BlueCross BlueShield Association

An Association of Independent Blue Cross and Blue Shield Plans

Harvard Medical School, Department of Health Care Policy

Engaging Consumers@Work

A Report from
Blue Cross and Blue Shield Association

and

The Department of Health Care Policy,
Harvard Medical School

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Engaging Consumers@Work Program Overview

Background

Engaging Consumers@Work (EC@W) was established in 2006 as a research-based workplace initiative to study the impact of educational and activation program components on consumer/employee engagement in health. The program had two intervention tracks:

Track 1 : Education

- worksite posters and table-tents
- postcards mailed to employee homes
- nutrition guides and health tracking cards mailed to employee homes

Track 2 : Education + Activation (*WalkingWorks® Program)*

- same education materials as Track 1
- employee participant guides and tracking logs
- online sign-up and tracking capability
- pedometers
- employer internal worksite competition

Research Methodology

In an effort to quantitatively measure the short-term impact of the EC@W program, the Blue Cross and Blue Shield Association worked in close partnership with the National Business Group on Health, the National Opinion Research Center at University of Chicago (NORC), and The Department of Health Care Policy at Harvard Medical School to develop a research methodology and conduct analysis.

Survey

The pilot intervention, 10 weeks in duration, aimed to study the impact of each intervention track on a variety of dimensions exemplified below:

- Physical activity
  - Questions relating to participation in moderate and vigorous physical activity, e.g.:
    - When you're not working, in a usual week, do you do [moderate /vigorous] activities for at least 10 minutes at a time?
    - How many days per week do you do [moderate /vigorous] activities for at least 10 minutes?
- Workplace wellness programs
  - awareness of program availability
  - types of available programs
  - participation in programs
  - perceptions of employer's interest in health
  - desire for additional programs
- Nutritional behavior
  - questions to determine number of servings of fruit, vegetables and unrefined grains consumed per day
- Self-reported health status
- Self-reported workplace productivity
  - number of work days missed because of illness
  - self-rated job performance
- Health knowledge
  - Level of agreement on 10 statements regarding various aspects of health, e.g.:
    - To help prevent heart disease, you should eat less saturated animal fat.
    - Regular exercise will cut your risk of diabetes.

Sample

A total of eight employers participated in the pilot. There was an effort to ensure geographic and employee diversity (in terms of age, gender and salary vs. hourly pay). Each employer group was composed of a number of worksites that were randomly assigned into test and control groups.

All employees were given pre-test and post-test surveys (before and after the pilot intervention) to determine their positions on the previously mentioned dimensions. Only employees who completed both surveys are included in the pilot research.

Analysis of the sample indicates that while the Track 1 test and control groups are quite evenly distributed in terms of gender and age, this is not the case for salary type. Only 10 percent of the Track 1 control group is made up of salaried employees, compared with 40 percent of the Track 1 test group. The Track 2 test and control groups are relatively more balanced overall than they are for Track 1.

The data were collected between June 26, 2006 and April 6, 2007.

Sample Breakdown

	TOTAL	Gender		Salary		Age	
		Male	Female	Salaried	Hourly	<=39	>=40
Track 1 - Test	1277	477	800	509	768	381	896
Track 1 - Control	604	181	423	59	545	165	439
Track 2 - Test	704	229	475	297	407	221	483
Track 2 - Control	967	436	531	360	607	308	659

Weighting

The sample was weighted to ensure that inferences drawn from the analysis corresponded to the population of all employees at the selected employers.[1] Weights for each combination of employer, intervention group, gender, age and type of pay (salary or wage) were computed by NORC (which also administered the survey) and incorporated in this analysis.[2]

[1] Non-response weights were incorporated into the analysis to account for the fact that not all employees in the targeted population returned their surveys.

[2] Because some categories ended up having very few respondents (e.g., only 2 out of about 100 in some instances), those respondents could have a very large impact on the results. To test the sensitivity of the results to the choice of weights, logistic regression models were used to develop smoothed weights; these are pulled towards the mean weight and thus are not as volatile as the original weights. Both sets of weights were standardized to sum to the total number of employees at each employer. Reassuringly, similar results were obtained whether or not weights were smoothed.

Analysis Methodology

The survey data were analyzed using the "difference in difference" methodology. This analysis aims to isolate the effect of the program interventions from the influence of other factors (e.g., other forms of marketing besides the program, nation or state-wide trends) that might cause employees to change their exercise and eating attitudes and habits over time.

The purpose of analyzing the control groups is to enable estimates of what the outcomes for the intervention groups would have been had the interventions not existed. Thus, the difference in the outcomes for the intervention and control groups estimates the effect of the program interventions above and beyond the effect of any other factors.

Of specific interest is the change that occurs in the intervention group from the pre to the post survey. The change in the mean outcome for the control group estimates what the change in the mean outcome for the intervention group would have been had the intervention not existed. The program interventions can, therefore, be thought of as having a beneficial effect if the observed change for the test group is larger than that of the control groups (assuming that a larger response indicates a more desired outcome). This is known as the difference in difference estimand because it compares the difference in the test group outcomes between the post-intervention and pre-intervention time periods to the same difference for the control group.

Executive Summary

Key Findings

Education combined with activation is more effective than education alone.

- The results of the Engaging Consumers@Work pilot demonstrate that a workplace wellness program like Track 2, which combines an activation program with education, is more effective than one that includes an education component alone, such as Track 1. In comparing the education program alone (Track 1) with this combination program (Track 2), the efficacy of Track 2 is noticeable in the following areas:
  - *Physical activity:* Track 2 employees report some positive changes in behavior even after the relatively short (10 week) intervention.
  - *Program awareness and participation:* Track 2 participants also had increased awareness of available programs and were more likely to report participation in workplace health/wellness programs after the pilot intervention.
  - *Perceptions of the employer*: Post-intervention, Track 2 participants were more likely than those in Track 1 to agree that their employer was interested in their health.
  - *Greater message recall*: Post-intervention, employees in Track 2 had higher recall of both program messages and the program materials they'd been exposed to than employees that were in the education-only program (Track 1).

Knowledge and awareness of health-related information improved post-intervention.

- The overall level of health knowledge and awareness on the topics tested increased among employees in Track 1. There were also some indications of increased knowledge and awareness in Track 2, but there was not enough strength in the data for these results to be statistically significant.

Employees are more likely to remember in-home communication than worksite materials.

- The program also highlighted the benefits of engaging consumers at home using direct mail communication vehicles with employees. Regardless of track, a higher percentage of employees remembered the postcards mailed to their homes than other communication materials such as worksite posters and table-tents.

Additional Findings

Opportunities exist for improvement with respect to employee healthy behavior.

- Among test-group employees in both tracks, self-reported health-related behaviors (post-intervention) indicate behavior can be further improved in these areas:
  - Employees report only 3-4 days/week of even moderate exercise.
  - Only about half of employees report eating even moderate amounts of fruit and/or unrefined grains per week.

Utilization of existing health information delivery mechanisms can be improved.

- Only about a quarter of employees report using a nurse-line or a health plan's 800 number or Web site as a source of health information, indicating an opportunity to encourage increased usage of reliable health information delivery.

Demographic segments did not significantly differ in their reaction to the program.

- While analysis was conducted to determine if different demographic segments (men vs. women, salaried vs. hourly, by age group) reacted differently to the program, no consistent trend was discernible within any one demographic segment.

Implications

Where possible, incorporate activation components into any health and wellness programming to drive greater employee engagement.

- The impact of the physical activation component of Track 2 on self-reported physical activity suggests that incorporating "activation" programs in other areas of health concern such as nutrition will increase engagement and will assist in modifying behavior in targeted areas. Examples of this could include:
  - healthy eating/weight loss program, perhaps with a competitive component to drive further engagement
  - smoking cessation program, potentially including a competitive aspect
  - activity-based stress-reduction program

Expand educational health-related messaging.

- Passive education programs do help in increasing awareness and knowledge. Given the relatively low investment required for these programs, employers should consider expanding educational messaging to other wellness topics (e.g. emergency room utilization).

Promotion and communication of any worksite health/wellness program is crucial to increased participation and program success.

- While communication efforts need to be tailored to the specific employer atmosphere and culture, it appears there is higher recall of direct mail sent to the home (i.e. postcards with wellness messages) than worksite communication elements. To help drive message awareness, direct mail should therefore be considered as an important component of an effective wellness education program. Worksite posters, which placed second among employee recall, also can play a key role in communicating wellness messaging.
- Employers need to make a concerted and continuous effort to let employees know about employer-sponsored programs. Surprisingly, even among those employees known to have registered for a worksite wellness program, only about 80 percent acknowledged the availability of worksite programs.
- Employees did not perceive Track 1 (education-only) as a worksite health and wellness program. This suggests that employers need to either carefully position education-focused programs or add an activation component for employees to recognize the employer's interest in their well-being.

Encourage employees to use available health information resources.

- Both health plans and employers need to promote and encourage the use of resources such as a health plan's 800 number or Web site and/or a nurse line or health coach so that employees become more aware of existing resources. Greater awareness is likely to cause employees to increase utilization and derive benefits from using a trusted information source. Currently, only about one-quarter of respondents report using these resources when they have either general or serious health concerns.

Findings

Findings illustrated here represent those that are statistically significant pre- to post-intervention, test vs. control.[3] Specific findings refer to "agreement" on survey statements. In the program survey, "Strongly Agree" was the highest level of agreement that a respondent could indicate and "Agree" was the next level. Other points on the scale were "Neutral," "Disagree" and "Strongly Disagree." References to "agreement" in the findings are based on a compression of the five-point scale to a two-point scale and indicate the percentage of respondents that selected "Strongly Agree" or "Agree" for each statement.

Track 2 (education coupled with activation program) has greater impact than Track 1 (education only).

Physical Activity

Changes in behavior relating to physical activity were more obvious in Track 2 than in Track 1. The change was most evident in the percentage of the Track 2 test group that reported walking as a moderate activity[4]. This percentage increased significantly from 67 percent in the pre-intervention period to 76 percent post-intervention in the test group, while the control group decreased from 66 percent to 63 percent. In comparison, the percentage of Track 1 test participants reporting walking as a moderate activity changed marginally, from 68 percent to 69 percent, while the Track 1 control group remained steady with 65 percent reporting walking as a moderate activity. The significant change in Track 2 leads to the conclusion that the intervention caused a higher proportion of employees to use walking as a moderate activity. These results for Track 2 are not surprising given that the activation program, WalkingWorks, focused on walking.

Physical Activity

Percent of Respondents Reporting on both surveys	Track 1				Track 2			
	Post		Change (Post-Pre)		Post		Change (Post-Pre)	
	Test	Control	Test	Control	Test	Control	Test	Control
Moderate activity[4]	84%	80%	-2%	-1%	88%	84%	2%	1%
Walking as a moderate activity	69%	65%	1%	0%	**76%***	63%	9%	-3%
Walking instead of driving	**59%***	53%	5%	-1%	58%	50%	5%	5%
Vigorous activity[5]	53%	46%	- 5%	-2%	63%	54%	4%	0%

* Significant improvement at 90 percent confidence level – test vs. control

[3] See the "Analysis Methodology" section for a detailed explanation of the difference in difference analysis

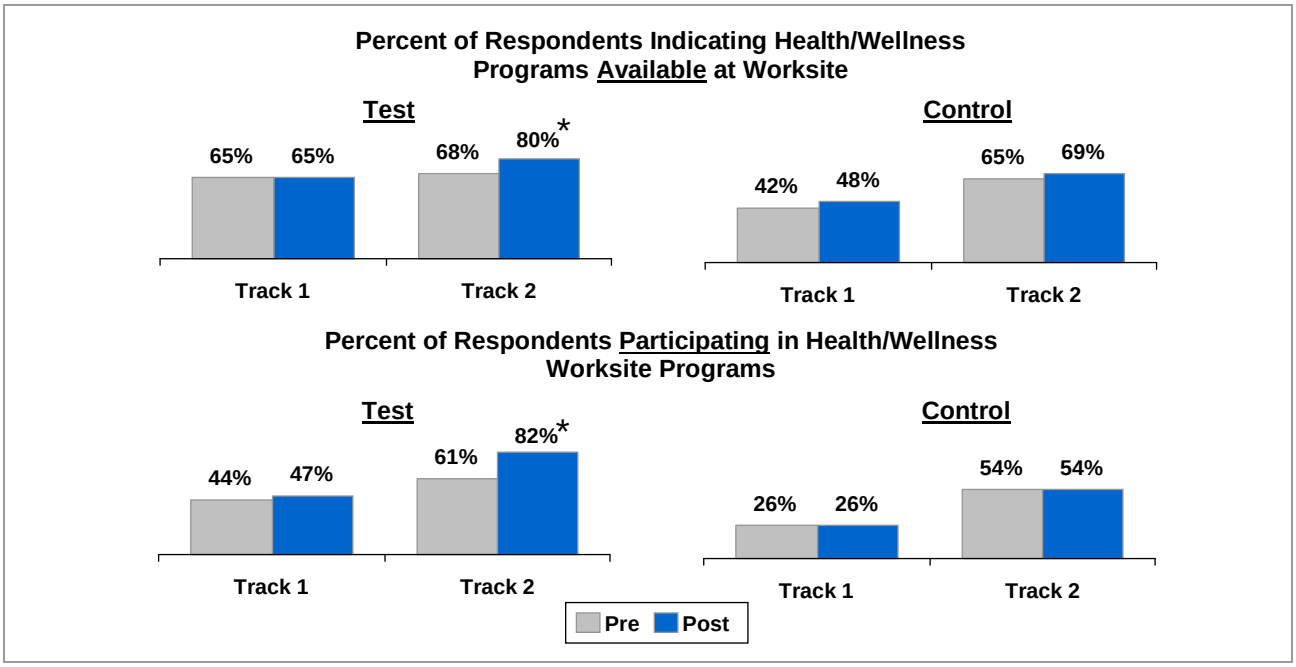
[4] Moderate activity is defined as the kinds of activities in which 10 minutes cause small increases in breathing or heart rate.

[5] Vigorous activity is defined as the kinds of activities in which 10 minutes cause large increases in breathing or heart rate.

Program awareness and participation

The percentage of Track 2 test participants reporting that workplace health/wellness programs were available to them increased from 68 percent pre-intervention to 80 percent post-intervention. In comparison, the percentage of Track 1 employees reporting the availability of workplace health/wellness programs was static at 65 percent. This implies that employees do not consider or recognize passive education initiatives to be worksite health/wellness programs.

Worksite Health/Wellness Programs: Awareness and Participation



* Significant improvement at 90 percent confidence level – test vs. control

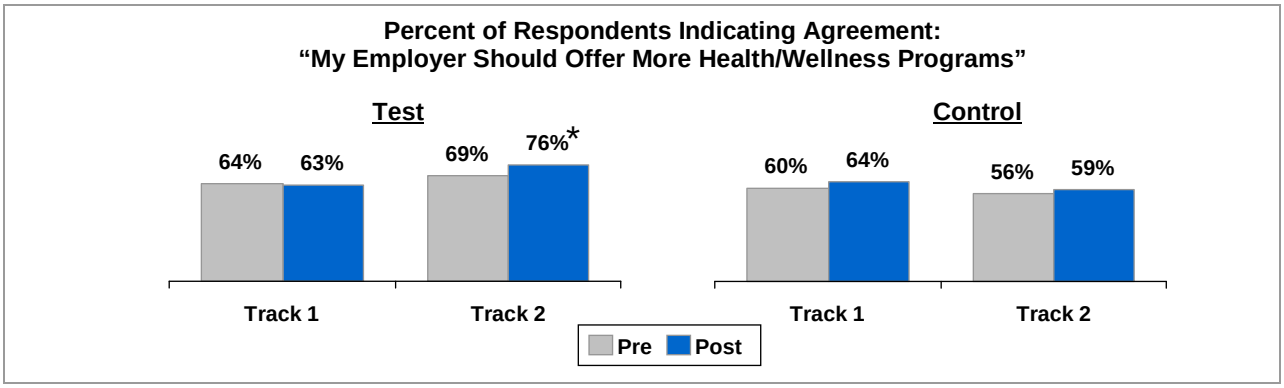
Among those aware of workplace health/wellness programs, the percentage of Track 2 test participants who reported participating in a program increased from 61 percent to 82 percent post-intervention. However, given that all Track 2 participants had signed up for the activation program, this implies that 18 percent of these employees either did not perceive the program as a health/wellness program or did not actually participate after signing up. There was no change among Track 1 test participants.

A lower percentage of the Track 1 control group than that of the Track 2 control group reports the availability of, or participation in, workplace health/wellness programs. One possible explanation could be that the Track 1 control group had a higher percentage of hourly employees, who may in general have less exposure to worksite health/wellness programs, than any of the other three groups (Track 1 test, Track 2 test, Track 2 control).

- **Interest in workplace health/wellness programs**

  Post-intervention, about three-quarters of Track 2 test participants reported agreement with the statement, "My employer should offer more health/wellness programs". This is an increase from the pre-intervention period when 69 percent agreed. The percentage of Track 1 test participants agreeing with the statement did not change.

Interest in Workplace Health/Wellness Programs

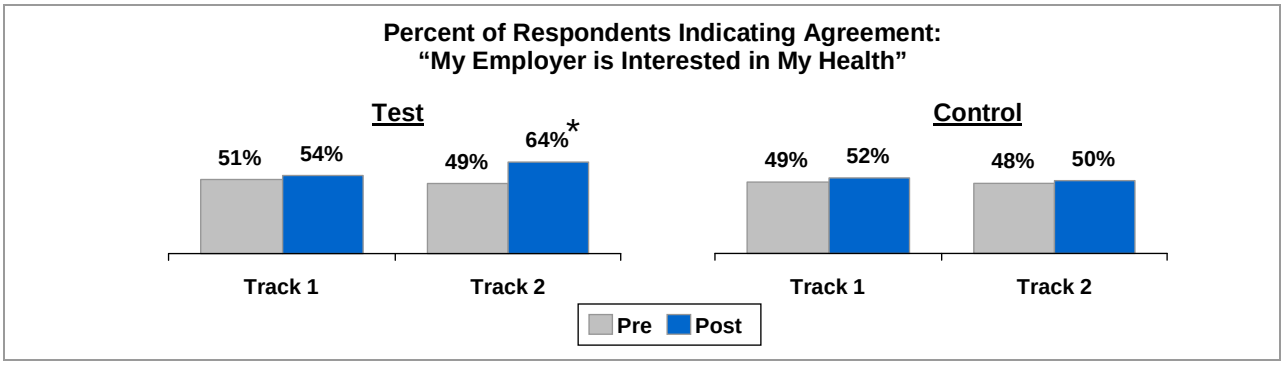


* Significant improvement at 90 percent confidence level – test vs. control

- **Perceptions of the employer**

  The percentage of Track 2 test participants who agreed (defined as Agree/Strongly Agree on a five- point scale) their employer was interested in their health increased by 15 percentage-points post-intervention. Perceptions among Track 1 Pilot participants increased by three percentage-points.

Perceptions of the Employer

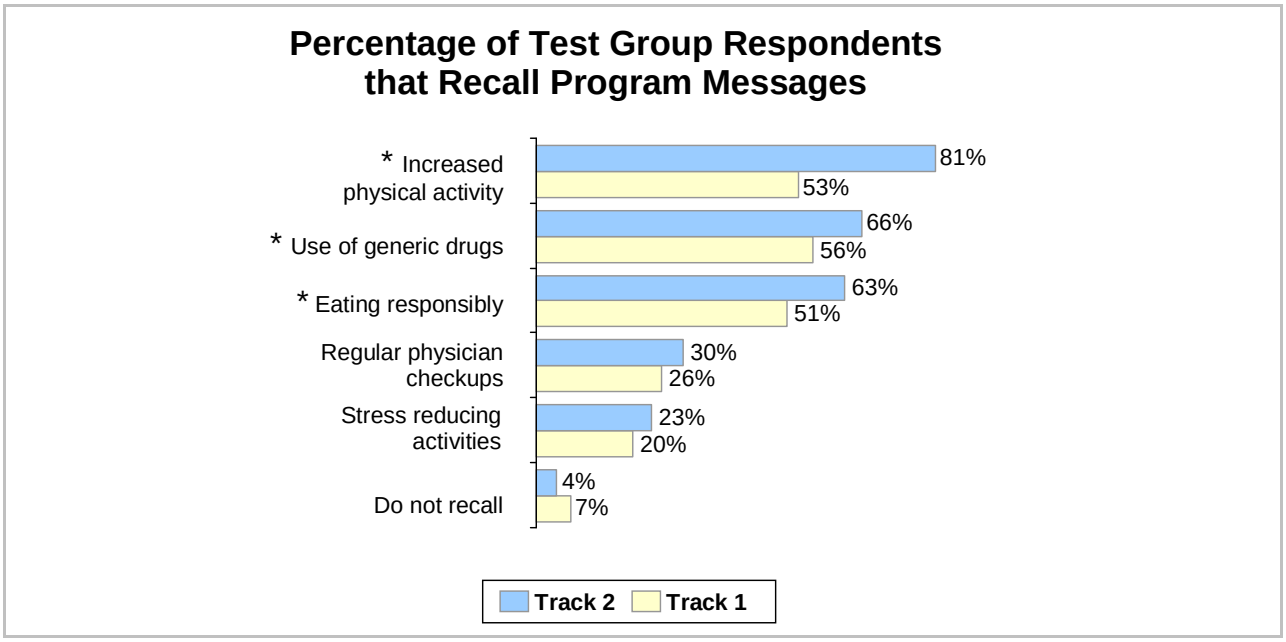


* Significant improvement at 90 percent confidence level – test vs. control

Message recall

Post-intervention, Track 2 test participants had greater recall of the messages promoted in the education materials than Track 1 test participants. This suggests that an activation program serves to reinforce program messages and enhances overall program impact.

Program Message Recall



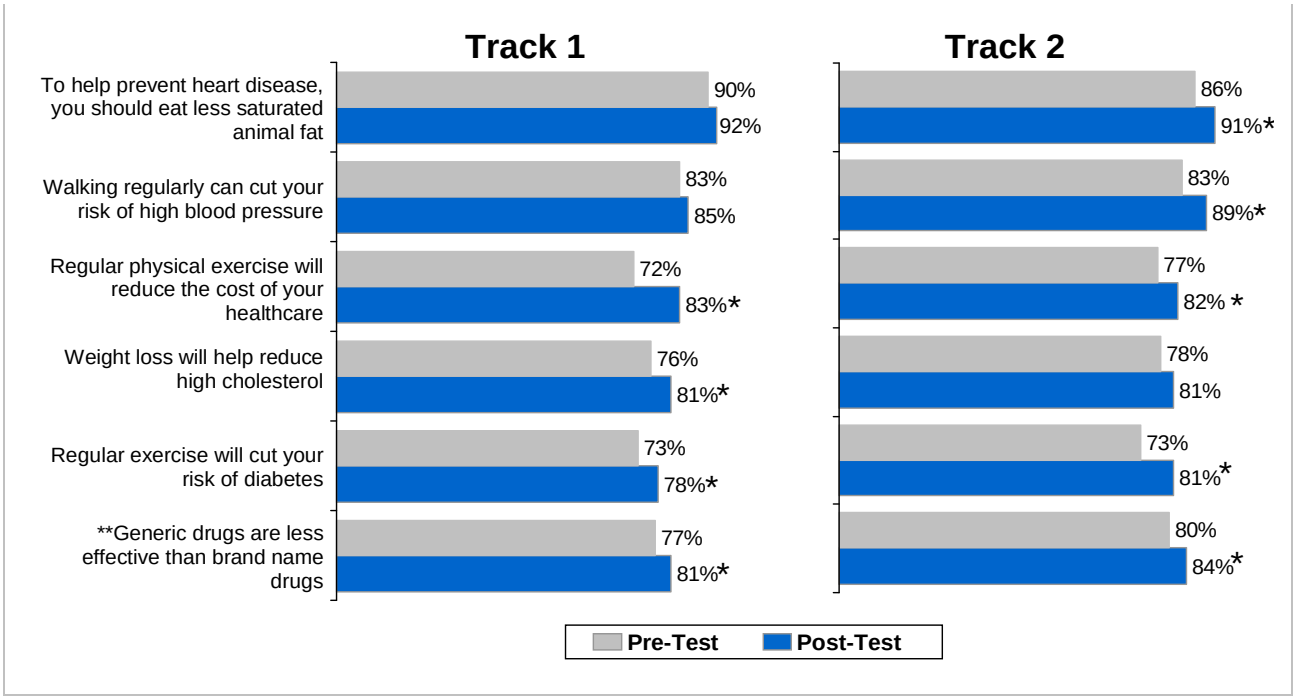
*Program messages

Knowledge and awareness of health-related information improved post-intervention

Knowledge and awareness of health-related information, as measured by pre- to post-intervention changes in agreement on tested statements, increased significantly among test group participants in both tracks.

It should be noted that baseline levels of knowledge/awareness were high in both tracks; greater than 70 percent indicated agreement with the statements in all areas tested.

Pre vs. Post Agreement: Health-Related Topics (Percentage of Test Group Respondents that Strongly Agree/Agree)



* Significant difference at 90 percent confidence level – pre to post change

** Percentage of respondents selecting 'Disagree/Strongly Disagree' on a 5 point scale

When the more rigorous test vs. control (difference in difference[6]) statistical analysis is used to determine program impact, no significant changes are observed for Track 2. Therefore, it is not possible to attribute any changes observed in Track 2 directly to the intervention. Among Track 1 test participants, there was an increase in overall awareness/knowledge, i.e. a significant change when all statements tested are combined and viewed in aggregate.

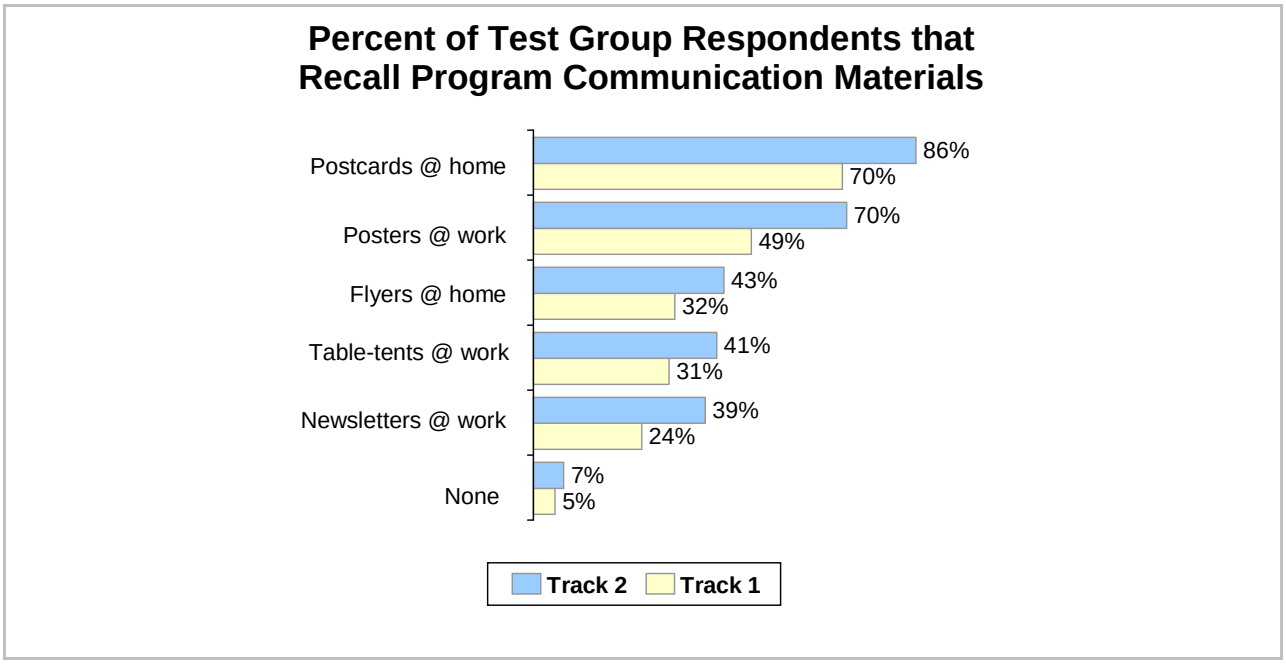
[6] See the "Analysis Methodology" section for a detailed explanation of the difference in difference analysis.

In-home communication has greater recall

Test group participants in both tracks were more likely to remember receiving program postcards at home than seeing worksite posters, table-tents and newsletters. However, the pilot did not test if the specific postcard messages also had greater recall than those on worksite posters, etc. Still, the higher recall of the in-home postcards suggests that engaging employees at home as well as in the workplace is an effective communication tactic. In the case of health and wellness communications, there is the additional benefit that home communications also are likely to be viewed by other members of the household.

Track 2 test participants also had greater recall of all communication materials than those in Track 1 – further evidence that the activation component of the program is more effective at increasing engagement than education alone.

Program Message and Communication Material Recall



Additional Data on Employee Behavior

In determining how best to influence employee health awareness and behavior, it is helpful to understand employee perceptions of their own health, nutrition, job performance, etc., and determine what resources they are using to obtain health information. The information shown here was collected as part of the EC@W surveys and provides insights and context useful for the development of additional health and wellness efforts.

The data presented here pertain to the **post-intervention** period for the **test group** and are all **self-reported**.

Respondent Profile		
Track 1	**Track 2**	**Health Status**
54%	**55%**	report “Very Good” or “Excellent” Health Status
		Physical Activity
3.8	**4.4**	average number of days per week spent doing at least 10 minutes of moderate activity outside of work
3.0	**3.1**	average number of days per week spent doing at least 10 minutes of vigorous activity outside of work
		Nutrition
55%	**55%**	report eating fruit at least several times a week
70%	**68%**	report eating vegetables at least several times a week
52%	**50%**	report eating unrefined grains at least several times a week
		Job Performance
75%	**82%**	report missing zero days of work in the past two months due to illness or injury
52%	**56%**	rate their job performance as very high (nine or 10 out of 10)

Sources of Health Information

When employees are seeking information for general health-related questions such as finding the best diet or how to treat sunburn, the most common source of information they look to are friends and family, followed by the Internet.

The data presented here pertain to the **post-intervention** period for the **test group** and are all **self-reported**.

Sources of Information for General Health Questions – Percentage of Respondents Indicating Very Likely/Somewhat Likely

Information Source	Track 1	Track 2
1. Friends or family	78%	68%
2. Internet	56%	61%
3. Doctor	53%	52%
4. Staff at clinic/Health Center	38%	34%
5. Nurse line health coach	25%	28%
6. Health plan's 800 number/ Web site	25%	25%
7. Some other place	25%	17%
8. Hospital	18%	13%

However, when employees have serious concerns about their health such as stomach pain for a week or more, almost everyone first seeks information from their doctor. About half would be very likely or somewhat likely to consult other medical options such as staff at a clinic or health center and hospitals.

The data presented here pertain to the **post-intervention** period for the **test group** and are all **self-reported**.

Sources of Information when Seriously Concerned about Health – Percentage of Respondents Indicating Very Likely/Somewhat Likely

Information Source	Track 1	Track 2
1. Doctor	97%	97%
2. Staff at clinic/Health Center	55%	59%
3. Hospital	48%	51%
4. Friends or family	57%	48%
5. Internet	35%	39%
6. Nurse line health coach	24%	27%
7. Health plan's 800 number/ Web site	21%	23%
8. Some other place	15%	11%

Conclusions and Next Steps

Despite being only a 10 week intervention, Engaging Consumers@Work definitely helped to increase employee engagement. The positive effects of the intervention were more evident in Track 2, which included an activation component, suggesting that employers need to consider using a combination of activation programs and education. Besides being more effective at engaging employees to modify behavior, activation components have added benefits for employers – such as improved employee perceptions of their employer.

Internal communication about the program is important to ensure that employees recognize that employer-sponsored programs are available. Communication efforts can be bolstered by engaging employees at home via direct mail, which has greater recall than worksite communications.

Employees are not making enough use of available health information resources such as nurse-lines and health coaches or their health plan's 800 number or Web site. Both health plans and employers should work to increase awareness and promote the use of these existing and reliable resources.

Based on the individual pilot employer findings and the statistical analysis of Harvard's Health Care Policy faculty, BCBSA is rolling out a packaged worksite engagement and activation program (based on EC@W, but with a few updates and enhancements for easy implementation).