

C. Evaluation Methodology

The Prudential HealthSolutions program was evaluated through data gathered in our robust integrated data warehouse designed and populated by Thompson Reuters as well as our internal data collection system (OHM). Key data elements include; health risk appraisal, medical and prescription drug costs, health promotion program participation (e.g. health coaching, on-site fitness centers, employee assistance programs, disease management and on-site clinics). The analysis and evaluation of these programs measured numerous outcomes impacting health, cost effectiveness and risk reduction.

Changes in overall health risks were based on changes in the employee's number of Edington Risk Factors¹. Employees who completed a health risk assessment during the years 2008-2010 were evaluated for this study. A cohort study of 9616 participants who completed the HRA in both years one and three, as well as a comparison of HRA participants versus non-participants was conducted. Return on investment was measured by evaluating risk migration patterns for this same cohort group. Pre and Post measures for health risk and medical and prescription drug claims costs were evaluated from 2008-2010. Due to a corporate change in health care plan design we excluded any pre-2008 claims data. To help normalize the data, high cost claimants with claims greater than \$50,000 were excluded from this study.

1. Wright, Beard, Edington. "Association of Health Risks With the Cost of Time Away From Work." Journal of Occupational and Environmental Medicine. 2002; 44(12):1126-1134.

D. Results

PROGRAM PARTICIPATION

Participation in Prudential's wellness program is tracked using a multiple of integrated systems. Participation is tracked year over year and program utilization has been consistent from 2008-2010. (Figure 1).

- **87% of eligible population has participated in at least one Health and Wellness program in 2010, which is a 10% increase since 2008.**
- **77% completed HRA at least once since 2008, 64% in 2010**
- **82% of eligible employees have had a biometric screening done since 2008, 53% in 2010**
- **27% of eligible population is enrolled in on-site fitness center in 2010**
- **6% of employees participated in health coaching since 2008**
- **37% of eligible population received a flu vaccination in 2010 ***

Figure 1 - Yearly participation by program

Participation	2008	2009	2010
Eligible employees	20300	19913	19811
Cholesterol Screenings	1281	1920	2088
Hypertension screenings	5350	5837	5855
Blood Sugar Screenings	1227	1774	1836
Health Coaching	338	575	808
HRA Participation	13772	12409	12637
Flu Vaccinations	6897	6405	5545
On-Site Fitness Center Members	1699	1674	1701
Ergonomic Assessments	974	570	698
Clinic Visits (individuals)	5407	6120	5250
Bone Density Screenings	506	486	574
Body Fat Screenings	753	744	484
Webinar Participants	-	2290	3932
On-Site Fitness Center Visits **	68980	79152	78659
Clinic Visits**	18025	16592	14492

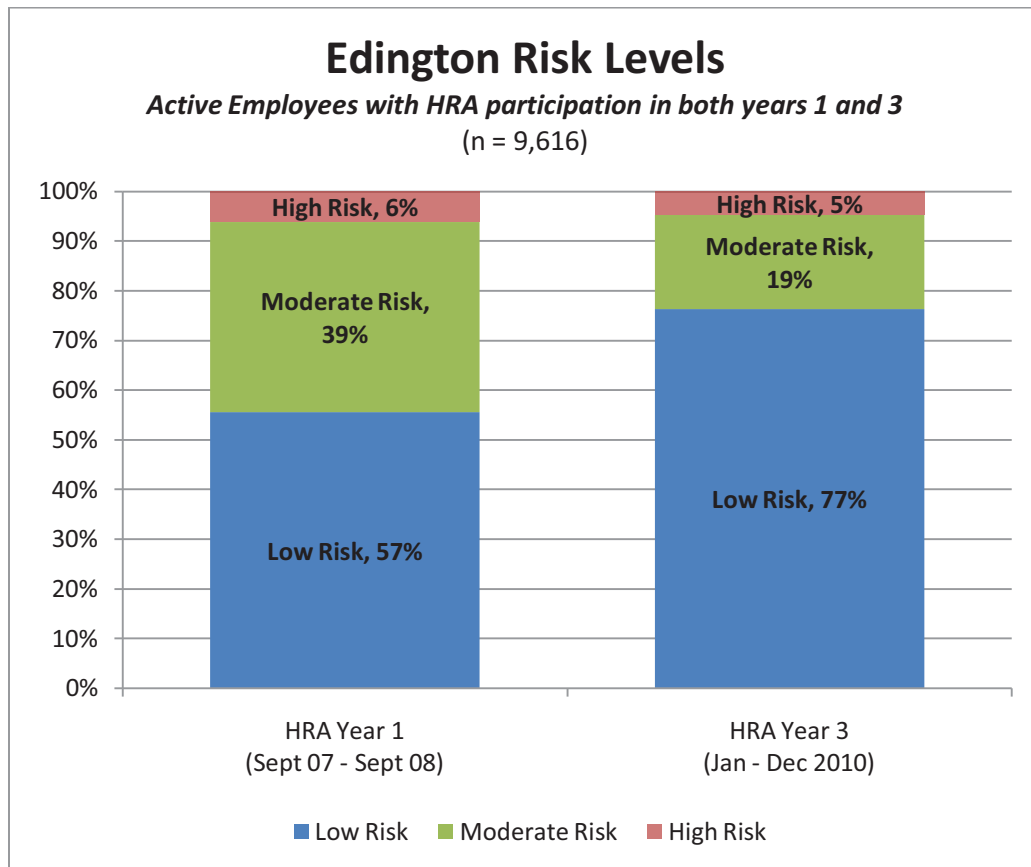
* Eligible population just for clinic and satellite locations (15060)

**Total utilization of visits, participants may have more than one visit.

RISK REDUCTION

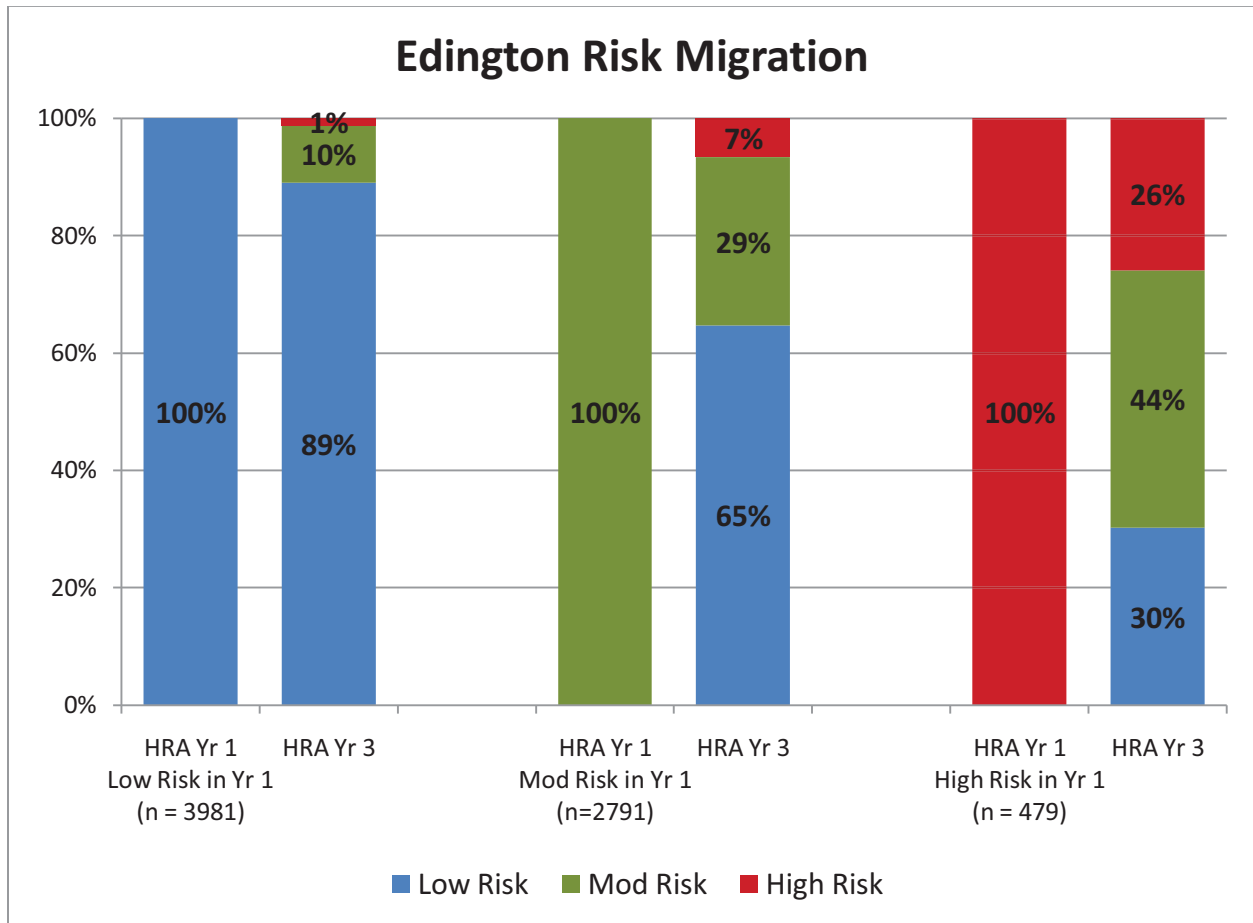
Over the past 3 years 77% of our population completed the HRA. We've trended our results from 2008, 2009 and 2010. We've also compared a cohort of 9616 employees (48% of the population) who took the HRA in 2008 and again in 2010. We have classified our population based on Edington's risk levels. In 2008, 57% of our population classified as low risk, 39% as moderate and 6% at high. In 2009 the numbers were 76%, 19% and 5% respectively, showing significant trend toward lower risk. The trend persisted in 2010 with 77% classified as low risk, 19% as moderate and 5% as high. (Figure 2)

Figure 2 – Edington Risk Stratification Change 2008-2010



A further examination of this same cohort group showed overall positive changes as well. In the year one low risk group only 11% migrated to higher risk in year three. While the moderate risk group saw 65% migration to low risk. The most dramatic improvement was seen with the high risk group, where 74% migrated to lower risk levels. (Figure 3)

Figure 3 –Edington Risk Migration 2008-2010



HEALTH OUTCOMES

Our HRA results in 2010 showed a sustained trend in healthier behavior and a decrease in risk in our population. Of special note was the change in exercise, nutrition and stress related risk factors. We also noted improvement in biometrics such as blood pressure and cholesterol. Positive health outcomes were also through self-report surveys for health coaching participants.

HRA Health outcomes from 2008-2010

- 17% reduction in smoking
- 17% increase in exercise level
- 19% decrease in hypertension
- 15% lowered cholesterol risk

Health Coaching Results

- 54% lost weight
- 61% increased physical activity
- 52% decreased stress
- Average number of pounds lost per participant is 7.8

Healthy People 2010

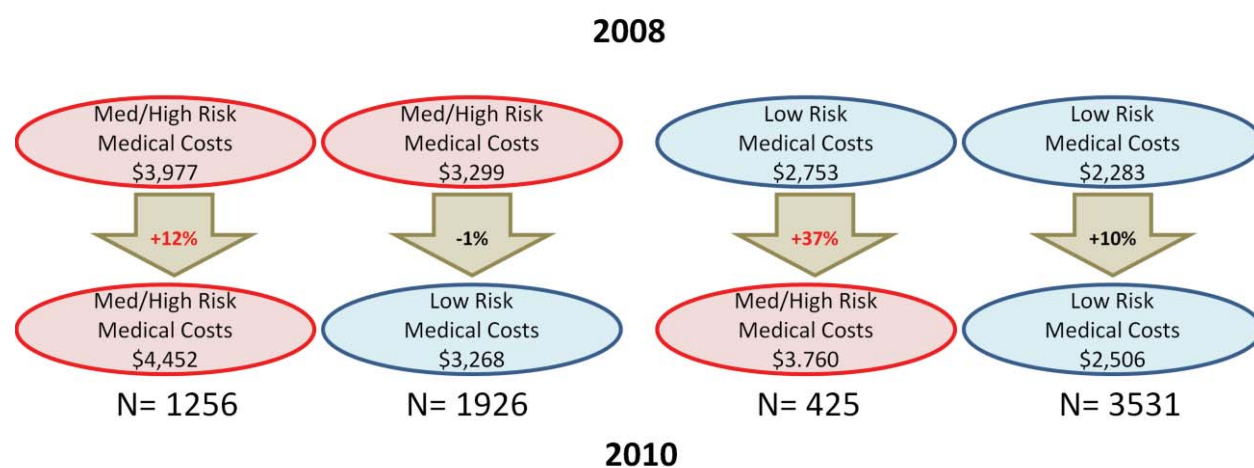
We encourage employees to receive appropriate preventive services. Those services are fully covered by our health plans. In 2009 screenings for breast and colon cancer compared favorably to Healthy People 2010 goals (72% compared to 70% for breast cancer, 53% compared to 50% for colon cancer). Screening for cervical cancer at 82% is below the Healthy People 2010 goal of 90% and an area that requires improvement.

EXPENDITURE OUTCOMES

Cost increases were compared over a two year period (2008-2010) rather than on an annual basis. Those who remained low risk had a 10% increase in cost compared to a 37% increase for those who moved to med/high risk. The med/high risk group that moved to the low risk category had a 1% decrease in cost compared to a 12% increase for those that stayed in the med/high risk group. This demonstrates the value in both keeping low risk employees at low risk and migrating employees at med/high risk to lower risk levels. (Figure 4)

In 2008, the high risk trend group's medical costs were 39% higher than the low risk group. At the end of 2010 the high risk trend group's costs were 54% higher than that of the low risk group.

Figure 4 – Risk Migration Cost Change 2008-2010



In addition, cost of treatment for acute conditions between 2008 and 2010 remained the same for groups that became or stayed in the low risk category compared to a 21% increase for the groups that became or stayed in the high risk category.

RETURN ON INVESTMENT

Analysis was conducted with our data warehouse vendor. We selected an employee cohort with continuous enrollment in our health plans that were initially classified as “low” or “moderate/high” risk based on Edington’s risk criteria and evaluated their claims cost from 2008-2010. We created two study groups, one composed of employees who remained low risk or shifted from moderate/high to low risk (low risk trend group), the other group remained at moderate/high risk or shifted from low to moderate/high risk (high risk trend group). Both of these groups were compared to non-participants. This resulted in a cost-avoidance for the low risk trend group. In calculating our ROI we also took ownership for the cost increase of the high risk trend group. (Figure 5)

Figure 5 – Return On Investment

EXCLUDES HIGH COST CLAIMANTS (defined as those with \$50K plus in allowed amount in the year)	Employees Avg. Med or Rx (Unique Count)			Allowed Amount Episode Total per Employee			% Chg 08 to 10
	2008	2009	2010	2008	2009	2010	
Subset	2008	2009	2010	2008	2009	2010	% Chg 08 to 10
Those that stayed at Low Risk	3,552	3,541	3,531	\$2,283	\$2,424	\$2,506	10%
Those that IMPROVED	1,939	1,943	1,926	\$3,299	\$3,147	\$3,268	-1%
Combined "Those stayed at Low Risk" and "Those that IMPROVED" (Low Risk Trend Group)	5,491	5,484	5,457	\$2,642	\$2,680	\$2,775	5%
Those that stayed at High Risk	1,283	1,275	1,256	\$3,977	\$4,502	\$4,452	12%
Those that GOT WORSE	435	428	425	\$2,753	\$4,079	\$3,760	37%
Combined "Those that stayed at High Risk" and "Those that GOT Worse" (High Risk Trend Group)	1,718	1,702	1,681	\$3,667	\$4,395	\$4,277	17%
Overall	6,996	6,977	6,928	\$2,873	\$3,098	\$3,138	9%
Non-Participants	2,355	2,355	2,323	\$2,639	\$2,948	\$3,040	15%

- If the “Low Risk Trend” group increased at same rate as Non-participants (15% vs. 5%) they would have seen and average increase of \$263 per participant, resulting in a net cost-avoidance of \$1,435,191
- If the “High Risk Trend” group increased at same rate as Non-participants (15% vs. 17%) they would have seen and average decrease of \$60 per participant, resulting in a net cost increase of \$100,860
- Net combined Savings is \$1,334,331. Cost of program for this time period was \$944,241 resulting in an **ROI of 1:1.4**

JOEM 2010 STUDY

We have measured the effect of our health promotion programs on biometric measures of blood cholesterol and glucose. Using actual biometric and self-reported measures we examined 1) the extent to which self-reported lipid and blood glucose values correlate to laboratory data (see figure 6), 2) whether self-reported and measured lipid values differ for physically active and sedentary employees, and 3) whether participation in a disease management program affects employees' lipid measures. We found that: 1) on average our employees were aware of and accurately reported their lipid and blood glucose levels, 2) high-density lipoprotein values were significantly higher for fitness center users compared with sedentary employees, supporting previous clinical studies, and 3) that disease management participants showed a significant reduction in total cholesterol and low-density lipoprotein during a 3-year period compared with nonparticipants. The overall inclusion sample of this study was 3541 employees. Our results were published in the August 2010 issue of the *Journal of Occupational and Environmental Medicine*.

Figure 6 – 2010 JOEM Study

Table 2. Characteristics and Comparison of Self-Reported and Measured Lipid and Blood Glucose Values

Screening Test	N	Average Self-Reported Value (mg/dL)	Average Measured Value (mg/dL)	Standard Deviation of Measured Values	Difference (Measured-Self-Report)	p-value	Average Length between Measured and Self-Reported Values (Days and Range)	Pearson's Correlation
Total Cholesterol	1099	187.8	190.0	36.0	2.2	0.0002	132 (0, 365)	0.8502
HDL	786	57.1	56.3	15.5	-0.8	0.0002	123 (0, 365)	0.9228
LDL	794	108.9	110.2	30.4	1.3	0.0414	124 (0, 365)	0.8349
Triglycerides	741	117.4	120.3	83.1	2.9	0.0827	122 (0, 365)	0.8397
Blood Glucose	272	100.7	101.5	26.8	0.8	0.5452	143 (0, 365)	0.6243
Blood Glucose (persons who self-reported Diabetes)	31	137.6	149.8	75.0	12.3	0.1277	205 (55, 353)	0.3755
Blood Glucose- (persons who did not self-report Diabetes)	241	96.0	96.2	15.0	0.2	0.4771	181 (0, 365)	0.4373

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