser		p=.000	Low belief	Low interest/hobbies
		↓	↓			↓	↓
		High belief	Good exerciser			High belief	Most int./hobbies
(32) Personal finance				**(39) Controlled substance usage**			
	p=.000	Low belief	Poor finance		p=.000	Low belief	Controlled sub.
		↓	↓			↓	↓
		High belief	Good finance			High belief	No Control sub.
(33) Health/self care				**(40) Alcohol usage**			
	p=.000	Low belief	Poor health/self care		p=.000	Low belief	More alcohol use
		↓	↓			↓	↓
		High belief	Good health/self care			High belief	Least alcohol use

The data in Table Ten shows that as respondents increase their beliefs (i.e., "I am in control of my health," or "I am responsible...") their lifestyle behaviors become those associated with improved health. This supports theories of self efficacy and self control.

Table Eleven: Analysis of Variance—"Healthy Eating"

Question	p-value	Relationship		Question	p-value	Relationship	
(41) Weight is				**(25) Exercise regularly**			
		Poor eating score	Higher weight			Poor eating score	Exercise least
	p=.000	↓	↓		p=.000	↓	↓
		Good eating score	Lower weight			Good eating score	Exercise most
(1) Weight concern				**(31) Manage stress**			
		Poor eating score	More weight concern			Poor eating score	Most stress
	p=.008	↓	↓		p=.000	↓	↓
		Good eating score	Less weight concern			Good eating score	Less stress
(15) Health rating score				**(32) Personal finance**			
		Poor eating score	Low health self rating			Poor eating score	Poor finance
	p=.000	↓	↓		p=.000	↓	↓
		Good eating score	High health self rating			Good eating score	Good finance
(65) Driving experience				**(33) Health/self care**			
		Poor eating score	Less experience			Poor eating score	Poor healthcare
	p=.000	↓	↓		p=.000	↓	↓
		Good eating score	More experience			Good eating score	Good healthcare
(28) Average profession health rating				**(34) Sleep**			
		Poor eating score	Poor prof health rate			Poor eating score	Lack of sleep
	p=.000	↓	↓		p=.000	↓	↓
		Good eating score	Good prof health rate			Good eating score	Enough sleep
(64) Job description				**(36) Personal relationships**			
		Poor eating score	Long haul TL			Poor eating score	Poor relationships
	p=.01	↓	↓		p=.000	↓	↓
		Good eating score	Local & LTL			Good eating score	Good relationships
(43) Blood cholesterol				**(37) Work**			
		Poor eating score	Poorest cholesterol			Poor eating score	Unfulfilled by work
	p=.001	↓	↓		p=.008	↓	↓
		Good eating score	Best cholesterol			Good eating score	Fulfilled by work
(62) Age				**(38) Interests and hobbies**			
		Poor eating score	Younger			Poor eating score	No/few hobbies
	p=.000	↓	↓		p=.01	↓	↓
		Good eating score	Older			Good eating score	Many int./hobbies
				(42) Blood pressure			
						Poor eating score	Poor blood pressure
					p=.001	↓	↓
						Good eating score	Good blood pressure

Responses to the "healthy eating" super variable, shown in Table Eleven, correlated with more questions than the other two composite measures. This indicates that better eating habits are a good indicator of other healthy lifestyle habits. It also implies eating habits should be a major building block for the core program.

Segment Analysis

Next, a subset of "healthy drivers" was extracted and compared to the pool of all respondents. The purpose of this step was to determine what traits this group exhibited that set them apart from other drivers. The criteria for the healthy driver group was:

- Self-health ratings (question 15) greater than seven
- Within 10 pounds of "healthy weight level" (question 41: response "b")
- Strong agreement with the statement: "I am in better health than I was one year ago." (question 16: response of four or five)
- Strong agreement with the statement: "I feel I have control over my own health." (question 18: response of four or five)
- Strong agreement with the statement: "I am responsible for my own health." (question 26: response of four or five)

This yielded a pool of 42 respondents. Summaries of the survey responses for this group is shown in Appendix Two. The mean responses for this subset of the pool were compared to the remainder. Two sample t-tests were then conducted to determine whether the responses from the "healthy drivers" pool were significantly different from the pool of all driver respondents. Table Twelve provides the results of the two-sample t-test calculations for questions with statistically significant differences in the mean responses (at the 0.05 level, p-value less than 0.05). Table Twelve also provides the question number, mean response values (total population and "healthy driver" subsets), absolute value of the mean response difference, confidence interval and p-value. The table is sorted by the absolute value of mean response differences and ranked in descending order.

The table illustrates regular exercise and eating healthy are the health issues with the most significant differences between the "healthy driver" population subset and the pool of all other respondents. This confirms the findings of the multivariate analysis. Interestingly, the following other observations can be made regarding "healthy drivers:"

- Perceive themselves to better manage stress
- Less concerned over fatigue
- More strongly perceive that life has meaning and value
- More driving experience
- Eat at fast food restaurants less frequently
- More strongly believe in the need of good health for energy, work, and job
- Carry unhealthy food less frequently

This data supports theories that suggest self efficacy and feelings of self control lead to healthier behavior.

Table Twelve: Mean Response Comparisons—Total Population vs. "Healthy Drivers"

Ques. Num.	Health Issue	Mean: All	Mean: Healthy	Abs. Diff.	Upper C. I.	Lower C. I.	P-value	Direction
25	Exercise regularly	2.42	3.74	1.32	-1.70	-0.93	0.0000	Higher
24	Eat healthy regularly	3.00	3.90	0.90	-1.25	-0.54	0.0000	Higher
30	Activity and exercise behavior	2.59	3.33	0.73	-0.97	-0.50	0.0000	Higher
48	Spouse/partner cooks healthy	3.83	4.561	0.73	-1.03	-0.43	0.0000	Higher
17	Manage stress*	2.29	3.00	0.71	0.30	1.12	0.0100	Higher
47	Enough time to eat healthy	2.98	3.67	0.69	-1.10	-0.26	0.0020	Higher
52	Carry unhealthy food	2.41	1.76	0.65	0.27	1.03	0.0011	Lower
50	Fast food restaurants	2.84	2.19	0.65	0.26	1.03	0.0015	Lower
49	Know how to eat healthy	3.95	4.561	0.61	-0.88	-0.34	0.0000	Higher
14	Fatigue	3.52	2.93	0.59	0.10	1.07	0.0170	Lower
29	Eating behavior	2.849	3.42	0.58	-0.81	-0.34	0.0000	Higher
21	Life has meaning and value*	3.15	3.71	0.56	0.24	0.87	0.0007	Higher
33	Health care behavior	3.05	3.61	0.56	-0.75	-0.36	0.0000	Higher
65	Driving experience	3.93	4.38	0.45	-0.77	-0.13	0.0076	Higher
31	Manage stress behavior	3.101	3.54	0.44	-0.69	-0.2	0.0008	Higher
62	Age	3.08	3.52	0.44	-0.80	-0.08	0.0160	Higher
27	Health for energy	4.49	4.92	0.43	-0.43	-0.23	0.0000	Higher
34	Sleep behavior	3.08	3.5	0.41	-0.60	-0.22	0.0000	Higher
46	Find healthy choices	3.16	3.57	0.41	-0.79	-0.03	0.0350	Higher
32	Personal finance behavior	3.46	3.857	0.39	-0.51	-0.26	0.0000	Higher
37	Work behavior	3.22	3.595	0.37	-0.59	-0.15	0.0014	Higher
23	Health to do well at job	4.30	4.643	0.34	-0.65	-0.03	0.0330	Higher
22	Health for work	4.26	4.595	0.33	-0.64	-0.03	0.0300	Higher
36	Personal relationships behavior	3.45	3.707	0.24	-0.40	-0.08	0.0031	Higher
20	Health for retirement	4.66	4.902	0.23	-0.37	-0.09	0.0100	Higher
40	Alcohol behavior	3.89	3.976	0.08	-0.15	-0.02	0.0110	Higher

* Note: Responses for questions 17 and 21 were "reverse coded." Since these questions were stated in the negative (e.g., I don't manage stress well) the responses were reversed. Therefore, a response of one was entered in the data set as a response of five.

Differences in responses to the open-ended question "last meal on the road" (i.e., question 55) were also examined. First, the meals listed were classified as either healthy choices or unhealthy choices. Next the responses were tabulated for both the total population and the "healthy driver" subset. Not suprisingly, 59 percent of "healthy driver" group ate healthy for their last meal on the road, while only 35 percent of the total group ate healthy.

Executive Survey Summary

In-depth one-on-one interviews were conducted with key executives and managers of ten private and for-hire truck fleets to examine issues effecting wellness program success. The interviews included such topics as:

- Implementation concerns
- Tracking program performance
- Measuring program cost
- Program support requirements
- Expected outcomes on fleet safety performance

The questionnaire and tabulation of responses is provided in Appendix Three and a summary of responses is shown below.

Greatest Challenges Facing the Industry

Finding and retaining qualified, safe drivers. Many of the executives noted that this problem is exacerbated by driver treatment from shippers and receivers. Several executives were concerned about complying with ever-increasing fleet and employee safety and health regulations.

Importance of Health Care

Employee health is important since it has a direct impact on health care costs (cited by one executive as 2 percent of gross revenue, or, approximately $5,000 per year per employee), absenteeism, and workers compensation claims.

Current Wellness Programs

Four companies offered no programs, with concerns such as "too expensive," "too hard to implement," or "difficult to maintain," cited most frequently as implementation barriers. Four companies offer limited programs, such as smoking cessation plans. Two companies have more comprehensive programs, which are primarily designed to boost employee morale and promote a positive company image.

Current Program Effectiveness

Three rated their programs as "not effective," and two said their programs were too new to rate.

Employees Health Ownership and Responsibility

Although managers would like their employees to take more responsibility for their own health, most interviewees did cite "adequate employee health ownership."

- **Why isn't employee health ownership greater?** It's part of the image, time, and culture of the blue collar worker. Availability of healthy food on the road are also issues drivers must contend with.
- **How could this be improved?** Programs need to be convenient, simple and fun—perhaps with creative incentives. Long-term quality of life needs to be emphasized.

Rewarding Healthy People
While only one company rewarded employees for low absenteeism or safe health practices, most would consider such a program. Interviewees weren't sure how to implement a healthy reward program, but most agreed that effective rewards need to be more than just money.

Existing Employee Benefits Packages
Most executives offer health insurance, life insurance, disability, 401K, and retirement plans. Some also had holiday and vacation pay plans, sick leave, safety incentives, and vision and dental programs.

Current Health Care Costs
While some executives could not quote their costs, others ranged from $1,500 (pays 50 percent of cost) to $9,600 per year per employee.

- **Workers compensation**: Some did not know and others ranged from $310 per year to $7.00 per hour.
- **Examination of costs**: While one company did report using risk managers to examine and manage costs, most interviewees did not generally conduct detailed studies of health care costs and their cost drivers.
- **Percentage of health care costs on wellness**: Three managers felt wellness should comprise 25–50 percent of total health care costs. One agreed philosophically in spending health care budgets on wellness, but could not justify the expense since their is no way to measure return on investment.

Driver Turnover
Turnover ranges from 2–105 percent per year were cited. Lower turnover rates were reported by those companies with drivers working close to home. Average turnover was about 50 percent.

- **Methods to decrease turnover**: Better training, better interaction with and appreciation from management and enhanced benefits package. One executive noted that a decrease in turnover will require more family involvement (e.g., calling card program) and better pay.

Wellness Program Implementation Concerns

- **Concerns cited**: driver scheduling and time constraints (e.g. hard to provide program, given that drivers are not frequently available at terminal), employee participation, program administration, and cost
- **Possible resolutions**: Work around driver schedules, involve families, and educate drivers to understand importance of healthy lifestyle
- **Willingness to implement**: Most would consider paying to implement a program if it met their criteria
- **Economic justification**: Executives would need proof of return on investment, such as improved safety,

Wellness Program Performance Measures

- Improved health and safety, and reduced fatigue
- Increased participation and family involvement
- Success stories
- Better eating habits
- Decrease in risk factors (i.e., weight, smoking)
- Decrease in employee absenteeism and turnover
- Reduced insurance claim frequency and lost work day cases

Executive Commitment to Optimal Health

Interviewees were asked what they did to maintain optimal health. Responses included:

- Does not smoke, watches diet, not enough exercise, "I haven't had a heart attack yet."
- Walks every day- 2 miles
- Takes Herbs- licorice
- Watches food intake
- Manages stress- practices relaxation techniques
- I don't exercise as much as I could
- Takes vitamins, interested in losing weight
- I'm very healthy and don't worry very much about it and know what to do
- Exercise, non-smoker, executive physical, eat very well
- Walks every night, I watch what I eat, I don't smoke, I don't drink very much

Core Wellness Program

Reaching a definitely unique, yet diverse, audience such as truck and bus drivers requires an equally unique approach in the design of a core program for health and safety.

> *"Drivers build a thick wall around them to survive. They believe they need this wall to be strong. They feel there is an unwritten rule not to be vulnerable. Other drivers and families are the people who can lower this wall."*[8]

It was through much brainstorming, ideation, and concepting that the core program was developed. Assumptions were taken apart and examined, drivers were given a voice through the comprehensive truck and bus driver survey, and the driver environment, from medical access to dining opportunities, was reviewed. Many questions were addressed:

- How do we provide a program which has a holistic perspective?
- How much should we break from the current medical model which is and will continue to be undergoing change and is not holistically oriented?
- What major themes should the program include to be of most value to the driver population?
- What is the best way to use the transtheoretical (stages of change) model of Prochaska in the program?[9]
- How do we deal with the very unique subculture of the driver population?
- How do we individualize the program to reach different needs of different drivers?
- How can the program be designed for the easiest implementation yet give options to companies (along with individual drivers)?

These questions were the driving force behind the thought processes that went into the design of the core program.

A Holistic Approach To Truck And Bus Driver Health

We believe the best way to improve the health of the driver population is to develop a program based on the concepts of holism and self-responsibility. This is especially appropriate in the driver population where personal control is a common characteristic.

The concept of holistic health (although not always called this) has been believed and practiced with peaks and valleys at various times over the centuries. The emergence of the wellness movement in the 1970's started bringing bits and pieces of holism back into our thinking. John Travis, M.D. a leader of the wellness movement, suggested wellness was not a neutral state of no

---

[8] William Nestor, President, Fleet Solutions, personal communication, February, 1998

[9] James O. Prochaska, Carlo C. DiClemente, and John C. Norcross. *In search of How People Change: Applications to Addictive Behaviors.* American Psychologist. Vol 47, No. 9 (September, 1992). American Psychological Association. Pp 1102-1114

disease, but a positive state of well-being accompanied by feelings of vitality, joyfulness, and energy.[10]

Elliott Dacher, M.D., has more recently defined an integrated healing model which has been incorporated into the core program.[11] It is based on the belief that we are moving toward a new world view, a paradigm shift that can be characterize by the emergence of a set of assumptions that are better matched to the needs of our time. These assumptions are dynamism, holism, and purposefulness.

Dynamism is characterized by the view that human life is a vital process of growth and development, resulting from the ongoing interaction and adaptation of man to his changing environment. This perspective asserts that the human condition can not be exclusively understood through the accumulation of static data that ignores the influence and validity of psychological, social, spiritual, and environmental influences.

- **Essence**: Driver health issues and problems are not one dimensional, but part of a larger dynamic system.

Holism is the term used to designate the viewpoint that life is a natural, organized, and unfolding process that consists of constituent elements bound together in a unitary whole.

- **Essence**: Acknowledging the "big picture" is important for driver health.

Purposefulness expresses the view that human life has direction and meaning.

- **Essence**: Driver's need to find and have meaning in their life.

This new model of health—integrated healing—as created by Dr. Dacher, is *person-centered.* It begins with a focus on our innate healing capacities with four interactive healing systems. These four systems are:

- *Homeostasis*: the bodies natural, inborn self-healing system which maintains a constant internal environment.
- *Treatment:* the use of external agents, treatments, and practices for the purpose of repairing abnormalities and restoring function.
- *Mind-Body*: the full development of the mind, which is activated through personal choice and initiative leading to a progressive capacity for self-regulation.
- *Spiritual:* the way of 'being' that provides meaning to our day-to-day experiences and the larger issues of living and dying. It is balance and connectedness.

---

[10] John W. Travis, M.D. *Wellness, Small Changes You can Use to Make a Big Difference.* Berkeley, California: Ten Speed Press1991.

[11] E.S. Dacher. *Whole Healing: A Step by Step Program to Reclaim Your Power to Heal.* New York, NY: Penguin Books USA Inc. 1996.

The implications of this new, expanded health model are shown below. This further explains how it relates to the driver wellness program.

Program Element	Biomedical Model	Expanded Model
Database	Physical findings Medical history Laboratory testing	Environmental Psychosocial Spiritual
Objective	Repair Restoration of function	Personal autonomy Enhanced capacity/resources Wholeness/coherence
Approach	Standardized	Individualized
Responsibility	Health professional	Shared responsibility Individual responsibility
Expenditures	Physician visits Procedures Rehabilitation	Education Information Cognitive time
Action	Reactive	Proactive

Source: Elliot Dacher, M.D.[12]

This expanded model matches the driver population:

1. It addresses their whole life (i.e., the environment in which they live) and not just their physical findings (such as blood pressure).
2. The 'driver' culture recognizes individual responsibility (survey results) and personal autonomy (conversation with William Nestor) as very important. These are key elements in this model.
3. The lifestyle of the driver is such that physician-centered care is difficult and less applicable.
4. The education, information, and cognitive time of the expanded model puts the driver in more control of their own care.

Major Topics

The core program was built around the major areas of concern as reported in the survey. These areas were:

- Family
- Exercise

[12] E.S. Dacher. (Speaker). *Holistic Primary Care: Current Knowledge and New Approaches.* (Cassette Recording No. 1MS98-029). Berkeley, CA: Conference Recording Service. 1998.

- Weight
- Diet
- Fatigue
- Stress

These topics were addressed in several areas of the survey by the drivers.

1. The major health concerns Likert scale had the above topics with the highest means indicating the most concern in these areas.
2. On the behavioral questions using the Likert scale, respondents scored the lowest on managing stress, eating healthy, and exercising regularly.
3. Behavioral areas where respondents appear to be the most willing to improve behaviors from the Transtheoretical Stages of Change Model by Prochaska section of the survey were: eating, exercise, stress management, self-care, and sleep as explained above.

These topics are also consistent with typical topics addressed in wellness programs designed to improve health.

To address these topics we developed the **4 R Road Challenge** with:

- **Refueling**: diet and weight
- **Relating**: family and social
- **Relaxing**: fatigue and stress
- **Rejuvenating**: exercise/moving

Stages of Change Model

The Transtheoretical Stages of Change Model by Prochaska, as described in detail in the work plan and Technical Memorandum One, was used in several ways in the development of the core program. [13] First, it was used in the analysis of the survey to determine which topics to focus on in the core program. The areas where the majority of drivers were in preparation or action (as defined by answering either of the questions related to the stages—" I believe I should eat healthier, but I don't know how or have not made a priority" or " I am trying to eat healthier") were the areas we chose as topic areas for the core program. These areas were eating, exercise, stress management, self care and sleep. In addition, we did not choose to develop the program around topics where the majority of respondents appeared to be in maintenance (i.e., drug and alcohol use).

We also are using the Transtheoretical Stages of Change Model in the main information booklet which will be provided to drivers in the Action Phase. Each topic area—Refueling, Relating, Relaxing, and Rejuvenating—will have a four step process (correlating to a four month Action Phase) where participants will follow an adapted version of the stages process as they progress through each topic.

---

[13] Prochaska, et. Al. Pp.1111-1113.

- **Month One**: Building awareness (Stage 1).....“Tell Me About It”
- **Month Two**: Determining pros and cons (Stage 2).....“Maybe. I Should. I Could.”
- **Month Three**: Acting on intentions (Stages 3&4).....“What Do I Need to Do?”
- **Month Four**: Maintaining successes (Stages 5&6).....“What’s Next?”

Grass Roots Approach

Drivers trust and listen to other drivers. This theme has been repeated throughout the research phase of the project from interviews, the survey, and readings. The two models being used in the core program shift the responsibility to the driver and create an environment where drivers will share with drivers. As an example, we would like to use drivers from the America’s Road Team as one of the pilot groups. Not only would they be great role models, but also great marketers of the program in general. They could be very important in getting other driver involvement. The program materials will also be loosely designed so they can take shape from within the industry. Experienced industry writers will prepare the written material so it talks specifically to the driver and their needs. Other industry spokespersons will be used whenever possible.

For long-term success, many facets of the driver culture—the family, truck stops, the driving public, and the employer—must embrace the concept that a healthy driver is a safer driver and participate as well. Drivers will heed the call to action, but they can need a supportive and changed environment for it to occur.

Individualization And Implementation

The more a health program can be personalized for the individual driver, the greater the potential for improved lifestyle behaviors. We are, however, dealing with an extremely large number of potential users which makes individualization difficult. In addition, different companies may choose to do more or less for their work force.

With this in mind, we envision a program which gives both the company, and each individual driver within a company, options. It is developed so even drivers within the same company can choose a different track to follow through the program. However, as the program options are tested during the pilot program testing phase, each pilot group will track through the program differently, but individual drivers within each pilot group will not track differently (even though this is possible).

The core program is designed to fit into the pilot timetable of six months.

- **Month One**: Recruitment Phase
- **Month Two**: Introductory Phase
- **Months Three–Six**: Action Phase

Figure Twenty and Table Thirteen illustrate how an individual driver would move through the program. Depending on options the company chooses to offer its employees, there are potentially forty-eight different pathways a driver could follow. Details on each aspect of the program follow.

Figure Twenty: Core Wellness Program

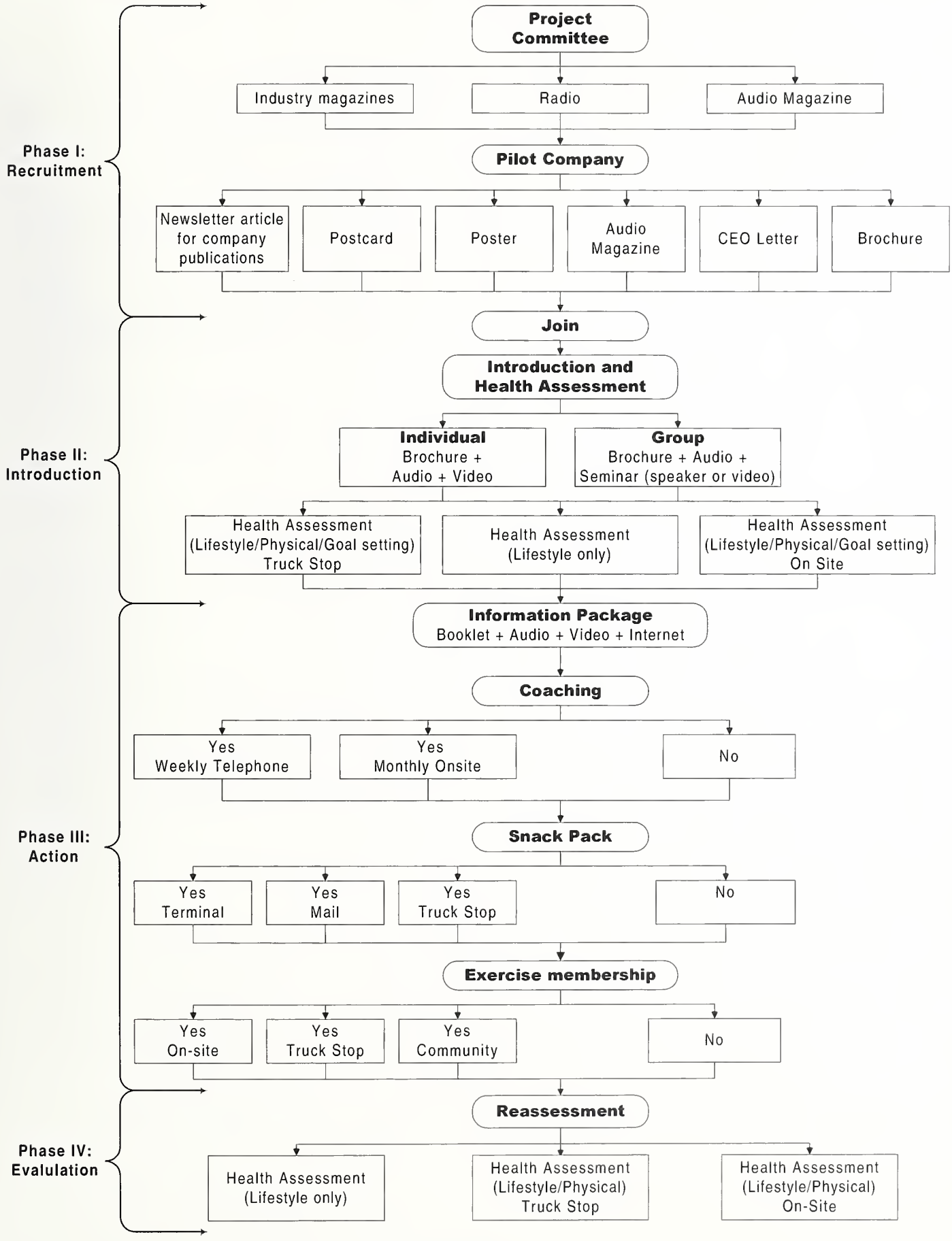


Table Thirteen: Core Program Overview

Program Phase	Phase Description
I. Recruitment Phase	• Industry wide information • Individual driver recruitment within chosen pilot groups
II. Introductory Phase	• Drivers participate in 1 of 4 introduction pathways: » Individual information with lifestyle/physical/goal setting assessment at truck stop » Individual information with lifestyle only assessment » Group information session with lifestyle only assessment » Group information session with lifestyle/physical/goal setting assessment on site • Company will have input into which options are made available, but even within a company, different drivers could choose potentially different tracks depending on their schedule and needs and what company will provide
III. Action Phase	• All participants receive base information package. This is the minimum the program will offer • Options (12 pathways) in action phase include: » Coaching on site, telephonic, or none » Snack pack, yes or no » Exercise membership, yes or no • Company will have input into which options are made available, but even within a company, different drivers could choose potentially different tracks depending on their schedule and needs
IV. Evaluation Phase	• Testing as done in Introductory phase will be repeated

Pilot Groups

Six different pilot groups are suggested for the testing phase. They are:

Pilot One: The America's Road Team members .....10 participants
Pilot Two: Long haul drivers from a small company .....20 participants
Pilot Three: Long haul drivers from a large company .....30 participants
Pilot Four: Short haul drivers.....20 participants
Pilot Five: Bus drivers .....25 participants
Pilot Six: Truck stop employees.....15 participants

Table Fourteen and Figures Twenty-one to Twenty-seven show how we suggest each pilot group track through the core program. As illustrated, a different set of variables is being tested in each of the different pilot groups.

Table Fourteen: Pilot Groups

	One Road Team	Two Long Haul Small Company	Three Long Haul Large Company	Four Short Haul Company	Five Bus Company	Six Truck Stop
Recruitment	Project	Company	Company	Company	Company	Company
Introductory Session	Group	Individual	Group	Group	Group	Individual
Health Assessment	All On-site	All Truck stop	All On-site	All On-site	All On-site	All On-site
Information Package	Yes	Yes	Yes	Yes	Yes	Yes
Coaching	Yes Telephone	No	Yes Telephone	Yes Onsite	Yes Onsite	No
Snack Pack	Yes Mail	No	Yes Terminal	No	Yes Terminal	Yes Truck stop
Exercise Membership	Yes Rolling Strong	No	Yes Company Facility	Yes Communit y	No	Yes Rolling Strong
Reassessment	?	All Truck Stop	All On-site	All On-site	All Onsite	All On-site

Each of the pilot groups was selected for reasons as stated.

Pilot One: The America's Road Team
This pilot group is suggested because it is hoped they can build grass roots support within the industry and act as catalysts and role models across the industry after they have gone through the program and see the positive results for themselves. They will receive the introductory session and health assessment as a group at their road team training at the end of the summer. They will then represent the owner operator faction in how we will work with them throughout the rest of the pilot test since each of them will come from a different, single location.

Pilots Two and Three: Long haul drivers from a small company and a large company
Long haul drivers represent the majority of the industry, so we suggest they represent two of the pilot groups. We divided them by company size. They track quite differently through the suggested core program, with one receiving the minimum program, and one receiving the "Cadillac" program with all of the options. This will show us if and how any of the options can be implemented and if and how this affects their health outcome.

Pilot Four: Local/short haul drivers
Short haul drivers return to their home base daily. This gives them different options than a long haul driver. We would like to test the availability of on-site coaching with this group and use of a local exercise facility.

Pilot Five: Bus drivers
This is a unique subset of drivers, which need to be tested as their own group.

Pilot Six: Truck stop employees
Working with truck stop employees reaches the drivers environment, which must be done if we are to successfully help the driver. As they become healthier and motivated, they can influence drivers.

Figure Twenty-one: Core Program Pilot One - America's Road Team

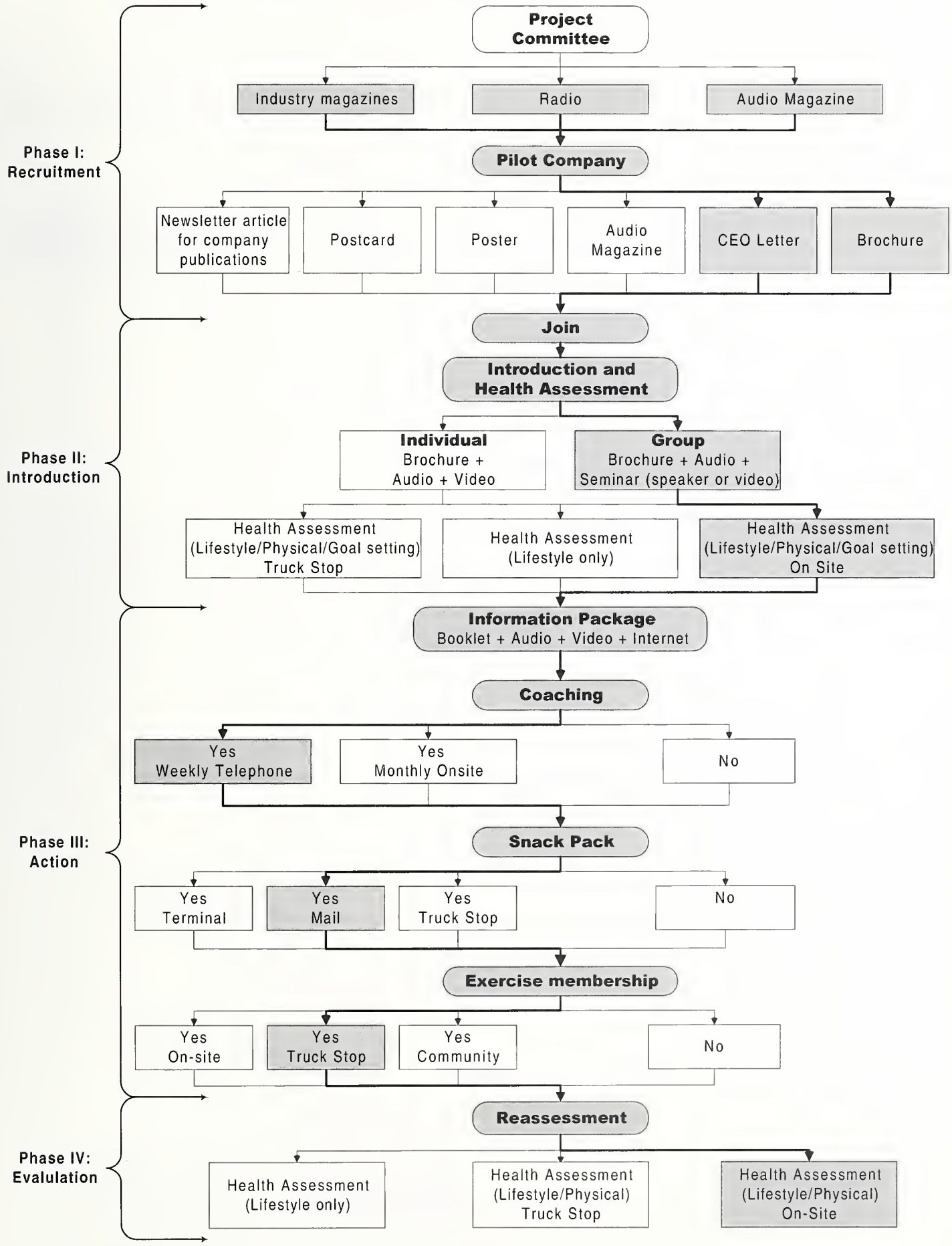


Figure Twenty-two: Core Program Pilot Two - Long Haul. Small Company

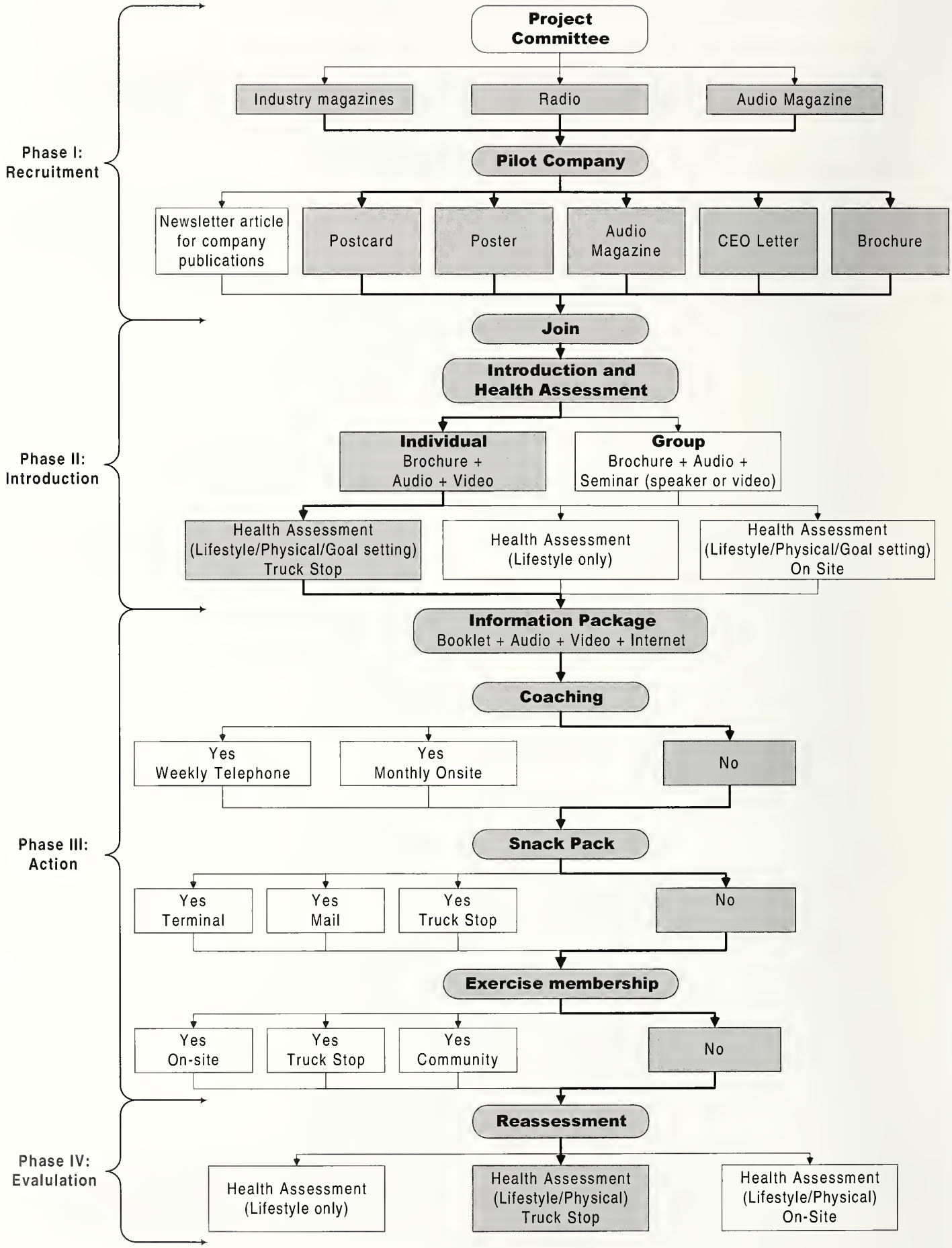


Figure Twenty-Three: Core Program Pilot Three - Long Haul. Large Company

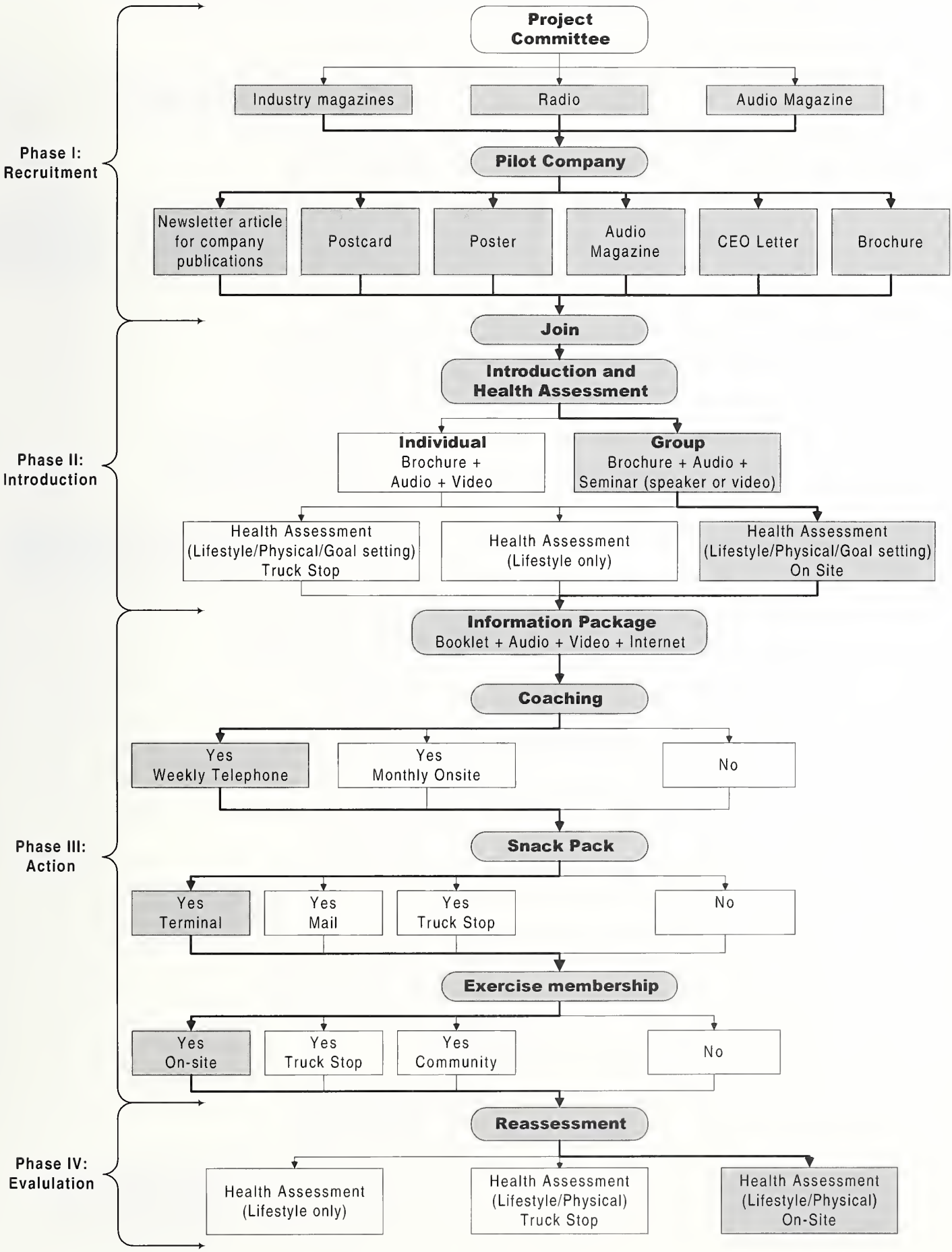


Figure Twenty-Four: Core Program Pilot Four - Short Haul

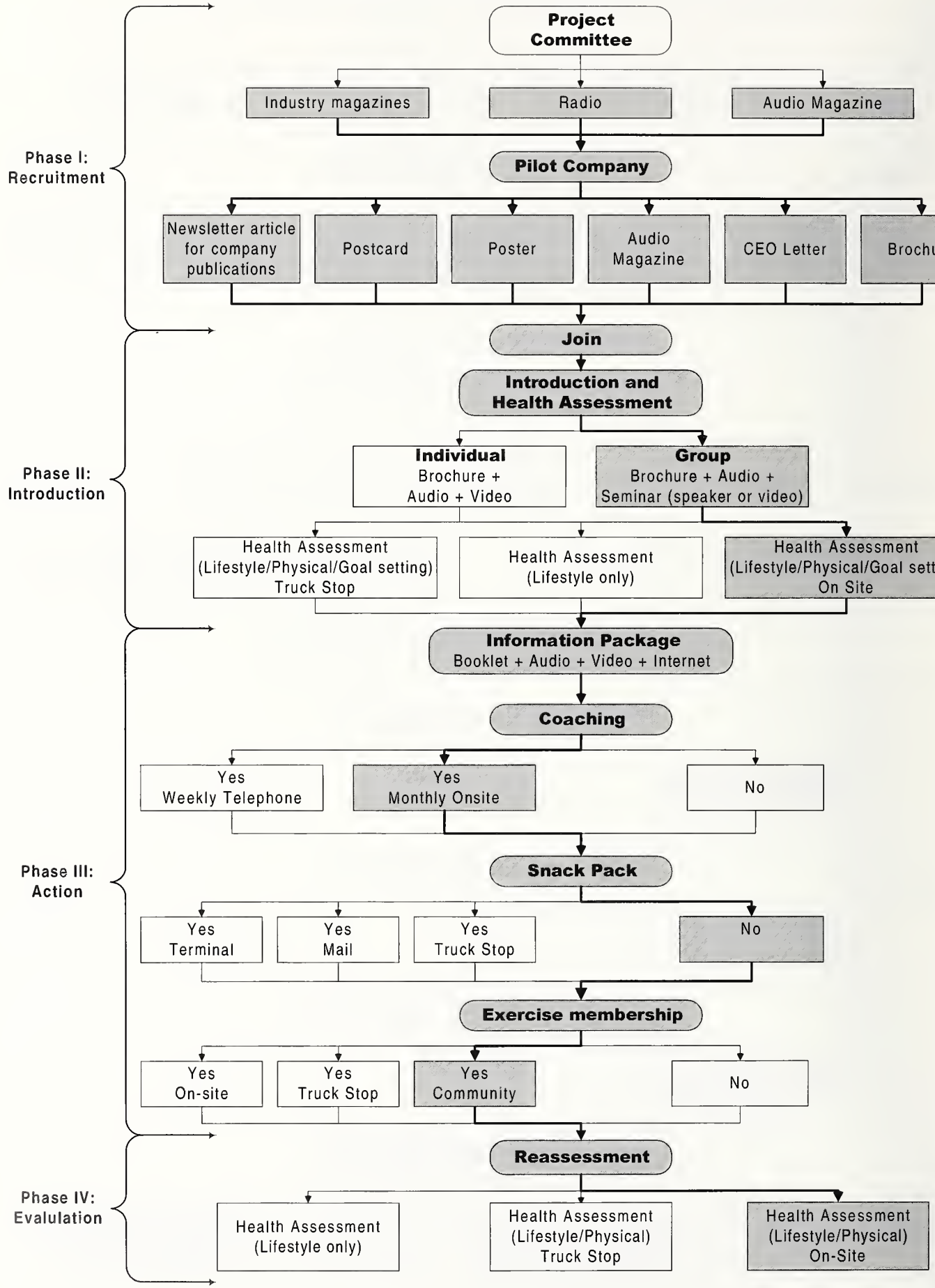


Figure Twenty-Five: Core Program Pilot Five - Bus Company

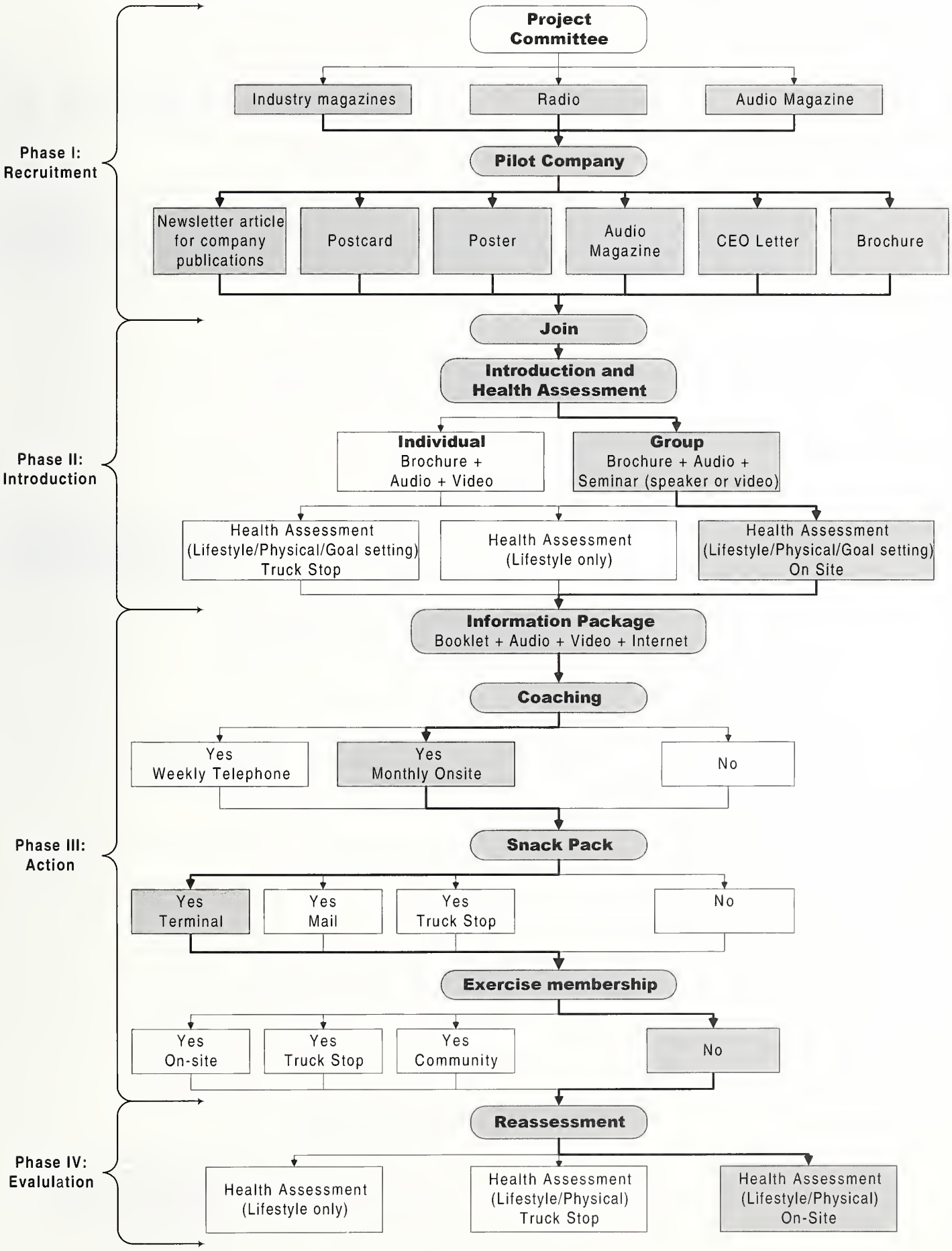
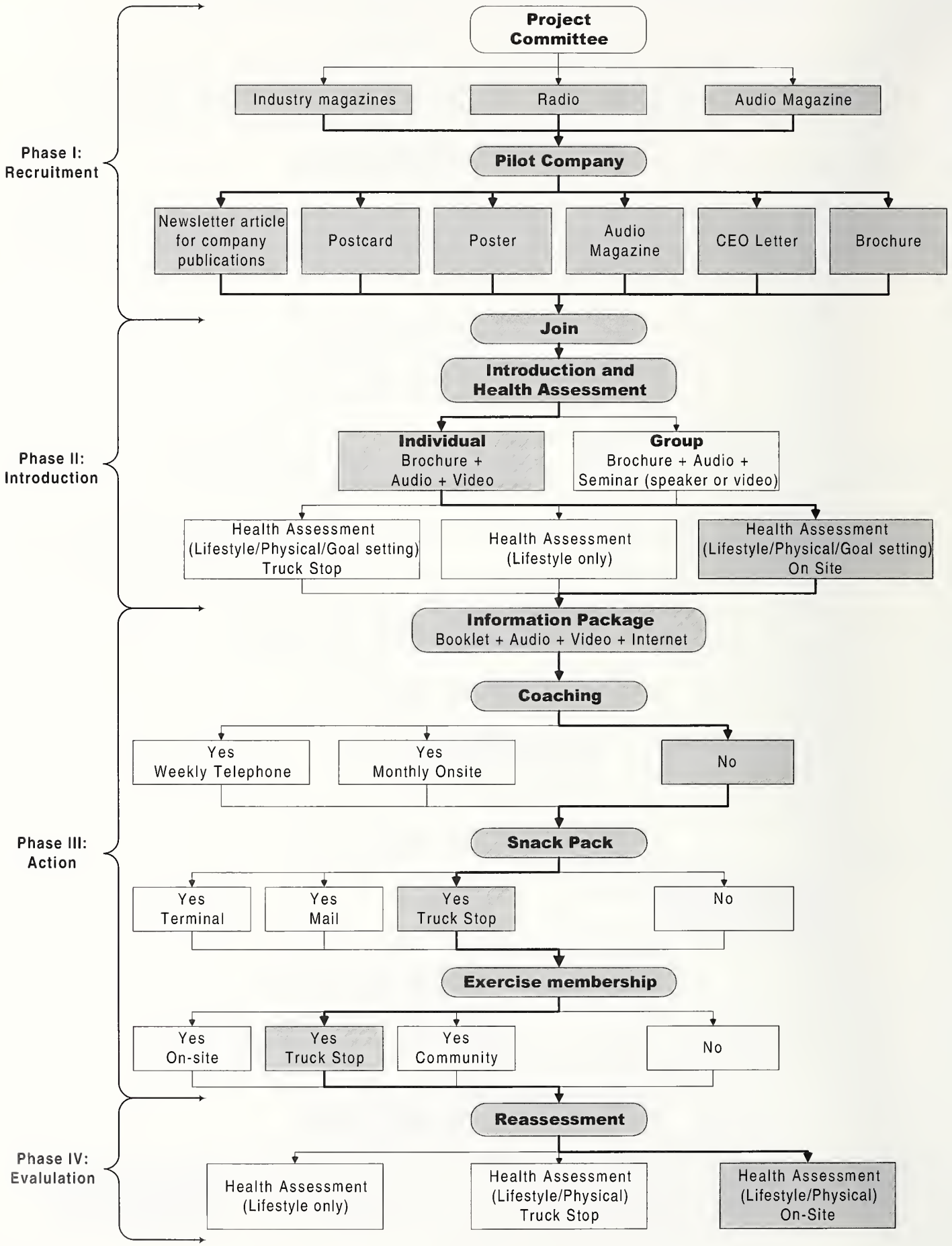


Figure Twenty-Six: Core Program Pilot Six - Truck Stop Company



Phase I: Recruitment Industry - Individual

Industry Wide Awareness

Why

- **Create an awareness and interest in health and wellness within the industry**
- **Prepare the industry for total program roll out**
- **Initiate recruitment of employees from participating pilot projects**

How

- **Publish articles in industry magazines, August, 1998**
  - » CCJ Eileen Cleaves – follow up to 'Heart of a Driver' article which ran in April (see Appendix four)
  - » Private Carrier (NPTC)
  - » Land Line
  - » Overdrive Charles Cox - follow up to 'Matters of the Heart' article which ran in April (see Appendix Four)

- **Broadcast radio spots and unpaid on air interviews during late night radio, August, 1998**
  - » Bill Martin- Produce Reporter
  - » Bill Mack Show from WBAP in Arlington, TX
  - » The Road Gang from WWL in New Orleans, LA

- **Tape interview on Super Driver to be aired August, 1998**
  - » Interview key spokespersons
  - » Initiate recruitment process (i.e., Be watching to see if your company…..)

Driver Recruitment By Pilot Projects

Why

- **Involve company in health and wellness process**
- **Peak interest and awareness in the concept of health and wellness and its importance to the individual driver and their family**
- **Explain the program**
- **Test various marketing pieces**
- **Offer pilot companies turn-key marketing materials to recruit employee participation**

How

- **Newsletter Article – Strategy # 1**
  - » Provide article to pilot companies who have an in-house newsletter – topics include:
    - – Health and wellness overview
    - – Program outline
    - – Sign up procedure
  - » Provide in July for publication in August, 1998, and September, 1998, newsletters

- **Postcard – Strategy # 2A**
  - » Encourage drivers to watch for upcoming program
  - » Provide registration information
  - » Distribute by mailing to the home, via company mail, or with paychecks during the 1st week of September

- **Poster – Strategy # 2B**
  - » Display large poster (17" x 22") in appropriate company locations to coincide with postcard distribution during month of September, 1998
  - » Encourage drivers to watch for upcoming program and introductory information
  - » Provide registration information
  - » Provide space to personalize poster with information pertinent to company

- **Audio Tape –Strategy # 3**
  - » Distribute special Super Driver audio tape which has been personalized for pilot companies to assist in recruitment purposes
  - » Encourage drivers to participate in program
  - » Include interviews with industry spokesperson(s) and project personnel
  - » Distribute during 2nd week of September, 1998

- **CEO Letter – Strategy # 4A**
  - » Send letter from company CEO or other executive inviting drivers to participate
  - » Provide letter copy to companies for use on their letterhead
  - » Distribute by mailing to the home, via company mail, or with paycheck during 3rd week of September, 1998
  - » See sample, Appendix five

- **Brochure – Strategy # 4B**
  - » Provide drivers with program specifics:
    - – Benefits of program
    - – Explanation of program
    - – Topics covered by program
    - – Registration instructions
  - » Distribute with CEO letter by mailing to the home, via company mail, or with paycheck during 3rd week of September, 1998

Phase II: Introduction

Introduction – Individual or Group

Why

- **Introduce the health and wellness concept to participants who have signed up for the program during recruitment phase**
- **Introduce and provide basic information on the 4 feature topics (4 R Road Challenge):**
  - » Refueling
  - » Relating
  - » Relaxing
  - » Rejuvenating
- **Introduce importance of family involvement**
- **Explain how pilot program will work**
- **Test four different combination methodologies**

How

- **Conduct group introductory session at each pilot company in a seminar format with speaker from Sue Roberts Health Concepts (if speaker is not possible, video described below to be used)**
  - » Present in October, 1998
  - » Invite executives from the company
  - » Invite families and provide an incentive (as determined by company) for them to attend
  - » Devise interactive seminar for approximately 45 minutes using power point or overheads
  - » Provide training for company representative if company uses video instead of onsite speaker
  - » Distribute materials that can be used by driver after seminar as reinforcement of information presented in the seminar:
    - Video – 45 minute high quality taping and edited version of a group seminar
    - Brochure – Enhanced version of recruitment brochure
    - Audio – 20-30 minute version of the seminar
- **Provide for driver who cannot participate in a group session, the introductory information through video, audio and brochure (as described above) to watch, listen to, and read on own.**
  - » Distributed during the month of October, 1998
  - » Family will be encouraged to watch, listen to, and read the material either with driver or separately

Health Assessment

Why

- **Collect current belief, behavior, knowledge and physical data of pilot participants to use as baseline for evaluation**
- **Provide information to participants to motivate them to participate fully in program**
- **Test variables with regard to assessment (i.e., location)**
- **Determine advisability of using various methods in national rollout**

How

- **Offer Lifestyle Written Assessment during introductory session**
  - » Use paper and pencil format (standardized)
  - » Ask demographic, history, belief, behavioral and knowledge questions
  - » Use format to make data available to both participant and project
  - » Assure confidentiality by assigning a code number to each report
  - » Reveal only group data to company
  - » Tabulate data for baseline information
  - » Minimum assessment - everyone to receive
  - » See sample, Appendix six

- **Conduct Physical Assessment during introductory session to include:**
  - » Body weight
  - » Height
  - » BMI Index (calculated)
  - » Blood pressure
  - » Pulse
  - » Blood total cholesterol
  - » Blood HDL cholesterol
  - » Cholesterol/HDL Ratio (calculated)
  - » Blood glucose
  - » Aerobic fitness test
  - » Strength test
  - » Flexibility test
  - » Insure ability to take tests by completion of medical history and signed release
  - » Conduct assessments onsite at company facility where introductory session is being held or at a truck stop
  - » Maintain minimal variability by utilizing the same individuals (whenever possible) to do the actual testing -- where others are performing assessments, complete procedures and guidelines will be given, (see Appendix seven)
  - » Assure confidentiality as outlined above for the Lifestyle Written Assessment
  - » Optional assessment component
  - » Tabulate data for baseline information

» Collection of data on standardized form along with history and release (see Appendix eight) where data is available to both participant and project
» Reveal only group data to company

- **Provide Goal Setting and Coaching as final dimension of health assessment**
  » Explain results of test to participant
  » Help participant determine goals and how to proceed in Action Phase
  » Assure confidentiality as outlined above for the Lifestyle Written Assessment
  » Collection of data on standardized form (see appendix nine)
  » Optional assessment component

Phase III: Action

Information Package

Why

- **Begin process of improving behaviors and health of drivers**
- **Provide information on health topics in formats (print, audio, and video) requested by drivers in survey**
- **Provide information addressing issues and concerns of drivers as reported in survey**
- **Provide information addressing both 'on the road' life and 'at home' life of driver**
- **Provide information using a style and format appropriate for driver population**

How

- **Provide a comprehensive interactive information booklet**
  » Offer as a component of the Information Package to all participants
  » Address topics determined of most concern to drivers :
    – Refueling
    – Relating
    – Relaxing
    – Rejuvenating
  » Provide information to driver to use when they are on the road as well as when they are at home
  » Follow format in which participant will read and do activities at their own pace, with the goal of finishing in four months (pilot length)
  » Distribute as part of the Information Package to participants during Introductory session
  » Develop into 4 R Road Challenge theme for year one
  » Use a modification of the Transtheoretical model for behavior change as described by Prochaska and Dacher's integrated healing model for each topic

- **Information booklet outline follows**

	Tell Me About It. **Stage 1**	**Maybe, I should. I could.** **Stage 2**	**What do I need to do?** **Stages 3-4**	**What's next?** **Stages 5-6**
Refueling	How eating affects health	Pros and cons of eating healthy	Healthy eating: on the road At home	Dealing with triggers Support system
Relating	Health value of relationships	Productive vs. nonproductive relationships	Improve relationships with better communication skills	Nurturing relationships
Relaxing	Health value of relaxation	Issues: Road rage Boredom Difficult people	Relaxation techniques: Short term Long term	Strategies for staying in control Dealing with triggers
Rejuvenating	Health value of movement and exercise	Pros and cons of exercise	Exercise Interest Inventory How to do it	Support system

- **Provide audio cassettes**
  - » Provide 4 different 30-60 minute audio tapes – one for each topic
    - Refueling – questions and answers interview and testimonials
    - Relaxing – a relaxation/meditation tape
    - Relating – role model conversations on communication skills, problem solving, family tips
    - Rejuvenating – exercise/walking tape, warm up, breathing
  - » Design tapes for use by participants at own pace, based on needs
  - » Use industry spokesperson and other drivers for majority of audio talent
  - » Distribute as part of the Information Package to participants during Introductory Session

- **Provide video**
  - » Offer as a component of the Information Package to all participants
  - » Design as two-hour video with approximately 30 minutes devoted to each of the topics:
    - Refueling
    - Relaxing
    - Relating
    - Rejuvenating
  - » Design to complement information as provided in the booklet and audio cassettes
    - Use industry spokespersons and drivers as majority of talent

- Distribute as part of Information Package to participants during Introductory session

- **Provide Internet option**
  - » Offer internet option with same information as provided in Information Package for participants who would prefer this format

Coaching

Why

- **Provide opportunity for drivers to form relationship with health professional who can help them with lifestyle changes**
- **Assist drivers in setting their goals**
- **Implement system of contact and support with driver which has been shown to improve outcome**
- **Test systems** of coaching to determine feasibility for national program

How

- **Offer option of personal coaching to each driver at introductory session**
- **Offer option of telephonic coaching to those who choose to work with a coach**
  - » Offer weekly contact for 20 minutes with coach for four months
  - » Provide coach from staff of Sue Roberts Health Concepts (individual who does assessment in introductory phase if possible)
  - » Provide telephone card for driver to use for coach call

- **Offer option of on-site, one-on-one coaching to those who choose to work with a coach**
  - » Possible coaches from companies who have wellness staff trained in core program
  - » Possible coaches from staff of Sue Roberts Health Concepts
  - » Offer monthly contact with coach for 30 minutes

Snack Pack

Why

- **Improve health by giving access to nutritious snacks**
- **Address snack issue - drivers do carry snacks, but not necessarily a healthy eating option (from survey)**
- **Acknowledge driver topic of concern eating and weight (from survey)**

How

- **Offer boxed snack pack weekly with 5 servings vegetables, 5 servings fruit, 5 servings grain, examples:**

Vegetable	Fruit	Grain
V-8 Juice	Juices	Whole grain crackers
Tomato juice	Dried fruit	Graham crackers
Baby carrots	Fresh fruit	Fig Newtons

- **Distribute snack pack at company terminal or at truck stops**
- **Provide system to reimburse driver for cost of snack packs purchased at truck stops**
- **Work with outside company to provide snack pack**
- **Make snack pack participation optional**
- **Determine availability with pilot companies**

Exercise Membership

Why

- **Improve health of drivers by providing access to exercise facilities**
- **Address an area where drivers report they need improvement in behavior, but find access difficult**

How

- **Offer exercise membership options**
  - » Rolling Strong™ membership for drivers who choose truck stop exercise
  - » Company exercise facility for drivers whose company have these available
  - » Local membership at community facilities such as the YMCA
- **Make exercise membership participation optional**

Phase IV: Evaluation

Health Assessment

Why

- **Collect post-pilot data on belief, behavior, knowledge and physical data of pilot participants to use for evaluation of pilot projects**
- **Review data to determine advisability of program specifics for national rollout**

How

- **Repeat Lifestyle Written Assessment pilot participants**
  - » Use paper and pencil format (standardized)
  - » Ask demographic, history, belief, behavioral and knowledge questions
  - » Use format to make data available to both participant and project
  - » Assure confidentiality by assigning a code number to each report
  - » Reveal only group data to company
  - » Tabulate data for comparison to baseline data
  - » Minimum assessment - everyone to receive

- **Repeat Physical Assessment with pilot participants**:
  - » Body weight
  - » Height
  - » BMI Index (calculated)
  - » Blood pressure
  - » Pulse
  - » Blood total cholesterol
  - » Blood HDL cholesterol
  - » Cholesterol/HDL Ratio (calculated)
  - » Blood glucose
  - » Aerobic fitness test
  - » Strength test
  - » Flexibility test
  - » Insure ability to take tests by completion of medical history and signed release
  - » Conduct assessments onsite at company facility where follow-up session is being held or at a truck stop
  - » Maintain minimal variability by utilizing the same individuals (whenever possible) to do the actual testing -- where others are performing assessments, complete procedures and guidelines will be given
  - » Assure confidentiality as outlined above for the Lifestyle Written Assessment
  - » Collection of data on standardized form along with history and where data is available to both participant and project
  - » Reveal only group data to company
  - » Tabulate data for comparison to baseline data

- **Provide Goal Setting and Coaching as final dimension of health assessment**
  - » Explain results of test to participant
  - » Help participant evaluate progress
  - » Assure confidentiality as outlined above for the Lifestyle Written Assessment
  - » Tabulate data as to goal attainment

Appendix

Appendix One: Summary of All Survey Respondents

For questions 1–14, please indicate the level of concern you have about your health in each area by circling the appropriate number (e.g., 1=almost never a concern; 5=almost always a concern).

Question	Mean Response	Almost Never A Concern (%)				Almost Always A Concern
1 Weight	3.54	1(10)	2(10)	3(25)	4(25)	5(29)
2 Heart disease	3.33	1(15)	2(13)	3(24)	4(19)	5(29)
3 Cancer	3.23	1(15)	2(16)	3(25)	4(18)	5(26)
4 Poor diet	3.51	1(10)	2(10)	3(26)	4(26)	5(28)
5 Lack of exercise	3.71	1(7)	2(12)	3(20)	4(20)	5(26)
6 High blood pressure	3.12	1(22)	2(14)	3(20)	4(17)	5(27)
7 Lack of family time	3.98	1(6)	2(9)	3(14)	4(20)	5(50)
8 Lack of sleep	3.40	1(12)	2(14)	3(25)	4(22)	5(28)
9 Diabetes	2.46	1(40)	2(17)	3(15)	4(12)	5(16)
10 Tobacco use	2.22	1(56)	2(9)	3(10)	4(9)	5(17)
11 Drug/alcohol use	1.63	1(75)	2(9)	(3)	4(3)	5(10)
12 Back/neck injuries	3.02	1(23)	2(14)	3(25)	4(15)	5(23)
13 Stress	3.48	1(12)	2(11)	3(23)	4(23)	5(30)
14 Fatigue	3.52	1(9)	2(14)	3(21)	4(26)	5(29)

15 How would you rate your own health? 7.14 (Mean Response)

Very Poor				(Percent Response)					Excellent
1 (0)	2(0)	3(2)	4(3)	5(12)	6(13)	7(23)	8(31)	9(9)	10(8)

For questions 16–27, please indicate your level of agreement with the following health statements by circling the appropriate number. Note: 1=Strongly disagree, 5=Strongly agree.

Question	Mean Response	Strongly Disagree		(%)		Strongly Agree
16 I feel that I am in better health than I was one year ago.	3.12	1(11)	2(15)	3(39)	4(19)	5(15)
17 I do not manage my stress well.	2.71	1(21)	2(26)	3(24)	4(17)	5(11)
18 I feel I have control over my own health.	3.58	1(5)	2(10)	3(32)	4(26)	5(27)
19 My family is an important reason for being healthy.	4.36	1(3)	2(3)	3(12)	4(19)	5(62)
20 Remaining healthy today will help me enjoy retirement years.	4.67	1(2)	2(1)	3(5)	4(14)	5(78)
21 I do not feel that my life has meaning and value.	1.84	1(66)	2(10)	3(8)	4(6)	5(10)
22 Being able to work is an important reason for being healthy.	4.26	1(3)	2(4)	3(13)	4(23(	5(57)
23 Doing well at my job is an important reason for being healthy.	4.30	1(3)	2(2)	3(13)	4(24)	5(57)
24 I eat healthy on a regular basis (i.e., at least five days per week).	3.00	1(15)	2(21)	3(29)	4(17)	5(17)
25 I exercise on a regular basis (i.e., at least three days per week).	2.42	1(32)	2(27)	3(20)	4(10)	5(11)
26 I believe I am responsible for my own health.	4.47	1(2)	2(2)	3(11)	4(19)	5(66)
27 Having energy to do what I want is important for being healthy.	4.59	1(1)	2(1)	3(5)	4(26)	5(68)

28 How would you rate the general health of the average driver in your profession?

Very Poor		Mean Response:		5.11					Excellent
1(3)	2(4)	3(16)	4(18)	5(20)	6(15)	7(11)	8(8)	9(3)	10(1)

For each of the following questions, circle which one of the following statements best describes your situation. NOTE, PLEASE CIRCLE ONLY ONE.

29 With regard to my ***eating***:

a (2) I eat whatever I want without regard to my health, and have no intention of changing.
b (27) I believe I should eat healthier, but I don't know how or have not made it a priority.
c (56) I am trying to eat healthier.
d (15) I eat healthy and have been for six months or more.

30 With regard to my ***activity and exercise***:

a (2) I am not active and do not exercise and have no intention of changing.
b (51) I believe I should be more active and exercise, but I don't know how or have not made it a priority.
c (32) I am trying to be more active and exercise at least 3 times per week.
d (15) I am active and exercise at least 3 times per week and have for six months or more.

31 With regard to how I ***manage stress***:

a (2) It's not important for me to manage my stress and I have no intention of changing.
b (24) I believe I should manage my stress, but I don't know how or have not made it a priority.
c (38) I am trying different methods to manage my stress.
d (37) I know how to relax and manage my stress and have for six months or more.

32 With regard to ***personal finances***:

a (1) I spend money without regard to my financial status and have no intention of changing.
b (7) I believe I should better manage my finances, but I don't know how or have not made it a priority.
c (36) I am trying to better manage my finances.
d (55) I am managing my personal finances within my means and have for six months or more.

33 With regard to my own ***health care***:

a (4) I ignore my health problems, hope the symptoms go away, or depend on my doctor when I get sick and have no intention of changing.
b (20) I believe I should learn more about taking care of my health, but don't know how/not made it a priority
c (42) I am trying to learn more about managing my own health care.
d (34) I see myself as the primary provider of my own health care, working in partnership with my doctor and have for six months or more.

34 With regard to ***sleep***:

a (4) I do not get enough sleep and have no intention of changing.
b (18) I believe I should improve my sleep habits, but I don't know how or have not made it a priority.
c (42) I am trying to improve my sleep habits.
d (35) I am getting enough sleep so that I am not tired during the day, and have for six months or more.

35 With regard to my ***tobacco use***:
a (8) I use tobacco products and have no intention of changing.
b (21) I believe I should stop using tobacco, but I don't know how or have not made it a priority.
c (16) I am trying to stop using tobacco products.
d (55) I do not use tobacco products and have not for six months or more.

36 With regard to my ***personal relationships***:
a (2) I do what I want without regard to the effect on my personal relationships and have no intention of chg
b (9) I believe I should improve my relationships, but I don't know how or have not made it a priority.
c (28) I am trying to improve my relationships.
d (60) I have several very good relationships which I have maintained for six months or more.

37 With regard to my ***work***:
a (3) My work is not enjoyable or fulfilling and I have no intention of changing it.
b (18) I believe my work should be more fulfilling and enjoyable, but I don't know how to change it.
c (33) I am trying to improve the fulfillment and enjoyment I receive from my work.
d (46) I enjoy and feel fulfilled by my work, and it has been this way for six months or more.

38 With regard to my ***interests and hobbies***:
a (4) I do not have many interests and hobbies, and have no intention of changing.
b (16) I believe I should increase my interests and hobbies, but I don't know how or have not made it a priority.
c (30) I am trying to increase my interests and my hobbies in life.
d (50) I have many interests and hobbies in life and have been aware of these for six months or more.

39 With regard to my use of ***controlled substances*** (i.e.: illegal drugs):
a (1) I use controlled substances and I have no intention of changing.
b (0) I believe I should stop using controlled substances, but I don't know how/not made it a priority.
c (0) I am trying to stop using controlled substances.
d (99) I do not use controlled substances and have not for six months or more.

40 With regard to my use of ***alcohol***:
a (1) I use alcohol excessively and have no intention of changing.
b (2) I believe I should decrease my intake of alcohol to no more than 2 drinks per day, but I don't know how or have not made it a priority.
c (4) I am trying to decrease my alcohol intake to 2 drinks per day or less.
d (93) I consume less than 2 alcoholic drinks per day, and have for six months or more.

41 My weight is: **Mean response: 2.96**
a (3) 10 pounds or more under a healthy level.
b (35) within 10 pounds of a healthy level.
c (36) 10–25 pounds over a healthy level.
d (15) 26–50 pounds over a healthy level.
e (11) more than 50 pounds over a healthy level.
f (0) I don't know my weight.

42 My blood pressure is: **Mean response: 2.48**

a (35) less than or equal to 120/80 mmHg.
b (27) 121/81–140/85 mmHg.
c (15) 141/86–160/90 mmHg.
d (2) greater than 160/90 mmHg.
e (21) I don't know my blood pressure.

43 My total blood cholesterol level is: **Mean response: 2.80**

a (26) less than or equal to 200 mg%.
b (19) 201–240mg%.
c (4.5) greater than 240 mg%.
d (50) I don't know my blood cholesterol level.

44 A higher blood pressure is a risk factor for: (Circle all that apply) **72% answered only a&d**

a (n=369) *Heart disease.
b (n=44) Cancer.
c (n=125) Diabetes.
d (n=393) *Stroke.
e (n=33) Arthritis.

45 A fish fillet sandwich from a fast-food restaurant is a healthy choice menu option.

☐ (24.6) True ☐ (75.4) *False

Some of us eat healthy, some of us do not. For Questions 46–52, we would like you to tell us information about why and how you eat by circling the appropriate number. Note: 1= almost never; 5=almost always.

Question	Mean Response	Almost Never	(%) Resp.			Almost Always
46 I can find healthy food choices where I eat.	3.15	1(11)	2(17)	3(33)	4(21)	5(17)
47 I have enough time to eat healthy.	2.98	1(16)	2(20)	3(29)	4(18)	5(16)
48 My spouse/partner cooks healthy.	3.83	1(7)	2(5)	3(22)	4(29)	5(37)
49 I know how to eat healthy.	3.95	1(3)	2(7)	3(18)	4(35)	5(36)
50 I eat at fast food restaurants.	2.84	1(16)	2(23)	3(32)	4(21)	5(9)
51 I carry healthy food with me.	2.83	1(24)	2(18)	3(26)	4(18)	5(15)
52 I carry unhealthy food with me.	2.41	1(31)	2(21)	3(30)	4(13)	5(6)
53 I eat at truck stops.	3.03	1(20)	2(13)	3(26)	4(24)	5(17)
54 I eat only one meal per day.	2.59	1(32)	2(18)	3(23)	4(14)	5(13)

55 List the foods you ate for your last meal on the road. _____

_____

A variety of wellness programs will be developed to help you with information and assistance to live a healthier life.

56 Would you participate in a program if it was offered?

☐ (41)Yes ☐ (10)No ☐ (49)Maybe

57 If you answered no, why not? _____

_____

_____

_____

58 Would your family participate in a program if offered to them?

☐ (32)Yes ☐ (12)No ☐ (56)Maybe

59 If you answered no, why not? _____

_____

_____

_____

60 Please indicate which of the following methods would be ways that you would like to receive information and assistance. (Circle all that apply).

a (n=197-44%) Audio tapes
b (n=231-52%) Newsletters, pamphlets
c (n=204-46%) Video
d (n=49-11%) Computer-disc
e (n=85-19%) Workbook
f (n=49-11%) Classes or seminars
g (n=132-29%) Information at truckstops
h (n=54-12%) One-on-one personalized counseling at terminal
i (n=35-8%) One-on-one counseling by phone
j (n=39-9%) One-on-one personalized counseling at truckstops
k (n=196-44%) Health screening clinics (e.g., Blood pressure, cholesterol, body fat, fitness testing)
l (n=40-9%) Support groups
m (n=25-6%) Contests
n (n=31-7%) None of these appeal to me
o Other _____

61 Who is a role model you admire and look up to? _____

_____

62 My age is: **(Mean response = 3.08)**

a (6.7%) less than 30 years.
b (22.6%) 30–40 years.
c (35.4%) 41–50 years.
d (26.6%) 51–60 years.
e (8.7%) greater than 60 years.

63 My gender is:
a (95.5%) male
b (4.5%) female

64 My type of driving job is ***primarily***: (Note circle only one)
a (22.8%) local short-haul (e.g., I do not go beyond a 100 air-mile radius from the terminal).
b (12.8%) long haul less-than-truckload.
c (57.6%) long haul truckload.
d (6.8%) motorcoach.

65 I have been driving for: **Mean response = 3.93**
a (2.2%) less than one-year.
b (14.7%) 1–5 years.
c (15.8%) 6–10 years.
d (22.4%) 11–20 years.
e (44.9%) more than 20 years.

66 I am:
a (77.2%) a company driver.
b (21.5%) an owner-operator.
c (1.3%) a leased employee.

67 The company I work for has:
a (1.2%) one driver.
b (9.9%) 2–10 drivers.
c (17.4%) 11–49 drivers.
d (71.5%) 50 or more drivers.

68 If you were designing a truck and bus driver wellness program, what would you be sure to do? _____

_____

_____

_____

_____

_____

69 What would you be sure not to do? _____

_____

_____

_____

_____

_____

_____

Appendix Two: Summary of "Healthy Driver" Survey Respondents

For questions 1–14, please indicate the level of concern you have about your health in each area by circling the appropriate number (e.g., 1=almost never a concern; 5=almost always a concern).

Question	Mean Response	Almost Never A Concern (%)				Almost Always A Concern
1 Weight	3.26	1(24)	2(12)	3(10)	4(24)	5(31)
2 Heart disease	3.45	1(22)	2(10)	3(12)	4(17)	5(41)
3 Cancer	3.24	1(22)	2(14)	3(14)	4(19)	5(31)
4 Poor diet	3.10	1(31)	2(5)	3(14)	4(24)	5(26)
5 Lack of exercise	3.26	1(19)	2(17)	3(12)	4(24)	5(28)
6 High blood pressure	3.07	1(32)	2(10)	3(7)	4(22)	5(30)
7 Lack of family time	3.71	1(14)	2(7)	3(17)	4(17)	5(45)
8 Lack of sleep	2.98	1(24)	2(12)	3(27)	4(15)	5(22)
9 Diabetes	2.43	1(45)	2(17)	3(7)	4(12)	5(19)
10 Tobacco use	2.45	1(55)	2(5)	3(7)	4(7)	5(26)
11 Drug/alcohol use	1.81	1(76)	2(2)	(2)	4(5)	5(15)
12 Back/neck injuries	2.81	1(36)	2(5)	3(24)	4(14)	5(21)
13 Stress	3.12	1(24)	2(7)	3(29)	4(14)	5(26)
14 Fatigue	2.93	1(26)	2(14)	3(19)	4(21)	5(19)

15 How would you rate your own health? 8.81 (Mean Response)

Very Poor				(Percent Response)					Excellent
1 (0)	2(0)	3(0)	4(0)	5(0)	6(0)	7(0)	8(55)	9(10)	10(36)

For questions 16–27, please indicate your level of agreement with the following health statements by circling the appropriate number. Note: 1=Strongly disagree, 5=Strongly agree.

Question	Mean Response	Strongly Disagree		(%)		Strongly Agree
16 I feel that I am in better health than I was one year ago.	4.52	1(0)	2(0)	3(0)	4(48)	5(52)
17 I do not manage my stress well.	2.00	1(50)	2(21)	3(12)	4(12)	5(5)
18 I feel I have control over my own health.	4.67	1(0)	2(0)	3(0)	4(33)	5(67)
19 My family is an important reason for being healthy.	4.55	1(5)	2(0)	3(5)	4(17)	5(74)
20 Remaining healthy today will help me enjoy retirement years.	4.90	1(0)	2(0)	3(2)	4(5)	5(93)
21 I do not feel that my life has meaning and value.	1.29	1(88)	2(5)	3(0)	4(5)	5(2)
22 Being able to work is an important reason for being healthy.	4.60	1(5)	2(0)	3(2)	4(17)	5(76)
23 Doing well at my job is an important reason for being healthy.	4.64	1(5)	2(0)	3(5)	4(7)	5(83)
24 I eat healthy on a regular basis (i.e., at least five days per week).	3.91	1(2)	2(7)	3(26)	4(26)	5(38)
25 I exercise on a regular basis (i.e., at least three days per week).	3.74	1(2)	2(17)	3(21)	4(24)	5(36)
26 I believe I am responsible for my own health.	4.95	1(0)	2(0)	3(0)	4(5)	5(95)
27 Having energy to do what I want is important for being healthy.	4.93	1(0)	2(0)	3(0)	4(7)	5(93)

28 How would you rate the general health of the average driver in your profession?

Very Poor		Mean Response:		5.52					Excellent
1(5)	2(2)	3(19)	4(7)	5(19)	6(12)	7(10)	8(17)	9(5)	10(5)

For each of the following questions, circle which one of the following statements best describes your situation. NOTE, PLEASE CIRCLE ONLY ONE.

29 With regard to my ***eating***:

a (2) I eat whatever I want without regard to my health, and have no intention of changing.
b (7) I believe I should eat healthier, but I don't know how or have not made it a priority.
c (36) I am trying to eat healthier.
d (55) I eat healthy and have been for six months or more.

30 With regard to my ***activity and exercise***:

a (0) I am not active and do not exercise and have no intention of changing.
b (14) I believe I should be more active and exercise, but I don't know how or have not made it a priority.
c (38) I am trying to be more active and exercise at least 3 times per week.
d (48) I am active and exercise at least 3 times per week and have for six months or more.

31 With regard to how I ***manage stress***:

a (5) It's not important for me to manage my stress and I have no intention of changing.
b (2) I believe I should manage my stress, but I don't know how or have not made it a priority.
c (26) I am trying different methods to manage my stress.
d (67) I know how to relax and manage my stress and have for six months or more.

32 With regard to ***personal finances***:

a (0) I spend money without regard to my financial status and have no intention of changing.
b (0) I believe I should better manage my finances, but I don't know how or have not made it a priority.
c (14) I am trying to better manage my finances.
d (865) I am managing my personal finances within my means and have for six months or more.

33 With regard to my own ***health care***:

a (0) I ignore my health problems, hope the symptoms go away, or depend on my doctor when I get sick and have no intention of changing.
b (5) I believe I should learn more about taking care of my health, but don't know how/not made it a priority
c (29) I am trying to learn more about managing my own health care.
d (66) I see myself as the primary provider of my own health care, working in partnership with my doctor and have for six months or more.

34 With regard to ***sleep***:

a (0) I do not get enough sleep and have no intention of changing.
b (2) I believe I should improve my sleep habits, but I don't know how or have not made it a priority.
c (45) I am trying to improve my sleep habits.
d (52) I am getting enough sleep so that I am not tired during the day, and have for six months or more.

35 With regard to my ***tobacco use***:
a (5) I use tobacco products and have no intention of changing.
b (12) I believe I should stop using tobacco, but I don't know how or have not made it a priority.
c (21) I am trying to stop using tobacco products.
d (62) I do not use tobacco products and have not for six months or more.

36 With regard to my ***personal relationships***:
a (0) I do what I want without regard to the effect on my personal relationships and have no intention of chg
b (0) I believe I should improve my relationships, but I don't know how or have not made it a priority.
c (29) I am trying to improve my relationships.
d (71) I have several very good relationships which I have maintained for six months or more.

37 With regard to my ***work***:
a (0) My work is not enjoyable or fulfilling and I have no intention of changing it.
b (10) I believe my work should be more fulfilling and enjoyable, but I don't know how to change it.
c (22) I am trying to improve the fulfillment and enjoyment I receive from my work.
d (69) I enjoy and feel fulfilled by my work, and it has been this way for six months or more.

38 With regard to my ***interests and hobbies***:
a (0) I do not have many interests and hobbies, and have no intention of changing.
b (17) I believe I should increase my interests and hobbies, but I don't know how or have not made it a priority.
c (19) I am trying to increase my interests and my hobbies in life.
d (64) I have many interests and hobbies in life and have been aware of these for six months or more.

39 With regard to my use of ***controlled substances*** (i.e.: illegal drugs):
a (0) I use controlled substances and I have no intention of changing.
b (0) I believe I should stop using controlled substances, but I don't know how/not made it a priority.
c (0) I am trying to stop using controlled substances.
d (100) I do not use controlled substances and have not for six months or more.

40 With regard to my use of ***alcohol***:
a (0) I use alcohol excessively and have no intention of changing.
b (0) I believe I should decrease my intake of alcohol to no more than 2 drinks per day, but I don't know how or have not made it a priority.
c (2) I am trying to decrease my alcohol intake to 2 drinks per day or less.
d (98) I consume less than 2 alcoholic drinks per day, and have for six months or more.

41 My weight is: **Mean response: 2.00**
a (0) 10 pounds or more under a healthy level.
b (100) within 10 pounds of a healthy level.
c (0) 10–25 pounds over a healthy level.
d (0) 26–50 pounds over a healthy level.
e (0) more than 50 pounds over a healthy level.
f (0) I don't know my weight.

42 My blood pressure is: **Mean response: 2.14**

a (41) less than or equal to 120/80 mmHg.
b (32) 121/81–140/85 mmHg.
c (12) 141/86–160/90 mmHg.
d (0) greater than 160/90 mmHg.
e (15) I don't know my blood pressure.

43 My total blood cholesterol level is: **Mean response: 2.43**

a (39) less than or equal to 200 mg%.
b (20) 201–240mg%.
c (0) greater than 240 mg%.
d (42) I don't know my blood cholesterol level.

44 A higher blood pressure is a risk factor for: (Circle all that apply) **83% answered only a&d**

a (n=35) *Heart disease.
b (n=0) Cancer.
c (n=6) Diabetes.
d (n=40) *Stroke.
e (n=0) Arthritis.

45 A fish fillet sandwich from a fast-food restaurant is a healthy choice menu option.

☐ (20) True ☐ (81) *False *(Correct answer)

Some of us eat healthy, some of us do not. For Questions 46–52, we would like you to tell us information about why and how you eat by circling the appropriate number. Note: 1= almost never; 5=almost always.

Question	Mean Response	Almost Never		(%) Resp.		Almost Always
46 I can find healthy food choices where I eat.	3.57	1(7)	2(7)	3(33)	4(26)	5(26)
47 I have enough time to eat healthy.	3.67	1(7)	2(14)	3(19)	4(24)	5(36)
48 My spouse/partner cooks healthy.	4.56	1(2)	2(0)	3(12)	4(10)	5(76)
49 I know how to eat healthy.	4.56	1(0)	2(2)	3(12)	4(12)	5(73)
50 I eat at fast food restaurants.	2.19	1(36)	2(29)	3(24)	4(5)	5(7)
51 I carry healthy food with me.	3.24	1(21)	2(12)	3(17)	4(21)	5(29)
52 I carry unhealthy food with me.	1.76	1(62)	2(14)	3(14)	4(5)	5(5)
53 I eat at truck stops.	2.69	1(36)	2(7)	3(26)	4(14)	5(17)
54 I eat only one meal per day.	2.14	1(55)	2(10)	3(10)	4(19)	5(7)

55 List the foods you ate for your last meal on the road. _____

_____

A variety of wellness programs will be developed to help you with information and assistance to live a healthier life.

56 Would you participate in a program if it was offered?
☐ (50)Yes ☐ (24)No ☐ (26)Maybe

57 If you answered no, why not? _____
_____
_____
_____

58 Would your family participate in a program if offered to them?
☐ (36)Yes ☐ (21)No ☐ (43)Maybe

59 If you answered no, why not? _____
_____
_____
_____

60 Please indicate which of the following methods would be ways that you would like to receive information and assistance. (Circle all that apply).

a (n=15-36%) Audio tapes
b (n=16-38%) Newsletters, pamphlets
c (n=17-41%) Video
d (n=4-10%) Computer-disc
e (n=9-22%) Workbook
f (n=5-13%) Classes or seminars
g (n=6-14%) Information at truckstops
h (n=2-5%) One-on-one personalized counseling at terminal
i (n=2-5%) One-on-one counseling by phone
j (n=1-2%) One-on-one personalized counseling at truckstops
k (n=16-38%) Health screening clinics (e.g., Blood pressure, cholesterol, body fat, fitness testing)
l (n=4-10%) Support groups
m (n=1-2%) Contests
n (n=6-15%) None of these appeal to me
o Other _____

61 Who is a role model you admire and look up to? _____
_____

62 My age is: **(Mean response = 3.52)**
a (2.4%) less than 30 years.
b (21.4%) 30–40 years.
c (16.7%) 41–50 years.
d (40.5%) 51–60 years.
e (19.1%) greater than 60 years.

63 My gender is:
a (100%) male
b (0%) female

64 My type of driving job is ***primarily***: (Note circle only one)
a (21.4%) local short-haul (e.g., I do not go beyond a 100 air-mile radius from the terminal).
b (23.8%) long haul less-than-truckload.
c (42.9%) long haul truckload.
d (11.9%) motorcoach.

65 I have been driving for: **Mean response = 4.38**
a (2.4%) less than one-year.
b (2.4%) 1–5 years.
c (14.3%) 6–10 years.
d (16.7%) 11–20 years.
e (64.3%) more than 20 years.

66 I am:
a (81.0%) a company driver.
b (19.0%) an owner-operator.
c (0%) a leased employee.

67 The company I work for has:
a (2.4%) one driver.
b (4.9%) 2–10 drivers.
c (26.8%) 11–49 drivers.
d (65.9%) 50 or more drivers.

68 If you were designing a truck and bus driver wellness program, what would you be sure to do? _____

_____

_____

_____

_____

_____

69 What would you be sure not to do? _____

_____

_____

_____

_____

_____

_____

Appendix Three: Executive Interview Summary

1. What does your company do?

Company one: For-hire flatbed truckload fleet located in western Pennsylvania. Staff includes 125 headquarters and 700 trucks drivers. Transport metals, (ferrous and nonferrous), 55% owner-operators. 36 remote terminals

Company two: Private national refrigerated truckload fleet for a major cheese manufacturing company. Based in Rocky mountains, employs 350 truck drivers, with a total company staff of 425. All drivers are paid by mile.

Company three: Nation-wide for-hire refrigerated truck load carrier. Located in Northeastern, PA. Fleet consists of. 1300 total vehicles.

Company four: Regional for-hire truckload fleet that runs exclusively east of the Mississippi. Located in the Great Lakes states. Employs 100 drivers and 25 office staff/mechanics. Average length of haul: less than 500 miles/load

Company five: Regional refrigerated and agricultural for-hire truck fleet located in the Pacific Northwest. Employs 3 union drivers and 47 non-union drivers. Haul diversified agricultural products and operate 90 percent of the time within 11 western states

Company six: Specialized national for-hire motor carrier located in the upper mid-west. Fleet is comprised of 100 independent owner operators and 25 additional company drivers and office staff.
Philosophy, "we care about you", open door policy

Company seven: Regional for-hire "wood chip" carrier located in the Pacific Northwest. Primarily hauls products from saw mills to wood mills. Length of haul is approximately 200 miles. Operate 50 trucks with 80 employees. Timber industry

Company eight: Less than truck load, regional regular route for-hire carrier located in the Pacific Northwest. Employs 225 union drivers. Fleet comprised of 205 tractors and 614 trailers

Company nine: For-hire liquid transporter based in the Upper Great Lakes. Fleet is comprised of 395 tractors, 608 trailers and employs 700 truck drivers and 65 corporate staff.

Company ten: For-hire national truckload carrier located in the Western Great Plains. Primarily haul general commodities within all 48 states. Commodities hauled include auto parts and household goods. Average length of haul:

over 750 miles. Established in 1969, this company currently operates a fleet of 192 tractors, 414 trailers and employs 180 truck drivers. All drivers are paid by the mile.

2. What are the greatest challenges facing your industry today?

Company One:	Getting qualified, safe drivers- Government regulations
Company Two:	Smoking risks- nutrition- not enough exercise- driver retention
Company Three:	Adequate driver staff
Company Four:	Driver hiring and retention- Poor treatment of drivers by shippers and receivers
Company Five:	Driver retention- good, qualified drivers- being able to keep them happy, traffic is hard, it is not an easy job.
Company Six:	Explosion of government regulations- anti industry- retraining and acquiring quality people.
Company Seven:	Driver retention- hauling rates
Company Eight:	Organized labor- Size and weight laws, taxes- regulatory activity related to OSHA
Company Nine:	Driver shortages
Company Ten:	Finding and retaining quality drivers

3. Where does the importance of employee health and health care costs fall in your list of priorities for you company?

Company One:	Pretty decent- presidents idea image of drivers is important
Company Two:	Not a priority because it is not a direct cost to me (non union)
Company Three:	High priority (non union)
Company Four:	No response
Company Five:	Health care is major- medical $-2% gross revenue, $15,000/mo = $3200/emp/yr- workman's comp = $2.40/hr $5,000
Company Six:	Employees provide a vast amount of the benefits
Company Seven:	Health care money and absenteeism are very important
Company Eight:	Significant- industrial compensation, worker lost time(work days)
Company Nine:	Very high issue
Company Ten:	Fairly high, major expense, no insurance

4. Does your company have a wellness program?: Why? Why not?

Company One:	Yes, there are facilities and health retreats. CEO is in shape and athletic and wants to change the image of the drivers. Calling card 30 min/mo program for driver appreciation, driver liaison, highway angels.
Company Two:	A little information. Human Resources thinks it will be too expensive to run fitness facilities

Company Three: No
Company Four: No. Have nicotine patch and smoking cessation. Problem is the drivers not having enough time.
Company Five: No. Too hard to set up
Company Six: Not currently
Company Seven: No
Company Eight: Yes. HR believes it contributes to good employee/management relations. EAP- flu shots, safety management programs, drug testing. Union company- unions goals are not aligned with the companies.
Company Nine: Yes, 2 years, recently the emphasis is on drivers. There have been five deaths due to circulatory in one quarter, more for drivers (always for all) Drivers are the least healthy group. Cuts down on health care costs. Problems- opened fitness center and ~ 20 people used it. Has Nautilus, steppers, 2 treadmills, free weights, bikes. Available to 150 people
Company Ten: Currently trying to implement program with health care provider. Some meetings with drivers. We can control worker's comp etc. with training. Would like a wellness program to try to get a handle on rising costs. So much of the costs are family related.

5. If you have a wellness program, how would you rate its effectiveness (scale 1-10)? Why?

Company One: No response
Company Two: Not too effective, not sure why. Just looked at it and forgot about it.
Company Three: No response
Company Four: No response
Company Five: No response
Company Six: No response
Company Seven: No response
Company Eight: 6
Company Nine: 4-5, better than nothing- a lot of activities quarterly
Company Ten: 2-3, very young, new

6. Do you believe your employees take ownership and responsibility for their own health? Why?

Company One: Some do. I do, the president does, others do not. Culture is hard. Blue collar
Company Two: Not as much as we would like. It is hard to eat healthy on the road, time is also a problem.
Company Three: Sure
Company Four: No, absolutely no. It is part of the image. They have a lot of time on their hands.
Company Five: No, we still have a lot who have bad habits, i.e. smoke, overweight. No more or less than the average person.
Company Six: I think they do but it is neglected.

Company Seven: No, but no worse than anyone else.
Company Eight: We have to work very hard to have a safe environment. 4 on a scale from1-10
Company Nine: Some- lifestyle too busy, macho type
Company Ten: Not 100%- some just live from day to day

7. How could this be improved?

Company One: With the drivers it is a convenience factor. Need to get the "fun" message out, simple. Driver recuperation center corporation headquarters- lounge, rec room, fitness center (treadmills, bikes), kitchen. Incentive program for drivers- on-time, etc. Incentive program for safety.
Company Two: Incentive program- speed program, safety program. Working hard. Hard culture to change??
Company Three: No response
Company Four: Image of a truck driver is hard to change. Need to work out of this.
Company Five: The improvement has to come from the 'love of life' and the quality of life you're going to have in your later years. You have to feel good about yourself first. The condition of enjoyment of life and the people around you.
Company Six: Develop a program that lays it out, then incentives and set goals.
Company Seven: I don't know. It is very hard. Some are more motivated than others.
Company Eight: No response
Company Nine: Communication- continual process
Company Ten: No response

8. Do you believe in rewarding healthy people? How would you or do you do it?

Company One: Incentive programs for drivers, on time etc. Incentive programs for safety.
Company Two: If a return on investment
Company Three: Yes & No. Wouldn't turn over, big problem
Company Four: Yes, don't
Company Five: No response
Company Six: Personal time- if not taken, they get a check for it. Need to add more to this. "I don't think it is a money issue".
Company Seven: I don't think it would work
Company Eight: Yes, low absenteeism- additional vacation
Company Nine: Yes- incentive program, wellness points for gift catalog, reduce health care cost for non-smokers
Company Ten: I suppose- I don't know how

9. Describe your employees benefit package.

Company One: Health care insurance, 401 k, holiday/vacation

Company Two:	Health care insurance, disability, life, vacation, sick leave (6 days/yr backup to 30)
Company Three:	Health care insurance, time off, workman's comp, no sick leave paid by the mile.
Company Four:	Self insurance up to $15,000 , vacation, health insurance, 7 paid holiday, 401 k/profit sharing, no sick leave, disability
Company Five:	No response
Company Six:	Health insurance, dental, vision, time loss days, 401k
Company Seven:	EAP medical insurance, retirement benefits, incentive benefits- company picnics, safety incentives (gifts) Benefits are more in absenteeism.
Company Eight:	Health care (prescription), dental, vision. 401K, ESOP, life, disability, vacation and holidays
Company Nine:	Health care insurance- term life, 401K (profit sharing), paid vacation

10. What about spouses?

Company One:	Yes
Company Two:	Yes
Company Three:	Yes
Company Four:	Yes
Company Five:	No response
Company Six:	Yes
Company Seven:	Yes
Company Eight:	No Response
Company Nine:	Yes
Company Ten:	They are on package, families are most of the cost

10a Retirees?

Company One:	Yes
Company Two:	No
Company Three:	No
Company Four:	No response
Company Five:	No response
Company Six:	No response
Company Seven:	No
Company Eight:	Yes
Company Nine:	Some- basically no
Company Ten:	None

11. How much does your company spend on health care costs per employee per year?

Company One:	% of wages, $3,200 average
Company Two:	Self insured, 3,000 employees, $135/mo ??
Company Three:	Self insured, $250/emp/mo

Company Four: No response
Company Five: No Response
Company Six: ??
Company Seven: $400/emp/mo (dental/vision) Self insured(~ 1 yr.)
Company Eight: $800/mo = $9,600/yr.
Company Nine: Self funded- $5,000 employees ~ 25-30%
Company Ten: $1500/yr.- 50% paid

11a On workers compensation?

Company One: No response
Company Two: 425,000/yr. Divided by 425
Company Three: < $1,000,000/yr. We are very aggressive, insurance rehabilitation contract
Company Four: No response
Company Five: No response
Company Six: We are doing well in this area, I think it relates to the type of driver that you hire
Company Seven: $1.65/hr. for drivers $286/mo
Company Eight: $7.00/hr.- $14.00/hr. 50% of wage
Company Nine: $233,000/yr. 750 $310/emp./yr.
Company Ten: No response

12. Do you analyze your health care costs? Do you know you major cost areas?

Company One: No response
Company Two: No
Company Three: Risk manager does, large percent of costs are families
Company Four: No response
Company Five: No response
Company Six: ??
Company Seven: Some now
Company Eight: No
Company Nine: Yes- CHD, cancer
Company Ten: No response

13. What percentage of the health care dollars do you believe should be spent on wellness?

Company One: No response
Company Two: No response
Company Three: Yes, philosophically
Company Four: No response
Company Five: No response
Company Six: No response
Company Seven: I don't know- 25-30%

Company Eight: No response
Company Nine: No response
Company Ten:

14. What do you spend?

Company One: No response
Company Two: No response
Company Three: No, no payback
Company Four: No response
Company Five: No response
Company Six: No response
Company Seven: No response
Company Eight: No response
Company Nine: No response
Company Ten: No response

15. What kind of return on investment would you expect?

Company One: No response
Company Two: yr.
Company Three: No response
Company Four: No response
Company Five: No response
Company Six: No response
Company Seven: No response
Company Eight: No response
Company Nine: No response
Company Ten: No response

16. Do you survey your drivers about their needs? If yes, what do you find?

Company One: We are going to try to- safety survey
Company Two: Informal- one-on-one communication
Company Three: Some
Company Four: Some- on equipment, have done some on health
Company Five: No response
Company Six: Have in the past, ongoing suggestion program
Company Seven: We talk with them
Company Eight: No
Company Nine: Not for a long time
Company Ten: Yes, I need more money

17. What is your driver turnover? How do you think you can decrease this?

Company One:	~ 90%, No truck driver publication, more family involvement, truck driver appreciation, i.e. calling card, have a four day training program for new drivers.
Company Two:	25%, 70% of this is in <2yr. People
Company Three:	100%, driver wellness, we give trinkets
Company Four:	No response
Company Five:	55%, the more you can do for the employee, the more they buy into
Company Six:	30%, need to be constantly vigilant on how we interact with our employees, reward employees if they refer other drivers (they will only do this if they are happy with their employer), spending more time in training in house staff on how to interact with drivers.
Company Seven:	10-15%
Company Eight:	2%, home every night, good pay, good benefits
Company Nine:	30-40% $3000-4000 new employee costs
Company Ten:	105% enhancing benefit package, better job managing drivers, more sensitive to needs of being at home.

18. Would you pay to implement a wellness program for your employees? Why or why not?

Company One:	Yes, it shows that the drivers are safer.
Company Two:	No response
Company Three:	Sure, easily administered
Company Four:	Yes, would look at
Company Five:	Yes
Company Six:	Yes, would need to see the program
Company Seven:	Yes, we would look at the money
Company Eight:	Yes, if we can see there is a benefit, psychological or families.
Company Nine:	No response
Company Ten:	Yes

19. What kind of program implementation concerns do you foresee?

Company One:	Keeping it fun, tie fitness incentive program into safety incentive program, safety risk department.
Company Two:	Communication- getting to drivers, getting it explained (time)
Company Three:	Truckers never come in- only 2times/yr. for 3-4 hours. Drivers are out two weeks at a time
Company Four:	No response
Company Five:	Out of sight, out of mind
Company Six:	No response
Company Seven:	Getting people to participate, schedule is so tough. Needs camaraderie
Company Eight:	Confidentiality- mistrust because of union. Has to be an economic return for the owner.

Company Nine: Getting to drivers
Company Ten: Out so often

20. Do you have any ideas on how to resolve these concerns?

Company One: No response
Company Two: Work around their schedules
Company Three: No response
Company Four: No response
Company Five: Must be ongoing
Company Six: Management needs to outline why employer is doing it
Company Seven: Sit down as a group and ask them what works for them. Family affair
Company Eight: No response
Company Nine: No response
Company Ten: No response

21. What kind of wellness performance measures would you expect to see?

Company One: Health statistics, improvement in fatigue, safety statistics
Company Two: Decrease in health care costs, $300/driver/yr. for sick leave
Company Three: Decrease in absenteeism
Company Four: Improved health, decrease in health care costs
Company Five: Direct benefit to employee, help them be a better person. Interested in developing this in employees.
Company Six: Decrease in weight, better eating habits, exercises to do in cab.
Company Seven: Less time lost, decrease in cost. Interest in families.
Company Eight: Decrease in absenteeism, psychological change.
Company Nine: Participation levels, success stories, economic, health care costs
Company Ten: Bench marks: claims activity, reduced health care costs, turnover

22. What do you do to maintain your own optimal health?

Company One: Does not smoke, watches diet, not enough exercise, "I haven't had a heart attack yet."
Company Two: Walks every day- 2 miles
Company Three: Herbs- licorice
Company Four: Watches food intake
Company Five: Manages stress- practices relaxation techniques
Company Six: I don't exercise as much as I could
Company Seven: Takes vitamins, interested in losing weight
Company Eight: I'm very healthy and don't worry very much about it and know what to do
Company Nine: Exercise, non-smoker, executive physical, eat very well
Company Ten: Walks every night, I watch what I eat, I don't smoke, I don't drink very much

Appendix Four:

Commercial Carrier Journal and Overdrive Articles

The Heart of a Driver

Here's one way fleets can reduce health care costs and absenteeism while enhancing employee job satisfaction and morale.

Eileen Cleaves, *Senior Editor*

Escalating medical claims costs are a concern for most trucking companies. They were at Ruan Transportation Management Systems, Des Moines, Ia., at least until they decided to find out what was causing the escalation and what they could do about reducing it.

"We wanted to identify what was causing the rise in our medical claims and to find solutions to reduce those costs," says Susie Holmes, manager of Mega Quality Improvement, Ruan Transportation Management Systems, Des Moines, Ia. "We started by analyzing where our health care dollars were being spent."

What they discovered from the breakdown of health care costs by category over three years, 1990 through 1992, was that heart problems appeared in the top two most expensive categories each year. Over 10% of their total health care costs were related to heart disease.

That didn't surprise them since "heart disease and stroke claim more lives—and cost the nation more economically—than any other health disorder," according to the American Heart Association (AHA).

Drivers at risk

But what did surprise them was the results of the data when it was analyzed by job category. Truck drivers appeared at the top of the list as having the most heart claims. At the time of the analysis, Ruan had 3,000 employees, half of which were drivers.

Claims for heart problems had a tremendous impact on Ruan's employee benefit costs. "Most employee claims required an average medical leave of absence from work of six weeks," says Holmes. "Fourteen percent were disabled enough to qualify for the long-term disability program." At the time the analysis was done, Ruan's long-term disability program had a 90-day elimination period.

Further analysis of the heart claims showed that 100% of the claims filed by employees were males and 71% of the dependent claims were females. The data was also reviewed by age: 18% of claims were by persons under age 40; 28% were from ages 41-50; 54% from ages 51-65.

The analysis was consistent with findings published by the AHA that identify the two major risk factors for heart disease that can't be controlled: sex and age. Men have a greater risk of heart attack than women and age increases incidents of heart disease.

But there are risk factors identified by AHA that contribute to heart problems that can be controlled—high blood pressure, smoking, and high blood cholesterol. The more risk factors a person has, the greater the chance of developing heart disease.

"Each factor doubles the chance of developing heart disease," AHA

Continued

claims. "That means that a person who has all three of the risk factors is eight times more likely to develop heart disease than someone who has none." Smokers' risk of heart attack is more than twice that of nonsmokers. In addition, contributing factors like obesity, stress and diabetes mellitus also increase the risk of heart problems. Obesity, in particular, increases the likelihood of developing high blood cholesterol and high blood pressure, which increase the risk of heart disease.

Since the results of Ruan's analysis revealed that heart-related problems were the major cause of its increasing costs, and that drivers had the highest incident frequency, the company focused its cost-control efforts on lifestyle related factors that could be controlled using a wellness program as a treatment.

Wellness programs advocate prevention of health problems through education, emphasizing the responsibility of the individual. The programs can help improve work performance and worker quality of life by encouraging exercise, weight loss, better sleep habits, smoking cessation, etc. They also can help reduce medical claims costs. Wellness programs are not common in the trucking industry because they don't address the particular needs of a workforce that operates nontraditional hours, doesn't return to the same location daily, and eats out frequently.

Ruan driver Steve Ryan monitors gauge as Sue Roberts, Health Concepts Inc., takes his blood pressure. High blood pressure is an indicator of an individual's susceptibility to heart disease.

A trucking industry first

Ruan focused on doing a test study that would evaluate the impact a wellness program could have if it were specifically designed for drivers. Sue Roberts of Sue Roberts Health Concept, Inc., Des Moines, Ia., was hired as a wellness consultant to work with Holmes to develop, implement and evaluate a driver nutrition study, the first of its kind in the trucking industry.

They began by collecting data on eating and exercise habits through a questionnaire mailed to a random sample of 300 company drivers. The results of the survey confirmed that drivers had poor eating habits, didn't exercise enough, and smoked too much. Favorite meals on the road were steaks and burgers and favorite snacks were chips,

Continued

fruits, candy and donuts. Less than half of the drivers exercised on the road.

From the responses to the questionnaire, a nutrition program was designed to determine the impact of nutrition on health risk values.

Wellness study

A local facility in Des Moines, Ia., was selected as the test site. The drivers were predominantly male, middle-aged, with poor nutrition and exercise habits.

Two groups were formed. The Test Group had fifteen drivers that were out three days at a time. The fifteen Control Group employees were short haul drivers, home every evening, and were randomly selected according to comparable weight (in pounds) to Test Group drivers.

"The drivers were a little resistant at first," says Holmes, "but once we started with the health screening, they became more interested."

All participants went through the same health screening, conducted at the job site. Measurements of cholesterol levels, weight, glucose, fitness, fat analysis, and blood pressure were taken, along with documentation of smoking habits.

The screening also included a medical history of the driver. Screenings often detect problems long before any symptoms are noticed. That's just what happened during Ruan's screening. One driver was identified with very high blood pressure and was urged to seek medical care to bring it under control. High blood pressure increases the heart's workload, increasing the risk of stroke, heart attack, kidney failure and congestive heart failure.

Although heredity also has been identified as a risk factor for heart disease, "Don't use heredity as an excuse," cautions Roberts. "Having a history of heart disease in your family is not an automatic indicator that you will have it. Statistics have shown that heredity factors can be overcome, in many cases, with good lifestyle habits."

The Test Group drivers received a thorough and in-depth analysis of their health screening results, a fat gram guide, general information pieces throughout the study, and daily, healthy snacks to take in the truck on the road. The snack bags included a variety of items, including fresh fruit, juices, raisins, pretzels, animal crackers, fat-free cookies, etc. Ruan also provided the Test Group drivers with a brochure, *On the Road to Good Health!*, that could be inserted into their drivers' log books. It contained a variety of information, including tips for dining out, nutritious snacks and calories burned during a variety of exercises.

Each driver also received one-on-one counseling to create a health improvement program specifically for them. "Truck drivers as a group have very poor eating and snacking habits," claims Roberts. "It takes personalization to make the program work," he adds. "Some drivers needed help with weight control, while others needed to reduce their cholesterol levels or increase their fitness. Many needed help in more than one area. To be effective, drivers need an individualized program," Roberts continues.

In comparison, the Control Group drivers received only the results of their health screening, and brief counseling.

At the end of six months, the health screening was performed again.

Test results

The guidelines to be considered "in good health" were: a cholesterol level less than or equal to 200 mg/dl, HDL between 30–80 mg/dl; glucose between 80–100 mg/dl; body fat less than or equal to 17% for males and 25% for females; blood pressure of 160/90 or less; and a fitness rating of "good" to "outstanding." The fitness rating was determined by the Techumseh Step Test for Cardio-Respiratory Endurance and involved the participant stepping on and off a bench for three minutes. After a 30 second rest, the pulse would be counted for 30 seconds.

The results of the study indicated that wellness is a key component in an individual's life and a key component in health care costs.

The Test Group's cholesterol decreased 25 mg (25%); weight decreased an average of four pounds (2%); glucose dropped .02%; fitness levels improved 4%; HDL cholesterol ratio improved .03%; body fat decreased 4%; blood pressure remained the same.

The Control Group saw improvement only in cholesterol, glucose

Continued

KEYS TO A SUCCESSFUL WELLNESS PROGRAM

1. Commitment from senior management
   - Monetary and personnel support
   - Philosophical support
   - Participation in program
2. Clear statement of philosophy, purpose and goals
3. Defined evaluation system
4. Needs assessment
   - Survey employee base
   - Management survey
   - In-depth analysis of employee health care costs, worker compensation costs, absenteeism
   - Examine the health status of the workforce
5. Use of effective and qualified professionals
6. Accurate, up-to-date information communicated effectively
7. Accessibility and convenience
8. Realistic budget
9. Individualized program to meet the needs of each employee
10. Results oriented

Provided by Sue Roberts Health Concepts Inc., Des Moines, Iowa.

For a copy of *On the Road to Good Health!* write to: Eileen Cleaves, CCJ, 201 King of Prussia Road, Radnor, Pa. 19089 or fax your request to her at 610-964-4512.

Heart

and body fat. This, claims Holmes, is attributed to the initial assessments, and brief consultations.

Cholesterol level is important

The most significant result was the decrease in cholesterol levels. "The group's average cholesterol count decreased 25 mg, which according to health studies may reduce the risk of heart attack 50 to 100%," claims Holmes. This was very important because the risk of heart disease rises as blood cholesterol levels increase. Cholesterol levels are affected by age, sex, heredity and diet. When other risk factors are present—high blood pressure and cigarette smoke—the risk increases even more, according to AHA.

"What was so significant about the results of the study was the fact that every one of the drivers in the program had some degree of success. Every driver had a change in at least one area and in some cases, two or three different areas," says Roberts.

There were a number of individual success stories: one male lost 24 pounds, which produced a 10% reduction in body fat, and dropped his cholesterol 27 points to 180 mg; another male dropped his cholesterol 29 points; a third male dropped his cholesterol 67 points to 179 mg. A female dropped her weight and cholesterol 8%, and two employees quit smoking.

Education is a key

Serious, long-term, lifestyle change is a process that takes education, reinforcement, and determination on the part of the individual to reach set goals. Although a company can take the initiative to provide the information and incentive, "The responsibility ultimately lies with the individual," says Holmes.

The health screening continues as Sue Roberts observes Ruan driver Dennis Bean during step test, designed to evaluate an individual's cardiovascular fitness. Afterwards, Dennis' pulse will be taken and compared to predetermined number of beats for his height, weight and age.

"Drivers really appreciated the information received during the study and had good feelings towards the company for providing it," she adds. An evaluation form completed at the end of the program (on a scale of 1 to 5, with 5 being excellent) gave the 'value of health screening' a 4.25 and 'how informative was the screening' a 4.50. In answer to the question, did the project change your eating habits, the drivers responded with a 3.40.

Proactive approach used

Based on the decline in cholesterol readings, the driver nutrition program could have been a catalyst in avoiding potential heart claims. That is why Ruan continues to use a proactive approach to wellness.

Beside sending wellness booklets to the homes of its 4,200 employees, including its 2,500 truck drivers, on a quarterly basis, Ruan pays 100% of the cost of an employee (and employee's spouse), up to a specified cap, which increases based on age. Ruan also sponsors a wellness reimbursement program, where employees may be reimbursed 50% up to $200 per year, for membership at a fitness facility, or for participating in a weight reduction program or smoking-cessation program.

In the past Ruan conducted a Healthy Lifestyle Discount Program, a three component program rewarding employees for not smoking, passing an annual physical, and for a spouse passing an annual physical. Passing an annual physical required verification by the employee's physician that the employee (or spouse) passed five of the six following criteria: weight, blood pressure, cholesterol, seat belt use, exercising, and a cancer checkup (using American Cancer Society guidelines). This program was discontinued when the company implemented its cafeteria plan in 1996, because of complicated administration issues.

The decline in death rates from cardiovascular disease in the U.S. is due largely to the public's adopting a more healthful lifestyle, according to the AHA. This underscores why it is important to advocate prevention strategies by educating people about risk factors and lifestyle changes to reduce risk.

And that is just what Ruan is doing. By educating their employees and their families about potential health problems and ways to avoid them, they are trying to improve the health and productivity of its drivers today, while reducing the need for expensive health care services in the future. ❑

The future of Driver Wellness Programs

Sue Roberts Health Concepts, Inc., Des Moines, Ia., is developing, testing and evaluating driver wellness programs for the National Private Truck Council, Alexandria, Va., under a grant from the Federal Highway Administration Office of Motor Carriers. Statistically valid information was collected from truck drivers during the first phase of the project. The results will be released in May. The second phase—a six-month pilot test of a prototype wellness program specifically designed for drivers, including for hire, private, and motor coach—will be implemented in a minimum of five fleets this fall. Results of the second phase of the program will be released in May 1999.

Matters of the Heart

Truckers are more at risk for heart disease than the general population, but they can prevent it just the same / By Charles Cox

One Saturday morning, 42-year-old Al Rasmussen, a Stevens Point, Wisconsin, owner-operator, left on a trip that had four stops: three in Pennsylvania and one in Annapolis, Maryland. As he unloaded one of the drops on Monday, he felt a mild pain in his chest. "I didn't think too much about it," Rasmussen recalls. "I'd never been sick a day in my life. I've never smoked, and I've never been really overweight."

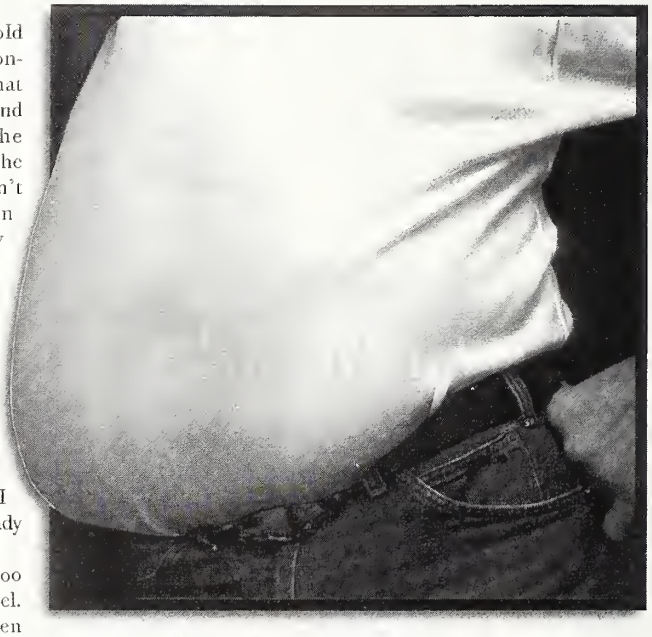
As the day progressed, the pain persisted but still wasn't severe. "I didn't think it was anything to be concerned about. I finished unloading and started on my way to the next stop."

After dinner, Rasmussen got back on the road. Despite increasing pain, he still wasn't too worried. "I figured if I was having a heart attack, I would already be dead," he says.

When he got to his last stop, it was too late to unload, so he checked into a motel. Finally, the pain got so bad, Rasmussen called a hospital. A doctor suggested he come in. About an hour later, he did. By then, it had been 10 hours since the first pains, just an aching sensation in the middle of his chest and a slight feeling of pressure.

When he got to the hospital, doctors told Rasmussen he'd had a heart attack. He spent 12 days in the hospital and 90 more recovering at home.

Eight years later, Rasmussen suffered another attack. As he did the first time, he recuperated at home for a while, then returned to work. He and his doctor agreed that as long as he felt fine, bypass surgery wasn't necessary.



Occupational hazard? One study shows that nearly three-quarters of truckers are overweight – a leading factor in heart disease.

A year later, Rasmussen went to the hospital again. While undergoing an angiogram to locate blockage in his arteries, He had another heart attack. This time it was massive. "It scared the heck out of me," he recalls. "I've never felt pain like that before, and I never want to again."

It took surgeons more than six hours to complete a quintuple bypass.

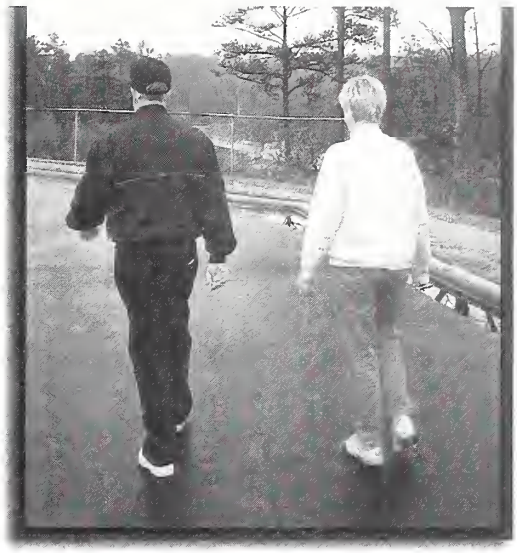
A risky situation

Coronary heart disease is America's No. 1 killer. According to the American Heart Association, 1.1 million Americans will have a heart attack this year. A third of those will die. That's one attack every 29 seconds, and one death every minute.

While no one is immune to heart disease, truckers are particularly susceptible. Trucking lends itself to a sedentary life and poor eating habits, which lead to obesity. In addition, trucking is a stressful job, which is a factor in high blood pressure. All of these are major risk factors in heart disease, and together, they put truckers at greater risk than the general population.

If you're not sure of your risk factors, get a checkup, including a blood lipid panel and blood chemistry. A good checkup can alert you to problems before they develop. Early detection gives your doctor a better chance of successfully treating heart disease.

Doctors urge everyone over 30 to get their cholesterol and blood fat levels checked yearly. Gerald Fletcher, a cardiologist at the Mayo Clinic in Jacksonville, Florida, advises adults to find out their blood cholesterol number. Generally, a number below 200 is good. A level of 200-240 is borderline, and you should modify your diet and exercise to bring it down. Over 240 is considered high, and your doctor might recommend a cholesterol-lowering drug in addition to a low-fat, low-cholesterol diet and an aggressive exercise program.



Walking just 20 minutes a day several times a week can lower your risk for a heart attack.

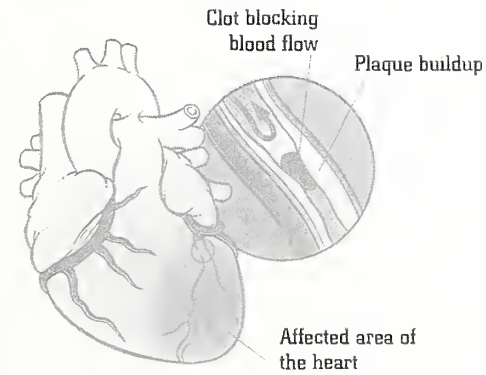
Besides knowing your cholesterol level, doctors recommend everyone over 40 know his average blood pressure. High blood pressure, or *(Continued on page 118)*

Anatomy of a Heart attack

A heart attack is usually the result of coronary artery disease, which results when one or more of the blood vessels supplying the heart muscle with blood become clogged. When the heart is deprived of oxygen and other essential nutrients, angina, or chest pain, results. In the case of partial blockage, only part of the heart muscle might be involved, and the heart attack is mild.

In a healthy person, arteries have smooth, muscular walls that are elastic enough to handle extreme variations in blood pressure. In some people, however, the inside walls of the arteries get damaged. At the site of the damage, fats in the bloodstream cause a buildup called plaque. If not treated, enough plaque can accumulate to restrict blood flow. Blood that can't flow freely can clot and block the arteries. When blood does not reach the heart, the muscle begins to malfunction.

If the damage isn't massive, early intervention can save the heart. Doctors can give clot-dissolving drugs to restore the flow of blood. They also can perform balloon angioplasty, a process in which a tiny balloon is inserted into the blocked artery and is inflated to push the plaque to the sides of the artery walls.



American Heart Association, Tuscaloosa, Alabama, Chapter

A heart attack can kill instantly, but it takes decades for arterial blockage, called atherosclorosis, to develop. Physicians say it can begin in childhood. However, there are no symptoms until the victim has chest pain. By then, it's too late to prevent or cure atherosclorosis; it can only be treated.

Our cardiovascular system tirelessly pumps 5 quarts of blood through 60,000 miles of vessels every minute. For most people, it works without a hitch for 70 or so years. But for some, things go wrong without warning.

Matters of the Heart

(Continued from page 30)

hypertension, means the heart and circulatory system must work harder. "The more pressure that's exerted on the cardiovascular system, the faster it wears out," says Charles Briggs, a general practitioner and owner of American Business Medical Services at the TravelCenters of America in Jessup, Maryland. For normal adults, systolic pressure (the first number) should be under 140, and diastolic

Keys to a Healthier

ACCORDING TO A SURVEY by the U.S. Department of Agriculture, 30 percent of men and 45 percent of women say they never exercise. In addition, the USDA reports that on any given day, 50 percent of people don't eat a single piece of fruit. A balanced diet and regular exercise are the keys to avoiding coronary artery disease.

The adage "You are what you eat" holds true. If you eat lots of fat, you get fat. While recent years have brought a broader range of healthier choices to truck stop restaurant menus, eating on the road can be challenging.

A study done by the Private Fleet Management Institute and Sue Roberts Health Concepts of Des Moines, Iowa, found that at one trucking company where 300 drivers were surveyed, burgers and steaks were named as the No. 1 dinner choice. Additionally, 48 percent said potato chips were the snack they preferred.

The healthiest diets are based primarily on fruits, vegetables and grains. These foods are mostly carbohydrates and have 60 percent fewer calories per ounce than foods such as meat and cheese, which are protein and fat. But you do need a balanced diet.

The "Nutrition Almanac" recommends adults get 60-100 grams of protein a day. A grilled chicken sandwich has about 25 grams of protein. A cup of low-fat cottage cheese has about 30, and a 3 ½-ounce steak (not a 12-ounce sirloin) has about 26. In addition, no more than 30 percent of your daily caloric intake should be from calories from fat.

A healthy diet should be com-

heart

bined with regular aerobic exercise. Even a little can bring big benefits. Just 10-20 minutes of aerobic exercise – the kind that gets your heart and breathing rate up and keeps it there – a day, four days a week, can strengthen your cardiovascular system. Tarping, lifting and fighting traffic are not aerobic exercise. Walking, jogging and bike riding are.

In an effort to help truckers get fit, gyms at truck stops are popping up around the country. Rolling Strong, a Richardson, Texas-based company, recently opened three fully equipped gyms at Pilot locations in Little Rock, Arkansas, Oklahoma City and Knoxville, Tennessee, off Interstate 40. A fourth is slated to open at the Bordentown, New Jersey, Petro this month. Each includes treadmills, stationary bikes and a stairclimber, as well as weight machines.

"A regular program of cardiovascular exercise can, in a matter of months, reduce your resting heart rate," says Jeff Abrams, president of Rolling Strong. "When you do that, your heart doesn't beat as fast and you live longer."

But you don't have to go to a gym to exercise. If you've been inactive for awhile, start walking. You can do it anywhere without special equipment. Start with 10 minutes once or twice a day for several weeks, then increase to 15 minutes, then 20. Before you know it, you'll feel better, have more energy and even sleep better.

You should, however, check with your doctor before beginning any exercise regimen.

pressure (the second number) should be under 90.

High blood pressure affects more than 50 million people in the United States, but truckers have a slightly greater incidence compared with the general population, according to a 1997 report by the National Private Truck Council's Private Fleet Management Institute and Sue Roberts Health Concepts.

Prepared for the Federal Highway Administration's Office of Motor Carriers, the study, "Design, Development and Evaluation of Driver Wellness Programs," set out to determine the state of health, health behavior and

health care costs of commercial vehicle drivers. It found that in a 1993 study of nearly 3,000 truckers, 33 percent had high blood pressure, compared to 25 percent of the general population.

Besides high cholesterol levels and high blood pressure, other risk factors include:

- **Smoking.** Smoking substantially increases your risk of cardiovascular disease. It constricts the arteries and makes them more susceptible to clogging. The NPTC/Roberts study found that 54 percent of truckers smoke cigarettes or cigars. Compared with the general population, that's 29 percent higher.
- **Family history.** "This is one of the most ignored yet one of the most important risk factors," Fletcher says. If your mother, father or more than one aunt or uncle has coronary artery disease, your risk increases greatly.
- **Being overweight.** Carrying around more weight than you should makes your heart work harder. In addition, overweight people often have high blood pressure and high cholesterol. The NPTC/Roberts study found that 73 percent of truck drivers are overweight, 40 percent higher than the general population.
- **Diabetes.** For reasons scientists don't fully understand, diabetes increases blood cholesterol levels, contributing to a higher risk of atherosclorosis. Being overweight also is a factor in diabetes.
- **Inactivity.** Researchers have long recognized the health risks associated with a sedentary lifestyle – and sitting behind the wheel of a truck for 10 hours a day is about as sedentary as you can get. The heart is a muscle, and it needs regular exercise to stay fit.
- **Stress.** Dealing with traffic, shippers and receivers is no easy task. Some days, it's enough to frazzle you. Stress can make your blood pressure rise and prime you for a heart attack.

Any one of these risk factors should raise a red flag, but they often go hand in hand. A trucker with multiple risk factors is in a particularly dangerous situation. Fletcher recommends that each person be evaluated in terms of all his risk factors and work to reduce those he can.

Heed the warnings

Recognizing the warning signs of a heart attack can save your life. However, symptoms aren't always

clear-cut, and they are different for men and women. However, there are "classic" symptoms, including pain or pressure in the chest, accompanied by pain radiating into one or both arms or the neck, sweating, nausea and weakness.

You can have chest pain without having a heart attack. This common pain can occur when you exert yourself, but goes away when you stop. With a heart attack, pain persists even after you stop.

Sometimes the pain of gastrointestinal problems, such as acid reflux or a hernia, mimics the pain of a heart attack. But there are differences, Fletcher says. "The pain associated with a heart attack can be more of a *discomfort* rather than overt [sharp] pain. It's often a feeling of pressure inside the chest, a grabbing sensation, or a feeling of extreme fullness, or a feeling much like you would have if someone were sitting on your chest. It also can be a crushing pain."

Regardless of the type or severity of the chest pain, if it is accompanied by nausea or pain in the arms or neck, you should get medical attention immediately, Fletcher says. Also look at how long the pain persists. "If you have periodic heartburn that you remedy with an antacid, you pretty well know how long it takes to get relief," he says.

AHA says many lives could be saved if heart attack victims got medial attention within an hour of the first pain. "We can do so much more today with early intervention," Fletcher says. "Many emergency vehicles are equipped with defibrillators and medications that can be used while en route to a medical facility. Paramedics are also well trained to administer CPR. The important thing is not to ignore the signs."

Why don't people seek help sooner, especially when their chances of survival increase greatly with rapid response? "Too many people feel that a heart attack is something that can't happen to them," Fletcher says. "It can happen to other people, they think, but not to me. That's probably the biggest reason so many don't survive that first attack."

Rasmussen survived not only his first attack, but also subsequent attacks and quintuple bypass surgery. He lost weight and eats healthier. Today he feels fine. Had he known then what he knows now, he'd have gotten his blood cholesterol levels checked earlier, and may have avoided heart disease altogether. □

Appendix Five: CEO Letter

Date

Driver
Address
City, State, Zip

Dear {first name},

Our company has been selected to participate in an innovative health promotion study. This program is geared especially for drivers and their families.

Flexible, personal and informative, you benefit with:

- more energy, get more done
- reducing risk factors for diseases and associated costs
- losing weight
- relaxing
- enjoying naturally good food, natural movement
- connecting with self, others, the world
- empowerment to make choices for your health and your world

If you are interested in working on your personal health promotion - at your own pace - review the enclosed brochure and contact the _____ department to sign up. All health information is strictly confidential between you and the health promotion company providing the services.

Thanks for your participation. Health improvements will benefit you as well as improve safety.

Sincerely,

{John Smith, CEO}

Appendix Six: Lifestyle Health Assessment

Health Assessment
Lifestyle

Please print:
Name:_____ **Age:**_____ **Sex: M / F**
Home Address:_____
Company Address: _____
Home Phone: _____ **Work Phone** _____

Take a few minutes to privately assess the refueling, rejuvenating, relaxing and relating dimensions of your life with the questions listed here. Be honest in your answers. Try not to analyze how you think you should respond, but circle the answer that first comes to mind. Keep this record in a safe place, and use it to evaluate changes and improvements as you progress.

Refueling

	Almost Never		Sometimes		Almost Always
1. I eat wholesome, minimally processed foods (without artificial preservatives, colors or flavorings).	**1**	**2**	**3**	**4**	**5**
2. I eat 4-5 times each day including breakfast and snacks.	1	2	3	4	5
3. I eat 3 servings of colorful vegetables each day.	**1**	**2**	**3**	**4**	**5**
4. I eat brown rice, whole grain pasta, or 100% whole grain bread.	1	2	3	4	5
5. I eat beans (such as pinto, navy or black) at least 2 times per week.	**1**	**2**	**3**	**4**	**5**
6. I choose not to eat fried foods.	1	2	3	4	5
7. I eat less than 4 ounces of red meat or poultry each day.	**1**	**2**	**3**	**4**	**5**
8. I eat no more than 1 serving each day of high sugar foods.	1	2	3	4	5
9. I eat less than 2 ounces of cheese each week (count pizza).	**1**	**2**	**3**	**4**	**5**
10. I use less than 2 Tablespoons of salad dressing each day.	1	2	3	4	5
11. I eat breads, vegetables, pasta and potatoes without margarine, butter, mayonnaise, sour cream or fatty sauces.	**1**	**2**	**3**	**4**	**5**
12. I drink enough fluid, like water, to keep my urine a very light yellow.	1	2	3	4	5
13. I do not use the salt shaker on an average day.	**1**	**2**	**3**	**4**	**5**
14. I eat 2 servings a day of real fruit or juice (not juice drink) every day.	1	2	3	4	5

Total Score _____

Rejuvenating

	Almost Never		Sometimes		Almost Always
15. I keep myself in top condition by balancing the type and amount of food I eat with exercise to keep my fitness level excellent and to maintain a healthy weight.	**1**	**2**	**3**	**4**	**5**
16. I do activities that increase my heart rate and get me sweating at least 3 times each week.	1	2	3	4	5
17. I walk at least 20 minutes each day.	**1**	**2**	**3**	**4**	**5**
18. I participate in a sport or leisure activity each week.	1	2	3	4	5
19. I do activities that increase my strength.	**1**	**2**	**3**	**4**	**5**
20. I take stretch breaks every 2 hours when sitting for long periods.	1	2	3	4	5
Total Score					

Relaxing

	Almost Never		Sometimes		Almost Always
21. I take long walks, hikes, or other outings to actively explore and appreciate my environment and the world around me.	**1**	**2**	**3**	**4**	**5**
22. I express anger appropriately and do not become violent.	1	2	3	4	5
23. I decide that certain things are not worth worrying about.	**1**	**2**	**3**	**4**	**5**
24. I am guided by my inner self rather than from expectations of others.	1	2	3	4	5
25. I make time for myself to relax at least 20 minutes each day.	**1**	**2**	**3**	**4**	**5**
26. I schedule regular vacations/time from work and do so without feeling guilty.	1	2	3	4	5
27. I know how to have fun and can generate my own.	**1**	**2**	**3**	**4**	**5**
28. I laugh often and easily.	1	2	3	4	5
29. I take time to play with and enjoy my family and friends.	**1**	**2**	**3**	**4**	**5**
30. I express myself through hobbies or the arts and take time each week to enjoy them.	1	2	3	4	5
31. I stay awake and feel refreshed when I need to.	**1**	**2**	**3**	**4**	**5**
Total Score					

Relating

	Almost Never		Sometimes		Almost Always
32. **My social ties with my extended family are strong.**	**1**	**2**	**3**	**4**	**5**
33. I have a positive outlook about spending my life with my partner or I enjoy the freedom and independence of being single.	1	2	3	4	5
34. Being open and real is important to me and I try to present my true self in my relationships with my family, friends, and others.	**1**	**2**	**3**	**4**	**5**
35. I have many happy times with my children.	1	2	3	4	5
36. I develop and maintain strong and satisfying friendships of both sexes with whom I spend time with each month.	**1**	**2**	**3**	**4**	**5**
37. I enjoy talking with people I meet.	1	2	3	4	5
38. I find time to help others through volunteer work, community service or other activities.	**1**	**2**	**3**	**4**	**5**
39. My behavior reflects fairness, justice, and tolerance of others.	1	2	3	4	5
40. I am emotionally stable and sure of myself.	**1**	**2**	**3**	**4**	**5**
41. I often put myself in others shoes by listening carefully and being empathetic.	1	2	3	4	5
Total Score					

Health Beliefs

	Almost Never		Sometimes		Almost Always
42. I feel like I am in better health than I was 1 year ago.	**1**	**2**	**3**	**4**	**5**
43. I am not concerned that I might develop a serious illness such as heart disease, diabetes, or stroke in the next 5 years.	1	2	3	4	5
44. Eating healthy and exercising will decrease my chance of developing heart disease, cancer, or diabetes.	**1**	**2**	**3**	**4**	**5**
45. My short term health depends on how well I take care of myself.	1	2	3	4	5
46. Eating healthy, exercising, and relaxing makes me feel good about myself.	**1**	**2**	**3**	**4**	**5**
47. I am knowledgeable about health issues.	1	2	3	4	5
48. It is easy to follow good health habits on my own.	**1**	**2**	**3**	**4**	**5**
49. I want to be responsible for my own health.	1	2	3	4	5
Total Score					

50. My blood pressure is _____
51. An ideal cholesterol level is
    a) ≤ 300 mg%
    b) ≤ 240 mg%
    c) 100 + my age
52. A fasting blood sugar of _____ would suggest diabetes.
    a) 90 mg%
    b) 120 mg%
    c) 50 mg%
    d) 140 mg%

53. A high blood cholesterol is associated with both heart disease and stroke.
    a) true
    b) false

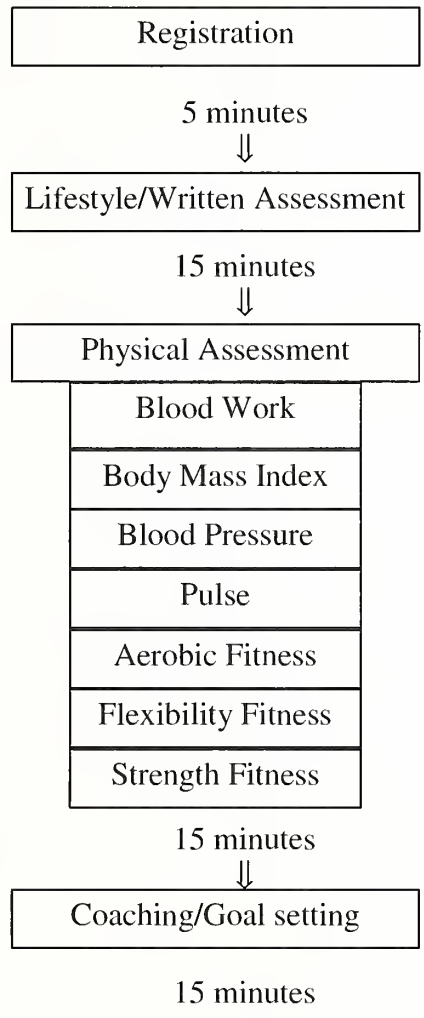
54. A high resting pulse indicates good physical shape.
    A) true
    B) false

55. Risk factors associated with heart disease include
    A) smoking
    B) diabetes
    C) high fat diet
    D) a & c
    E) all of the above

Scoring system being developed

Appendix Seven: Health Assessment Procedure

Clinic Design
Each health assessment clinic at various pilot company on-site locations and truck stops are run by licensed, trained health professionals. Each driver will participate in the assessment in the following manner:



The expectation is to have the driver through the clinic in 45-60 minutes

I. Registration
Drivers sign in and complete necessary paperwork including health history and consent form to complete assessment.

II. Lifestyle Written Assessment
A Lifestyle Written Assessment is completed which addresses beliefs, behaviors and knowledge.

III. Physical Assessment

Blood Work

Total blood cholesterol, HDL cholesterol, and total cholesterol/HDL ratio are extremely important indicators of risk of coronary heart disease (CHD). Because CHD is a major disease problem, these measurements are done. Also, because onsite goal setting is offered, immediate results are needed. This is done using a Cholestech L*D*X which obtains results through a fingerstick. Standards are: Passing: HDL % of Total ≥ 22%; Ideal: HDL% of Total ≥ 25%.

Blood Glucose (non-fasting) is used as a screening indicator for both diabetes and hypoglycemia. It is done using the fingerstick method and a glucometer with immediate results available for use in goal setting. Standards are: Passing: 60-140 mg%; Ideal: 60-120 mg%.

Body Mass Index

Body Mass Index (BMI) is a measurement based on height and weight, and indicates risk of developing weight related health problems. It is a non-invasive method of measuring obesity more accurate than height-weight tables. A weight scale and height measurement tool are needed, as weight and height are the factors used in calculation.

The calculation used is: $Kg/Meters^2$ = BMI. Or, the following chart is used

Standards are:	Passing	BMI <27
	Ideal	BMI < 25

Body Mass Index (BMI)*

Weight (lb)	Height (ft, in)								
	4'10"	5'0"	5'2"	5'4"	5'6"	5'8"	5'10"	6'0"	6'2"
125	26	24	23	22	20	19	18	17	16
130	27	25	24	22	21	20	19	18	17
135	28	26	25	23	22	21	19	18	17
140	29	27	26	24	23	21	20	19	18
145	30	28	27	25	23	22	21	20	19
150	31	29	27	26	24	23	22	20	19
155	32	30	28	27	25	24	22	21	20
160	34	31	29	28	26	24	23	22	21
165	35	32	30	28	27	25	24	22	21
170	36	33	31	29	28	26	24	23	22
175	37	34	32	30	28	27	25	24	23
180	38	35	33	31	29	27	26	25	23
185	39	36	34	32	30	28	27	25	24
190	40	37	35	33	31	29	27	26	24
195	41	38	36	34	32	30	28	27	25
200	42	39	37	34	32	30	29	27	26
205	43	40	38	35	33	31	29	28	26
210	44	41	38	36	34	32	30	29	27
215	45	42	39	37	35	33	31	29	28
220	46	43	40	38	36	34	32	30	28
225	47	44	41	39	36	34	32	31	29
230	48	45	42	40	37	35	33	31	30

BMI values that correlate to a higher risk of adverse effects on health

BMI ≥ 30 kg/m² | BMI ≥ 27 kg/m² in the presence of risk factors

*BMI is defined as body weight (in kg) divided by height (in m²).

Blood Pressure

Screening for hypertension is done with a blood pressure reading using a standard blood pressure cuff and sphygmomanometer. A large cuff is available for accurate readings on larger arms. If an elevated reading (>140/90 mmHg) is found, a second reading is performed and used. Standards used are: Passing ≤ 160/90 mmHg; Ideal ≤ 120/80 mmHg.

Pulse

A baseline pulse is taken as an indicator of exercise frequency. Factors which could affect this are taken into consideration by the tester. Standards used are: Passing ≤ 85 bpm (beats per minute); Ideal ≤ 70 bpm

Aerobic Fitness

Important to job endurance and risk in many disease states is aerobic fitness. A relatively quick, easy to administer aerobic fitness test is the 3-minute step test. This is done using the following methodology:

1. Keeping time with a metronome set at 96 beats per minute, the individual steps up and down (right foot up, left foot up, then right foot down, left foot down, and repeat) on an 8 inch step bench.
2. As soon as the individual masters cadence, they step for exactly three minutes.
3. At the end of 3 minutes, the individual stops stepping and immediately sits in a chair.
4. Exactly 30 seconds after stopping, the individual's pulse is taken for 30 seconds and compared to the following standards for their age and sex.

The Techumseh Step Test for Cardio-Respiratory Endurance

Fitness Rating	**Age**							
(in number of beats)	**20-29**		**30-39**		**40-49**		**50 and over**	
	F	**M**	**F**	**M**	**F**	**M**	**F**	**M**
Excellent	39-42	34-36	39-42	35-38	41-43	37-39	41-44	37-40
Good	43-44	37-40	43-45	39-41	44-45	40-42	45-47	41-43
Average	45-46	41-42	46-47	42-43	46-47	43-44	48-49	44-45
Fair	47-52	42-47	48-53	44-47	48-54	45-49	50-55	46-49
Low	53-56	48-51	54-56	48-51	55-57	50-53	56-58	50-53
Poor	56-57	52-59	56-57	52-59	58-67	54-60	59-66	54-62

Adapted from:

Nutrition, Weight Control and Exercise by Frank I. Katch and William D McArdle. 3rd ed. Copyright 1988 by Lea & Febiger. All rights reserved.

Physical Activity and Health: An Epidemiologic Study of an Entire Community H.J. Montoye. Prentice Hall, Englewood Cliffs, NJ 1975.

Flexibility

Sit and reach flexibility screening is used as an indicator of flexibility and risk for back pain/injury. The following methodology is used:

1. Use a 12" high box.
2. 2. Place a yardstick on the top, with 15" extending beyond the top of the box.
3. Have the participant sit on the floor with sole of feet against the box.
4. Place arms in front, one hand on top of the other, and reach forward. Hold for 1 second. **Do not bounce**. Client should not feel pulling in back or thighs.

5. Repeat two more times. Take measurement on last stretch, and compare to the following standards:

Rating	Women	Men
Excellent	23+"	21+"
Good	20 1/4 - 23"	18 1/4 - 21"
Average	16 1/4 - 20"	13 1/4 - 18"
Low	12 - 16"	11 - 13"
Poor	Less than 12"	Less than 11"

Strength

Upper body strength is important to job endurance, safety and reduced risk of injury. Strength is tested with simple push-ups using the following methodology:

1. Instruct driver to lie down on the floor on their stomach. Hands should be placed next to the shoulders, palms facing down. Feet should be at a right angle to the floor.
2. Have driver slowly push with hands to raise torso from the floor while exhaling, keeping back straight and elbows bent.
   Men: keep legs straight
   Women: keep bent knees on floor
3. Have drivers slowly lower to the floor to original position.
4. Repeat as many times as possible.
5. Record score according to the following table.

Number of Repetitions

Age < 35	Age > 35	Level of Strength
0-11	0-9	Poor
12-21	10-19	Average
22-31	20-29	Good
>32		> 30 Excellent

IV. Coaching and Goal Setting

A professional with education and experience in preventive/holistic medicine with coaching and goal setting skills works with each driver to explain lifestyle written assessment results, their physical assessment results, and helps the driver set specific individualized goals for improvement.

Exclusion Guidelines for Testing
The following conditions exclude an individual from the following tests:

Glucose and Cholesterol

1. Current skin disorder such that a fingerstick may cause severe bruising, injury or infection.
2. Known communicable blood borne pathogen such as HIV/AIDS or hepatitis viruses where the individual chooses not to have procedure.
3. Hemophilia or other bleeding disorders.
4. Person is extremely nervous to the point of fainting or simply refuses to have the procedure.

Blood Pressure

1. Arm is so large that large cuff does not fit.

Aerobic Fitness

1. Current back, knee, ankle or foot problem.
2. History of heart disease, heart attack or heart surgery.
3. Blood pressure>140/90 mmHg after two tests.
   Exception: regular exerciser with either systolic or diastolic within 5 mmHg of guideline and no other risk factor such as:
   Age > 55 years
   HDL cholesterol <15% of total
4. Pregnancy unless meeting following conditions:
   a. pulse stays under 140 beats per minute during testing (take at 1 and 2 minutes)
   b. no problems with pregnancy
   c. less than 7 months pregnant
   d. have maintained regular activity levels during pregnancy
5. Age greater than 65 years.
6. Resting pulse greater than 105 beats per minute.
7. Glucose greater than 200 mg% or less than 50 mg%.
8. HDL cholesterol less than 15% of total, plus female 55 years or older or male 45 years or older; HDL cholesterol less than 10% of total.
9. Recent surgery where physician has not released employee for regular activity.

Flexibility

1. Current back or shoulder problem.
2. Current foot or ankle problem which precludes employee from placing foot against bench.
3. Current broken bone in leg, ankle or foot.
4. Pregnancy ≥ 6 months.

Data Collection
Individual lifestyle data, physical data and goal setting data are collected on forms for the driver to take with them with a copy kept to calculate aggregate group data.

Appendix Eight: Health Assessment - Physical

Please print:
Name:_____ **Age:**_____ **Sex: M / F**
Home Address:_____
Company Address: _____
Home Phone: _____ **Work Phone** _____

Health History

1. Please check any of the following that apply to you:
   __allergies __anemia __diabetes __epilepsy
   __gestational diabetes __heart disease __hernia __high blood pressure
   __high cholesterol __high triglycerides __hypoglycemia __pregnant
   __surgery __stroke __other heart problems
2. Check any of the following that apply to your family:
   __diabetes __heart disease __high blood pressure
   __high cholesterol __high triglycerides __stroke
3. Do you currently have pain in the back, knees, joints, hips, ankles or feet? ___ Yes ___ No
4. Have you had a serious back or spinal injury? ___ Yes ___ No
5. Is your physical activity currently limited by a physician? ___ Yes ___ No
6. Are you currently under the care of a physician? ___ Yes ___No Condition _____
7. Please list current medications and the conditions taken for:

Release: I consent to the following tests and procedures, including the drawing of a fingerstick blood sample for the purpose of measuring my blood cholesterol and glucose levels and various tests for assessment of physical fitness. I understand these are routine procedures, but that the practice of medicine is not an exact science and that testing may involve risk of injury. I acknowledge that no guarantees have been made as to the results of any procedure or test given and that these are for screening purposes only and do not take the place of a physician's exam. I state that I have no physical conditions that should prevent me from participating in these tests.

Signature:_____ **Date:** _____

To be completed by testing personnel **Date:**_____

Test	Results	Passing	Ideal	Follow-up results
Total Cholesterol (mg%)	_____			_____
HDL Cholesterol (mg%)	_____			_____
HDL % of Total	_____	≥ 22%	≥ 25%	_____
Serum Glucose (mg%)	_____	60-140 mg%	60-120 mg%	_____
Weight ____ Height ____				
Body Mass Index	_____	25-26.9	20-24.9	_____
Pulse (bpm)	_____	≤ 85 bpm	≤ 70 bpm	_____
Blood Pressure (mmHg)	_____	≤ 160/90 mmHg	≤ 120/80 mmHg	_____
Aerobic Fitness	_____	≥ good	≥ very good	_____
Strength Fitness	_____	≥ good	≥ excellent	_____
Flexibility Fitness (in.)	_____	male > 13"	male > 18"	_____
		female > 16"	female > 20"	

Appendix Nine: Health Assessment - Goal Setting

Please print:
Name:_____ **Age:**_____ **Sex: M / F**
Home Address:_____
Company Address: _____
Home Phone: _____ **Work Phone** _____

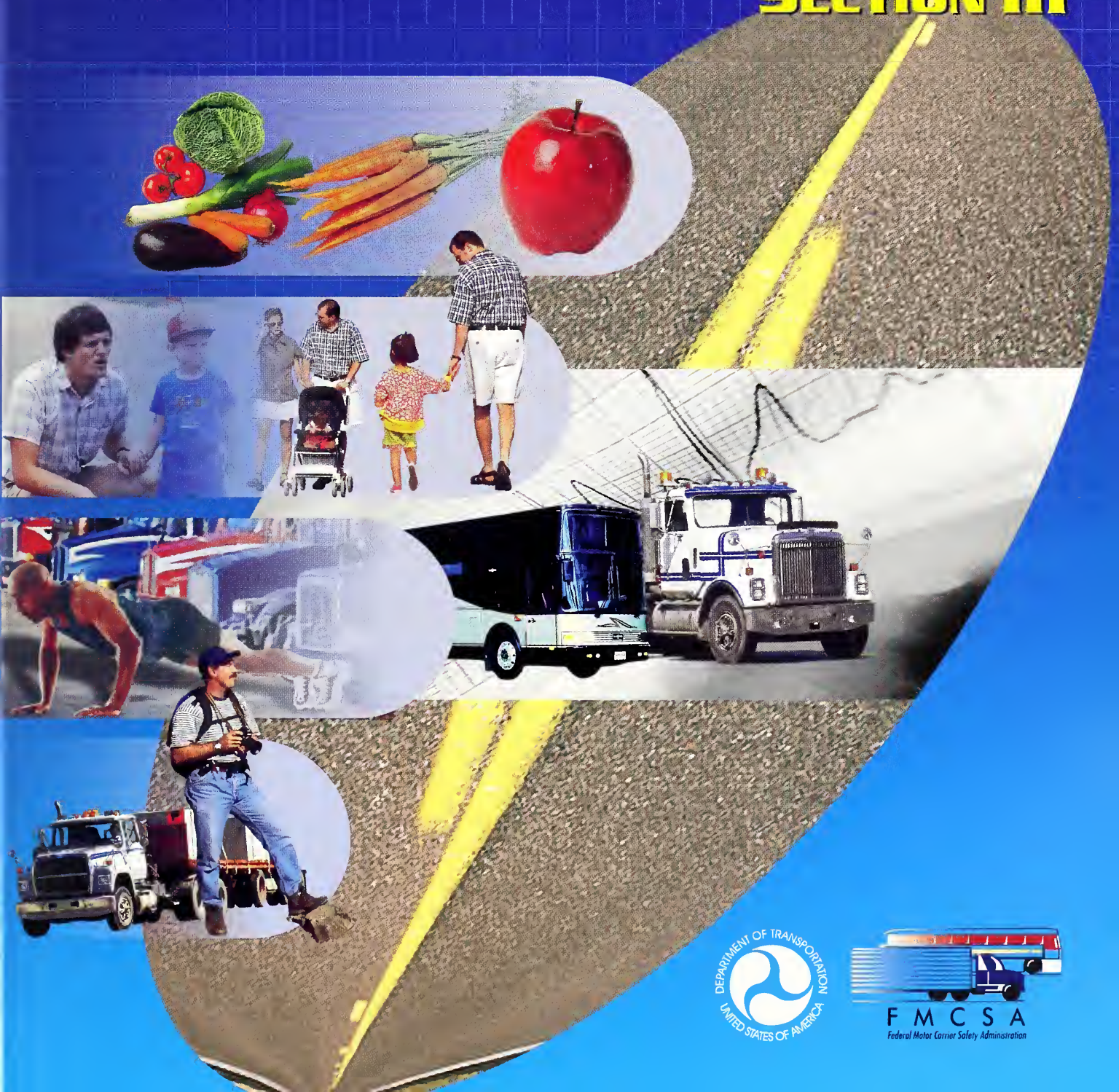
Counselor: _____ Phone number: (____)_____ Date: _____

Gettin' in Gear

Design Development and Evaluation of

Truck and Bus Driver Wellness Programs

Section III



DEPARTMENT OF TRANSPORTATION
UNITED STATES OF AMERICA

FMCSA
Federal Motor Carrier Safety Administration

Design, Development and Evaluation of Driver Wellness Programs

Technical Memorandum Number Three: Pilot Test Results and Marketing Plan

October 31, 1999

Prepared for:

Federal Motor Carrier Safety Administration
Office of Research and Technology
MC-RTR
400 Seventh Street, SW
Washington, DC

Prepared by:

Sue Roberts
Sue Roberts Health Concepts
1515 Linden Street, Suite 220
Des Moines, IA 50309

Jim York
Private Fleet Management Institute
National Private Truck Council
66 Canal Center Plaza, Suite 600
Alexandria, VA 22314

Table Of Contents

List of Figures

List of Tables

INTRODUCTION

In May, 1997, the National Private Truck Council's (NPTC) Private Fleet Management Institute (PFMI) began a research program in cooperation with Sue Roberts Health Concepts, Inc., ATA Foundation, Inc., and the Federal Motor Carrier Safety Administration (FMCSA) to design, develop, and evaluate a model truck and bus driver wellness program. This wellness program is being developed to provide a resource for addressing truck and bus industry challenges in the area of driver safety, turnover, performance, job satisfaction, and industry competition. It is ntended to provide strategies to give drivers opportunities for improved health.

As envisioned in the project workplan, this project has five primary research tasks:

Task	Title	Time Frame	Deliverable
1	Review of Literature and Programs	June 97 – Aug 97	Technical Memorandum One
2	Draft Core Wellness Program	Sept 97 – May 98	Technical Memorandum Two
3	Develop Core Wellness Program	June 98 – Aug 98	
4	Pilot Test and Evaluate Program	Sept 98 – Oct 99	Technical Memorandum Three
5	Marketing Plan	Oct 99 – Apr 00	Technical Memorandum Three

This document (Technical Memorandum Three) is the product of Tasks 3, 4 & 5 research efforts. Comprised of four major sections, the document includes:

- Program Review - review of Tasks 1 & 2 completed earlier
- Core Wellness Program - description of program design
- Pilot Test- description of test, analysis, and evaluation of data
- Marketing Plan

PROGRAM REVIEW

The research data has already been reported regarding the first two tasks of this research project in Technical Memorandum One and Two. However, the writers thought it would be beneficial to the reader if a summary of the research in Technical Memorandum One and Two was done as a review and introduction to the detailed research from Tasks 3–5 which is presented here. For more detailed information, the reader is referred back to Technical Memorandum One and Two.

Task 1: Review of Driver Health Literature and Programs

This task involved four subtasks:

A. Review of the literature regarding driver health.
B. Review of current wellness programs inside and outside the industry.
C. Review of behavior change models.
D. Review of wellness program design.

Summaries of findings by subtask are shown below:

Subtask A: Review of the Literature

1. The literature on driver health is scarce.
2. The prevalence of risk factors is much higher in drivers compared to the general population (often double).

Subtask B: Review of Wellness Programs

1. Most companies do not have programs (only one was reported in the literature).
2. The few companies with programs had trouble reaching drivers and therefore had much less participation than companies outside the industry.

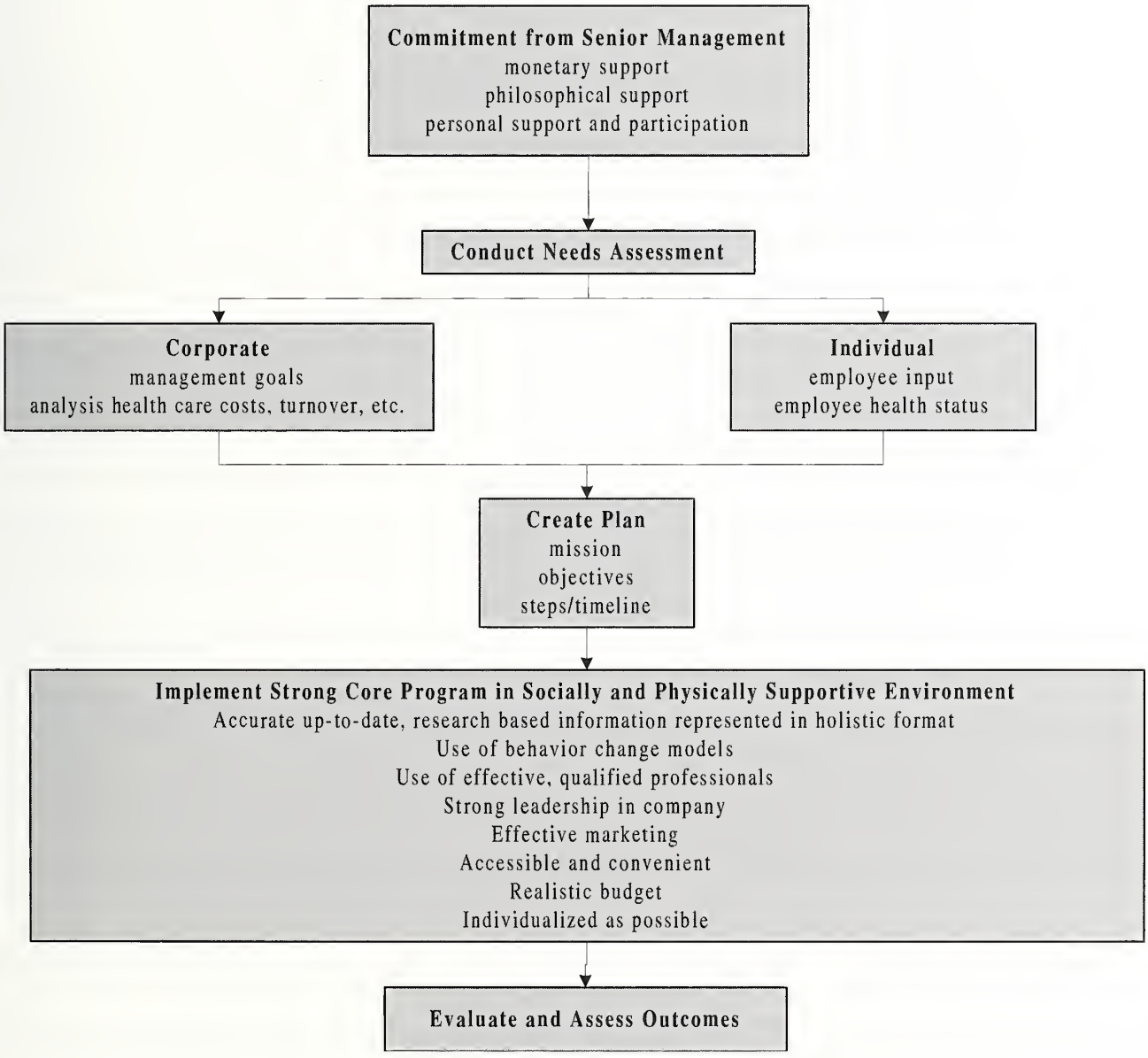
Subtask C: Review of Behavior Change Models

1. Trans Theoretical Model (stages of change).
2. Social Cognitive Theory.
3. Health Beliefs Model.
4. Community Participation.

Subtask D: Review of Wellness Program Design

The process and criteria necessary for program success are summarized in Figure One:

Figure One: Wellness Program Design



Task 2: Draft Core Wellness Program

This task comprised three subtasks:

A. Determination of driver attitudes and perceptions.
B. Determination of management perceptions.
C. Draft of core wellness program.

Subtask A: Driver Attitudes and Perceptions

Attitudes and perceptions were determined through a national survey. This was conducted after four national focus groups were held to help develop the survey. A pretest was also conducted. Significant findings of the survey were:

1. Age, gender, primary driving job, and employer data were very similar to national statistics verifying representative sample of total population in our 448 responses (from 2750 sent).
2. Major health concerns of drivers were lack of family time, lack of exercise, weight, fatigue, poor diet, stress.
3. Drivers were in stages ready or trying to improve behavior in eating, exercise, stress management, self care and sleep.
4. Drivers most concerned about health were long haul TL, 40-60 years old, and those who do not currently exercise or eat well.
5. Drivers who more feel they are in control or are responsible for their own health tended to have better lifestyle habits (i.e., lower weight, more exercise, healthier eating, no tobacco).
6. Better eating habits composite score correlated significantly with the most healthy lifestyle habits.
7. A subgroup of "Healthy drivers" significantly exercised more, ate better, managed stress, etc., and felt more in control.

Subtask B: Management Attitudes and Perception

Attitudes and perceptions were determined by one-on-one interviews conducted with ten fleet executives. Major findings were:

1. Employee health is important. It has a direct impact on health care costs, absenteeism, workers compensation and bottom line.
2. Most companies were doing little to improve driver health. Many had concerns about driver participation and cost of wellness programs.

Subtask C: Core Wellness Program:

As described in the next section, an initial program design was drafted for steering committee approval in May, 1998. The following issues were used in the conceptualization of the design:

1. A holistic approach should be used.
   - » Driver health issues are not one dimensional, but part of a larger dynamic system.
   - » Drivers need to find and have meaning in their life.

2. Major topics (the four R's) for the core program were chosen based on drivers' greatest concerns.
   - » Refueling: diet and weight
   - » Relating: family
   - » Relaxing: fatigue and stress
   - » Rejuvenating: exercise

3. The Transtheoretical Stages of Change Model was to be adapted to the program. The information given to participants was to follow the stages from the model.
   - » Month 1 - Building awareness (stage 1)
   - » Month 2 - Determining pros and cons (stage 2)
   - » Month 3 - Acting on intentions (stages 3 and 4)
   - » Month 4 - Maintaining success (stages 5 and 6)

4. The core program was to be designed to fit into the pilot testing time table of six months.
   - » Phase 1: Recruitment — January, 1999
   - » Phase 2: Introduction — February, 1999
   - » Phase 3: Action (Information) — March, April, May, June 1999
   - » Phase 4: Evaluation — August, 1999

5. The name of the program would be 'Gettin' in Gear'.

GETTIN' IN GEAR WELLNESS PROGRAM

Design of the 'Gettin' in Gear' Driver Wellness Program

It was thought the actual program design should have direct driver involvement for best results. To accomplish this, we invited 2 drivers from each of our pilot companies to be part of a Driver Task Force to provide input into the design of the program.

The Driver Task Force was made up of the following individuals:

Dave Ramos	Driver, DATTCO
Mark Sullivan	Driver, DATTCO
Gary Austin	Driver, Collins & Aikman Corporation
Herschell Summers, Jr.	Driver, Collins & Aikman Corporation
Tom Rockwell	Driver Trainer, Ruan Transportation Management
Dave Stewart	Recruiter, Ruan Transportation Management
Bob Newhouse	Driver Trainer, Leprino Transportation
Al Griffen	Driver, ABF, America's Road Team Captain
Margaret Petersen	Driver, Roadway, America's Road Team Captain

The drivers and personnel working on the program met over a weekend in Des Moines, IA, during September, 1998. Drivers provided input into the design of the program. They shared experiences and thoughts, for the video which was produced. They spoke with interviewers, sharing their thoughts, for audio tapes which were produced. And finally, they provided quotes and ideas which were used in the written material.

It was hoped that driver input and involvement in actual materials produced would increase driver acceptance (i.e., drivers working with drivers).

The actual program design took into consideration:

1. Concepts presented on page 5.
2. Input from the wellness steering committee.
3. Input from the driver task force.

The final design is described in the following paragraphs.

Phase I: Recruitment

Industry Wide Awareness

Print media was to be used to draw industry awareness to the wellness concept and the Gettin' in Gear Program. This was accomplished through three articles featuring the Gettin' in Gear Program printed in *Over Drive, Commercial Carrier Journal and Transport Topics.*

Industry awareness was to be increased with use of a well known audio magazine. This was accomplished through the audio magazine *Super Driver* which featured stories and information from the Gettin' in Gear Program for several months.

Company Recruitment

A recruitment package was developed for companies to use to encourage drivers to enroll in the Gettin' in Gear program. This package had the following materials along with detailed instructions on how to use the materials.

- Gettin' in Gear Brochure — See Attachment #1
- Gettin' in Gear Poster — See Attachment #2
- Audio Magazine *(Super Driver)* — See Attachment #3
- CEO Letter — See Attachment #4
- Newsletter article — See Attachment #5

This package was sent to the contact person at each of the pilot companies in December, 1998. They used the materials to recruit drivers in their company during January, 1999. In addition, the drivers who were on the Driver Task Force were asked to talk with fellow drivers to encourage them to participate in the program.

Phase II: Introduction

Introductory Package

An introductory package was developed to introduce the participant to the Gettin' in Gear Program. This package consisted of a box (with the Gettin' in Gear logo) containing:

- Gettin' in Gear Introductory Brochure — See Attachment #1
- Gettin' in Gear Introductory Video — See Attachment #6
- Gettin' in Gear Introductory Audio Tape — See Attachment #7
- Gettin' in Gear Notebook — See Attachment #8

The program was designed so that each participant received the Gettin' in Gear Introductory Package.

Introductory Seminar

An introductory seminar was designed to be given by project staff. All pilot groups were to receive this seminar except for one.

Health Assessment

A health assessment containing both a written lifestyle questionnaire and physical risk factor assessment was completed with each participant. Health assessments were done at each pilot company at the same time the introduction to the program was given. The assessment included:

1. **Written Lifestyle Questionnaires**
   - Health Habits History — See Attachment #9
   - Lifestyle related to Refueling, Rejuvenating, Relaxing, Relating — See Attachment #10
   - Health Knowledge — See Attachment #11
   - Health Beliefs — See Attachment #11

2. **Physical Risk Factor Assessment** — See Attachment #12
   - Total Cholesterol
   - HDL percentage of Total Cholesterol (calculated)
   - Glucose
   - Body Mass Index (calculated from height and weight)
   - Blood Pressure
   - Pulse
   - Aerobic Fitness- (step test)
   - Strength Fitness- (push ups)
   - Flexibility Fitness- (sit and reach)

   All testing was done by trained personnel using standard procedures. The standards and procedures are explained in detail in Technical Memorandum Two.

3. **Goal Setting**
   Each participant had the opportunity to speak with a health professional who explained their results and helped them set personal goals (if desired). An example of personal goals set for a participant can be viewed in Attachment #13.

The Introduction Phase was completed during the month of February, 1999.

Phase III: Action

Part One: Information Package

During this phase, the participants received information mailed directly to their home each of the four months. The material was designed to address the topics of Refueling, Relating, Rejuvenating, and Relaxing.

It was originally thought the chapters would follow the stages of change model as described on page 5. The Driver Task Force, however, strongly believed the action information "What do I need to do?" should get to the participant before Month 3 (as originally planned). The information was then designed to start 'action' information in Month 2, instead of Month 3, as shown in Table One.

Table One: Gettin' in Gear Information Package Topics

	Month 1 **Maybe I Should** *Stages 1& 2*	**Month 2** **What Do I Need To Do?** *Stage 3*	**Month 3** **I'm Doing It** *Stage 4*	**Month 4** **What's Next?** *Stages 5 & 6*
Refueling	**Does Eating Healthy Matter** Advantages Refueling needs evaluation Refueling habits evaluation	**Refueling on the Road** Tips for restaurants Tips for snacks Tips for packing food	**Refueling at Home** Planning, Preparation Shopping Tips	**Keep Going Tips** Variety Support Balance
Rejuvenating	**Does Exercising Matter** Health Benefits of Moving Moving Evaluation	**Rejuvenating on the Road** Tips outside Tips inside vehicle	**Rejuvenating at Home** Simplicity Nature Equipment	**Keep Going Tips** Variety Support Navigating road blocks
Relating	**Health Value of Relationships** Evaluation of relationships Evaluation of self esteem	**Relating with Family while on the Road** Keeping in touch Improving relationships Improving communication	**Relating at Home** Building Connections with Family and Friends	**Keep Going Tips** Focus Challenges Support Positiveness
Relaxing	**Stress Issues** Road rage evaluation Evaluation of stress health effects	**Relax on the Road** with Stretching, Breathing, Progressive Muscle Relaxation	**Relax** with Personal balancing skills, Healthy body, Healthy relationships, Healthy attitude	**Keep Going Tips** Plan ahead Lighten the load Balance

The participant received the monthly 'action' information in two formats:

1. Written - Chapters to put in their 5 ½ x 7 Notebook (See sample Month 1 written materials- Attachment #14).

2. Audiotape - Information was also presented in audio format each month for participants to listen to while driving (Attachment #15).

Information was presented as easy tips from both professionals and other drivers (used driver task force members).

Information was also presented to be interactive. For example, each written chapter had workouts (worksheets) to engage the participant in thinking and doing.

Part Two: Coaching

Written – Each participant received a letter from a health professional as follows:

- Two weeks following health assessment (Attachment #16)
- Two weeks following receipt of Month 1 Action materials
- Two weeks following receipt of Month 2 Action materials
- Two weeks following receipt of Month 3 Action materials
- Two weeks following receipt of Month 4 Action materials

Telephonic – Each participant was offered personal coaching by phone using a toll free number provided.

E-mail – Each participant was offered personal coaching by e-mail using the NPTC website set-up for Gettin' in Gear.

Part Three: Snack Pack

Snack ideas (see Attachment #17) were given to pilot companies to provide to participants as a weekly snack pack. One company (Gates Rubber) provided snacks throughout the entire study in reusable bags with the Gettin' in Gear Logo. Another company (Collins & Aikman) provided snacks for part of the study.

Part Four: Exercise Membership

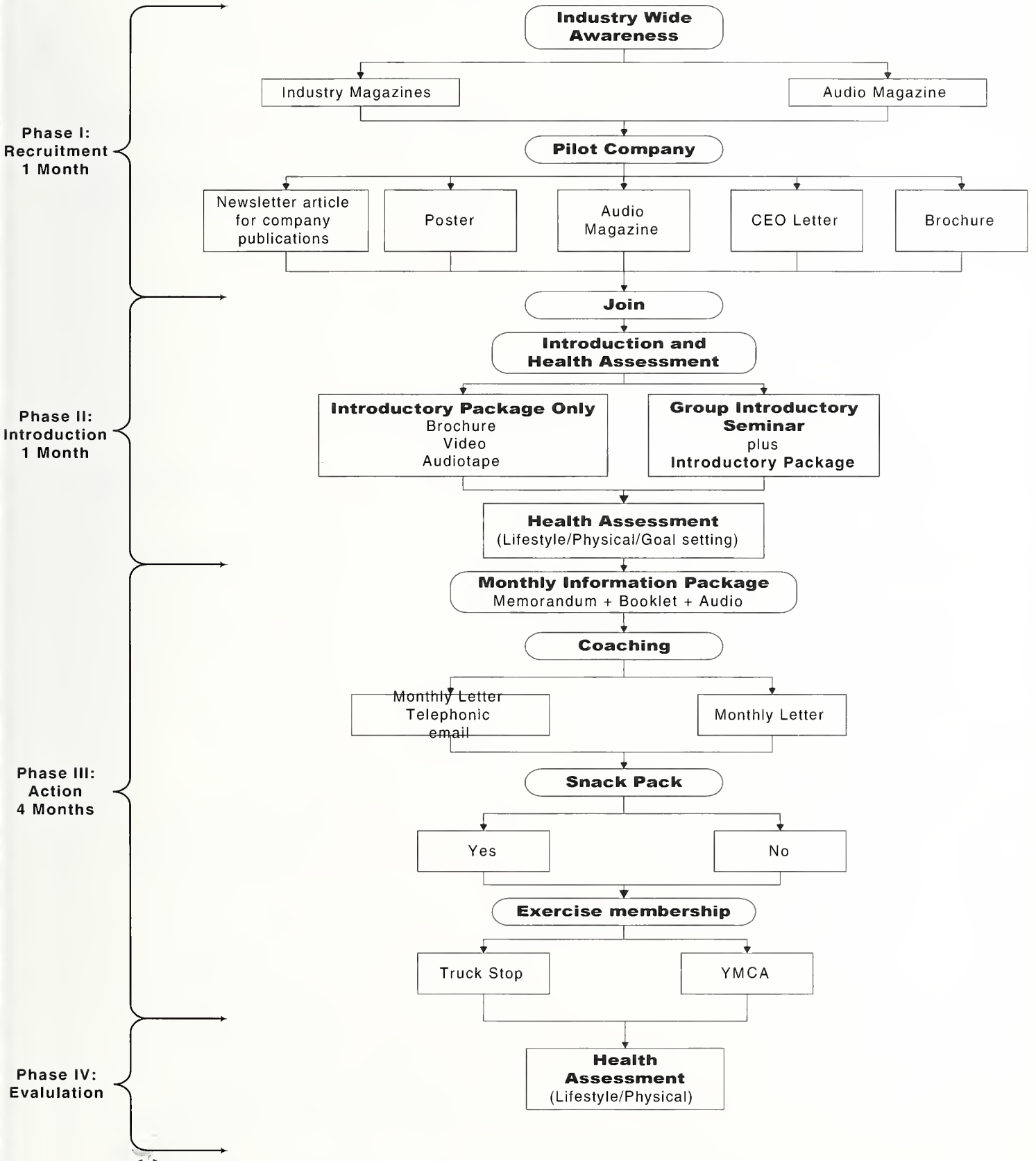
All participants were offered a free membership with the "Rolling Strong" Gyms found in several truck stops across the country. One company (Collins & Aikman) provided subsidized YMCA memberships.

Phase IV: Evaluation

For evaluation, a follow-up health assessment was completed.

Figure Two shows the phases of the Gettin' in Gear wellness program in graphic form.

Figure Two: Gettin' in Gear Program Design



GETTIN' IN GEAR PILOT TEST

Pilot Companies

Companies were recruited during the summer of 1998 to be part of the testing phase. The companies who agreed to be part of the pilot test are shown in Table Two.

Table Two: Companies Recruited

Company Type	Company	Address
Special	America's Road Team	American Trucking Association 2200 Mill Road Alexandria, VA 22314-4677
Long Haul – Medium	Collins & Aikman	P.O. Box 521 New London, NC 28127
Long Haul – Small	Gates Rubber	7979 Vulcan Drive Florence, KT 41042
Long Haul – Large	Leprino Transportation	P.O. Box 17989 Denver, CO 80217 -0989
Short Haul	Ruan Transportation	Two Ruan Center 601 Locust Street Des Moines, Iowa 50309
Bus	DATTCO	583 South Street New Britain, CT 06051
Truck Stop	Petro Stopping Center	722 Watt Road Knoxville, TN 28127

We had two long haul – small companies, because Gates Rubber requested that one of their branch terminals be added and we were able to accommodate them.

Pilot Test Time Line

Pilot testing began in January, 1999, and proceeded as shown in Table Three.

Table Three: Pilot Test Time Table

Phase I Recruitment	January, 1999	Company recruits participants Used recruitment package sent December, 1998
Phase II Introduction	February, 1999	Introductory Package with Group Seminar and Health Assessments **or** Introductory Package Only and Health Assessment
Phase III Action	March, 1999	Month 1 booklet and audiotape sent plus follow-up letter sent two weeks later
	April, 1999	Month 2 booklet and audiotape sent plus follow-up letter sent two weeks later
	May, 1999	Month 3 booklet and audiotape sent plus follow-up letter sent two weeks later
	June, 1999	Month 4 booklet and audiotape sent plus follow-up letter sent two weeks later
Phase IV Evaluation	July/August, 1999	Follow- up Health Assessment.

Variables in Pilot Groups

The variables which were different in each pilot group are shown in Table Four.

Table Four: Variables in Pilot Groups

	One America's Road Team	**Two** Collins & Aikman	**Three** Leprino	**Four** Gates Rubber	**Five** Ruan	**Six** DATTCO	**Seven** Petro Centers
Recruitment	Project	Company	Company	Company	Company	Company	Company
Introductory Session	Group	Group	Group	Group	Group	Group	Individual
Health Assessment	Yes On-site	Yes On-site	Yes On-site	Yes On-site	Yes On-site	Yes On-site	Yes On-site
Monthly Information Package	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Coaching	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Snack Pack	No	Yes	No	Yes	No	No	No
Exercise Membership	Yes Rolling Strong	Yes YMCA	Yes Rolling Strong	Yes Rolling Strong	Yes Rolling Strong	No	Yes Rolling Strong
Reassessment	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Recruitment — Accomplished by each company using marketing materials provided. America's Road Team received marketing material directly from project staff through ATA staff.

Introductory Session — All participants received the Introductory Group Seminar plus Introductory Package except Petro participants, who received only the Introductory Package with no seminar.

Initial Health Assessment — All participants received the initial health assessment.

Monthly Information Package — All participants received the monthly information mailed for 4 months.

Coaching — All participants received monthly letters for 4 months. All participants were offered telephonic counseling through an 800 number, although only two drivers chose to use it. All participants were offered e-mail counseling and only one driver chose to use it.

Snack Pack — Two companies (Collins & Aikman and Gates Rubber) provided snack packs to participants.

Exercise Membership	All participants were offered free Rolling Strong memberships except DATTCO. No drivers chose to use the free Rolling Strong membership offered. Some of the employees at Petro, which had a Rolling Strong Gym on site, used the gym until it closed in June. Collins & Aikman offers a subsidized YMCA membership for drivers of which a few participated.
Follow-up Health Assessment	All participants were offered follow-up health assessments.

Participant Sample

The participant sample size goal of 120 was determined for statistical purposes. We tried to recruit slightly more than our suggested number. We achieved 128 initial enrollees. All 128 received the Introductory session with Introductory Package, Initial health assessment, and Action materials. All were offered coaching and an exercise membership.

We tried very hard to get participants back for the follow-up health assessment (after intervention). Methods used were:

1. Sent three letters reminding them of follow-up assessment.
2. Worked with pilot company facilitator for four weeks prior to assessments to schedule drivers.
3. Telephoned drivers a minimum of one to four times.

After all this we were able to do follow-up health assessments on only 54 of the original 128 participants. The data is shown by company in Table Five.

Table Five: Number of Participants by Company

	ART	Collins & Aikman	Gates	Ruan	Leprino	DATTCO	Petro	Total
Starting Assessment	12	26	9	22	12	23	24	128
Follow-up Assessment	4	11	5	6	8	12	8	54

Because of the extremely low follow-up assessment response rate, we wanted to determine whether those who came to the follow-up assessment were the more healthy participants since they were the ones we were going to be using in our data analysis. To do this, we looked at the initial average scores in both groups (no follow-up vs. follow-up) to see if there were any significant differences.

The results are as shown in Table Six.

Table Six: Initial Mean Scores of Follow-up vs. Non Follow-up Participants

Average	No follow-up (N=74)	Follow-up (N=54)	P value
Total Refueling Score	2.8	2.7	NS
Total Rejuvenating Score	2.6	2.6	NS
Total Relaxing Score	3.6	3.6	NS
Total Relating Score	4.1	4.1	NS
Total Health Beliefs Score	4.1	3.9	NS
Total Cholesterol (mg%)	216	220	NS
HDL Percent of Cholesterol	20	21	NS
Glucose (mg%)	107	104	NS
Body Mass Index	31.6	32.2	NS
Pulse (beats/min)	78	73	.011
Systolic Blood Pressure (mmHg)	136	155	NS
Diastolic Blood Pressure (mmHg)	84	82	NS
Aerobic Fitness Level	1.4	2.0	.10
Strength Fitness Level	1.8	2.1	NS
Flexibility Fitness Level	2.4	2.2	NS

This analysis showed that our participants who came back for follow-up assessments were generally no healthier than those who did not come back. The only exception to this was in aerobic fitness level and resting pulse (both indicators of fitness level). The follow-up group was slightly better in these parameters on initial assessment. As will be shown in the results, however, these two parameters both continued to significantly improve in the follow-up group in the final analysis along with other parameters.

Pilot Study Results

Lifestyle Habits

Lifestyle habit data were collected both pre and post intervention. Participants recorded responses in each of the four intervention areas of Refueling (eating), Rejuvenating (exercise), Relaxing (stress management) and Relating (relationship/family) using a 5-point Likert Scale response , with 1 being almost never and 5 being almost always agreeing with the statement posed. The entire questionnaire can be seen as Attachment # 10.

For example: Question 1 read:

1. I eat wholesome, minimally processed foods (without artificial preservatives, colors or flavorings). 1 2 3 4 5
(Almost Never) (Sometimes) (Almost Always)

The total number of questions for each group was:

Refueling:	15	Relaxing:	13
Rejuvenating:	6	Relating:	16

The specific responses and grouped totals (i.e., for Refueling) with statistically significant change are shown in Table Seven.

Table Seven: Lifestyle Habits Showing Significant Change (N=54)

	Question	Initial Mean	Final Mean	Diff.	P Value
Part I: Refueling Questions					
	I eat 3 servings of colorful vegetables each day.	2.25	2.75	.50	.012
	I eat brown rice, whole grain pasta, or 100% whole grain bread.	2.62	3.16	.54	.020
	I eat less than 4 ounces of red meat or poultry each day.	2.44	2.91	.47	.052
	I eat no more than 1 serving each day of high sugar foods.	2.61	3.14	.53	.031
	I eat breads, vegetables, pasta and potatoes without margarine, butter, mayonnaise, sour cream or fatty sauces.	2.44	2.89	.45	.076
	I drink enough fluid, like water, to keep my urine a very pale yellow.	3.49	3.84	.35	.110
	I drink less than 16 ounces (2 cups) caffeinated drinks per day.	2.34	2.68	.34	.200
Refueling Total		2.70	2.99	.29	.030
Part II: Rejuvenating Questions					
	I keep myself in top condition by balancing the type and amount of food I eat with exercise to maintain a healthy weight.	2.38	2.93	.55	.011
	I do activities that increase my heart rate and get me sweating at least 3 times each week.	2.63	3.41	.78	.003
	I walk at least 20 minutes each day.	2.52	3.20	.68	.012
	I participate in a sport or leisure activity each week.	2.33	2.82	.49	.076
	I do activities which increase my strength.	2.59	2.93	.34	.160
	I take stretch breaks every 2 hours when sitting for long periods.	2.37	3.75	1.38	.120
Rejuvenating Total		2.45	3.00	.56	.004
Part III: Relaxing Questions					
	I am guided by my inner self rather than from expectations of others.	3.56	3.87	.31	.130
	I make time for myself to relax at least 20 minutes each day.	3.08	3.66	.58	.022
Relaxing Total		3.63	3.79	.16	.140

Refueling Habits (Diet)
The data reveal participants significantly improved in 7 of 15 areas with respect to Refueling (eating habits).

The total category score for Refueling also significantly improved after intervention.

Rejuvenating Habits (Exercise)
The data reveal participants significantly improved in 6 of 6 areas with respect to Rejuvenating (exercise habits).

These data are also supported by the fact that the physical data reveal statistically significant improvements in actual physical abilities (i.e., strength).

The total category score for Rejuvenating also significantly improved after intervention.

Relaxing Habits (Stress Management)
The data reveal participants significantly improved in 2 of 13 areas with respect to Relaxing.

Even though only 2 of 13 specific questions showed significant improvement for Relaxing, the total category score for Relaxing significantly improved after intervention.

Relating Habits (Relationships/ Family)
The data reveal participants did not improve significantly in any of the questions with respect to Relating.

Relative Improvements in Habits

The data show the participants improved most in the areas where most improvement was needed (i.e., Rejuvenating). This is revealed by looking at initial and final average responses in the four specific categories shown in Table Eight.

Table Eight: Mean Lifestyle Habit Responses by Category

Category	Initial Mean	Final Mean	Diff	P Value
Rejuvenating	2.45	3.01	.56	.004
Refueling	2.70	2.99	.29	.03
Relaxing	3.63	3.79	.16	.14
Relating	4.13	4.10	.03	NS

In other words, improvements were made where they were most needed. Improvements were also made proportionately. Largest improvements were made in Rejuvenating and Refueling where there was the most need: These data also show that significant changes were not made in Relating, probably because the participants scored so well initially in this area with little need or room for improvement.

Health Knowledge

Health knowledge was tested in two areas: knowledge of own health parameters (i.e., blood pressure) and knowledge of basic health issues. The percentage of drivers who answered knowledge questions correctly is shown in Table Nine.

Table Nine: Comparison of Before and After Pass Rates in Health Knowledge

Question	Considered Correct	Initial Correct (%)	Final Correct (%)	Statistical Significance Between Mean Responses
My current weight	within 5 lbs.	26.9	37.5	p=0.24✚
My current blood pressure	within 5mm	11.5	14.3	p=0.67
My current cholesterol	Within 10mg	15.4	5.5	p=0.097✶
Ideal cholesterol	(c)	65.4	66.1	p=0.94
A blood sugar suggesting diabetes	(d)	90.4	85.7	p=0.46
High cholesterol is associated with heart disease and stroke	T	23.1	32.1	p=0.30
High pulse indicates good physical shape	F	48.1	55.4	p=0.45
Risk Factors for heart disease	(e)	38.5	46.4	p=0.41

Note: ✚ indicates a marginal statistical significance
✶ indicates statistical significance

As can be seen with the data, the group did not increase their knowledge significantly in any question. They actually did significantly worse in knowing their actual cholesterol level.

Physical Risk Factor Data

Measurement of physical risk factor data revealed statistically significant improvement after intervention in 6 of the 10 areas measured:

- Body Mass Index (B.M.I.)
- Pulse
- Diastolic Blood Pressure
- Aerobic Fitness Level
- Strength Fitness Level
- Flexibility Fitness Level

The data are is shown in Table Ten.

Table Ten: Physical Data (N=54)

Physical Risk Factor Parameter	Initial Mean	Final Mean	P Value
Total Cholesterol (mg%)	217	218	NS
HDL Percent of Total (%)	22	21	NS
Glucose (mg%)	104	104	NS
B.M.I.	31.7	28.6	.23
Pulse (beats/min)	73	70	.16
Systolic Blood Pressure (mmHg)	152	148	NS
Diastolic Blood Pressure (mmHg)	82	80	.18
Aerobic Fitness Score (1)	2.0	3.8	.00
Strength Fitness Score (2)	2.1	2.7	.04
Flexibility Fitness Score (3)	2.2	2.5	.13

Note: 1 (1=Poor, 6=Excellent) 3 (1=Poor, 5=Excellent)
2 (1=Poor, 4=Excellent)

Total Cholesterol/ HDL Percent of Total Cholesterol

The data reveal that, as a group, participants did not significantly change their total cholesterol or HDL percent of total cholesterol.

It is of interest, however, to note that single individuals did make significant improvements. For example, one participant dropped their cholesterol from 312 mg% to 216 mg%.

Glucose

The data reveal that as a group, the glucose level did not significantly change. The mean both initial and final is a normal value. Again, however, it is of interest to note that specific individuals did make significant improvements. For example, one participant dropped their glucose from 329 mg% to 120 mg %.

Body Mass Index (B.M.I.)

The data reveal participants significantly improved in BMI (from 31.7 to 28.6) which is an indicator of body weight. A B.M.I. of 28.6 is still elevated (passing is ≤ 27), however, the group dropped from an obese rating to an overweight rating (by definition).

Pulse

The data reveal participants significantly improved in resting pulse from 73 beats per minute to 70 beats per minute.

Systolic/Diastolic Blood Pressure

The systolic blood pressure reading did not significantly change, but the diastolic blood pressure reading did improve significantly.

Aerobic Fitness Level

The data reveal a very significant improvement in aerobic fitness score of the participants after intervention. This is the physical data measurement which saw the greatest improvement in the study. This significant improvement in fitness level validates the significant improvement reported in exercise habits (reported earlier).

Strength Fitness Level

This fitness parameter (tested with push ups) also saw a very significant improvement after intervention.

Flexibility Fitness Test

The data reveal that the final fitness test of flexibility (tested with a sit and reach) also improved significantly from initial measurement to final measurement.

'Passing' Test Data

Another way to look at the data was to determine significance in whether a driver passes (based on specific passing criteria) the parameters measured initially and at follow-up. Criteria used to define passing are shown in Table Eleven along with percent with passing scores.

Table Eleven: Percent with Passing Scores on Parameters (N=54)

Parameter	Passing Criteria	Pass Initially	Final	P value
Total Refueling Score	Mean ≥ 3.0	34.6	50.0	0.11
Total Rejuvenating Score	Mean ≥ 3.0	21.2	53.6	0.0004
Total Relaxing Score	Mean ≥ 3.0	88.5	91.0	NS
Total Relating Score	Mean ≥ 3.0	94.2	96.4	NS
HDL Percent of Cholesterol	>22%	46.3	38.9	NS
Glucose (mg%)	60-140 mg%	90.7	90.7	NS
Body Mass Index	< 27.0	14.8	18.5	NS
Pulse (beats/min)	≤85	85.2	92.6	NS
Systolic Blood Pressure (mmHg)	≤160	92.6	96.3	NS
Diastolic Blood Pressure (mmHg)	<90	81.5	90.7	0.17
Aerobic Fitness Score	≥4 (1=Poor, 6= xcellent)	16.7	44.4	0.002
Strength Fitness Score	≥3 (1=Poor, 4= xcellent)	31.5	42.6	NS
Flexibility Fitness Score	≥3 (1=Poor, 5= xcellent)	40.7	51.9	NS

Improvement in Parameters Measured

Some participants may not have a passing score in a specific parameter (i.e., B.M.I.) but did have a significant improvement from initial assessment to follow-up assessment. For example, their B.M.I. on initial assessment was 32.0 and was 28.5 on follow-up assessment. This is a significant improvement, but still does not meet the passing criteria of ≤27.0. Therefore, we also evaluated improvement as shown in Table Twelve.

Table Twelve: Improvement in Parameters(Lifestyle and Physical) Measured

	ART N=4	Collins & Aikman N=11	Gates N=5	Leprino N=8	Ruan N=6	Dattco N=12	Petro N=8	Total N=54
Improved	7.46	7.51	7.14	6.30	7.80	6.49	6.54	7.18
Worse	3.10	4.31	3.59	5.46	4.25	5.10	5.13	4.15
Same	3.45	2.17	3.27	2.22	1.96	2.41	2.34	2.68

These data show the participants as a group improved in 7 of 14 total parameters. They stayed the same in 3 and retreated in 4. "It should be noted that two of the areas where they scored worse (retreated) were areas where both initial scores were very good (i.e., relating lifestyle score) and the score decrease was very small".

Correlations

From all the data points collected, we looked at correlations. There was an extremely high number of correlations between data points. For example: Decreased pulse correlated positively with higher aerobic fitness scores. But one of the areas where we especially wanted to test correlations was in the health beliefs area. Some of the strongest correlations are shown in Table Thirteen.

Table Thirteen: Data Point Correlations

Correlating Data Points			R value
I feel I am in better health than I was 1 year ago.	→	Higher Refueling Score	.590
		Higher Rejuvenating Score	.619
Eating healthy and exercising will decrease my chance of developing heart disease, cancer or diabetes.	→	Higher Refueling Score	.510
		Higher Rejuvenating Score	.418
		Higher Relaxing Score	.512
		Higher Relating Score	.513
		Decreased Systolic Blood Pressure	-.409
It's easy to follow good health habits on my own.	→	Higher Refueling Score	.602
I am responsible for my own health.	→	Decreased Systolic Blood Pressure	-.416
Health Beliefs Total Score	→	Higher Refueling Score	.430
		Higher Rejuvenating Score	.646
		Higher Relaxing Score	.554
		Higher Relating Score	.562

As can be seen from the data, as the participants positive health beliefs (i.e., Eating and exercise are important; I am responsible) increased so did their health parameters, especially their habits. For example, the Health Beliefs Total Score correlated highly with higher scores in all four lifestyle habits categories of Refueling, Rejuvenating, Relaxing and Relating. These data follow what is seen in the health literature. Those who have more positive beliefs are more likely to have healthier habits. Our participants were no different.

Evaluation of Program by Participants

Participants seen at follow-up assessment were asked questions to help in the evaluation of the program and the materials. A copy of the questions asked for the evaluation is found as Attachment #19.

Overall Program

Participants rated the overall program a 4.65 (on a scale of 1-5, 5 being high). Examples of comments about the overall program:

- Great – super.
- It works.
- Eye opener for me.
- Something to work at – good advice.
- Basically a real good program – depends on a person's willingness to try.

How Helped

Participants were asked how the program had helped them. Ninety-six percent responded that it had helped them. Sample responses:

- The program helped me realize I need to take better care of myself.
- I feel a lot better. Made me more conscious about eating. I began exercising a lot more – started running.
- Yes – in my mind – awareness.
- I feel better – have a lot more energy.
- Woke up ideas.
- Was already health conscious – mainly provided support.

Changes Made

When asked what they do differently, sample responses were:

- More exercise. Eating better: no vending snacks, no fried foods, no soft drinks, more veggies and fruit.
- I'm eating better: more fat free margarine, vegetables. More exercising – line dancing.
- I eat better: 1) eating less meat and 2) less fatty food and 3) started oatmeal for breakfast and 4) more fruits.
- Much more careful on the road. I park farther away when on road, walk more.
- I try not to eat Ho-Ho's, etc. I don't do buffets anymore.
- Quit eating red meat and fried foods. Walk dog every night.
- I walk 4-5 days/week, riding bike. Eat more fruit, make carrot-raisin salad, buy juices, less fried foods, less sweets.
- I pay more attention to exercise & stress reduction. Reinforced my eating habits.
- Helped me eat better: more vegetables.
- Eating: 1) more colored vegetables, 2) more brown rice, 3) now eating breakfast.

Recommendation

When asked if they would recommend the program to fellow drivers 100% said yes.

Involvement

The toughest evaluation question for the participants was the one we constantly struggle with: "How can we get drivers involved?" Responses were often prefaced with, "That's a good question!" Some of the ideas participants had:

- Until they become aware of what the job does to them, they will not do anything. They need to realize it themselves.
- It's hard – has to be individual willingness.
- Pay them.
- Pull them in. Tell them it's not hard to do gradual things. Do not force them, but explain and encourage.
- One-on-one.
- Start with a good presentation.
- They have to want to get in shape.
- Just worry about those interested.
- Success stories of others.
- Have a mentor (driver) in the group who helps get it started.
- Get company to get their drivers involved – need management support. Drivers need outside support.

Program Specifics

Participants were asked specific questions about the different phases of the program. A summary of their responses:

Program Component	Evaluation Comment
Recruitment	Rated materials a 4.42 on a scale of 5.
Introductory Group Session	Those who had the introductory session (speaker and video) really liked it and ranked it a 4.69 on a scale of 5. Comments were: ▪ Excellent ▪ Teaches you a lot ▪ Gives people a wake up call. ▪ Group part is important.

Health Assessment — In general they liked the health assessments and found getting their personal information very valuable. They scored the assessment high with a 4.89 on a scale of 5.

Action Notebook — The notebook was rated high, 4.66 on a 5-point scale, but it was apparent some did not read it. Some loved the written material and record keeping and others thought the worksheets or record keeping were too difficult or time consuming.

Audiotapes — The audiotapes seemed to be more liked than the notebook, but they were rated about the same – 4.69 on a 5-point scale. Comments received were:

- Excellent – I listen to them all the time.
- Just don't listen to tapes.
- Most important thing.
- Listened to tapes more than anything else – about wore them out.
- Will listen over and over

Final Suggestions

When asked if they would go through the program again, now that they know what it is, all said yes except for one participant. He said no, because he felt he already was healthy and had knowledge from other sources.

Some of the final suggestions from the group were:

- Liked personal notes received from coach.
- Follow-up meeting at 6 weeks would be good.
- On right track.
- Need to give constant reinforcement to participants.
- Group participation (support) needed – like buddy system. Help and competition.
- A little too much repetition from tapes to book.
- I feel so much better. I can't believe it. Reduces stress.
- Need management support.
- Get management involved.
- Have successful people tell their stories.

Case Studies

It is often very interesting to also look at individual success stories as part of the program evaluation. Two are presented here:

Case Study #1

CS #1 began the Gettin' in Gear program with an unhealthy HDL/Total Cholesterol ratio of 14%, putting him at high risk for Coronary Heart Disease and Stroke. He weighed 208 pounds, which for his height placed his Body Mass Index (BMI) at an unhealthy 28. His blood pressure, though within regulation, was 133/88 mmHg, a level considered borderline high by many health professionals. He also scored Poor (level 1 of 6 possible) on the cardio-respiratory fitness test (step test).

By the end of the 6-month program, CS #1 had made many changes, resulting in an HDL cholesterol 20 points higher, which boosted his cholesterol ratio 7% (or one third) to a much healthier 21% (25% is ideal). This change alone reduces his risk of heart disease by 14%.

He lost 21 pounds, lowering his BMI to 25 (20-25 ideal). His blood pressure made a very significant drop to an ideal 120/82 mmHg. His score on the aerobic fitness test moved up from a 1 to a 4 (6 possible), and he did 47 pushups.

CS #1's fasting blood glucose, although within ideal limits both pre and post program, moved from 107 mg% to 82 mg%. A summary of CS # 1's before and after risk factor data is shown in Table Fourteen.

Table Fourteen: Case Study One Summary Risk Factor Data

Risk Factor	Before	After
Cholesterol (mg%)	289	283
HDL Cholesterol (mg%)	40	60
HDL%	14	21.2
Glucose (mg%)	107	82
Weight (pounds)	208	187
BMI	28	25
Pulse (beats/min)	64	68
Blood Pressure (mmHg)	133/88	120/82
Aerobic Fitness	Poor (56)	Good (43)
Strength Fitness	Outstanding (33)	Outstanding (47)
Flexibility Fitness	Avg (15 ½")	Avg (17")
Refueling (mean score)	3.5	3.9
Rejuvenating (mean score)	3.2	4
Relaxing (mean score)	3.1	3.4
Relating (mean score)	3.8	3.4

Case Study #2

CS #2 began the Gettin' in Gear program with a weight of 230 pounds placing his Body Mass Index (BMI) at 31 (obese). His blood pressure was high at 150/84 mmHg. He was already an avid exerciser and scored well in all the fitness tests.

At the end of the 6-month program, CS #2 scored even better in the fitness tests. He also lost 13 pounds, moving his BMI from the obese range to a better 29.4 (still overweight, but closer to a lower health risk BMI of 27).

Most significantly, his blood pressure dropped to an ideal 122/78 mmHg. His lifestyle refueling score jumped significantly from a mean of 2.1 to a 3.4, indicating an expected continuation of weight loss and healthier cholesterol levels. Case Study #2's summary risk factor data are shown in Table Fifteen.

Table Fifteen: Case Study Two Summary Risk Factor Data

Risk Factor	Before	After
Cholesterol (mg%)	238	291
HDL	44	57
HDL%	18.5	20
Glucose (mg%)	85	92
Weight (pounds)	230	217
BMI	31	29.4
Pulse (beats/min)	61	52
Blood Pressure (mmHg)	150/84	122/78
Aerobic Fitness	outstanding (34)	outstanding (26)
Strength Fitness	outstanding (32)	outstanding (32)
Flexibility Fitness	Good (18.5)	Good (18)
Refueling (mean score)	2.1	3.4
Rejuvenating (mean score)	4	4
Relaxing (mean score)	4.4	4.1

Conclusions from Pilot Test

Health Improvements

The Gettin' in Gear Program had a positive health impact on the 54 participants measured both initially and at follow-up. This was shown in both lifestyle habits and actual physical lifestyle data. The most statistically significant improvements were made in the exercise habits and also in the actual fitness parameters measured. This is important, because the exercise area is where they most needed to make improvements.

Participants significantly improved in 3 of 4 categories (eating, exercise, relaxing) of lifestyle habits. This is important because habits are what influence health status. The only area where significant improvement was not seen was in relationships. This is because the group scored so well initially, there was really no need for improvement.

The next step after looking at habits was to look at actual physical data. Again, the participants significantly improved in 6 of 10 parameters. As stated above, the parameters testing fitness levels (aerobic, strength, flexibility, pulse) improved the most.

Diastolic blood pressure improved significantly and systolic blood pressure moved in the right direction (although not statistically significant). These are a reflection of better eating, more exercise and better stress management.

The significant improvement in BMI (weight loss) is also a reflection of better eating habits and more exercise.

The blood glucose level did not improve as a group, but did not need to as the group mean was in the ideal range on initial assessment.

We are not sure why the cholesterol levels measured did not improve. The most likely reason for this is the small sample size with large variance.

Driver Acceptance of Program

The drivers who were able to make it to the follow-up assessment all generally reported positive things about the program. We were unable to test various tracts of the core program (i.e., no introductory seminar vs. having introductory seminar), because our numbers were just too small. The following observations can be made:

Recruitment	Needed Materials were fine. Drivers (from company) recruiting fellow drivers is important.
Introduction	Initial seminar with speaker and video was well liked. All thought getting drivers together as a group was important. Participants thought the health assessment was valuable and should be a regular part of the program. A follow-up assessment is also important for participants to see results.
Action	The booklet and audiotapes are fine. The tapes were probably used more than written material, however for some drivers, the written was preferred. Therefore, both are needed. The drivers did not choose to use the free fitness membership. They tended to do more exercising on their own (i.e., walking).

The snack packs were popular in the two companies where done. One of these companies had significantly better results than others. The other showed improvement; however, the numbers were too small to show significance. This would imply the snack pack can be an important component of the program. The snack pack component, however, takes a larger commitment from management to provide time and money for the distribution of the snacks.

The coaching component was not used significantly by participants when they had to initiate it themselves. They did report that they liked the personal comments and letters sent to them. This implies program personnel may need to initiate contact rather than depending on drivers. With larger numbers, an 800 number would still be beneficial.

Other Thoughts

Driver Participation in the Program

As drivers respond best to other drivers, drivers should be involved in the coordination of the program at their company. They should be involved in initial training, recruitment of drivers, and support for drivers as they are making changes. Drivers should also be involved in the development of the materials. They should have input into the information developed and should be the voices and actors used in the actual tapes, videos, etc.

Management Support

Management support is critical to the success of the program. Management needs to show support by participating in the wellness program themselves and speaking of health/wellness goals for their company with employees.

Follow-up

Wellness is not a one-shot operation. There needs to be a commitment to have continual programming which follows the initial program.

MARKETING PLAN

Target Audience

There are two primary target audiences to reach with the Gettin' in Gear Program. They are the company decision maker and the individual driver or company employee.

The decision maker is the individual who decides whether to offer a wellness program to employees. The company decision maker:

Understands and believes that employees are the most important asset of the company;
Understands and believes that there is an important connection between an employee's health habits and work performance; and
Understands the connection between driver health and safety on the road.

The decision maker also has the desire to provide a work atmosphere and an effective wellness program that will improve health and quality of life.

The participant of the Gettin' in Gear program is the driver or company employee who believes in a person's ability to influence his/her health and recognizes the connection between health habits and safety on the road. This person has a desire to have a healthier body and mind and understands that this will improve his/her quality of life.

Marketing Obstacles

The anticipated marketing obstacles are:

1. Lack of understanding and interest by company decision makers to implement the Gettin' in Gear Program. This could be related to lack of understanding of the connection between health and performance/safety, lack of interest in providing anything above required programming for employees, unwillingness to spend the dollars needed for prevention or performance improvement programming.

2. Lack of understanding and interest by drivers regarding their own health. This is related to believing they do not have control over their own health, believing they do not have enough time to practice healthy habits, believing "the system" does not care about them, believing they are not responsible for their own health, believing their profession makes it impossible to be healthy, etc.

Marketing Strategies

Large Group Marketing Presentations

The intent of the large group presentation is to present the results of the Gettin' in Gear pilot study to decision makers at various meetings across the United States. These presentations will have the following objectives:

1. Improve decision maker awareness of the importance of employee health to their bottom line.

2. Present data from the pilot study showing health improvements made with the program.

3. Inform decision makers how they might use the Gettin' in Gear program with their employees.

Tactics:

1. Program participation will be solicited at different industry transportation meetings being held where decision makers will be present to obtain a cross section of the various businesses in the bus and trucking industry. Examples of such meetings are:

   American Trucking Associations Annual Meeting
   Food Distributors International Productivity Conference
   Truckload Carriers Association Annual Meeting
   United Motor Coach Association Annual Meeting
   American Bus Association Annual Meeting
   State Trucking Association Annual Meetings
   Federal Motor Carrier Safety Administration "Driver Fatigue Seminars"

2. Presentations, at a minimum, should include the following:

   PowerPoint presentation of program outline and results of pilot study
   Promotional video showing success stories of drivers
   Sample driver Gettin' in Gear wellness package

3. The presentations may be given by individuals involved in the project and, if available, by a driver who participated in the pilot project.

Promotional Campaign

A promotional campaign should be conducted to make information available to the transportation industry about the Gettin' in Gear program.

Tactics:

1. Development of an announcement and press kit folder to be sent to companies within the industry.

2. Development of a press release which will be used by the Federal Motor Carrier Safety Administration's Public and Consumer Affairs Office to announce the Gettin' in Gear program.

3. Development and placement of print ads in leading industry publications to announce the Gettin' in Gear program. Publications such as the following will be used:

For client (decision maker)	*For customer (driver)*
Transportation Topics	Truckers News
Business Trucking	Owner Operator Magazine
Fleet Owner	The Trucker
The Docket (United Motor Coach Assoc.)	
Destinations (American Bus Assoc.)	

4. Development and placement of articles about driver health and the Gettin' in Gear program in leading industry publications such as the ones listed above.

5. Development of a tabletop display (approximately 40" x 60") to be exhibited at various industry meetings.

6. Development of 30- and 60-second radio public service announcements.

7. Development of 30- and 60-second television public service announcements.

8. Development, implementation, and maintenance of an internet website which provides information about the Gettin' in Gear program.

Train the Trainer Presentations

A number of train the trainer presentations should be conducted. The objective of these presentations is to convince decision makers to implement the Gettin' in Gear program in their workplace and to provide them with the resources needed to implement the program. The presentations will explain the why and how of the Gettin' in Gear program.

Tactics:

1. It is recommended that the presentations be made in conjunction with the Federal Motor Carrier Safety Administration's "Driver Fatigue Seminars" programmed to be conducted around the United States through the American Trucking Associations. The sessions should be approximately one-half day and would be presented along with the fatigue seminar which is also one-half day.

2. Participants in the training session will be provided with a sample Gettin' in Gear Driver Box to include:

   a. Introductory memo.

   b. Gettin' in Gear notebook with tab dividers, notebook instructions, self health assessment, and chapters for action.

   c. Gettin' in Gear program brochure.

   d. Gettin' in Gear program video.

   e. Gettin' in Gear program audio cassettes (5).

   f. Gettin' in Gear reward button.

   g. Gettin' in Gear coloring book (for family members).

3. Participants in the training session will be provided with a Gettin' in Gear Program Instructors Manual. The instructors manual will provide detailed information about the program and instructions on how to implement it.

U.S. Department of Transportation
Federal Motor Carrier Safety Administraiton
400 Seventh Street, SW
Washington, DC 20590

www.fmcsa.dot.gov

Publication No. DOT-MC-00-200
MC-ESA/9/00(300)EW