King County 2007 Program Review

King County Lifestyle Management Programs

April 10, 2008

HEALTHWAYS

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Introduction

The following is a review of the King County Lifestyle Management 12-Month (LM) and Lifestyle Management 6-Month (LM) programs provided by Healthways Inc. over the 2006 through 2007 calendar years. Cohorts of participants are grouped by the year in which they participated in their Health Risk Assessment (HRA) and by the health coaching product they stratified into.

Healthways recognizes that King County refers to their HRA as the "Wellness Assessment". For the purposes of this report, the Wellness Assessment will be referred to as "HRA".

This analysis examines the risks identified in the King County population, the enrollment timeline, and the current return on investment forecast for each program year.
(Note: Totals may not equal 100% due to rounding.)

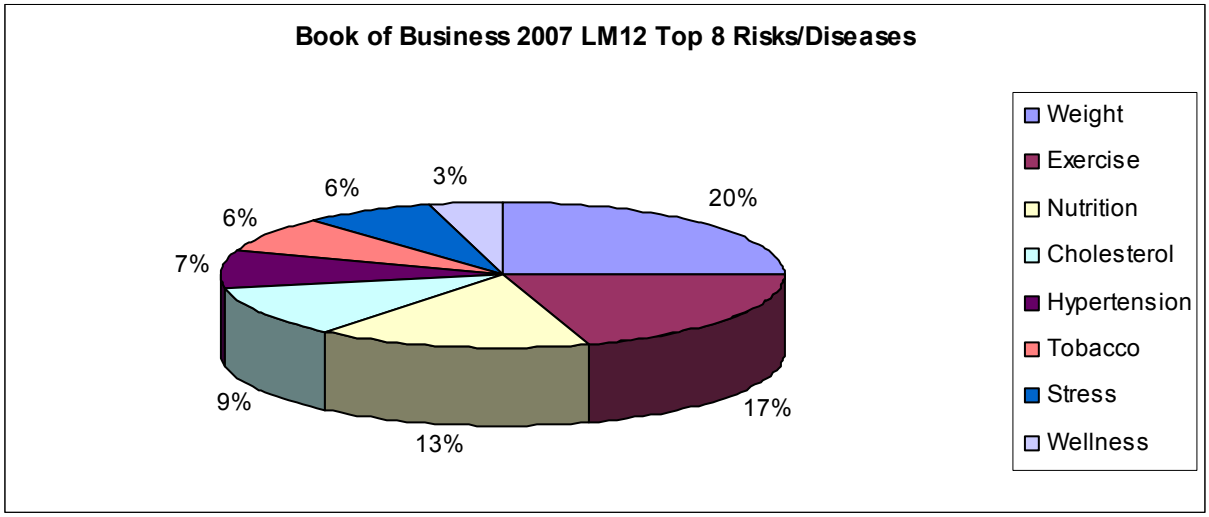
Analysis:

A: Lifestyle Management 12-Month Program 2007 Cohort

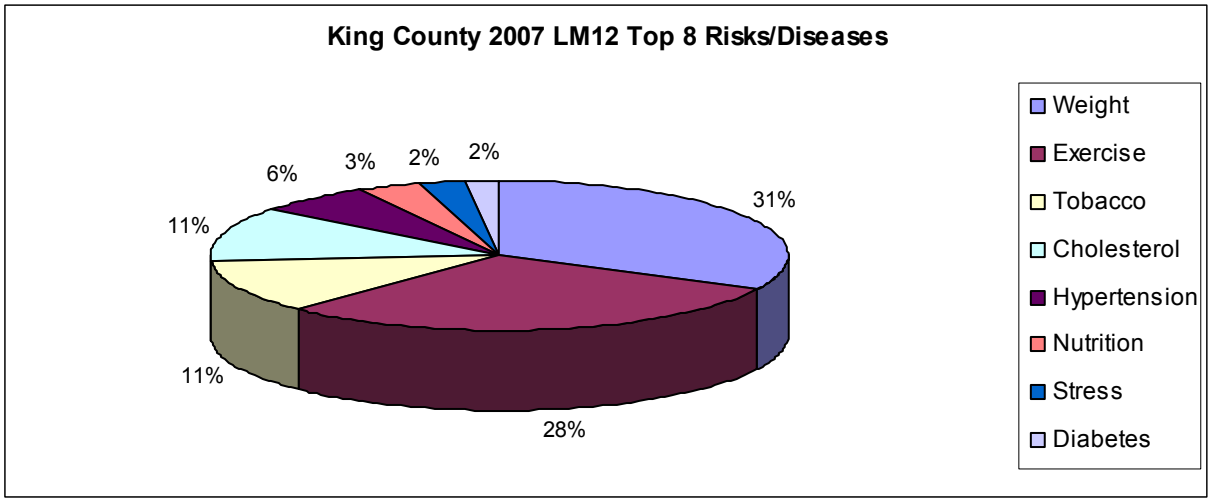
Risk Demographics

The risks are identified through the HRA, based on the stratification agreed upon with King County. In order to create a normative comparison, the King County population risk set is compared to the Healthways 2007 book-of-business risk set. The following charts show the most frequent risks reported in each population:

Graph A1: Top 2007 Book-of-Business Lifestyle Management 12-Month Risks

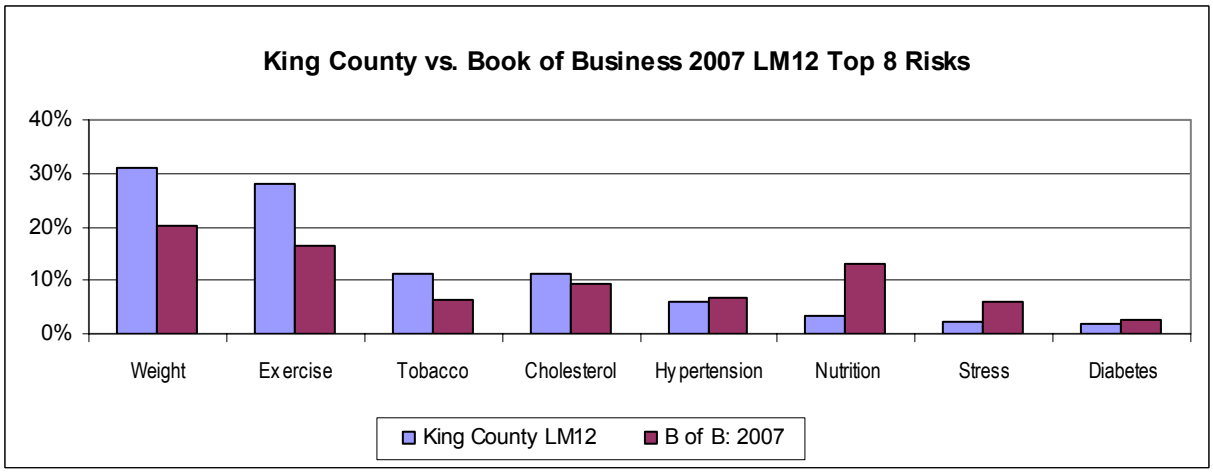


Graph A2: Top 2007 King County Lifestyle Management 12-Month Risks



The following chart shows a direct comparison between the King County enrolled population and the normative book-of-business population for the period:

Graph A3: King County vs. 2007 B-of-B Lifestyle Management 12-Month Risks



Graph A3 shows that the King County enrolled population differs from the typical Healthways client in its starting risk composition. Relative to the book-of-business data, the King County participants have a higher prevalence of weight, exercise, tobacco, and cholesterol risks. The King County participants also have lower than average hypertension, nutrition, stress, and diabetes risks. Overall, this group had 2.28 risks per participant on average. In comparison, the 2007 book-of-business average had 3.07 risks per participant. The average age of King County participants was 49.9 years compared to a book-of-business population average of 46.7 years.

Program Participation

Program participation is also compared to our book-of-business data. Unlike starting risk data, participation is time sensitive. The LM12 programs involving the 2007 book-of-business population are 65% concluded as of April 10, 2008. The counseling programs involving the King County 2007 cohort are 100% concluded as of April 10, 2008. The following tables show the eligibility and enrollment by gender, followed by percentages of participation.

Table A1: Eligibility by Gender

Prog Year	Gender	Eligible	Percent
2007	Female	3755	55.9%
2007	Male	2964	44.1%
2007	**Total**	**6719**	**100.0%**

More females than males were eligible for the lifestyle management program.

Table A2: Enrollment by Gender

Prog Year	Gender	Enrolled	Percent
2007	Female	3506	56.6%
2007	Male	2687	43.4%
2007	**Total**	**6193**	**100.0%**

King County enrollment by gender was nearly proportionate to eligibility.

Table A3: Enrollment Participation

Enrollment	LM12: 2007	BB: 2007
By Contact:	99%	65%
By Eligible:	92%	37%

Enrollment by contact is the percentage of eligible people Healthways enrolls of those who are actually reached by an advisor. In the case of King County, 99% of those individuals contacted enrolled in the program, leaving 1% who declined. Enrollment by eligible is the percentage of people who enroll out of the entire eligible population. 92% of the total eligible population enrolled in the program. The enrollment ratio is above the typical Healthways client according to comparable data from the book-of-business. The next table shows the current status of the enrolled population.

Table A4: Current Enrollment Status

Participation	LM12: 2007	BB: 2007
Completers:	4%	8%
Inactives:	15%	30%
Drop Outs:	37%	11%
Admin Closure:	44%	16%
Still Active:	0%	35%

Note that for King County there were 44% of members who were “Administratively Closed”. This is due to the surcharge timelines and the requirement to close participants out at the end of

the year. Since the participants were active for the duration of the program, they should be considered complete.

The next table shows the progress made in reducing risks.

Table A5: Current Risk Reduction Status

Outcomes	LM12: 2007	BB: 2007
Impr or Elim 0 risks	19%	37%
Impr or Elim 1 risks	45%	29%
Impr or Elim 2 risks	28%	19%
Impr or Elim 3 risks	7%	9%
Impr or Elim >3 risks	2%	5%

The King County program participants had better success in reducing risks over the course of the program compared with the book-of-business. This is evident when comparing the percentage of each cohort that improved or eliminated no risk. In the King County cohort, 81% of the starting participants improved or eliminated one or more risks. In the book-of-business cohort, 62% of the starting participants improved or eliminated one or more risks.

The final table in this section accounts for everyone who was eligible for a Lifestyle Management 12 program. This table shows their 2007 program end disposition along with their call and advising statistics.

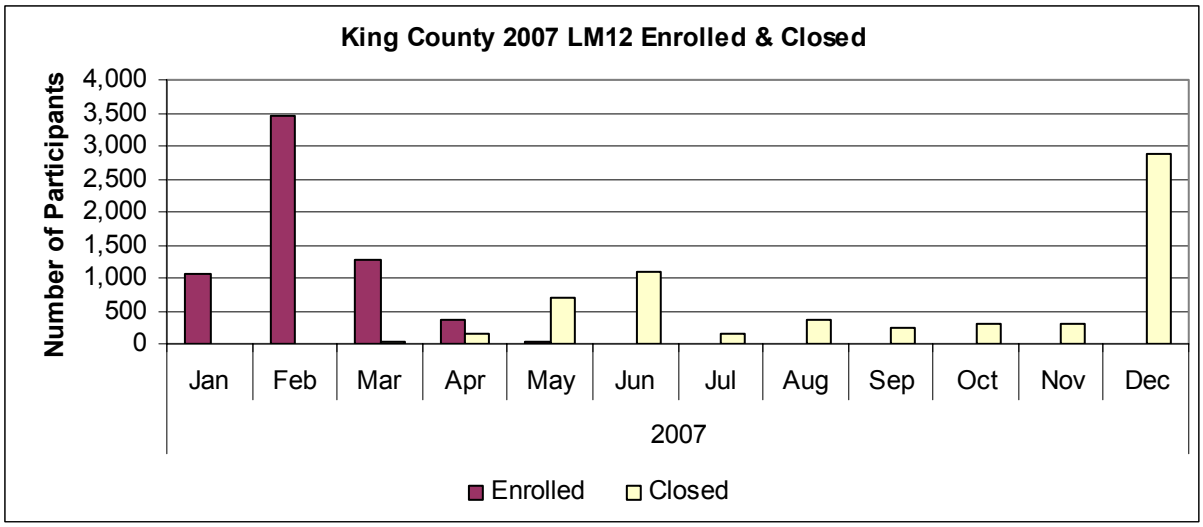
Table A6: Current Status and Process Statistics

Most Current Outcome Description	Count Of Eligible	Average Total Call Attempts	Average POE Call Attempts	Average Advising Sessions	Average Active Months
Deceased - Post-enrollment	4	8.0	6.5	2.5	4.5
Deceased - Pre-enrollment	1	2.0	0.0	0.0	0.0
Declined	52	2.5	0.0	0.0	0.0
DropOut	2,319	8.4	5.5	3.2	4.1
FinalSession	223	13.7	11.5	7.0	9.5
Inactive	938	13.9	10.8	3.1	7.0
IS Closure - Post-enrollment	2,567	12.9	10.0	4.5	10.3
No Longer Eligible	38	8.6	6.0	1.9	4.3
Not Eligible	8	2.8	0.0	0.0	0.0
Supervisor Closure - Post-enrollment	10	7.5	4.4	1.9	5.3
Supervisor Closure - Pre-enrollment	24	4.4	0.0	0.0	0.0
Terminated	418	4.3	0.0	0.0	0.0
Wrong Number - Post-enrollment	90	11.3	8.1	3.1	5.8
Wrong Number - Pre-enrollment	17	2.9	0.0	0.0	0.0
Total / Average	**6,150**	**5.8**	**2.2**	**0.6**	**2.0**

Note: PRE = Pre-Enrollment, POE = Post-Enrollment

This table accounts for all eligible employees. "Drop out" refers to those employees who, after enrollment, decide to discontinue the service. "Inactive" refers to those program participants who can no longer be reached. "Final Session" is the ideal completion of a program. Normally, the best process and outcome statistics will be associated with the program completers. The next graph shows the enrollment over time.

Graph A4: Enrolled & Closed by Month



Note: 0% of the participants are still active in King County program as of April 10, 2008.

Outcomes to Date

Healthways uses an algorithm to quantify health risks for participants in order to evaluate program outcomes. A Healthy Behavior Score (HBS) is assigned to every participant as a result of his or her HRA. The Healthways algorithm to quantify health risks is as follows; a healthy person with no risk factors has an HBS of 100. Each health risk is worth 10 points, and each risk is deducted from the healthy score of 100. As a program continues, participants can gain points if a risk factor is resolved, controlled, or improved. If a risk is resolved or controlled, it is no longer counted in the calculation and the participant gains 10 points. If a risk is improved, i.e., progress is made toward risk resolution, half a risk (5 points) is returned to the participant's current HBS. For example, a participant (PIN) with 4 risks will have a starting HBS of 60. If that participant resolves one risk and improves another, his or her HBS becomes 75.

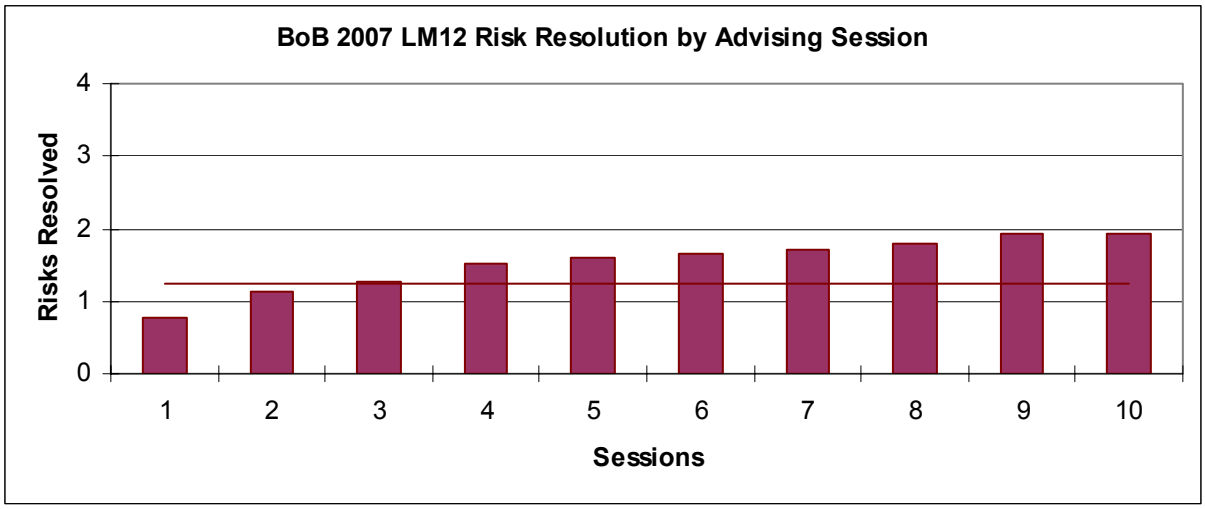
Since medical and productivity costs have a high correlation with the number of personal risks, a reduction in the number and severity of risks in a population should reduce or avert future cost increases. Likewise, if the mean HBS of a population is increasing, it means that the individuals in that population are making positive differences in health choices. Those positive changes should then result in medical claims savings and productivity increases. In the Lifestyle Management program, there is an opportunity to gather risk assessment data with every phone call, thereby providing multiple measurement points and intervention opportunities. The historical data can then be analyzed to show changes in HBS. Tables A7 and A8 examine the 2007 historical LM12 data as it relates to each advising session.

Table A7: Book-of-Business 2007 LM12 Healthy Behavior Score by Advising Session

Advising Sessions	Mean of Start HBS	Mean of Final HBS	Risk Reduction	Count Of PIN	Percent of PINs
1	62.27	69.89	0.76	10294	24%
2	59.50	70.67	1.12	7749	18%
3	65.30	77.88	1.26	8457	20%
4	60.61	75.67	1.51	5590	13%
5	59.74	75.76	1.60	4237	10%
6	59.56	76.16	1.66	2796	7%
7	58.89	76.12	1.72	1785	4%
8	58.36	76.34	1.80	1070	2%
9	56.38	75.57	1.92	539	1%
10	55.54	74.71	1.92	242	1%
3.32	61.36	73.89	**1.25**	42991	100%

For the book-of-business all enrollee Lifestyle Management population, the average number of advising sessions is 3.32 and participants have eliminated 1.25 risks on average. Note that the individuals with the most risk factors, as indicated by a lower starting HBS, stay in the program the longest and see the greatest change in HBS. The number of advising sessions a participant receives is highly correlated with how many risks he or she has. Most people end the program when they have achieved a score in the 70-to-80 HBS range, regardless of the number of advising sessions required to achieve that result. While these individuals are improved from their starting point, the ideal situation is to keep them to program completion. The next graph shows the book-of-business HBS gain by advising sessions.

Graph A5: 2007 LM12 Book-of-Business Risk Resolution by Advising Session



The HBS gain by advising sessions shows a linear increase in the HBS through ten sessions. As the number of advising sessions increase, the number of risks reduced increases. However, there is an inverse relationship between the number of sessions and the starting HBS. The participants with the most risks stay in the program the longest, and thus have more opportunity to see greater risk reduction.

The next table shows the difference between starting and final HBS for the King County LM12 2007 cohort.

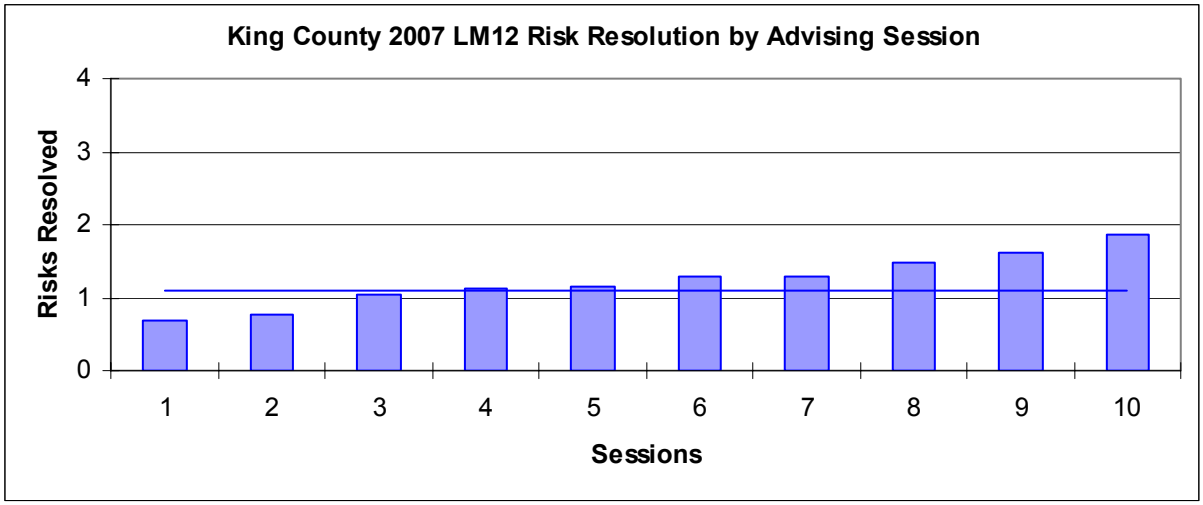
Table A8: King County 2007 LM12 Healthy Behavior Score by Advising Session

Advising Sessions	Mean of Start HBS	Mean of Final HBS	Risk Reduction	Count Of PIN	Percent of PINs
1	78.69	85.54	0.68	130	2%
2	77.44	85.17	0.77	86	1%
3	78.29	88.75	1.05	3152	51%
4	76.70	87.94	1.12	1208	20%
5	76.01	87.40	1.14	781	13%
6	75.56	88.44	1.29	430	7%
7	73.71	86.69	1.30	210	3%
8	72.20	87.00	1.48	100	2%
9	65.33	81.50	1.62	30	0%
10	53.75	72.50	1.88	8	0%
3.88	77.14	88.12	**1.10**	6143	100%

Of the total population of participants who have received advising, participants received an average of 3.88 advising sessions. With a starting HBS average of 77.14, the King County population has less starting risks than our 2007 book-of-business average of 61.36. The King County group studied achieved 1.10 risks reduced per participant compared to 1.25 for the book-of-business.

The King County Lifestyle Management risk reduction is shown in the next graph.

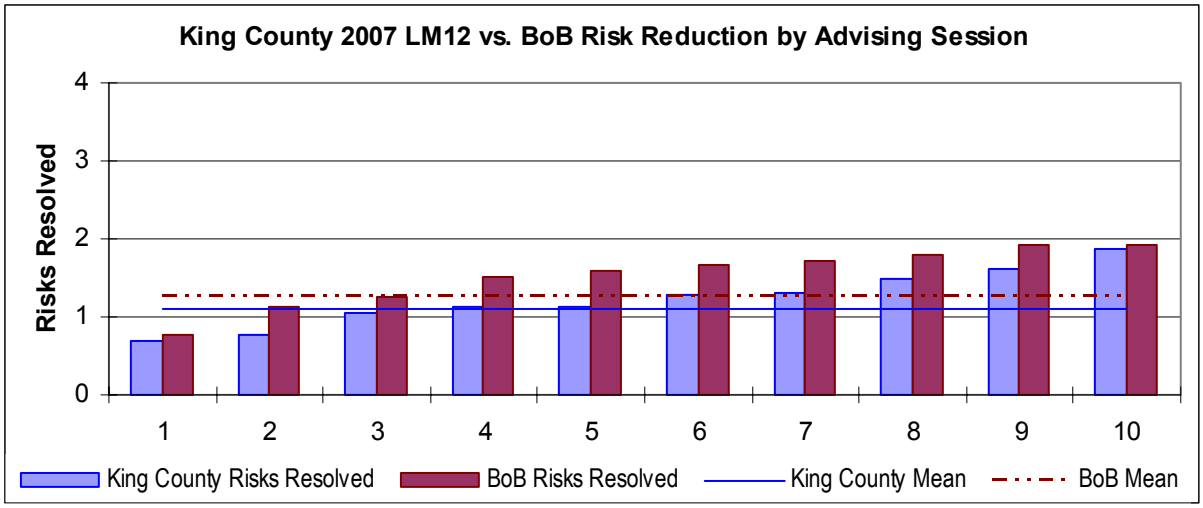
Graph A6: King County 2007 LM12 Risk Reduction by Advising Session



Participants received maximum benefit with ten advising sessions, with at least six advising sessions needed to achieve above average results. It is likely that more risk reductions would have been recorded had the participants received their final advising sessions.

The final graph for this section compares risk resolution by advising session for both cohorts.

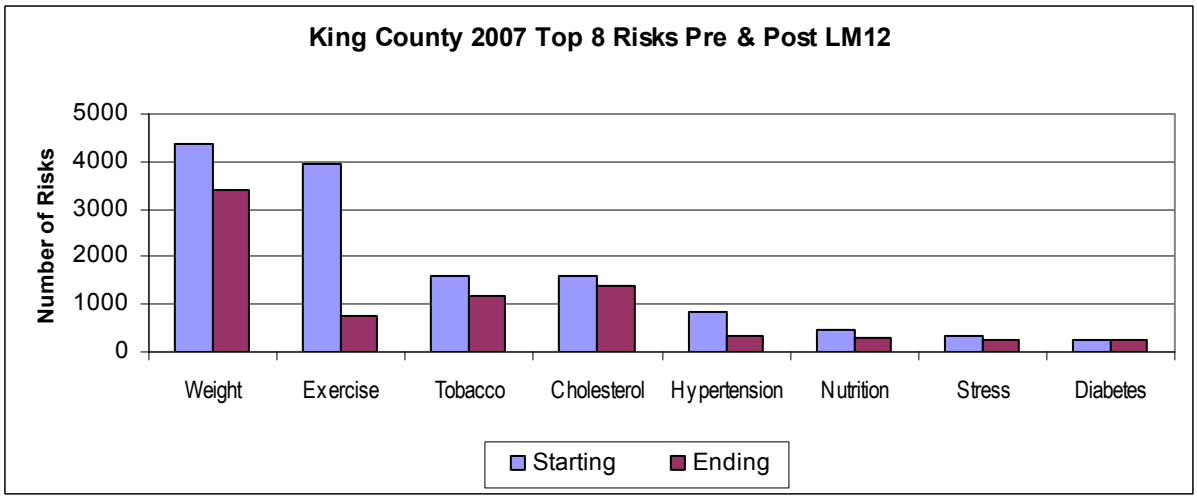
Graph A7: King County 2007 LM12 versus B-of-B Risk Reduction by Advising Session



Participants in both the King County and the book-of-business cohorts achieved benefits congruently throughout the program cycle.

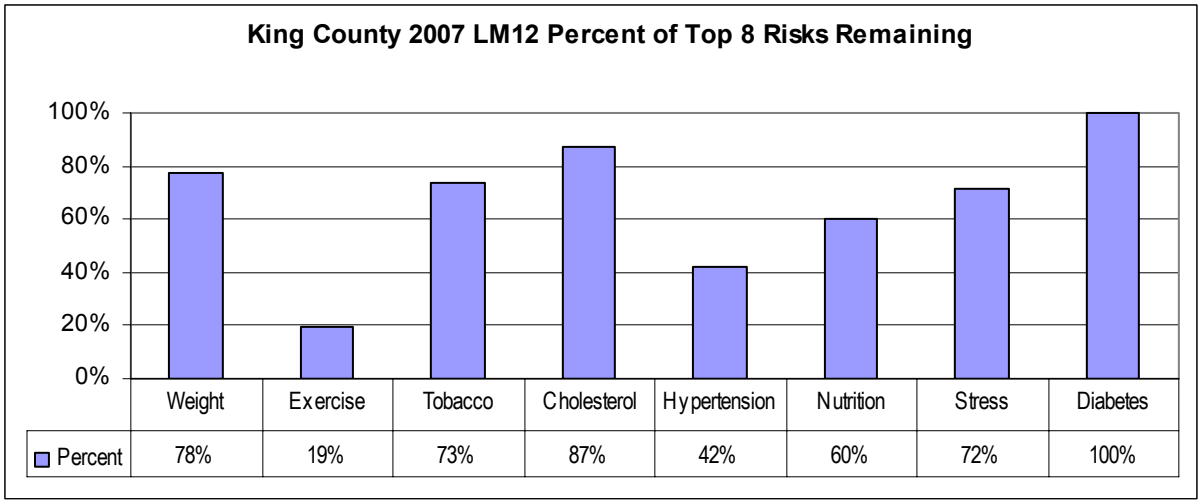
The following graph shows the success of the risk resolution of the most frequent risks identified in the King County 2007 cohort. The following graph shows both the starting and ending number of participants in each risk category. The ending value is the number of participants who still have the risk as of the time they concluded their final advising sessions.

Graph A8: King County 2007 Top 8 Risks before and after Lifestyle Management 12



Participants were successful in eliminating or reducing the following risks categories: weight, exercise, tobacco, cholesterol, hypertension, nutrition, and stress. Another way to view the risk elimination data is in terms of the percentage of risks remaining. That view is displayed in the next graph.

Graph A9: King County 2007 LM12 Top 8 Risks Percent of Risks Remaining



Exercise achieved the best results, followed by hypertension, nutrition, stress, tobacco, weight, cholesterol, and diabetes.

Return on Investment Forecast

According to a recent news release by Dee Edington, PhD, a leading researcher from the University of Michigan Health Management Research Center:

- As health risks rise, medical costs rise - and as health risks go down, medical costs go down. Costs tend to rise or fall incrementally based on the number of health risks. Research consistently demonstrates these trends.
- A population that is low-risk may not remain low-risk. According to Edington's research, 20% - 40% of an employee population is likely to move to higher-risk status within 1 year without low-risk maintenance programs.
- Prevention vs. Intervention: Maintaining low risk may be as good or better an investment than intervening with high risks. Investing in prevention programs to maintain low risks is a better financial investment than high risk intervention because the prevention provides greater long-term return.

The model used for the return on investment forecast is based on the research done by the Health Enhancement Research Organization (HERO). HERO is a national, nonprofit, coalition or organizations that facilitate research impacting healthcare, of which Healthways is a longtime member. In a 1997 study, HERO determined the cost of a particular risk using a large database of individuals tracked over three years. The 1996 dollars associated with each risk have been adjusted for medical inflation for this report. The inflation adjusted HERO risk costs are multiplied by the actual number of risks resolved to get the total benefit per resolved risk. The total program costs for the Healthways Lifestyle Management programs are then compared with the benefit savings to generate a forecasted first year ROI. The calculations can be seen in the following table:

Table A9: King County Lifestyle Management 2007 Forecasted ROI

LM12 Compliant Risks Description	Actual Resolved	HERO Estimate	Starting Count	Risk Compliant	B.O.B. Compliant	Risk Cost	35% Tot Benefit	2007 ROI
Alcohol	83	$499	104	79.8%	56.9%	$6,271	$14,508	2.31
Arthritis	9	$2,766	58	15.5%	3.9%	$3,498	$8,713	2.49
CAD/CVD	10	$1,621	35	28.6%	3.8%	$2,111	$5,675	2.69
Cancer Prevention	17	$1,098	44	38.6%	10.9%	$2,653	$6,535	2.46
CHF	0	$7,988	3	0.0%	1.3%	$181	$0	0.00
Cholesterol	199	$1,098	1826	10.9%	13.1%	$110,112	$76,493	0.69
Depression	19	$2,639	51	37.3%	8.3%	$3,075	$17,551	5.71
Diabetes	32	$1,903	290	11.0%	4.8%	$17,488	$21,318	1.22
Exercise	3194	$384	4218	75.7%	46.2%	$254,356	$429,278	1.69
Fatigue	2	$1,098	15	13.3%	3.7%	$905	$769	0.85
General Nutrition	193	$1,098	789	24.5%	51.0%	$47,579	$74,187	1.56
Hypertension	493	$442	1032	47.8%	51.0%	$62,232	$76,292	1.23
Hypoglycemia	0	$1,305	4	0.0%	0.0%	$241	$0	0.00
Illness	21	$1,098	54	38.9%	7.6%	$3,256	$8,072	2.48
Life Satisfaction	2	$585	10	20.0%	38.1%	$603	$409	0.68
Osteoporosis	3	$1,098	12	25.0%	7.6%	$724	$1,153	1.59
Pulmonary Disease	11	$1,718	29	37.9%	4.5%	$1,749	$6,616	3.78
Safety	2	$1,098	3	66.7%	57.8%	$181	$769	4.25
Stress Management	96	$1,628	413	23.2%	18.4%	$24,905	$54,700	2.20
Tobacco Cessation	421	$507	1611	26.1%	20.7%	$97,147	$74,635	0.77
Weight	973	$783	4509	21.6%	20.0%	$271,904	$266,740	0.98
Wellness	107	$1,153	126	84.9%	53.1%	$7,598	$43,174	5.68
Total	5887	Risks	15,236		Totals:	$918,770	$1,187,586	1.29

Percent Compliant:	38.64%	Participants	6,187
Enrollment Cost:	$918,770	Average Risks/PIN	2.5
Ave Cost/Participant:	$148.50	Mean HHT Cost/Risk	$60.30
LM12 Participants:	6,187		

The 2007 ROI for the LM12 program is forecasted at 1.29. Note that the first year HERO risk benefit is discounted to 35% of the inflation adjusted benefit. This adjustment is based on a comparison of insurance benefits in 1996 and today. That comparison shows that previously there was less cost sharing by the employee. In addition, the HERO annual benefit cost is amortized over seven years, so the full financial impact of risk resolution is not felt in year one. The total enrollment cost for the 2007 program was $918,770 for an average cost per risk of $60.30. Of the 15,236 risks identified, 5887 (38.64%) were self-reported as resolved.

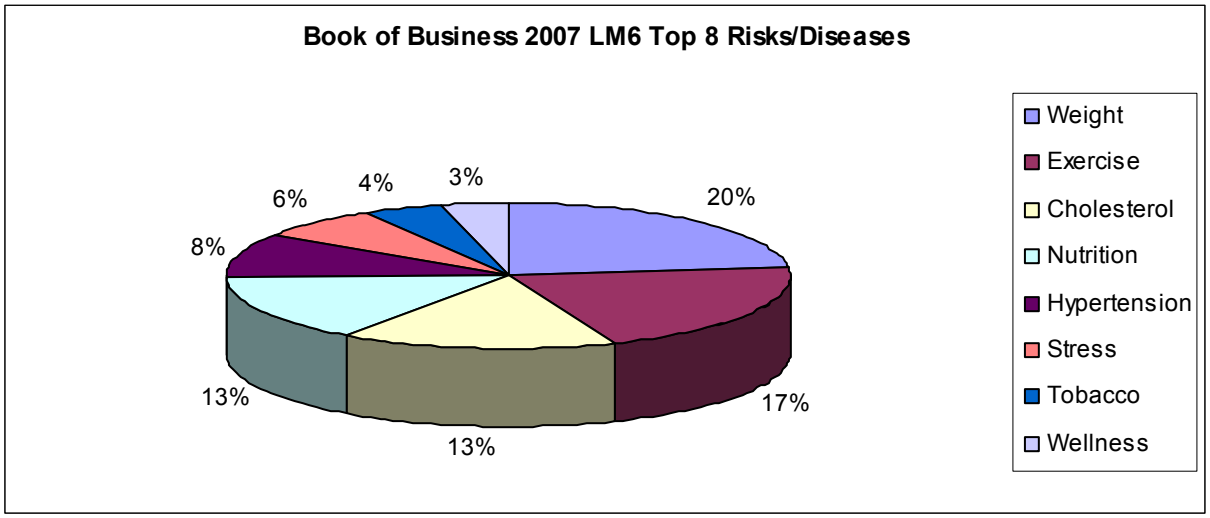
Using this same process for our book-of-business, the combined ROI for all Lifestyle Management 12 clients is 1.62.

B: Lifestyle Management 6-Month Program 2007 Cohort

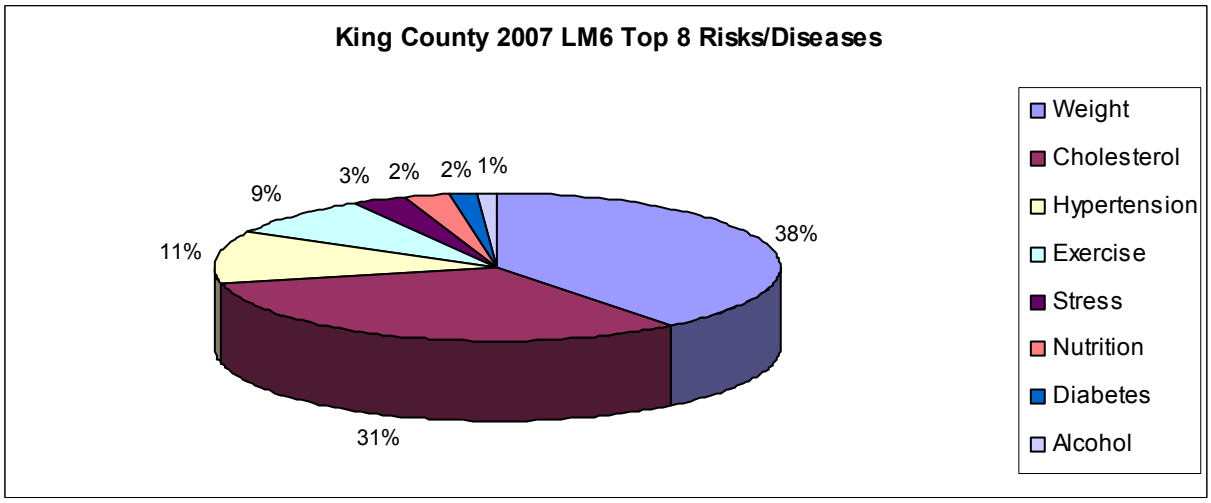
Risk Demographics

The risks are identified through the Health Risk Assessment, based on the stratification agreed upon with King County. In order to create a normative comparison, the King County population risk set is compared to the Healthways 2007 book-of-business risk set. The following charts show the most frequent risks in each population:

Graph B1: Top 2007 Book-of-Business Lifestyle Management 6-Month Risks

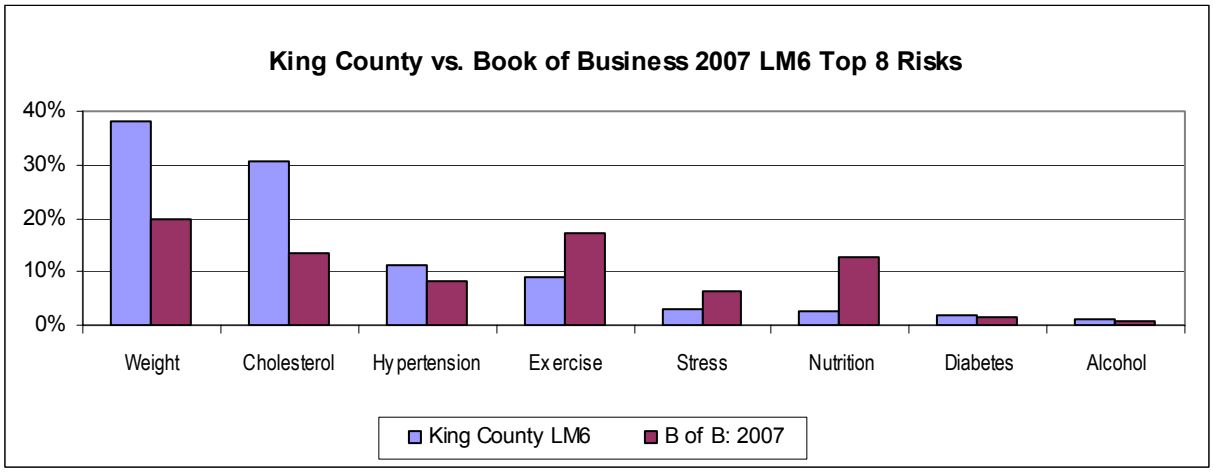


Graph B2: Top 2007 King County Lifestyle Management 6-Month Risks



The following chart shows a direct comparison between the King County enrolled population and the normative book-of-business population for the period:

Graph B3: King County vs. 2007 B-of-B Lifestyle Management 6-Month Risks



Graph B3 shows that the King County enrolled population differs from the typical Healthways client in its starting risk composition. Relative to the book-of-business data, the 2007 King County participants have a higher prevalence of weight, cholesterol, hypertension, diabetes, and alcohol risks. The King County participants also have lower than average exercise, stress, and nutrition risks. Overall, this group has 2.45 risks per participant on average. In comparison, the 2007 book-of-business average has 3.27 risks per participant. The average age of King County participants is 53.4 years, compared to a book-of-business population average age of 45.7 years.

Program Participation

Program participation is also compared to our book-of-business data. Unlike starting risk data, participation is time sensitive. The programs involving the 2007 book-of-business population are 77% concluded as of end of April 10, 2008. The counseling programs involving the King County 2007 cohort are 100% concluded as of April 10, 2008. The following tables show eligibility and enrollment by gender, followed by percentages of participation.

Table B1: Eligibility by Gender

Prog Year	Gender	Eligible	Percent
2007	Female	246	38.4%
2007	Male	394	61.6%
2007	**Total**	**640**	**100.0%**

More males than females were eligible for the Lifestyle Management 6-Month program.

Table B2: Enrollment by Gender

Prog Year	Gender	Enrolled	Percent
2007	Female	240	38.4%
2007	Male	385	61.6%
2007	**Total**	**625**	**100.0%**

King County enrollment by gender was nearly proportionate to eligibility.

Table B3: Enrollment Participation

Enrollment	LM6: 2007	BB: 2007
By Contact:	100%	64%
By Eligible:	98%	39%

Enrollment by contact is the percentage of eligible people Healthways enrolls of those who are actually reached by an advisor. In the case of King County, 100% of those individuals contacted enrolled in the program, leaving 0% who declined. Enrollment by eligible is the percentage of people who enroll out of the entire eligible population. 98% of the total eligible population enrolled in the program. The enrollment ratio is above the typical Healthways client according to comparable data from the book-of-business. The next table shows the current status of the enrolled population.

Table B4: Current Enrollment Status

Participation	LM6: 2007	BB: 2007
Completers:	42%	40%
Inactives:	12%	23%
Drop Outs:	35%	7%
Admin Closure:	10%	9%
Still Active:	0%	23%

Note that for King County there were 10% of members who were "Administratively Closed". This is due to the surcharge timelines and the requirement to close participants out at the end of the year. Since the participants were active for the duration of the program, they should be considered complete.

The next table shows the progress made in reducing risks.

Table B5: Current Risk Reduction Status

Outcomes	LM6: 2007	BB: 2007
Impr or Elim 0 risks	21%	27%
Impr or Elim 1 risks	46%	33%
Impr or Elim 2 risks	26%	22%
Impr or Elim 3 risks	6%	12%
Impr or Elim >3 risks	1%	6%

The King County program participants had better success in reducing risks over the course of the program compared with the book-of-business. This is evident when comparing the percentage of each cohort that improved or eliminated no risk. In the King County cohort, 79% of the starting participants improved or eliminated one or more risk factors. In the book-of-business cohort, 73% of the starting participants improved or eliminated one or more risks.

The final table in this section accounts for everyone who was eligible for a Lifestyle Management 6-Month program. This table shows their 2007 program end disposition along with their call and advising statistics.

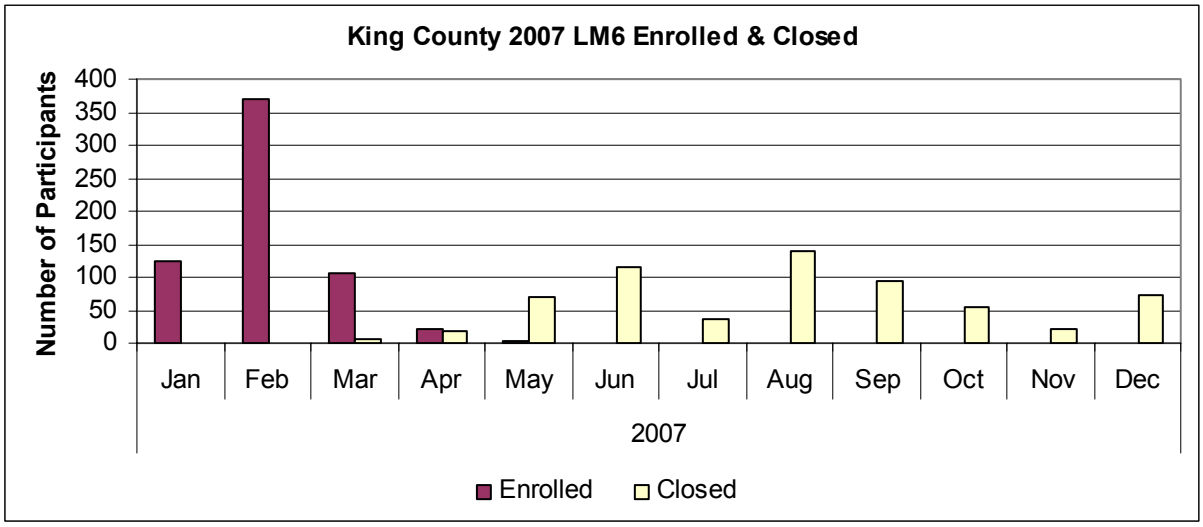
Table B6: Current Status and Process Statistics

Most Current Outcome Description	Count Of Eligible	Average Total Call Attempts	Average POE Call Attempts	Average Advising Sessions	Average Active Months
Deceased - Post-enrollment	1	5.0	3.0	1.0	4.0
Declined	2	3.5	0.0	0.0	0.0
DropOut	218	7.5	4.8	3.1	3.6
FinalSession	264	10.3	8.0	4.7	6.8
Inactive	77	13.8	10.3	3.0	6.8
IS Closure - Post-enrollment	60	12.3	8.8	3.6	10.1
No Longer Eligible	1	2.0	1.0	1.0	3.6
Not Eligible	1	5.0	0.0	0.0	0.0
Supervisor Closure - Pre-enrollment	2	4.0	0.0	0.0	0.0
Terminated	10	5.2	0.9	0.3	0.3
Wrong Number - Post-enrollment	3	7.7	5.3	3.0	4.4
Total / Average	**626**	**5.4**	**1.8**	**0.7**	**2.1**

Note: PRE = Pre-Enrollment, POE = Post-Enrollment

This table accounts for all eligible employees. "Drop out" refers to those employees who, after enrollment, decide to discontinue the service. "Inactive" refers to those program participants who can no longer be reached. "Final Session" is the ideal completion of a program. Normally, the best process and outcome statistics will be associated with the program completers. The next graph shows the enrollment over time.

Graph B4: Enrolled & Closed by Month



Note: 0% of the participants are still active in King County program as of April 10, 2008.

Outcomes to Date

Healthways uses an algorithm to quantify health risks for participants in order to evaluate program outcomes. A Healthy Behavior Score (HBS) is assigned to every participant as a result of his or her HRA. The Healthways algorithm to quantify health risks is as follows; a healthy

person with no risk factors has an HBS of 100. Each health risk is worth 10 points, and each risk is deducted from the healthy score of 100. As a program continues, participants can gain points if a risk factor is resolved, controlled, or improved. If a risk is resolved or controlled, it is no longer counted in the calculation and the participant gains 10 points. If a risk is improved, i.e., progress is made toward risk resolution, half a risk (5 points) is returned to the participant's current HBS. For example, a participant (PIN) with 4 risks will have a starting HBS of 60. If that participant resolves one risk and improves another, his or her HBS becomes 75.

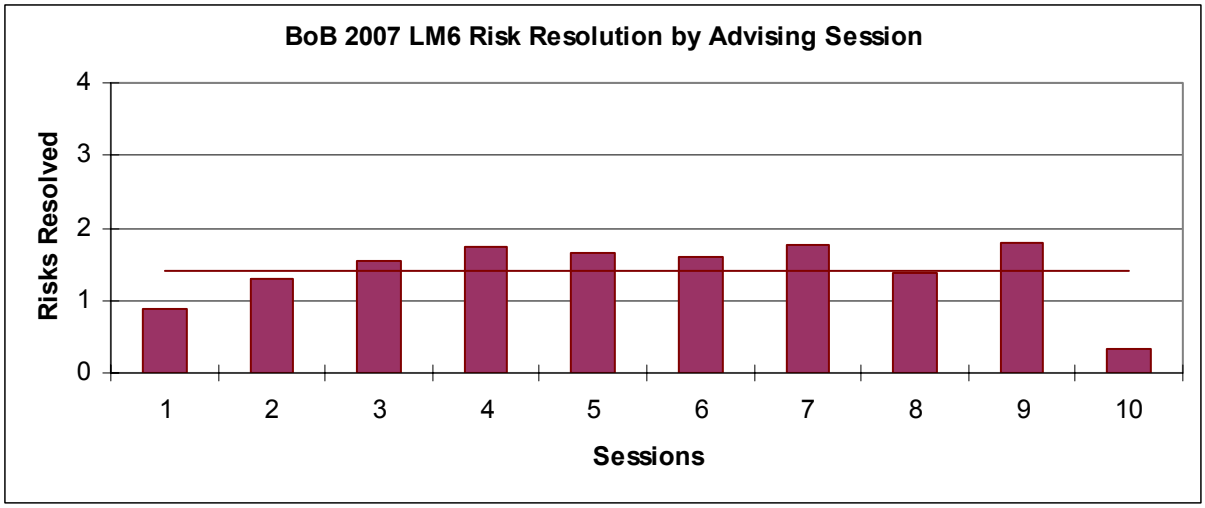
Since medical and productivity costs have a high correlation with the number of personal risks, a reduction in the number and severity of risks in a population should reduce or avert future cost increases. Likewise, if the mean HBS of a population is increasing, it means that the individuals in that population are making positive differences in health choices. Those positive changes should then result in medical claims savings and productivity increases. In the Lifestyle Management 6-Month program, there is an opportunity to gather risk assessment data with every phone call, thereby providing multiple measurement points and intervention opportunities. The historical data can then be analyzed to show changes in HBS. Tables B7 and B8 examine the 2007 historical LM6 data as it relates to each advising session.

Table B7: Book-of-Business 2007 LM6 Healthy Behavior Score by Advising Session

Advising Sessions	Mean of Start HBS	Mean of Final HBS	Risk Reduction	Count Of PIN	Percent of PINs
1	65.83	74.60	0.88	2440	21%
2	63.57	76.53	1.30	2421	21%
3	64.13	79.53	1.54	2407	21%
4	63.11	80.54	1.74	2228	19%
5	64.40	80.82	1.64	1331	12%
6	65.03	80.95	1.59	457	4%
7	60.48	78.05	1.76	105	1%
8	69.70	83.48	1.38	33	0%
9	64.00	82.00	1.80	5	0%
10	56.67	60.00	0.33	3	0%
2.98	64.21	78.22	**1.40**	11441	100%

For the book-of-business all enrollee Lifestyle Management 6-Month population, the average number of advising sessions is 2.98 and participants have eliminated 1.40 risks on average. Note that the individuals with the most risk factors, as indicated by a lower starting HBS, stay in the program the longest and see the greatest change in HBS. The number of advising sessions a participant receives is highly correlated with how many risks he or she has. Most people end the program when they have achieved a score in the 70-to-80 HBS range, regardless of the number of advising sessions required to achieve that result. While these individuals are improved from their starting point, the ideal situation is to keep them to program completion. The next graph shows the book-of-business HBS gain by advising sessions.

Graph B5: 2007 LM6 Book-of-Business Risk Resolution by Advising Session



The HBS gain by advising sessions shows a linear increase in the HBS through four sessions. As the number of advising sessions increase, the number of risks reduced increases. However, there is an inverse relationship between the number of sessions and the starting HBS. The participants with the most risks stay in the program the longest, and thus have more opportunity to see greater risk reduction.

The next table shows the difference between starting and final HBS for the King County LM6 2007 cohort.

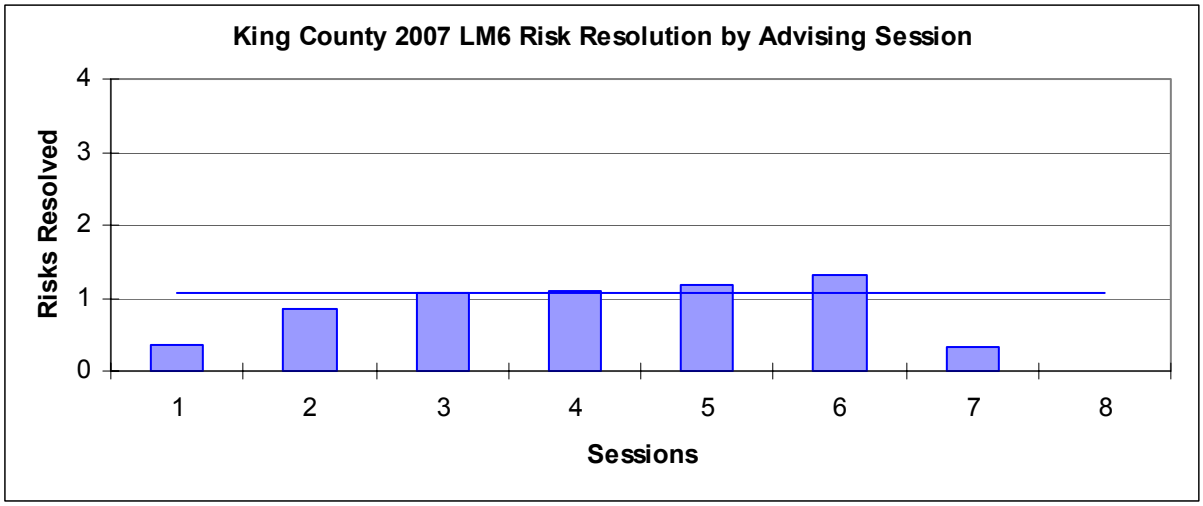
Table B8: King County 2007 LM6 Healthy Behavior Score by Advising Session

Advising Sessions	Mean of Start HBS	Mean of Final HBS	Risk Reduction	Count Of PIN	Percent of PINs
1	80.00	83.64	0.36	11	2%
2	78.57	87.14	0.86	7	1%
3	76.28	86.90	1.06	282	45%
4	75.00	85.94	1.09	176	28%
5	74.74	86.47	1.17	116	19%
6	72.31	85.58	1.33	26	4%
7	73.33	76.67	0.33	3	0%
8	75.00	75.00	0.00	2	0%
3.78	75.50	86.29	**1.08**	624	100%

Of the total population of participants who have received advising, participants received an average of 3.78 advising sessions. With a starting HBS average of 75.50, the King County population had less starting risks than our 2007 book-of-business average of 64.21. The King County group studied achieved 1.08 risks reduced per participant compared to 1.40 for the book-of-business.

The King County Lifestyle Management 6-Month risk reduction is shown in the next graph.

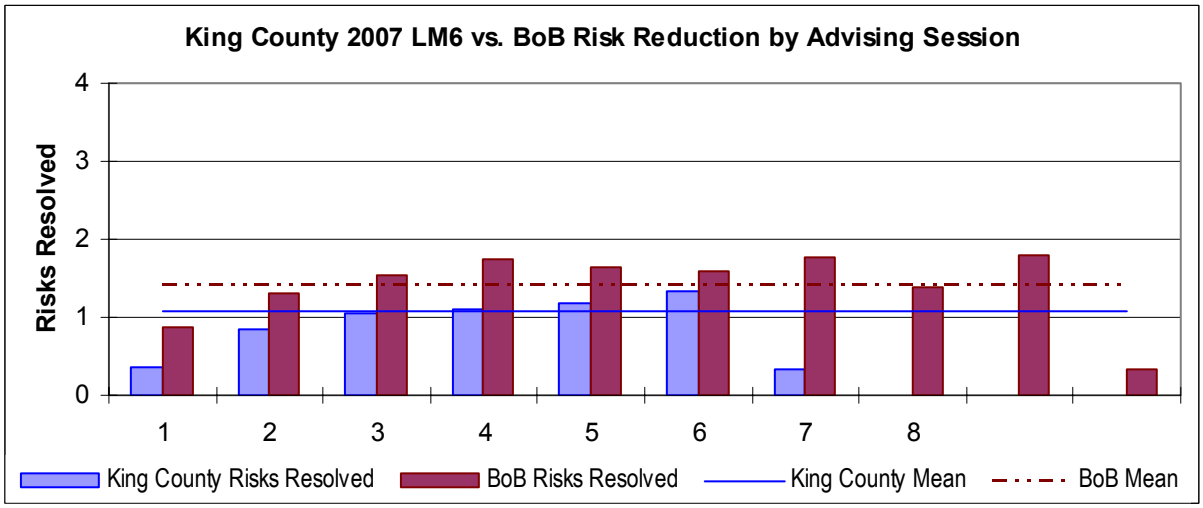
Graph B6: King County 2007 LM6 Risk Reduction by Advising Session



Participants received maximum benefit with eight advising sessions, with at least five advising sessions needed to achieve above average results. It is likely that more risk reductions would have been recorded had the participants received their final advising sessions.

The final graph for this section compares risk resolution by advising session for both cohorts.

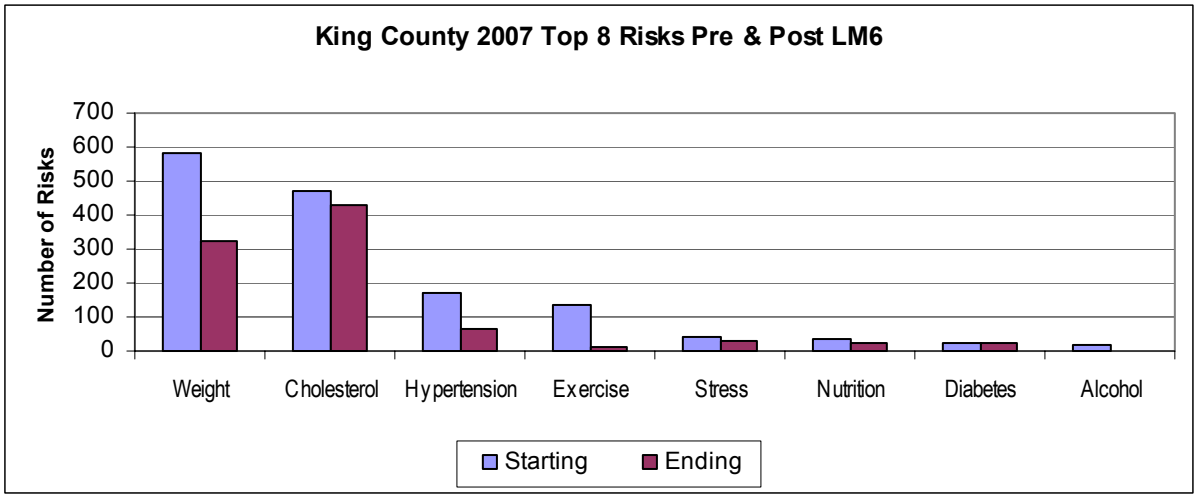
Graph B7: King County 2007 LM6 versus B-of-B Risk Reduction by Advising Session



King County participants started with fewer risks, and resolved fewer risks on average compared to the book-of-business participants.

The following graph shows the success of risk resolution of the most frequent risks identified in the King County 2007 cohort. The following graph shows both the starting and ending number of participant risks in each risk category. The ending value is the number of participants who still have the risk as of the time they concluded their final advising sessions.

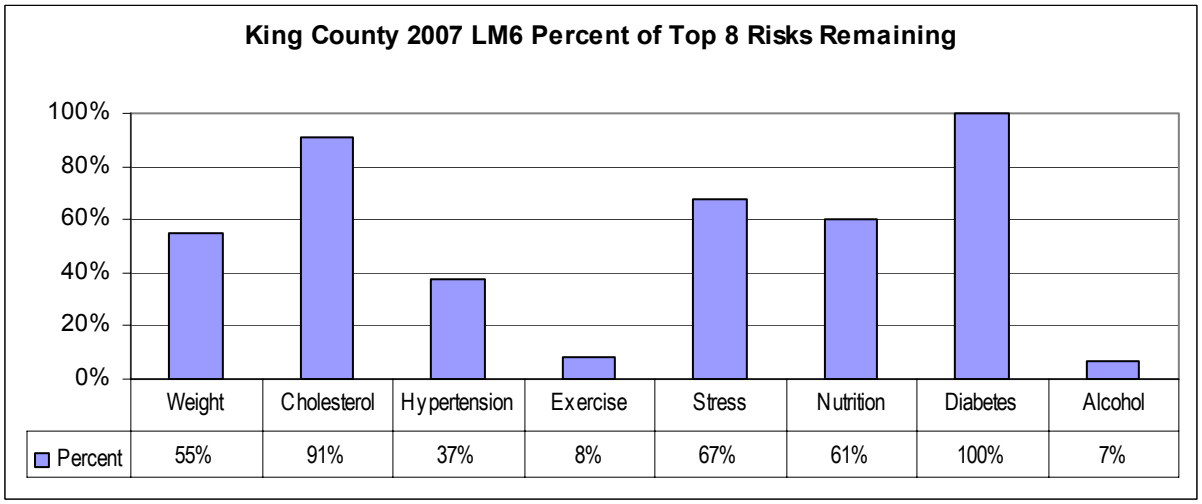
Graph B8: King County 2007 Top 8 Risks before and after Lifestyle Management 6-Month



Participants were successful in eliminating or reducing the following risk categories: weight, cholesterol, hypertension, exercise, stress, nutrition, and alcohol categories.

Another way to view the risk elimination data is in terms of the percentage of risks remaining. That view is displayed in the next graph.

Graph B9: King County 2007 LM6 Top 8 Risks Percent of Risks Remaining



	Weight	Cholesterol	Hypertension	Exercise	Stress	Nutrition	Diabetes	Alcohol
Percent	55%	91%	37%	8%	67%	61%	100%	7%

Alcohol achieved the best results, followed by exercise, hypertension, weight, nutrition, stress, cholesterol, and diabetes categories.

Return on Investment Forecast

According to a recent news release by Dee Edington, PhD, a leading researcher from the University of Michigan Health Management Research Center:

- As health risks rise, medical costs rise - and as health risks go down, medical costs go down. Costs tend to rise or fall incrementally based on the number of health risks. Research consistently demonstrates these trends.
- A population that is low-risk may not remain low-risk. According to Edington's research, 20% - 40% of an employee population is likely to move to higher-risk status within 1 year without low-risk maintenance programs.
- Prevention vs. Intervention: Maintaining low risk may be as good or better an investment than intervening with high risks. Investing in prevention programs to maintain low risks is a better financial investment than high risk intervention because the prevention provides greater long-term return.

The model used for the return on investment forecast is based on the research done by the Health Enhancement Research Organization (HERO). HERO is a national, nonprofit, coalition or organizations that facilitate research impacting healthcare, of which Healthways is a longtime member. In a 1997 study, HERO determined the cost of a particular risk using a large database of individuals tracked over three years. The 1996 dollars associated with each risk have been adjusted for medical inflation for this report. The inflation adjusted HERO risk costs are multiplied by the actual number of risks resolved to get the total benefit per resolved risk. The total program costs for the Healthways Lifestyle Management 6-Month programs are then compared with the benefit savings to generate a forecasted first year ROI. The calculations can be seen in the following table:

Table B9: King County Lifestyle Management 6-Month 2007 Forecasted ROI

LM6 Compliant Risks Description	Actual Resolved	HERO Estimate	Starting Count	Risk Compliant	B.O.B. Compliant	Risk Cost	35% Tot Benefit	2007 ROI
Alcohol	14	$499	17	82.4%	65.8%	$694	$2,447	3.53
Arthritis	0	$2,766	5	0.0%	6.9%	$204	$0	0.00
CAD/CVD	0	$1,621	2	0.0%	0.2%	$82	$0	0.00
Cancer Prevention	1	$1,098	6	16.7%	10.4%	$245	$384	1.57
CHF	0	$7,988	0	0.0%	0.0%	$0	$0	N/A
Cholesterol	44	$1,098	481	9.1%	15.1%	$19,638	$16,913	0.86
Depression	2	$2,639	4	50.0%	7.2%	$163	$1,847	11.31
Diabetes	0	$1,903	27	0.0%	0.9%	$1,102	$0	0.00
Exercise	124	$384	179	69.3%	57.0%	$7,308	$16,666	2.28
Fatigue	0	$1,098	0	0.0%	2.0%	$0	$0	N/A
General Nutrition	15	$1,098	57	26.3%	30.7%	$2,327	$5,766	2.48
Hypertension	106	$442	180	58.9%	59.3%	$7,349	$16,404	2.23
Hypoglycemia	0	$1,305	0	0.0%	0.0%	$0	$0	N/A
Illness	1	$1,098	1	100.0%	12.0%	$41	$384	9.41
Life Satisfaction	1	$585	1	100.0%	56.4%	$41	$205	5.01
Osteoporosis	0	$1,098	2	0.0%	4.9%	$82	$0	0.00
Pulmonary Disease	0	$1,718	1	0.0%	3.9%	$41	$0	0.00
Safety	0	$1,098	0	0.0%	64.1%	$0	$0	N/A
Stress Management	14	$1,628	45	31.1%	22.3%	$1,837	$7,977	4.34
Tobacco Cessation	11	$507	12	91.7%	28.0%	$490	$1,950	3.98
Weight	263	$783	588	44.7%	37.1%	$24,007	$72,099	3.00
Wellness	6	$1,153	7	85.7%	63.5%	$286	$2,421	8.47
Total	602	Risks	1,615		Totals:	$65,938	$145,464	2.21
Percent Compliant:	37.28%	Participants	625					
Enrollment Cost:	$65,938	Average Risks/PIN	2.6					
Ave Cost/Participant:	$105.50	Mean HHT Cost/Risk	$40.83					
LM6 Participants:	625							

The 2007 ROI for the LM6 program is forecasted at 2.21. Note that the first year HERO risk benefit is discounted to 35% of the inflation adjusted benefit. This adjustment is based on a comparison of insurance benefits in 1996 and today. The comparison shows that previously there was less cost sharing by the employee. In addition, the HERO annual benefit cost is amortized over seven years, so the full financial impact of risk resolution is not felt in year one. The total enrollment cost for the 2007 program was $65,938 for an average cost per risk of $40.83. Of the 1615 risks identified, 602 (37.28%) were self-reported as resolved.

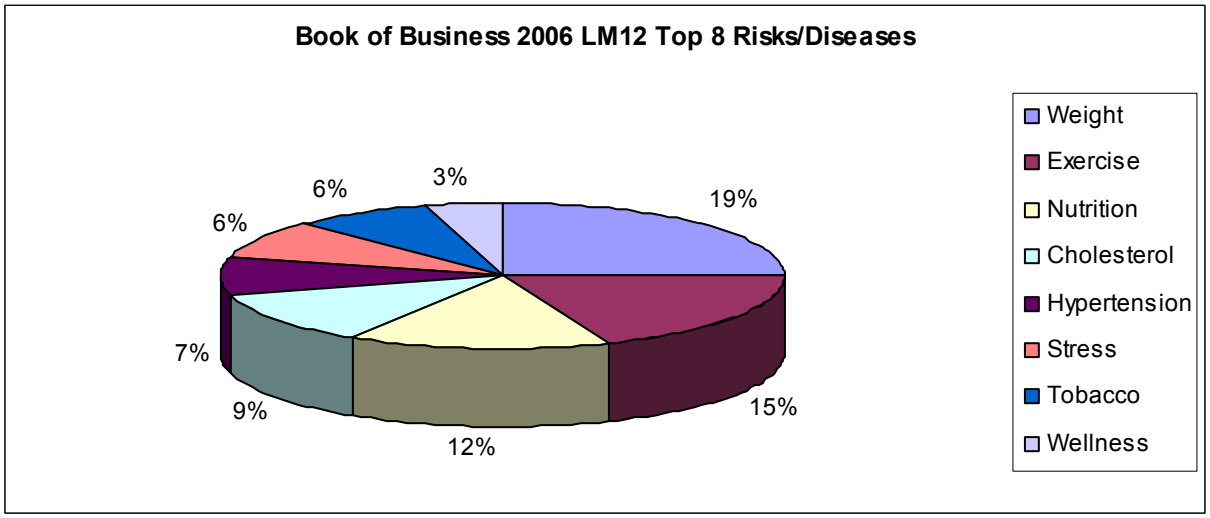
Using this same process for our book-of-business, the combined ROI for all Lifestyle Management 6-Month clients is 3.00.

C: Lifestyle Management 12-Month Program 2006 Cohort

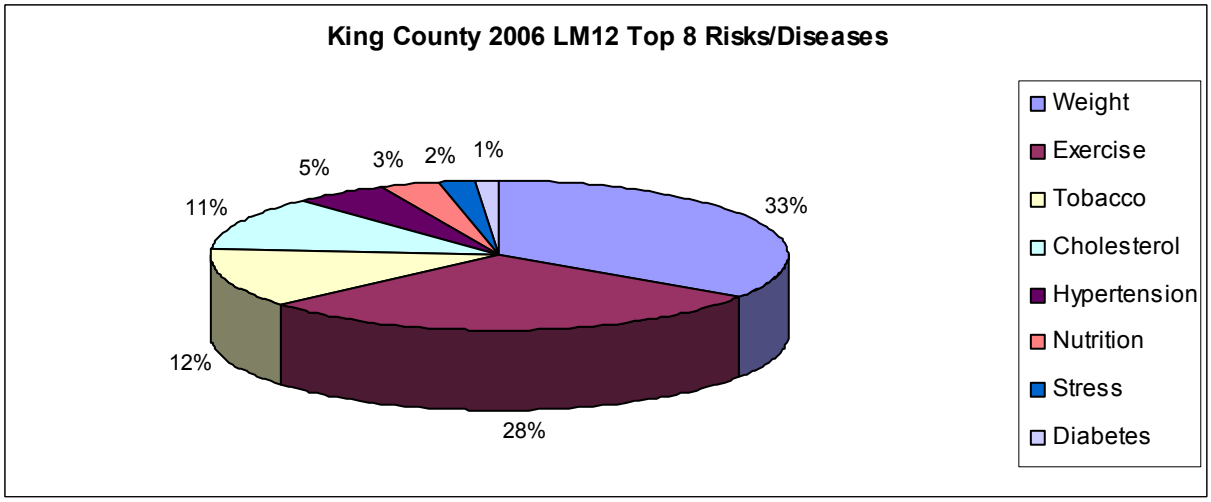
Risk Demographics

The risks are identified through the HRA, based on the stratification agreed upon with King County. In order to create a normative comparison, the King County population risk set is compared to the Healthways 2006 book-of-business risk set. The following charts show the most frequent risks reported in each population:

Graph C1: Top 2006 Book-of-Business Lifestyle Management 12-Month Risks

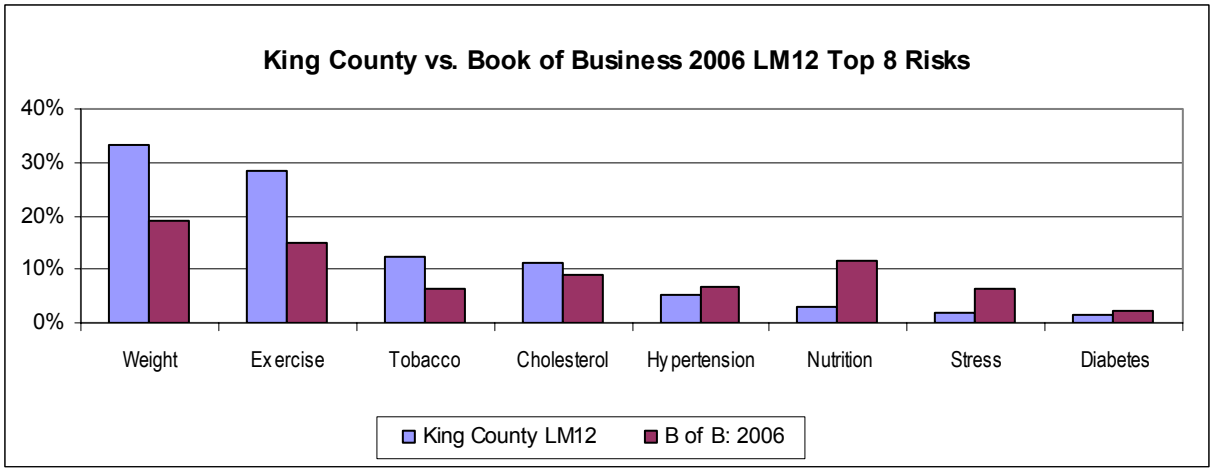


Graph C2: Top 2006 King County Lifestyle Management 12-Month Risks



The following chart shows a direct comparison between the King County enrolled population and the normative book-of-business population for the period:

Graph C3: King County vs. 2006 B-of-B Lifestyle Management 12-Month Risks



Graph C3 shows that the King County enrolled population differs from the typical Healthways client in its starting risk composition. Relative to the book-of-business data, the 2006 King County participants have a higher prevalence of weight, exercise, tobacco, and cholesterol risks. The King County participants also have lower than average hypertension, nutrition, stress, and diabetes risks. Overall, this group has 1.99 risks per participant on average. In comparison, the 2006 book-of-business average has 3.66 risks per participant. The average age of King County participants is 50.3 years compared to a book-of-business population average of 48.2 years.

Program Participation

Program participation is also compared to our book-of-business data. Unlike starting risk data, participation is time sensitive. The programs involving the 2006 book-of-business population are 97% concluded as of April 10, 2008. The counseling programs involving the King County 2006 cohort are 100% concluded as of April 10, 2008. The following tables show the eligibility and enrollment by gender, followed by percentages of participation.

Table C1: Eligibility by Gender

Prog Year	Gender	Eligible	Percent
2006	Female	4471	55.4%
2006	Male	3600	44.6%
2006	**Total**	**8071**	**100.0%**

More females than males were eligible for the lifestyle management program.

Table C2: Enrollment by Gender

Prog Year	Gender	Enrolled	Percent
2006	Female	4101	55.8%
2006	Male	3250	44.2%
2006	**Total**	**7351**	**100.0%**

King County enrollment by gender was nearly proportionate to eligibility.

Table C3: Enrollment Participation

Enrollment	LM12: 2006	BB: 2006
By Contact:	99%	67%
By Eligible:	91%	46%

Enrollment by contact is the percentage of eligible people Healthways enrolls of those who are actually reached by an advisor. In the case of King County, 99% of those individuals contacted enrolled in the program, leaving 1% who declined. Enrollment by eligible is the percentage of people who enroll out of the entire eligible population. 91% of the total eligible population enrolled in the program. The enrollment ratio is above the typical Healthways client according to comparable data from the book-of-business. The next table shows the current status of the enrolled population.

Table C4: Current Enrollment Status

Participation	LM12: 2006	BB: 2006
Completers:	18%	27%
Inactives:	18%	42%
Drop Outs:	14%	9%
Admin Closure:	50%	19%
Still Active:	0%	3%

Note that for King County there were 50% of members who were “Administratively Closed”. This is due to the surcharge timelines and the requirement to close participants out at the end of

the year. Since the participants were active for the duration of the program, they should be considered complete.

The next table shows the progress made in reducing risks.

Table C5: Current Risk Reduction Status

Outcomes	LM12: 2006	BB: 2006
Impr or Elim 0 risks	22%	30%
Impr or Elim 1 risks	49%	33%
Impr or Elim 2 risks	24%	22%
Impr or Elim 3 risks	4%	10%
Impr or Elim >3 risks	1%	5%

The King County program participants had more success in reducing risks over the course of the program compared with the book-of-business. This is evident when comparing the percentage of each cohort that improved or eliminated no risk. In the King County cohort, 78% of the starting participants improved or eliminated one or more risks. In the book-of-business cohort, 70% of the starting participants improved or eliminated one or more risks.

The final table in this section accounts for everyone who was eligible for a Lifestyle Management 12 program. This table shows their 2006 program end disposition along with their call and advising statistics.

Table C6: Current Status and Process Statistics

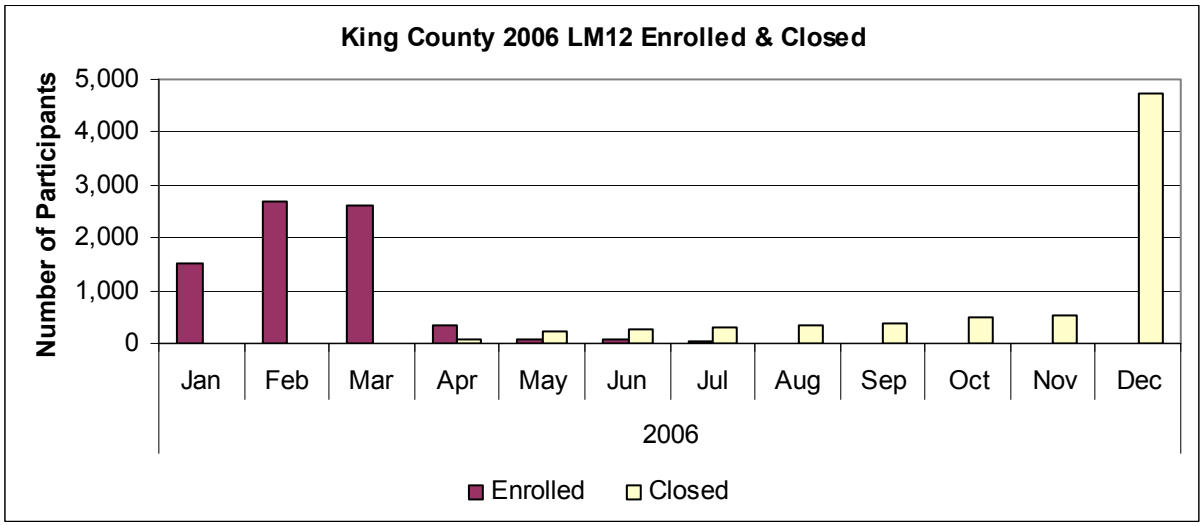
Most Current Outcome Description	Count Of Eligible	Average Total Call Attempts	Average POE Call Attempts	Average Advising Sessions	Average Active Months
Deceased - Post-enrollment	6	7.0	4.0	2.2	3.7
Deceased - Pre-enrollment	2	4.5	0.0	0.0	0.0
Declined	88	2.9	0.0	0.0	0.0
DropOut	1,034	8.0	5.5	3.2	5.1
FinalSession	1,346	13.2	10.5	5.9	9.5
Inactive	1,319	13.7	10.4	2.7	7.3
IS Closure - Post-enrollment	3,317	12.9	10.1	4.4	10.0
IS Closure - Pre-enrollment	128	1.1	0.0	0.0	0.0
No Longer Eligible	103	8.6	5.5	2.2	5.0
Not Eligible	28	3.8	0.0	0.0	0.1
Supervisor Closure - Post-enrollment	10	6.8	4.2	1.3	5.1
Supervisor Closure - Pre-enrollment	38	1.4	0.1	0.0	0.1
Terminated	380	5.5	0.1	0.0	0.0
Wrong Number - Post-enrollment	210	8.9	5.9	2.4	5.6
Wrong Number - Pre-enrollment	57	3.2	0.0	0.0	0.0
Total / Average	**8,066**	**11.5**	**8.5**	**3.7**	**7.8**

Note: PRE = Pre-Enrollment, POE = Post-Enrollment

This table accounts for all eligible employees. "Drop out" refers to those employees who, after enrollment, decide to discontinue the service. "Inactive" refers to those program participants who can no longer be reached. "Final Session" is the ideal completion of a program. Normally,

the best process and outcome statistics will be associated with the program completers. The next graph shows the enrollment over time.

Graph C4: Enrolled & Closed by Month



Note: 0% of the participants are still active in King County program as of April 10, 2008.

Outcomes to Date

Healthways uses an algorithm to quantify health risks for participants in order to evaluate program outcomes. A Healthy Behavior Score (HBS) is assigned to every participant as a result of his or her HRA. The Healthways algorithm to quantify health risks is as follows; a healthy person with no risk factors has an HBS of 100. Each health risk is worth 10 points, and each risk is deducted from the healthy score of 100. As a program continues, participants can gain points if a risk factor is resolved, controlled, or improved. If a risk is resolved or controlled, it is no longer counted in the calculation and the participant gains 10 points. If a risk is improved, i.e., progress is made toward risk resolution, half a risk (5 points) is returned to the participant's current HBS. For example, a participant (PIN) with 4 risks will have a starting HBS of 60. If that participant resolves one risk and improves another, his or her HBS becomes 75.

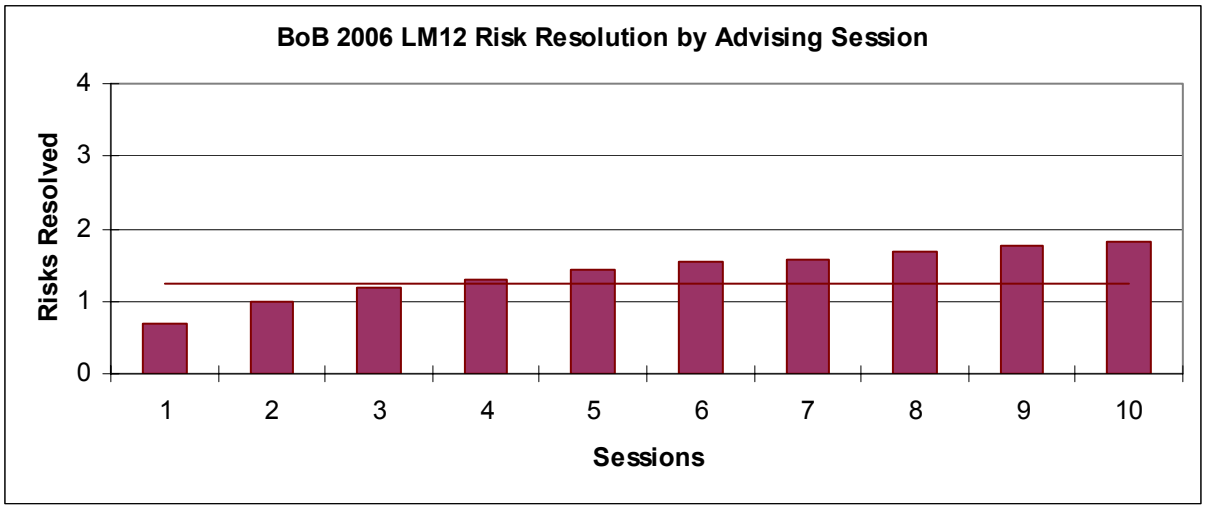
Since medical and productivity costs have a high correlation with the number of personal risks, a reduction in the number and severity of risks in a population should reduce or avert future cost increases. Likewise, if the mean HBS of a population is increasing, it means that the individuals in that population are making positive differences in health choices. Those positive changes should then result in medical claims savings and productivity increases. In the Lifestyle Management program, there is an opportunity to gather risk assessment data with every phone call, thereby providing multiple measurement points and intervention opportunities. The historical data can then be analyzed to show changes in HBS. Tables C7 and C8 examine the 2006 historical LM12 data as it relates to each advising session.

Table C7: Book-of-Business 2006 LM12 Healthy Behavior Score by Advising Session

Advising Sessions	Mean of Start HBS	Mean of Final HBS	Risk Reduction	Count Of PIN	Percent of PINs
1	62.19	69.05	0.69	10232	18%
2	62.29	72.31	1.00	8958	16%
3	64.24	76.01	1.18	7393	13%
4	64.58	77.56	1.30	6873	12%
5	63.38	77.65	1.43	6422	12%
6	61.69	77.10	1.54	5657	10%
7	59.97	75.80	1.58	4160	8%
8	57.43	74.38	1.69	2740	5%
9	56.77	74.46	1.77	1530	3%
10	56.18	74.27	1.81	756	1%
4.05	62.16	74.43	**1.23**	55359	100%

For the book-of-business all enrollee Lifestyle Management population, the average number of advising sessions is 4.05 and participants have eliminated 1.23 risks on average. Note that the individuals with the most risk factors, as indicated by a lower starting HBS, stay in the program the longest and see the greatest change in HBS. The number of advising sessions a participant receives is highly correlated with how many risks he or she has. Most people end the program when they have achieved a score in the 70-to-80 HBS range, regardless of the number of advising sessions required to achieve that result. While these individuals are improved from their starting point, the ideal situation is to keep them to program completion. The next graph shows the book-of-business HBS gain by advising sessions.

Graph C5: 2006 LM12 Book-of-Business Risk Resolution by Advising Session



The HBS gain by advising sessions shows a linear increase in the HBS through ten sessions. As the number of advising sessions increase, the number of risks reduced increases. However, there is an inverse relationship between the number of sessions and the starting HBS. The participants with the most risks stay in the program the longest, and thus have more opportunity to see greater risk reduction.

The next table shows the difference between starting and final HBS for the King County LM12 2006 cohort.

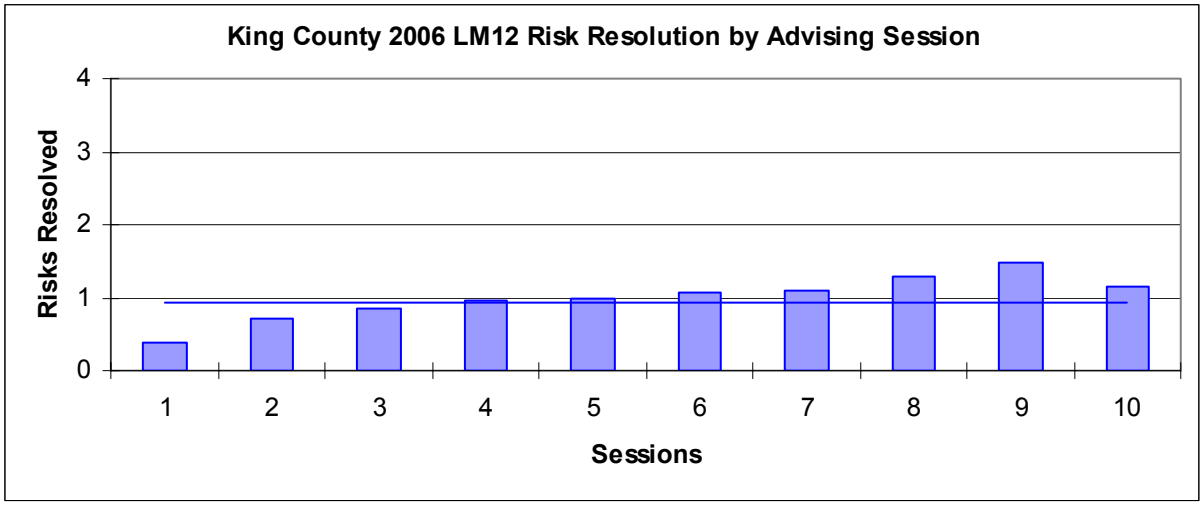
Table C8: King County 2006 LM12 Healthy Behavior Score by Advising Session

Advising Sessions	Mean of Start HBS	Mean of Final HBS	Risk Reduction	Count Of PIN	Percent of PINs
1	80.43	84.13	0.37	208	3%
2	80.95	88.21	0.73	1007	14%
3	80.47	89.00	0.85	1628	22%
4	80.29	89.77	0.95	1600	22%
5	79.90	89.87	1.00	1349	19%
6	79.00	89.78	1.08	943	13%
7	79.28	90.31	1.10	375	5%
8	76.77	89.55	1.28	133	2%
9	75.17	90.00	1.48	29	0%
10	72.00	83.50	1.15	10	0%
4.12	80.03	89.25	**0.92**	7290	100%

Of the total population of participants who have received advising, participants received an average of 4.12 advising sessions. With a starting HBS average of 80.03, the King County population has fewer starting risks than our 2006 book-of-business average of 62.16. The King County group studied achieved .92 risks reduced per participant compared to 1.23 for the book-of-business.

The King County Lifestyle Management risk reduction is shown in the next graph.

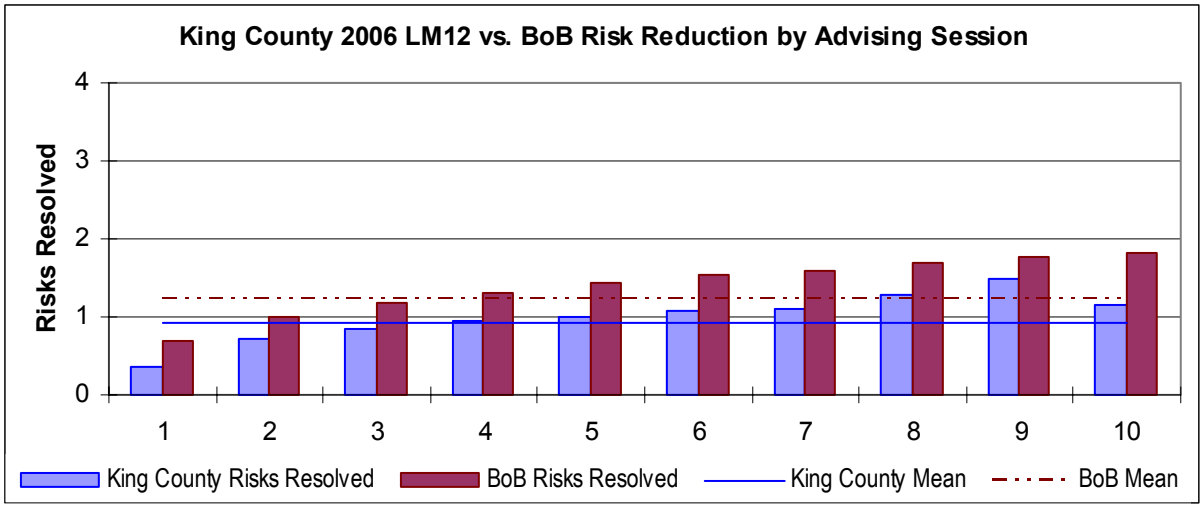
Graph C6: King County 2006 LM12 Risk Reduction by Advising Session



Participants received maximum benefit with ten advising sessions, with at least six advising sessions needed to achieve above average results. It is likely that more risk reductions would have been recorded had the participants received their final advising sessions.

The final graph for this section compares risk resolution by advising session for both cohorts.

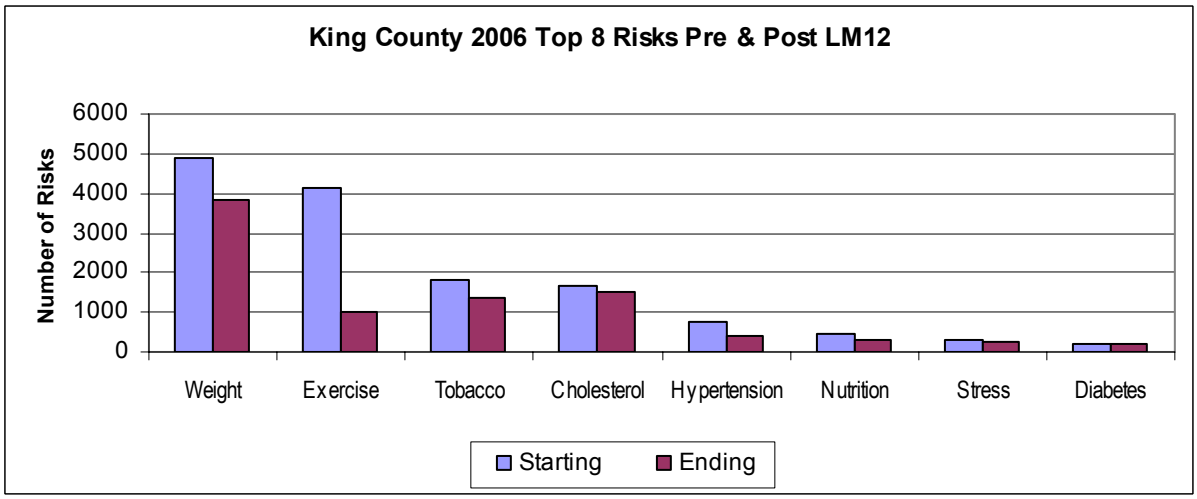
Graph C7: King County 2006 LM12 versus B-of-B Risk Reduction by Advising Session



Participants in both the King County and the book-of-business cohorts achieved benefits congruently throughout the program cycle.

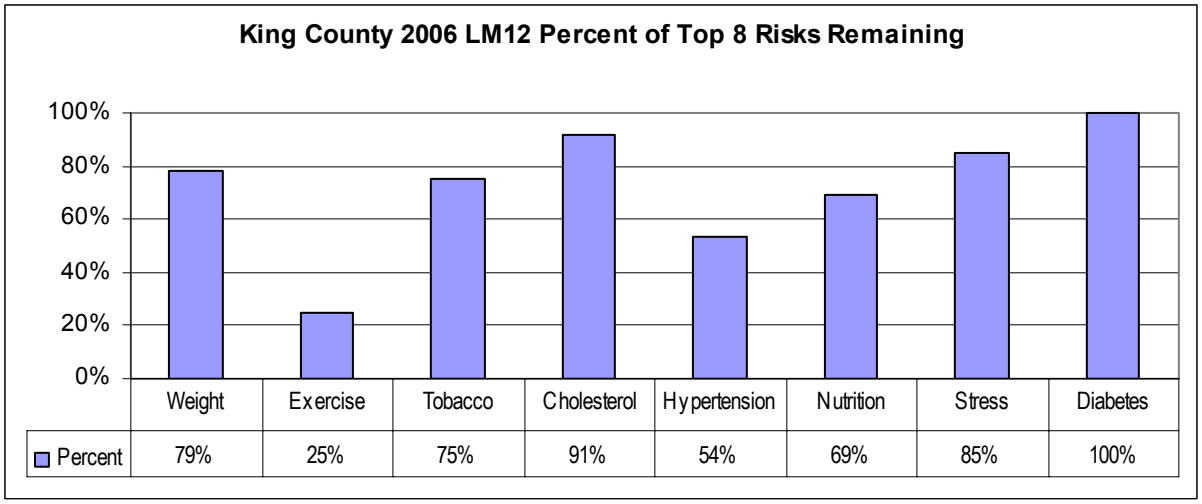
The following graph shows the success of the risk resolution of the most frequent risks identified in the King County 2006 cohort. The following graph shows both the starting and ending number of participants in each risk category. The ending value is the number of participants who still have the risk as of the time they concluded their final advising sessions.

Graph C8: King County 2006 Top 8 Risks before and after Lifestyle Management 12



Participants were successful in eliminating or reducing the following risks categories: weight, exercise, tobacco, cholesterol, hypertension, nutrition, and stress. Another way to view the risk elimination data is in terms of the percentage of risks remaining. That view is displayed in the next graph.

Graph C9: King County 2006 LM12 Top 8 Risks Percent of Risks Remaining



Exercise achieved the best results, followed by hypertension, nutrition, tobacco, weight, stress, cholesterol, and diabetes.

Return on Investment Forecast

According to a recent news release by Dee Edington, PhD, a leading researcher from the University of Michigan Health Management Research Center:

- As health risks rise, medical costs rise - and as health risks go down, medical costs go down. Costs tend to rise or fall incrementally based on the number of health risks. Research consistently demonstrates these trends.
- A population that is low-risk may not remain low-risk. According to Edington's research, 20% - 40% of an employee population is likely to move to higher-risk status within 1 year without low-risk maintenance programs.
- Prevention vs. Intervention: Maintaining low risk may be as good or better an investment than intervening with high risks. Investing in prevention programs to maintain low risks is a better financial investment than high risk intervention because the prevention provides greater long-term return.

The model used for the return on investment forecast is based on the research done by the Health Enhancement Research Organization (HERO). HERO is a national, nonprofit, coalition or organizations that facilitate research impacting healthcare, of which Healthways is a longtime member. In a 1997 study, HERO determined the cost of a particular risk using a large database of individuals tracked over three years. The 1996 dollars associated with each risk have been adjusted for medical inflation for this report. The inflation adjusted HERO risk costs are multiplied by the actual number of risks resolved to get the total benefit per resolved risk. The total program costs for the Healthways Lifestyle Management programs are then compared with the benefit savings to generate a forecasted first year ROI. The calculations can be seen in the following table:

Table C9: King County Lifestyle Management 12-Month 2006 Forecasted ROI

LM12 Compliant Risks Description	Actual Resolved	HERO Estimate	Starting Count	Risk Compliant	B.O.B. Compliant	Risk Cost	35% Tot Benefit	2006 ROI
Alcohol	71	$471	118	60.2%	50.6%	$7,242	$11,697	1.62
Arthritis	9	$2,607	64	14.1%	5.8%	$3,928	$8,212	2.09
CAD/CVD	6	$1,528	41	14.6%	3.8%	$2,516	$3,209	1.28
Cancer Prevention	8	$1,035	47	17.0%	12.5%	$2,885	$2,898	1.00
CHF	0	$7,528	2	0.0%	5.7%	$123	$0	0.00
Cholesterol	143	$1,035	2265	6.3%	10.7%	$139,011	$51,807	0.37
Depression	19	$2,487	67	28.4%	8.7%	$4,112	$16,542	4.02
Diabetes	49	$1,794	315	15.6%	6.6%	$19,333	$30,766	1.59
Exercise	3097	$362	4877	63.5%	47.7%	$299,319	$392,311	1.31
Fatigue	3	$1,035	15	20.0%	4.8%	$921	$1,087	1.18
General Nutrition	140	$1,035	917	15.3%	23.1%	$56,280	$50,720	0.90
Hypertension	353	$417	1196	29.5%	46.2%	$73,403	$51,487	0.70
Hypoglycemia	0	$1,230	5	0.0%	1.3%	$307	$0	0.00
Illness	12	$1,035	48	25.0%	8.5%	$2,946	$4,347	1.48
Life Satisfaction	3	$551	15	20.0%	43.0%	$921	$579	0.63
Osteoporosis	4	$1,035	16	25.0%	3.4%	$982	$1,449	1.48
Pulmonary Disease	4	$1,620	26	15.4%	5.3%	$1,596	$2,268	1.42
Safety	2	$1,035	5	40.0%	46.2%	$307	$725	2.36
Stress Management	43	$1,534	464	9.3%	17.6%	$28,477	$23,092	0.81
Tobacco Cessation	450	$477	1890	23.8%	19.6%	$115,996	$75,189	0.65
Weight	1044	$738	5254	19.9%	22.6%	$322,457	$269,749	0.84
Wellness	43	$1,087	125	34.4%	45.3%	$7,672	$16,353	2.13
Total	5503	Risks	17,772		Totals:	$1,090,733	$1,014,486	0.93

Percent Compliant:	30.96%	Participants	7,345
Enrollment Cost:	$1,090,733	Average Risks/PIN	2.4
Ave Cost/Participant:	$148.50	Mean HHT Cost/Risk	$61.37
LM12 Participants:	7,345		

The 2006 ROI for the LM12 program is forecasted at .93. Note that the first year HERO risk benefit is discounted to 35% of the inflation adjusted benefit. This adjustment is based on a comparison of insurance benefits in 1996 and today. That comparison shows that previously there was less cost sharing by the employee. In addition, the HERO annual benefit cost is amortized over seven years, so the full financial impact of risk resolution is not felt in year one. The total enrollment cost for the 2006 program was $1,090,733 for an average cost per risk of $61.37. Of the 17,772 risks identified, 5503 (30.96%) were self-reported as resolved.

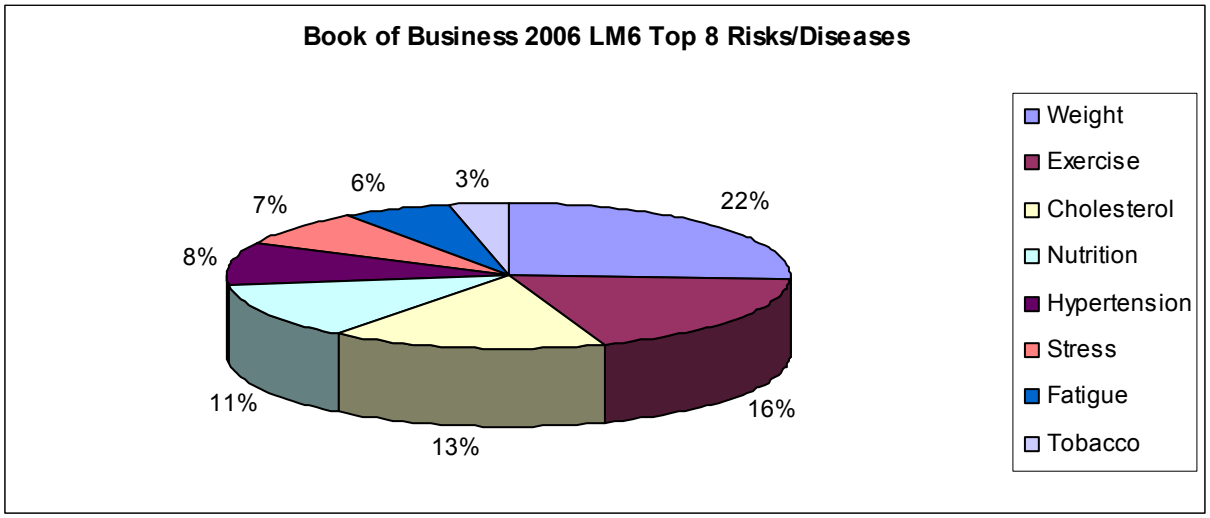
Using this same process for our book-of-business, the combined ROI for all Lifestyle Management 12 clients is 1.73.

D: Lifestyle Management 6-Month Program 2006 Cohort

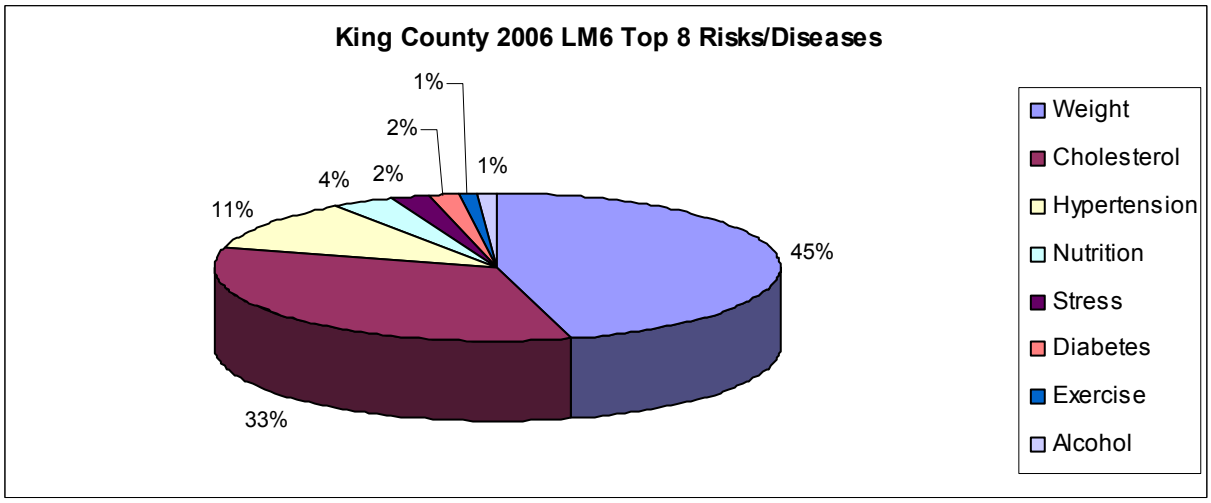
Risk Demographics

The risks are identified through the Health Risk Assessment, based on the stratification agreed upon with King County. In order to create a normative comparison, the King County population risk set is compared to the Healthways 2006 book-of-business risk set. The following charts show the most frequent risks in each population:

Graph D1: Top 2006 Book-of-Business Lifestyle Management 6-Month Risks

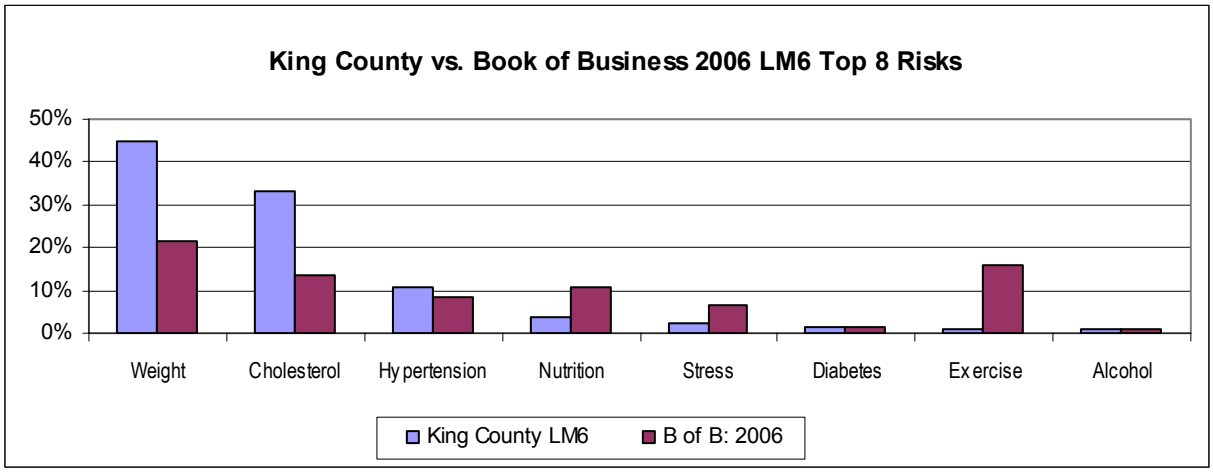


Graph D2: Top 2006 King County Lifestyle Management 6-Month Risks



The following chart shows a direct comparison between the King County enrolled population and the normative book-of-business population for the period:

Graph D3: King County vs. 2006 B-of-B Lifestyle Management 6-Month Risks



Graph D3 shows that the King County enrolled population differs from the typical Healthways client in its starting risk composition. Relative to the book-of-business data, the 2006 King County participants have a higher prevalence of weight, cholesterol, and hypertension risks. The King County participants also have lower than average nutrition, stress, and exercise risks. Overall, this group has 2.05 risks per participant on average. In comparison, the 2006 book-of-business average has 3.26 risks per participant. The average age of King County participants is 53.2 years, compared to a book-of-business population average age of 46.5 years.

Program Participation

Program participation is also compared to our book-of-business data. Unlike starting risk data, participation is time sensitive. The programs involving the 2006 book-of-business population are 99% concluded as of end of April 10, 2008. The counseling programs involving the King County 2006 cohort are 100% concluded as of April 10, 2008. The following tables show eligibility and enrollment by gender, followed by percentages of participation.

Table D1: Eligibility by Gender

Prog Year	Gender	Eligible	Percent
2006	Female	343	38.6%
2006	Male	545	61.4%
2006	**Total**	**888**	**100.0%**

More males than females were eligible for the Lifestyle Management 6-Month program.

Table D2: Enrollment by Gender

Prog Year	Gender	Enrolled	Percent
2006	Female	329	38.7%
2006	Male	522	61.3%
2006	**Total**	**851**	**100.0%**

King County enrollment by gender was nearly proportionate to eligibility.

Table D3: Enrollment Participation

Enrollment	LM6: 2006	BB: 2006
By Contact:	99%	66%
By Eligible:	96%	45%

Enrollment by contact is the percentage of eligible people Healthways enrolls of those who are actually reached by an advisor. In the case of King County, 99% of those individuals contacted enrolled in the program, leaving 1% who declined. Enrollment by eligible is the percentage of people who enroll out of the entire eligible population. 96% of the total eligible population enrolled in the program. The enrollment ratio is above the typical Healthways client according to comparable data from the book-of-business. The next table shows the current status of the enrolled population.

Table D4: Current Enrollment Status

Participation	LM6: 2006	BB: 2006
Completers:	79%	57%
Inactives:	6%	32%
Drop Outs:	10%	6%
Admin Closure:	4%	8%
Still Active:	0%	1%

Note that for King County there were 4% of members who were "Administratively Closed". This is due to the surcharge timelines and the requirement to close participants out at the end of the year. Since the participants were active for the duration of the program, they should be considered complete.

The next table shows the progress made in reducing risks.

Table D5: Current Risk Reduction Status

Outcomes	LM6: 2006	BB: 2006
Impr or Elim 0 risks	23%	28%
Impr or Elim 1 risks	58%	38%
Impr or Elim 2 risks	17%	24%
Impr or Elim 3 risks	1%	8%
Impr or Elim >3 risks	0%	2%

The King County program participants had average success in reducing risks over the course of the program compared with the book-of-business. This is evident when comparing the percentage of each cohort that improved or eliminated no risk. In the King County cohort, 76% of the starting participants improved or eliminated one or more risk factors. In the book-of-business cohort, 72% of the starting participants improved or eliminated one or more risks.

The final table in this section accounts for everyone who was eligible for a Lifestyle Management 6-Month program. This table shows their 2006 program end disposition along with their call and advising statistics.

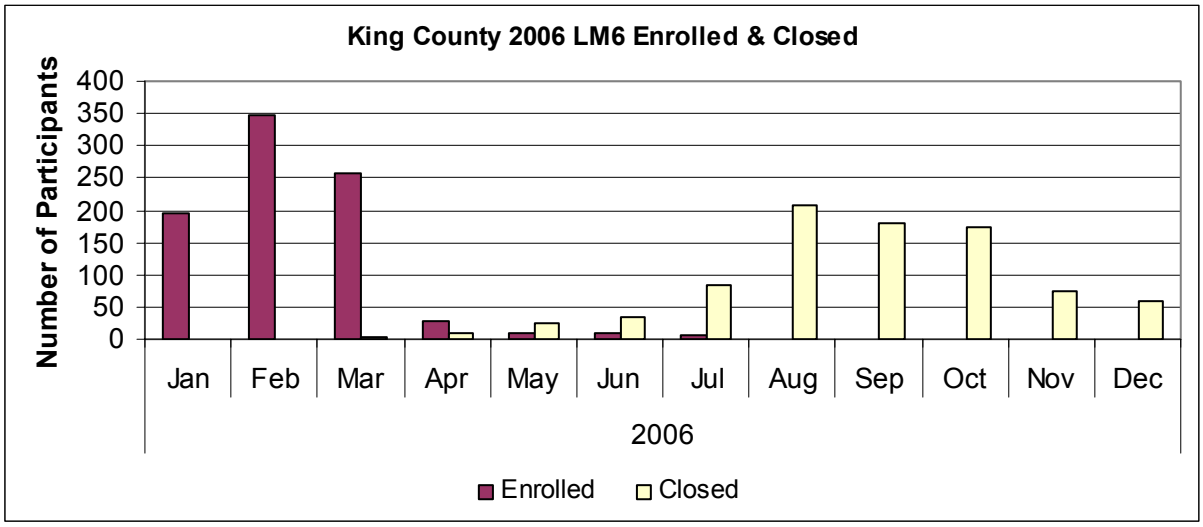
Table D6: Current Status and Process Statistics

Most Current Outcome Description	Count Of Eligible	Average Total Call Attempts	Average POE Call Attempts	Average Advising Sessions	Average Active Months
Declined	6	3.3	0.0	0.0	0.0
DropOut	88	7.8	5.2	2.9	3.9
FinalSession	673	10.2	7.7	4.2	6.8
Inactive	53	14.8	11.6	2.5	8.0
IS Closure - Post-enrollment	26	12.2	8.9	2.8	8.7
IS Closure - Pre-enrollment	9	1.0	0.0	0.0	0.0
No Longer Eligible	2	9.0	6.5	1.5	4.6
Not Eligible	3	2.3	0.0	0.0	0.0
Supervisor Closure - Post-enrollment	1	7.0	4.0	2.0	1.9
Supervisor Closure - Pre-enrollment	2	1.0	0.0	0.0	0.0
Terminated	16	5.3	0.3	0.1	0.1
Wrong Number - Post-enrollment	7	6.4	3.6	1.4	3.8
Wrong Number - Pre-enrollment	1	6.0	0.0	0.0	0.0
Total / Average	**887**	**10.0**	**7.4**	**3.8**	**6.3**

Note: PRE = Pre-Enrollment, POE = Post-Enrollment

This table accounts for all eligible employees. "Drop out" refers to those employees who, after enrollment, decide to discontinue the service. "Inactive" refers to those program participants who can no longer be reached. "Final Session" is the ideal completion of a program. Normally, the best process and outcome statistics will be associated with the program completers. The next graph shows the enrollment over time.

Graph D4: Enrolled & Closed by Month



Note: 0% of the participants are still active in this program as of April 10, 2008.

Outcomes to Date

Healthways uses an algorithm to quantify health risks for participants in order to evaluate program outcomes. A Healthy Behavior Score (HBS) is assigned to every participant as a result of his or her HRA. The Healthways algorithm to quantify health risks is as follows; a healthy person with no risk factors has an HBS of 100. Each health risk is worth 10 points, and each risk is deducted from the healthy score of 100. As a program continues, participants can gain points if a risk factor is resolved, controlled, or improved. If a risk is resolved or controlled, it is no longer counted in the calculation and the participant gains 10 points. If a risk is improved, i.e., progress is made toward risk resolution, half a risk (5 points) is returned to the participant's current HBS. For example, a participant (PIN) with 4 risks will have a starting HBS of 60. If that participant resolves one risk and improves another, his or her HBS becomes 75.

Since medical and productivity costs have a high correlation with the number of personal risks, a reduction in the number and severity of risks in a population should reduce or avert future cost increases. Likewise, if the mean HBS of a population is increasing, it means that the individuals in that population are making positive differences in health choices. Those positive changes should then result in medical claims savings and productivity increases. In the Lifestyle Management 6-Month program, there is an opportunity to gather risk assessment data with every phone call, thereby providing multiple measurement points and intervention opportunities. The historical data can then be analyzed to show changes in HBS. Tables D7 and D8 examine the 2006 historical LM6 data as it relates to each advising session.

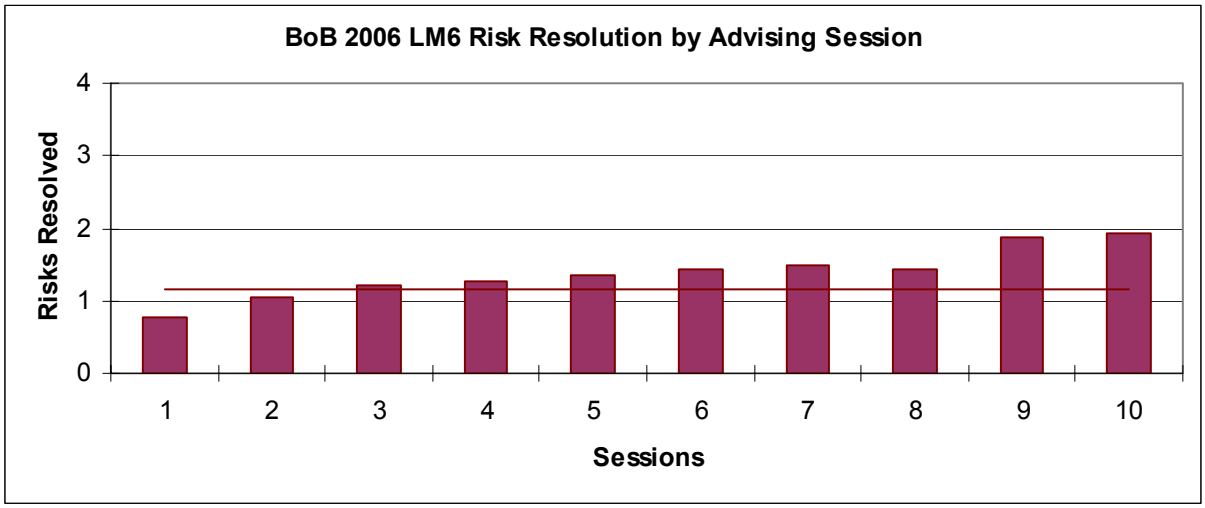
Table D7: Book-of-Business 2006 LM6 Healthy Behavior Score by Advising Session

Advising Sessions	Mean of Start HBS	Mean of Final HBS	Risk Reduction	Count Of PIN	Percent of PINs
1	67.03	74.75	0.77	1569	17%
2	66.83	77.23	1.04	1553	17%
3	67.82	79.96	1.21	1845	20%
4	68.88	81.43	1.26	2155	24%
5	67.99	81.61	1.36	1426	16%
6	66.56	80.88	1.43	427	5%
7	65.88	80.76	1.49	85	1%
8	68.95	83.16	1.42	19	0%
9	40.00	58.75	1.88	4	0%
10	44.29	63.57	1.93	7	0%
3.25	67.66	79.21	**1.16**	9106	100%

For the book-of-business all enrollee Lifestyle Management 6-Month population, the average number of advising sessions is 3.25 and participants have eliminated 1.16 risks on average. Note that the individuals with the most risk factors, as indicated by a lower starting HBS, stay in the program the longest and see the greatest change in HBS. The number of advising sessions a participant receives is highly correlated with how many risks he or she has. Most people end the program when they have achieved a score in the 70-to-80 HBS range, regardless of the number of advising sessions required to achieve that result. While these individuals are improved from

their starting point, the ideal situation is to keep them to program completion. The next graph shows the book-of-business HBS gain by advising sessions.

Graph D5: 2006 LM6 Book-of-Business Risk Resolution by Advising Session



The HBS gain by advising sessions shows a linear increase in the HBS through ten sessions. As the number of advising sessions increase, the number of risks reduced increases. However, there is an inverse relationship between the number of sessions and the starting HBS. The participants with the most risks stay in the program the longest, and thus have more opportunity to see greater risk reduction.

The next table shows the difference between starting and final HBS for the King County LM6 2006 cohort.

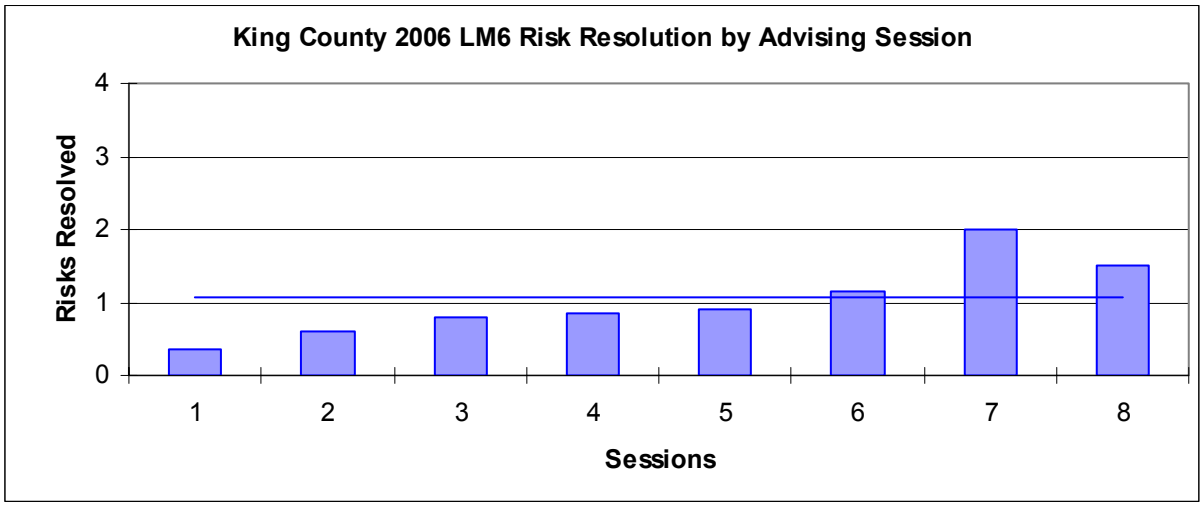
Table D8: King County 2006 LM6 Healthy Behavior Score by Advising Session

Advising Sessions	Mean of Start HBS	Mean of Final HBS	Risk Reduction	Count Of PIN	Percent of PINs
1	81.00	84.50	0.35	10	2%
2	80.54	86.62	0.61	74	12%
3	79.65	87.54	0.79	171	27%
4	79.37	87.88	0.85	349	56%
5	78.92	88.00	0.91	203	33%
6	78.33	89.72	1.14	36	6%
7	80.00	100.00	2.00	1	0%
8	75.00	90.00	1.50	2	0%
3.78	75.50	86.29	**1.08**	624	100%

Of the total population of participants who have received advising, participants received an average of 3.78 advising sessions. With a starting HBS average of 75.50, the King County population has slightly fewer starting risks than our 2006 book-of-business average of 67.66. The King County group studied achieved 1.08 risks reduced per participant compared to 1.16 for the book-of-business.

The King County Lifestyle Management 6-Month risk reduction is shown in the next graph.

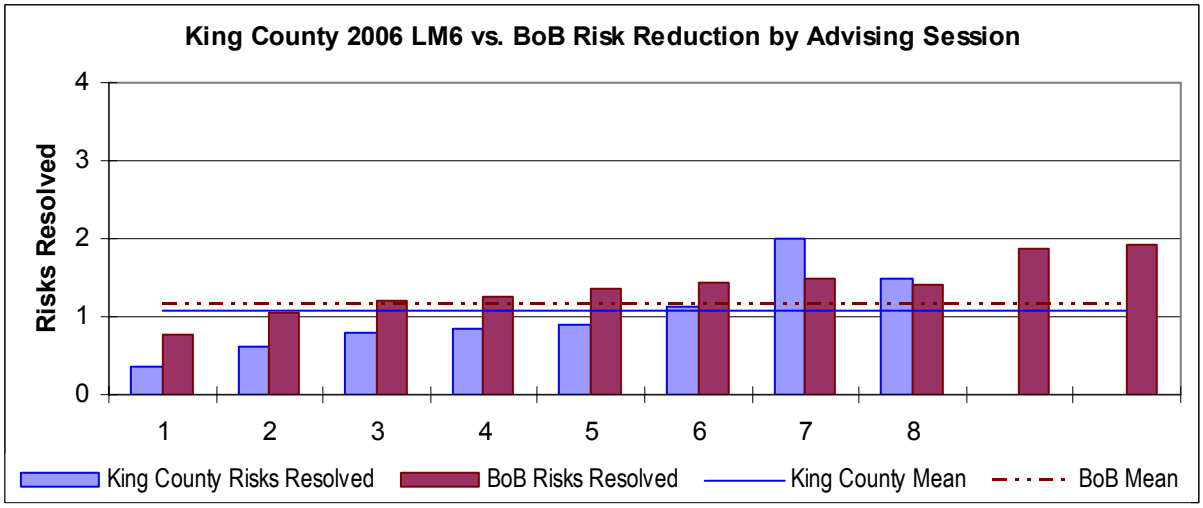
Graph D6: King County 2006 LM6 Risk Reduction by Advising Session



Participants received maximum benefit with eight advising sessions, with at least six advising sessions needed to achieve above average results. It is likely that more risk reductions would have been recorded had the participants received their final advising sessions.

The final graph for this section compares risk resolution by advising session for both cohorts.

Graph D7: King County 2006 LM6 versus B-of-B Risk Reduction by Advising Session

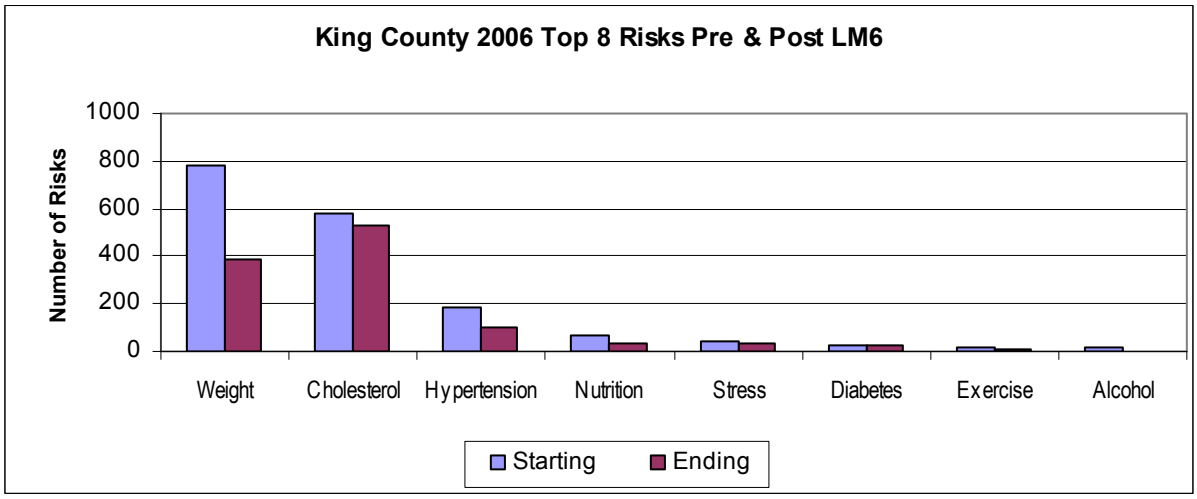


King County participants started with fewer risks, and resolved fewer risks on average compared to the book-of-business participants.

The following graph shows the success of risk resolution of the most frequent risks identified in the King County 2006 cohort. The following graph shows both the starting and ending number

of participant risks in each risk category. The ending value is the number of participants who still have the risk as of the time they concluded their final advising sessions.

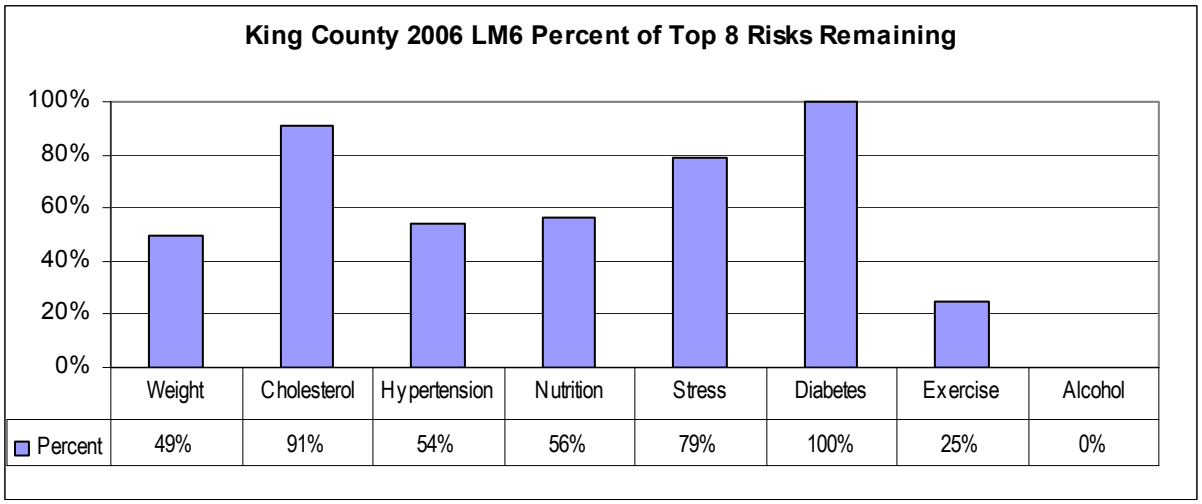
Graph D8: King County 2006 Top 8 Risks before and after LM 6-Month



Participants were successful in eliminating or reducing the following risk categories: weight, cholesterol, hypertension, nutrition, stress, exercise, and alcohol categories.

Another way to view the risk elimination data is in terms of the percentage of risks remaining. That view is displayed in the next graph.

Graph D9: King County 2006 LM 6-Month Top 8 Risks Percent of Risks Remaining



	Weight	Cholesterol	Hypertension	Nutrition	Stress	Diabetes	Exercise	Alcohol
Percent	49%	91%	54%	56%	79%	100%	25%	0%

Alcohol achieved the best results, followed by exercise, weight, hypertension, nutrition, stress, cholesterol, and diabetes risks.

Return on Investment Forecast

According to a recent news release by Dee Edington, PhD, a leading researcher from the University of Michigan Health Management Research Center:

- As health risks rise, medical costs rise - and as health risks go down, medical costs go down. Costs tend to rise or fall incrementally based on the number of health risks. Research consistently demonstrates these trends.
- A population that is low-risk may not remain low-risk. According to Edington's research, 20% - 40% of an employee population is likely to move to higher-risk status within 1 year without low-risk maintenance programs.
- Prevention vs. Intervention: Maintaining low risk may be as good or better an investment than intervening with high risks. Investing in prevention programs to maintain low risks is a better financial investment than high risk intervention because the prevention provides greater long-term return.

The model used for the return on investment forecast is based on the research done by the Health Enhancement Research Organization (HERO). HERO is a national, nonprofit, coalition of organizations that facilitate research impacting healthcare, of which Healthways is a longtime member. In a 1997 study, HERO determined the cost of a particular risk using a large database of individuals tracked over three years. The 1996 dollars associated with each risk have been adjusted for medical inflation for this report. The inflation adjusted HERO risk costs are multiplied by the actual number of risks resolved to get the total benefit per resolved risk. The total program costs for the Healthways Lifestyle Management 6-Month programs are then compared with the benefit savings to generate a forecasted first year ROI. The calculations can be seen in the following table:

Table D9: King County Lifestyle Management 6-Month 2006 Forecasted ROI

LM6 Compliant Risks Description	Actual Resolved	HERO Estimate	Starting Count	Risk Compliant	B.O.B. Compliant	Risk Cost	35% Tot Benefit	2006 ROI
Alcohol	19	$471	20	95.0%	59.9%	$877	$3,130	3.57
Arthritis	1	$2,607	7	14.3%	5.7%	$307	$912	2.97
CAD/CVD	0	$1,528	2	0.0%	1.1%	$88	$0	0.00
Cancer Prevention	0	$1,035	5	0.0%	17.0%	$219	$0	0.00
CHF	0	$7,528	0	0.0%	2.6%	$0	$0	N/A
Cholesterol	49	$1,035	602	8.1%	9.0%	$26,411	$17,752	0.67
Depression	1	$2,487	2	50.0%	10.5%	$88	$871	9.92
Diabetes	0	$1,794	36	0.0%	4.4%	$1,579	$0	0.00
Exercise	15	$362	173	8.7%	49.4%	$7,590	$1,900	0.25
Fatigue	0	$1,035	0	0.0%	2.6%	$0	$0	N/A
General Nutrition	28	$1,035	107	26.2%	25.4%	$4,694	$10,144	2.16
Hypertension	84	$417	214	39.3%	49.1%	$9,389	$12,252	1.30
Hypoglycemia	0	$1,230	0	0.0%	0.0%	$0	$0	N/A
Illness	0	$1,035	1	0.0%	5.2%	$44	$0	0.00
Life Satisfaction	0	$551	1	0.0%	38.3%	$44	$0	0.00
Osteoporosis	0	$1,035	1	0.0%	3.8%	$44	$0	0.00
Pulmonary Disease	1	$1,620	3	33.3%	3.9%	$132	$567	4.31
Safety	0	$1,035	0	0.0%	54.4%	$0	$0	N/A
Stress Management	8	$1,534	47	17.0%	13.7%	$2,062	$4,296	2.08
Tobacco Cessation	1	$477	16	6.3%	17.9%	$702	$167	0.24
Weight	398	$738	794	50.1%	42.8%	$34,835	$102,835	2.95
Wellness	6	$1,087	13	46.2%	49.6%	$570	$2,282	4.00
Total	611	Risks	2,044		Totals:	$89,675	$157,109	1.75

Percent Compliant:	29.89%	Participants	850
Enrollment Cost:	$89,675	Average Risks/PIN	2.4
Ave Cost/Participant:	$105.50	Mean HHT Cost/Risk	$43.87
LM6 Participants:	850		

The 2006 ROI for the LM6 program is forecasted at 1.75. Note that the first year HERO risk benefit is discounted to 35% of the inflation adjusted benefit. This adjustment is based on a comparison of insurance benefits in 1996 and today. The comparison shows that previously there was less cost sharing by the employee. In addition, the HERO annual benefit cost is amortized over seven years, so the full financial impact of risk resolution is not felt in year one. The total enrollment cost for the 2006 program was $89,675 for an average cost per risk of $43.87. Of the 2,044 risks identified, 611 (29.89%) were self-reported as resolved.

Using this same process for our book-of-business, the combined ROI for all Lifestyle Management 6-Month clients is 2.57.

E: King County Overall Program Comparison: 2007

Program Participation: 2007

Table E1: King County Program Participation

Program Participation	2006		2007		Totals To Date
	LM-12	LM-6	LM-12	LM-6	
# of Eligible	8,071	888	6,719	640	16,318
# of Enrolled	7,351	851	6,193	625	15,020
% of Eligible Enrolled	91%	96%	92%	98%	92%
% Still Active	0%	0%	0%	0%	0%

Risk Reduction: 2007

Table E2: King County Risk Change

Risk Change	2006		2007		Totals To Date
	LM-12	LM-6	LM-12	LM-6	
# Starting Risks	14,612	1,748	14,100	1,529	31,989
# Ending Risks	9,223	1,139	8,339	931	19,632
# Risks Resolved	5,389	609	5,761	598	12,357
% Risks Resolved	37%	35%	41%	39%	39%
Starting Risks/Person	1.99	2.05	2.28	2.45	2.13
Ending Risks/Person	1.25	1.34	1.35	1.49	1.31
Risk Reduction/Person	0.92	1.08	1.10	1.08	1.01
Av. Advising Sessions	4.12	3.78	3.88	3.78	3.99

Return on Investment Forecast: 2007

Table E3: King County Total ROI

Total ROI	2006		2007		Totals To Date
	LM-12	LM-6	LM-12	LM-6	
Enrollment Cost	$1,090,733	$89,675	$918,770	$65,938	$2,165,115
Estimated Benefit	$1,014,486	$157,109	$1,187,586	$145,464	$2,504,645
Year 1 ROI Forecast	0.93	1.75	1.29	2.21	1.16

The LM-6 programs generate the best ROI as it is less costly to resolve the risks in its population.
Note: ROI forecast as of April 10, 2008.

Recommendations

Recommendations are being given on July 15, 2008 after completing the 3rd incentive period with the King County Healthy Incentives program.

The second year results indicate that the incentive structure designed and implemented by King County is capable of yielding greater than 90% participation in the wellness assessment and individual action plan. Key to the success of this program has been a very committed and dedicated benefits team. Their continuous communications have created an unprecedented sense of awareness among their population.

2010 Planning

Healthways would like to explore further with King County our vision for the 2010 King County Healthy Incentives Program. Some of the recommended program features would include:

- Integrated Wellness Portal
  - Dynamic online portal which includes such features as:
    - Virtual Trainer
    - Meal Planners
    - Helpful expert advice
    - Online coaching
    - Personal activity trackers
    - Etc.
  - This site would be ideal as a minimum requirement for all employees and spouses/domestic partners
- Healthways Wellness Assessment
  - The online assessment would reside on the Integrated Wellness Portal
  - For offline users, we have the ability to deliver IVR
- Quitnet Comprehensive
  - Since smoking was one of King County's top risks, a comprehensive tobacco cessation progam utilizing phone, web and nicotine replacement therapy would yield a substantial return on investment
- Weight Comprehensive
  - Since weight management was the highest risk, a focused weight management program utilizing phone, web and Alli OTC therapy would yield a substantial return on investment
- For those that qualified with health risks outside of tobacco use and/or weight management, a Lifestyle management program would be provided.

Healthways looks forward to working with King County as their strategic wellness partner for years to come.