

# Healthy Worksite Initiative Evaluation: Final Report



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**Health Promotion  
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Report prepared by:  
Lydia Andris, Allen Cheadle  
Health Promotion Research Center, University of Washington, Seattle, WA

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# Healthy Worksite Initiative – Final Report

## EXECUTIVE SUMMARY

### Introduction

The Healthy Worksite Initiative (HWI) was a 30 month legislatively-mandated demonstration project that began in July 2007 and ended December 2009. This report presents findings from the University of Washington's (UW) evaluation of the initiative and is intended to serve as a companion piece to the Health Care Authority's (HCA) final report for the legislature.

HWI was led by the HCA and involved seven other state agencies:

- Department of Financial Institutions (DFI)
- Department of Health (DOH)
- Department of Natural Resources (DNR)
- Department of Social and Health Services (DSHS)
- Employment Security Department (ESD)
- Higher Education Coordinating Board (HECB)
- Office of the Attorney General (AGO)

The initiative tested a model for comprehensive, rapid, and sustainable organizational change that would result in improved employee health and productivity and ultimately bend the rising cost trend of health care. If successful, the model could be spread to other state agencies and higher education institutions and affect a large number of employees and their families in Washington State.

Overall, the Healthy Worksite Initiative appears to have been successful. Improvements in select health behaviors/conditions (*cholesterol, diabetes risk factors, absenteeism, physical activity, diet/nutrition and depression*) occurred during the course of the initiative. In addition, agencies made some important operational changes to support employees' health and help build a culture of wellness.

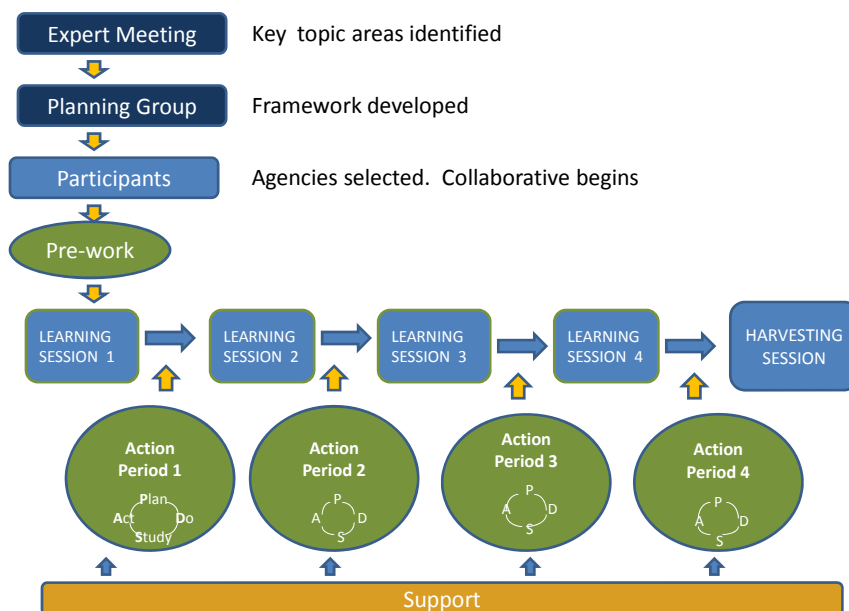
# Intervention Model

HWI used the Collaborative Breakthrough Series (BTS) model as the basis for its intervention. Each agency assigned three representatives to participate directly in the Collaborative. A change package, developed by national experts and local stakeholders for HWI, guided agency activity in six key areas:

- Understand your population
- Engage employees and families
- Internal work environment
- Information and measurement
- Wellness interventions
- Community linkages

Agencies used PDSA (Plan, Do, Study, Act) cycles to make improvements. They generated small changes in the key areas; tested them; then improved, expanded or dropped them based on experiential data; and repeated the process until the activities were successful. In this way, effective, and comprehensive change could be made in a short period of time. Agencies worked independently (during "Action Periods") and together through "Learning Sessions" to develop and refine individual, environmental, and policy interventions that positively influenced health behaviors and lifestyle choices, and helped develop a culture of wellness within the organization.

## HWI Collaborative



# Outcome Measures

Listed below are the outcome measures used to evaluate this initiative. The first eight were specified in the enabling legislation. The other measures were added by HWI Leadership.

1. High rate of **participation** in Health Survey and Screenings
2. Reduction in percentage of employees who are **overweight/ obesity**
3. Reduction in risk factors related to **diabetes**
4. Reduction in high **cholesterol**
5. Reduction in high **blood pressure**
6. Reduction in **tobacco** consumption
7. Reduction in risk factors related to **absenteeism**
8. Increase in appropriate **use of preventive health services**
9. Improvement in overall **health status**
10. Reduction in risk factors related to **presenteeism**
11. Development of a **culture of wellness**
12. Reduction in percentage who screen positive for **depression**
13. Reduction in percentage who screen positive for **alcohol**
14. Increase in **physical activity** levels
15. Improvement in **diet/nutrition**

Progress, on all but two of the measures, was tracked using Health Survey and Health Risk Screening results. Survey/Screenings were offered three times (every six months) to all employees in the Collaborative. To evaluate use of preventive services we analyzed UMP claims data, and to assess development of a wellness culture we looked at change package progress. Outcome measures are explained in more detail on pages of 19-27 of the main report.

# Methods

Quantitative analyses were used to assess progress on all measures except the development of a culture of wellness, for which we primarily used a qualitative approach. Most of the data to assess outcomes comes from the survey/screening results, which we analyzed in different ways as described below.

- 1. Pure Pre-Post Comparison** Looked at the experience over time of employees who participated in both the first screening and the last (third) screening.
- 2. Everybody Cross-Section** Examined the experience of all HWI participants screened in each round. Then cumulatively looked at all participants' latest results whether from Round 1, 2 or 3. Includes people screened once, twice, and three times.
- 3. Cohort CTLL vs. Non CTLL** Analyzed the experience of participants in a special intensive intervention called *Changes that Last a Lifetime* (CTLL) compared it to the experience of those who did not. All employees in this analysis were screened at least 2 times. We compared first and last test results.
- 4. Newly Identified as "At Risk"** Looked at the Health Survey results of those identified as "at risk" by a Screening, to determine if they were aware that they had this risk factor/condition prior to being screened. Specifically we looked at: Fasting Blood Glucose, Blood Pressure, Total Cholesterol, LDL, HDL, and Triglycerides.

The bulk of this report presents data from the Pure Pre-Post Comparison. Statistically significant changes were found even with its smaller sample size. CTLL analysis was used to show the benefits an intensive comprehensive approach can make. The Cross Section or "everybody" approach, was used to present responses to "follow-up" questions. And the Newly Identified as "At Risk" analyses shows just how large the potential impact could be. (*See Appendices for results from all analyses that looked at change over time*). To analyze use of preventive screenings, we looked at claims data, comparing the difference between three time periods (2007, 2008 and 2009).

# Results

The table below summarizes our findings. Each outcome measure is listed with the goal/desired direction of change and whether or not a statistically significant change was observed, meaning a change unlikely to be due to chance alone.

**Yes** = Statistically significant change occurred in the desired direction

**Not yet** = Changed occurred in the desired direction but was *not* statistically significant. In one instance, Use of Preventive Services, change in desired direction was not observed.

Some 40% of all employees in the Collaborative, almost 2,400 people, participated in at least one round of the Health Survey and Health Risk Screenings. A total of 583 employees participated in both the first and third rounds and were included in the Pure Pre-Post analyses, which is the basis for most of our achievement assessments.

Measure	Goal	Achieved?
<b>Employee Participation</b>	≥40%	<b>Yes</b>
Overweight/ obesity	↓	Not yet
<b>Risk factors related to diabetes</b>	↓	<b>Yes</b>
<b>Cholesterol/Lipids</b>	↓	<b>Yes</b>
Blood pressure	↓	Not yet
Tobacco consumption	↓	Not yet
<b>Absenteeism</b>	↓	<b>Yes</b>
Use of Preventive Services	↑	Not yet
Presenteeism	↓	Not yet
<b>Overall Health Status</b>	↑	<b>Yes</b>
<b>Culture of Wellness<sup>†</sup></b>	↑	<b>Yes</b>
<b>Depression</b>	↓	<b>Yes</b>
Alcohol	↓	Not yet
<b>Physical Activity</b>	↑	<b>Yes</b>
<b>Diet/Nutrition*</b>	↑	<b>Yes</b>

\*Statistical significance of this measure was determined by Cross Section analyses because the question for the diet measure was not on the first survey and so could not be measured using the Pre-Post approach.

† Statistical tests were not run on this measure due to the small number of agencies involved.

# Employees Assessment of HWI

HWI leadership inserted some evaluation questions into the Health Survey administered in Round 2 and 3. The Personal Health Report referenced below refers to the customized report each participant received after taking the Health Survey. Based on the input of almost 1,200 employees responding to these questions, HWI, its screenings and survey, were a success.

- **93%**      **Agency should continue developing wellness program**
- **88%**      **Took action based on screening and report results**
- 85%      Agency supports me in maintaining my health
- 81%      Found the Personal Health Report valuable
- 72%      HWI has been valuable to me
- 67%      Increased physical activity
- 57%      Changed my diet



# Summary and Conclusions

The seven participating state agencies made impressive progress in implementing worksite interventions that have the potential to greatly improve employee health and productivity.

Baseline risk assessments from June 2008 indicated that employees participating in HWI survey/screenings had a number of health behaviors and risk factors in need of improvement. More than half of those surveyed/screened had or were:

- Overweight/obese
- Elevated LDL cholesterol
- Physically inactive
- Elevated blood pressure
- Depression

Follow-up data collected at the end of HWI, in June 2009, showed that agency activity was correlated with positive changes in some behaviors/risk factors. In particular: reducing risk factors for diabetes and cholesterol, increasing activity levels particularly among those who had been inactive, reducing absenteeism due to illness, reducing depression, and increasing daily intake of fruits and vegetables. Plus, employees reported really appreciating the efforts agencies were making to improve and support their health.

HWI offered a unique opportunity for Washington State to develop and refine a model that can now be used with all State agencies/institutions to encourage rapid, comprehensive, and sustainable reforms that will improve employees' health and productivity. The basic constructs of the initiative continue to live on through the new Washington Wellness Worksite Designation program. During 2010-2011, this program will actively work with 17 agencies to improve the health and well-being of their employees. Beginning in 2012, the program hopes to work with an ever-growing number of agencies and higher education institutions until all are on the path to building and maintaining a healthy and productive worksite.



# HEALTHY WORKSITE INITIATIVE (HWI)

## FINAL REPORT

### I. Introduction

The Healthy Worksite Initiative (HWI) was a 30 month demonstration project involving seven Washington State agencies. The project began in July 2007 and ended in December 2009. The purpose of the initiative was to test and refine a model designed to help organizations improve the health status of their workforce and create a culture of wellness. Over time, a healthier and more productive workforce is expected to positively impact the state's healthcare cost trend and reduce health-related productivity losses. The model, if successful, would be used with other State agencies and higher education institutions.

The University of Washington evaluated the initiative under the guidance of HWI leadership and in partnership with HWI's two consultants: CSI Solutions and Institute for Health and Productivity Management (IHPM).

The enabling legislation specified a number of desired outcomes and the evaluation group refined and expanded upon this list.

Overall, HWI was associated with positive changes in employees' health. Statistically significant changes/improvements were noted in terms of:

- Cholesterol risks (*in particular total cholesterol and low density lipoprotein (LDL) levels.*)
- Physical activity
- Modifiable risk factors for diabetes (*in particular elevated blood glucose levels and physical activity*)
- Depression screen
- Being absent due to illness for more than five days during the course of the year
- Number of overall health risks

Promising preliminary results led the Health Care Authority to develop the Washington Wellness Worksite Designation Program, launched in April 2010. The designation program encourages all Washington State agencies to get on the path to improving workforce health and productivity and uses the HWI model as its basis.

## II. Background

It is now commonly accepted that lifestyle habits, such as a poor diet and lack of physical activity, contribute to the development of conditions like obesity, hypertension, and lipid disorders. If not addressed, these habits can lead to the development of chronic diseases like heart disease and diabetes.

Employees who are less healthy or have multiple health risks tend to have higher health care costs, more absenteeism, and be less productive on the job than their healthier peers. With the percentage of employees in this less healthy category continuing to grow, it became clear that Washington State, as a large employer, would benefit greatly from taking action.

Over the past several years, Washington State, like most large employers, offered some worksite wellness programs to employees and responded to worsening employee health and increased costs primarily by making changes to medical benefits. Nonetheless, employee health continued to worsen and costs to increase. New and different action was needed to minimize or reverse this trend.

In January 2006, the Governor, recognizing the need to promote prevention and wellness and the importance of taking a leadership role, made an Executive Order directing the Administrator of the Health Care Authority (HCA) and the Secretary of Health from Department of Health (DOH) to launch Washington Wellness statewide.

The target audience of Washington Wellness is State employees, retirees and dependents. The underlying belief is that as the largest employer in the State, improving the health and vitality of State employees would positively impact both job performance and the cost trend of health plan benefits.

*“Government must play a leadership role in promoting prevention and wellness. I believe Washington State is especially well-suited to serving as a model, promoting healthy behavior among our own employees and retirees. In so doing, we not only improve the health of state employees and retirees, themselves, but also enhance their ability to serve state citizens.”*

*- Governor Gregoire  
(Vision statement)*

Each State agency and higher education institution appointed a Wellness Coordinator to lead the health and productivity management program in his/her agency/organization. The primary focus of this initial effort was to implement a Health Risk Assessment (HRA) which would allow the State to obtain baseline information about the health of its workforce. This information could be used to help plan health promotion activities for targeted populations and evaluate effectiveness of interventions over time. Washington Wellness coordinators were not specially funded to do this work and no assistance was provided regarding making workplace changes and selecting wellness programs that could help achieve the desired sustainable improvement in employee health.

In 2007, the legislature furthered the Governor’s initiative by placing into statute Senate Bill 5930 (SB 5930, section 36/ Chapter 41.05.541 RCW) <http://apps.leg.wa.gov/RCW/default.aspx?cite=41.05.541> which directs Washington Wellness to pilot and evaluate interventions in four or more State agencies involving up to 8,000 employees. The Legislature defined a specific set of outcome measures and allocated funding to support this effort. This pilot project became known as the “Healthy Worksite Initiative” or “HWI”.

The Governor and the legislature acted on the growing evidence that worksite environment, policies, and program interventions can have a strong impact on employees’ health and productivity - not surprising given that employees spend more than half of their waking hours at work five days a week.

They also understand that merely offering “worksite wellness” programs such as aerobics and yoga classes, is not enough. A clear business case can be made for developing a comprehensive approach. One that encourages employees to manage their own health as part of a larger employer effort to improve productivity and develop a worksite culture of health.

### III. Description of the Initiative

The Healthy Worksite Initiative was a comprehensive systems change approach for making sustainable improvements to employees' health and productivity. It was led by the Health Care Authority with technical assistance from the Department of Health.

#### Agencies Involved

- Department of Financial Institutions (DFI)
- Department of Health (DOH)
- Department of Natural Resources (DNR)
- Department of Social & Health Services (DSHS)
- Employment Security Department (ESD)
- Higher Education Coordinating Board (HECB)
- Office of the Attorney General (AGO)

These agencies were selected to participate based on their response to a Request for Proposals (RFP) which included the following legislatively mandated criteria for participation:

- Have Senior Management support with up to 0.5 FTE commitment for HWI.
- Capable of implementing best practice employee health programs
- Engaged in significant effort to promote Health Risk Assessment completion during Washington Wellness
- Able to form an HWI team
- Capable of documenting the number of participating employees

The legislation also specified a minimum number of agencies and a cap on the number of total employees that could participate, which meant that larger agencies could only include a portion of their employees in HWI.

Altogether, the seven participating agencies had about 7,000 employees in the initiative, representing about 3% of total State employee population.

Most of the participating agencies included all of their employees in HWI, with two exceptions: DSHS and DNR. DSHS, because of its large size, included only a subset of employees. It chose two divisions: Economic Services Administration (ESA) and Health and Recovery Services Administration (HRSA), which together represent about 8% of the employees at DSHS. DNR started with only a subset of their employees so that more agencies could participate.

All employees<sup>1</sup> in HWI were offered the opportunity to participate in the survey/screenings and programs, and work in the environment and culture that HWI was actively trying to change.

**Table 1. Agency vs. HWI Collaborative Population**

	Agency		HWI	
	No. of Employees	No. of physical sites	No. of Employees	% of Agency Employees
AGO	1,339	17	1,339	100%
DFI	195	1	195	100%
DNR	1,481	19	618	42%
DOH	1,511	6	1,511	100%
<b>DSHS</b>	19,038	2	1,590	8%
ESD	1,949	53	1,949	100%
HECB	96	1	96	100%
<b>TOTAL</b>	25,609	97	7,298	28%

Sources: Agency reports and for DSHS from <http://lbloom.net/index07.html>.

\* DSHS – included 100% of its employees from two divisions – ESD & HRSA, so while results are not generalizable to the entire agency they are for those divisions.

The number of employees from each agency ranged from about 96 at HECB (making up 1% of the Collaborative) to 1,949 at ESD (constituting 26% of the Collaborative). The number of geographic sites/offices per agency included in the sample also ranges considerably from 1 (HECB) to 62 (ESD).

<sup>1</sup> With the exception of ESD who in the first round of surveys/screenings only included a subset of employees. Subsequent rounds included all employees.

The Collaborative population had a similar age distribution as the agencies themselves, but had a larger proportion of females (65% vs. 50%).

## The Model

HWI's model incorporated three evidence-based methods/tools: a change package, a collaborative learning process, and a continuous improvement process.

1. **A Change Package** The Change Package provided structured support for agencies. It identified a set of high level evidence-based activity areas for organizations to work on to help bring about the desired change. In this case, the aim was to improve the health of their employees and build a healthy work culture. For HWI these areas included:

1. Understand Your Population
2. Engage Employees and their Families
3. Maintain an Internal Work Environment That Fosters Wellness
4. Use Information and Management
5. Employee Effective Wellness Interventions
6. Leverage Community Linkages

Organizations needed to work in each and all of these areas to bring about the desired change.

2. **Collaborative Learning Process** – HWI used the Institute for Healthcare Improvement's (IHI) Collaborative Breakthrough Series (BTS)<sup>2</sup> model to provide agencies with the “how” to make changes. This model has been used to spread and adapt best practices across multiple organizations, and has achieved dramatic results in many areas of health care. HWI was the first known application of this model to improve worksite health and productivity.

A BTS Collaborative brings together organizations seeking the same desired change. It provides a structure for organizations to learn from each other and

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<sup>2</sup> The Breakthrough Series White Paper. Institute for Health Care Improvement, 2003. [www.ihc.org](http://www.ihc.org)



from experts in the field, and to act based upon what they learn to make system level changes within their own organization. Organizations help each other achieve common goals. These Collaboratives are short-term, usually between 6-15 months. HWI was a little longer, 18 months from agency selection to the end of the Collaborative, to allow enough time between each survey/screening for change to occur.

Each participating agency formed a team to spearhead the initiative within their agency as well as participate in the Collaborative. Typically this was a three person team comprised of a senior leader, a day-to-day leader, and a dedicated employee. Team members tended to be from different areas and levels of the organization. The team attended five face-to-face meetings over the course of the Collaborative. The first four of these meetings were called "Learning Sessions". During these sessions, agency teams met as a group to share ideas and successes, discuss problems/concerns, and plan for the next phase. The last meeting was called a "Harvesting Session."

The first HWI Learning Session focused on the change package, the second on the model for improvement and learning from case studies, the third on understanding and using results from the surveys and screenings, and the fourth, on sustaining the gains and spreading the improvements. The Harvesting session was a time to highlight successes and discuss lessons learned.

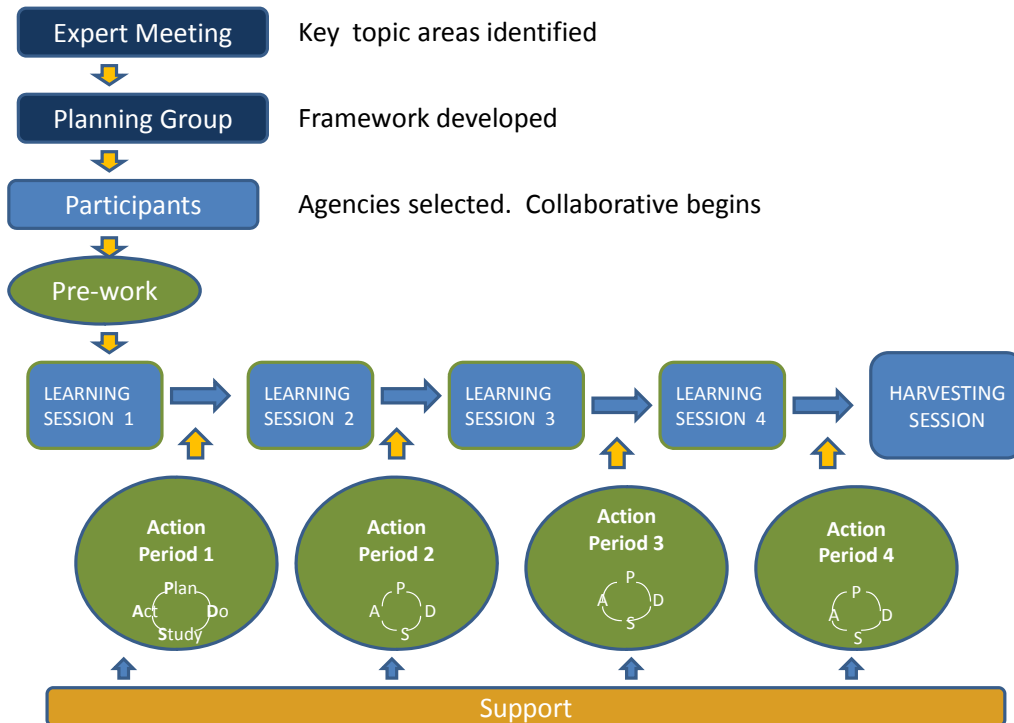
All Learning Sessions offered teams the opportunity to learn from each other as they reported on successes, barriers, and lessons learned. This occurred through formal presentations, workshops, poster presentations, as well as informal dialogue and exchange.

Teams submitted monthly progress reports so leadership could monitor their progress and help troubleshoot problems. They were supported by monthly conference calls, periodic site visits, and a virtual list-serve/office for web-based discussions and the sharing of materials and resources.

### 3. Rapid Cycle Model for Improvement<sup>3</sup>

Between Learning Sessions are Action Periods. This is when teams brought what they learned at the Collaborative gathering to their own organization. They used the Plan-Do-Study-Act (PDSA) method to introduce and continually improve efforts within their own organization. This rapid cycle model for improvement calls for making a small change, testing it, refining it, and repeating until you have something that works effectively on a larger scale.

## HWI Collaborative



<sup>3</sup> Model for Improvement. Developed by Associates in Process Improvement.  
[http://www.ihl.org/IHI/Topics/Improvement/Improvement Methods/How to Improve](http://www.ihl.org/IHI/Topics/Improvement/Improvement%20Methods/How%20to%20Improve)

## Funding

Total cost of this project is about \$1.05 million, or \$527,500 a year.

The Washington State Legislature, recognizing that agencies needed funding to successfully implement the desired worksite wellness changes, provided \$600,000 for HWI over the biennium.

In addition to funding from the legislature, the Health Care Authority (HCA) contributed 1.5 FTE in staff time, adding approximately \$200,000 in value, and the Institute for Health and Productivity Management (IHPM) contributed in-kind resources valued at about \$250,000. IHPM contributed a website for employees in the Collaborative, a HIPAA compliant data repository and screening analyses, a Health Risks Assessment survey, consultation on the survey and health screenings, and free vendor products (for example, Changes that Last a Lifetime (CTLL) and Healthy Quarters).

**Table 2. Estimated Funding and In-Kind Contributions for HWI**

Sources	Type	7/07-6/09
WA State Legislature	Dollars	\$600,000
Health Care Authority	Staff time	\$120,000
	Dollars	\$114,350
Institute for Health & Productivity Management (IHPM)	In-kind resources estimated	\$255,000
<b>TOTAL</b>		<b>\$1,055,000</b>

Participating agencies also contributed to this effort with their own funds for additional staffing, interventions, and promotional materials.

The cost per employee per year works out to a little more than \$80. The cost/employee/year in other companies for similar programming ranges from \$50 - \$500. The dollars and in-kind resources spent on this program paid for both the development of a large scale health and productivity program AND the implementation of a health and productivity program in seven agencies.

## Timeline

HWI officially began in July 2007 when SB 5930 section 41 passed. It was a 30 month project with three distinct phases: design, collaboration, and evaluation/spread.

### Design Phase: July 2007- Dec 2007

Jul 2007	SB 5930 Section 41 goes into effect and HWI is created
Dec 2007	HCA selects model and expert panel refines model

### Collaborative Phase: Jan 2008 – Jun 2009

Jan 2008	Agencies selected and agency teams formed
Mar 2008	Collaborative Learning Session #1 (Kick Off)
Jun 2008	Collaborative Learning Session #2
May-Jun 2008	<u>Health Survey &amp; Health Risk Screenings- #1</u> (Baseline)
Sep 2008	Collaborative Learning Session #3
Nov-Dec 2008	<u>Health Survey &amp; Health Risk Screenings - #2</u>
Dec 2008	Interim Report to Legislature
May-Jun 2009	<u>Health Survey &amp; Health Risk Screenings #3</u>
Feb 2009	Collaborative Learning Session #4
Jun 2009	Collaborative Harvesting Session – lessons learned & model refined
Jun 2009	Collaborative Officially Ends

### Evaluation & Spread Phase (July 2009 – Dec 2010)

Sept 2009	Outcomes Congress – celebration of accomplishments of HWI agencies and launch of Healthy Worksite Designation Program
Dec 2009	Official end of pilot phase of HWI
Dec 2009	Dissemination and spread of change package through HCAs Designation Program to more agencies/institutions
Apr 2010	Washington Wellness Worksite Designation Program launched
Jun 2010	University of Washington submits draft HWI Evaluation
Aug 2010	University of Washington's HWI Evaluation completed
Dec 2010	HCA submits Final Report to legislature
Jun 2011	SB 5930 Section 41 expires

Note: This timeline does not include the following monthly recurring events:

- Planning group teleconferences
- Agency teams teleconferences
- Agencies submission of their monthly reports

## IV. Outcomes, Measures & Data Sources

The overall goal of HWI was to develop and refine workplace interventions that will positively influence employee health behaviors and lifestyle choices. Over the long run, this will lead to improved health status and productivity and lower healthcare costs than would otherwise be possible. To assess progress towards reaching this goal, the legislature and the HCA identified several specific outcomes desired from this initiative including:

### Desired Outcomes

Listed below are the outcomes or desired results from the initiative. The first eight were identified by the authorizing legislation and the rest were added by HWI Leadership.

1. High rate of participation in Health Survey/Screenings
2. Reduction in percentage overweight/ obesity
3. Reduction of (modifiable) risk factors related to diabetes
4. Reduction in high cholesterol
5. Reduction in high blood pressure
6. Reduction in tobacco consumption
7. Reduction in risks factors related to absenteeism
8. Increase appropriate use of preventive health services
9. Improvement in overall employee health status (health risks & quality of life)
10. Reduction risks factors related to presenteeism
11. Identify agency changes that create a "culture of wellness" to support employees
12. Reduction in "at risk" due to depression
13. Reduction in "at risk" due to alcohol consumption
14. Increase in physical activity level
15. Improvement in diet/nutrition

## Measures

The University of Washington, Health Care Authority, and Institute of Health and Productivity Management (IHPM) worked together to come up with a set of measures that we could use over time to assess whether or not the desired outcomes were achieved. The following several pages discuss each outcome measure and its data source(s) individually.

### **Outcome Measure 1: High Rate of Participation in Health Survey/Screenings**

HWI Leadership's goal was to have at least 40% of eligible employees participate in the survey/screenings at least once. This is a high rate for health surveys/screenings which typically have a 20% response rate.

To measure participation, we started with the number of eligible employees participating in the first round of the survey/screenings. We then added the number of employees who came for the first time in the second round, and did the same for those who came for the first time in the third round. We took this sum and divided it by the total number of eligible employees. Using this method, we were able to report the percent of employees who were screened at least once during the course of HWI.

Data Source(s): Health Surveys & Health Screenings

### **Outcome Measure 2: Reduction in Percentage who are Overweight or Obese**

HWI Leadership decided to use body mass index (BMI) as its measurement for weight. While not a perfect measure it is one that is commonly accepted, easily calculated, and inexpensive to administer.

**BMI ( kg/m<sup>2</sup> ) = (weight in kilograms / height in meters squared**

The National Heart Lung and Blood Institute's status categories associated with this measure include:

Normal = BMI of 18.5-24.9

Overweight = BMI of 25-29.9

Obese = BMI of 30 or more

We looked at the percentage of people who had a BMI of 25 or greater (overweight or obese).

Data Source(s): Health Screening – weight scale & height measurements

### **Outcome Measure 3: Reduction of (modifiable) Risk Factors for Diabetes**

Determining a person's risk for developing diabetes involves looking at multiple factors. Some of these are non-modifiable (such as a family history, ethnicity/race, and age) others are modifiable by changes in lifestyle (e.g. weight, fasting blood glucose).

To track progress on this outcome, we first removed anyone who already had a diagnosis of diabetes from the analysis. These people are no longer at risk for diabetes, they have it. We then looked at commonly accepted modifiable risk factors that could be easily measured. These included:

- Overweight/Obese (BMI  $\geq$  25 kg/m<sup>2</sup>)
- Fasting Blood Glucose (FBG) level: > 100 mg/dl
- Hypertension (S  $\geq$  140 and/or D  $\geq$  90 mm/Hg)
- Physical Inactivity (  $\leq$  30 minutes/day and  $\leq$  2 days a week)
- HDL < 35 mg/dL
- Triglycerides > 250 mg/dL

We calculated the percentage of employees who had none of these risk factors, then the percentage who had 1, 2 and then 3 or more respectively. We used the proportion of employees who had no diabetes risk factors as our measure to track progress over time.

Data Sources: Survey & Screening – fingerprick

**Outcome Measure 4: Reduction in High Cholesterol**

There are several forms of cholesterol circulating in the blood, so there is no one measure for “cholesterol”. Each form needs to be examined individually. Typically, this is done through a “lipid profile which covers total cholesterol (TC), triglycerides (TG), high density lipoprotein (HDL) – *the “good” cholesterol, where more is better*, and low density lipoprotein (LDL) – *the “bad” cholesterol, where more is worse* – and total cholesterol/HDL ratio (TC/HDL). HWI used a finger prick technology to analyze employees blood.

Levels considered cause for concern are:

- TC:  $\geq 200$  mg/dL
- TG:  $\geq 150$  mg/dL ,
- TC/HDL ratio  $> 3.5$
- LDL:  $\geq 100$  mg/dL
- HDL: Men  $< 40$ , Women  $< 50$  mg/dL

The “at risk” levels used by HWI are more inclusive than what most medical providers use to diagnose and treat patients. Clinical practices tend to use “high risk” cut-off levels which are: TC:  $\geq 240$  mg/dL; TG:  $\geq 200$  mg/dL; TC/HDL ratio  $> 4.0$ ; LDL:  $\geq 160$  mg/dL; HDL (same as the “at risk” level defined above).

HWI casts a broader net of “at risk” in order to catch employees before they become “high risk”. Without active attention, risk tends to worsen with age. The “at risk” category also includes those who are at “high risk” and/or have a chronic disease(s).

After determining which lipids were “at risk” for each employee, we looked at the number of different types of lipids/lipid risk factors that were considered “at risk” and calculated the percentage who had none of these risk factors, the percentage who had 1, 2, and then 3 or more. We used three or more as our threshold measure to compare over time.

Data Source(s): Health Screenings – finger prick



**Outcome Measure 5: Reduction in High Blood Pressure**

Blood pressure is expressed as systolic blood pressure over diastolic blood pressure. HWI identified the following level as being "at risk":

- Systolic  $\geq$  120 mm/Hg and/or
- Diastolic  $\geq$  80 mm/Hg

As was the case with lipids/cholesterol, this definition includes employees who are what may be called "borderline" or "pre-hypertensive". Clinical hypertension (high blood pressure) is defined as 140/90 mm/Hg.

Data Source(s): Health Screening – automated blood pressure testing

**Outcome Measure 6: Reduction in Tobacco Consumption**

Questions asked employees if they currently smoke cigarettes, cigars or pipe or use chewing tobacco. Employees were considered "at risk" if they currently use tobacco in any form.

Data Source(s): Health Survey (*See Appendix A for actual questions*)

**Outcome Measure 7: Reduction in Risk Factors Related to Absenteeism**

Originally, HWI planned to use data from Washington State's Department of Personnel's Government Management Accountability & Performance Initiative (GMAP) database/reports and their Human Resources Management Reports (HRMR) to collect absenteeism information. Not all agencies report to these systems, and the data that is available is not very useful. We were not able to distinguish between time off taken for a preventive screening to care for a dependent who is ill, or because an employee is actually sick. So, for this report, we simply used the self-reported assessment of absenteeism over the past year included in the Health Survey. Data from this measure is weak because it is self reported for the past year – which most of us would be hard-

pressed to remember accurately.

Data Source(s): Health Survey – absenteeism questions (see Appendix A)

**Outcome Measure 8: Increase in Appropriate Use of Preventive Health Services**

Adopting a healthy lifestyle includes following recommended preventive clinical services guidelines. HWI leadership identified three preventive services to use as proxy measures for the appropriate use of preventive services. These include: colon cancer screening test(s), Pap smears, and mammograms.

The recommendation for these services is as follows: colon cancer screening once every two years for all adults age 50 and older, Pap smear every three years for all women age 21 through 64, and a mammogram every two years for women age 40 and older.

We looked at claims data for all employees included in the Collaborative who were continuously enrolled in the Uniform Medical Plan from July 1, 2003 to December 31, 2009. We identified who should be receiving these services, and whether in fact they did.

Data Source(s): Uniform Medical Plan (UMP) claims data. The UMP covers the majority of employees in the Collaborative and in the State as a whole.

**Outcome Measure 9: Improvement in Overall Health Status/Health Risks**

We looked at two different measures to assess Improvement in health status:

1. Overall Number of Key Risk factors
2. Quality of Life Screen

To assess **Overall Number of Risks**, we counted the number of key risk factors that were considered “at risk” to make this determination. This called for being or having:

- Overweight/Obese (BMI  $\geq$  25),
- Any lipid risk factor (Lipid Count  $\geq$  1)
- Elevated Blood Pressure ( $>$ 120 or 80)
- Elevated Fasting Blood Glucose ( $>$ 100)
- Physically inactive (for this measure was defined as  $\leq$  30 minutes/day)

AND  $\leq 2$  days a week)

Individuals were then slated into one of the following categories: 0 key risk factors, 1 key risk factor, or 2 or more key risk factors. We then focused on the number with 2 or more, and tracked that proportion over time.

Data Source: Health Surveys & Screenings

For Quality of Life – we used IHPM’s set of questions embedded in the survey to screen for quality of life problems/issues. This includes the perception of: one’s health as “fair” or “poor”, a decrease in health from a year ago, one’s health being worse than others, and not wanting to help improve it. (See *Appendix A for actual questions*).

## **Outcome Measure 10: Reduction in Risk Factors Related to Presenteeism**

Presenteeism is a relatively new concept for “lost productivity”. It is the act of being present at work even if one is too sick or injured to be productive. It is often a large hidden cost that negatively affects a company’s output and long-term performance. An employee who arrives at work despite illness may only operate at a fraction of his/her normal capacity despite requiring the same expenditure in wages, social contributions and taxes as an employee operating at 100%. S/he may also be more prone to making mistakes and may transmit illness to other employees causing an even greater fall-out effect.

There are a few tools currently available for measuring presenteeism. HWI Leadership choose to use the Work Limitations Questionnaire (WLQ)<sup>4</sup>. This tool, developed by Debra Lerner, PhD. from Tufts University, was embedded in the HWI Health Survey. The WLQ measures the employee’s ability to be engaged and productive at work along four dimensions: time management, physical demands, mental/interpersonal, and output. It also calculates an overall measure.

Data Source(s): Health Survey – WLQ questions (*see Appendix A*)

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<sup>4</sup> Work Limitations Questionnaire 1998. The Health Institute, Tufts-New England Medical Center, 750 Washington Street, NEMC #345, Boston, MA 02111. <http://www.nemc.org/icrhps/resprog/thi/wlq/asp>.

## **Outcome Measure 11: Creating a Wellness Culture at the Workplace**

To assess how well agencies were developing a culture of wellness, we assessed their progress on the change package using the following measures:

### **Understand Your Population**

- Have a process to use Health Survey/Screening data
- Have demographic data on employee population

### **Employee & Family Engagement**

- Documented and shared promotional efforts

### **Internal Work Environment**

- Have an effective Wellness Committee –uses continuous improvement processes
- Secured commitment from Senior Leadership
- Have policies and procedures in place that support wellness

### **Effective Wellness interventions**

- Initiated new wellness programs
- Have a sustainable program

### **Information & Measurement**

- Evaluated interventions implemented
- Enough employees participated in screenings
- Measured & used Absenteeism/ Presenteeism data

### **Community Linkages**

- Made community linkages to enhance wellness

#### Data Sources:

- Agency's monthly reports
- Poster sessions at the Learning Sessions
- Presentations, workshops & informal discussions at the Learning Sessions
- Virtual office and emails
- Site visits

## **Outcome Measure 12: Reducing Depression**

The IHPM survey includes a set of questions to screen for depression.

Data Source(s): Health Survey. (See Appendix A for actual questions).

**Outcome Measure 13: Reducing Problematic Alcohol Use**

The IHPM survey includes a set of questions to screen for alcohol use problems.

Data Source(s): Health Survey. (See Appendix A for actual questions)

**Outcome Measure 14: Increasing Physical Activity**

The IHPM survey includes several questions about physical activity. We used the most basic measure, the proportion of people who were inactive, defined as being physically active for two or fewer days a week or exercising on average less than fifteen minutes a session. Note: This is different definition of "inactivity" than was used for Diabetes Risk and Overall Health Risk measures.

Data Source(s): Health Survey (See Appendix A for actual questions)

**Outcome Measure 15: Improving Diet/Nutrition**

HWI Leadership decided to focus on the consumption of fruits and vegetables as the measure of diet/nutrition. Unfortunately, in the first round of the survey, there was no question about fruit/vegetable consumption. One however was added to both the second and third rounds of the survey. We tracked the percentage of participants who reported consuming five or more servings of fruits/vegetables a day.

Data Source(s): Health Survey – (Rounds 2 & 3 only)

## Data Sources

This section discusses the data sources in more detail, reviewing each one individually:

### Quantitative Data

- **Health Surveys**
- **Health Risk Screenings**
- **UMP Claims Data**

### Qualitative Data:

- **Monthly Progress Reports**
- **Meeting Notes** (Site Visits, Teleconferences, Learning Sessions, Poster Sessions)

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## Quantitative

### **Health Survey**

HWI leadership sponsored three Health Surveys (a.k.a Health Risk Assessments) for HWI employees, spaced about six months apart. Round 1 was offered in June 2008, Round 2 in December 2008 and Round 3 in June 2009. Each of these surveys could be taken on-line anytime over a six-week period. Agencies actively encouraged and incentivized employees to take the surveys.

The Health Survey used was called the “Comprehensive Personal Health Survey”, developed specifically for this initiative by the Institute for Health and Productivity Management (IHPM). The survey assessed risk in 12 areas: Alcohol Use, Anxiety, Breathing Problems, Depression, Diabetes, Exercise, Heart or Blood Vessel Problems, Prescription Medication Use, Quality of Life, Seat Belt Use, Sleep Problems, and Tobacco Use. Based on an employee’s responses to a particular set of questions, she/he was identified as “at risk” or “not at risk” in each of these areas. For our evaluation we were only concerned with select measures from the survey, specifically: absenteeism, alcohol use, depression, fruits and vegetable consumption, physical activity, presenteeism, quality of life, tobacco use, assessment of HWI, perception of agency support for employee health, and awareness of own risk factors.

### **Health Screenings**

HWI leadership sponsored three Health Risk Screenings for HWI employees,

roughly coinciding with the Health Survey periods. HWI employees were invited and actively encouraged and incentivized to participate in these screenings – at no cost. Maxim Healthcare administered the screenings at participating agency worksites. Employees signed up on-line to be screened on a specific date, time and place. Maxim Healthcare pricked their finger for blood lab work, took their blood pressure, and measured their height, weight, and waist circumference.

IHPM collected and analyzed the data from the survey and screenings and prepared reports for individual participants as well as for the agencies, HWI leadership, and initiative evaluators.

### **Claims Data**

Adopting a healthy lifestyle includes following recommended preventive clinical services guidelines. As mentioned previously, HWI leadership identified three preventive services to use as a proxy measure for appropriate use of preventive services: colon cancer screening test(s), pap smears, mammograms.

We used Uniform Medical Plan (UMP) claims data, to assess use of these three preventive screenings among employees in the Collaborative.

## **Qualitative**

### **Agency's Monthly Reports**

Participating agencies submitted monthly electronic reports to HWI Leadership. These reports helped leadership monitor progress, document successes, and identify areas where additional activity and technical assistance was needed. We also used these reports to help evaluate progress on the change package.

Each report identifies:

- Strategies undertaken for each of the change package areas
- Activities engaged in over the past month for each area
- Challenges faced
- Successes accomplished
- Focus for the next month

Supporting documentation is embedded in the report or sent as an attachment.

## **Site Visits**

HWI's Program Manager conducted one to two site visits with each agency team. Visiting teams on their own turf provides the opportunity to: view facility changes, see large promotional/ health education displays; discuss some of the agency's unique issues in more depth; determine how the Collaborative might be better able to support them in their efforts; and include a senior executive in the discussion.

## **Monthly Meetings: Teleconferences & Learning Sessions**

Information gathered at these meetings helped us evaluate progress on the change package. The Collaborative met every month. Most months, teams met over the phone for an hour, but every three months the seven agency teams met for an all day "Learning Session" in Olympia. Typically, each agency's lead and two other wellness committee members attended these sessions.

HWI Leadership developed the agenda for both the teleconferences and the Learning Sessions. Agendas for the Learning Sessions included presentations by exemplary agencies on a particular topic/area of activity, as well as presentations by HWI consultants, experts in the field of health promotion, representatives from local government wellness initiatives, and vendors of health intervention programs. There was also time for informal sharing and formal planning.

After each Learning session, HWI Leadership asked participants to evaluate the session. The average overall score was 4 out of 5 (very good). Members reported finding it energizing and helpful to hear about what other agencies were doing and to share their own experiences.

## **Poster Sessions**

Poster sessions helped us evaluate progress on the change package. Agencies prepared a poster for each Learning Session. Posters displayed what each agency had been working on since the last Learning Session to foster a culture of wellness.



**Table 3. Summary of Outcomes. Specific Measures, and Data Sources**

<b>Outcome</b>	<b>Specific Measures</b>	<b>Data Source</b>
<b>Participation in Health Screenings/Surveys</b>	Sum of the percentage of eligible employees participating for the first time in each round of survey/screening.	Surveys & Screenings
<b>Reduction in Overweight/Obese</b>	Body Mass Index (BMI) - takes into account height & weight. Overweight/Obese: BMI $\geq 25$ kg/m <sup>2</sup> Overweight: BMI 25 -29 kg/m <sup>2</sup> Obese: BMI $\geq 30$ kg/m <sup>2</sup>	Screenings
<b>Reduction in Modifiable Risk Factors for Diabetes</b>	Employees who do not currently have diabetes and do not have any of the following modifiable risk factors for diabetes: Fasting Blood Glucose (FBG) level: > 100 mg/dl Hypertension (S $\geq 140$ and/or D $\geq 90$ mm/Hg) Overweight/Obese (BMI $\geq 25$ km/m2) Exercise ( $\leq 30$ minutes/day and $\leq 2$ days a week) HDL < 35 mg/dL Triglycerides > 250 mg/dL	Surveys& Screenings
<b>Improvement in Lipid Levels</b>	Employees who have 3 or more of the following lipid risks: Total cholesterol: $\geq 200$ mg/dL Triglycerides: $\geq 150$ mg/dL , Total chol/HDL ratio: > 3.5 LDL: $\geq 100$ mg/dL HDL: Men < 40, Women < 50 mg/dL	Screenings
<b>Decrease in Blood Pressure</b>	Systolic $\geq 120$ mm/Hg and/or Diastolic $\geq 80$ mm/Hg	Screenings
<b>Reduction in Tobacco Use</b>	Currently smoke cigarettes, cigars or pipe or use chewing tobacco	Surveys
<b>Reduction in Absenteeism &amp; Presenteeism</b>	Absenteeism: Self reported number of days absent due to illness over the past year. Presenteeism: WLQ measures	Surveys
<b>Increase in Use of Preventive Services</b>	Employees following recommended guidelines? <u>Colon cancer screenings</u> – every 2 years for adults age 50+. Includes fecal occult blood test (FOBT), flexible sigmoidoscopy, and/ or colonoscopy. <u>Pap Smears</u> – every 3 years for women ages 21-64 <u>Mammograms</u> – every 2 years for women ages 40 plus	UMP Claims:
<b>Improvement in Overall Health Status</b>	Have 2 or more key risk factors: overweight/obese; $\geq 3$ lipid risks, Blood Pressure $\geq 120/80$ ; Fasting Blood Glucose > 100, and/or Physical Activity less than 15 minutes/day or 2 times a week; and Quality of Life screen.	Surveys & Screenings
<b>Progress in Developing a Culture of Wellness</b>	Assessment of HWI in survey and progress along change package measures including: Understanding your population; Engaging Employees and their families; Environmental changes; Interventions; Evaluation; and Community Linkages	Survey – Follow up Questions Meetings, Poster Sessions, Site Visits, Monthly Reports
<b>Reduction in unmanaged Depression</b>	IHPM's depression screen – positive	Surveys
<b>Reduction in problematic Alcohol Use</b>	IHPM's alcohol screen- positive	Surveys
<b>Reduction in Physical Inactivity</b>	Employees engaging in physical activity two or less days a week or whose average activity session was less than 15 minutes.	Surveys
<b>Improvement in Diet/Nutrition</b>	Report eating at least 5 fruits/vegetables per day	Surveys

## V. METHODS

Several different methods were employed to analyze the data. For the Health Survey, Health Screenings, and claims data, we primarily used the Pure Pre-Post analyses and performed chi square tests to determine the significance of changes observed. We used qualitative analyses to assess progress on the change package measures.

### Survey/Screening Data Analysis

We looked at the data from the Health Survey/Screenings in four different ways to determine the best way to assess the majority of outcome measures.

1. Pure Pre-Post – Round 1 vs. Round 3
2. Cross Section – Round 1 vs. Round 2 vs. Round 3
3. Changes That Last a Lifetime (CTLL) Cohort vs. everyone else – first vs. last round of results had for each individual
4. Newly Identified as “at risk” – across all three rounds

#### 1. “*Pure Pre- Post*”

For this analysis, we looked only at the group of individuals who participated in *both* the first and last survey/screenings (i.e., Round 1 & Round 3). Measurements from June 2008 constitute the pre-intervention (or baseline) results while measurements from June 2009 constitute the post-intervention results.

This analysis allows us to see how risk factors/conditions changed in this group over 12 months of HWI. Because only 583 of the individuals screened in June 2008 returned to be screened in June 2009, we performed additional analyses to see if there were important differences worth noting.

## **2. “Everybody’s In” - Cross Section Analysis**

We also looked at everyone who was screened at each round. The advantage to this method is it provides the largest sample size (N) since all individuals who participated at any time are included.

Specifically, we compared the measures of everyone screened June 2008, everyone screened December 2008, and everyone screened June 2009. We also included a composite or TOTAL measure to provide a snapshot for all individuals who were screened at least once – where we took the latest screening measures for each person – whether it be from Round 1, 2, or 3.

## **3. “Changes that Last a Lifetime (CTLL) Cohort Analysis”**

Additionally, we looked to see if changes among those who participated in “Changes that Last a Lifetime” (the rather intensive/ comprehensive diet/nutrition, physical activity, and weight management program) were different from those who did not participate in the program.

There was some suspicion among HWI leadership that an intensive comprehensive program intervention, such as CTLL, may be necessary to impact risk factors over the short period of time of the HWI.

For this analysis, only employees who were screened at least twice were included. Their first screening, whether that occurred in Round 1 or Round 2, was their “Pre” measure and their last screening, whether that occurred in Round 2 or Round 3, was their “Post” measure.

## **4. Newly Identified as “At Risk”**

Lastly, we looked at health survey responses of those who were identified as “at risk” from the screenings to determine if they knew they were at risk (i.e., had been told by a doctor).

Based on results from all four approaches, we chose to focus on the pure Pre-Post Comparison and the Newly Identified as “At-Risk” analyses. The Pure Pre-Post is the cleanest and strongest approach and we were pleased to find positive results using this approach, even with its smaller sample size. The Newly Identified “at risk”, while interesting, may overstate the number of employees affected due to HWI’s liberal definition of “at risk” and the fact that screening results were not repeated to ensure accuracy. Both are different from standard operations at a primary care provider’s office. Nevertheless, this analysis provides a barometer for assessing the potential impact of HWI since it identifies employees early so they can make changes before they have a problem. This analysis is favored by IHPM and HWI Leadership.

## **Claims Data Analysis**

To assess changes in the use of preventive services, we looked at participating agencies’ Uniform Medical Plan (UMP) claims data for 2008 and 2009. While screening questions were included on the Health Risk Survey, responses to such questions are notoriously inaccurate. We opted to use actual service data rather than self reported data. Since the UMP is Washington State’s self-insured and self-administered plan, we were able to access the data something that was not possible from the other (proprietary) health plans.

Employees included in this analysis are different from those included in the Health Survey/Screening data analysis. First, not all HWI agency employees have UMP as their health plan. Across all state agencies roughly 60% of employees are in Uniform Medical, and this appears to be fairly consistent across agencies, so we assumed about the same proportion of those in HWI are also in UMP. Secondly, employees included in this analysis may or may not have participated in the survey/screenings.

## **VI. RESULTS**

This section presents findings from the surveys/screenings, claims analysis, and follow-up questions.

### **A. Health Surveys and Screenings**

#### **Participants & Participation Rates**

HWI reached its goal of having 40% or more of eligible employees participate in at least one screening. Achieving a high participation rate is important for being able to make generalizations of the findings from the sample to the larger population. Most of the data used to assess the achievement of the outcome measures comes from these two instruments.

HWI Leadership offered the Health Survey/Health Risk Screenings three different times during the course of the initiative – spaced about six months apart. Agencies actively promoted each survey and screening. All provided advance notice and used multiple methods to encourage participation, including incentives. The offering of a cash incentive (the \$50 state maximum) seemed to be correlated with the highest participation rates.

All but one HWI agency (ESD) invited all their employees in the Collaborative to participate in each round. In Round 1, for logistical reasons (ESD has 62 locations), ESD invited only employees who work in the Seattle and Spokane tele-centers (representing about 16% or 313 employees of their employees). These employees were believed to be among the hardest to reach.

Participation in HWI Survey/Screenings is presented in the table below. Only those who completed the Health Survey could participate in the Health Screenings, and fortunately most did.

In Round 1, 1,503 employees participated out of 5,662 eligible employees. In Round two, a slightly larger number of employees were eligible (6,290), as ESD expanded divisions/locations eligible to participate. Of the 1,222 employees who participated, 565 were being screened by HWI for the first time. In Round 3, 6,290 employees were again eligible. Of these, 1,173 were screened, 350 for the first time. Over all three rounds, some 3,900 screenings were provided for more than 2,400 people.

**Table 4. Participation in Health Surveys/Screenings**

<b>Participation</b>	<b>Round 1</b>	<b>Round 2</b>	<b>Round 3</b>	<b>ALL 3</b>
Eligible for Screening	5,662	6,290	6,290	Avg. 6,081
Total Number Screened	1,503	1,222	1,173	3,898
Newly Screened (1 <sup>st</sup> time)	1,503	565	350	2,418
Repeat Screening (i.e. 2 <sup>nd</sup> or 3 <sup>rd</sup> time)	--	657	823	1,480
Percentage Participating (newly screened / total screened)	27%	19%	19%	40%

A larger proportion of women and employees in the 25-44 age range participated in the screenings than were in the Collaborative population as a whole. Women constituted about 75% of those screened compared to 65% in the total HWI population, and employees aged 25-44 constituted almost half of those screened but only 37% of those in the total HWI population.

## **Findings**

As mentioned previously, we looked at the Health Survey/Screening data in four ways,

1. Pure Pre–Post
2. Cross section
3. Changes that Last a Lifetime (CTLL Cohort) vs. everyone else
4. Newly identified “at risk”

We focused our analysis on the Pre-Post approach, as it is the purest method and the sample size was large enough to show some statistically significant results.

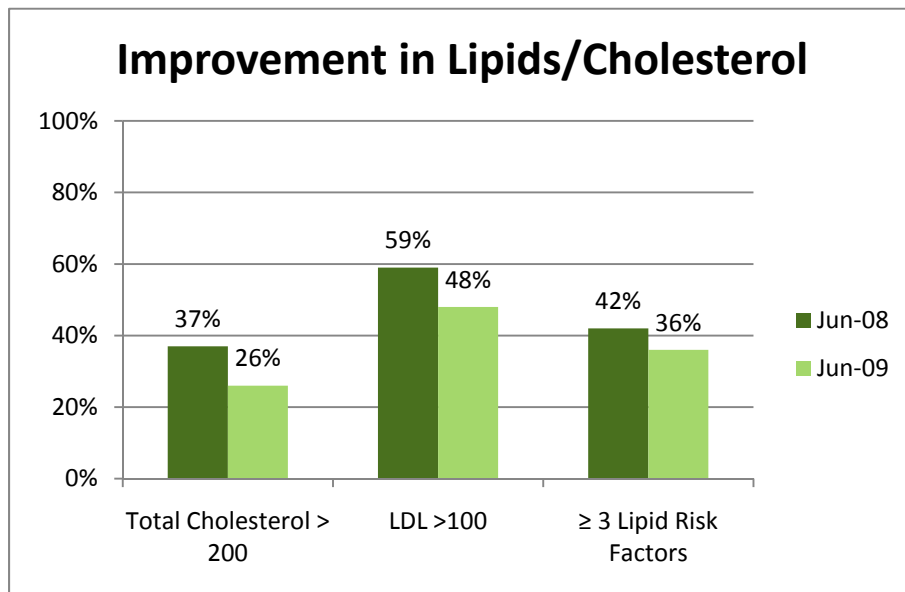
HWI’s definition of “at risk” is broader than most clinicians. Their reasoning is that left unchecked, borderline levels will lead to a diagnosable condition over time. So it's important to modify behaviors to prevent developing the condition rather than waiting till you have it to try and do something about it. For example, HWI’s "at risk" definition for blood pressure includes both pre-hypertension levels as well as the clinical hypertension levels.

## Pure Pre-Post

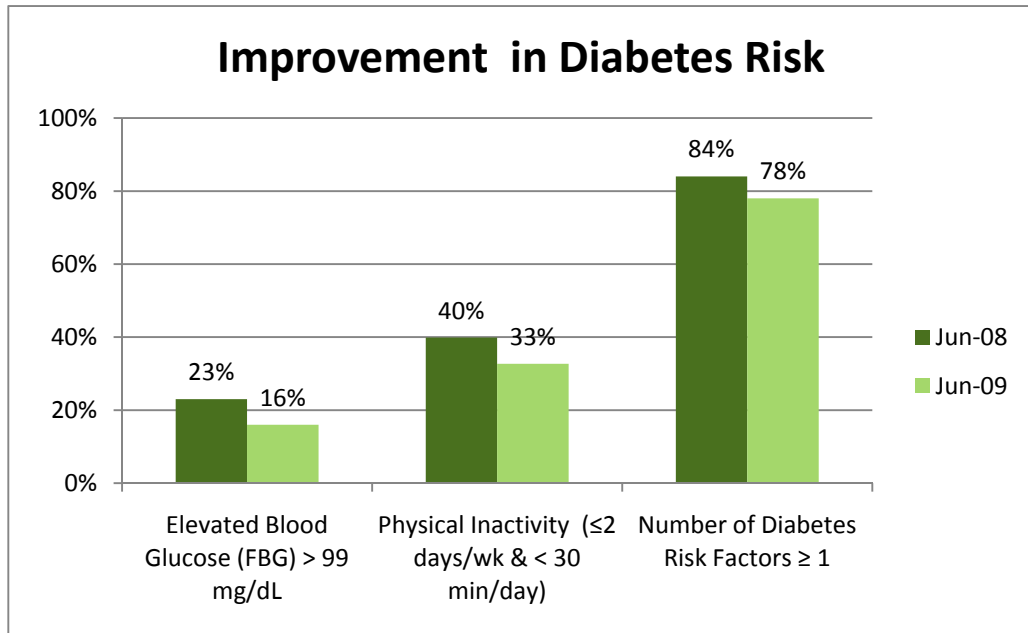
The Pure Pre-Post approach allows us to look at what happened to one group of people over their one year of involvement in HWI. We included everyone who took both the first and the last survey/screening (*see appendices for results from the other two analytical approaches*). Demographically and in terms of health status/risk, this group is similar to the larger group of people screened and included in the cross section analysis (i.e., everyone screened whether it be round 1, 2, or 3). They may, however, be different in ways that were not measured, for example, in their readiness to make a change. The Pre-Post group is comprised of employees who participated at the first opportunity (the early adopters) and again later. As a group they may be more concerned about their health and making improvements.

The following graphs present the **statistically significant changes** that occurred – grouped by lipids/cholesterol, diabetes, and other risk factors. Changes included:

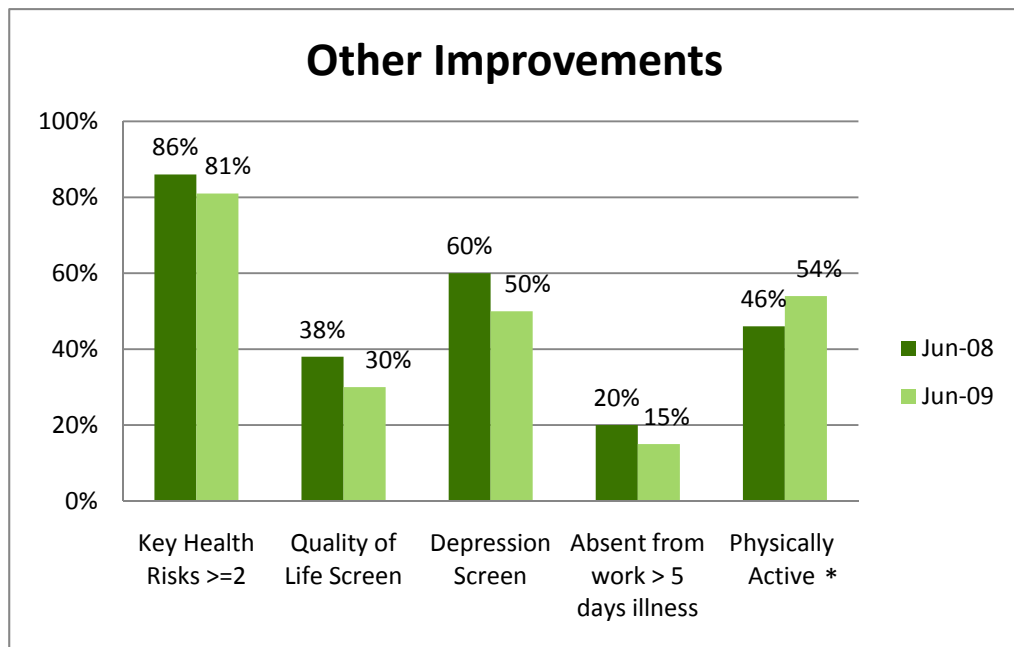
- Reducing total cholesterol, LDL and the proportion with  $\geq 3$  lipids at risk levels.
- Reducing fasting blood glucose levels & other diabetes risk factors
- Increasing physical activity
- Reducing depression
- Reducing the proportion screened positive for quality of life issues
- Reducing absenteeism due to illness



NOTE:  $\geq 3$  Lipid Risk Factors means having 3 or more of the following: Total cholesterol:  $\geq 200$  mg/dL; Triglycerides  $\geq 150$  mg/dL; Total chol/HDL ratio  $> 3.5$ ; LDL  $\geq 100$  and/or mg/dL; HDL- Men  $< 40$ , Women  $< 50$  mg/dL.



NOTES: Number of Diabetes Risk Factors  $\geq 1$  – refers to having one or more of the following: Overweight/Obese (BMI  $\geq 25$  km/m<sup>2</sup>); Fasting Blood Glucose (FBG) level: > 100 mg/dl; Hypertension (S  $\geq 140$  and/or D  $\geq 90$  mm/Hg); Physical Inactivity ( $\leq 30$  minutes a day for 2 or fewer days per week); HDL < 35 mg/dL; and/or Triglycerides > 250 mg/dL.



NOTES: “Key Health Risks  $\geq 2$ ” – refers to having two or more of the following: Weight (BMI  $\geq 25$ ); Presence of any lipid risk factor (Lipid Count  $\geq 1$ ); Elevated Blood Pressure (>120 or 80); Elevated Fasting Blood Glucose (>100), and/or Physical Inactivity (defined here as less than 30 minutes for 2 or fewer days a week

\* Physically Active Bars - here is defined as exercising for more than 2 days/week or exercising on average more than 15 minutes a session. This is a different definition than used in the Key Health Risks measure.



These improvements were similar to those found in our **cross section analysis** which looked at everyone screened in June 2008 compared to everyone screened in June 2009. This analysis was with a larger group, but is not as strong a comparison, since it includes some employees who were screened at both times and others who were only screened one time or the other. Still, it provides an indication of the direction of change and confirms our findings in the pre-post analysis.

In the cross section analysis, in addition to the improvements found in the pure pre-post analysis, we found statistically significant improvements in some additional measures including:

- **overweight/obese** (went from 68% to 65%)
- **elevated blood pressure** (went from 69% to 64%)
- **eating at least 5 fruits/vegetables a day** (went from 40 to 45%)
- **alcohol screen** (went from 23% to 19%)
- **presenteeism - time management** (went from 15% to 13%).

See Appendix C for more information on the cross section analysis.

Improvements among those who participated in the intensive Changes that Last a Lifetime (CTLL) Program – were even more pronounced over time than among those who did not. Reductions in Lipid and Diabetes risk factors were two times as large as those in the Pure Pre Post. Improvements were also noted in terms of presenteeism, but we were not able to test for significance of these differences. See pages 47-48 and Appendix B for more information on this analysis.

**Table 5. Pre- Post Analysis Results**

PURE PRE POST Outcome Measures	Goal	Met?	PRE N=583	POST N=583	Difference	P value
<b>Weight</b>	<b>Reduced</b>	<b>Not Yet</b>				NS
Overweight or Obese ((BMI ≥ 25)	↓ Reduction	No	67%	66%	1%	NS
Overweight (BMI 25-29)	↓ Reduction	No	32%	33%	1%	NS
Obese (BMI ≥ 30)	↓ Reduction	No	35%	33%	2%	NS
<b>Lipids/Cholesterol</b>	<b>Reduced(most)</b>	<b>YES</b>				
Total Cholesterol > 200	↓ Reduction	Yes	37%	26%	11%	<.01**
LDL >100	↓ Reduction	Yes	59%	48%	12%	<.01**
Triglycerides	↓ Reduction	No	32%	31%	1%	NS
HDL	↑ Increase	No	39%	43%	4%	NS
Lipid Ratio (T Chol/HDL >3.5)	↓ Reduction	No	47%	45%	2%	NS
Number of lipid risk factors >= 3	↓ Reduction	Yes	42%	36%	6%	.05*
<b>Physical Activity</b>	<b>Reduced</b>	<b>YES</b>				
Inactive (≤ 2 days/wk or <15 minutes/session)	↓ Reduction	Yes	54%	46%	8%	<.01**
<b>Blood Pressure</b>	<b>Reduced</b>	<b>Not Yet</b>				
Systolic ≥ 120 and/or D ≥ 80	↓ Reduction	No	68%	63%	5%	NS
<b>Diabetes (N=483)</b>	<b>Reduced(most)</b>	<b>YES</b>				
Elevated Blood Glucose (FBG) > 99 mg/dL	↓ Reduction	Yes	23%	16%	7%	<.01**
Physical Inactivity (≤ 2days/wk & <30 mins/day)	↓ Reduction	Yes	40%	33%	7%	<.05*
Triglycerides (>250 mg/dL)	↓ Reduction	No	5%	8%	3%	NS
HDL (<35 mg/dL)	↑ increase	No	10%	14%	4%	NS
Hypertension (Blood Pressure ≥ 140/90)	↓ Reduction	No	26%	22%	4%	NS
Number of Diabetes Risk Factors = 0	↑ increase	Yes	16%	22%	5%	<.05*
<b>Health Status/Risk</b>	<b>Reduced</b>	<b>YES</b>				
Overall No. of Key Health Risks >=2	↓ Reduction	Yes	86%	81%	6%	<.01**
Quality of Life Issues	↓ Reduction	Yes	38%	30%	8%	<.01**
<b>Other Measures from Survey</b>	<b>Reduced</b>	<b>MIXED</b>				
Depression Screen	↓ Reduction	Yes	60%	50%	10%	<.001***
Alcohol Screen	↓ Reduction	No	20%	17%	3%	NS
Tobacco Consumption	↓ Reduction	No	12%	11%	1%	NS
Fruits & Vegetable Consumption+	↑ increase	NA	NA	50%	NA	NA
<b>Absenteeism</b>	<b>Reduced</b>	<b>YES</b>				
Absent from work > 5 days injury	↓ Reduction	No	3%	3%	1%	NS
Absent from work > 5 days illness	↓ Reduction	Yes	20%	15%	5%	<.05*
<b>Presenteeism (WLQ)</b>	<b>↓ Reduction</b>	<b>Not yet</b>				
Time Management	↓ Reduction	No	15%	12%	3%	NS
Physical	↓ Reduction	No	7%	6%	1%	NS
Mental/Interpersonal Skill	↓ Reduction	No	10%	8%	2%	NS
Output	↓ Reduction	No	8%	7%	1%	NS
Overall Score	↓ Reduction	No	3%	2%	1%	NS

Underlined key measure among a group of measure for determining achievement

+ = Question not asked on first survey (round 1)

<.05\* = Conventional statistical significance cut off. Means that there is only a 5 % chance that that this difference is due to coincidence.

<.01\*\* = Stronger statistical significance. Means there is only a 1% chance that this difference is due to coincidence.

<.001\*\*\* = Strongest statistical significance. Means 0.1% chance (or one in a thousand) that this difference occurred by coincidence.

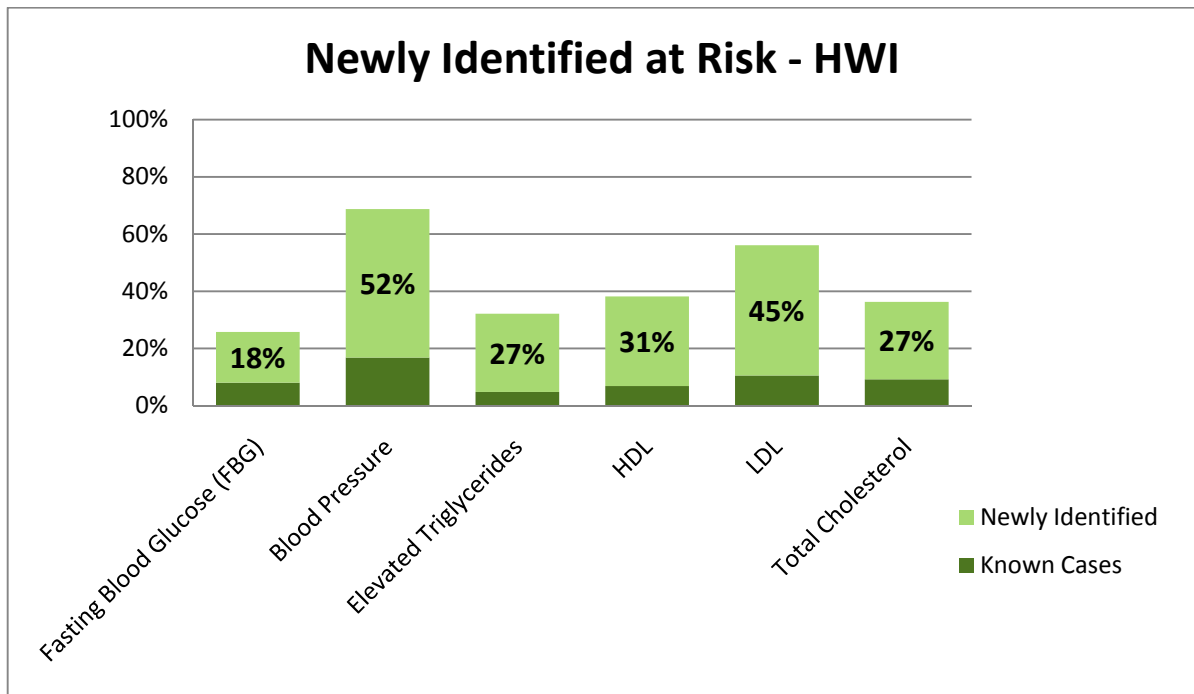
NS = not significant

NA = not applicable

## Newly Identified at Risk

The graph below shows the proportion of employees “at risk” for five selected risk factors. The dark bottom part of the stacked bars shows the proportion of employees who knew they had a particular condition/risk factor. Stacked on top is the proportion who did *not* know they were “at risk” (as determined by their Health Survey responses) but who, based upon their Health Risk Screening are now identified as “at risk”. Among 2,385 unique participants, there were 6,461 “at risk” conditions identified, 4,675 (or 72%) of which were previously unrecognized.

- More than half (52%) did not know they were at risk due to their blood pressure levels
- Almost half (45%) did not know their LDL levels were elevated
- 31% did not know their HDL was low
- 27% did not know their total cholesterol level was elevated
- 27% did not know their triglycerides were elevated
- 22% did not know their waist circumference measurement put them at increased risk
- 18% did not know they had elevated fasting blood glucose levels (FBG)



The Personal Health Report, that each participating employee received, advised those newly identified as “at risk” to follow up with their primary care provider. For this group of people, HWI has already made a significant contribution to their well-being by making them aware of their increased risk(s).

## **B. Change Package / Culture of Wellness**

This section provides an assessment of agencies' progress in developing a culture of wellness. To assess progress, we looked at activities agencies engaged in following the change package model. The change package called for simultaneous activity in the following areas:

- 1. Understand your population**
- 2. Engage employees and families**
- 3. Internal work environment**
- 4. Information and measurement**
- 5. Wellness interventions**
- 6. Community linkages**

Experts surmised that by working in all these areas, agencies would support individuals making positive behavior changes and help bring about a systems/cultural change.

### **1. Understanding Your Population**

This area of the Change Package emphasizes the need to meet people where they are. Teams were encouraged to use a variety of sources to gather needed information including personnel statistics, agency demographics, data from employee questionnaires, health surveys and health screenings. Understanding key characteristics of your employee population is helpful for designing, developing, and providing programs, communications, and support.

All seven agencies collected, synthesized, reported, and documented key demographic and agency FTE data for use in their wellness planning. All agencies assigned responsibility for this task to a particular member of their Wellness Committee who is to repeat this process at least once a year. In addition, all seven agencies used the data from the Health Survey and Health Risk Screenings to help plan and prioritize strategies and wellness interventions. One agency (DOH) went a step further by requesting de-identified individual data so they could run their own more in-depth analyses.

## **2. Employee and Family Engagement**

Agencies can encourage healthy behaviors, but ultimately it's employees who make the needed change. Some proven ways to engage employees:

- Survey employees to determine their needs/interests/desires and barriers to taking action.
- Include employees in the decision making process through committees/subcommittees and feedback systems.
- Promote health surveys, health screenings, and wellness programs through posters, letters from administrators, flyers, emails, personal notes, newsletter articles, postings on bulletin boards or intranet sites, presentations to staff, etc.
- Promote health through special campaigns (such as “Fruits and Vegetables campaign”), educational displays, educational computer programs, brown bags, newsletter content, etc.
- Offer refreshments and incentives for participating in surveys, screenings, and programs. For health screenings: \$50 VISA cash card and drawings for enticing items seemed to work best.
- Survey employees after interventions to assess satisfaction and effectiveness and use feedback when developing other programs.

## **3. Maintain an Internal Work Environment that Fosters Wellness**

Participating agencies either had a Wellness Committee or created one. These committees reviewed, designed, and implemented policy and environmental changes with the goal of supporting employee wellness. Defined roles and responsibilities were developed for each member of the committee. Agencies supported employees by promoting the use of preventive health plan benefits, developing policies to support health and productivity, and modifying the physical environment to make healthy choices easier. Examples include:

### **Developing supportive policies**

- Wellness policy
- Healthy catering policy
- Healthy foods vending machine policy
- Tobacco policy
- Breast-feeding policy
- Staff time or flex time policy to participate in HWI screenings and programs
- Wellness training for Wellness committee members, supervisors, and/or new employees
- Performance evaluation measures for wellness committee members

### **Modifying the physical environment**

- Dedicating building bulletin boards to wellness
- Designating a room specifically for health and productivity
- Making walking maps available
- Providing bottled or filtered water
- Having bikes & helmets available for check-out
- Installing bike racks
- Offering blood pressure monitors/cuffs at the worksite
- Providing weight scales and tape measurers at the worksite
- Putting up notices by elevators encouraging stairwell use
- Adding showers

### **Promoting Preventive Health Benefits**

- Developing a flyer summarizing health plan preventive benefits
- Encouraging screening participants with “at-risk” level(s) to follow up with their primary care provider for further evaluation.
- Distributing notices and articles encouraging employees to get their recommended preventive screenings and explaining why it’s important.

## **4. Use Information and Measurement**

With limited resources, employers must focus on what works. This area of the change package encourages teams to develop systems for collecting and using information to assure that what they are doing is efficient and effective and will

benefit employees and influence their health choices. Sharing “best practices” across agencies was also encouraged to optimize benefits. Specifically this part of the change package called for:

### **Using health survey, screening, and employee data to make decisions**

All agencies used their screening and survey data to identify and prioritize interventions. Top priorities were most commonly increasing employees’ physical activity and consumption of fruits and vegetables, and reducing their stress. Such changes would in turn positively impact weight, diabetes, blood pressure, lipid levels, and make chronic diseases more manageable.

### **Evaluating each intervention**

Agency teams were asked to evaluate each new intervention. This involved identifying the anticipated outcome, assessing the actual outcome (through a feedback questionnaire completed by participants), determining the reach (i.e. number of people participating) and assessing the feasibility of repeating the intervention and/or its sustainability.

### **Improving one’s ability to measure absenteeism and presenteeism**

Thanks to HWI’s Health Survey’s incorporation of the Work Limitations Questionnaire (WLQ), a presenteeism tool, all agencies improved their ability to measure presenteeism by simply offering the survey. Absenteeism remains a problem area, due to the way it is currently recorded in the Department of Personnel’s GMAP database and HRMR system. We ended up using information collected by the survey, but self-reported absenteeism is not as accurate as actual records.

## **5. Employ Effective Wellness Interventions**

This area of the change package encourages using the needs and interests of employees to choose among workplace interventions that have already proven to be effective. A variety of types and levels is recommended in order to reach as many people as possible. Agencies were encouraged to consider the epidemiological importance, economic costs, anticipated effectiveness, number of

people likely to benefit, possible occurrence of undesirable effects, and social validity when choosing interventions to implement.

HWI leadership offered some interventions to all participating agencies, and individual agencies also found their own programs. The initiative called for testing at least three new wellness programs and sustaining at least one of those programs on to the next year.

Examples of some of the interventions implemented include:

- Changes that Last a Lifetime
- LiveWell – Chronic Disease Self-Management
- Diabetes support group\*
- Governors Health Bowl\*
- Weight management classes
- Yoga classes
- Chair-side massages
- Healthy recipe contests
- Nutrition challenges
- On-line nutrition programs/challenges\*
- Monthly “meet a fruit/vegetable”
- Physical activity challenges
- Regularly scheduled walks
- Blood pressure checks\*

\* sustainable programs even in challenging budget environments

**Changes that Last a Lifetime (CTLL)**, developed by Abbott, is one of the programs HWI leadership offered free to employees who participated in the first screening/survey. The program ran for six months. The first three months included a kick-off meeting, a couple of brown bag lunches, daily customized email messages, as well as on-line behavior tracking and journaling. Participants were given a gym bag, a copy of Body for Life, a Body for Life Success Journal, a pedometer, and health education materials from national associations on diabetes, blood pressure, etc.. The program guided participants to make appropriate food choices, portion sizes, and to engage in specific types of physical activity for set periods of time.

The second half of the program had no group component. After six months participants gathered to celebrate their effort/accomplishments.



A few agencies had CTLL kiosks where participants could be weighed and have their information tracked. Program Videos/DVDs were made available for employees at remote sites. [www.ctll.com](http://www.ctll.com) <http://www.ctll.com/landing-corp.php>

Employees were enthusiastic about this program. Of the 1,413 employees eligible to participate, 627 or about 47% enrolled in this program, and over half of those completed the program. Several employees credited the program for really turning their lives around.

Below is employee feedback immediately after participating in the program:

- 86% would like to see their worksite continue offering programs like CTLL
- 83% found the nutritional suggestions helpful
- 79% agreed that CTLL helped them set goals for improving their health
- 75% would recommend CTLL to a family member or a friend
- 67% reported increasing their physical activity levels because of CTLL
- 58% incorporated strength training as a result of participation in CTLL

Some positive health results included:

- 32% lost 5 or more pounds
- 61% lost weight or stayed the same
- 21% reduced their blood pressure to below 140/90
- 15% reduced their cholesterol to below the  $\leq 200$  level
- 12% reduced their diabetes risk

See Appendix B for Health Screening/Survey results of this group compared to those who did not participate in CTLL.

### **LiveWell – chronic disease self management**

LiveWell is part of Thurston County's Public Health and Social Services WorkWell program, funded by a US Department of Health and Human Services grant. The program is based on Stanford University's Chronic Disease Self Management (CDSM) workshop series. Thurston County's program is available to any employer group in the county that can guarantee a minimum of 12 participants. The focus is on increasing skill level for self managing chronic conditions.

Each workshop runs for six weeks and is led by two trained lay leaders. Participants are offered tools and support to increase their self efficacy to live better and prevent disease complications. They gather for a series of “lecturettes” and group discussions and, in the process, build a network of lay health advisors that continue helping employees. The program is highly participatory.

The program required 2.5 hours a week for six weeks. Agencies were strongly encouraged to allow employees to take time off from work to participate in this program, or at least offer flex time.

### **Governor’s Health Bowl**

The Governor’s Bowl is an annual event held in the fall. It is part of the Washington Health Foundation’s (WHF) Healthiest State in the Nation campaign. It’s a Web-based program that encourages residents to increase positive health behaviors over a period of six weeks. Participants and teams earn points based on their exercise, nutrition, and health practices (weight loss, oral health, tobacco cessation etc). WHF offers weekly prizes to champions. Participating organizations and agencies may also provide their own incentives/awards.

## **6. Leverage Community Linkages**

Promoting participation in community wellness activities/programs, raising awareness about health concerns and good health practices, and advocating for policies that support wellness, can be powerful additions to workplace wellness initiatives.

### **Examples of Community Linkages**

- Coordinated with other agencies to have a diabetes support group
- Used resources from Thurston County Public Health and Social Services Living Well, Work Well and Steps programs
- Learned from King County model program

- Partnered with Lacey Parks to encourage use of a “Family Friendly” icon next to certain events and suggested possible new family leagues
- Governor’s Health Bowl – annual six week physical activity challenge sponsored by the Washington Health Foundation <http://www.whf.org/HSIN/GovHealthBowl.aspx>
- YMCA – agency run
- Promoted Tumwater’s farmers market
- Arranged for a yoga instructor to come to the workplace to provide classes
- Offered “Talk and Chop” at farmers market (DOH)
- Coordinated a community project with hospital residency (AGO)

## Summary of Progress on Change Package Measures

Below is a summary table of the change package including: the measures used to assess agencies' performance and progress in each of these areas, the goal (e.g. all agencies having performed the measure), and an indication of whether the goal was met during the initiative or more work is needed. Of the twelve progress measures examined, all but two were met during the initiative. The two that need more work are: evaluating interventions and using absenteeism and presenteeism data. Agencies, by undertaking activities and making positive changes in each of these areas, are creating a culture of wellness. They have achieved the groundwork for this cultural shift, and need to continue their efforts to sustain their gains and expand their scope. Over time by continuing these types of activities, agencies will fully achieve the desired systems/cultural change.

**Table 6. Summary of Progress on Change Package Measures**

<b>Change Concept &amp; Progress Measure</b>	<b>GOAL</b>	<b>Met Goal?</b>
<b>Understand Your Population</b>		
Have a process to use health survey/screening data	All agencies	√ Yes
Have demographic data on employee population	All agencies	√ Yes
<b>Employee &amp; Family Engagement</b>		
Documented and shared promotional efforts	All agencies	√ Yes
<b>Internal Work Environment</b>		
Have an effective wellness committee –uses continuous improvement processes	All agencies	√ Yes
Secured commitment from senior leadership	All agencies	√ Yes
Have policies and procedures in place that support wellness	All agencies	√ Yes
<b>Effective Wellness interventions</b>		
Initiated new wellness programs	≥ 3 / agency	√ Yes
Have a sustainable program	≥ 1 / agency	√ Yes
<b>Information &amp; Measurement</b>		
Evaluated interventions implemented	All agencies	<b>Needs work</b>
Enough employees participated in screenings	≥ 40%	√ Yes
Measured & used absenteeism/ presenteeism data	All agencies	<b>Needs work</b>
<b>Community Linkages</b>		
Made community linkages to enhance wellness	≥ 1/ agency	√ Yes
<b>OVERALL</b>	- -	10 Goals Achieved 2 Goals Need work

## C. Claims Analysis: Preventive Health Screening Behavior

Receiving recommended preventive services/screenings is also a component of healthy behavior. We focused on a set of recommended cancer screenings to measure this behavior. Specifically colon, cervical, and breast cancer screenings.

To estimate baseline rates for three proxy screenings we looked at the claims data of all employees in the Collaborative agencies who were continuously enrolled in the Uniform Medical Plan (UMP—the state’s self-insured health plan) over a five and a half year period (from 7/1/03 to 12/31/09).

We identified the number of employees who did not receive the recommended screenings in 2007, 2008, and 2009, and compared rates over time. Note: This is a different population, time period, and analytical method than used for the other analyses in this report.

The guidelines used were:

- **Colon cancer screening** - every 2 years for all adults 50+. (*colon cancer screening included blood fecal occult test, flexible sigmoidoscopy and/or colonoscopies*).
- **Cervical cancer screening** - a Pap smear every 3 years for women ages 21 through 64.
- **Breast cancer screening** - a mammogram every 2 years for women 40 and over (new guidelines not yet in effect).

The percentage of employees **not** following recommended guidelines was highest for colon cancer screenings (*by a factor of 2*) averaging around 65%, followed by breast cancer averaging around 32%, and cervical cancer averaging about 28%.

Ideally all these percents would 0%, which would indicate that all employees received the recommended screenings for their age and sex.

**Table 7. Percentage NOT Following Recommended Preventive Screening Schedule for their Age/Gender**

Preventive Screenings	In Need			Difference 2007-2009	Goal	Met?	
	Eligible for (N) *	2007	2008				2009
Need to be Screened for Colon Cancer ( <i>age 50+</i> )	3705	60%	67%	67%	+7%	Reduction	No
Need to be Screened for Cervical Cancer ( <i>women, ages 21-65</i> )	3100	28%	27%	28%	No change	Reduction	No
Need to be Screened for Breast Cancer ( <i>women, age 40+</i> )	2815	29%	33%	33%	+ 4%	Reduction	No

\* N is average of those eligible across the three years - 2007-2009

The percentage of employees who did not receive the recommended screenings stayed steady or increased slightly over the course of three years. The percentage in need *increased 7%* for colon cancer screening, 4% for mammograms, and did not change for Pap smears.

## D. Employee Assessment of HWI

In this section we present responses from HWI survey “follow up questions”. HWI leadership added these questions to the surveys of employees who were repeating the survey for a second and/or third time. Anyone who "somewhat agreed" or "strongly agreed" with the statement is included in these percentages.

<b>Table 8. FOLLOW UP Qs – part of HEALTH SURVEY</b>	
Agency should continue to develop its wellness program	93%
Took action based on screening and report results	88%
Agency supports me in maintaining my health	85%
Found the Personal Health Report valuable	81%
Worksite encourages physical activity	74%
HWI has been valuable to me*	72%
Increased physical activity based on screening/survey results*	67%
Changed diet based on screening/survey results*	57%
Agency has healthy food policy/guidelines	48%
Agency has healthy foods to purchase	40%
Worksite encourages tobacco users to quit	36%
Saw primary care doctor based on survey/screening results*	30%
Began, changed, or took more regularly medications based on survey/screening results*	13%

*\* Denotes data from December 2008 Survey. All other data in table from June 2009 survey.*

Based on this feedback, HWI as a whole, and the survey and screening results in particular, were rated very highly. An overwhelming 93% agreed that the agency should continue to develop its wellness program. 85% agreed that their agency supports them in maintaining their health. Almost 75% said that the worksite encouraged physical activity.

There is still room for improvement, particularly in terms of employees’ perception that their agency has healthy foods to purchase and healthy food policy/guidelines, and that the worksite encourages tobacco users to quit.

## VII. LESSONS LEARNED

Below are the lessons learned identified during the Harvesting Session held in September 2009. They serve as recommendations for other agencies/organizations interested in doing a similar effort.

### Management

- **Use biometric screening results to open doors** with senior management, the Public Employee Benefits Board (PEBB), and unions. This helps them get on board and recognize that a proactive approach to health is necessary. Once you begin your wellness program, shift the focus from biometric health risk measures to improvements in lifestyle behaviors such as nutrition, physical activity, and tobacco cessation. With time, these changes will lead to the desired biometric improvements.
- **Coach senior leaders on how to communicate to middle managers** about the importance of this effort. They need to make it easy for middle managers to support the health and productivity of their staff, or it won't happen.
- **Propose giving employees time-off to participate**, or at least the ability to use flex-time, to take the survey, get screened, and/or participate in wellness programs. This communicates the importance of wellness and makes it easier for staff to participate. By including the goal of improving or maintaining one's health as part of one's job, employees are less likely to let competing challenges and priorities take over or feel resistance/resentful about employers entering their "personal business". Public perception of state employees doing wellness activities during work hours may also need to be addressed.
- **Encourage a re-evaluation of the agency's computer use policy.** There are many excellent web-based interfaces and tools that can educate, motivate, and help employees track their progress. Allowing access to these tools at work is beneficial and recommended.

### Promotion

- **Consider including a section on wellness in the employee handbook.** This would clearly communicate the importance of wellness at the worksite.



- **Actively educate and encourage employees to use their preventive benefits.** State employees have great preventive health benefits but they are not always used. The state, as a whole, should do more to encourage employees to use these benefits as recommended by the screening guidelines for their age and sex.
- **Educate employees about disease management programs.** These are part of employees' health benefits and can be very useful in helping employees make positive behavior changes. Employees should be encouraged to say "yes", if and when they are invited to participate, and/or to call on their own to find out if they qualify (health plans have bad phone numbers for 1/3 of employees eligible for such programs).
- **Continue trying new ways to engage employees.** There are still lots of employees who are not participating in what HWI offers. Consider doing regular prize drawings to pique the interest of those who have not yet participated and retain those who have.
- **Piggy back on current national reforms.** Will help get the message across.

## Data

- **Work with the State to develop an easier way to obtain agency and division demographic data.** This information, over time, is necessary for strategic planning. Agencies had a hard time getting this data in a useable form.
- **Work with the State to revise the way sick leave data is collected and train employees accordingly.** The way the State Department of Personnel currently collects absence data is not useful for health and productivity assessments. Employers need to be able to distinguish between a day taken off because one is sick vs. a doctor's appointment/procedure, or caring for a dependent. In addition, apparently, leave is often coded incorrectly. The importance of accurately reporting this measure has not been stressed.
- **Consider using a different measure to track changes in weight.** BMI and its standard weight categories may not adequately capture gains. Anecdotally, we know that weight loss has occurred but it didn't show up using our measures. If a person who is obese loses 20 pounds, but is still obese, that won't count. In the

future we may want to track those who lose at least 10% of their body weight, a common clinical measure shown to lead to improvements in health.

### How HWI Leaderships Could Help

- **Provide agencies with information on the State's authorizing environment** and identify issues they may want to address. Provide contact information for safety, personnel, contracts, etc.
- **Facilitate discussions to overcome risk management issues.** State agencies face many constraints and are often confused about what is allowed and not allowed in their facilities. It would be beneficial to address these issues across agencies so that posters could be allowed in stairwells, physical activity equipment could be made available for employees, etc..
- **Provide agencies with a list or menu of evidence-based interventions** to choose from vs. having to do the research themselves.
- **Develop a primer for each change package concept** with benchmarks and achievement levels that agencies should try and reach. This would help provide a clearer idea of what "success" would look like.
- **Provide templates** for reports, letters/emails, employee handbooks, promotional materials, and FAQs, that agencies can use as the basis for their communications.
- **Continue to offer phone support** for HWI staff. That support was apparently very important and helpful.
- **Bring air quality into the equation.** Poor air quality affects employees' health and also needs to be addressed.
- **Make the business case for wellness.** Agencies would like HWI Leadership to develop an evidence-based case using actual claims data to show the ROI of prevention activities on agency populations. A cost/benefit approach.

### Screenings/Surveys

- **Disclose key information up front.** Inform participants up front about the wide net used to define "at risk" and the limitations inherent in worksite screenings.

Employees need to know that blood levels naturally fluctuate throughout the day, and that finger prick tests are not as accurate or reliable as those you would get at your doctor's office.

- **Standardize messaging for employees identified as “at risk”.** Do we want them to call their doctor, make an appointment, get a second test or just try and start engaging in healthier behaviors? We need to be consistent with written and oral messages from various sources.
- **Close the loop between screening results and employees' primary care practitioners (PCPs).** It would be beneficial to inform PCPs when state sponsored screenings occur and offer employees the opportunity to have a copy of their results sent directly to their PCP.
- **Make sure registration for survey/screenings/programs do not require a middle name,** as was the case for some of the HWI efforts. Many cultures do not have middle name and this can unnecessarily restrict participation.
- **Allow employees to be screened at any site.** Make it possible (and clear) that employees don't need to be screened at their own agency.
- **Provide more information on what some of these measures mean.** In particular the Work Limitations Questionnaire (WLQ) used to measure productivity/presenteeism was not well understood.

## VIII. SUMMARY AND CONCLUSION

This report evaluated Washington State's Healthy Worksite Initiative (HWI) – an eighteen-month demonstration project involving seven state agencies. Data from health surveys/screenings, UMP claims, and the change package process were analyzed. Overall, from 2008 to 2009, the seven energized and innovative agencies participating in this initiative helped employees become healthier and laid the groundwork for a culture of wellness.

Statistically significant improvements included:

- Increase in physical activity levels
- Increase in consumption of fruits and vegetables
- Decrease in diabetes risk factors
- Decrease in lipid/cholesterol risk
- Decrease in depression
- Decrease in absenteeism due to illness

Measures showing change in the right direction, but that were not statistically significant included:

- Weight
- Blood pressure
- Presenteeism
- Tobacco consumption

By continuing on their current path, HWI agencies can expect to reap additional gains from these improvements in individuals' health. The physical activity and diet changes will help reduce blood pressure, weight, and presenteeism. Special efforts, however, will be needed to address tobacco consumption. More needs to be done to encourage tobacco users to participate in smoking cessation programs or use supplies/medications that can help them quit. Agencies should also consider making it more difficult and less comfortable for employees to take smoke breaks while at work. One of the participating agencies has since adopted a tobacco-free campus policy. Fortunately, the State's recent 50% increase in the cigarette tax will facilitate agencies' progress on this important outcome measure.

Agencies also need to do more work to encourage employees to use the preventive care benefits provided by the State. Among colorectal, mammograms and Pap smears, the greatest need is for colorectal exams, but all three could use improvement. Over the course of the initiative, screening rates stayed the same or slightly decreased.

In terms of developing a culture of wellness, all seven participating agencies used the change package to successfully build a strong foundation for this new culture. Specifically they all:

- Used data and senior leader support to strategize and develop their wellness programs
- Adopted policies and developed the infrastructure to support employees
- Developed new communications to promote wellness programs
- Implemented new health programs
- Modified the work environment to make healthier choices easier to make
- Promoted use of health-related community resources

Agencies appreciated participating in this initiative. They credited HWI with providing the necessary data, tools, programs, and funding that enabled them to be successful. They felt that HWI helped them take a more educated, strategic, and inspired approach than would otherwise have been possible.

On the following page is a summary table of all the outcome measures and an assessment of whether or not the desired change/goal was achieved during the course of the initiative. Overall, nine out of the fifteen (or 60%) of the desired outcomes were successfully achieved. And five out of eight (63%) of the legislatively identified outcomes were achieved. This progress occurred over the course of just one year, and should be applauded.

Making changes, for individuals and for organizations, is hard work and requires a long-term perspective. Through this work, employees and agencies are developing a new kind of partnership. Agencies are beginning to view employees as assets/investments that require support with tools, equipment and skills so they can be healthy and productive. And employees are beginning to take some personal responsibility for their behavior and lifestyle choices.

While the Healthy Worksite Initiative is officially over, its influence will live on through the Washington Wellness Designation Program. All State agencies and institutions were invited to apply for this special program which began in January 2010. As of April 2010, seven agencies met the criteria/standards and were awarded the Washington Wellness Worksite designation (six of whom were in the HWI demonstration project). HCA will work with these agencies to sustain and further their achievements. Six new agencies will enter a Collaborative process (similar to HWI), and four other agencies will receive technical assistance to help them move further down the path. Through this designation program, HCA and the State hope to disseminate the HWI model, at least at some level, to all agencies and institutions in the State.

The designation program, with its HWI-like approach, will help agencies reduce employees' health risks, improve morale, reduce absenteeism, and integrate employee health into their management strategies. Over time, it should also help reduce presenteeism, improve recruitment and retention of skilled employees, and bend the trend with respect to the rising costs of health benefits.

The HCA will facilitate agencies' work on improving employees' health and productivity by continuing to work on the creation of a value-based benefit design for all health plans offered by the State. This would mean developing a benefits package with the right incentives to encourage healthy behaviors, such as financial discounts for individuals who participate in Health Surveys, disease management programs, specific wellness programs, and/or for those who do not smoke.

The table on the following page summarizes the accomplishments of the Healthy Worksite Initiative, which involved more than 6000 State employees over a 12 month period of time. The results suggest that with the right kind of effort, the State can positively influence employee health and productivity in a relatively short period of time, and without great expense. As a whole, agencies and their employees greatly appreciated having the opportunity to participate in this important initiative.

**Table 9. Summary of Outcomes**

**Yes** = Desired change occurred and it was statistically significant (i.e., p value < .05). One exception is the Culture of Wellness measure – for which we did not do significance testing. The number of agencies was too small (only seven) to warrant such an analysis and a qualitative approach was used.

**Not Yet** = Change in the desired direction occurred but was not statistically significant. In the case of Use of Preventive Services, change in desired direction was not observed.

Measure	Desired Change	Achieved?
<b>Employee Participation</b>	≥40%	<b>Yes</b>
Overweight/ obesity	↓	Not yet
<b>Risk factors related diabetes</b>	↓	<b>Yes</b>
<b>Cholesterol/Lipids</b>	↓	<b>Yes</b>
Blood pressure	↓	Not yet
Tobacco consumption	↓	Not yet
<b>Absenteeism</b>	↓	<b>Yes</b>
Use of Preventive Services	↑	Not yet
<b>Overall Health Status</b>	↑	<b>Yes</b>
Presenteeism	↓	Not yet
<b>Culture of Wellness</b>	↑	<b>Yes</b>
<b>Depression</b>	↓	<b>Yes</b>
Alcohol	↓	Not yet
<b>Physical Activity</b>	↑	<b>Yes</b>
<b>Diet/Nutrition*</b>	↑	<b>Yes</b>

\* = Significance for this measure was determined by Cross Section Analysis. We were not able to test significance using the pre-post analyses because the question about fruit and vegetable consumption was not in the first survey





# IX. APPENDICES



# APPENDIX A: HEALTH SURVEY "AT RISK" QUESTIONS

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## Alcohol

- 1. Which best describes how often you drink any type of alcohol (beer, wine, liquor)? (One drink is one beer, one glass of wine or one ounce of liquor) Respondent selects the response below:**
  - More than 14 drinks per week
- 2. How often do you drink alcohol to relieve any physical or mental symptoms? Respondent selects one of the following responses:**
  - A slight bit of the time
  - Some of the time
  - Most of the time
  - All of the time

## Exercise

- 1. How many days in an average week do you work up a sweat, have your heart beat fast or breath heavy from exercise (such as brisk walking, jogging, aerobics, weightlifting)? Respondent selects one of the responses below:**
  - 1-2 days
  - Do not exercise
- 2. How long does your average exercise activity last? Respondent selects one of the responses below:**
  - Less than 15 minutes
  - Do not exercise

## Depression

**1. How much of the time during the last 4 weeks have you had the following feelings?** Respondent selects one the responses listed to the right for each statement below.

- a. Felt calm and peaceful *(a slight bit of the time or none of the time)*
- b. Felt full of life\ *(a slight bit of the time or none of the time)*
- c. Felt so down in the dumps that nothing could cheer me up *(All of the time or most of the time)*
- d. Felt stressed *(All of the time or most of the time)*
- e. Had a lot of energy *(a slight bit of the time or none of the time)*
- f. Had health limit my social activities like visiting with friends or being with family *(All of the time or most of the time)*
- g. Was worn out or tired for no known reason *(All of the time or most of the time)*

**2. How long have you felt sad, empty or depressed more often than not?** Respondent selects one of the responses listed below:

- More than 5 years
- 2-5 years
- 1-2 years
- 6 months to 1 year
- Less than 6 months

## Quality of Life

**1. In general how would you describe your health?** Respondent selects one of these responses:

- Fair
- Poor

**2. How true or false is each of the following statements for you?** Respondent selects one of the options presented in parenthesis on the right for each statement.

- I am as healthy as anyone I know *(Mostly false, Definitely False)*
- I am as ready and committed to improving my health *(Mostly false, Definitely False)*
- I expect my health to get worse in the next 2-5 years *(Definitely true, Mostly True)*
- I seem to get sick more easily than other people *(Definitely true, Mostly True)*
- I want my health to improve *(Mostly false, Definitely False)*
- I want to learn how to improve my health *(Mostly false, Definitely False)*

**3. Compared to one year ago, how would you rate your health in general now?** Respondent selects one of these responses:

- Somewhat worse than one year ago
- Much worse now than one year ago

## APPENDIX B: CTLL COHORT ANALYSIS

The table on the following page presents the experience of staff who participated in the **Changes that Last a Lifetime (CTLL)** program compared to those who did not. CTLL was a 12-week intensive and comprehensive program. It empowered individuals to make positive changes in their life, focusing on healthy eating, cardio, and strength training.

Only those who participated in the first round of survey/screenings were eligible to participate in this program. Of the 1,413 employees eligible to participate, 627 or about 47% enrolled in this program.

To begin with, **CTLL participants were different from those who did not participate**. Demographically there were more females and Asians/Pacific islanders, and health-wise they had more risks. Specifically:

- High blood pressure (70% vs. 58%)
- At risk lipid levels (total cholesterol, LDL, HDL, and triglycerides) (see appendix)
- More likely to have diabetes (5% vs. 2%)
- At higher risk for developing diabetes (Had 3 or more risk factors: 27% vs. 23%)
- More likely to be overweight/obese (72% vs. 61%)
- Higher overall risks – (3+ key risks: 71% vs. 60%)

Overall, **CTLL participants appeared to make larger gains in improving their health** than their non CTLL counterparts, although these gains were not tested for statistical significance. Specifically CTLL participants experienced a great reduction in the proportion of persons who had or were:

- Three or more lipid factors (7% vs. 3%)
- Diabetes risk factors (5% vs. 2%)
- Physically inactive (11% vs. 8%)
- More than three overall risk factors
- Absent more than five days due to illness (8% vs. 2%)
- Presenteeism issues (2% vs. 0%)

From an evaluation administered after the program, we learned that **employees liked the program**. :

- 86% Would like to see worksite continue offering programs like CTLL
- 83% Found nutrition suggestions helpful
- 79% CTLL helped set goals for improving health
- 75% Would recommend CTLL to a family member or friend
- 67% Increased physical activity levels because of CTLL
- 58% Incorporated strength training as a result of participation in CTLL

Outcome Measures	CTLL made a difference?	% Improvement	% Improvement	Difference
		CTLL	NOT CTLL	
<b>Weight</b>	<b>NO</b>			
Overweight or Obese ((BMI >= 25)		-1%	1%	-1%
Overweight (BMI 25-29)		0%	2%	0%
Obese (BMI >= 30)		1%	0%	1%
<b>Lipids/Cholesterol</b>	<b>MAYBE</b>			
Total Cholesterol > 200		10%	10%	0%
LDL >100		10%	10%	0%
Triglycerides		2%	3%	1%
HDL		3%	4%	1%
Lipid Ratio (T Chol/HDL >3.5)		3%	0%	3%
Number of lipid risk factors >= 3		7%	3%	4%
<b>Physical Activity</b>	<b>YES</b>			
Inactive (≤ 2 days/week or <15 minutes/session)		11%	8%	3%
<b>Blood Pressure</b>	<b>MAYBE</b>			
Systolic ≥ 120 and/or D ≥ 80		10%	8%	2%
<b>Diabetes</b>	<b>YES</b>			
Reported have on survey		0%	-1%	1%
Elevated Blood Glucose (FBG) > 99 mg/dL		11%	1%	10%
Number of Risk Factors = 0		3%	7%	4%
Number of Diabetes Risk Factors >=3		5%	2%	3%
<b>OVERALL - Number of Key Risk Factors</b>	<b>YES</b>			
Overall Health Risks >=2		-3%	7%	10%
Quality of Life Issues		9%	6%	3%
<b>Other Measures from Survey</b>	<b>MIXED</b>			
Depression Screen		11%	10%	1%
Alcohol Screen		6%	3%	3%
Tobacco Consumption		1%	1%	0%
Eat Fruits & Veggies+		na	na	na
<b>Absenteeism</b>	<b>YES</b>			
Absent from work > 5 days injury		2%	0%	2%
Absent from work > 5 days illness		8%	2%	6%
<b>Presenteeism (WLQ)</b>	<b>YES</b>			
Time Management		3%	3%	0%
Physical Demands		2%	0%	2%
Mental/Interpersonal Skill		3%	1%	2%
Output		2%	0%	2%
Overall Score		1%	0%	1%

+ Question not asked on first survey. All people in CTLL participated in the first survey and screening.

## APPENDIX C: CROSS SECTION ANALYSIS

In this analysis, we looked at everyone who took the survey/screenings in Round 1, and compared them with everyone who took the survey/screenings in Round 2 and everyone who took them in Round 3. Some employees participated in all three rounds, some in only two, and some in only one. The table on the next page, for reasons of simplicity, shows Round 1 and Round 3 results only.

While not all the indicators showed statistically significant change, most at least showed a change in the desired direction.

Participants in Round 1 and Round 3 were demographically similar in terms of gender and age distribution, but Round 3 had significantly more Asians and fewer people whose race was unknown.

CROSS SECTION Outcome Measures	Goal	Goal Met?	Every body June 2008	Every body June 2009	% change	P value
			583	583		
<b>Weight</b>	<b>Decrease</b>					
Overweight or Obese ((BMI >= 25)	↓ Reduction	Yes	68%	63%	5%	<.01
Overweight (BMI 25-29)	↓ Reduction	No	31%	30%	1%	NS
Obese (BMI >= 30)	↓ Reduction	No	36%	33%	3%	NS
<b>Lipids/Cholesterol</b>	<b>Improved</b>					
Total Cholesterol > 200	↓ Reduction	Yes	37%	26%	11%	<.001
LDL >100	↓ Reduction	Yes	59%	49%	10%	<.001
Triglycerides	↓ Reduction	No	32%	32%	0%	NS
HDL	↑ Increase	No	38%	42%	4%	NS
Lipid Ratio (T Chol/HDL >3.5)	↓ Reduction	No	49%	47%	2%	NS
Number of lipid risk factors >= 3	↓ Reduction	Yes	43%	36%	7%	<.001
<b>Physical Activity</b>	<b>Increase</b>					
Inactive (≤2 days a week or <15 minutes/session)	↓ Reduction	Yes	55%	48%	7%	<.001
<b>Blood Pressure</b>	<b>Decrease</b>					
Systolic ≥ 120 and/or D ≥ 80	↓ Reduction	Yes	69%	64%	5%	<.01
<b>Diabetes</b>	<b>Improved</b>					
Reported have on survey	NA	NA	4%	3%	1%	NS
Elevated Blood Glucose (FBG) > 99 mg/dL	↓ Reduction	Yes	25%	16%	9%	<.01
Number of Risk Factors = 0	↑ increase	Yes	17%	24%	7%	<.001
Number of Diabetes Risk Factors >=3	↓ Reduction	Yes	27%	21%	6%	<.001
<b>Overall Number of Key Risk Factors</b>						
Overall Health Risks >=3.	↓ Reduction	Yes	67%	57%	10%	<.001
Quality of Life Issues	↓ Reduction	Yes	41%	34%	7%	<.001
<b>Other Measures from Survey</b>						
Depression Screen	↓ Reduction	Yes	61%	55%	6%	≤.001
Alcohol Screen	↓ Reduction	Yes	23%	19%	4%	<.05
Tobacco Consumption	↓ Reduction	No	12%	11%	1%	NS
Eat Fruits & Veggies*	↑ increase	Yes	40%	45%	5%	<.05
<b>Absenteeism</b>						
Absent from work > 5 days injury	↓ Reduction	No	4%	3%	1%	<.05
Absent from work > 5 days illness	↓ Reduction	Yes	22%	16%	6%	<.001
<b>Presenteeism (WLQ)</b>	<b>↓ Reduction</b>					
Time Management	↓ Reduction	No	15%	13%	2%	NS
Physical Demands	↓ Reduction	No	8%	6%	2%	NS
Mental/Interpersonal Skill	↓ Reduction	No	10%	9%	1%	NS
Output	↓ Reduction	No	8%	7%	1%	NS
Overall Score	↓ Reduction	No	2.9	2.4	.5	--

**NOTES:** Overall Health Risks = Includes: Weight (BMI > 25), Presence of any lipid risk factor (Lipid Count >=1); Elevated Blood Pressure (>120 or 80); Elevated Fasting Blood Glucose (>100),and/or Physically inactive

\* since fruits/vegetables question was not asked in Round 1 (June 2008) we used results from round 2 (Dec 2008) in this column instead and compared them to June 2009.



## APPENDIX D: SUMMARY OF SIGNIFICANCE

The table below presents the significance of changes found in two of the analyses – the Pure Pre-Post (same group of individuals pre and post) and the Cross Section Analysis (different but overlapping group of individuals in the first round vs. the third round).

CROSS SECTION Outcome Measures	Goal	Achieved	P value	
			Pre Post	Cross Section
<b>Weight</b>	<b>Reduction</b>			
Overweight or Obese ( <i>BMI</i> $\geq$ 25)	↓ Reduction	POSSIBLY	NS	$\leq$ .01
Overweight	↓ Reduction	NO	NS	NS
Obese	↓ Reduction	NO	NS	NS
<b>Lipids/Cholesterol</b>	<b>Improved</b>			
Total Cholesterol > 200	↓ Reduction	YES+	$\leq$ .01	$\leq$ .001
LDL >100	↓ Reduction	YES+	$\leq$ .01	$\leq$ .001
Triglycerides	↓ Reduction	NO	NS	NS
HDL	↑ Increase	NO	NS	NS
Lipid Ratio (T Chol/HDL >3.5)	↓ Reduction	NO	NS	NS
Number of lipid risk factors $\geq$ 3	↓ Reduction	YES+	$\leq$ .05	$\leq$ .001
<b>Physical Inactivity</b>	<b>Reduction</b>			
% inactive( $\leq$ 2 days/week or < 15 minutes/session)	↓ Reduction	YES+	$\leq$ .05	$\leq$ .001
<b>Blood Pressure</b>	<b>Reduction</b>			
Systolic $\geq$ 120 and/or D $\geq$ 80	↓ Reduction	POSSIBLY	NS	$\leq$ .01
<b>Diabetes</b>	<b>Reduction</b>			
Elevated Blood Glucose (FBG) > 99 mg/dL	↓ Reduction	YES+	$\leq$ .01	$\leq$ .01
Physical Inactivity ( $\leq$ 2 days/week & < 30 min/day)	↓ Reduction	YES+	$\leq$ .05	$\leq$ .01
Number of Diabetes Risk Factors	↓ Reduction	YES+	$\leq$ .05	$\leq$ .001
<b>Overall Number of Key Risk Factors</b>	<b>Reduction</b>			
Overall Health Risks	↓ Reduction	YES+	$\leq$ .01	$\leq$ .001
Quality of Life Issues	↓ Reduction	YES+	$\leq$ .01	$\leq$ .001
<b>Other Measures from Survey</b>	<b>Improved</b>			
Depression Screen	↓ Reduction	YES+	$\leq$ .001	$\leq$ .001
Alcohol Screen	↓ Reduction	YES	$\leq$ .001	$\leq$ .05
Tobacco Consumption	↓ Reduction	NO	NS	NS
Eat Fruits & Veggies+	↑ increase	POSSIBLY	NA	$\leq$ .05
<b>Absenteeism</b>	<b>Reduction</b>			
Absent from work > 5 days injury	↓ Reduction	POSSIBLY	NS	$\leq$ .05
Absent from work > 5 days illness	↓ Reduction	YES+	$\leq$ .05	$\leq$ .001
<b>Presenteeism (WLQ)</b>	<b>Reduction</b>			
Time Management	↓ Reduction	NO	NS	NS
Physical Demands	↓ Reduction	NO	NS	NS
Mental/Interpersonal Skill	↓ Reduction	NO	NS	NS
Output	↓ Reduction	NO	NS	NS
Overall Score	↓ Reduction	NO	NS	NS

TABLE NOTES: + = question was not asked on the first survey and so not available for pre-post cohort.

“Achieved” was given a “YES+” if the goal was achieved at a statistically significant level by both the Pure Pre Post and the Cross Section analyses.

The most robust results were those indicated across more than one type of analysis. These results included reducing the proportion of employees with:

- Elevated Cholesterol/Lipids (Total cholesterol and LDL)
- Reporting they were physically inactive
- Diabetes risk factors (physical activity and fasting blood glucose level)
- Positive finding on depression screen
- Positive finding on quality of life issues screen and more than two overall risk factors
- Alcohol use problems
- Depression
- Absenteeism of > 5 days in the past year due to illness

## APPENDIX E: Follow-Up Questions

These questions were asked only of persons who participated in at least one previous screening.

<b>FOLLOW UP Qs</b>	<b>Dec 2008</b>	<b>June 2009</b>
	<b>N=1221</b>	<b>N=1173</b>
<b>Workplace supports wellness (= Yes)</b>		
Agency has healthy food policy/guidelines	--	40%
Agency has healthy foods to purchase	--	48%
Worksite encourages physical activity	--	74%
Worksite encourages tobacco users to quit	--	36%
<b>My agency supports maintaining my health</b>		
Strongly agree	--	55%
Somewhat agree	--	30%
Neither agree nor disagree	--	10%
Somewhat Disagree	--	2%
Strongly disagree	--	1%
I don't believe it's my agency's role	--	1%
<b>Agency should continue developing wellness programs</b>		
Strongly or somewhat agree	--	93%
<b>Action took as a result of the survey/screenings</b>		
No previous survey/screening	--	--
No action	12%	--
Saw Primary care doctor	30%	--
Changed diet	57%	--
Increased physical activity	67%	--
Began taking meds	4%	--
Changed medications	4%	--
Began taking prescribed meds more regularly	5%	--
Other	14%	--
<b>Participation in HWI (=4 or 5, somewhat or strongly agree)</b>		
HWI provided new information about myself	62%	--
HWI has been valuable to me	72%	--
I found info in Personal Health Report valuable	81%	--
I took action on the Personal Health Report info	70%	--
<b>Physical Activity at Work</b>		--
walk/run near worksite	56%	--
fitness class on site	6%	--
workout at nearby gym	13%	--
Governors Bowl Sept 2008-Nov 2008	17%	--
Flex work schedule to do physical activity	11%	--
Take stairs and/or park further away from door	65%	--
I am not physically active at work	16%	--