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Kentucky Worksite Wellness Tax Credit: A Health Impact Assessment

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Kentucky Worksite Wellness Tax Credit: A Health Impact Assessment

The purpose of the assessment was to evaluate the potential effects of a worksite wellness tax credit on three main areas of concern for Kentucky: (1) nutrition, physical activity and obesity levels of children whose parents receive Worksite Wellness services, (2) jobs and (3) social cohesion.

January 2012

The Kentucky Department for Public Health produced this report with grant funds from Association of State and Territorial Health Officials and technical assistance from Human Impact Partners and Western Kentucky University.

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A Health Impact Assessment
Kentucky Worksite Wellness Tax Credit
EXECUTIVE SUMMARY OF FINDINGS JANUARY 2012

- Current conditions of the selected health determinants -childhood obesity, employment and social cohesion
- A logic model that shows how a Worksite Wellness Tax Credit could impact the three health determinants
- Assessments of the health impacts of the Worksite Wellness Tax Credit on 25 key areas, including Parental Understanding of Healthy Diet and Physical Activity for Children, Job Loss Due to Poor Health Status and Populations in Kentucky with Social Isolation
- Consider This: A Summary of Potential Impacts
- Key Findings
- Recommendations designed to help Kentucky receive the most benefit from worksite wellness policies

WHAT YOU WILL FIND IN THIS REPORT

Extensive research shows that Worksite Wellness Programs benefit both employees and employers. There is strong evidence that comprehensive programs can change employee health behaviors and reduce their risk of disease. Healthy employees boost a company's bottom line by reducing health care costs, Workman's Compensation and disability claims and absenteeism, while increasing morale and productivity. At the current rate of increase, the cost of health care to employers will likely be the single most significant detriment to recruitment of businesses to the state and the viability and profitability of existing businesses. Public agencies are feeling the sting as well as health insurance costs skyrocket. Health care costs contributable to obesity alone are projected to be $2.3 billion in 2013 and $6 billion in 2016 for the state of Kentucky (American Public Health Association/Partners in Prevention, 2011).

A worksite wellness tax credit was proposed, but not enacted in 2008, 2009 and 2010 which would give tax credits to employers who provide qualified wellness programs for their employees. Based on HB 74 in 2010, the annual credits would be up to 50% of the cost of wellness programs, or a maximum of $100 per total number of qualified employees. The total tax credit amount will be capped at $3 million dollars annually. Qualified programs are comprehensive and include health education, behavioral change and supportive environments.

What would the impact of a worksite wellness tax credit be for the state of Kentucky? To answer this question the Kentucky Department for Public Health partnered with the Western Kentucky University College of Public Health to develop a Health Impact Assessment, a state-of-the-art approach used for assessing the broader outcomes of health-related policies. The purpose of the assessment was to evaluate the potential effects of a worksite wellness tax credit on three main areas of concern for Kentucky: (**1)**

nutrition, physical activity and obesity levels of children whose parents receive Worksite Wellness services, (2) jobs and (3) social cohesion. The full report provides complete details of the assessment and findings.

THE PURPOSE OF CONDUCTING AN HIA ON KENTUCKY WORKSITE WELLNESS TAX CREDIT

Consider broader health impact of wellness at the worksite:

- potential benefits of a healthier population
- lower healthcare costs
- stronger economy and workforce

Provide directions to lessen health disparities on special populations including

- small businesses
- rural areas
- underemployed and the lower income.

Inform about the potential health benefits of enacting the Kentucky Worksite Wellness Tax Credit to:

- Kentucky residents, health professionals, legislators, business leaders and other stakeholders

ABOUT HEALTH IMPACT ASSESSMENTS

A Health Impact Assessment is an information gathering tool used to systematically evaluate the potential and sometimes unintended effects of a proposed project, plan or policy on the health of a population and the distribution of those effects within the population. An HIA has 5 steps:

Screening - To determine if a HIA is needed

Scoping - Determines which health impacts, the analysis method and how the impact will be completed

Assessment and Recommendations - Looks at current conditions, possible impacts, and offers strategies to address unwanted health impacts

Reporting - Includes creating and sharing a formal report of process and findings

Monitoring - Tracks impact on the project or policy and the health determinants

----- **Human Impact Partners**

KEY FINDINGS OF ASSESSMENT

The HIA finds a worksite wellness tax credit would likely have positive impacts on the physical and social health of Kentuckians and the economy. Key findings of the HIA of the Kentucky Worksite Wellness Tax Credit are:

- Parents have the most influence of their children's habits and lifestyles.
- Parents can be educated and supported to improve their own health and that of their children at the workplace.
- Progressive companies in the country are offering wellness programs now for employees and their families.
- Employee wellness programs, which include families, have shown greater results than employee only programs.
- Job growth can be increased through healthier employees, which result in healthier companies, including lower employee turnover rates, higher productivity, lower absenteeism, lower presenteeism (coming to work but performing poorly) and a state image that could attract companies.
- Social cohesion influences communities' ability to provide a supportive, healthy environment, including less dependency on government programs with potential opportunities for self-sufficient community members.

Current Conditions

CHILDHOOD OBESITY

- Kentucky ranks third in the nation for childhood obesity
- 16% of children are overweight and 18% are obese
- 80% of children who are overweight will become overweight adults (CDC, 2009)

JOBS IN KENTUCKY

- Almost 355,000 Kentuckians are underemployed. The underemployed have less education, are younger, non-white, and have physical limitations
- Kentucky is ranked 40th in the nation for percentage of low-income working families (The Working Poor Project, 2008)
- KY state unemployment - 9.8% Eastern KY areas higher - 12.1% (Office of Employment & Training, 2010)

SOCIAL COHESION

- Kentucky was ranked 49th in the overall Gallop-Healthways WELL-Being Index Study
- The state was 49th in emotional health, life evaluation, and physical health, and 50th in healthy behavior (Gallup-Healthways, 2010)

Health Impact Assessment Logic Model

Kentucky Worksite Wellness Tax Credit

GOAL:
To show the impact of the KY Worksite Wellness Tax Credit

RATIONALE:
Motivate companies to implement effective wellness programs resulting in healthier communities

ASSUMPTIONS

Healthier families including spouses and children

Health care costs could decline, while job opportunities could increase

Healthier worksite could lead to better social cohesion

RESOURCES

Responsible agency

Technical assistance

Develop certification process

Expert at state level

ACTIVITIES

Marketing

Create employee wellness model

Create awards

Conduct training

Tracking

OUTCOMES

Increase in number of companies offering wellness programs

Increase in number of comprehensive wellness programs

Increased number of health promoting policies in work policies

Capacity for job growth

Increased access to wellness programs

Healthier families, including spouses and children

Improved social cohesion internally and externally of worksites in Kentucky

CONSIDER THIS
A Summary of Potential Impacts

More Physical Activity

Kentucky children (under 18) are 8.5% below the national average for meeting the requirements of daily physical activity. This relates to 457, 223 children in the Commonwealth that are considered sedentary. If companies and schools in Kentucky offered worksite wellness programs, parents and teachers, who are both significant roles models to these children would be better equipped to guide their children and students to be more physically active.

Families Eat More Fruit and Vegetables

If employers offered family wellness programs for fruit and vegetable consumption, 11% more of the KY working population and their families may eat healthier. This could lead to an estimated 10,000 children eating more fruits and vegetables.

Educate on Importance of Limiting Sweetened Beverages

If eliminating consumption of just one soda per day, approximately 150 calories (40 grams of sugar) per soda, a child could potentially lose between 10 to 16 pounds in one year. Worksite wellness programs would educate employees (parents) on the nutritional importance of limiting sweetened beverages in their children's daily intake of liquids.

Support for Working Moms to Continue to Breastfeed

A Kentucky worksite wellness tax credit could likely increase the number of companies that implement wellness programs and consequently lactation programs and policies, which would increase Kentucky's rate for breast feeding up to one year which is currently at 13.1% as compared to nationally 22.7% and Health People 2020 objective of 34.1%. Creating basic accommodations for lactating women can cost businesses next to nothing, yet the return on investment can be significant. One company estimated a return on investment for their worksite lactation support program at 2.8 to 1 (Partnership for a Fit Kentucky, 2009). The lactation programs in Kentucky could also prevent the primary reason for mother's stopping breastfeeding, which is returning to work.

Healthier Families

According to the 2008 County Business Patterns (NAICS) from the U.S. Census Bureau, there are 92,587 worksites in Kentucky (U.S. Census Bureau, 2009). Ninety four percent or 87,212 of those businesses are small (49 or less employees) and most do not offer wellness programs, while 5% are medium size (50-249 employees) and less than 1 % are considered large (250 and more). The Worksite Wellness Tax Credit could potentially influence 30,000 employees and their families to live healthier lives, especially those in small and medium businesses.

Support for Parents Employed in Small Businesses

Although the number of employees who are parents and work in small businesses is not known, a majority of worksites in Kentucky are small. According to the U.S. Census Bureau (2008), approximately 99% of all businesses in Kentucky are considered small (2-249). The estimated workers employed by small businesses in Kentucky are 906,794, which could be positively influenced by wellness programs in their worksites, resulting in healthier and more productive workers.

More Jobs in the Wellness Industry

By offering employers incentives to implement wellness programs, more companies will provide comprehensive wellness programs and will require qualified health professionals to lead them. Small and medium sized companies tend not to offer wellness programs as often as larger organizations. With the tax incentive, more companies will likely offer health promotion programs which will generate increased business for wellness vendors in Kentucky. This would lead to more jobs in the wellness service industry in the state.

A Healthier Workforce Creates a Healthier Economy

Wellness programs reduce the chronic diseases in a population and reduce costs for both employees and employers. By implementing wellness programs in the workplace, a significant part of the population is reached. A healthier workforce creates a healthier economy. The savings realized from a healthier workforce includes lower healthcare costs, less absenteeism, lower presenteeism and higher productivity, which will lead to a more efficient working environment and healthier businesses.

Increased Job Opportunities for Vulnerable Populations

Vulnerable populations in Kentucky are more likely to be unemployed. If companies encouraged and supported healthy work environments through worksite wellness programs, producing healthier and more productive employees, these vulnerable populations would have increased job opportunities through a stronger job demand.

Help Kentuckians Meet Their Basic Needs

The need to be self-sustaining and meet the basic need of life is vital to the health of a population. A healthy job market encourages states, communities and individuals to grow and prosper. The Kentucky Worksite Tax Credit will motivate companies of all sizes to add wellness as a part of the benefits to employees. The growth potential of a healthy company will allow more Kentuckians to work and enable them to meet their basic needs.

Increase Job Satisfaction, Increase Productivity

Social support at the workplace has a positive effect on the well-being of the worker, including impact on job satisfaction and productivity for the organization, Kentucky's labor force would benefit from the implementation of wellness programs as a result of passing the KY Worksite Tax Credit.

Key Recommendations

The report found that to truly reap the benefits that worksite wellness has to offer in addressing key problems in the state a more comprehensive approach was needed. Recommendations include to:

- Implement the Worksite Wellness Tax Credit
- Conduct a state-wide in depth assessment of current status of worksite wellness programs
- Create a state-wide worksite wellness council or panel
- Create a center of excellence for worksite wellness
- Support of worksite wellness programs at a regional and local level with a qualified consultant
- Offer wellness programming to provide education for parents in the worksite
- Educate employers on the benefits of providing wellness programs for both employees and their families
- Set standards for quality wellness programs for the worksite wellness tax credits to be successful

What Employers Can Do

- Help employees develop healthy family lifestyles in the home
- Educate employees about what to do if their child is overweight
- Provide tools and information to optimize employee partnerships with health care providers
- Refer parents to child care services and providers that meet nutrition and physical activity recommendations

The Big Picture of Kentucky Worksite Wellness

Worksite	Employee	Families	Community	Kentucky
Increase number & quality of wellness programs	Healthier lifestyles	Healthier lifestyles	Healthier members	Healthier citizens & workforce
Role model for community	Role model for families	Improved family dynamics	Improved social cohesion	Attract new businesses

1. Introduction

Unhealthy lifestyle choices and behaviors are key factors in poorer health, a lower quality of life, and the increased cost of health care (Riedel, Lynch, Baase, Hymel, & Peterson, 2001). As much as fifty percent of health care costs can be attributed to individual behaviors (Anderson, et al., 2000). Poor health and rising healthcare costs consume large portions of our corporate and state resources placing Kentucky at a disadvantage in providing a good quality of life for its people and for creating an environment conducive to business growth and development (Kentucky Chamber, 2010). Lower health status statistics affect the productivity and quality of life, as well as the recruitment and retention of business in the state.

Worksite health promotion programs are offered by employers to raise awareness and knowledge of issues that impact employees' health and well being. The body of evidence that supports the positive results of comprehensive worksite health promotion programs continues to develop. Average reductions in sick leave, health plan costs, and workers' compensation and disability costs of slightly more than 25% were found in a meta-analysis of studies. (Chapman, 2005). Aldana (2001) completed an analysis of studies that showed return on investment savings ranging from $2.30 to $6.00 (Aldana, 2001). A series of literature reviews conducted by the Centers for Disease Control and Prevention Community Guide Task Force found that "there was sufficient or strong evidence that comprehensive, evidence-based programs can reduce rates of tobacco use, dietary fat consumption, seat belt nonuse, high blood pressure, total serum cholesterol levels, high-risk drinking, and the number of days absent from work because of illness or disability. The reviews also found improvements in employees' physical activity, overall health and well-being scores, and health care use, especially in terms of reduced hospital admissions and days of care" (Goetzel & Ozminkowski, 2008).

Improving health through a well designed worksite health promotion program is an important strategy for businesses to address absence and other health related issues. Worksite Health Promotion (WHP) programs can assist in the reduction of health insurance claims and overall health care costs and, most importantly, help achieve a higher level of health for employees (Davis, et al., 2009). Companies continue to promote activities that engage employees in managing their health and costs associated with their health, with 78 percent of companies now investing in health improvement programs such as health risk assessments and biometric testing (Aon Hewitt, 2011).

Kentucky business leaders recognize the need to address poor employee health. Although information about worksite wellness programs in Kentucky businesses is very limited, a 2010 survey conducted by the Kentucky Department for Public Health (KDPH) and the Kentucky Chamber of Commerce found that 63% of Kentucky Chamber member businesses now have a worksite wellness program in place compared with 36% in 2006 (Kentucky Chamber, 2010). These results are representative of chamber members only. Also, many of these programs may not be comprehensive, or include evidence based strategies, and therefore, may not be effective.

Some major changes need to be made to ensure a healthy working population, including employees and their families. There is a need for employers, both public and private, to implement comprehensive worksite wellness programs and provide wellness services to the employees and their families to prevent

overweight and obesity and help employees make healthy choices. Efforts are being made to change the lifestyles risk factors that affect health; however, these efforts can only be successful when they are constant and reinforced. Policy change can strengthen efforts of employers to provide supportive environments and employees to adopt healthier lifestyles (Heinen & Darling, 2009).

In the fall of 2010 the Kentucky Department for Public Health (KDPH) received a grant from the Association of State and Territorial Health Officials (ASTHO) to build capacity to conduct Health Impact Assessments (HIA) and to complete a first HIA for the KDPH. The first HIA project was the assessment of the Kentucky Worksite Wellness Tax Credit (HB 74) which would provide tax credits to employers who implement worksite wellness programs according to specific guidelines. This bill was introduced in 2010 but was not enacted. Speculation is that the economic environment was not conducive to a reduction in tax revenue for the state at that time. However it is believed that revealing the broader positive impact of such a tax credit could result in a gain in support. This HIA was conducted beginning in January of 2011 by the KDPH Obesity Staff and Western Kentucky University's (WKU) Department of Public Health with input from a state-wide HIA Team. Looking at the impact that the tax credit would have on the diet and physical activity levels of children (childhood obesity), jobs, social cohesion and well-being involved extensive literature and document reviews and the expertise and time of public health and other professionals.

This HIA report includes the background, current conditions of the selected health determinants, potential impacts of the tax credit, and recommendations. The background section describes the basic HIA process, worksite wellness at a national level, a summary of HB 74, and the reasoning behind selecting this policy to assess. The current conditions section includes statistics of the three health determinants addressed (diet and physical activity in children, jobs, and social cohesion and well-being). This section includes the scope portion of the report, which goes into more detail of the health determinants and includes the research and impact questions and methodology. The assessment portion provides the available data for each research and impact question. This section emphasizes a "Consider this" section that includes qualitative and quantitative analysis of the impact findings. And finally, in the recommendations portion of this report, suggestions are provided that will result in a strong and effective tax credit bill, but also a stronger worksite wellness initiative for the state.

Reference is made throughout this document, specifically to the 2010 bill (HB74), however, research, conclusions, and recommendations would apply to any similar future legislation.

2. Background

2.1 Health Impact Assessment Overview

A Health Impact Assessment (HIA) is defined as "a combination of procedures, methods and tools that systematically judges the potential and sometimes unintended effects of a proposed project, plan or policy on the health of a population and the distribution of those effects within the population". An HIA identifies appropriate actions to manage those effects (Human Impact Partners). HIA is recommended as a planning tool in Healthy People 2020 (Centers for Disease Control and Prevention, 2011).

Traditionally health impacts have not been considered in projects changing the built environment of a community such as new buildings or road construction. The basic goal of the HIA is to include health and

health disparities in the decision making and planning process of such changes. Without public health input, community "improvements" may actually contribute to a decline in health status particularly for some disparate populations. By following a scientific and objective assessment process in partnership with key stakeholders, public health impacts can be seriously considered by those who do not have an understanding of health factors or risks

The HIA process includes the following l steps:

Screening – Determines if an HIA is needed
Scoping – Determines which health impacts will be assessed, the study methods, and how the research will be completed
Assessment and Recommendations – Looks at current conditions, possible impacts, and offers strategies to address unwanted health impacts
Reporting- Includes creating and sharing a formal report of process and findings
Monitoring- Tracks impact on the project or policy and the health determinants
Source: (Human Impact Partners)

2.2 Worksite Wellness Legislation in the United States

Worksite wellness legislation is a fairly new concept. New Jersey's Health Wellness Promotion Act, enacted in 2000 was the first health promotion legislation to address the adult population. A review of worksite wellness legislation in the U.S. from 2001 to 2006 looked at 87 bills consisting of various wellness incentives including tax credits, wellness policies/programs, alternative transportation and health insurance plans. Those listed as tax credits offered employers income tax credits of varying amounts (up to a maximum amount) toward wellness program costs. Twenty-seven states enacted bills. A passage rate of 19% to 22% revealed that worksite wellness bills were as likely to pass as other health promotion related ones (Lankford, Kruger, & Bauer, 2009).

Worksite wellness legislation is gaining momentum in the United States. Between 2006 and 2010, 28 states passed worksite wellness laws concerning health insurance incentives, state employee programs, tax credits and studies concerning worksite wellness. Nine states and the District of Columbia have considered employer-sponsored health promotion program tax credits, but only Indiana enacted legislation. Indiana's Small Employer Wellness Tax Credit Program allows employers with two to 100 employees to receive a tax credit for 50 percent of the cost incurred in a given year for providing state-certified employee wellness programs. According to the Indiana Department of Revenue, in 2007 (the first year of the program), 50 employers claimed $107,960 in small employer wellness tax credits; in 2008,184 employers claimed $219,782; and in 2009, 186 employers claimed $225,085. (National Conference of State Legislatures, 2010). Several states enacted laws or resolutions to conduct studies of worksite wellness programs. New Mexico passed a resolution to study the effects of worksite wellness programs. Other states have passed legislation concerning state employee wellness programs. Arkansas and Alabama enacted legislation to support their states' employee wellness programs.

One 2010 worksite wellness brief reported that, "The evidence to date suggests gains from wellness programs are too uncertain to justify broad taxpayer supported subsidies" (Tu & Mayrell, 2010). However, worksite wellness studies have found wellness programs, when properly designed and implemented, improve health and contain or reduce health related costs. Several scientific reviews indicate that worksite health promotion programs reduce medical costs and absenteeism and produce a positive return on investment (Chapman, 2005).

According to a briefing document of Health Promotion Advocates (2011), the most definitive review of financial impact reported the following:

- 18 studies indicated that these programs reduce medical costs, and 14 studies indicated that they reduce absenteeism costs.
- 13 studies calculated benefit/cost ratios and all showed the savings from these programs are much greater than their cost, with medical cost savings averaging $3.48 and the absenteeism savings averaging $5.82 per dollar invested in the programs. (Health Promotion Advocates)

A 2004 Research Triangle Institute Obesity Telephone Survey of Americans regarding work policy strategies for treating and preventing adult obesity revealed that almost 85 percent of respondents favored tax credits for employers and reimbursement and discounts for obesity treatment.

Policy	Percent in Favor
Favored tax breaks for employers who provided exercise facilities	**84.9%**
Favored employee health insurance reimbursement for obesity treatment and prevention programs	**72.9%**
Favored employee health insurance discounts for healthy weight or improvement	**72.2%**

(Fuemmeler, Baffi, Mâsse, Atienza, & Evans, 2007)

Tax credits that require a comprehensive wellness program could be a tool to increase the number of effective wellness programs implemented in worksites. The effectiveness of tax credits to increase participation of businesses that implement worksite wellness programs need to be evaluated after more data has been collected from participating organizations.

2.3 The Kentucky Worksite Wellness Tax Credit / HB 74

A Kentucky Worksite Wellness Tax Credit bill (HB111) an act to encourage healthy lifestyles, was introduced by Representative John Tilley for the 2008 session. The 2008 bill was introduced in the House on March 4, 2008 and went to the Appropriations & Revenue Committee on March 5, 2008. This bill included the establishment of a wellness program with the Kentucky Personnel Cabinet and the Frankfort YMCA to create a state employee personal fitness pilot program to demonstrate how a reduction in health care expenditures can be achieved. This bill did not pass (House Bill 111, 2008). A similar bill, filed in 2009, also did not pass.

House Bill (HB) 74, an act relating to encourage health lifestyles was introduced to the Kentucky legislature by Representatives John Tilley and David Watkins in 2010. A description summary of the bill is:

> "An ACT relating to encouraging health lifestyles.
>
> Create new sections in KRS Chapter 141 to establish a wellness project credit; create a new section in KRS Chapter 131 to require the department to report data annually to the Legislative Research Commission; amend KRS 141.0205 to place the new credit within the credit-ordering statute; create a new section in KRS Chapter 194A to require the Cabinet for Health and Family Services to develop an employer wellness project model and require a certification process for all employer-provided programs."
>
> House Bill 74 would allow for employers to certify their worksite wellness program through the Kentucky cabinet for Health and Family Services and then apply for a tax credit for program costs. Employers could receive 50 percent of the costs of their wellness program subject to 1) not to exceed $30 a month per employee for physical activity related costs, 2) Not to exceed $100 per employee per year, 3) No food or health insurance costs can be applied (House Bill 74, 2010).

The program would be required to include:

1) A health-awareness program
2) A behavior-change program
3) A supportive-environment program

If this bill were enacted, The Kentucky Cabinet for Health and Family Services would develop an Employer Wellness Project Model that is based on best practices. The model will include program components that educate employees on health risks and the need for screenings and preventive care; support behavior change; and, promote healthy lifestyles. There is a $3,000,000 annual cap on the tax credit based on a first come, first served basis.

The bill was sent to the Interim Joint Committee on Appropriations and Revenue on November 4, 2010 and introduced in the House Appropriations & Revenue Committee on January 5, 2010. The bill has not since been considered or reintroduced. It is believed that there is support for the advancement of worksite wellness in the state and that there is no major opposition to the bill. However, with state budget problems it is believed that any bill that would reduce tax revenue would not have been enacted in 2010. (See Appendix II for complete bill details.)

2.4 The Decision to Conduct an HIA on the Kentucky Worksite Wellness Tax Credit

Screening, the first step in the HIA process, establishes the benefits and achievability of conducting an HIA. The screening reveals potentially significant health impacts that may be overlooked, and can also

influence the decision-making process. The purpose of conducting the Health Impact Assessment (HIA) on the Kentucky Worksite Wellness Tax Credit is to:

- Consider the broader health impact of wellness at the worksite and the potential benefits of a healthier population, lower healthcare costs, stronger economy and workforce.
- Provide directions to lessen the health disparities on special populations including small businesses, rural areas, underemployed and the lower income.
- Inform Kentucky residents, health professionals, legislators, business leaders and other stakeholders about potential health benefits of enacting the Kentucky Worksite Wellness Tax Credit.

A Kentucky Worksite Wellness Tax Credit has the potential to not only impact the health of the working population, but also the health of spouses, children, and ultimately the community and even the state as a whole. Worksites have become the "perfect" venue to improve health due to the availability of the population and the needs of both employees and employers. Although many worksites now offer wellness programs in the state, a high percentage are not properly designed to produce health improvement. If passed, a Kentucky Worksite Wellness Tax Credit could increase the number of companies that provide effective wellness programs, which could result in healthier and more productive employees. According to HB 74, tax credit would require the wellness program to be "certified" (meet best practice criteria) by the state to quality for the tax credit.

Companies, particularly smaller size ones and those in rural areas, would be more likely to implement effective programs if an incentive was provided. These companies often employ individuals that have less education, less access to health care and have fewer resources for basic needs. Even many current supporters of a worksite wellness tax credit do not see the full impact that worksite wellness programs can have on parents at the workplace and therefore have the capability to affect family health and childhood obesity. Although there may be some understanding of the effect on the economy and jobs in the state, there has not been any formal assessment of this impact.

The relationship between supportive worksite policies and environments to increased physical activity was examined in a study conducted during 2001-2003. The study (Dodson, Lovegreen, Elliott, Haire-Joshu, & Brownson, 2008) revealed the importance of combining worksite programming with policy change to increase employees physical activity levels. The findings suggest that the effectiveness of worksite health promotion programs can be increased through supportive policies and environments.

In 2005, The Task Force on Community Preventive Services reviewed interventions conducted at schools and worksites aimed at achieving or maintaining a healthy weight. People spend a significant amount of time and consume a lot of calories in these settings. Results showed that both schools and worksites provide a controlled environment, including effective communication channels and supportive social networks. A recommendation made by The Task Force suggested worksites combine interventions such as nutrition and physical activity for increased effectiveness. Another recommendation was that worksite interventions that target both adolescents and adults be examined in future studies (Center for Disease Control and Prevention, 2005).

A randomized research study in Kentucky found the potential long-term benefits of multi-component interventions in small companies (150-350 employees). When designing interventions for employees a menu approach may be feasible. A study (Brehm, Gates, Singler, Succop, & D'Alessio, 2011) was conducted in eight smaller manufacturing companies in Kentucky to determine if environmental interventions in the workplace could prevent or manage obesity. Results revealed that interventions of less intensity, such as health risk assessments, were not as effective in long-term health and weight management as more intense efforts such as policy changes. The combination of tailored support for individuals and supportive policies and environments for healthy and at-risk population would seem the most beneficial.

The Worksite Wellness Tax Credit HB74 was introduced in 2010, but not reintroduced in the spring session of 2011. By conducting this HIA in 2011, this provides the entire year to conduct an HIA, disseminate the findings, allow for additional feedback and input, and make revisions. The HIA findings will also be used to identify and document gaps in Kentucky's worksite wellness programs data and to demonstrate the need for a comprehensive assessment of worksite wellness programs in the state.

The screening process led to the decision to conduct an HIA to show the significant impact of worksite wellness on such factors as family health, economic growth, social cohesion and well-being. Worksite wellness encompasses a broad range of health factors, including tobacco, chronic illnesses, ergonomics, financial issues, obesity, and others that can have far ranging effects. Kentucky's childhood obesity rate, which is 4th in the nation, affects Kentucky's future population and its prosperity, influencing the decision to choose obesity over these other issues. Also, the Kentucky Worksite Wellness Initiative, a statewide consortium, conducted surveys which revealed obesity as a major concern in businesses' perceptions of significant health risks for their employees.

Kentucky partners included representatives from the following institutions:

- Western Kentucky University (WKU) conducted literature review, assisted in writing the report, provided a graduate student assistance and consultation on policies and procedures.
- Kentucky Cancer Consortium assisted in literature review.
- Kentuckiana Health Collaborative provided opportunities to share HIA findings.
- Northern Kentucky Chamber of Commerce assisted with literature review sources and provided expert contacts.
- Support to conduct the HIA was provided by ASTHO and Human Impact Partners (HIP).

This HIA was conducted with no known conflict of interest.

Receptiveness to the HIA Findings

Due to state-wide interest and support in worksite wellness from the business community, public health leaders, and others over the past few years, it is believed that demonstrating the broad potential health impact of a worksite wellness tax credit will garner a tremendous amount of additional support for the tax credit. Conducting the HIA research has uncovered many new potential partners and has raised awareness of the important link between their goals, the role of worksite wellness and the tax credit. Public health will have a better understanding of the role worksite wellness plays in reaching the populations they are attempting to affect in their health programming.

2.5 Potential Health Impacts Resulting From the Worksite Wellness Tax Credit Requirements

Since worksite wellness programs cover such a wide range of health and other topics, it was important to narrow the scope of the HIA to a manageable and meaningful project. Scoping is used to determine the health determinants impacts, the method, and how the impact will be analyzed. The health determinants were narrowed to diet and physical activity of children (childhood obesity), jobs and social cohesion. A preliminary review of the research and other available information revealed extensive data on the diets and physical activity levels of children both in Kentucky and nationally. Though there is extensive information on jobs and social cohesion in general, there are gaps in data on the effects of worksite wellness programs on these two areas.

2.6 Current Conditions for Health Determinants chosen for HIA

Health Status

Kentucky's poor health status, 2nd worst in the nation (United Health Foundation, 2010), is greatly influenced by risk factors including personal behaviors, community, environment and public health policies that do not support a healthy lifestyle. Many of these factors can be improved through health education and policies that would encourage and support decisions that would lead to a healthier population. Kentucky's health status is directly related to its workforce's productivity, the resulting economy and the population's general quality of life (Anderson, Asher, Whitler, & Wilson, 2008). Many modifiable behaviors, including obesity and sedentary lifestyles are factors that can be addressed through worksite wellness programs, which if properly implemented can be an effective tool for improving health behaviors. While employees become healthier, companies become healthier as productivity and presenteeism increases and absenteeism decreases. Kentucky's rural demographics can contribute to isolation of communities and often led to an absence of social cohesion. Positive health and economic indicators empower communities to become more self-reliant.

Population Demographics

The state has a population of approximately 4, 300,000 residents. The population age groups compare very closely with those of the rest of the country. (Table 1).

Table 1

Populations	Kentucky	US
Population, 2010	4,339,367	308,745,538
Population, percent change, 2000 to 2010	7.4%	9.7%
Persons under 5 years old, percent, 2009	6.7%	6.9%
Persons under 18 years old, percent, 2009	23.5%	24.3%
Persons 65 years old and over, percent, 2009	13.2%	12.9%

Source: (U.S. Census Bureau, 2009)

The highest percentages of population racial categories are 87.8% white, 7.8% black, and 3.1% Hispanic or Latino, as shown in (Table 2).

Racial Categories in Kentucky and U.S.

Table 2

Race	Kentucky	US
White	87.8%	72.4%
Black	7.8%	12.6%
Hispanic	3.1%	16.3%
Asian	1.1%	4.8%
American Indian/Alaska Native	0.2%	0.9%
Native Hawaiian	0.1%	0.2%

Source: (U.S. Census Bureau, 2009)

2.7 Kentucky Obesity Rates

Kentucky ranks fourth in adult obesity for the nation. Kentucky, along with 8 other states had a prevalence of obesity equal to or greater than 30% (Table 3).

Weight classification by Body Mass Index (BMI) Kentucky Adults

Table 3

	Neither overweight nor obese (bmi le 24.9)	OVERWEIGHT (bmi 25.0 - 29.9)	OBESE (bmi 30.0 - 99.8)
% CI n	32.9 (31.1-34.7) 2869	34.7 (32.9-36.5) 3194	32.4 (30.6-34.1) 3137

Source: (Centers for Disease Control and Prevention, 2009)

Kentucky Obesity Rates for Children

Kentucky ranks third in childhood obesity rates with 17.6% of children obese and 5.6% overweight. (Table 4).

Overweight and Obesity Rates for Kentucky Children

Table 4

Overweight (students who were >= 85th percentile but < 95th percentile for body mass index, by age and sex, based on reference data)	**Kentucky** 15.6 %	**US** 15.8 %
Obese (students who were >= 95th percentile for body mass index, by age and sex, based on reference data)	17.6 %	12.0 %

Source: (Centers for Disease Control and Prevention, 2009)

2.8 Unemployment

According to the Office of Employment and Training (OET) for the first time since February 2009 Kentucky's seasonally adjusted preliminary unemployment rate fell below the 10 percent mark to 9.8 percent in May 2011. The state's rate was 10 percent in April 2011.

Rural areas of the state, particularly the eastern part of Kentucky in the Appalachian region, have much fewer employment opportunities and a higher unemployment rate (Table 5).

Table 5

-2010 Change in Kentucky 2009Area Unemployment Rates			
Area	**2009 Unemp. Rate**	**2010 Unemp. Rate**	**Change from 2009-2010**
U.S.	9.3%	9.6%	+0.3%
Kentucky	10.7%	10.5%	-0.2%
Purchase	9.6%	9.7%	+0.1%
Pennyrile	11.5%	10.7%	-0.8%
Green River	10.2%	9.5%	-0.7%
Barren River	11.8%	10.6%	-1.2%
Lincoln Trail	12.2%	11.1%	-1.1%
KIPDA (Louisville)	10.4%	10.5%	+0.1%
Northern Kentucky	10.5%	10.2%	-0.3%
Buffalo Trace/Gateway	12.5%	12.0%	-0.5%
FIVCO	10.4%	10.6%	+0.2%
Big Sandy	11.2%	11.8%	+0.6%
Kentucky River	11.3%	12.1%	+0.8%
Cumberland Valley	12.0%	12.1%	+0.1%
Lake Cumberland	11.6%	11.3%	-0.3%
Bluegrass	9.5%	9.3%	-0.2%
Source: (Office of Employment and Training, 2010)			

The following table compares the average income per person in Kentucky ($33, 348) to the average income per person nationally ($40, 584). Kentucky ranks (44th) in per capita income, well below the national average. (Table 6)

Table 6

Kentucky Per Capita Income	
Dollars (2010p)	$33,348
% of National Average	82%
Dollar Difference from National Average	$40,584
Rank in U.S.	44
% Change 2009-2010p	4.6%
Source: Bureau of Economic Analysis	

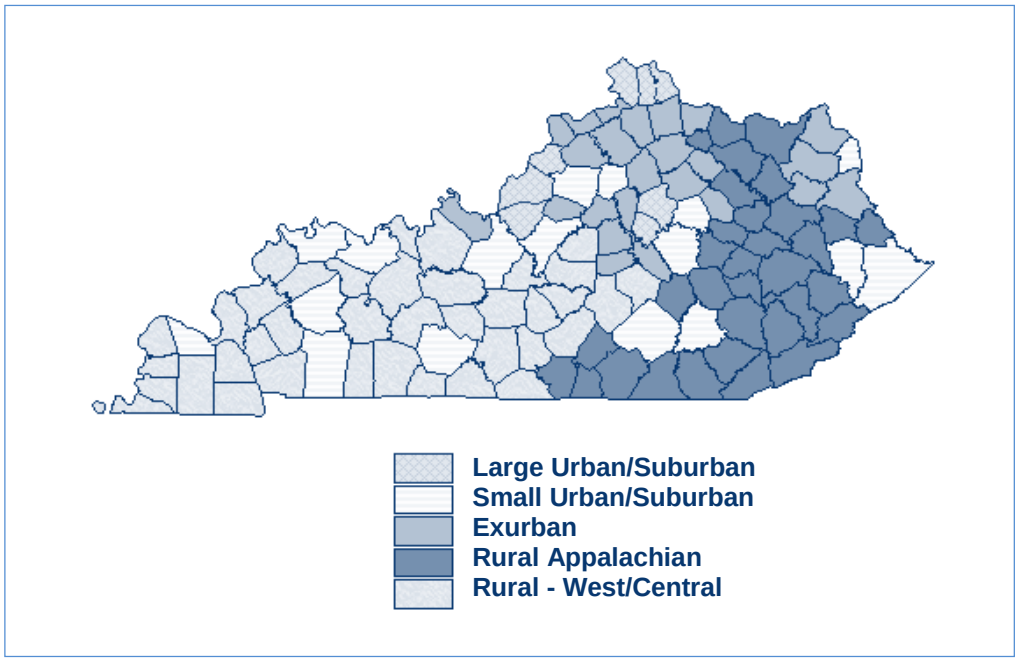
Source: (Office of Employment and Training, 2010)

2.9 Job Underemployment

Underemployment was found to be an issue for many in Kentucky. There are almost 355,000 underemployed individuals in the state. The underemployed have less education, are younger, are less likely to be married, non-white, and often have physical limitations. Individuals that are considered underemployed work more in manufacturing than any other industry. They also are more likely to be employed by private for-profit employers than government employers. The unemployed tend not to be self-employed or in management, but are more likely to be in administrative support jobs.
In 2007, the low-income threshold was $41,902 for a family of four. Kentucky is ranked 40th in the nation for percentage of low-income working families and 41st for children in low-income working families. Kentucky has 65.6 percent of low-income families that work and is ranked 41st for adults 18-64 with no high school degree/GED. (The Working Poor Families Project, 2008). The map below shows underemployment rates by Kentucky counties.

Map 1

Underemployment in Kentucky

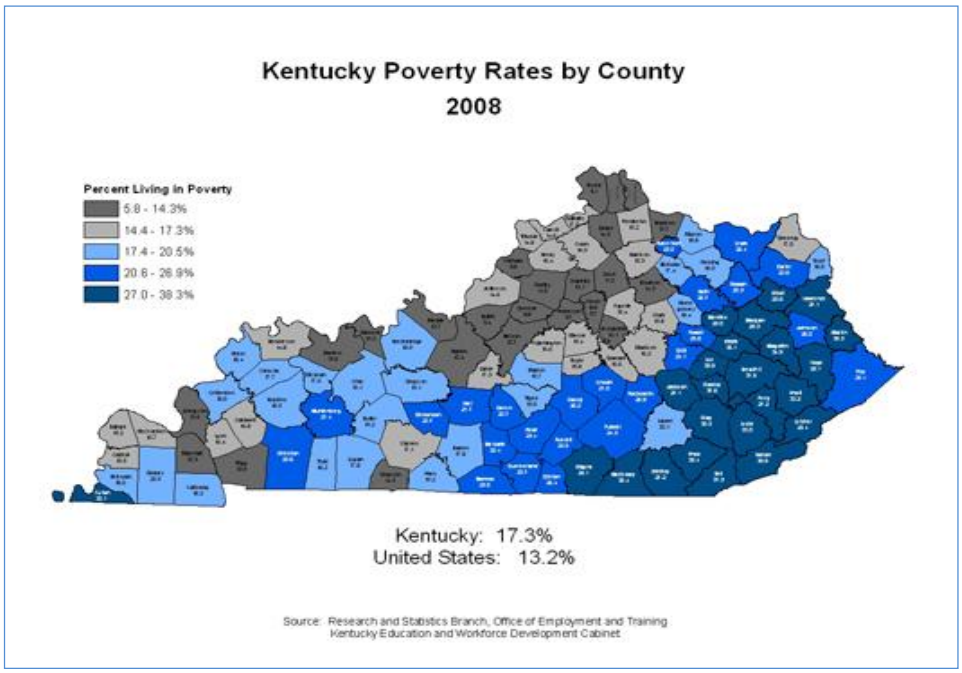


Source: (Berger, Bollinger, Coomes, & Langley, 2003)

2.10 Low Income and Poverty

Kentucky has consistently been ranked in the bottom poverty rate quintile for the past ten years. In 2008, Kentucky's rank deteriorated to 48th, its lowest ranking over the last decade (Kentucky Education and Workforce Development Cabinet, 2010).

Map 2

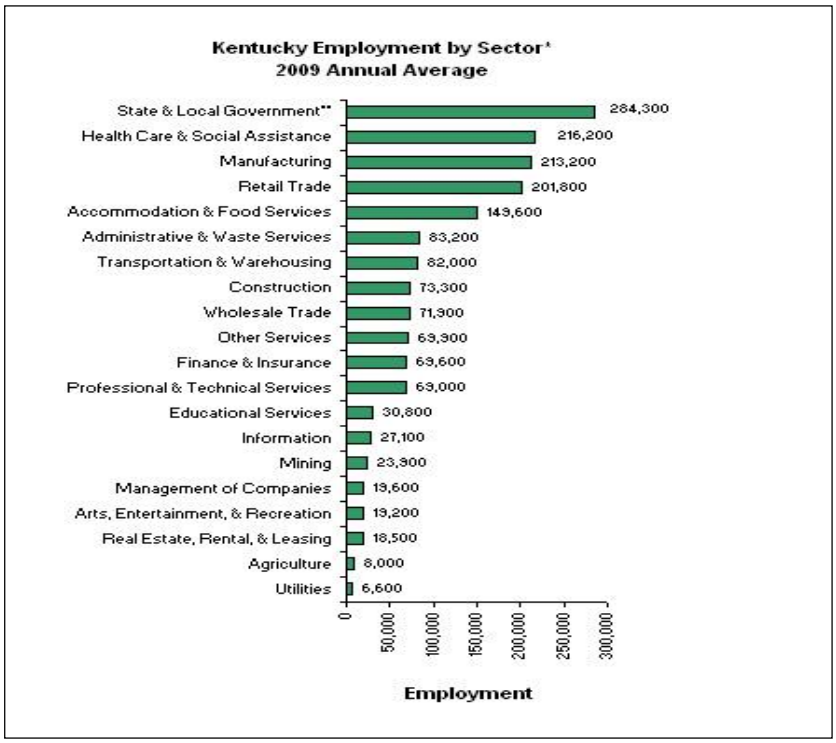


Source: (Office of Employment and Training, 2010)

2.11 Businesses in Kentucky

In looking at the business demographics of Kentucky in the 2009 chart below, the largest segment of employment is state and local government followed by health care and social assistance, while third is manufacturing.

Figure 1

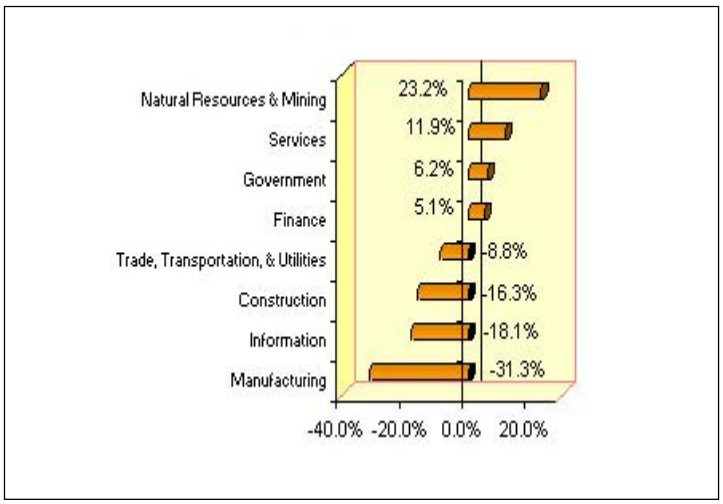


Source: (Office of Employment and Training, 2010)

The chart below displays the Kentucky Statewide Percentage Change by Industry and reveals that manufacturing had the largest percentage of lost jobs. This phenomenon could possibly result in several consequences including higher unemployment, underemployment and a need for the retraining of a significant portion of the workforce. The large rural population in Kentucky may find it more of a challenge than the urban population to retrain or return to school. Two significant barriers include geographic location involving longer commutes and lack of awareness of access to tuition reimbursements.

Figure 2

Kentucky State-wide Job Loss Percentage Change by Industry 2000-2009



Source: (Office of Employment and Training, 2010)

2.12 Social Cohesion and Well-being

Kentucky was ranked 49th in the overall Gallop-Healthways Well-Being Index Study. The Well-Being Index study examines key factors in individuals such as emotional and physical health, healthy behaviors, and work environment. The state was 49th in emotional health, life evaluation, and physical health, and 50th in healthy behaviors. There was a significant decline in the nation's Work Environment Index (WEI) in 2010. The WEI score was 50.9 in 2008 and fell to 48.2 in 2010. According to a Healthways report, "This indicates increasing discontent with the U.S. work environment, declining job satisfaction, and a lack of trust in employee / supervisor relations." Kentucky's Work Environment Index score fell from 48.3 in 2009 to 46.8 in 2010 leading to a drop in state ranking from 32 to 36 in this index. The city of Ashland (grouped with Huntington for this study) was named the unhealthiest city in the country. This assessment also considered morale and social support (Gallup- Healthways, 2010).

The table below shows the Overall Well-Being ranking for Kentucky and each of the six areas evaluated (Table 7).

Table 7

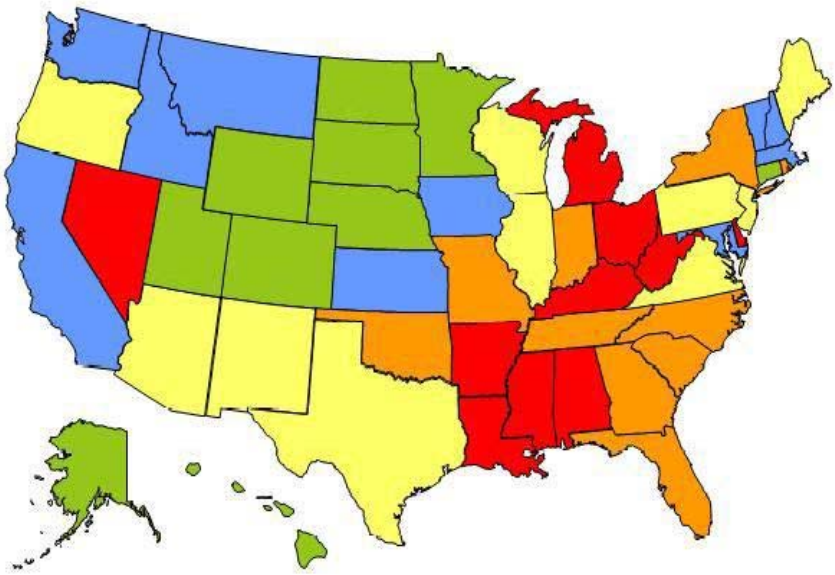
	2009	2010	
Well-Being Overall	49	49	
Life Evaluation	48	49	
Emotional Health	49	49	
Physical Health	49	49	
Healthy Behavior	50	50	
Work Environment	32	36	Noted Decline
Basic Access	39	45	

Source: (Gallup- Healthways, 2010)

Map 3

State of Kentucky Well-Being

The map below identifies state ranking for Wellbeing. Kentucky ranks in the 5th (Rankings Highest 1 – Lowest 5) Quintile for Well-being.



TOP QUINTILE = GREEN **2ND QUINTILE =BLUE**

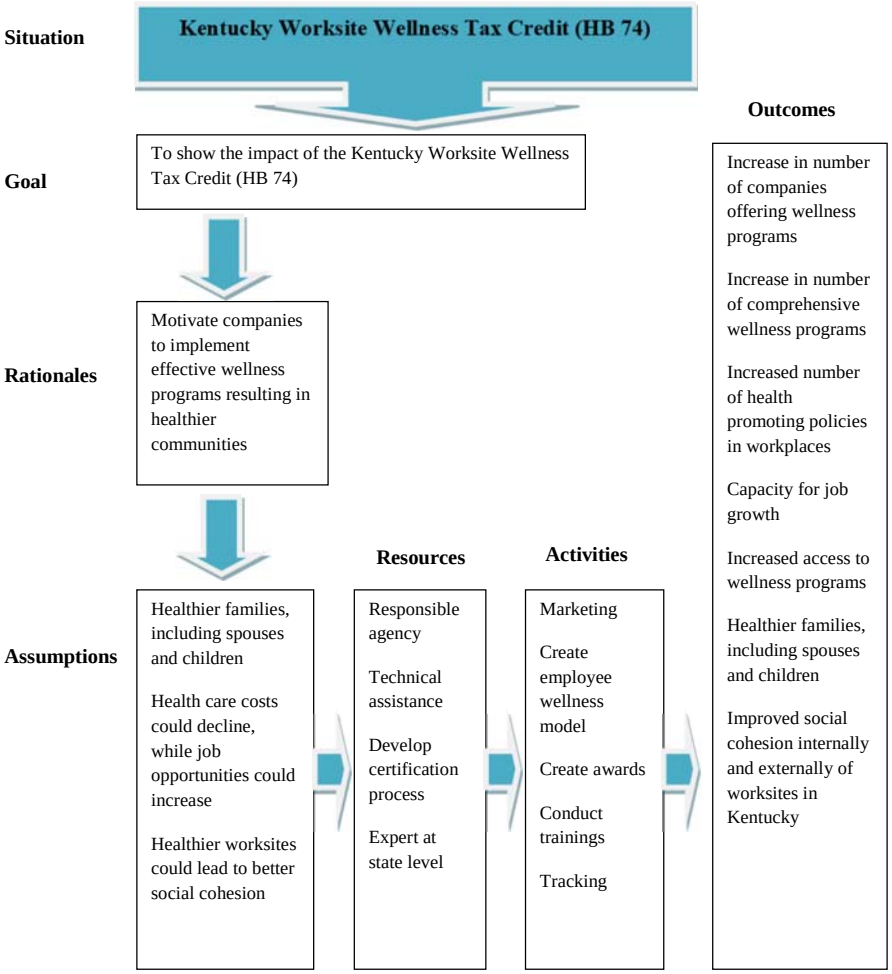
3 rd QUINTILE= YELLOW **4TH QUINTILE = ORANGE**

5TH QUINTILE= RED

Source: (Gallup- Healthways, 2010)

Figure 3

HIA Logic Model



3. Scope of the HIA Project Concerning the Commonwealth Of Kentucky

The scoping process allows for a concentrated focus on specific health determinants and the potential impact of projects or policies. The goal of the HIA on the Kentucky Worksite Wellness Tax Credit was to locate the evidence of its potential impact on the health determinants of diet and physical activity in children (obesity), jobs, and social cohesion. The more vulnerable populations considered in this HIA include children, low income individuals and families, less educated individuals, employees of small businesses, minorities, and those in isolated regions of the state. The geographic area of focus for this HIA is the state of Kentucky. Of particular interest was the evidence of the tax credit's potential impact on childhood obesity. It is believed that by improving the health behaviors of employees, their families will also improve their health.

Although the tax credit policy was the focus on this HIA, worksite wellness programs are the key driver to achieving results. Worksite wellness covers a broad health spectrum. Most worksite wellness interventions include programming for nutrition, physical activity, specific health conditions (such as cancer, diabetes), and stress. It was necessary to narrow the HIA scope to diet and physical activity. The economic aspect of worksite wellness policy was considered by researching its potential impact on jobs in the state. Worksite social cohesion was researched in order to provide insights into the impacts of social perceptions and their effect on employees, businesses, and the community. There is no specific data available on worksite wellness and its effects on social cohesion in Kentucky. Only limited surveys have been conducted and this data has not been collected. Therefore, this HIA reviewed social cohesion in a broader perspective looking at national data and limited Kentucky data.

The Kentucky Department for Public Health (KDPH) HIA Team proposed the worksite wellness tax credit policy as a potential HIA project for a grant that KDPH had received in 2010 from ASTHO. The HIA Team for this project consisted of professionals from public health, business, and the university setting. Team members attended a two day training in November, 2010 conducted by Human Impact Partners to learn the key process steps of conducting an HIA. The training also included reviewing a proposed HIA project for Kentucky. The worksite wellness tax credit was presented to the HIA Team during the training. Although there was much discussion in the screening process to determine the feasibility of conducting an HIA on a policy that included a health aspect, it was determined that since the HIA would address children's health, jobs, and social cohesion this provided an opportunity to look at aspects of worksite wellness not typically considered. The scoping process required narrowing the health determinants to manageable yet meaningful areas of interest. The scope areas of diet and physical activity of children (childhood obesity), jobs, and social cohesion were finalized by the HIA Team.

The HIA Team members provided journal articles, reports and other data to conduct the research over the next several months. Team members provided names of contacts that could be a resource for locating data. Western Kentucky University (WKU) conducted an extensive literature review, provided technical assistance, consultation and assisted in writing the final report. Some members of the HIA team attended a worksite wellness conference on May 18 in Louisville, Kentucky in which the HIA Project was introduced to an audience consisting of business and health professionals.

A Kentucky Worksite Wellness Tax Credit policy will affect working residents of Kentucky and their families, businesses, and the state's health status statistics as a whole. By increasing the number and quality of worksite wellness programs in the state, more of the over 1,500,000 working population could be supported through interventions provided by these programs to improve employees' health habits. Many employers are also insurance providers for the employees' beneficiaries. Increased access to wellness programs can benefit not only employees, but also their families, especially when programs are designed with a family emphasis. Business will benefit by improving employee health that translates into improved productivity and reduced health care costs. Kentucky as a state can improve its health status statistics overall through worksites wellness programs that reach employees, families, and the community.

A worksite wellness tax credit policy also has the potential to increase the effectiveness of wellness programs in the state. Worksite wellness programs address most health habits, particularly those associated with nutrition, physical activity, and stress, which are directly linked to many chronic diseases. A key health determinant impact of this HIA is diet and physical activity of children and its impact on childhood obesity. This could be either through the improved knowledge, belief system, and habits of employees (parents) or directly through specific family programming.

The largest data gap discovered in our research was the lack of information on worksite wellness programs in the state. We used the most current national and state reports, peer-reviewed journals, and websites in our assessment.

For each of the research impact questions listed in Section 3, a literature review was conducted. The following section reveals the assessment and potential impact for each of the selected areas of childhood obesity, jobs, social cohesion and well-being.

3.1 Research/Impact Questions

Worksite wellness includes a broad spectrum of factors in health and other areas. Health, economic and social aspects should be considered. For this reason, the HIA of the worksite wellness tax credit policy was narrowed to the health determinants of diet and physical activity in children (childhood obesity), jobs, and social cohesion. Research and impact questions for each of these health determinants were selected. The previous logic model demonstrates the broad potential impact the worksite wellness tax credit can have on the health of employees, spouses, children, communities and the state. Each research question, immediately followed by the impact question, is the format used to show the relationship between the existing conditions and the potential impact of the worksite wellness tax credit.

Research/Impact Questions: Diet and Physical Activity (for children)

1. **How many sweetened beverages are consumed on average (per day) by children in Kentucky (for young children and teens)?**
    - **How could this policy impact consumption of sweetened beverage among children (younger children and teens) in Kentucky?**

2. **How many minutes on average do teens in Kentucky engage in physical activity? How does this compare to recommended standards for physical activity levels for teens?**
    - **How will this policy impact conditions that influence the amount of physical activity among children in Kentucky?**
3. **How many servings of fruits and vegetables do children (teens and younger children) in Kentucky consume on average per day or week?**
    - **How will this policy impact the factors that influence fruits and vegetables among children in Kentucky?**
4. **Where do children of employed parents eat most meals (at home, away from home) in Kentucky?**
    - **How will this policy impact the amount of meals children eat at home versus eating out (restaurants and fast foods)?**
5. **What is the average "screen time" per day for children of employed parents in Kentucky?**
    - **How will this policy impact factors that influence screen time for children of employed parents in Kentucky?**
6. **What percentage of mothers in Kentucky breastfeed their children? Are the rates of breastfeeding among employed mothers similar to the average for women across the state?**
    - **How would this policy impact the number of percentage of Kentucky mothers that breastfeed their children?**
7. **What is known about parent understanding/knowledge of healthy diet and level of physical activity for children in Kentucky?**
    - **How would this policy impact parent's knowledge/understanding about healthy diets and levels of physical activity for their children?**
8. **What are the current levels of [diabetes, high blood pressure, etc. - list chronic conditions related to physical activity and diet here] among children in Kentucky?**
    - **How would this policy impact risk factors for chronic conditions among children in Kentucky?**
9. **How many employees currently enrolled in worksite wellness programs have no more than a high school education in the state?**
    - **How would this policy impact the number of lower educated employees participating in worksite wellness programs?**

10. **How many employees currently enrolled in worksite wellness programs have been (or are currently) enrolled in WIC programs in Kentucky?**
    - **How many additional employees enrolled in (current or past) WIC will be enrolled in worksite wellness programs if this policy is implemented in Kentucky?**
11. **How many employees currently enrolled in worksite wellness programs are considered to be low-income in Kentucky?**
    - **How many additional employees considered to be low-income will be enrolled in worksite wellness programs if this policy is implemented in Kentucky?**
12. **How many Kentucky employees who work in small companies (2 -200) are also parents?**
    - **How will this policy impact parents who work in small businesses and their children?**
13. **How many employees currently enrolled in worksite wellness programs have children enrolled in Head Start in Kentucky?**
    - **How many additional employees with children in Head Start would be enrolled in wellness programs if this policy was enacted?**

Research/ Impact Questions: Jobs

1. **How many worksite wellness service jobs currently exist in Kentucky?**
    - **How would this policy impact the number of wellness service jobs that could be supported in Kentucky?**
2. **What is the rate of job turnover in companies with worksite wellness programs vs. those without Worksite Wellness Programs?**
    - **How would this policy impact the rate of future job turn over for companies that are eligible for the worksite wellness tax credit in Kentucky?**
3. **What is the prevalence of health outcomes associated with lack of employment in Kentucky? (or with being employed) - [for example, depression, having money available for basic needs (food, health care services, etc.)]**
    - **How will this policy impact the prevalence of these conditions in Kentucky?**
4. **What are the characteristics of the unemployed populations in Kentucky with regard to race, age, gender, education level and skill/training?**
    - **How will this policy increase the number of jobs available to these vulnerable populations?**

5. **What is the relationship between job loss and health status statistics in Kentucky?**
    - **How will this policy affect job loss in Kentucky?**
6. **What is the effect of lack of resources for basic needs in the state?**
    - **How will this policy affect the results of the lack of basic resources?**

Research/Impact Questions: Workplace Social Cohesion and Well-being

1. **How many workplaces in Kentucky currently have worksite wellness programs? What is the average size of these workplaces?**
    - **How many additional worksites will implement worksite wellness programs as a result of this policy?**
2. **How many Kentucky worksites have reported increased productivity as a result of their worksite wellness programs?**
    - **How many additional worksites could report increased productivity as a result of implementing wellness programs resulting from this policy?**
3. **Do workplaces that currently have worksite wellness programs report strong social networks among employees?**
    - **How will this policy impact the number of workplaces that report having strong social networks among employees?**
4. **How does support in the workplace impact health outcomes in Kentucky?**
    - **How will this policy impact factors associated with these health outcomes?**
5. **What populations in Kentucky have the least cohesive communities?**
    - **Will this policy help worksite wellness programs reach this population?**
6. **Are there populations in Kentucky in which social isolation is a concern?**
    - **Will this policy help worksite wellness programs in KY reach socially isolated populations?**

3.2 Methodology

The research methods used to conduct the HIA included the review of existing secondary data, peer-reviewed and empirical literature. Thirteen research questions were identified for diet and physical activity for children (childhood obesity), six questions for jobs, and six questions for workplace social cohesion followed by impact questions. A literature review was conducted for each question and national and state data was used to confirm deficits of health determinants in Kentucky as related to worksites. Information was obtained through publicly available sources including the National Business Group on

Health, CDC's Youth Risk Behavior Surveillance System (2009), the Kentucky Tweens Nutrition Report (2005), and Investing in Kentucky's Working Families (2010). Eleven worksite wellness related questions could not be addressed due to the lack of information about worksite wellness programs in Kentucky. One question regarding unemployed populations in Kentucky could not be released due to privacy policies. It is evident that a worksite wellness program assessment is needed to capture important information in order to comprehend the current status and effects of wellness programs in Kentucky and their potential to improve health and economics in the state.

4. Assessment of the Health Impact of a Kentucky Worksite Wellness Tax Credit on Childhood Obesity

As previously stated, Kentucky ranks third in childhood obesity with 17.6% obese and 15.6% overweight (Centers for Disease Control and Prevention, 2009). Almost one in four Kentucky one year olds (23%) is classified as obese. Obese children are developing diseases that were formerly seen only in adults. Type 2 diabetes, hypertension, heart disease and arthritis are now common in Kentucky's youth (Partnership for a Fit Kentucky, 2009). A third of the babies born in Kentucky in 2000 will develop diabetes during their lifetimes (Kentucky Public Health Association, 2010). Up to 80% of overweight children will become overweight adults, leading to a lifetime of poor health. This is the first generation predicted to have shorter life spans than their parents (Olshansky, et al., 2005).

4.1 How many sweetened beverages are consumed on average (per day) by children in Kentucky (for young children and teens)?

The dietary habits of children are one of the factors contributing to childhood obesity. Kentucky data shows that 35.7% of children drank a can, bottle or glass of soda one or more times per day during the past seven days compared to the national rate of 29.2 % (Centers for Disease Control and Prevention, 2009).

Research has established a clear link between sweetened beverage consumption and childhood obesity. One study revealed that for each additional serving of a sweetened beverage consumed daily over a 1 ½ year period among school aged children, the risk of becoming overweight increased by 60% after controlling for other confounding variables. The size of the sweetened beverage problem has grown substantially. Soft drink consumption among youth has increased 500% in the last 30 years (Ludwig, Peterson, & Gortmaker, 2001).

According to the CDC, the highest consumers of sweetened beverages are in the 12- 19 age group (13% of total calories). Parenting practices, and parental consumption are named as factors in the level of sweetened beverages that children consume. Addressing the importance of drinking water and limiting sweetened drinks can be included in the nutritional component in workplace wellness programs for both the parents (employees) and for their children. In May, 2008 the Healthy South Dakota Program conducted the "Sodabriety Healthy Challenge" targeting workplaces in an effort to increase water intake in the state. They saw an 88% increase in water intake and a decrease of 74% in sweet drink consumption" (Centers for Disease Control and Prevention, 2010).

The Lexington Fayette County Health Department in Kentucky (2005) conducted marketing research of the eating habits of Tweens (9 to 11 years old) and their parents in 2004. The focus of the research was

the perceptions, habits, and barriers to a healthy diet in the Tweens population in Lexington, Kentucky. They conducted 27 focus groups with Tweens and 24 focus groups with parents. Results concluded that when Tweens drink more sweetened beverages, they drink fewer nutritious beverages such as milk, water, and 100% juice. A recent study of children aged 6-13 years found that children will choose sweetened drinks over milk when given a choice, but will drink milk if not given a choice (Mrdjenovic & Levitsky, 2003).

Potential Impact of a Worksite Wellness Tax Credit on Sweetened Beverage Consumption in Kentucky

The Center for Weight and Health considers the reduction of sweetened beverages one of the most promising interventions to prevent childhood obesity (Ritchie, Crawford, Woodward-Lopez, Ivey, Masch, & Ikeda, 2001). Creating a Kentucky Worksite Wellness tax credit for employers could likely increase the number of companies that implement worksite wellness programs. This would allow more opportunities to provide education and support for employees (parents) to become healthier, better role models, and to learn about ways to improve their children's health. Research confirms that parents and caregivers are the primary influence on the Tweens age group. Parents allowed soda both at home and outside the home with cost and availability of healthier choices named as the reasons. The majority of soda is consumed at home leading to the assumption that attempts at reducing consumption of sweetened drinks may be most effective if the home is the targeted location. Understanding what a healthy drink is was an issue for both parents and Tweens (Morris, Bryant, & Courtney, 2005).

Consider this: If eliminating consumption of just one soda per day, approximately 150 calories (40 grams of sugar) per soda, a child could potentially lose between 10 to 16 pounds in one year. Worksite wellness programs could educate employees (parents) on the nutritional importance of limiting sweetened beverages in their children's daily intake of liquids.

4.2 How many minutes on average do teens in Kentucky engage in physical activity? How does this compare to recommended standards for physical activity levels for teens?

According to the CDC, children and adolescents should get 60 minutes of moderate to vigorous physical activity a day. Fifty-four percent (54.5%) of children in Kentucky were physically active for a total of at least 60 minutes per day on five or more of the past seven days, while the national rate is 63% (Centers for Disease Control and Prevention, 2009). According to a CDC report, The Obesity Epidemic and Kentucky Students (2009):

- 17% did not participate in at least 60 minutes of physical activity on any day during the 7 days before the survey.
- 79% were physically active at least 60 minutes per day on less than 7 days during the 7 days before the survey.
- 67% did not attend physical education (PE) classes in an average week when they were in school.
- 77% did not attend PE classes daily when they were in school.
- 29% watched television 3 or more hours per day on an average school day.
- 23% used computers 3 or more hours per day on an average school day

The CDC Youth Physical Activity: Role of Families (2009) states that the benefits of physical activity for children include:

- Builds strong bones and muscles
- Decreases the likelihood of developing obesity and risk factors for diseases like type 2 diabetes and heart disease
- May reduce anxiety and depression and promote positive mental health (Centers for Disease Control and Prevention, 2009)

Physical activity in adolescents has been associated with lower weight. Physical activity has been linked to lower tobacco and marijuana use, less television watching, higher fruit and vegetable consumption, less depression, and closer relationships with parents (Menschik, Ahmed, Alexander, & Blum, 2008).

Vigorous activity should be included at least three days of the week. Most of the physical activity should be aerobic like walking, bike riding, running, dancing and physically active games. Children need muscle strengthening exercise three days a week (included in the 60 minutes) such as climbing, gymnastics, push-ups, and weight lifting. Bone strengthening activities should also be a part of an active lifestyle for three days a week (included in the 60 minutes) such as hopping, skipping, and sports like basketball and soccer (Centers for Disease Control and Prevention, 2009).

Potential Impact of a Worksite Wellness Tax Credit on Children's Physical Activity in Kentucky

Parents' physical activity levels have been shown to predict their children's physical activity levels (Kalakanis, Goldfield, Paluch, & Epstein, 2001). Parent's role modeling and beliefs of physical activity influences their children's level of activity both directly and indirectly. Some researchers believe that support and encouragement of physical activity may have an even greater impact on children's behavior than role modeling. This may be in part due to the amount of time children spend with their peers. However, parents do have significant influence over their children. Active parents are more likely to support an active lifestyle for their children. Active parents may provide more sports and other tools to be active (Welk, Wood, & Morss, 2003). Most studies find some differences in how each parent may influence their children's physical activity. Parents can serve as good role models by being active themselves and including physical activity in family time. A study found that parental role modeling and parental social support are important to increase physical activity among underserved adolescents (Wright, Wilson, Griffin, & Evans, 2010).Parents can also encourage children to engage in active play with their friends (Centers for Disease Control and Prevention, 2009).

Worksite wellness programs can assist employees and their families to become more physically active. Physical activity is typically a key component in worksite wellness programs. The CDC's Guide to Community Preventive Services (2010) addresses the prevention and control of obesity by advocating the establishment of worksite programs at workplaces that includes physical activity components. Providing opportunities for physical activity at the workplace such as exercise facilities, walking paths plus policies to support them may lead to more recreational physical activity both inside and outside of the workplace (Crespo, Sallis, Conway, Saelens, & Frank, 2011). Improving the physical activity level of the employee (parent) through workplace health promotion efforts would better equip parents to follow the

recommendations to assist their children in being more physically active. Companies can also implement programs specifically targeting parents and their children, which could lead to more physical activity for the families of employees.

Consider this: Kentucky children (under 18) are 8.5% below the national average for meeting the requirements of daily physical activity. This means that 457, 223 children in the Commonwealth are considered sedentary. If companies and schools in Kentucky offered worksite wellness programs, parents and teachers, who are both significant roles models to these children would be better equipped to guide children and students to be more physically active.

4.3 How many servings of fruits and vegetables do children (teens and younger children) in Kentucky consume on average per day or week?

A CDC article, Fruit and Vegetable Consumption among Adults (2007), states that a lack of fruit and vegetable consumption is linked to obesity. In Kentucky, 85.8% of children ate **fruits and vegetables less than five times per day** compared to 77.7% nationally. Also 75.8% ate fruit or drank 100% fruit juice less than two times a day compared to 66.1% nationally (Centers for Disease Control and Prevention, 2009). The availability of fresh fruit and vegetables is a proven factor in the ability to increase consumption, yet many Kentuckians reported it is difficult for them to get affordable fresh fruits and vegetables (Health Foundation of Greater Cincinnati; Foundation for a Healthy Kentucky, 2011).

The 2010 Kentucky Health Issues Poll surveyed Kentuckians about their ability to obtain healthy foods for their families. Access to fresh fruits and vegetables is a significant concern for too many Kentucky families. The Poll found that:

- 1 in 5 Kentucky adults (21%) said it was not easy to get affordable fruits and vegetables where they live.
- 4 in 10 Kentucky adults (41%) were worried about having enough money to buy nutritious meals to feed their families.
- 1 in 3 low-income Kentucky family reported it difficult to get affordable fresh fruits and vegetables (Those earning less than the federal poverty guidelines, or less than $22,050 for a family of 4)

Potential Impact of a Worksite Wellness Tax Credit on Fruit and Vegetable Consumption

Studies have found that the role of family dietary behaviors and the importance of parental modeling in determining the consumption of fruits and vegetables in their children were important. One study looked at differences in consumption and predictors of fruit, berries and vegetables between normal-weight and overweight treatment-seeking children and their parents. Children and parents in the normal weight range ate fruits and vegetables more often than overweight children. The parents' consumption of fruit and vegetables influenced the child's interest in eating fruits and vegetables signifying the importance of parent's behaviors ability to impact those of the children (Vanhala, Keinänen-Kiukaanniemi, Kaikkonen, Laitinen, & Korpelainen, 2010).

Most worksite wellness programs include nutrition awareness and educational programs for employees (parents) providing an opportunity to improve their nutritional habits. By assisting employees (parents) to adopt a healthier diet they can become more knowledgeable about food choices and become better role models for their children. A study looking at parenting styles suggests that parents should be guided to improve their own diet to increase their children's fruit and vegetable consumption (Vereecken, Maes, & Rovner, 2010). In looking at interventions to improve fruit and vegetable consumption, employee and family programs have shown greater results (19%) than employee alone interventions (7%). Additional results based on this study's outcomes revealed that family interventions resulted in less fat and saturated fat intake of children. These results showed that worksite interventions, which include families, focus on barriers to fruit and vegetable consumption while providing needed resources. Dietary habits addressed in the work and home improves the intervention (Sorenson, et al., 1999). If fruits and vegetables are readily available in the home, children are more likely to eat healthy. Social environmental influences also play a major role in combating obesity at an early age. Frequent family meals promote healthy food consumption among children and adults (Gable & Lutz, 2000). Parental lifestyles, including healthy eating can influence a child's eating habits. Educating parents at their workplace about convenient healthy eating strategies will help them implement those at home. Some researchers have described the worksite as the ideal place for individual behavior change (Story, Kaphingst, Robinson-O'Brien, & Glanz, 2008).

Consider this: If employers offered family wellness programs for fruit and vegetable consumption, 11% more of the Kentucky working population and their families might eat healthier. This could lead to an estimated 10,000 children eating more fruits and vegetables.

4.4 Where do children of employed parents eat most meals (at home, away from home) in Kentucky?

Approximately 200,000 children receive some kind of out-of-home day care on a daily basis in Kentucky. Approximately 50% of America's food expenditure goes for foods consumed outside the home. Americans are predicted to spend $1.7 billion on fast food a day in 2011. The average family spent $2,619 dollars on food away from home in 2009 (National Restaurant Association, 2011).

Potential Impact of a Worksite Wellness Tax Credit on the Type of Meals that Children in Kentucky Eat

Working parents find it difficult to find time to prepare and serve meals at home and often rely on fast food. A study of working parents and food choices for the family looked at several work related factors such as hours, shift, job schedule, security, satisfaction, and food access. Other food and meal management factors such as food preparation, food away from home, missing meals, planning meals were also considered. The father's working conditions, when including long hours and nonstandard schedules, revealed associations with the amount of take-out meals and missed family meals. The mother's work affected missed breakfast and the prepared entrees types and frequencies. Stressful work conditions among parents often influenced food choices for their family meals. This study points out in its findings that the workplace could provide education for employees (parents) enabling better food choices for their families (Devine, Farrell, Blake, Jastran, Wethington, & Bisogni, 2009).