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## Factors Influencing Acceptance of a Worksite Wellness Program in a Major Urban Healthcare System - A Cross-Sectional Analysis

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Deborah A. Ballard, Student

Dr. William Pfeifle, Committee Chair

William Pfeifle, Director of Graduate Studies

**Factors Influencing Acceptance of a Worksite Wellness Program in a Major Urban  
Healthcare System- A Cross-Sectional Analysis**

CAPSTONE PROJECT PAPER

A paper submitted in partial fulfillment of the requirements for the degree of Master of  
Public Health in the University Of Kentucky College Of Public Health

By

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August 29, 2012

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## **Abstract**

Adults spend a significant portion of their lives at their workplace. Thus the workplace provides an important venue for public health interventions aimed at prevention and wellness. Best practices for workplace wellness programs are continually being refined. Ironically, health care workers are often less healthy than other professionals and face significant barriers to participating in workplace wellness programs. This paper analyzes the experience of a large urban health care system as it instituted a workplace wellness program and offers recommendations to increase participation in healthcare workplace wellness program and create an overall healthier work environment for healthcare workers.

Factors negatively influencing participation in a workplace wellness program in a large urban healthcare system included: 1) working a shift other than first, 2) being male and 3) being older than 65 years. Significant cultural, personal, and environmental barriers were also described in focus group sessions: 1) lack of time to participate due to stressful work patterns, 2) failure to read communications about the program, 3) lack of trust and concerns of lack of confidentiality with perceived threats to job security, 4) lack of on-site exercise facilities and healthy food choices, and 5) low perceived self-efficacy to engage in wellness activities.

The U.S. Department of Health and Human Services stated in 2010 that the threat of rapidly escalating healthcare costs to national economies exceeds any other single cost item and that approximately 75% of the \$2.5 trillion spent annually in the U.S. on healthcare is spent on preventable conditions.<sup>1</sup> These escalating costs increasingly make affordable healthcare insurance beyond the reach of many individuals and businesses. However, companies recognize that healthcare and disability insurance are key benefits that assist in the recruitment and retention of a desirable workforce.

As a result, businesses are trying a number of strategies to decrease the cost of employee healthcare and disability insurance plans. These include shifting a greater portion of the cost to the employees and utilizing workplace wellness programs to reduce the burden of preventable disease and injury in their employee populations. Public health officials agree that workplace wellness programs can reduce preventable illnesses and injuries. . One of the specific goals of Healthy People 2010 was for 75% of workplaces to offer employee wellness programs and for 75% of employees to participate in these programs.<sup>2</sup> Among the goals of Healthy People 2020 is promoting “the health and safety of people at work through prevention and early intervention”<sup>3</sup> Healthcare and work environments are one of the five areas of focus of the 2012 Institute of Medicine Committee on Accelerating Progress in Obesity Prevention.<sup>4</sup>

## **Background**

Numerous studies have documented adoption of favorable health behaviors, reduced medical costs, increased employee engagement and presentism for workers participating in well-designed workplace wellness programs that are linked to incentives.<sup>1,2,5-10</sup> The American Heart Association 2009 Policy Statement Worksite Wellness Programs for

Cardiovascular Disease Prevention summarizes the evidence supporting workplace wellness programs and recommends their widespread adoption.<sup>10</sup> However, it also states that further research is needed on best practices and methods to increase participation. It does not specifically address the healthcare workplace. Johnson & Johnson was one of the first companies to develop a workplace wellness program in 1979. In 2009, it was able to show an average annual savings of \$565 per employee, producing a return on investment equal to a range of \$1.88—\$3.92 saved for every dollar spent on its program.<sup>6</sup> Johnson & Johnson's program is characterized by the following components.

1. It features both individual risk reduction and environmental components;
2. Achieves a high participation rate, based on the company's benefit plan design that directly links an employee's medical insurance premium to program participation;
3. An ingrained "culture of health," exemplified by strong leadership that encourages program participation and health improvement.

The Cleveland Clinic's employee wellness program is one of the most aggressive in the United States among healthcare systems. The Cleveland Clinic does not hire smokers and removed all sugared beverages from its campuses. Employees are offered free membership in a number of weight management and physical activity programs if they participate fully and reach certain health goals. The health insurance premiums are tied to reaching specific health goals, with those meeting goals experiencing the lowest increase in premiums. In 2012, the Cleveland Clinic announced that employees who do not participate in the wellness program will see their health insurance premiums rise by 21%. Although this approach has been criticized by some as infringing on employees rights,

the Cleveland Clinic has been able to almost flatten its health care costs in the last 2 years.<sup>11, 12</sup>

Healthcare workers present an interesting, unique, and growing sub-group of employees. Healthcare workers tend to be overwhelmingly female, are more educated than the general population, and their numbers have tripled since 1960. Even during economic recessions, the number of healthcare workers has continued to grow. Registered nurses make up the largest proportion of healthcare workers. Healthcare workers in private inpatient settings have significantly higher rates of non-fatal injury and illness involving days away from work than those in other private industries (general medical and surgical hospitals: 175/10,000 full time employees versus other private industry: 125/10,000 full time employees).<sup>13</sup> In 2004, only truck drivers (heavy and tractor-trailer) and laborers and material movers (hand) had more cases of workplace injuries and illnesses than nursing aides, orderlies, and attendants.<sup>13</sup> Almost 40% of all nurses report some form of back injury.<sup>14</sup> These injuries create a significant cost to healthcare employers' disability insurance plans and their healthcare insurance plans.

Many healthcare workers engage in shift work (defined as "work hours that are scheduled outside of daylight"<sup>13</sup>). Shift work has been shown to have numerous negative effects on physical, social, and emotional health.<sup>15-21</sup> These include increased risk of obesity, diabetes, cardiovascular events, cancer, and gastric ulcers.<sup>18</sup> In addition to increasing workers' risk of illness, sleep deprivation as a result of shift work poses serious threats to patient and worker safety.<sup>18,20</sup> It is also common for nurses to work 12 hour day shifts, and to pick up additional shifts outside their regular 40 hour work

week.<sup>22-23</sup> This pattern of work contributes to fatigue and lack of time for wellness behaviors.

Violence in the healthcare setting is a routine occurrence. During the period from 1995 to 2004, 7% of workplace injuries in nurses, psychiatric and home health aides were due to assaults, usually by patients and 30% of all assaults in the workplace occur in healthcare workers.<sup>24</sup> Although most assaults do not result in death or permanent injury, they can insidiously erode healthcare workers' morale. This pervasive exposure to worksite violence has many well documented negative consequences for healthcare workers' physical and emotional health.<sup>25,26</sup> Additionally, the American Nurses Association has a wealth of literature on the psychological toll of caring for very sick and dying people in the highly complex work environment of modern hospitals. This contributes to burnout and "compassion fatigue" that leads to anxiety and depression in many nurses.<sup>27</sup>

Despite the growing need to recruit and retain healthcare workers, and the well-recognized health risks associated with the nursing and allied healthcare professions, few studies have been done specifically on the effectiveness of worksite wellness programs for this group.<sup>28</sup>

### **Problem Statement**

Healthcare systems desire to develop effective workplace wellness programs for their employees to promote recruitment and retention, decrease costs to their healthcare insurance and workman's compensation plans, and increase productivity and engagement of their employees. They represent a unique and challenging environment in which to

develop such programs. Best practices specifically for healthcare systems have not been identified.

### **Purpose of this Study**

The purpose of this study is to identify variables that affected participation in a workplace wellness program in a large urban healthcare system and offer recommendations to increase participation and return on investment in workplace wellness programs specifically in healthcare systems.

## **METHODS**

### **Design Overview**

This study is a cross-sectional analysis.

### **Setting and Participants**

This study was conducted at a large healthcare system located on the border of the mid-west and southern regions of the United States. At the end of the data analysis collection time, 12,197 people were eligible for this study. The 12,197 participants were all full and part-time employees of the healthcare system. Of course, the number of employees is always in a state of flux thus the differing total number of employees from one quarter of 2012 to the next as seen in Tables 2-4.

Henceforth in this paper the healthcare system under study will be referred to as Study Healthcare System (SHS). It is the third largest private employer in the area and provides care at over 140 sites. SHS includes five metropolitan hospitals with 1,800 licensed beds; five outpatient centers; 12 immediate care centers; over 12,000 employees; and more than 600 employed medical providers. SHS offers health and disability

insurance among other benefits to its employees. It is self-insured. SHS contracts with a national broker to administer its employee benefits plan.

Table 1 provides a snapshot of self-reported health behaviors of residents of the county and state in which SHS is located versus SHS employees.<sup>29</sup> It should be noted that SHS is located in a state that consistently ranks among the worst of the United States in multiple health metrics. SHS currently has no mechanism to verify the self-reported smoking rate. There appears to be a marked bias to under-report the behavior. In 2012, although 9.2% reported current smoking, almost one-third reported ever-smoking, and given the effectiveness of known smoking cessation strategies<sup>30</sup>, it is likely the real smoking rate among employees is substantially higher than the self-reported rates. Thus, the SHS employee population equals or exceeds the general local and state population in prevalence of obesity, physical inactivity, and probably smoking.

Claims data compiled by SHS' health insurance broker for the 2011 annual report (internal report) shows that SHS employee rates of asthma, chronic obstructive pulmonary disease, depression, diabetes, hypertension, and osteoarthritis were above the national norm.

In 2012, 50% of employees participating in the Employee Wellness Program (EWP) who completed an online health risk assessment reported a BMI of 30 or more. Twenty-nine percent of those employees who completed the 2012 health risk assessment eat one or less fruits or vegetables per day, 15% use salt at every meal, and 29% do not regularly eat whole grain. Fifteen percent of the employees are physically inactive. Additionally, 24% of those SHS employees self-reported having hypertension, 17% being diagnosed with hyperlipidemia, and 10% being diagnosed with diabetes (data based on

SHS Employee Health Risk Assessment data as of June 8, 2012). The health insurance broker's 2011 annual review shows that hypertension, back pain, hyperlipidemia, diabetes, and neck pain, in that order, are the 5 top conditions by number of members. It also disturbingly shows that the most frequently prescribed drug for SHS' employees is the narcotic hydrocodone-acetaminophen.

SHS began its voluntary employee wellness program (EWP) in 2009 in response to rising insurance premiums and recommendations from its broker. One of its major competitors in the region also began a workplace wellness program at this time. In order to be eligible for the EWP, one has to be a full or part-time employee. All such SHS employees are eligible to participate in the EWP, but only those who take the health insurance benefit are eligible for monetary incentives. Dependents will not be eligible to participate until 2015. Out of 12,197 employees, 8,359 enrolled in SHS' healthcare insurance benefit in 2012. All employees enrolled in the EWP are eligible to win prizes and public recognition for participating in wellness challenges sponsored by the EWP. The original goal was for 60% of all eligible employees to do the following by November 19, 2012:

1. Register on the EWP website.
2. Take the Health Risk Assessment (HRA) online through the EWP website.
3. See a primary care physician (PCP) for an annual wellness visit.

Initially, the EWP was staffed by a health and fitness educator and an RN who reported to the vice-president of Human Resources. During the first year, the EWP primarily promoted participation in health-related activities such as weight loss challenges, community walks and runs, and smoking cessation programs. Participation

was incentivized by prize giveaways and public recognition. Although participation was not formally tracked for all activities, it was observed that few employees participated in these wellness activities.

In 2011, SHS leadership decided to intensify its efforts toward employee wellness. In January, 2011, the EWP was moved from the Human Resources department to the newly formed Centers for Prevention and Wellness (CPW). The Employee Health Program remains separate and functions to assure compliance with all federal and state regulations surrounding employee safety issues and processes all complaints of work-related injuries. CPW was directed by SHS' senior leadership to standardize all preventive health services provided by SHS. CPW provides preventive health services and education to the community, other area businesses, and SHS' own employees. In mid-2010, the EWP purchased a web-based wellness program that provides a comprehensive online health risk assessment (HRA), tools for tracking nutrition, exercise, weight loss, and programs for smoking cessation. The web-based program also has a health coaching platform, but no positions have yet been created for health coaches at SHS. The web-based online product also provides navigation to the Employee Assistance Program and community fitness activities such as fundraising walks and runs.

In 2011, EWP worked with SHS' marketing department to enhance promotion of its services among employees. EWP worked closely with the human resources, legal, and internal communications teams to determine what incentives could be offered for participation, to assure compliance with all federal, state, and local laws concerning privacy and workers' rights, and to communicate the program to the employees. Senior leadership supported the EWP by writing letters to employees, addressing employee

wellness at quarterly leadership conferences, and endorsing the program in the benefits bulletin and a video on the company's website.

After taking the HRA, EWP participants must complete one 100% subsidized annual wellness visit with a primary care physician. During this visit, biometrics including body mass index, waist circumference, fasting blood glucose and lipids, blood pressure, and pulse rate are measured. The physician is provided a form by EWP on which to record these metrics, immunization status, cancer screening recommendations, and an individualized wellness plan. This form was developed in collaboration with the medical director of the primary care division of SHS and the medical director of SHS employee health program.

Based on the employee's health conditions and risk profile, the physician performing the annual wellness visit can refer the employee to a number of programs, both community-based and provided by SHS, aimed at reducing obesity, increasing physical activity, and ceasing tobacco. A new program was developed by the pharmacy department to assist persons with diabetes in the management of their condition, since non-compliance with diabetes standards of care was identified as generating excessive costs to SHS' insurance plan. The diabetes management program is 100% subsidized by SHS. The cost of all of the other programs is subsidized 75% by the EWP. Employees with Flexible Spending Accounts can use these funds to pay for lifestyle programs if the physician writes a letter of necessity.

During 2011, SHS worked with its food vendor to offer more healthy choices in its cafeterias and put up signs denoting walking paths on all its campuses. It also conducted an awareness campaign concerning its smoke-free policy and asked managers

to more vigorously enforce it. A new free online version of the Cooper/Clayton Method for Smoking Cessation was offered through the EWP as well. In early 2012, a local fitness center was contracted to provide beginners' exercise classes on one of the hospital campuses. There is a full service gym on the main campus open to all employees at a cost of less than \$1 per day.

Employees were offered the following incentives to participate in EWP: In 2012, employees were rewarded for their participation with public recognition and prizes such as iPads given away in drawings. Participation in the plan by November 19, 2012 will be rewarded with a \$20 per pay period credit (\$520 per year) beginning January 1, 2013.

Beginning in November 2011, numerous communications were sent to individual employees through print, email, and face to face presentations. Employees received some sort of communication about EWP on a bi-weekly basis. A comprehensive brochure on EWP was included in the annual benefits enrollment guide which is sent to all employees each November. Targeted messaging was sent to leadership and physicians through print, email, and in face to face presentations at departmental meetings. Wellness Champions, employee volunteers with an interest in health promotion, were recruited from all the campuses and charged with giving presentations to their various departments on EWP services. The communications very specifically and repeatedly addressed the issues of confidentiality and explained that only members of the internal wellness team (key CPW staff, EWP staff, and staff of targeted wellness programs such as the diabetes management team), and not managers or the Human Resources Department would have access to personal protected health information. The communications explained that participation in the EWP was in no way linked to job performance and decisions

regarding hiring or firing of employees. The communications also promoted the several new wellness activities such new exercise classes offered on two of SHS' campuses, the diabetes management program, and the online smoking cessation classes.

In November of 2011, the staff of CPW, which includes staff of EWP, began registering on the website and taking the online HRA. These staff members were considered "beta testers". The vendor incorporated minor programmatic refinements based on the beta testers' feedback.

By the end of the first quarter of 2012, participation in EWP was very low. Only 10.4 % of those eligible had registered (1,224), 7.21% (849) had taken the online HRA, and 0.57% (51) had their annual physician wellness visit (Table 2). In response to the low participation rates, in May and June, the staff of EWP and the CPW began a canvassing blitz in which staff members visited the various departments throughout SHS. They spoke face to face with employees and distributed flyers and cards describing EWP and the incentives. In addition, SHS' health insurance broker conducted focus groups on several of SHS' worksites about EWP. Focus group participants were not incentivized, other than being offered refreshments. These focus group sessions were conducted the first week of June 2012. There were seven focus group sessions held at five of SHS' worksites. Five sessions were held on hospital campuses and two were held at one of SHS' administrative and support service sites. There were a total of 58 focus group participants. The participants were asked questions regarding the perceived level of participation at their worksite, the effectiveness of the communication strategy, the

concerns and fears about the EWP, the barriers to participation, and the effectiveness of the incentives provided. They were also given an opportunity to speak ad lib about their feelings toward the EWP.

As of June 25, 2012, participation still remain low (Table 3), but improved somewhat as a result of the canvassing and focus group efforts. Thirty-three percent (3,999) of those eligible had registered, 30% (3,593) had taken the HRA, and 4.75% (423) had their annual physician wellness visit. The CPW and EWP teams continued their canvassing efforts. A message encouraging participation in the EWP was made the banner for the daily employee email newsletter. Physician services announced special wellness clinic days starting in September, 2012 with the primary care practices for employees to get their annual physical.

As of August 20, 2012, 45% of eligible employees had registered on the website, 41% had completed their health risks assessments, and 13% had completed the annual wellness visit with a primary care physician (Table 4). The original goal was to have 60% of employees complete all these steps by November 19, 2012. Because so few had completed the annual wellness visit by the end of the data collection period, the participation rates in this study are defined as number completing the HRA.

### **Data Collection**

New members enrolling in EWP and taking the online HRA were tracked on the EWP website. Those completing the annual physician wellness visit were asked to download a form from the EWP website, take it to the physician visit, have the physician complete it, and then fax, scan, or mail the form to the EWP staff. EWP staff then enters

the data from the forms into a secure password protected data base. Data was collected and analyzed for the period from November 1, 2011 to August 20, 2012.

The following variables were studied in both the participating and non-participating groups:

1) Gender: Female, Male. 2) Shifts: 1, 2, 3, and 4 (for definition of shifts, see addendum 2). 3) Age (years) groups: 18-44, 45-54, 55-64,  $\geq 65$ . 4) Worksite: Hospitable employee (works on one of the five campuses that have emergency rooms, inpatient services, and outpatient surgery) or non-Hospitable employee (system, immediate care center, physician office, offsite laboratory).

The total number of eligible employees is 12,197, and the total number of participants completing the HRA in the program as of 8/20/2012 is: 4,747. The eligible population (12,197 employees) basic information is summarized as follows:

- Gender:

Female: 82%. Male: 18 %.

- Working Shifts:

1st Shift: 44 %

2nd Shift: 7 %

3rd Shift: 7 %

4th Shift:

Registry and any 12 hour shift 42%

- Age in years

Mean: 41.93. Median: 41. Mode: 27

- Age-Groups:

Age group 1: 18 years – 34 years: 34%

Age group 2: 35years – 44 years: 23%

Age group 3: 45years – 54 years: 24%

Age group 4: 55years - 64 years: 17%

Age group 5: 65 years + 3%

- Working Environment:

Hospitals environment: 64 %. Non-hospitals environments: 36%

### **Data Analysis**

The software used for the data analysis was SAS 9.2/Enterprise Guide 4.2. The initial analysis shows that the population of eligible employees has special characteristics such as that the majority of employees are females, and a significant portion of them work longer shifts or irregular hours. To overcome this situation, age, gender and shift adjusted participation rates were calculated to ensure realistic calculation for participation rates. The Stepwise Selection logistic regression was used to identify the prognostic factors for participation. The Stepwise Selection Model tests the significance of the factors at each step determining whether to keep the factor or remove it from the model. The Hosmer and Lemeshow Goodness of Fit test and Hosmer-Lemeshow Classification tables were checked for lack of fit in the model. These and the ROC Curves confirm that the model was a good fit for the data.

The number of eligible employees completing the HRA from the period of November 1, 2011 to August 20, 2012 was the major outcome. Only qualitative statements can be made about the information gathered in the focus groups. Focus group

results were studied using a directed content analysis to code the qualitative survey data into major themes.

## **RESULTS**

Overall participation in the SHS EWP, as defined by taking the HRA, remained low at 41%. As of August 20, 2012, only 13% of eligible employees had completed all the steps necessary to earn the monetary award of \$520. As shown in Table 5, females have a significantly higher adjusted participation rate than males, first shift employees have a significantly higher adjusted participation rate than the other three shifts and employees aged 65 or older have a very low adjusted participation rate. Those working 4<sup>th</sup> shift (12 hour and rotating shifts) had the lowest participation rates of any of the shifts. The worksites of hospitals versus non-hospitals do not show a statistically significant difference in participation rates. Therefore, participation in the EWP was negatively correlated with working a shift other than first, (especially a 12 hour or rotating shift), being a male, and being older than 65 years.

### **Focus Group Findings**

Five predominant themes were identified in the focus groups' responses. These are ranked according to the number of times the theme was present in the responses.

1. Time: Employees were too busy to read communications, and too busy to participate in the wellness program.
2. Communication: Communications were often ignored by staff because they feel they are unimportant or they do not have enough time to read them.
3. Lack of trust/confidentiality concerns: Fear that information from the wellness program would be shared with management and human resources and would

affect the hiring and firing of employees.

4. Environmental/structural barriers: Lack of onsite gyms, healthy cafeteria food, and a time and place for relaxation during breaks were voiced as barriers to program participation.
5. Low perceived self-efficacy to engage in wellness activities: These included feelings of hopelessness, fear of illness, and being overwhelmed with the demands of work.

The perceived lack of time was a key reason why employees did not read the communications. Reading the communications would have possibly reduced the number of concerns about confidentiality and job security and prompted employees to enroll in new wellness programs.

Analysis of the focus group feedback and discussions with numerous workers throughout SHS, revealed a perception among many nurses and other allied health professionals that they just “work shifts”. In addition to working their shifts at SHS, many work extra shifts beyond their 40-hour work week at other healthcare facilities. They do not feel loyalty to any particular health care system, but view themselves as “free agents”. This obviously leads to poor engagement with their employers’ initiatives, including the employee wellness program. In addition, healthcare workers may need a significantly higher financial incentive than that offered in this program because they can easily make over \$520 working a couple of extra shifts on weekends or at night.

The following are examples of feedback given in the focus groups:

*“Patients’ families are demanding – they want their nurse, and NOW. Lunch and bathroom breaks are rare, much less breaks for wellness programs.”*

*“Staff doesn’t read the EWP emails they receive. There are too many and not enough notice is given for events/activities. While staff is required to check email once per week, reality is that doesn’t always happen. Or, they check weekly and find the event that is advertised has already passed.”*

*“Employees already have to fill out so much paperwork; the physician form is “one more thing”. After doing it, employees realize it “isn’t that bad” but also have licensure forms, compliance forms, etc. to fill out. It seems there’s a new form to fill out each month!”*

*“Confidentiality regarding how data is shared. Norton doesn’t have a right to know about employee’s health.”*

*“What’s next? Employees don’t know what’s coming and are afraid their personal information will be used against them. They are scared of what’s coming and think it’s contradictory: On one hand they are being advised how to protect against identity theft (by limiting what information they provide and to whom) but on the other hand they’re being asked to provide a lot of personal health information.”*

*“Supportive environment means more than money or trinkets. Simple exercise facility for yoga classes, basic cardio equipment and hand weights with a shower.”*

*“Many are overweight/obese and already know it. These programs just remind them of their failures. Many employees have little confidence in their ability to change and/or do not want to change; these programs are furthering those thoughts rather than helping.”*

*“Healthcare workers don’t want to know what’s wrong with them. They see too many horror stories and are afraid it will happen to them.”*

One worker, not in the focus group summed up his experience as a nurse:

*“I work three 12-hour shifts back to back. On work days, I am so tired, all I can do is come home and crash. On my first day off, I sleep all day. On the middle days off, I try to fit in time with my friends and family and take care of personal stuff like grocery shopping and paying bills. The day before I go back to work, I try to catch up on sleep to get ready for the week ahead.”*

## **DISCUSSION**

This study has several limitations. Because full participation was so low, participation had to be redefined for this study as completing the HRA. Only those variables that could be tracked in the participating and non-participating groups could be analyzed. A potentially important variable that could not be analyzed in this study is the health status of the employees who participated versus that of those who did not. The health status of those who did not participate is unknown. It is possible that employees with very poor self-perceived health status or negative health behaviors may have avoided participation in the EWP due to fear of job loss, reprimand, or shame. It is also possible that those with very good self-perceived health status may recognize no benefit to participating in the EWP beyond the monetary reward, which may have not been sufficient to incentivize participation. Other variables that may be very important are employee income, educational attainment, race and ethnicity, and years worked for the system. These will be addressed in future studies.

Much remains unknown about best practices to produce sustainable positive improvements in healthcare workers' health and reduce costs to their healthcare and disability insurance plans. There are very few studies specifically addressing workplace wellness programs in healthcare workers.<sup>28</sup> As this study and the literature shows, the

culture, environment, and work patterns of many healthcare workers are plagued with barriers to engaging in positive personal health behaviors as well as increased risks to personal health. These same barriers and risks create threats to patient and worker safety. Indeed, the health and safety issues are inextricably intertwined and must be addressed simultaneously to improve healthcare workers' health and wellness.

Ironically, the increasing burden of preventable disease that has steadily created jobs for healthcare workers in the last five decades has also made their jobs more demanding. Their employers have decreased staff to patient ratios and now hospitalize only very high acuity patients in order to be profitable. There certainly is some truth to healthcare workers' assertions that they do not have time to participate in any activities at or outside of work because of their demanding workloads. More and more patients are obese, increasing the risk of injury for healthcare workers who must move them.

One disturbing finding of this study was that many nurses have a "shift worker mentality", meaning they see themselves as a body to fill a shift rather than an integrated member of any one healthcare system. Nurses often ask for 12 hour work shifts, and work them on 3 consecutive days. Many in our study reported working extra shifts at multiple healthcare systems in the area. Nurses perceive that working this way gives them added income with flexible schedules and plenty of time off for family and social life. In reality, this work pattern appears to negatively impact their personal health, their engagement at work, their patients' safety, and their family and social lives.

Not surprisingly, night shift work and rotating shift work were associated with the lowest participation rates in the employee wellness plan.

As in other parts of the United States, SHS workforce is predominantly female. It is widely known that women drive the healthcare decisions in their families and engage in healthcare activities more than men. Therefore, the finding that participation in men was lower than in women is not surprising. What does need further exploration is the specific factors that influenced males to participate in the employee wellness program.

Only 3% of SHS workforce is over the age of 65 years. The reasons for their low participation are unclear. Certainly increasing age is correlated with an increased number of chronic health conditions. Fears of reprimand, job loss, or shame may deter older workers from reporting these problems in a health risk assessment. One additional possible explanation in this age group is unfamiliarity with using computers. There currently is no other option for participation in SHS' EWP but through the web-based program.

Another sad and intriguing aspect of healthcare workers' reluctance to engage in a wellness plan is the stress surely created by watching patients suffer and die from preventable illnesses, yet personally continuing to engage in those same behaviors. This is proof positive of the public health adage that education is necessary but insufficient to change behavior. As discovered in the focus group sessions, many healthcare workers do not possess a sense of self-efficacy to change negative health behaviors. Like many of their other American contemporaries, they do not seem to feel they have any control over their own time, when in fact they are violating SHS' policies and federal law by skipping breaks and working back to back shifts in multiple facilities.

## Recommendations

1. Healthcare systems should incentivize healthcare workers to work eight hour shifts in order to promote their adoption of healthy lifestyle behaviors, improve patient safety, and increase employee engagement.
2. Healthcare systems should incentivize employees to work only for that system.
3. Healthcare systems should provide paid-time-off as an incentive to participate in workplace wellness programs. This could only be successfully done if recommendations 1 & 2 are followed. Employees should use this paid-time-off to engage in wellness behaviors, not work shifts at other healthcare facilities.
4. Healthcare systems must assure that employees take their breaks. This would give them time to eat a healthy meal, go for a walk, meditate, or possibly even read communications from their employer. The practice of ignoring the law regarding workers' breaks must be met with zero tolerance.
5. Healthcare systems should take great care to educate all workers, but especially night and rotating shift workers, on strategies to get enough sleep, eat healthy food, get exercise, and maintain positive social and family relationships.
6. Healthcare systems should make a firm commitment to providing on-site healthy food, exercise facilities, and opportunities for relaxation on breaks. They must also strictly enforce smoke-free policies. This should include eliminating all sugared beverages and fried foods from its cafeterias.
7. Healthcare systems should provide health coaches with specific knowledge of the

barriers faced by healthcare workers as part of its workplace wellness program.

Health coaches may help employees increase perception of self-efficacy to change negative health behaviors.<sup>31,32</sup>

8. Healthcare systems must reduce workers' exposure to work-place violence.

Both the Joint Commission and the Occupational Safety and Health

Administration have released recent guidelines on prevention of violence in the healthcare setting.<sup>33,34</sup>

9. Healthcare systems should make promotion of employee wellness part of every leadership position. This facilitates diffusion of accurate information on the employee wellness program throughout the system, encourages managers to implement policies that promote employee wellness, and model positive health behaviors to their staff. The American Nurses Association has called for the development of strong nursing leadership to create a healthy work environment at all levels of healthcare organizations, from senior leadership to point of care or unit level.<sup>35</sup>

Further study on the best incentives to engage healthcare workers in workplace wellness programs is needed. The Cleveland Clinic's very aggressive approach has produced significant cost reductions for that healthcare system, but could it be replicated in other places?

Future studies should also explore the factors within each sub-group that influenced their participation. What factors allowed some night and rotating shift workers to participate? Why do some workers feel they are integrated and valued members of a healthcare system's team and others feel they are only there to pull a shift?

What factors influenced the men who participated? Why do older workers have such low participation rates? What incentives are really needed to promote participation?

Clearly, the work patterns of many healthcare workers do not promote optimal health for them or optimal safety for their patients. Human resources departments need to reconsider scheduling of healthcare workers shifts and explore ways to increase their engagement, benefits, and compensation to discourage the “shift worker mentality” that was found to lead to many negative health behaviors in this study. Changing the cultural barriers present in the healthcare workplace will be necessary to significantly increase participation and realize a return on investment for its workplace wellness program. Addressing these barriers will also create a more humane environment and hopefully eliminate the ironic finding that the healthcare workplace is one of the least healthy places to work.

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**Tables/Figures**

**Table 1. Self-Reported Health Behavior Statistics for County, State and SHS compared to National Benchmark from County Health Rankings and Roadmaps 2012<sup>27</sup>**

<b>Health Behaviors</b>	<b>County</b>	<b>State</b>	<b>SHS</b>	<b>National Benchmark</b>
<b>Adult smoking</b>	24%	27%	9.2%	14%
<b>Adult obesity</b>	34%	33%	36.1%	25%
<b>Physical inactivity</b>	29%	31%	30.8%	21%

**Table 2. Participation Rates in Study Healthcare System Employee Wellness Program 2012 (Quarter I-January-March 31)**

Total members / Total # eligible: **10.4 %**

1,224

10,541

Total HRAs Completed / Total # eligible: **7.21%**

849

10,916

Total members with PCP/ Total # eligible:  
**0.57 %**

51

8,847

**Table 3. Participation Rates in Study Healthcare System Employee Wellness Program 2012 Quarter 2 (April 1-June 30)**



Total members / Total # eligible: **35%**



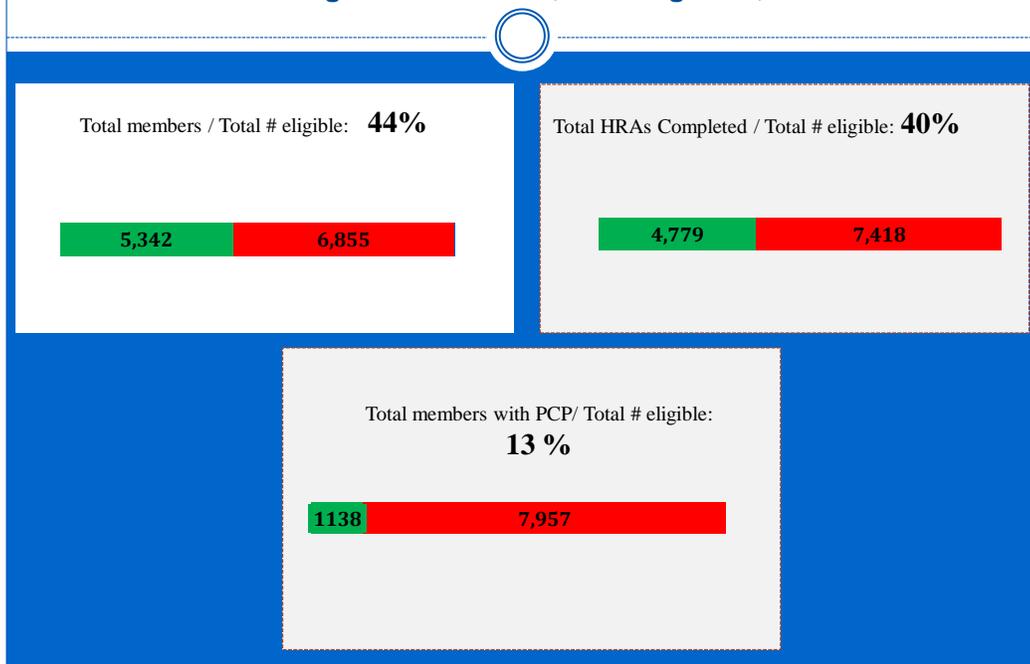
Total HRAs Completed / Total # eligible: **31%**



Total members with PCP / Total # eligible:  
**5.8 %**



**Table 4. Participation Rates in Study Healthcare System Employee Wellness Program November 1, 2011-August 20, 2012**



<b>Table 5</b>	<b>Number taking the HRA (total=4147)</b>	<b>Number in total population (12,197)</b>		<b>Participation percent per total population</b>	<b>Participation percent per sub-population</b>
<b>By Gender</b>			%	%	%
Male	602	2195	18	4.94	27
Female	4145	10002	82	33.98	41
<b>By Shifts</b>					
1 <sup>st</sup>	2607	5367	44	21.37	49
2 <sup>nd</sup>	296	853	7	2.43	35
3 <sup>rd</sup>	278	854	7	2.28	33
4 <sup>th</sup>	1566	5123	42	12.84	31
<b>By Age Groups</b>					
18-34	1524	4147	34	12.49	37
35-44	1125	2805	23	9.22	40
45-54	1174	2427	24	9.63	48
55-64	840	2073	17	6.89	41
64 and +	84	745	3	0.689	11
<b>By Worksite</b>					
Hospital	2881	7806	64	23.62	37
Non-Hospital	1866	4391	36	15.30	42

<b>Table 6 Type 3 Analysis of Effects</b>			
Effect	Degrees of Freedom	Wald Chi-Square	Pr> ChiSq
Hospital	1	0.8259	0.3635
Shifts	3	346.8912	<.0001
Gender	1	171.1325	<.0001
Age	4	37.5423	<.0001



## Addendum 1

### Shift Definitions:

1st 7 a.m. – 3 p.m.

2nd 3 p.m. – 11 p.m.

3rd 11 p.m. – 7 a.m.

4th

- Registry and any 12 hour shift
- 7 a.m. – 7 p.m.
- 7 p.m. – 7 a.m.

## Biographical Sketch

Deborah Ann Ballard, MD, is the medical director of the Norton Healthcare Centers for Prevention and Wellness, Louisville, Kentucky. She earned a B.A. in Chemistry with High Honors from the University of Louisville in 1984. She graduated from the University Of Louisville School Of Medicine in 1988 and completed her residency in Internal Medicine there in 1991. She worked in private practice for 17 years with a special focus on diabetes and endocrine care. She joined the Norton Cancer Institute in Louisville, Kentucky in 2008 as the Director of Community Outreach. In 2011, Dr. Ballard became the medical director for the Norton Healthcare Centers for Prevention and Wellness Louisville, Kentucky. She is also the physician lead for the Norton Healthcare Integrative Medicine development team. She is a member of the American Medical Association.

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## Acknowledgements

The statistical analyses for this study were performed by Yehia Khalil Mohamed, PhD, program analyst for Norton Healthcare Centers for Prevention and Wellness.

The focus group sessions were conducted by Sarah Auer of Lockton Associates.

Thanks to Hannah Hernandez, office coordinator for help with formatting.

A special thanks to Dr. Ballard's capstone committee:

William Pfeifle, M.S., M.A., Ed.D, MBA,

Robin Vanderpool, DrPH, CHES,

Julia Costich, MPA, JD, PhD.

Their guidance and critique of this study was invaluable.

