

B For Online Publication: Comparison with prior literature — further details

We compiled all treatment effects estimates for health care costs and absenteeism from the studies included in the following review articles on wellness programs: [Baicker, Cutler and Song \(2010\)](#), [Soler et al. \(2010\)](#), [Osilla et al. \(2012\)](#), [Lerner et al. \(2013\)](#), and [Baxter et al. \(2014\)](#). There are two additional articles included below that are not featured in these review articles: [Moore, LoGerfo and Inui \(1980\)](#) and [Bernacki, Tao and Yuspeh \(2006\)](#). For each study, we identify the outcome of interest, i.e. health care costs (HCC) or absenteeism (ABS). We also indicate whether the study estimated a treatment-on-the-treated (TOT) or an intent-to-treat (ITT) effect.

If a study includes only a treatment and control group, we report the levels for each, T_1 and C_1 , respectively. We use the level for the control group as the counterfactual level (CF Level). We then calculate the effect as $T_1 - C_1$, and the percent change as the effect divided by the counterfactual level.

Some studies also include pre and post levels for the treatment and control, T_0 and C_0 , respectively. In those cases, we calculate the effect as $(T_1 - T_0) - (C_1 - C_0)$, and the counterfactual level as T_1 minus the effect. The percent change is still calculated as the effect divided by the counterfactual level.

Finally, some studies only include pre and post levels for the treatment group. In those cases, the effect is calculated as $T_1 - T_0$, the counterfactual level is T_0 , and the percent change is again the effect divided by the counterfactual level.

For Entries with a "+" mark, we have taken the results as directly reported in an appendix table from [Baicker, Cutler and Song \(2010\)](#).

Table B.1: Detailed Description of Estimates from Figure 8

Title(Year)	Outcome	T_0	T_1	C_0	C_1	CF Level	Effect	% Change	Type
Aldana et al. (1993) ⁺	HCC	2,148	1,800	1,480	1,368	1,648	-189	-0.11	TOT
Aldana et al. (2005)	HCC		2,666.07		2,621	2,621	45.07	0.02	TOT
Aldana et al. (2005)	ABS		14.71		15.40	15.40	-0.69	-0.04	TOT
At'kov et al. (2011)	ABS		8.15		18.97	18.97	-10.82	-0.57	TOT
At'kov et al. (2011)	ABS		4.8		7.86	7.86	-3.06	-0.39	TOT
Baker et al. (2008)	HCC					4,090,978	-311,755	-0.08	TOT
Baun, Bemacki and Tsai (1986) ⁺	HCC		1,256		2,424	2,424	-1,168	-0.48	TOT
Baun, Bemacki and Tsai (1986) ⁺	ABS	8.7	9.0	10.0	12.4	11.1	-2.1	-0.19	TOT
Bernacki, Tao and Yuspeh (2005)	HCC		6,749		12,542	12,542	-5793	-0.46	TOT
Bernacki, Tao and Yuspeh (2005)	ABS		53.4		95.0	95.0	-41.6	-0.44	TOT
Bernacki, Tao and Yuspeh (2006)	HCC		12,554		20,400	20,400	-7846	-0.38	TOT
Bernacki, Tao and Yuspeh (2006)	ABS		53.0		99.0	99.0	-46.0	-0.46	TOT
Bertera (1990) ⁺	ABS	5.7	4.9	5.2	4.9	5.4	-0.5	-0.09	ITT
Bertera (1993)	ABS		3.0		2.9	2.9	0.1	0.03	ITT

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Title(Year)	Outcome	T_0	T_1	C_0	C_1	CF Level	Effect	% Change	Type
Blair et al. (1986) ⁺	ABS	5.6	5.5	6.0	6.2	5.8	-0.3	-0.05	TOT
Bly, Jones and Richardson (1986) ⁺	HCC	247	655	253	1,234	1,228	-573	-0.47	ITT
Bridges et al. (2000) (1997–1998)	HCC		26.18		10.51	10.51	15.67	1.49	TOT
Bridges et al. (2000) (1997–1998)	ABS		0.60		0.41	0.41	0.19	0.45	TOT
Bridges et al. (2000) (1998–1999)	HCC		6.22		9.71	9.71	-3.49	-0.36	TOT
Bridges et al. (2000) (1998–1999)	ABS		0.18		0.24	0.24	-0.06	-0.26	TOT
Bunting and Cranor (2006)	HCC		1,585		3,050	3,050	-1,465	-0.48	TOT
Bunting and Cranor (2006)	ABS		16.80		66.50	66.50	-49.70	-0.75	TOT
Burton and Conti (2000)	ABS	29.3	23.2	22	23.3	30.60	-7.40	-0.24	ITT
Burton et al. (2005)	ABS		1.86		3.15	3.15	-1.29	-0.41	TOT
Campbell and Rumley (1997)	HCC		1,181		2,990	2,990	-1809	-0.61	TOT

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Title(Year)	Outcome	T_0	T_1	C_0	C_1	CF Level	Effect	% Change	Type
Campbell and Rumley (1997)	ABS		50		109	109	-59	-0.54	TOT
Chenoweth and Garrett (2006)	HCC		1,351		1,580	1,580	-229	-0.14	TOT
Chenoweth et al. (2008)	HCC		11,165,777		13,344,709	13,344,709	-2,178,932	-0.16	TOT
Colombo et al. (2006)	ABS		294.2		366.82	366.82	-72.62	-0.20	TOT
Colombo et al. (2006)	ABS		161		231	231	-70	-0.30	TOT
Cousins and Liu (2003)	HCC		5,264		5,825	5,825	-561	-0.11	ITT
Davis et al. (2009)	HCC	24.6	-4.4	10.4	6.0	100	-24.60	-0.25	ITT
Davis et al. (2009)	ABS		7.6		10.1	10.1	-2.5	-0.25	ITT
Dille (1999)	HCC		946.27		6,177.52	6,177.52	-5231.24	-0.85	TOT
Dille (1999)	ABS		35		63	63	-28	-0.44	TOT
Fera, Bluml and Ellis (2009)	HCC		13,829		14,909	14,909	-1080	-0.07	TOT
Foote and Erfurt (1991) (1)	HCC	3,196	4,046	2,946	4,326	4,576	-530	-0.12	ITT
Foote and Erfurt (1991) (2)	HCC	2,579	3,407	2,946	4,326	3959	-552	0.24	ITT
Foote and Erfurt (1991) (3)	HCC	1,875	2,183	2,946	4,326	3,255	-1,072	-0.33	ITT

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Title(Year)	Outcome	T_0	T_1	C_0	C_1	CF Level	Effect	% Change	Type
Fries et al. (1994)	HCC		354		497	497	-143	-0.08	ITT
Fries et al. (1994)	ABS		4.30		5.50	5.50	-1.20	-0.22	ITT
Fries and McShane (1998) ⁺	HCC	1,616	1,185	500	419	1,535	-350	-0.23	TOT
Fries and McShane (1998) ⁺	ABS	3.9	3.0	1.6	1.5	3.80	-0.80	-0.21	TOT
Gibbs et al. (1985) ⁺	HCC	695	1,687	605	1,977	2,067	-380	-0.18	TOT
Goetzel et al. (1998) ⁺	HCC		1,413		1,396	1,396	17	0.01	TOT
Green-McKenzie et al. (2002)	HCC		191,992		469,694	469,694	-277,702	-0.59	TOT
Groeneveld et al. (2011)	HCC		212		279	279	-67	-0.24	ITT
Groeneveld et al. (2011)	ACC		12.3		9.1	9.1	3.2	0.35	ITT
Groeneveld et al. (2011) (imputed)	ACC		14.4		15.7	15.7	-1.3	-0.08	ITT
Henke et al. (2011)	HCC		4,435		5,000	5,000	-565	-0.11	ITT
Herman et al. (2006)	ABS	0.052	0.051	0.065	0.077	0.06	-0.01	-0.20	TOT
Hochart and Lang (2011)	HCC	225.74	227.77	226.75	276.01	275.0	-47.23	-0.17	ITT
Hughes et al. (2007)	HCC		1,970		4,353	4,353	-2,383	-0.55	TOT
Hughes et al. (2007)	ABS		1.1		3.1	3.1	-2.0	-0.65	TOT

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Title(Year)	Outcome	T_0	T_1	C_0	C_1	CF Level	Effect	% Change	Type
Jeffery et al. (1993)	ABS	18.0	13.5	19.1	18.2	18.0	-3.6	-0.2	ITT
Jones, Bly and Richardson (1990) ⁺	ABS	5.9	5.6	5.3	6.0	6.6	-1.0	-0.15	ITT
Knight et al. (1994) ⁺	ABS	9.1	10.2	9.1	10.8	10.8	-0.6	-0.06	TOT
Lechner and de Vries (1997)	ABS	12.4	11.0	14.3	14.2	12.3	-1.3	-0.11	TOT
Leigh et al. (1992) ⁺	HCC	2,171	1,695	1,881	1,995	2,285	-590	-0.26	ITT
Leigh et al. (1992)	ABS	18.0	17.2	18.0	19.4	19.4	-2.2	-0.11	ITT
Linz et al. (2001)	ABS		2,137		3,702	3,702	-1,565	-0.42	ITT
Loeppke et al. (2008)	ABS		9.83		5.75	5.75	4.08	0.71	ITT
Lynch et al. (1990) ⁺	ABS	4.4	3.7	5.6	5.5	4.3	-0.6	-0.14	TOT
Maes et al. (1998)	ABS	0.158	0.077	0.143	0.095	0.11	-0.03	-0.30	ITT
McCulloch et al. (2001)	ABS		56.4		73.5	73.5	-17.1	-0.23	TOT
McEachan et al. (2011)	HCC		17,900.0		17,979.4	17,979.4	-79.4	-0.004	ITT
Merrill et al. (2011)	HCC		3,441.3		5,969.3	5,969.3	-2,528.0	-0.42	TOT
Milani and Lavie (2009)	HCC	2,960	1,539	3,002	2,522	2,480	-941	-0.38	ITT
Mills et al. (2007)	ABS	0.38	0.35	0.58	0.76	0.56	-0.21	-0.38	TOT
Moore, LoGerfo and Inui (1980) (G1 vs G2)	HCC	7.8	6.2	7.0	5.9	6.70	-0.50	-0.07	ITT

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Title(Year)	Outcome	T_0	T_1	C_0	C_1	CF Level	Effect	% Change	Type
Moore, LoGerfo and Inui (1980) (G1 vs G3)	HCC	7.9	6.0	7.0	5.9	6.70	-0.80	-0.12	ITT
Morales et al. (2004)	ABS		22.66		29.08	29.08	-6.42	-0.22	TOT
Musich, Adams and Edington (2000) ⁺	HCC	2,140	2,337	1,083	2,908	3,965	-1,628	-0.41	TOT
Naydeck et al. (2008)	HCC	1,531	2,907	1,427	3,429	3,533	-626	-0.18	TOT
Nilsson, Klasson and Nyberg (2001)	ABS	6.0	2.9	4.5	7.4	8.9	-6.0	-0.67	ITT
Nyman et al. (2012) (DM)	HCC	625.46	734.99	470.33	646.97	802.10	-67.11	-0.08	TOT
Nyman et al. (2012) (DM)	ABS	67.87	76.3	67.38	72.52	73.02	3.28	0.04	TOT
Nyman et al. (2012) (LM)	HCC	403.19	481.46	302.68	407.87		-26.93	-0.07	TOT
Nyman et al. (2012) (LM)	ABS	60.36	65.66	57.57	64.08	66.88	-1.22	-0.02	TOT
Osilla et al. (2010)	ABS		7.88		13.75	13.75	-5.87	-0.43	TOT
Ozminkowski et al. (1999) ⁺	HCC	2,736	3,411	2,896	4,136	3,976	-565	-0.14	TOT
Page et al. (2009)	HCC		169,780		105,220	105,220	64,560	0.61	TOT

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Title(Year)	Outcome	T_0	T_1	C_0	C_1	CF Level	Effect	% Change	Type
Page et al. (2009)	ABS		600		800	800	-200	-0.25	TOT
Pegus et al. (2002)	ABS		0.33		0.49	0.49	-0.16	-0.32	
Pelletier, Boles and Lynch (2004)	ABS		0.01		0.015	0.015	-0.005	-0.33	TOT
Proper et al. (2004)	ABS		4,735		5,505	5,505	-770	-0.14	ITT
Proper et al. (2004)	ABS		21.0		27.25	27.25	-6.25	-0.23	ITT
Ringen et al. (2002)	HCC		236		325	325	-89	-0.27	ITT
Sacks et al. (2009)	HCC		2,413		2,327.86	2,327.86	85.14	0.04	TOT
Sacks et al. (2009) (High CV risk subgroup)	HCC		3,425		4,251.95	4,251.95	-826.95	-0.19	TOT
Samad et al. (2006)	ABS		14.22		67.44	67.44	-53.22	-0.79	TOT
Samad et al. (2006)	ABS		3.0		4.22	4.22	-1.22	-0.29	TOT
Schneider and Häck (2011)	HCC		134,700		289,141	289,141	-154,441	-0.53	ITT
Schultz et al. (2002)	ABS	6.6	17.2	6.6	23.3	23.3	-6.1	-0.26	TOT
Sciacca et al. (1993)	HCC	1,159	2,397	825	1,701	2,035	362	0.18	TOT
Serxner et al. (2001)	ABS	29.2	27.8	33.2	38.1	34.1	-6.3	-0.18	TOT
Serxner et al. (2003) ⁺	HCC		4,176		4,454	4,454	-278	-0.06	TOT
Shephard et al. (1982) ⁺	HCC	294	296	295	396	395	-99	-0.25	ITT

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Title(Year)	Outcome	T_0	T_1	C_0	C_1	CF Level	Effect	% Change	Type
Shephard et al. (1982) ⁺	ABS	0.3	0.1	0.1	0.5	0.7	-0.6	-0.86	ITT
Shi (1993) ⁺ (G1 vs G2)	HCC	1,891	1,621	1,970	1,710	1,631	-10.0	-0.01	ITT
Shi (1993) ⁺ (G1 vs G2)	ABS	4.96	4.69	5.05	4.78	4.69	0.0	0.0	ITT
Shi (1993) ⁺ (G1 vs G3)	HCC	1,986	1,485	1,970	1,710	1,726	-241	-0.14	ITT
Shi (1993) ⁺ (G1 vs G3)	ABS	5.15	4.08	5.05	4.78	4.88	-0.8	-0.16	ITT
Shi (1993) ⁺ (G1 vs G4)	HCC	2,036	1,283	1,970	1,710	1,776	-493	-0.28	ITT
Shi (1993) ⁺ (G1 vs G4)	ABS	5.22	3.24	5.05	4.78	4.95	-1.71	-0.35	ITT
Stave, Muchmore and Gardner (2003)	HCC		3,222		3,909	3,909	-687	-0.18	TOT
Stave, Muchmore and Gardner (2003)	ABS	3.1	2.3	3.1	3.3	3.3	-1.0	-0.3	TOT
Taimela et al. (2008)	HCC		925.1		1108.6	1108.6	-183.5	-0.17	ITT
Taimela et al. (2008)	HCC	17.4	19.3	17.1	29.9	30.2	-10.9	-0.36	ITT
Wang et al. (2007)	ABS		10.20		13.45	13.45	-3.25	-0.24	ITT
Wolf et al. (2009)	ABS	0.74	0.31	0.75	1.16	1.16	-0.85	-0.73	ITT
Wood, Olmstead and Craig (1989)	ABS	2.5	2.6	2.9	4.3	3.9	-1.3	-0.33	TOT
Golaszewski et al. (1992)	HCC	6,185	7,743	5,249	7,734	8,670	-927	-0.11	TOT

Prior Wellness Literature

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C For Online Publication: Multiple Hypothesis Testing Methodology

Multiple hypotheses arise when there are multiple outcomes of interest, multiple subgroups of interest, multiple independent variables of interest, or some combination thereof. Consider testing $K > 1$ different null hypotheses. The family-wise error rate (FWER) is the probability of rejecting at least one true null hypothesis (i.e., a “false discovery”) belonging to this “family” of K hypotheses. A procedure is said to provide *strong* control of the FWER if it does not depend on which of the K null hypotheses happen to be true.

We estimate the FWER using the free step-down resampling method of [Westfall and Young \(1993\)](#) (Algorithm 2.8, p. 66-67). The procedure consists of the following steps:¹

1. Estimate $\{\widehat{\beta}_1, \widehat{\beta}_2, \dots, \widehat{\beta}_K\}$. Estimate the conventional, unadjusted p -values $\{p_1, p_2, \dots, p_K\}$ that correspond to separately testing each null hypothesis $\widehat{\beta}_k = 0$. Without loss of generality, assume the estimated p -values are indexed such that $p_1 \leq p_2 \leq \dots \leq p_K$.
2. Draw with replacement from the dataset to create a bootstrap sample.
 - (a) Estimate $\{\widehat{\beta}_{i1}^*, \widehat{\beta}_{i2}^*, \dots, \widehat{\beta}_{iK}^*\}$. Estimate the conventional, unadjusted p -values $\{p_{i1}^*, p_{i2}^*, \dots, p_{iK}^*\}$ that correspond to separately testing each null hypothesis $\widehat{\beta}_{ik}^* = \widehat{\beta}_k$. The k index here corresponds to the ranking computed in step 1. It will *not* generally be the case that $p_{i1}^* \leq p_{i2}^* \leq \dots \leq p_{iK}^*$.
 - (b) Enforce monotonicity with respect to the original ordering in step 1 by computing the successive minima:

¹Our program was written in Stata and is easily applied to other settings. The module can be obtained by typing “`ssc install wyoung, replace`” at the Stata prompt, or downloaded directly from ideas.repec.org/c/boc/bocode/s458440.html.

$$\begin{aligned}
q_{iK}^* &= p_{iK}^* \\
q_{i,K-1}^* &= \min(q_{iK}^*, p_{i,K-1}^*) \\
q_{i,K-2}^* &= \min(q_{i,K-1}^*, p_{i,K-2}^*) \\
&\vdots \\
&\vdots \\
q_{i1}^* &= \min(q_{i2}^*, p_{i1}^*)
\end{aligned}$$

3. Repeat step 2 N times. For each bootstrap sample i and hypothesis k , define the indicator $COUNT_{ik} = 1$ if $q_{ik}^* \leq p_k$ and 0 otherwise.²

4. For each hypothesis $k = 1, 2, \dots, K$, calculate the fraction of successive minima that were lower than the original p -value:

$$r_k = \frac{1}{N} \sum_{i=1}^N COUNT_{ik}$$

5. Enforce monotonicity using successive maximization to calculate the adjusted p -value:

$$\begin{aligned}
p_1^{adj} &= r_1 \\
p_2^{adj} &= \max(r_1, r_2) \\
&\vdots \\
&\vdots \\
p_K^{adj} &= \max(r_{K-1}, r_K)
\end{aligned}$$

This resampling algorithm exhibits strong control of the FWER under subset pivotality, which is a multivariate generalization of pivotality.³ This condition requires that the multivariate distribution of any subvector of p -values is unaffected by the truth or falsehood of hypotheses corresponding to p -values not included in the subvector. The condition is satisfied in many settings, including testing the significance of

²To compute “single-step” p -values instead of “step-down” p -values, define the indicator $COUNT_{ik} = 1$ if $\min\{p_{i1}^*, p_{i2}^*, \dots, p_{iK}^*\} < p_k$ and 0 otherwise. Resampling-based single-step methods often control family-wise type 3 (sign) error rates. Whether their step-down counterparts also control type III error rates is unknown (Westfall and Young, 1993, p. 51).

³The sampling distribution of a pivotal statistic does not depend upon which distribution generated the data. The t -statistic is a common example.

coefficients in a general multivariate regression model with possibly non-normal or heteroskedastic errors (Westfall and Young, 1993, p. 122-123).

It is possible for this algorithm to produce adjusted p -values that are smaller than unadjusted p -values. For example, consider the extreme case where the number of bootstraps is equal to 1 (so that $N = 1$ in steps 3 and 4). Then all adjusted p -values are equal to either 0 or 1. The ones that are equal to 0 will of course be smaller than the unadjusted values. For this reason, we recommend employing a large number of bootstraps. (Westfall and Young (1993) recommend at least 10,000 bootstrap draws.) If adjusted p -values remain significantly smaller than the unadjusted p -values, even when the number of bootstraps is large, this may indicate model misspecification. For example, in simulations with clustered errors (described below), we found that adjusted p -values are frequently smaller than unadjusted values when we fail to employ a cluster bootstrap.

We ran four different sets of simulations to evaluate the effectiveness and statistical power of this resampling algorithm. Let μ be a 10-dimensional zero vector $(0, 0, \dots, 0)'$. Let I be a 10×10 identity matrix. Let Σ be a 10×10 covariance matrix where all off-diagonal elements are equal to 0.9. The data generating process for each simulation scenario is described below:

1. Normal i.i.d. errors (10 outcomes)

$$e \sim \mathcal{N}(\mu, I)$$

$$Y = e$$

2. Normal i.i.d. errors (1 outcome, 10 subgroups)

$$e \sim \mathcal{N}(0, 1)$$

$$Y = e$$

3. Correlated errors (10 outcomes)

$$X \sim \mathcal{N}(\mu, I)$$

$$e \sim \mathcal{N}(\mu, \Sigma)$$

$$Y = 0.2X + e$$

4. Lognormal, mean-zero i.i.d. errors (10 outcomes)⁴

$$e \sim \exp[\mathcal{N}(\mu, I)] - \sqrt{\exp[1]}$$

$$Y = e$$

We simulated 2,000 datasets for each of these four data generating processes. In each of these 2,000 simulations, we estimated a series of 10 regressions:

$$Y_i = \alpha + \beta_i X_i + \varepsilon_i, i = 1 \dots 10$$

The sample size for each regression was 100. The regressor $X_i \sim N(0, 1)$ in simulations 1, 2, and 3. In scenario 4, the regressor is just a constant equal to 1 (α is omitted). There are 10 null hypotheses that correspond to these 10 regressions: $\beta_i = 0, i = 1, \dots, 10$. These 10 null hypotheses are all true in scenarios 1, 2, and 4, and all false in scenario 3 (correlated errors).

Table C.1 compares the effectiveness of the Westfall-Young resampling algorithm to other well-known multiple inference adjustment methods.⁵ Each column in the table reports how often at least one null hypothesis was rejected using each adjustment method. When outcomes are independent and normally distributed, the probability that at least one of the 10 hypotheses is statistically significant is equal to $1 - (1 - .05)^{10} = 0.401$. This calculation accords well with the simulation: the first row of column (1) reports that at least one of the 10 hypotheses was rejected at $\alpha = 0.05$ in 39.8 percent of the 2,000 simulations when no adjustment was performed. By contrast, the Bonferroni-Holm, Sidak-Holm, and Westfall-Young adjustments reject at least one null hypothesis only about 4 percent of the time, thus achieving a family-wise error rate of less than 5 percent.

In column (2), the 10 hypotheses arise from examining multiple subgroups rather than multiple outcome variables. Failing to adjust the p -values again results in a high rejection rate of nearly 40 percent. The

⁴The mean of the standard lognormal distribution is $\sqrt{\exp[1]}$.

⁵The Bonferroni-Holm and Sidak-Holm (step-down) p -values are calculated as follows. Sort the K unadjusted p -values so that $p_1 \leq p_2 \leq \dots \leq p_K$. The Bonferroni-Holm adjusted p -values are calculated as $\{p_1 K, \max[p_1, p_2(K - 1)], \dots, \max[p_{K-1}, p_K]\}$. The Sidak-Holm adjusted p -values are calculated as $\{1 - (1 - p_1)^K, \max[p_1, 1 - (1 - p_2)^{(K-1)}], \dots, \max[p_{K-1}, p_K]\}$. If the calculation yields a value larger than 1, then the adjusted p -value is set equal to 1.

Bonferroni-Holm, Sidak-Holm, and Westfall-Young adjustment methods, however, all achieve rejection rates of around 5 percent.

The downside of the Bonferroni-Holm and Sidak-Holm adjustment methods is that they assume outcomes are independent, and therefore can be too conservative when outcomes are correlated. This is demonstrated in column (3), which reports rejection rates for a scenario where the 10 null hypotheses are all *false*. Here, the Bonferroni-Holm and Sidak-Holm methods reject at least one hypothesis only about 35 percent of the time. The Westfall-Young resampling algorithm, however, achieves a rejection rate in excess of 50 percent.

Although traditional adjustment methods such as Bonferroni-Holm and Sidak-Holm are generally thought to be conservative, [Westfall and Young \(1993\)](#) emphasize that these traditional methods can actually *over-reject* when the data-generating process is nonnormal. This is demonstrated in column (4): the resampling method of Westfall-Young achieves a family-wise error rate of under 6 percent, but the Bonferroni-Holm and Sidak-Holm methods reject at least one null hypothesis over 20 percent of the time.

Clustered standard errors

[Westfall and Young \(1993\)](#) do not discuss how to perform multiple inference in regression models where observations can be grouped into clusters, with model errors correlated within clusters. The presence of clustered errors does not violate subset pivotality, which is automatically satisfied in linear regression models. However, in this case it is important that the resampling in step 2 of the procedure be done over entire clusters, rather than individual observations. This is accomplished by specifying the **cluster()** option of the **wyoung** command.

We demonstrate the importance of resampling over clusters by performing another set of simulations. Again, let μ be a 10-dimensional zero vector $(0, 0, \dots, 0)'$, and let I be a 10×10 identity matrix. The data generating process for this simulation scenario is:

5. Serially correlated errors (10 outcomes)

$i = 1 \dots 100$ clusters

$t = 1 \dots 10$ time periods

$$\eta_i \sim \mathcal{N}(\mu, I)$$

$$e_{it} \sim \mathcal{N}(\mu, I)$$

$$Y_{it} = \eta_i + e_{it}$$

We again simulated 2,000 datasets. In each simulation, we estimated the following 10 regressions:

$$Y_{it} = \alpha + \beta_i D_{it} + \varepsilon_{it}, i = 1 \dots 10$$

where the dummy variable $D_{it} = 1\{t > START_i\}$ and $START_i$ is a Poisson random variable with mean equal to 5. We estimated these regressions under two different assumptions about the standard errors (homoskedastic or clustered), and with and without a bootstrap cluster. Our results are reported in Table [C.2](#).

Comparing column (2) to column (1) in the first row of Table [C.2](#) shows that estimating the model using clustered standard errors results in a smaller family-wise error rate relative to a model that assumes errors are homoskedastic. Nevertheless, the rejection rate for the unadjusted value in column (2) still significantly exceeds five percent because this specification does not account for the number of hypotheses being tested.⁶

The second and third rows of Table [C.2](#) show that the Bonferroni-Holm and Sidak-Holm corrections achieve a 5 percent rejection rate when the standard errors are clustered. This is unsurprising since the outcome variables in this simulation are independent.

The fourth row of Table [C.2](#) demonstrates the importance of properly accounting for clustered standard errors when implementing the Westfall-Young correction. Column (2) shows that (erroneously) employing a simple bootstrap that resamples over individual observations causes the Westfall-Young correction to perform worse than even the unadjusted specification! However, column (3) shows that the Westfall-Young correction achieves a five percent rejection rate when the cluster bootstrap is employed.

⁶By construction, the values in columns (2) and (3) are identical in the first three rows, because these two columns vary only the bootstrapping methodology, which matters only for the Westfall-Young correction.

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Table C.1: Family-wise rejection proportions at $\alpha = 0.05$

	(1)	(2)	(3)	(4)
Adjustment method	Normal errors	Multiple subgroups	Correlated errors	Lognormal errors
Unadjusted	0.398	0.387	0.685	0.577
Bonferroni-Holm	0.040	0.047	0.344	0.234
Sidak-Holm	0.040	0.051	0.347	0.237
Westfall-Young	0.041	0.045	0.513	0.058
Num. observations	100	100	100	100
Num. hypotheses	10	10	10	10
Hypotheses are true	Y	Y	N	Y

Notes: Table reports the fraction of 2,000 simulations where at least one null hypothesis in a family of 10 hypotheses was rejected. All hypotheses are true for the simulations reported in columns (1), (2), and (4), i.e., lower rejection rates are better. All hypotheses are false for the simulation reported in column (3), i.e., higher rejection rates are better. The Westfall-Young correction is performed using 1,000 bootstraps.

Table C.2: Family-wise rejection proportions at $\alpha = 0.05$, when the data generating process is serially correlated

	(1)	(2)	(3)
Unadjusted	0.652	0.401	0.401
Bonferroni-Holm	0.187	0.049	0.049
Sidak-Holm	0.188	0.049	0.049
Westfall-Young	0.191	0.498	0.046
Num. observations	1,000	1,000	1,000
Num. hypotheses	10	10	10
Model std. errors	Homoskedastic	Clustered	Clustered
Cluster bootstrap	N	N	Y

Notes: Table reports the fraction of 2,000 simulations where at least one null hypothesis in a family of 10 hypotheses was rejected. The difference between columns (1) and (2) is the assumption about the standard errors (homoskedastic or clustered). The difference between columns (2) and (3) is the method of bootstrapping (resampling over individual observations versus clusters), which matters only for the Westfall-Young correction. All null hypotheses are true, i.e., lower rejection rates are better. Each simulation generated 100 panels (clusters) with 10 time periods. The Westfall-Young correction is performed using 1,000 bootstraps.

D For Online Publication: Appendix for the Illinois Workplace Wellness Study

Table of Contents

D.1	Sample Selection and Study Overview	2
D.1.1	Online baseline survey (July 11 – July 31)	3
D.1.2	Study randomization (August 1 – August 8)	4
D.1.3	Health screening (August 15 – September 16)	5
D.1.4	Online health assessment (September 8 – October 4)	6
D.1.5	2016 fall wellness activities (October 10 – December 16)	7
D.1.6	2017 spring wellness activities (January 30 – April 25)	7
D.1.7	2017 online follow-up survey (July 10 - August 9)	8
D.1.8	2017 follow-up health screening (August 21 – September 22)	8
D.2	Datasets	11
D.2.1	University administrative data	11
D.2.2	Illinois Marathon data	13
D.2.3	Health insurance claims data	13
D.2.4	Online survey data	14
D.2.5	Health screening data	15
D.2.6	Health questionnaire data	16
D.2.7	Online health assessment and wellness activities data	17
D.3	Online Appendix Figures	18
D.4	Online Appendix Tables	46

D.1 Sample Selection and Study Overview

We designed and implemented a randomized controlled trial of an employee wellness program called iThrive at the University of Illinois at Urbana-Champaign. To participate in the study, university employees had to first digitally sign an informed consent form and complete an online baseline survey (described below). Employees who completed the baseline survey received a \$30 Amazon.com gift card. Participants were subsequently randomly assigned either to a control group or to one of six different treatment groups. Treatment groups differed only in the amount of financial rewards that participants were offered: \$0, \$100, or \$200 for completing a health screening and online health assessment, and \$25 or \$75 for each completed round of wellness activities. Treatment group participants were informed of their reward amounts at the time of their assignment.

Contact with members of the control group was minimized whenever possible. Participants in the control group were aware that they were participating in a study exploring “the link between wellness program incentives and program participation and health outcomes among employees”, as stated in their informed consent form, but the details of the program and the size of the incentives for those in the treatment group was not revealed to them. Nevertheless, it is likely that many members of the control group were aware that others on campus were participating in wellness activities and receiving rewards for doing so.

The 2016-2017 iThrive wellness program had three main components:

1. Health screening (August 15 – September 16)
2. Online health assessment (September 8 – October 4)
3. Wellness activities
 - (a) Fall 2016 (October 10 – December 16)
 - (b) Spring 2017 (January 30 – April 25)

Steps 1 and 2 were mandatory. Participants who failed to complete them received no rewards and were not allowed to participate in subsequent wellness activities. Participants who successfully completed steps

1 and 2 were given the opportunity to participate in fall and spring wellness activities. Participation in fall activities was not required in order to participate in the spring activities.

The relationship between the different datasets employed in our study is illustrated in Appendix Figure [D.1](#). Because most of the steps in the study were mandatory (e.g., taking the baseline survey, receiving a health screening), the datasets collected in later periods are generally only available for a strict subset of participants from previous periods. For example, health screening data are available for any participant who completed an online health assessment, but wellness activity data are not available for all participants who completed the online health assessment.

D.1.1 Online baseline survey (July 11 – July 31)

The University of Illinois provided us with a list of 12,486 active employees who met the following criteria as of June 10, 2016: (1) located at the Urbana-Champaign campus; and (2) eligible for part-time or full-time employee benefits from the Illinois Department of Central Management Services. This list included first and last names, mailing addresses, and email addresses. We dropped records that did not include a university email. We also dropped members of the research team, their family members, and other individuals heavily involved in the study. Following these exclusions, we were left with a total of 12,459 employees.

We mailed a postcard (see Appendix Figure [D.2](#)) on July 6, 2016 to each of these 12,459 employees informing them that they would receive an invitation to participate in an online survey for the Illinois Workplace Wellness Study. We included the UIUC-affiliated members of the research team in this mailing and confirmed that the postcards were delivered by July 9, 2016. The Provost of UIUC sent an email on the morning of July 11 to these employees indicating the university’s support for the study (see Appendix Figure [D.3](#)).

An email invitation (see Appendix Figure [D.4](#)) containing the link to the online baseline survey was sent to each of the 12,459 employees on the morning of July 11, shortly after the email from the Provost. Reminder emails were sent on July 19, July 27, and August 1 to employees who had not yet completed the survey. The survey closed at noon on August 1, at which point 4,834 employees had successfully completed

it. Participants who completed the survey immediately received a confirmation email (see Appendix Figure D.5). They also received an electronic \$30 Amazon.com gift card about one week after completing the survey (see Appendix Figure D.6).

D.1.2 Study randomization (August 1 – August 8)

We randomly assigned 3,300 of the 4,834 employees who completed the online baseline survey to one of six different iThrive treatment groups, denoted A25, A75, B25, B75, C25, and C75. Treatment groups differed only in the size of incentives offered for completing various steps of the iThrive program. Treated individuals in groups beginning with the letter A, B, or C were offered \$0, \$100, or \$200, respectively, for completing the health screening and online health assessment portions of the experiment. The second part of the treatment group name, 25 or 75, indicates the reward amount offered for each round (spring and/or fall) of wellness activities the individual completed.

For randomization, the sample was stratified by six baseline, demographic “strata” variables: (1) employee class (faculty, academic staff, or civil service); (2) sex (male or female); (3) age, as of the baseline survey launch date of July 11, 2016 (≤ 36 , $37 - 49$, or ≥ 50); (4) above or below median annual salary; (5) quartile of annual salary; and (6) race (white or nonwhite). To create the strata, we sequentially split the sample in the order listed above for these strata variables. At each step in this sequence, we would only split a cell by the next strata variable if doing so resulted in cell sizes of at least 20. This ensured that, for every stratum, at least 2 employees could be assigned to the control and each of the 6 treatment groups (i.e., $20 \cdot p_{A,B,C} \cdot p_{25,75} > 2$, where $p_{A,B,C} \cdot p_{25,75}$ is the proportion of each stratum assigned to each treatment arm, as described below). This stratification process resulted in 69 strata, with the sample size per stratum ranging from 20 to 251.

Within each stratum, a proportion $p_{A,B,C} = 1100/4834 \approx 0.228$ of employees were randomly selected to be offered one of the three levels of incentive tied to completing the screening and health risk assessment (\$0, \$100, and \$200). This randomization was done such that exactly 1,100 employees in total would be assigned to each of these three levels of screening incentive. Next, within each stratum and screening incentive level, a proportion $p_{25,75} = 0.5$ of employees were randomly selected to be offered each of the

two levels of activity incentive (\$25 or \$75). This resulted in six treatment groups with the following sample sizes: A25 ($N = 551$), A75 ($N = 549$), B25 ($N = 552$), B75 ($N = 548$), C25 ($N = 551$), and C75 ($N = 549$).

D.1.3 Health screening (August 15 – September 16)

We sent email invitations on August 9, 2016 to the 3,300 participants randomly selected to participate in iThrive. This email informed them of their selection and their monetary rewards for completing the different parts of the iThrive program, and explained how to sign up for a health screening (see Appendix Figure D.7). We also mailed postcards to these participants (Appendix Figure D.8) informing them of their selection. The postcards did not specify the monetary amounts and were delivered a few days after the initial email invitation. We sent reminder emails on August 12, August 23, and September 12 to participants who had not yet signed up for a health screening. Each of these participants was given login access to the iThrive website (see Appendix Figure D.9 and Appendix Figure D.10), which provided them with information about the iThrive program and reported on their progress throughout the year.

Health screenings were offered at 7 different locations on the UIUC campus, and also at Presence Covenant Medical Center, which is located about one mile away from the center of campus. A map displaying these locations is available in Appendix Figure D.11. Participants signed up for a date and time to receive their health screening using an online appointment scheduler (see Appendix Figure D.12).¹

Appointments were available Monday through Saturday, from August 15th to September 16th, with the exception of Saturday, September 3 and Monday, September 5 (Labor Day). Appointment times were generally available from 6 AM until 10:50 AM. Only one campus location was available each day. The full schedule of appointment times and locations is displayed in Appendix Table D.1.

Participants who successfully signed up for an appointment received a confirmation email containing the date, time, and a link to a map of the location of their appointment. The online appointment scheduler sent participants an automated reminder email 24 hours prior to their appointment (see Appendix Figure D.13), and an automated text message if they had provided their cell phone number when making their

¹A small number (<10) of participants showed up for a health screening without an appointment, but we were able to accommodate them.

appointment. We also sent participants a reminder email emphasizing that they should “not have anything to eat or drink (besides water) for 12 hours” before the health screening (see Appendix Figure D.14).

Upon showing up for their appointment, participants were asked to provide a form of identification, to sign a second informed consent form, and to complete a brief questionnaire (see Appendix Figure D.15) concerning their beliefs about their health status.² Participants then filled out the top half of a health screening form (Appendix Figure D.16) and were subsequently then directed to an open “station” where a clinician from Presence Covenant Medical Center measured their height, weight, waist circumference, and blood pressure. Next, they obtained blood chemistry measurements using the CardioChek Plus Analyzer, which is manufactured by PTS Diagnostics. This fingerstick measures cholesterol (total, HDL, and LDL), triglycerides, and glucose. All measures were recorded on the health screening form. At the end of the screening, a health coach reviewed the results with each individual participant in private. Depending on the measures, participants were sometimes recommended to make minor lifestyle changes or to seek medical attention. (See Appendix Figure D.17 for the guidelines employed by the health coach.) Recommendations were recorded on the health screening form. Upon departure, participants were given a carbon copy of their health screening form and a postcard reminding them to check their email for an invitation to take the online health assessment (Appendix Figure D.18). From start to finish, the entire health screening lasted on average for about 20 minutes.

D.1.4 Online health assessment (September 8 – October 4)

After completing their health screening, participants were invited over email to complete an online health assessment survey (Appendix Figure D.19). We sent reminder emails on September 21 and September 29 to participants who had not yet completed their online health assessment. After completing the survey, participants received a confirmation email from us within a few days.

The server hosting the survey became overloaded with requests on the first day of the survey (September 8), causing many participants to experience technical problems and to be unable to complete the survey.

²The ID was not a formal requirement, so in the small number of cases where participants did not have an ID, we allowed them to receive their health screening anyway. Fraud was not a concern because (1) participants had to make appointments online in their name prior to their arrival; and (2) all reward payments were made later in the study by direct deposit via University payroll.

This was fixed within 24 hours, although a small number of participants continued to report difficulties taking the health assessment throughout the survey period. Nevertheless, 97 percent of participants who completed the health screening managed to complete the online health assessment, so these technical glitches do not appear to have caused major difficulties for participants.

D.1.5 2016 fall wellness activities (October 10 – December 16)

We sent email invitations for the Fall 2016 wellness activities on September 27 to participants who had successfully completed their online health assessment (Appendix Figure [D.20](#)).³ Participants were able to sign up for activities immediately, but no activities began before October 10. Signups were done via the iThrive website. Appendix Table [D.2](#) lists the different activities that were available. Most classes were filled to capacity. Nearly 80 percent of people who registered were signed up for HealthTrails, which had unlimited capacity.

Out of 1,848 people eligible to participate, 1,306 people signed up for a wellness activity, and 903 people successfully completed them.

D.1.6 2017 spring wellness activities (January 30 – April 25)

We sent email invitations for the Spring 2017 wellness activities on January 17 to participants who had successfully completed their online health assessment (Appendix Figure [D.21](#)). Participants did not have to complete a fall activity to be eligible to participate in a spring activity. Participants were able to sign up for activities immediately, and activities began on January 25. Signups were done via the iThrive website. Appendix Table [D.3](#) lists the different activities that were available. Most classes were filled to capacity. Over 75 percent of people who registered were signed up for Spring Into Motion, which had unlimited capacity. Out of 1,848 people eligible to participate, 1,059 people signed up for a wellness activity, and 740 people successfully completed them.

³We sent a separate invitation on October 3 to the small number of participants who completed their online health assessment after September 27.

D.1.7 2017 online follow-up survey (July 10 - August 9)

We mailed a postcard (see Appendix Figure D.22) on July 5, 2017 to 4,824 participants in our study.⁴ We included the UIUC-affiliated members of the research team in this mailing and confirmed that the postcards were delivered by July 8, 2017.

We sent an email invitation (see Appendix Figure D.23) containing the link to the online follow-up survey to each of the 4,824 study participants on the morning of July 10. Reminder emails were sent on July 18, July 26, August 2, and August 7 to participants who had not yet completed the survey. The survey closed at 10:20 am on August 9, at which point 3,561 study participants (73.7 percent) had successfully completed it.⁵ Participants who completed the survey immediately received a confirmation email. They also received an electronic \$20 Amazon.com gift card about one week after completing the survey. The confirmation email and gift card were formatted similarly to the ones employed for the initial baseline survey (see Appendix Figures D.5 and D.6).

The August 2 reminder informed participants that ten people who completed the follow-up survey would be chosen at random to receive a \$100 Amazon.com gift card (see Appendix Figure D.24). This new potential reward was in addition to the guaranteed \$20 Amazon.com gift card. Participants who had already completed the survey prior to August 2 were included in this drawing.

D.1.8 2017 follow-up health screening (August 21 – September 22)

All study participants, including those in the control or treatment groups, were eligible to complete the one-year follow-up health screening in 2017. We randomly assigned these individuals to one of two groups, which differed only in the size of incentives (\$0 or \$125) offered for completing the follow-up survey.

Our method of randomization for the follow-up screening incentive combined explicit stratification plus re-randomization. Our follow-up strata were constructed by splitting the original strata by study arm. Because there were 69 original strata (see Section D.1.2) and 7 study arms (6 treatment groups plus a

⁴4,834 participants completed the 2016 baseline survey, but 10 had subsequently withdrawn from the study at the time of this invitation.

⁵The survey was accidentally reopened later that month for several weeks. Although all participants had been told that the survey would close on August 9, seven participants nevertheless completed the survey after the August 9 deadline, bringing the final number of completions up to 3,568.

control group), this resulted in $483 = 69 \times 7$ follow-up strata, with the sample size per follow-up stratum ranging from 2 to 80.

To implement the stratified re-randomization, we generated multiple potential follow-up treatment assignments T_j as follows:

1. Draw a random integer s_j and set the random-number seed to equal s_j .
2. Randomly sort all 4,834 original study participants first by follow-up strata, then within each follow-up strata. Drop the individuals ($N = 15$) who had withdrawn from the study at the time of randomization (August 4, 2017), leaving a sample of $N = 4,819$ employees to be randomized.
3. Assign alternating observations to the \$0 and \$125 follow-up screening incentive group, and let T_j denote the resulting vector of treatment assignments for each employee.
4. Test for balance between the \$0 and \$125 groups for 60 variables (pre-determined at the time of follow-up randomization) grouped into the following 8 families:
 - (a) Baseline strata (6 variables).
 - (b) Baseline survey (21 variables).
 - (c) Salary and age (3 variables).
 - (d) Employment (7 variables).
 - (e) Health behavior (6 variables).
 - (f) Medical spending and coverage (8 variables).
 - (g) Sick days taken (2 variables).
 - (h) Registration for or completion of 2016 biometric screening, HRA, or Fall 2016 or Spring 2017 wellness activities (7 variables).

We performed joint tests for balance by family of outcomes (8 balance tests), plus individual tests for balance for each of the medical spending outcomes, with and without coverage weights for average

spending outcomes (10 balance tests). In total, we performed 18 tests for balance, and we denote by p_j^{min} the minimum p -value across these tests.

After performing these steps for $j = 1$ to 10,000, we selected the treatment assignment that maximized the p -value p_j^{min} from the balance tests. Specifically, the selected treatment assignment was chosen to be T_{j^*} , where $j^* = \arg \max_j p_j^{min}$.

In total, 2,409 employees were assigned to the \$0 follow-up screening incentive, while 2,410 employees were assigned to the \$125 follow-up screening incentive. We sent email invitations on August 14, 2017 to these employees ($N = 4,819$) informing them of their monetary reward for completing the 2017 health screening, and explained how to sign up for it (see Appendix Figure D.25). We sent reminder emails on August 23, September 5, September 13, September 19, and September 21 to participants who had not yet signed up for a health screening.⁶ The final reminder encouraged participants to walk in for a health screening even if they did not have an appointment (see Appendix Figure D.26).

The iThrive website was updated on August 14, 2017 so that treatment group participants could obtain information about the 2017 follow-up health screening and their potential rewards. For the first time, control group members were also given login access to the iThrive website. Everyone was encouraged to visit the website in the August 14 screening invitation email (Appendix Figure D.25). For control group members, the website only displayed information about the health screenings (see Appendix Figure D.27). For treatment group members, the website displayed information about the subsequent health assessment and wellness activities once the treatment group member completed a screening (see Appendix Figure D.27).

Health screenings were held in the same locations as in 2016, with the exception of the Physical Plant Services Building, which was unavailable for reservation. Unlike in 2016, people were allowed to make appointments all the way until 3:50 PM. The full schedule of appointment times and locations is reported in Appendix Table D.4.

The health screening procedure was nearly identical to the procedure employed in 2016 (see Section D.1.3 for a full description). There were only two substantive differences. First, participants were not

⁶Study participants who signed up for a screening, but later failed to show up for their appointment, were included in these reminder emails.

handed a postcard at the end of the screening reminding them to check their email for an invitation to take the online health assessment. This step was omitted in 2017 because follow-up screening participants in that year included employees from the control group, who were not eligible to take the 2017 online health assessment. Second, health screening confirmation emails were sent only to participants who had been assigned a \$125 reward (see Appendix Figure D.29). Screening participants in both the control and treatment groups who were assigned a \$0 reward did not receive a screening confirmation email. However, all participants could confirm their completion status by visiting the iThrive website.

D.2 Datasets

D.2.1 University administrative data

The University of Illinois provided us with an initial list of 12,459 employees who met the following criteria as of June 10, 2016: (1) located at the Urbana-Champaign campus; and (2) eligible for part-time or full-time employee benefits from the Illinois Department of Central Management Services. The university administrative datasets described below are available for all 12,459 of these employees.

Demographics

This dataset includes first and last names, mailing address, email address, exact date of birth, sex, annual salary, race (white, black, or other), employee class (faculty, academic staff, or civil service), home college (49 colleges), home organization (323 organizations), and exact hire date.

Employment history

This dataset includes employment history information up through August 15, 2017. It includes the exact hire date for all employees. Out of the initial sample of 12,459 employees, 1,537 of these employees were no longer actively employed by the university as of August 15, 2017. For these former employees, the dataset includes the exact date of employment termination and the associated reason (resigned, retired, deceased, terminated, contract ended, or other). For active employees, the dataset lists their annual salary as of

August 15, 2017.⁷

Sick leave

This dataset includes the number of sick days taken by a Civil Service employee at the monthly level, for the time period January 2015 through May 2017. For non-Civil Service employees (i.e., Academic Staff and Faculty), the dataset includes the total number of sick days taken during the two time periods August 16, 2015 through August 15, 2016, and August 16, 2016 through May 15, 2017. Sick leave for faculty (25 percent of our sample) is self-reported and exhibits little variation: more than 75 percent of the faculty in our sample reported 0 days of sick leave during the August 16, 2015 through August 15, 2016 academic year.

The vast majority of employee sick leave is noncompensable, i.e., it cannot be “cashed out” when the employee terminates employment.⁸ Civil Service employees accrue sick leave at the rate of 0.0462 hours for each hour worked, which corresponds to approximately 12 days per year for a full-time employee, and this sick leave is cumulative (i.e., rolls over from one year to the next). Full-time Academic Staff and Faculty earn 12 cumulative and 13 non-cumulative sick leave days per year, and their total sick leave is recorded in the data only twice a year: on May 16 and on August 16.

Gym attendance

This dataset includes a list of the exact dates that each employee visited one of the university’s campus recreational facilities during the time period January 1, 2015 through July 31, 2017. There are three recreational facilities located on the university campus: the Activities and Recreation Center (ARC), the Campus Recreation Center East (CRCE), and the Ice Arena. Membership costs \$40 per month for university employees and retirees. Entering these facilities requires swiping a university identification card through a machine, which is the basis for the observations in this dataset.

⁷Civil Service, Academic Staff, and Faculty received a mid-year salary increase in the second half of February, 2017. The salary increase was explicitly merit-based, and the total salary pool was capped at 2 percent of aggregate base salaries.

⁸Prior to 1999, employees could accrue compensable sick leave. A few older employees still have positive compensable sick leave balances, but this is very rare.

D.2.2 Illinois Marathon data

The Illinois Marathon is a running event held annually in Champaign, Illinois. The races offered include a marathon, a half marathon, a 5K, and a 10K. When registering for a race, a participant must provide her name, age, sex, and hometown. That information, along with the results of the race, are published online after the races have concluded.⁹

We downloaded Illinois Marathon data for the 2014-2017 races and matched it to individuals in our study data using full name, age, sex, and hometown. An individual in our study data was counted as participating in a running event in a given year if either (a) University and Illinois Marathon records matched on full name, age (+/- 1 year), and sex; or (b) University and Illinois Marathon records matched on the first two letters of last name, age (+/- 1 year), sex, and hometown. Among University employees that match to Illinois Marathon records using *either* match measure, *both* measures generate a match in 73.7, 74.6, 84.4, and 79.6 percent of cases for the years 2014, 2015, 2016, and 2017, respectively.

D.2.3 Health insurance claims data

We obtained health insurance claims data for 8,326 university employees (anonymized for non-study participants) who were listed in our university administrative dataset and who were members of Health Alliance at any point during the period January 1, 2015 through July 31, 2017. (Note: 8,095 employees were members during the pre-period July 1, 2015 through July 31, 2016.) The dataset includes all inpatient, outpatient, and prescription drug claims with a date of service between January 1, 2015 through June 30, 2017. Each claim lists a date of service, a physician specialty code, a place of service code, and the total allowed amount, which is the sum of payments to the provider from both the insurer and the beneficiary. Health Alliance also provided an enrollment file listing start and end dates for each member.

Health Alliance, the university's most popular insurer, operates an HMO plan with a \$0 medical deductible and a \$100 annual pharmacy deductible. Physician visits require a \$20 copay, and the plan's out-of-pocket maximum is \$3,000 for the individual and \$6,000 for the family.

The university offers seven different health insurance plans. One of these, Quality Care Health Plan,

⁹See <http://illinoismarathon.com/resultscertificatesphotos/#results>.

is a traditional indemnity insurance plan.¹⁰ The rest are managed care plans, including four Health Maintenance Organizations (BlueAdvantage HMO, Coventry HMO, Health Alliance HMO, and HMO Illinois) and two Open Access Plans (Coventry OAP and HealthLink OAP). Beginning July 1, 2017, Coventry HMO and Coventry OAP were renamed Aetna HMO and Aetna OAP.

Employee contributions are the same for all HMO plans, and depend on income. For the 2016-2017 plan year, an employee's monthly contribution for an HMO plan ranged from \$68 per month (annual salary \$30,200 and below) up to \$186 per month (annual salary \$100,001 and above). Contributions for an employee enrolled in Quality Care Health Plan ranged from \$93 per month (annual salary \$30,200 and below) up to \$211 per month (annual salary \$100,001 and above). The seven health plans charge different contributions for dependents, with dependent contributions ranging from \$96 per month (BlueAdvantage HMO) to \$249 per month (Quality Care Health Plan).

D.2.4 Online survey data

2016 baseline survey

The baseline survey was administered online using survey software provided by SurveyGizmo. An email invitation containing the link to the online baseline survey was sent to 12,459 university employees. Each link was unique and pointed to a survey that could only be completed once. Survey participants navigated the survey by clicking on buttons labeled "Next" and "Back". They were allowed to skip questions and to change their answers on previous pages if so desired. In order to receive their \$30 Amazon.com gift card, participants had to navigate to the end of the survey and click the "Submit" button. The software did not allow them to change their answers once the survey was submitted. Participants who exited the survey prior to completion could continue from where they left off by clicking on their invitation link again.

The software recorded that 7,468 employees clicked on the link to the survey, 4,918 employees began the survey, and 4,834 employees successfully completed the survey. Among those who completed the survey within an hour of clicking on the survey link for the first time, the average completion time was 15 minutes.

In order to assess the reliability of the survey, we compared participants' self-reported ages from the

¹⁰This plan was administered by Cigna up through June 30, 2017. Aetna has administered it since July 1, 2017.

survey with the ages available in the university’s administrative data. Of the 4,830 participants who reported an age, only 24 (<0.5%) reported a value that differed from the university’s data by more than one year.

2017 follow-up survey

The 2017 follow-up survey was administered online using survey software provided by SurveyGizmo. An email invitation containing the link to the follow-up survey was sent to 4,824 study participants.¹¹ The format of the invitation email and the survey were similar to the 2016 baseline survey. In order to receive their \$20 Amazon.com gift card, participants had to navigate to the end of the survey and click the “Submit” button.

The software recorded that 3,642 employees clicked on the link to the survey, 3,611 employees began the survey, and 3,568 employees successfully completed the survey. Among those who completed the survey within an hour of clicking on the survey link for the first time, the average completion time was 13.3 minutes. The completion rates for the control and treatment groups were 75.4 and 73.1 percent, respectively. The difference in completion rates is marginally significant ($p = 0.079$).

In order to assess the reliability of the survey, we compared participants’ self-reported ages from the survey with the ages available in the university’s administrative data. Of the 3,561 participants who reported an age, only 20 (<0.006%) reported a value that differed from the university’s data by more than one year.

D.2.5 Health screening data

Fall 2016 health screening

2,047 participants signed up for a health screening, and 1,900 were successfully screened. The top of each participant’s screening form (see Appendix Figure D.16) contains the participant’s answers to the following questions:

¹¹4,834 participants completed the 2016 baseline survey, but 10 had subsequently withdrawn from the study at the time of this invitation.

1. "Do you use tobacco of any form?"
2. "In the average week, how many times do you engage in physical activity?"
3. "If you engage in physical activity, for how long?"
4. "How often do you feel tense, anxious, or depressed?"
5. "Do you have a primary physician?"
6. "Did you fast today?"

The following biometric data were recorded on every form: height; weight; waist circumference; body mass index; systolic blood pressure; diastolic blood pressure; total cholesterol; total cholesterol ratio; HDL; LDL; triglycerides; and glucose. Finally, the form also records which (if any) of the following actions were taken by the health coach (see also Appendix Figure [D.17](#)) as a result of the patient's biometric readings:

1. Referred patient to a primary care physician
2. Advised patient to make minor lifestyle changes
3. Communicated to patient that one or more results were out of the normal range
4. Communicated to patient that the results require a medical referral
5. Communicated to patient that the results require immediate medical attention

In order to ensure accuracy, all of the data on every form was read and entered into a database twice, by two different research assistants. Any disagreements between the two entries were resolved by reexamining the original form.

D.2.6 Health questionnaire data

Fall 2016 health questionnaire

Participants were required to fill out a health questionnaire prior to receiving their health screening, so every participant who was screened (1,900 in total) is also represented in this dataset. A copy of the questionnaire is displayed in Figure D.15. As with the health screening data, these data were digitized twice in order to ensure accuracy.

D.2.7 Online health assessment and wellness activities data

Fall 2016/ Spring 2017 online health assessment and wellness activities

Out of the 1,900 participants who completed a health screening, 1,848 completed an online health assessment. These 1,848 participants constitute the set of study participants who were eligible to sign up for wellness activities in the fall and in the spring. Participants were not required to sign up for a fall activity in order to sign up for a spring activity. Out of the 1,848 people eligible to participate, 1,306 people signed up for a fall wellness activity (903 completed it) and 1,059 people signed up for a spring wellness activity (740 completed it).

The online health risk assessment (HRA) data contain the exact start dates and times that participants began their HRA, and the exact end dates and times they completed it. The wellness activity data include indicator variables for whether the participant signed up for a wellness activity, and for whether the participant completed that activity. If the participant signed up for an activity, the name of the activity was also recorded. (See Appendix Tables D.2 and D.3 for names and descriptions of the activities that were offered.) The wellness activities data also include information on how much of the activity was completed by the participant, along with the minimum threshold required to qualify for the wellness activity reward.¹²

¹²For example, the Spring 2017 “Lunchtime Walk” activity met on 8 separate occasions, and participants were required to participate in at least 6 of the walks in order to qualify for their reward. The wellness activities data contains a variable specifying how many walks each participant attended.

D.3 Online Appendix Figures

Figure D.1: Overlap among datasets

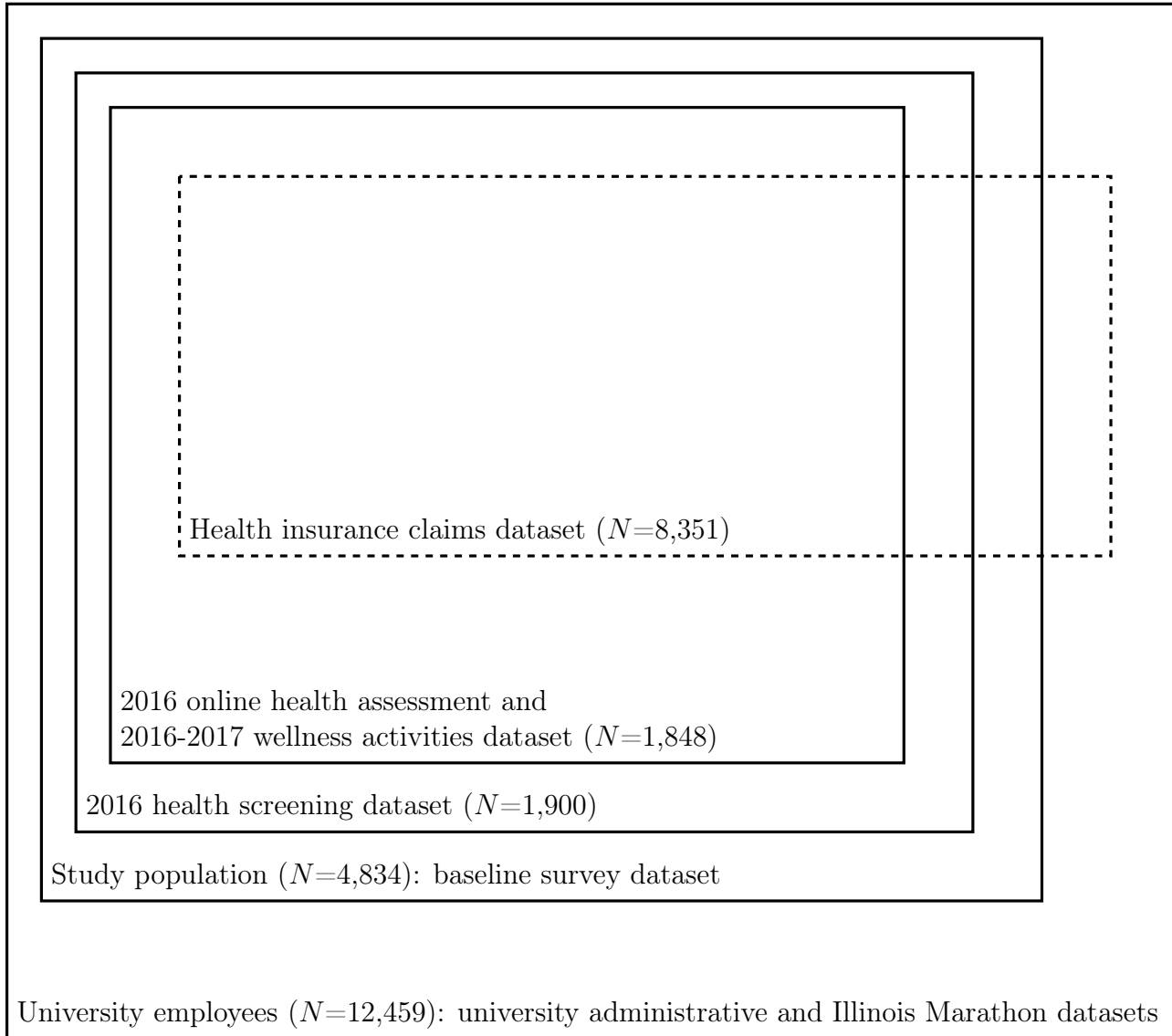


Figure D.2: Front and back sides of invitation postcard sent on July 6, 2016

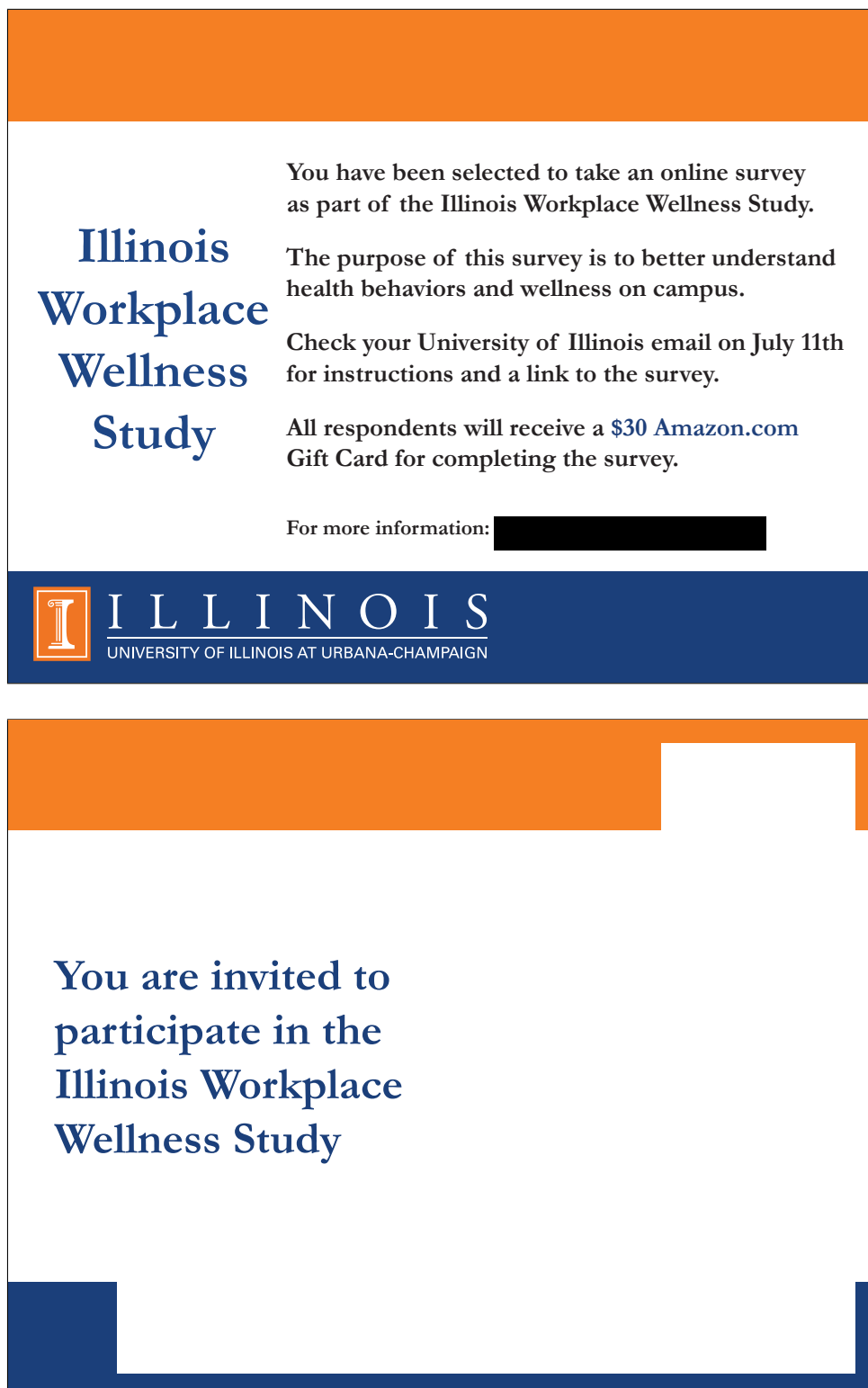
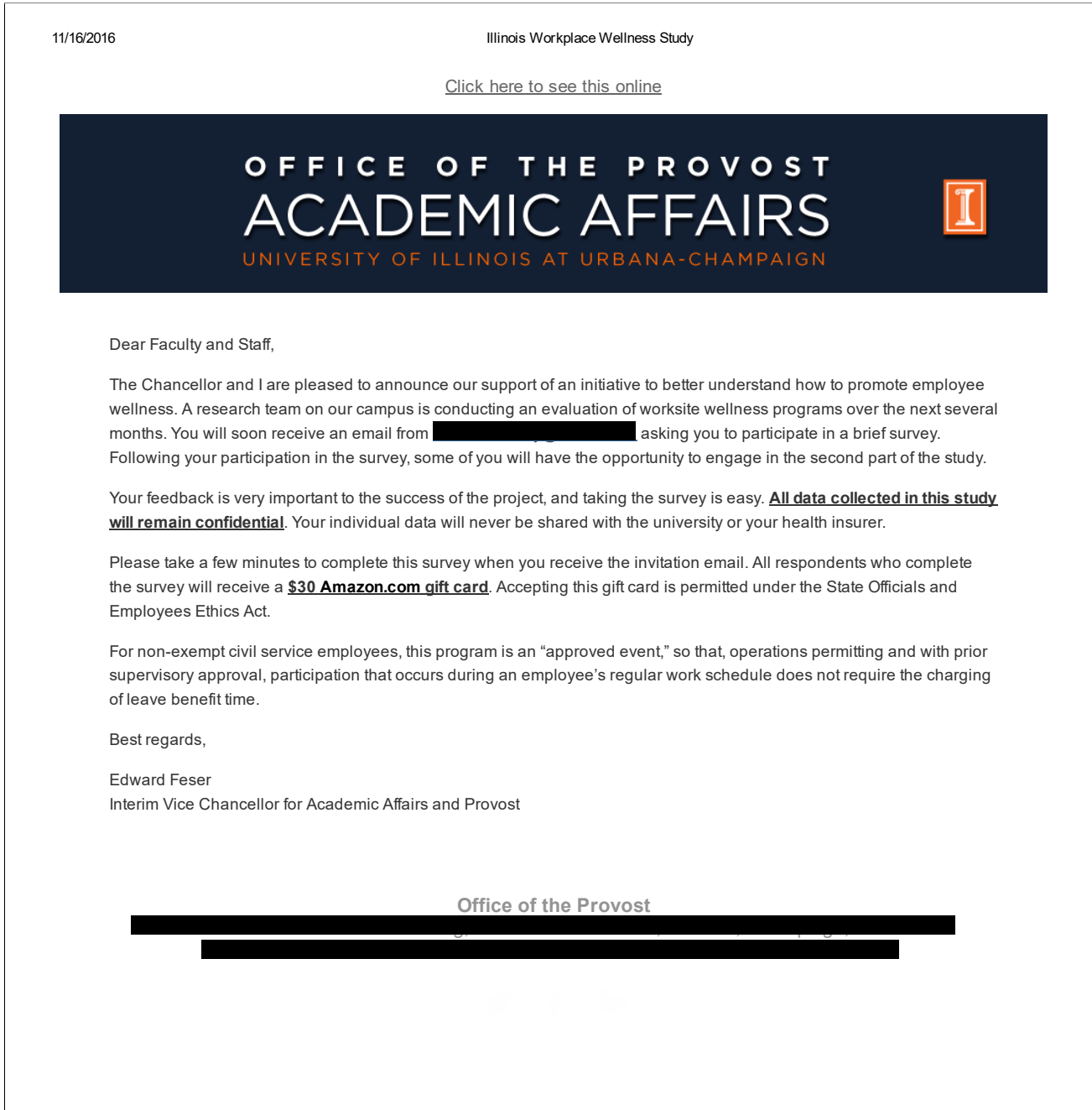


Figure D.3: Email sent from the UIUC Provost to university employees on July 11, 2016



Notes: Email also available at <http://illinois.edu/emailer/newsletter/100150.html>.

Figure D.4: Invitation email sent to university employees on July 11, 2016

Illinois Workplace Wellness Study Invitation

From: **Illinois Workplace Wellness Study** [REDACTED]
Date: Monday, July 11, 2016 10:34 AM
Subject: Illinois Workplace Wellness Study Invitation
To:

Dear Colleagues,

We invite you to take part in a research study of workplace wellness programs. This study is funded by the National Institutes of Health and will help inform national health policy regarding the costs and benefits of wellness programs.

The first part of the study consists of an online survey about health behaviors and wellness on campus. The survey will take approximately 15 minutes to complete. We know that your time is valuable, so we are offering a **\$30 Amazon.com gift card** to all respondents who complete the survey.

The survey is only available for a limited time, so please complete the survey promptly in order to receive your \$30 gift card. To access the online survey, simply click the following URL or paste it in your browser:

<http://surveys.citl.illinois.edu/go/Wellnessjx421>

This survey is strictly confidential. **Your individual data will never be shared with the university or your health insurer.** Some of you who take the survey will be offered an opportunity to participate in a second part of the research study.

For non-exempt civil service employees, this program is an “approved event,” so that, operations permitting and with prior supervisory approval, participation that occurs during an employee’s regular work schedule does not require the charging of leave benefit time.

Thank you for contributing to this important research project! If you have any questions or need assistance, please contact us at [REDACTED]

Best regards,

Illinois Workplace Wellness Study Team

David Molitor
Assistant Professor, Department of Finance

Laura Payne
Associate Professor, Department of Recreation, Sport and Tourism

Julian Reif
Assistant Professor, Department of Finance and IGPA

Figure D.5: Text of the confirmation email sent to study participants who successfully completed the online baseline survey

From: [REDACTED]
Subject: Survey Confirmation: Illinois Workplace Wellness Study

Dear **[First name]**,

Congratulations! This email is confirmation that you have completed the online survey for the Illinois Workplace Wellness Study. You will soon receive an email containing your \$30 Amazon.com gift card. Please allow up to one week for the gift card to be processed.

You may be selected to participate in the second part of the study. If so, we will email you within the next month.

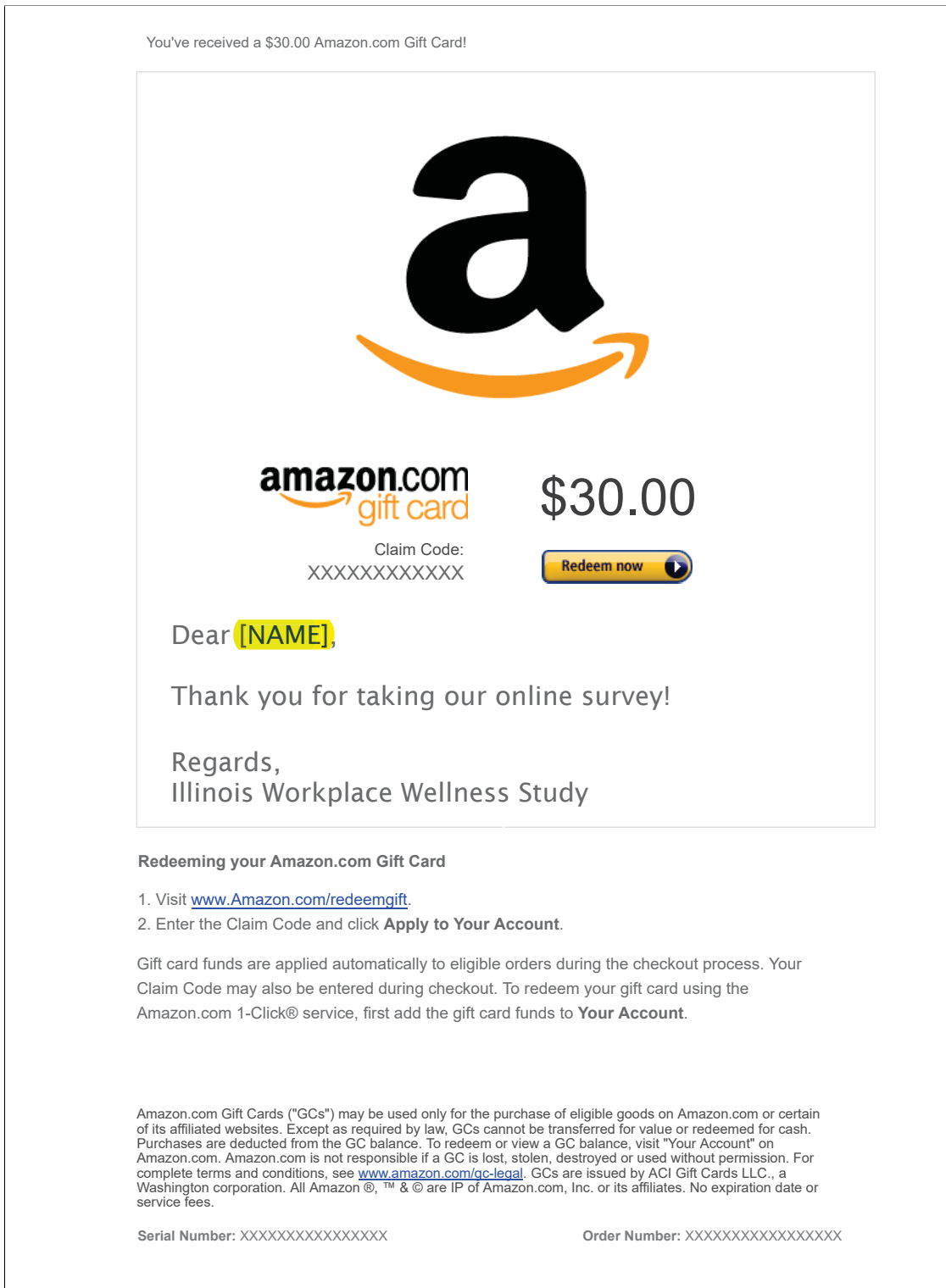
If you have any questions or need assistance, please contact us at [REDACTED]
or [REDACTED]

Regards,

Illinois Workplace Wellness Study Team

Notes: The text highlighted in yellow was appropriately customized for each participant.

Figure D.6: Electronic Amazon.com gift card sent to participants who completed the baseline survey



Notes: The text highlighted in yellow was appropriately customized for each participant.

Figure D.7: Text of invitation email sent to participants in treatment group C75 (\$350 incentive) on August 9, 2016

From: [REDACTED]
Subject: Illinois Workplace Wellness Study: iThrive Invitation

Dear [First Name]:

Last month, you completed a health survey as part of the Illinois Workplace Wellness Study. You have been selected to participate in the second part of this research study: [iThrive](#), a program to promote health and wellness among campus faculty and staff.

iThrive offers you the opportunity to participate in valuable health screening and wellness activities at no cost to you. In addition, **you can earn up to \$350 in financial rewards**, as described below.

The opportunity to participate in iThrive is only available for a limited time. To learn more about how to get started and earn rewards, visit the iThrive website: [iThrive.illinois.edu](#)

The iThrive website provides personalized information on your progress, links for signing up for iThrive opportunities, answers to frequently asked questions (FAQs), and a summary of your rewards. To help you get started, you will receive an invitation later today from Presence Health, in order to schedule your health screening.

The iThrive program is summarized below.

How iThrive Works

iThrive begins with a health screening and health assessment survey. Once you complete the screening and health assessment, you are eligible to enroll in wellness activities in Fall 2016 and again in Spring 2017.

Step 1: Health Screening + Health Assessment Survey (\$200 reward)

The health screening is your gateway to iThrive. The purpose of a health screening is to measure physical health characteristics (e.g., height, weight, blood pressure, cholesterol) and use the information as a benchmark for health promotion and management. For your convenience, Presence Health will offer these screenings at various dates and locations across campus.

After completing the health screening, you will receive an invitation to complete an online health assessment survey. The health assessment will provide you with a detailed health summary and evaluation of health risks. Upon completion of the health screening and health assessment survey, you will receive a reward of \$200.

Step 2: Wellness Activities (up to \$150 reward)

After completing your health screening and health assessment survey, you will have the opportunity to participate in a wellness activity that aligns with an area of your health that you would like to improve. These areas include physical activity, weight management, stress management, chronic disease self-management, and tobacco cessation. You will have the option to participate in programs that meet in person, or you may choose to participate in one of our online, self-paced programs.

These activities will be offered in Fall 2016 and again in Spring 2017. Completing your chosen wellness activity in Fall 2016 will entitle you to a \$75 reward. Completing an activity in Spring 2017 will entitle you to another \$75 reward, for a total possible reward of \$150 for wellness activities. If you do not complete an activity in Fall 2016, you are still eligible to participate in Spring 2017 and receive a \$75 reward.

Enrolling in iThrive

You enroll in iThrive by scheduling your health screening. When scheduling your health screening, please use the email address to which this email was sent [REDACTED]. This email address will be referred to as your "iThrive contact email". You will receive an email from Presence Health today with a link to the online scheduler. You can also access the online scheduler now by copying and pasting the following URL into your browser:

[ithrive.acuityscheduling.com](#)

You may also visit the iThrive website at any time: [iThrive.illinois.edu](#). This website will provide personalized information on your progress, links for signing up for iThrive opportunities, and a summary of your rewards.

For non-exempt civil service employees, iThrive is an "approved event," so that, operations permitting and with prior supervisory approval, participation that occurs during an employee's regular work schedule does not require the charging of leave benefit time.

As with every part of the Illinois Workplace Wellness Study, your participation in iThrive is completely voluntary and your **individual data will never be shared with your health insurance provider or your employer**. You can read [here](#) about the purpose of our study as well as the steps we will take to keep your information confidential. If you have any questions or need assistance, please contact us at [REDACTED]

Yours in good health,

Illinois Workplace Wellness Study Team

Notes: The text highlighted in yellow was appropriately customized for each participant.

Figure D.8: Front and back sides of the postcard mailed to participants selected to participate in iThrive, week of September 8, 2016



Figure D.9: Login page for the iThrive website

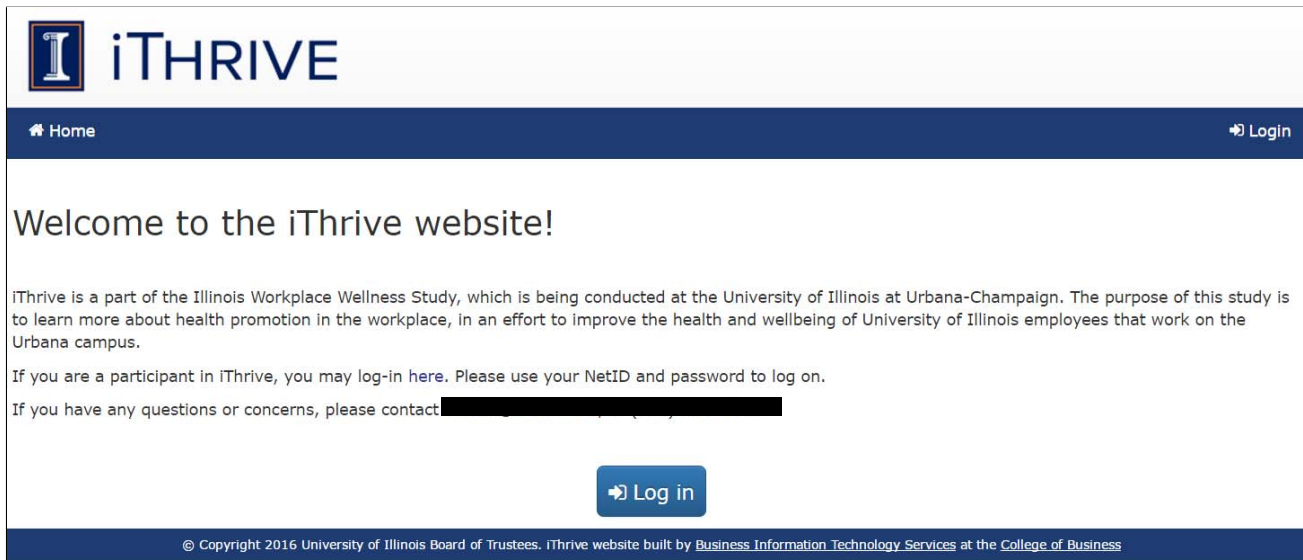


Figure D.10: Main home page for the iThrive website

iTHRIVE

My Portal Health Screening & Assessment Wellness Activities FAQ Contact Welcome John Doe Logout

My Portal

My Portal gives you information about your progress in iThrive, a program to promote health and wellness among campus faculty and staff. iThrive offers you the opportunity to participate in valuable health screening and wellness activities at no cost to you. In addition, you can receive financial rewards for completing certain elements of iThrive.

To earn rewards and to participate in Wellness Activities, you must complete your Health Screening by Friday, September 16th and the Health Assessment by Friday, September 30.

Your participation reward: \$200.00 of \$350.00 earned so far

Step 1: Health Screening & Assessment

The first step in iThrive is to complete your Health Screening and Health Assessment. After you complete your Health Screening, you will be able to access your online Health Assessment. [Learn more about Health Screening & Assessment »](#)

Congratulations! You have completed your Health Screening and Health Assessment.

Reward for completing both the Health Screening and Health Assessment: \$200.00

- ✓ Health Screening completed
- ✓ Health Assessment completed

Step 2: Wellness Activities

After you have completed Step 1, you may register to participate in a wellness activity. You may use the information provided to you in your Health Assessment to select a program that best addresses an area of your health that you would like to improve. [Learn more about Wellness Activities »](#)

Registration for Fall Activities is now closed. More information about Spring Activity registration will be made available soon.

Reward for completing Fall activity: \$75.00

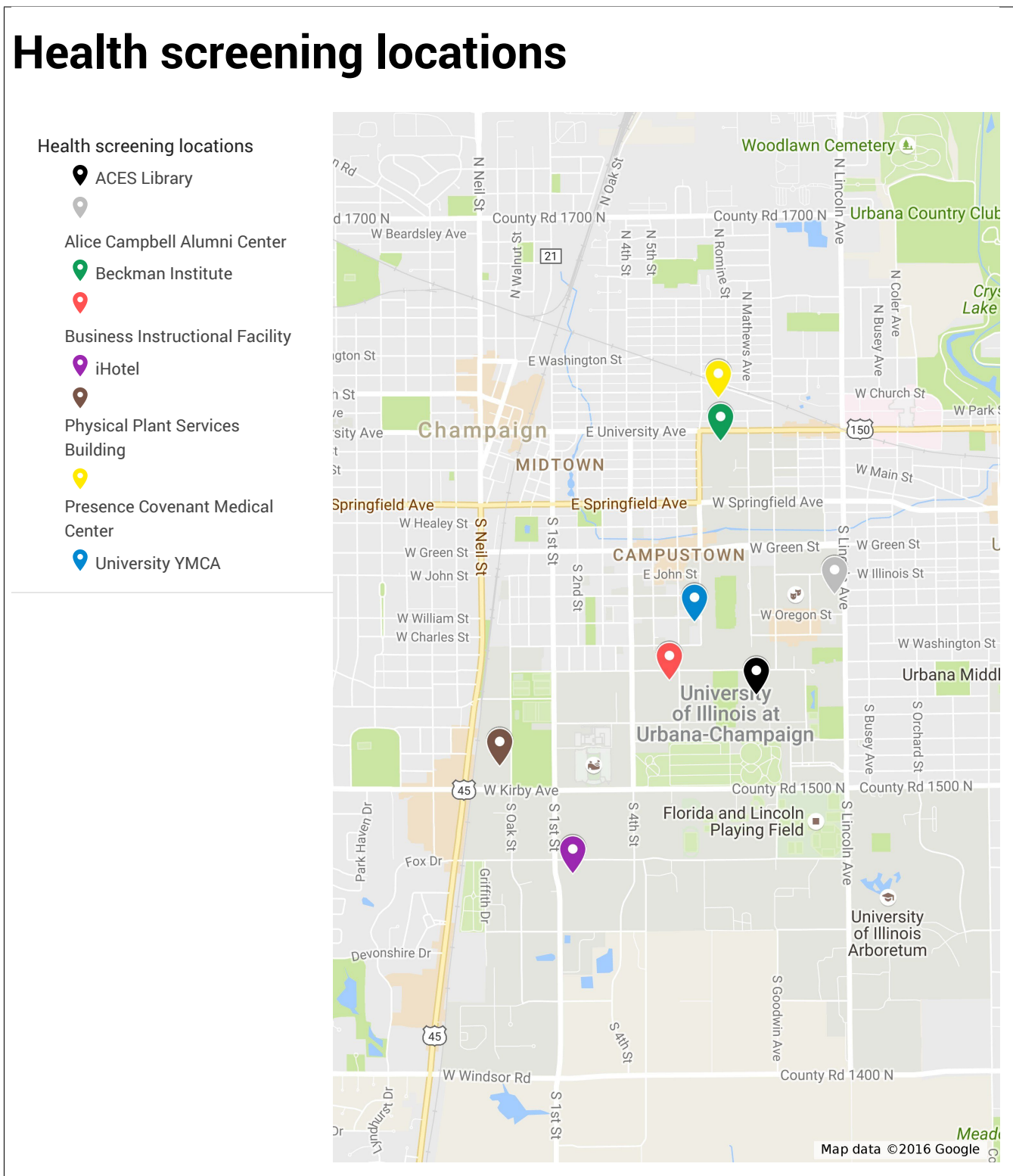
Reward for completing Spring activity: \$75.00

- ✗ Fall activity not completed. Registered for HealthTrails
- ✗ Spring activity not completed

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Notes: This participant was randomly assigned to treatment group C75, and thus is eligible for a total of $\$200 + 2 \times \$75 = 350$ in rewards.

Figure D.11: Screening locations



Notes: This map displays the locations of the 8 different places where health screenings were held.

Figure D.12: First and second pages of the online appointment application used to sign up for a health screening

Choose
Your Info
Confirmation

Choose a location where you would like to have your screening. Then select a time when you are available on Monday through Saturday, from **August 15th to September 16th**. Each screening will take about 20 minutes.

The screening will involve a finger-stick blood draw, and will require that participants fast for 12 hours prior to their appointment time.

Not all locations are available on each date - click on a location to see which dates are available. If there are no dates available at your preferred location, please click on the drop-down menu to view the other locations.

Questions? Email [REDACTED]

To avoid losing progress, please do not use the back button on your browser.

Choose a location for your health screening...

ACES Library
1101 S Goodwin Ave, Urbana, IL 61801

Alice Campbell Alumni Center
601 S. Lincoln Ave Urbana, IL 61801

Beckman Institute
405 N Mathews Ave, Urbana, IL 61801



Business Instructional Facility
515 East Gregory Drive Champaign, IL 61820

iHotel
1900 South First Street | Champaign, IL 61820

Physical Plant Services Building
1501 South Oak Street, Champaign, IL 61820

Presence Covenant Medical Center
1400 W. Park St., Urbana, IL 61801

University YMCA
1001 South Wright Street Champaign, IL 61820

Choose
Your Info
Confirmation

Choose a location where you would like to have your screening. Then select a time when you are available on Monday through Saturday, from **August 15th to September 16th**. Each screening will take about 20 minutes.

The screening will involve a finger-stick blood draw, and will require that participants fast for 12 hours prior to their appointment time.

Not all locations are available on each date - click on a location to see which dates are available. If there are no dates available at your preferred location, please click on the drop-down menu to view the other locations.

Questions? Email [REDACTED]

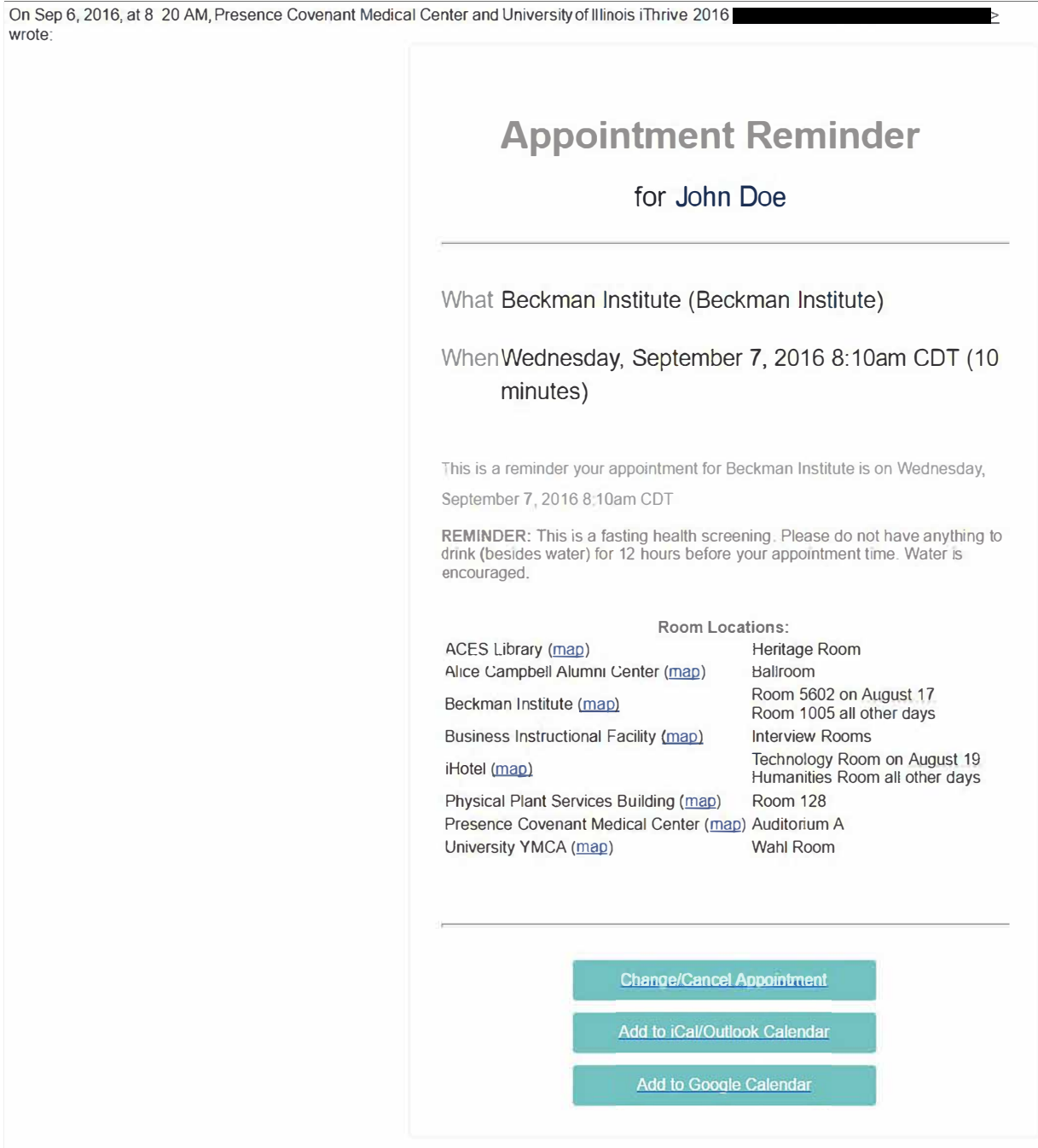
To avoid losing progress, please do not use the back button on your browser.

iHotel
1900 South First Street | Champaign, IL 61820

< **September 2016** >

S	M	T	W	Th	F	S
				1	2	3
4	5	No appointments are available this month			9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Figure D.13: Example of a reminder email sent out by the online appointment scheduler



Notes: These reminders were delivered one day before the participant's health screening appointment.

Figure D.14: Example of a reminder email sent by the research team to participants one day prior to their health screening

Hello,

You are receiving this email because you are scheduled for an iThrive health screening appointment **tomorrow, September 2nd, at the Funk ACES Library**. The address is as follows:

**Funk ACES Library
1101 S Goodwin Ave
Urbana, IL 61801**

Tomorrow's health screenings will be held in the **Heritage Room**. Enter the ACES Library from the main entrance. The Heritage Room is located on the main level of ACES, on the West Side of the atrium. Once you enter the building doors, you will continue into the Atrium where the stairs are, and you will see the Heritage Room.

Note: Please do not have anything to eat or drink (besides water) for 12 hours before your appointment time. Water is encouraged.

Please allow about 20-25 minutes for your screening appointment.

If you have any questions tonight or tomorrow morning, please email [REDACTED] and we will do our best to respond to your email as soon as possible.

Sincerely,

Lauren Geary

Lauren E. Geary
Project Manager || iThrive
University of Illinois at Urbana-Champaign
[REDACTED]

Figure D.15: Copy of health questionnaire given to participants prior to screening

ID _____

We would like to ask you a few questions about your health.

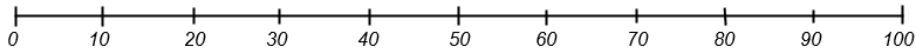
1. What is your weight, in pounds? Make your best guess.

_____ (weight in pounds)

2. What is your height, in feet and inches? Make your best guess.

_____ ft. and _____ in.

Below is a drawing of a ruler with a scale from 0 to 100. For the next set of questions, please use this scale as an indicator of how confident you are in your answer.



Absolutely
No Chance

Not Likely

Unsure

Likely

Absolutely
Certain

3. Using a number from zero to one hundred, where 0 equals absolutely no chance and 100 equals absolutely certain, what do you think the chances are that you have high cholesterol today?

_____ (0 to 100)

4. What do you think the chances are that you have high blood pressure today?

_____ (0 to 100)


5. What do you think the chances are that you have impaired fasting glucose today?

_____ (0 to 100)

6. A body mass index that exceeds 30 indicates that a person may be obese. What do you think the chances are that your body mass index exceeds 30?

_____ (0 to 100)

Figure D.16: Copy of health screening form used by clinicians from Presence Covenant Medical Center to record health measures



**Worksite Wellness
SCREENING REGISTRATION and CONSENT**

Name: <input type="checkbox"/> M <input type="checkbox"/> F		Date:	
Address:		Zip Code	Date of Birth:
Telephone:		Name of primary care physician:	
Email:		If none, would you like a referral? <input type="checkbox"/> Y <input type="checkbox"/> N	
Insurance provider:			

I consent to the screenings listed on this page and to the collection of screening results by Presence Health. The wellness screening includes taking body measurements, vital signs, and a "finger stick" to obtain a blood sample to measure glucose, etc. I understand that my participation in the wellness screening is voluntary and that the screening results are considered preliminary and do not constitute a diagnosis of any particular disease or condition. I understand that I will be given the results of the screening and that it is my responsibility to follow up with my health care provider regarding any treatment options. I understand that my results will be kept confidential. I acknowledge that I was provided information about Presence Health's privacy practices.

Signature of patient, or, if patient is a minor, signature of parent/guardian

Witness

Last 4 digits of SSN

Do you use tobacco of any form?
 Yes No Use E-cigarette

In the average week, how many times do you engage in physical activity?
 None 1-2 times per week 3 or more per week

If you engage in physical activity, for how long?
 Do not engage 20 minutes 40 minutes

How often do you feel tense, anxious, or depressed?
 Rarely or Never Sometimes Often

Do you have a primary physician?
 Yes No

Fasting Non-Fasting

Test	Results	Desirable Levels <small>(Source-American Heart Association, Mayo Clinic)</small>
Height		
Weight		
Waist Circumference		Ideal Range for Women - < 35 inches; Ideal Range for Men - < 40 inches
Body Mass Index		Less than 25 - Normal 25-29 - Overweight 30 or more - Obese
Blood Pressure		Less than 120/80 - Normal 120-139/80-89 - Pre-hypertension Over 140/90 - High Blood Pressure
Total Cholesterol		Less than 200 More than 240 - High
Total Cholesterol Ratio		Less than 3.5 - Optimal
HDL		More than 60 - Optimal More than 40 - Moderate
LDL		Less than 100 - Optimal primary prevention Less than 70 - Optimal for history of diagnosed cardiovascular disease
Triglycerides		Less than 150 - Optimal 151-199 - Borderline High
Glucose		Less than 100 - Normal 101-125 - Pre Diabetes
A1C		4.0 - 6.5% - Optimal

PCP referral Results require medical referral
 Make minor lifestyle changes Results require immediate medical attention
 Identification of 1 or more results out of the normal range

Clinician's comments:

Revision Date: 7/16 Form #PH-100

Notes: A carbon copy of this was given to participants upon completion of their health screening.

Figure D.17: Health coaching guidelines

<p>Increased Blood Pressure (180/100)</p> <p>1. <i>Does the participant have a history of high blood pressure?</i></p> <p>If yes: ask the participant if they are working with their PCP to decrease their blood pressure.</p> <p>If no: make the patient aware of the damage consistently increased blood pressure has on their body.</p> <p>Give educational materials.</p>	<p>If yes: ask the participant if they are working with their PCP to decrease the triglycerides.</p> <p>If no: make the patient aware of the damage increased triglycerides has on their body.</p> <p>Give educational materials.</p>
<p>2. <i>Do they have a primary care provider?</i></p> <p>If yes: tell participant to make an appointment with their provider and take the screening form with.</p> <p>If no: give a list of providers and make the participant aware of the importance.</p>	<p>Increased Triglycerides (>500), Increased Total Cholesterol Ratio (>4.0)</p> <p>1. <i>Ask the participant if they did indeed fast for 8-12 hours prior to health screening.</i></p> <p>If no: then explain the test is not an accurate measurement of triglycerides, but there is still concern with the elevated cholesterol ratio.</p> <p>If yes: proceed to step 2.</p>
<p>Increased Glucose (>210 Fasting)</p> <p>1. <i>Does the participant have a family history of diabetes?</i></p> <p>If yes: ask the participant if they are working with their PCP.</p> <p>If no: make the patient aware of the possibility of diabetes, and the importance of being tested. Give educational materials.</p> <p>2. <i>Do they have a primary care provider?</i></p> <p>If yes: tell participant to make an appointment with their provider and take the screening form with.</p> <p>If no: give a list of providers and make the participant aware of the importance.</p>	<p>2. <i>Do they have a primary care provider?</i></p> <p>If yes: tell participant to make an appointment with their provider and take the screening form with.</p> <p>If no: give a list of providers and make the participant aware of the importance.</p> <p>3. <i>Does the participant have a family history of heart disease?</i></p> <p>If yes: ask the participant if they are working with their PCP to prevent heart disease.</p> <p>If no: make the patient aware of the damage increased triglycerides and bad cholesterol has on their body.</p> <p>Give educational materials.</p>
<p>Decreased Glucose (<65)</p> <p>1. <i>Ask the patient if they are feeling well.</i></p> <p>If yes: let them know their glucose levels are low and they may want to eat something.</p> <p>If no: sit them down immediately, and give them juice and a granola bar.</p>	<p>Increased Triglycerides (>500), Increased Total Cholesterol Ratio (>4.0), Increased Blood Pressure</p> <p>1. <i>Ask the participant if they did indeed fast for 8-12 hours prior to health screening.</i></p> <p>If no: then explain the test is not an accurate measurement of triglycerides, but the elevated cholesterol ratio and blood pressure are cause for concern.</p> <p>If yes: proceed to step 2.</p>
<p>Increased Triglycerides (>500)</p> <p>1. <i>Ask the participant if they did indeed fast for 8-12 hours prior to health screening.</i></p> <p>If no: then explain the test is not an accurate measurement of triglycerides.</p> <p>If yes: proceed to step 2.</p> <p>2. <i>Do they have a primary care provider?</i></p> <p>If yes: tell participant to make an appointment with their provider and take the screening form with.</p> <p>If no: give a list of providers and make the participant aware of the importance.</p> <p>3. <i>Does the participant have a history of high triglycerides?</i></p>	<p>2. <i>Do they have a primary care provider?</i></p> <p>If yes: tell participant to make an appointment with their provider and take the screening form with.</p> <p>If no: give a list of providers and make the participant aware of the importance.</p> <p>3. <i>Does the participant have a family history of heart disease?</i></p> <p>If yes: ask the participant if they are working with their PCP.</p> <p>If no: make the patient aware their health screening numbers give concern for heart disease. It is essential for the participant to obtain an appointment for further assessment.</p> <p>Give educational materials, and write a personal note on the screening form that states they need to see a PCP.</p>
<p>Page 1 of 2</p>	<p>Page 2 of 2</p>

Notes: These guidelines were employed by health coaches during their private discussions with study participants immediately following the health screening.

Figure D.18: Postcard given to participants on site after they completing their health screening

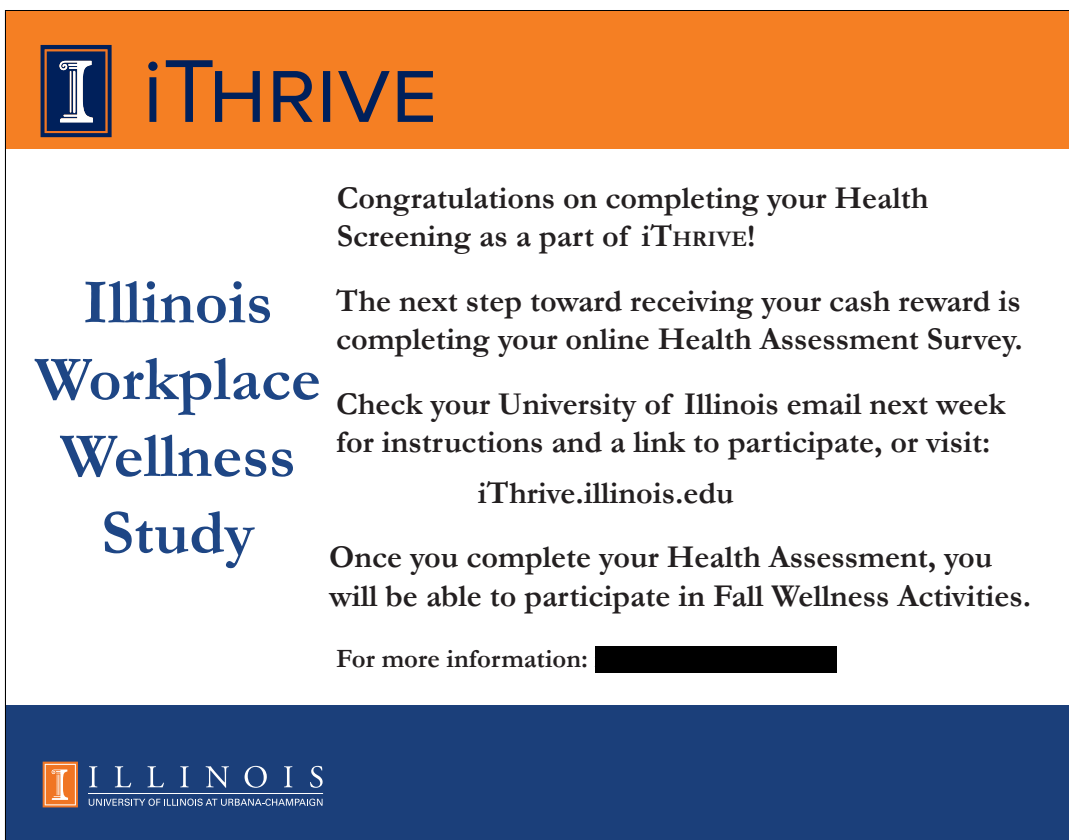


Figure D.19: Email invitation for the online health assessment

From: [REDACTED]
Subject: iThrive: Health Assessment Survey Invitation

Dear [First Name]:

Congratulations on completing your iThrive health screening! The next step is to complete your online Health Assessment survey, which will provide you with a personalized health summary and suggest practical ways to improve your health.

The Health Assessment survey takes about 12 minutes. After finishing this survey, you will receive a reward of \$100 and will be eligible to enroll in wellness activities once registration opens.

To access the online Health Assessment survey, simply copy and paste the following URL into your browser:

ithrive.illinois.edu/healthassessment

You must log in using the following username and initial password:

Username: <username>
Password: <password>

Once you are logged in, you must accept the terms of agreement. Next, click on the “Start New Assessment” button and answer a series of questions. You must click “Finish” when you are done, in order to view your report and to become eligible to enroll in wellness activities.

Please note: Some participants have experienced technical difficulties when taking their surveys. Slow response times or error messages sometimes arise when our survey vendor’s servers become overloaded. If you face any technical difficulties while taking the survey, please wait for fifteen minutes and try again later. We are sorry for any inconvenience this might cause for you.

This survey asks questions about seven dimensions of health (i.e., heart health, fitness, nutrition, mental health, diabetes risk, cancer risk, overweight/obesity risk). In order for the software to calculate a personalized wellness score for each dimension, you must answer all of the questions. Your results will give you insights you can use to make goals and plans for health improvement through iThrive programs and activities.

In the consent form you signed at the beginning of this study, you were told that you may refuse to answer any questions and withdraw at any time. This is still true with the Health Assessment, except that if you choose to skip any question in the health assessment, you cannot proceed with the survey. This software limitation only applies to the Health Assessment. If you do not wish to answer all of the survey items, you may withdraw from the study altogether.

For non-exempt civil service employees, iThrive is an “approved event,” so that, operations permitting and with prior supervisory approval, participation that occurs during an employee’s regular work schedule does not require the charging of leave benefit time.

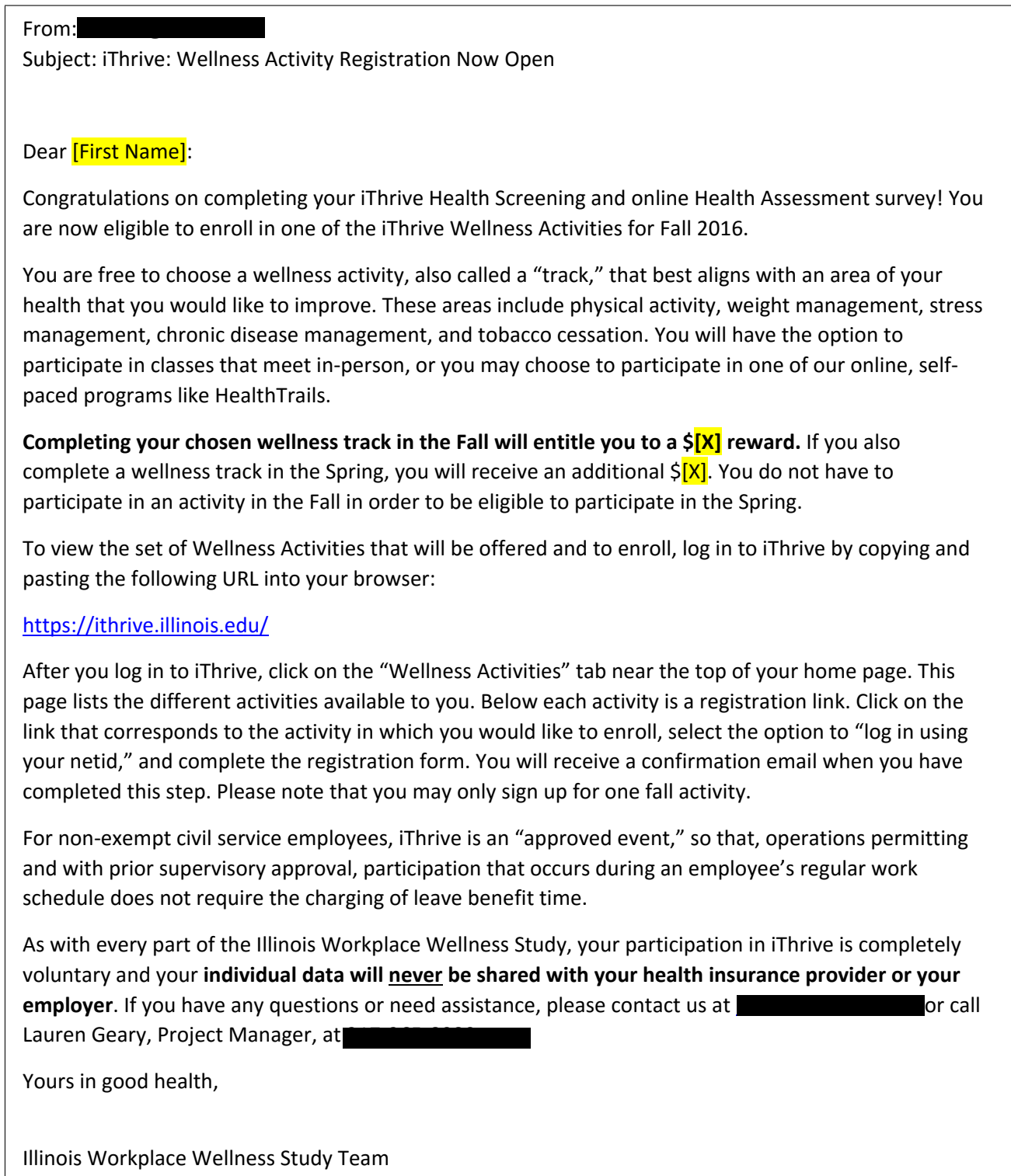
As with every part of the Illinois Workplace Wellness Study, your participation in iThrive is completely voluntary and your **individual data will never be shared with your health insurance provider or your employer**. If you have any questions or need assistance, please contact us at [REDACTED] or call Lauren Geary, Project Manager, at [REDACTED]

Yours in good health,

Illinois Workplace Wellness Study Team

Notes: This was sent only to participants who had completed their health screening. The text highlighted in yellow was appropriately customized for each participant.

Figure D.20: Email invitation for Fall 2016 wellness activities



Notes: This was sent only to participants who had completed their online health assessment. The text highlighted in yellow was appropriately customized for each participant.

Figure D.21: Email invitation for Spring 2017 wellness activities

From: iThrive@illinois.edu

Subject: iThrive: Spring Wellness Activity Registration Now Open

Dear [First Name]:

Congratulations on all of your progress in iThrive so far. You are now eligible to enroll in one of the iThrive wellness activities for Spring 2017.

You are free to choose a wellness activity that best aligns with an area of your health that you would like to improve. These areas include physical activity, weight management, stress management, chronic disease management, and financial wellness. You will have the option to participate in classes that meet in-person, or you may choose to participate in one of our online, self-paced programs like Spring Into Motion. Note that each activity has a limited capacity, except for Spring Into Motion. Registration will end on Friday, February 10.

Completing your chosen wellness activity in the Spring will entitle you to a \$[X] reward. You are able to participate in a Wellness Activity this Spring even if you did not participate in the Fall.

To view the set of Wellness Activities that will be offered and to enroll, log in to iThrive by copying and pasting the following URL into your browser:

<https://ithrive.illinois.edu/>

After you log in to iThrive, click on the “Wellness Activities” tab near the top of your home page. This page lists the different activities available to you. Below each activity is a registration link. Click on the link that corresponds to the activity in which you would like to enroll, select the option to “log in using your netid,” and complete the registration form. Participants with a “@uillinois.edu” email address may need to log in using the “log in using your email” option. You will receive a confirmation email when you have completed this step. Please note that you may only sign up for one Spring activity.

For non-exempt civil service employees, iThrive is an “approved event,” so that, operations permitting and with prior supervisory approval, participation that occurs during an employee’s regular work schedule does not require the charging of leave benefit time.

As with every part of the Illinois Workplace Wellness Study, your participation in iThrive is completely voluntary and your **individual data will never be shared with your health insurance provider or your employer.** If you have any questions or need assistance, please contact us at iThrive@illinois.edu or call Lauren Geary, Project Manager, at 217-265-8980.

Yours in good health,

Illinois Workplace Wellness Study Team

Figure D.22: Front and back sides of invitation postcard sent on July 6, 2017

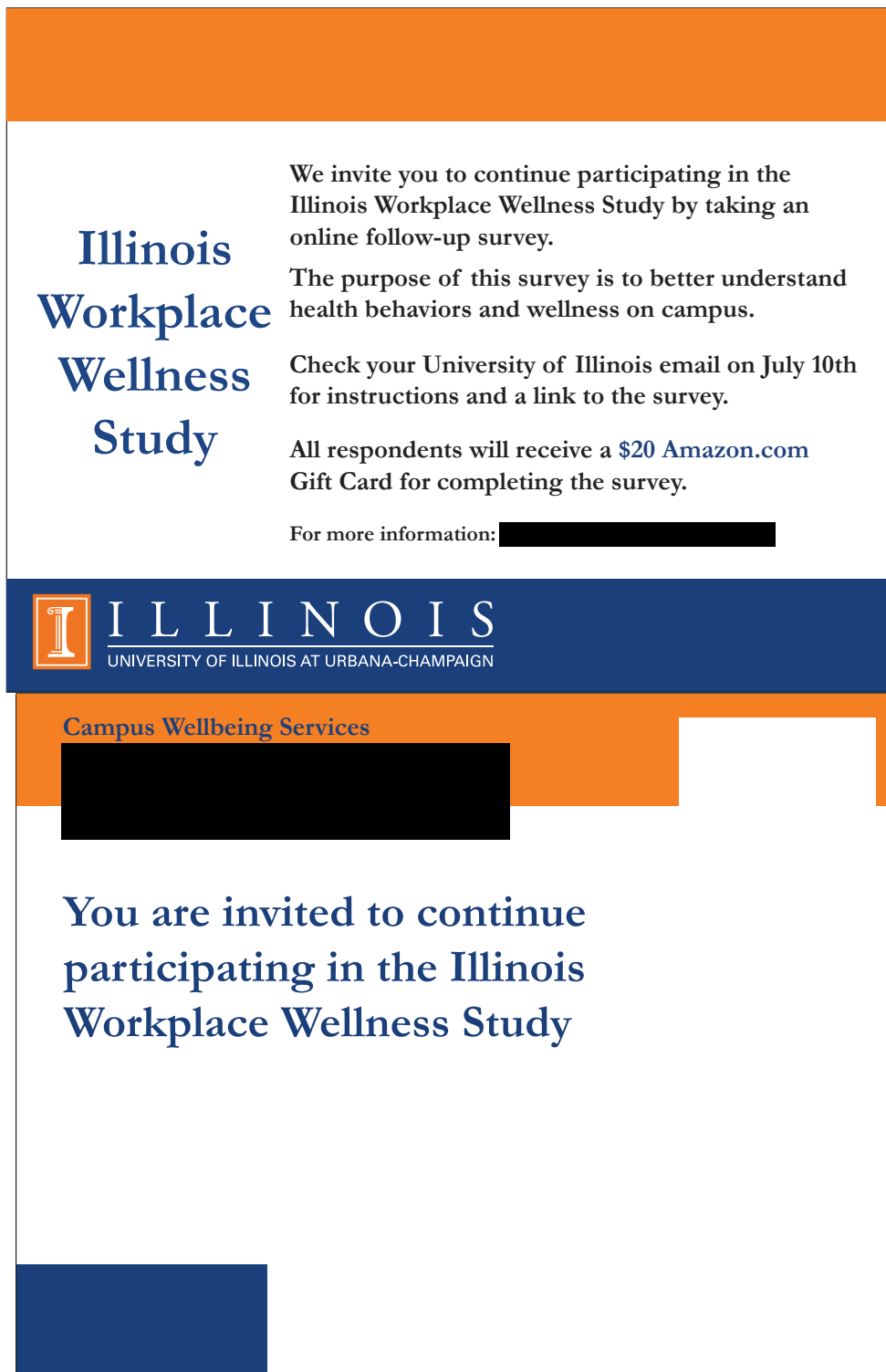


Figure D.23: One-year follow-up survey invitation sent to study participants on July 10, 2017

Dear <FirstName>,

Last summer, you participated in an online survey for the Illinois Workplace Wellness Study. Your participation has allowed the Illinois Workplace Wellness Study Team to conduct important research about workplace wellness programs on the UIUC campus.

We invite you to take part in a second survey for the Illinois Workplace Wellness Study. As before, this online survey includes questions about health behaviors and wellness on campus. The survey will take approximately 15 minutes to complete. We know that your time is valuable, so we are offering a **\$20 Amazon.com gift card** to all respondents who complete the survey. This gift card is taxable.

The survey is only available for a limited time, so please complete the survey promptly in order to receive your \$20 gift card. To access the online survey, simply copy and paste the following URL in your browser:

<link>

This survey is strictly confidential. **Your individual data will never be shared with the university or your health insurer.**

For non-exempt civil service employees, this program is an “approved event,” so that, operations permitting and with prior supervisory approval, participation that occurs during an employee’s regular work schedule does not require the charging of leave benefit time.

Thank you for contributing to this important research project! If you have any questions or need assistance, please contact us at [REDACTED] or [REDACTED]

Best regards,

Illinois Workplace Wellness Study Team

David Molitor
Assistant Professor, Department of Finance

Laura Payne
Professor, Department of Recreation, Sport and Tourism

Julian Reif
Assistant Professor, Department of Finance and IGPA

Notes: The text highlighted in yellow was appropriately customized for each participant.

Figure D.24: One-year follow-up survey reminder sent on August 2, 2017

From: [REDACTED]
Subject: \$100 gift card drawing: Illinois Workplace Wellness Study

Dear [FIRSTNAME],

We are pleased to announce that those who complete the online survey for the Illinois Workplace Wellness Study will be entered into a drawing to win a \$100 Amazon.com gift card.

Ten (10) people who complete the brief survey will be selected at random to receive a \$100 Amazon.com gift card. This gift card will be in addition to the \$20 Amazon.com gift card that all participants receive for completing the online survey. The drawing for the \$100 Amazon.com gift card will occur after the survey closes. Winners will be notified by email.

To access the online survey, simply copy and paste the following URL in your browser:

<personalized study url>

If you have already completed the survey, then you will automatically be entered into the drawing.

If you have any questions or need assistance, please contact us at [REDACTED] or [REDACTED]

Best Regards,

Illinois Workplace Wellness Study Team

Notes: The text highlighted in yellow was appropriately customized for each participant. This reminder informed participants for the first time that completing the follow-up survey would enter them into a drawing for an additional \$100 reward.

Figure D.25: Text of invitation email sent to study participants on August 14, 2017

<p>Dear [First Name]:</p> <p>You have been selected to participate in the 2017 iThrive Health Screenings. The iThrive Health Screenings are a component of the Illinois Workplace Wellness Study.</p> <p>The iThrive program offers you the opportunity to participate in a valuable health screening at no cost to you. In addition, you will earn \$125 for completing the iThrive Health Screening.</p> <p>The opportunity to participate in the iThrive Health Screening is only available for a limited time. To learn more about iThrive and to sign up for an appointment, visit the iThrive website:</p> <p>ithrive.illinois.edu</p> <p>The iThrive Health Screening is summarized below.</p> <p>Last month, you were invited to take the Illinois Workplace Wellness Study online survey. Even if you did not complete that survey, you are still invited to participate in the health screening. For those of you who took the survey, the random drawing has been completed and the winners have been notified.</p> <hr/> <p>iThrive Health Screening</p> <p>You are invited to participate in a free health screening through the iThrive program, beginning on August 21. The purpose of a health screening is to measure physical health characteristics (e.g., height, weight, blood pressure, cholesterol) and use the information as a benchmark for health promotion and management. For your convenience, Presence Health will offer these screenings at various dates and locations across campus. Appointments typically take about 20 to 25 minutes.</p> <p>Upon completion of the health screening, you will receive a reward of \$125.</p> <p>Scheduling your Health Screening</p> <p>To schedule your health screening, copy and paste the URL below into your web browser:</p>	<p>https://presencehealth.acuityscheduling.com/</p> <p>When scheduling your health screening, please use the email address to which this email was sent (netid@illinois.edu). This email address will be referred to as your "iThrive contact email".</p> <p>You may also visit the iThrive website at any time: ithrive.illinois.edu. This website provides personalized information about your progress.</p> <p>For non-exempt civil service employees, the iThrive Health Screening is an "approved event," so that, operations permitting and with prior supervisory approval, participation that occurs during an employee's regular work schedule does not require the charging of leave benefit time.</p> <p>As with every part of the Illinois Workplace Wellness Study, your participation in the iThrive Health Screening is completely voluntary and your individual data will never be shared with your health insurance provider or your employer. You can read here about the purpose of our study as well as the steps we will take to keep your information confidential. If you have any questions or need assistance, please contact us at [REDACTED]</p> <p>Yours in good health,</p> <p>Illinois Workplace Wellness Study Team</p>
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Notes: The text highlighted in yellow was appropriately customized for each participant.

Figure D.26: Text of reminder email sent to study participants on September 21, 2017

Dear [First Name]:

This is your **last chance** to attend your free iThrive Health Screening. **The final day to complete your iThrive Health Screening is tomorrow, Friday September 22nd, at Beckman Institute.** To schedule a screening, copy and paste the following URL into your browser:

<https://presencehealth.acuityscheduling.com/schedule.php>

As a reminder, you will receive a reward of \$125 after completing your iThrive Health Screening.

Walk-ins are also encouraged! Stop by Beckman Institute, Room 1005 any time between 6am and 12pm on Friday, September 22nd for an appointment.

For non-exempt civil service employees, iThrive is an “approved event,” so that, operations permitting and with prior supervisory approval, participation that occurs during an employee’s regular work schedule does not require the charging of leave benefit time.

As with every part of the Illinois Workplace Wellness Study, your participation in iThrive is completely voluntary and your **individual data will never be shared with your health insurance provider or your employer.** If you have any questions or need assistance, please contact us at [REDACTED]

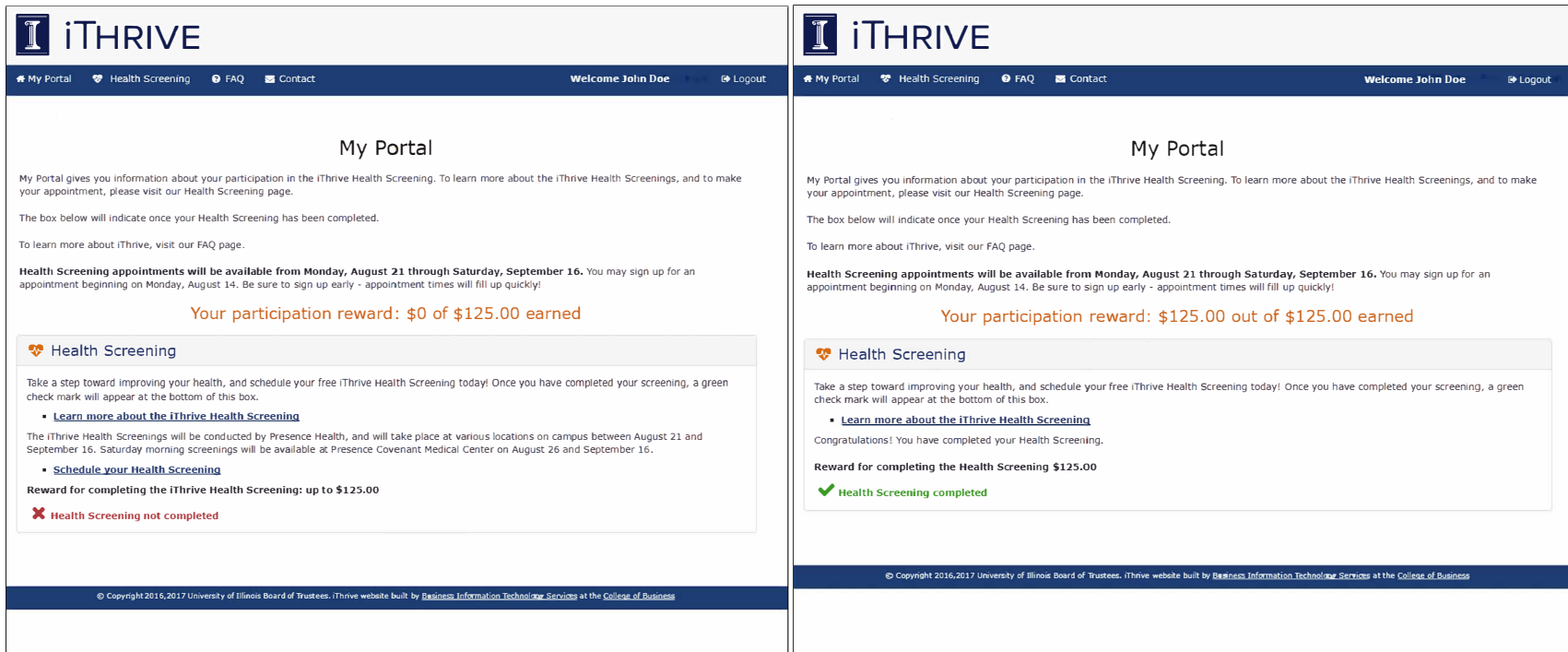
Yours in good health,

Illinois Workplace Wellness Study Team

Notes: The text highlighted in yellow was appropriately customized for each participant.

Figure D.27: Main page for the 2017-2018 iThrive website for a control group member in the \$125 screening reward group

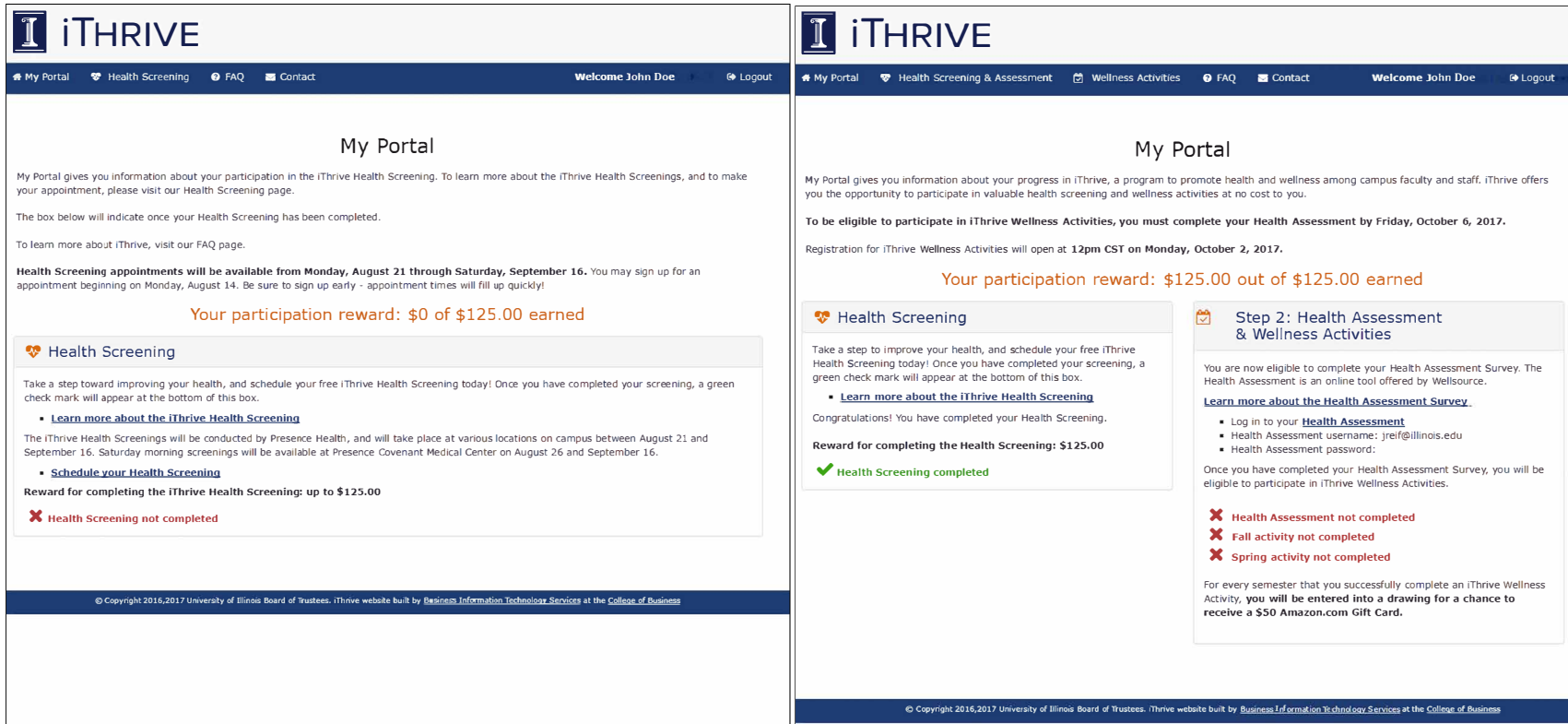
43



Notes: Follow-up screening participants in the \$0 reward group did not receive a confirmation email. However, all follow-up screening participants could confirm their completion status on the iThrive website.

Figure D.28: Main page for the 2017-2018 iThrive website for a treatment group member in the \$125 screening reward group

44



Notes: Follow-up screening participants in the \$0 reward group did not receive a confirmation email. However, all follow-up screening participants could confirm their completion status on the iThrive website.

Figure D.29: Text of the confirmation email sent to one-year follow-up screening participants in the \$125 reward group

From: [REDACTED]
Subject: Your iThrive Health Screening Payment

Hello,

Congratulations on completing your iThrive Health Screening! Your \$125 reward for completion will be processed in October, after the iThrive Health Screenings have ended. The payments will be made through direct deposit, and will be included as part of your regularly scheduled paychecks. As a reminder, these payments are taxable.

You may log in to the iThrive website at <https://iThrive.illinois.edu> to view your progress at any time.

Please let us know if you have any questions. We will send an email in October after all of the payments have been made.

Yours in good health,

The Illinois Workplace Wellness Study Team

Notes: Follow-up screening participants in the \$0 reward group did not receive a confirmation email. However, all follow-up screening participants could confirm their completion status on the iThrive website.

D.4 Online Appendix Tables

Table D.1: Dates, locations, times, and number of health screenings performed in 2016

Date	Location	Appt Times	Capacity	Appts scheduled	Total Screened
Monday, August 15	Business Instructional Facility	6:00am - 10:20am	108	67	69
Tuesday, August 16	Business Instructional Facility	6:00am - 10:20am	108	66	65
Wednesday, August 17	Beckman Institute	6:00am - 10:20am	108	89	90
Thursday, August 18	Physical Plant Services Building	7:45am - 10:15am	64	58	57
Friday, August 19	iHotel	6:00am - 10:20am	108	91	93
Saturday, August 20	Presence Covenant Medical Center	7:00am - 10:20am	84	74	76
Monday, August 22	iHotel	6:00am - 10:20am	108	99	92
Tuesday, August 23	Business Instructional Facility	6:00am - 10:50am	120	75	75
Wednesday, August 24	Business Instructional Facility	6:00am - 10:50am	120	77	74
Thursday, August 25	Alice Campbell Alumni Center	7:45am - 10:55am	80	74	77
Friday, August 26	Beckman Institute	6:00am - 10:50am	120	100	94
Saturday, August 27	Presence Covenant Medical Center	7:00am - 9:50am	72	52	45
Monday, August 29	Beckman Institute	6:00am - 10:55am	120	97	90
Tuesday, August 30	iHotel	6:00am - 10:55am	120	109	104
Wednesday, August 31	University YMCA	6:00am - 10:50am	120	98	94
Thursday, September 1	University YMCA	6:00am - 10:50am	120	78	71
Friday, September 2	ACES Library	8:15am - 10:55am	68	66	60
Saturday, September 3	N/A	N/A	N/A	N/A	N/A
Monday, September 5	N/A	N/A	N/A	N/A	N/A
Tuesday, September 6	iHotel	6:00am - 10:50am	120	117	99
Wednesday, September 7	Beckman Institute	6:00am - 10:50am	120	87	76
Thursday, September 8	University YMCA	6:00am - 10:50am	120	92	81
Friday, September 9	University YMCA	6:00am - 10:50am	120	66	55
Saturday, September 10	Presence Covenant Medical Center	7:00am - 9:50am	72	26	17
Monday, September 12	iHotel	6:00am - 10:50am	61	52	45
Tuesday, September 13	iHotel	6:00am - 10:50am	75	53	45
Wednesday, September 14	iHotel	6:00am - 10:50am	76	58	53
Thursday, September 15	iHotel	6:00am - 10:50am	76	50	42
Friday, September 16	iHotel	6:00am - 10:50am	76	76	61
Total			2,664	2,047	1,900

Table D.2: Description of and statistics for the Fall 2016 wellness activities

	Number of classes	Time and day of week	Start date	End date	Reward requirement	Capacity	Registered	Completed	Description
Freedom from Smoking	1	N/A	10/17/2016	12/9/2016	8 weekly calls	20	17	9	The Illinois Freedom from Smoking HelpLine is a one-on-one telephonic coaching program to help participants to quit tobacco for good. Participants are matched with a trained cessation expert. Quitline cessation specialists offer participants expert advice, an assessment of your tobacco treatment, and help you develop a customized quit-plan. Calls take place weekly, and are scheduled at your convenience.
HealthTrails	Unlimited	N/A	10/10/2016	12/4/2016	400 virtual miles	Unlimited	1027	715	HealthTrails is an eight-week self-paced, online wellness activity developed by Health Enhancement Systems – a leader in online wellness campaigns. This program allows participants to virtually travel along famous trails as they practice and record healthy lifestyle behaviors such as physical activity, nutrition, and stress management. HealthTrails includes the option of a mobile application that allows participants to conveniently track their behaviors using their cell phone or other mobile device. The program incorporates challenging wellness goals and fun themes, as well as daily tips throughout the program. Participants who choose to register for HealthTrails can work to improve their health in the areas of: * Physical Activity * Stress Management * Healthy Eating
Live Well Be Well	1	5:15pm - 7:15pm (R)	10/13/2016	11/17/2016	Attend 5 of 6 classes	20	19	16	Live Well, Be Well is a six-week evidence-based chronic disease self-management program that was developed by Stanford University. This interactive program has been shown empowers participants through learning important lifestyle skills that enhance one's ability to effectively manage ongoing health conditions. This program is open to anyone with an ongoing health condition such as arthritis, heart disease, asthma, lung disease, diabetes, osteoporosis, cancer or any other. Caregivers may also participate. The program is taught by certified facilitators Cheri Burcham and Chelsey Byers, University of Illinois Extension community health educators.
Prudential Pathways	1	5:15pm - 6:15pm (R)	10/13/2016	11/10/2016	Attend 5 of 5 classes	25	25	20	The Prudential Pathways program offers practical, down-to-earth financial information. Participants will gain an understanding of the fundamentals of financial wellness, and personal financial planning. Prudential Pathways will be facilitated by Peggy Furlong with Prudential Financial, and will cover important topics such as: setting your financial goals, protecting your assets through risk management, investment principles, healthcare planning, retirement and asset distribution planning, tax strategies, estate planning strategies, how your employee benefits fit into your overall financial wellness, and more.
Recess for Adults	2	5:15pm - 6:00pm (W), 6:30pm - 7:15pm (W)	10/12/2016	12/7/2016	Attend 6 of 8 classes	50	49	28	Recess For Adults is an eight-week program inspired by games typically seen on a playground. This program is perfect for adults to increase their physical activity levels, and to have fun together. A typical class agenda could include, for example, "Red Light, Green Light", "Crazy Kickball", "Blob Tag", and "Group Juggle". This program meets once per week for 45 minutes, for eight weeks. The program will be led by instructor Kerri Schiller, a University of Illinois PhD student in Recreation, Sport, and Tourism.
Stress Management	1	5:15pm - 6:15pm (W)	10/19/2016	12/14/2016	Attend 6 of 8 classes	40	40	27	This eight-week program provides participants with the knowledge and skills to effectively manage stress in their lives. Participants gain an understanding of how stress affects them. They build awareness of their personal stressors and stress symptoms, of their ability to control how stress affects them, and how to address stress. The program is very interactive; in each session participants learn practical skills they can use in their daily lives. Topics include defining stress, overcoming stressful thought patterns, relaxation techniques, managing stress at work, coping with change, and more. The program is facilitated by Michele Guerra, the Director of the UI Wellness Center.
Tai Chi	3	5:15pm - 6:15pm (T), 6:30pm - 7:30pm (T, R)	10/11/2016	12/8/2016	Attend 6 of 8 classes	60	60	39	Tai Chi for Relaxation is an eight-week program that aims to improve overall health and wellness through learning basic Tai Chi movements and techniques. The class is taught by local certified Tai Chi instructor Rick Krandel, who maintains certification from the Tai Chi for Health Institute. Two sessions of Tai Chi for Relaxation are scheduled this fall. You may select either the Tuesday evening or Thursday evening sessions.
Weight Watchers at Work	2	12:00pm-12:50pm (W,R)	10/12/2016	12/8/2016	Attend 6 of 8 classes	32	32	27	Weight Watchers at Work is an eight-week weight management program, that aims to help participants to develop skills to unlock their inner strength to make healthy choices for life. Participants will learn how to see food as a fuel for a healthy life, and to find ways to move more each day. The SmartPoints plan assigns a point value to every food, and members are given a target number of points for each day. Participants can make their own choices about what foods to eat to reach their daily target number of points. Weight Watchers at Work will meet on Thursdays from 12pm to 1pm.
Well at Work	1	12:00pm-12:50pm (M)	10/10/2016	12/5/2016	Attend 6 of 8 classes	35	35	22	The Well at Work Series is an eight-week program that provides participants with practical tips on how to stay healthy at work. Each session will focus on a different aspect of workplace wellness. The brief lunch and learn format is conveniently scheduled to increase employees' ability to attend. Facilitator Michele Guerra, the Director of the UI Wellness Center, will cover a variety of workplace health-related topics, including how to: fit physical activity in at work, eat healthfully at work, achieve work-life balance, get a good night's sleep, stay energized during the work day, relax during stressful moments, and more.
Total							1,304	903	

Table D.3: Description of and statistics for the Spring 2017 wellness activities

	Number of classes	Time and day of week	Start date	End date	Reward requirement	Capacity	Registered	Completed	Description
Active Living Every Day	1	5:15pm - 6:15pm (T)	1/31/2017	4/25/2017	Attend 9 out of 12 classes	30	12	9	Active Living Every Day (ALED) helps people become and stay physically active. ALED focuses on lifestyle physical activity into one's life and life management skills. Participants will be provided with a step-by-step process to create their own healthy lifestyle. They will learn a wide variety of life skills, including: *Setting goals *Overcoming challenges *Defusing stress *Making lasting changes, and more ALED is perfect for inactive people, or those who want to be more active, but are having difficulty doing so. Note: This is not an exercise class.
Adventures in Financial Wellness	1	5:15pm - 6:15pm (R)	2/16/2017	4/13/2017	Attend 6 out of 8 classes	36	36	21	Looking to expand or deepen your financial savvy? Sign up for Adventures in Financial Wellness. Each week, Prudential financial professionals* will provide practical information on a different financial wellness topic. Participants will gain a better working knowledge of credit, banking services, saving, investing, and funding college, taxes, life insurance and retirement planning. This program is different from the Pathways program we offered in the fall. Some information may be similar. *No Prudential financial products will be sold or promoted during this series.
Healthy Weigh	1	5:15pm - 6:15pm (W)	2/8/2017	4/5/2017	Attend 6 out of 8 classes	40	28	17	Are you looking for a safe and effective weight management program? Join the Healthy Weigh! Healthy Weigh is the UI Wellness Center's weight management program. Healthy Weigh equips participants with proper tools to lose weight safely and effectively. This program is not a diet. Participants will: *Learn how to lose and maintain a healthy weight *Attain life management skills to help them attain their weight goals *Receive group support to increase self-confidence
Live Well Be Well	1	5:15pm - 7:15pm (W)	2/22/2017	4/12/2017	Attend 5 out of 7 classes	20	9	3	Live Well, Be Well is a six-week evidence-based chronic disease self-management program that was developed by Stanford University. This interactive program has been shown empowers participants through learning important lifestyle skills that enhance one's ability to effectively manage ongoing health conditions. This program is open to anyone with an ongoing health condition such as arthritis, heart disease, asthma, lung disease, diabetes, osteoporosis, cancer or any other. Caregivers may also participate. The program is taught by certified facilitators Cheri Burcham and Chelsey Byers, University of Illinois Extension community health educators.
Lunchtime Walk	1	12:10pm - 12:55pm (M)	2/27/2017	4/24/2017	Attend 6 out of 8 sessions	35	34	21	Do you want to get more physical activity, but can't seem to find the time? It just got easier to fit in a walk during your busy day. Sign up for our Lunchtime Walk program. These walks are designed to fit into the average lunch break, allowing enough time to travel to and from the starting point, get a 30-minute walk, and return to your work area. The first three walks will be inside; once the weather warms up a bit, we will walk outside. Walkers of all abilities are welcome.
Mini Stress Relievers	1	12:10pm - 12:55pm (T)	2/14/2017	4/11/2017	Attend 6 out of 8 classes	35	35	28	Need some "me time"? Join our Mini Stress Relievers program! Each week we will feature an easy-to-do stress reduction activity. Examples of activities include: *Coloring *Practicing muscle relaxation techniques *Taking a contemplative walk *Experiencing the power of aromatherapy *And more! You will also have the opportunity to meet other campus employees in a relaxing atmosphere.
Recess for Adults	1	5:15pm - 6:00pm (W)	2/8/2017	4/5/2017	Attend 6 of 8 classes	25	25	15	Recess For Adults is an eight-week program inspired by games typically seen on a playground. This program is perfect for adults to increase their physical activity levels, and to have fun together. A typical class agenda could include, for example, "Red Light, Green Light", "Crazy Kickball", "Blob Tag", and "Group Juggle". This program meets once per week for 45 minutes, for eight weeks. The program will be led by instructor Kerri Schiller, a University of Illinois PhD student in Recreation, Sport, and Tourism.
Spring Into Motion	N/A	N/A	2/6/2017	4/2/2017	Obtain 40 "Springer Icons" (6,000 steps per day or 30 minutes of physical activity per day for 40 days)	Unlimited	808	588	Spring Into Motion is an online, self-paced wellness activity that encourages participants to be more active. The program allows participants to track either their steps or physical activity minutes each day, making progress toward a final goal. As they track their activity, participants progress through different, exciting spring events all around the world. This program is great for participants of all fitness levels. Whether you are just starting out, or have a well-established physical activity routine, Spring Into Motion will help to boost energy and improve health. For user convenience, a mobile application is also available to help with on-the-go activity tracking. Participants who own a FitBit or a Jawbone device will have the ability to sync their devices with their Spring Into Motion accounts, allowing for automatic activity tracking. Participants will strive to reach a goal of at least 6,000 steps per day or 30 minutes of physical activity per day, for at least 40 days throughout the program.
Tai Chi	3	6:30pm - 7:30pm (T), 6:30pm - 7:30pm (T, R)	2/7/2017	4/6/2017	Attend 6 of 8 classes	60	60	27	Tai Chi for is an eight-week program that aims to improve overall health and wellness through learning basic Tai Chi movements and techniques. The class is taught by local certified Tai Chi instructor Rick Krandel, who maintains certification from the Tai Chi for Health Institute. Two sessions of Tai Chi for Relaxation are scheduled this fall. You may select either the Tuesday evening or Thursday evening sessions.
Tai Chi (Advanced)	1	5:15pm - 6:15pm (T)	2/7/2017	4/4/2017	Attend 6 of 8 classes	20	12	11	Tai Chi Extension Movements is an eight-week program that aims to improve overall health and wellness through Tai Chi movements. We will be offering the Extension Movements class as an advanced section of Tai Chi, where the instructor will be teaching additional postures that were not covered in the first semester sessions. This class has a limited capacity, and is only open to participants who successfully completed an introductory Tai Chi program in the Fall (attended at least 6 of the 8 sessions).
Total							1,059	740	

Table D.4: Dates, locations, times, and number of health screenings performed in 2017

Date	Location	Appt Times	Capacity	Appts scheduled	Total Screened
Monday, August 21	Business Instructional Facility	6:00am - 11:20am, 12:40pm - 4:00pm	208	62	57
Tuesday, August 22	Beckman Institute	6:00am - 11:20am, 12:40pm - 4:00pm	208	152	138
Wednesday, August 23	Business Instructional Facility	6:00am - 11:20am, 12:40pm - 4:00pm	208	70	65
Thursday, August 24	University YMCA	6:00am - 11:20am, 12:40pm - 4:00pm	208	106	97
Friday, August 25	iHotel	6:00am - 11:20am, 12:40pm - 4:00pm	208	178	154
Saturday, August 26	Presence Covenant Medical Center	7:00am - 10:50am	96	74	67
Monday, August 28	Alice Campbell Alumni Center	7:45am - 11:15am, 12:40pm - 4:00pm	168	112	96
Tuesday, August 29	Business Instructional Facility	6:00am - 11:20am, 12:40pm - 4:00pm	208	75	63
Wednesday, August 30	ACES Library	7:45am - 11:15am, 12:40pm - 4:00pm	168	126	120
Thursday, August 31	iHotel	6:00am - 11:20am, 12:40pm - 4:00pm	208	148	138
Friday, September 1	Beckman Institute	6:00am - 11:20am, 12:40pm - 4:00pm	208	38	34
Saturday, September 2	N/A	N/A			
Monday, September 4	N/A	N/A			
Tuesday, September 5	iHotel	6:00am - 11:20am, 12:40pm - 4:00pm	208	87	75
Wednesday, September 6	Alice Campbell Alumni Center	7:45am - 11:15am, 12:40pm - 4:00pm	168	75	68
Thursday, September 7	iHotel	6:00am - 11:20am, 12:40pm - 4:00pm	208	100	85
Friday, September 8	University YMCA	6:00am - 11:20am, 12:40pm - 4:00pm	208	84	77
Saturday, September 9	N/A	N/A			
Monday, September 11	Beckman Institute	6:00am - 11:20am, 12:40pm - 4:00pm	208	101	93
Tuesday, September 12	iHotel	6:00am - 11:20am, 12:40pm - 4:00pm	208	90	82
Wednesday, September 13	University YMCA	6:00am - 11:20am, 12:40pm - 4:00pm	208	58	53
Thursday, September 14	Beckman Institute	6:00am - 11:20am, 12:40pm - 4:00pm	208	85	79
Friday, September 15	University YMCA	6:00am - 11:20am, 12:40pm - 4:00pm	208	67	58
Saturday, September 16	Presence Covenant Medical Center	7:00am - 10:50am	96	35	27
Monday, September 18	iHotel	6:00am - 11:20am	128	48	44
Tuesday, September 19	iHotel	6:00am - 11:20am	128	42	38
Wednesday, September 20	iHotel	6:00am - 11:20am	128	69	61
Thursday, September 21	University YMCA	6:00am - 11:20am	128	48	45
Friday, September 22	Beckman Institute	6:00am - 12:10pm	156	90	90
Total			4,692	2,220	2,004