IMPLEMENTING THE ALIVE! BEHAVIORAL INTERVENTION PROGRAM IN PHILLIPS COUNTY, ARKANSAS

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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 Raeschell “Shelly” Williams Woodbridge, VA

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Project Abstract

The Arkansas Department of Health proposes implementing the Alive! behavioral intervention program in Phillips County, Arkansas to decrease the prevalence of obesity in this community. Alive!, A Lifestyle Intervention Via Email, is an evidence-based, email-derived, worksite intervention focused on reducing saturated fats, increasing fruit and vegetable intake, and increasing physical activity. As an email-based program, participants will receive weekly emails tailored to their individual goals with reminder emails delivered during the week with small-step goals to help the participant achieve their larger goal. As the country with the highest prevalence of obesity and second highest prevalence of obesity in 2014, Phillips County is primed for this intervention. As the largest employer of individuals in Phillips County, Alive! will take place in three schools in the Helena-West Helena School District – J.F. Wahl Elementary School, Eliza Miller Primary School, and Central High School. The goals of the intervention aim to benefit both the employee and the employer. The goals for the employee include better physical health through increased fruit and vegetable consumption and increased physical activity. The employer will see the benefits in fewer missed days from work due to employee illness and poor health, as well as incentives to receive filtered water stations upon agreement to participate. In conclusion, the researchers believe the Alive! behavioral intervention program has the potential to impact the health and wellness of the participants in the Helena-West Helena School District and those in Phillips County, AR as a whole.
Target Population and Need

Obesity Overview

According to the Centers for Disease Control and Prevention (CDC), obesity is one of the greatest health threats to the United States as it contributes to several major health conditions. These conditions can include heart disease, type 2 diabetes mellitus, stroke, certain cancers, hypertension, liver disease, kidney disease, Alzheimer’s disease, dementia, respiratory conditions, osteoarthritis, and overall poor general health. According to the CDC, more than one-third of U.S. adults are obese, with a higher concentration of obese adults living in the southeast U.S.

Of the states in the southeast US, Arkansas suffers the highest prevalence of obesity among adults. The percentage of adults in 2014 who were obese by self-report with a BMI of 30 or higher in Arkansas was 35.9%, which is well above the national average of 29.6%. Phillips County, Arkansas, located in the eastern part of the state along the Mississippi River. As shown in the circled spot in Figure 1, Phillips county leads the state of Arkansas in the prevalence of adult obesity at 41.5%. As mentioned previously, this elevated obesity rate has tremendous health consequences. For example, 12.7% of adults in Arkansas have diagnosed diabetes, with 28.2% of deaths in 2013 attributed to diabetes compared to 23% of diabetes deaths nationally. With an 18% prevalence of diabetes in Phillips County, there is great need for behavioral changes to reduce possible negative health consequences in this region.

Figure 1. Obesity and Diabetes Prevalence in Phillips County
Obesity is largely preventable and is caused, in part, by modifiable health behaviors, including dietary behaviors and physical activity. In Arkansas, approximately 50% of adults reported consuming fruit less than one time daily, and 28% reported consuming vegetables less than one time daily. To help alleviate the problem of obesity in this state, a focus is needed on the consumption of more fruits and vegetables in the adult population. Similarly, according to the American Heart Association, only 41.2% of Arkansas adults participated in 150 minutes or more of aerobic physical activity per week, compared to 50.5% of US adults.

Structural issues, such as lack of access to healthy, affordable food options, also impacts obesity rates in Phillips County. Per the U.S. Department of Agriculture (USDA) data from 2013, while one in five Arkansas residents reported low food security, 8.1% of Arkansas adults experienced very low food security, which was previously defined as being food insecure with hunger. This is the highest state prevalence of very low food security in the nation. Very low food security indicates that lack of money and other resources for food caused a reduction in food intake or eating pattern of one or more household members during the year. In Phillips
County, 29.1% of adults experienced food insecurity. The combined impact food insecurity and lack of affordable, nutritious food options can impact obesity rates.

Finally, social determinants of health in Phillips County likely exacerbate both the contributing factors and outcomes of obesity in the region. Economically, the median household income in 2015 was $26,844 compared to approximately $42,000 for the state overall. Along with disparities in household income, there is an ethnic disparity related to poverty levels. For those in poverty in Phillips County, 87.5% are African American, with Whites equating to approximately 12% and Hispanics adding less than 1%. Overall, understanding the social determinants of health can display a clearer picture of the numerous health problems in Phillips County, Arkansas.

**Resources**

There is one major program currently available in Arkansas for the prevention of obesity in adults. This program, called the Arkansas Coalition for Obesity Prevention (ArCOP), aims to improve the health of Arkansas communities by increasing physical activity and healthy eating to reduce and prevent obesity. Implementation occurs through the formation of an alliance of individuals, government agencies, nonprofit organizations, private businesses, and membership organizations to promote healthier activities in the state. Growing Healthy Communities (GHC) is the main initiative of the ArCOP. This is a designation that communities can receive when they have set out to become healthier – economically, policy-wise, nutritionally, and physically. In each GHC there is an organized, multidisciplinary team working actively to drive the health of the community forward. For the coalition to be successful, numerous teams are formed that focus on specific aspects in the community that can have an impact on obesity. These various focus points can include access to healthy foods, advocacy, focusing on healthcare, social marketing,
and worksite wellness. In this way, the many complex facets of obesity are being impacted in a multi-team approach.

**Program Approach**

To address the problem of obesity in Phillips County, Arkansas, we plan to implement the “A Lifestyle Intervention Via Email (ALIVE!)” behavioral intervention program. Kaiser Permanente of Northern California Division of Research designed this program to assist individuals to lose weight and gain a healthier lifestyle. The goal of the program is for participants to increase their physical activity and fruit and vegetable intake, as well as decrease their intake of saturated fats, trans-saturated (trans) fats, and added sugars. ALIVE! utilizes email messages to participants suggesting four to six small goals relevant to the goals each participant identifies in an initial health risk assessment (e.g., lifestyle constraints, physical activity preferences, stage of change, current diet, and physical activity level). After each weekly email, the participant is asked to commit to one or two of their target goals for the upcoming week. In this way, the participant is continuously reminded of their initial health goals and is given tools to help reach the goals by taking smaller steps throughout the process. For the behavioral intervention program implemented in Phillips County, the goals of the program will be for participants to increase fruit and vegetable consumption, engage in more regular physical activity, utilize support groups and incentives to maintain positive behavior change, and increase knowledge of proper physical activities to reduce overall weight.

The behavior change principles for the ALIVE! behavioral intervention program are multifactorial. The program aims to maximize individual relevance through assessments, feedback, and tailoring. This tailoring is done on an individual basis such that the program is adaptable to a participant’s stage-of-change, individual diet habits, exercise preferences, and
program goals. To reach positive change, participants are given small steps to reach their goals and this helps develop new habits. The program has a catalog of several messages that can automatically be electronically sent to participants based on their target goals for a week. For example, participants who want to focus on physical activity will receive tailored messages about exercise while those focusing on increasing fruit or vegetable consumption will receive dietary-directed messages. Additionally, there is continued feedback and reinforcement, as well as increasing salience and motivation through health information, tips, and reminders. Overall, the social support and the adaptability of the program allows for overall behavior change and positive health goals for the participants.

The evidence base for this program comes from the idea that the use of internet and email can greatly extend the reach of behavioral intervention programs. Many programs targeting health behavior changes are effective, but they are not implemented on a larger scale due to challenges in reaching participants. This ALIVE! program was derived from a previous program, Worksite Internet Nutrition (WIN). The WIN program was also a computer-tailored, email-delivered program, but it was primarily focused on reducing dietary fat and increasing fruit and vegetable intake. The WIN program was also based entirely in the workplace, as the participants were recruited through a corporate worksite.

To effect change in our target population, corporate leadership will implement the ALIVE! program in the Helena-West Helena School District in Phillips County, AR. As the largest employer in Phillips County, the Helena-West Helena School District employed approximately 500 people in 2014. Because the program involves emailed messages to the participants, locations for implementation need to be settings in which people can check and receive email messages daily. In the workplace, people will receive the initial email through their
employer listserv and will be able to complete the initial assessment as well as enroll in the program. This employee enrollment will inherently insert bias into the program as those who have greater and more easily available access to their computers will be able to interact with the program more readily. This may diminish the reach of those who participate in the program. To help alleviate some of these concerns, the researchers will implement adaptations to the original intervention program to be further discussed later. If there is adequate interest, the grant will cover the cost of the enrollment fees for the participants who expressed interest in the program.

*Program Steps*

The ALIVE! behavioral intervention program will consist of a 3-year multilevel intervention with an annual budget of $250,000. The goal of the program will be to reduce the prevalence of obesity in those who are 18 years of age or older and living in Phillips County, Arkansas through an intervention aimed at electronic communication for dietary and physical activity goals. The target reach involves impacting all three schools in the Helena-West Helena School District – J.F. Wahl Elementary School, Eliza Miller Primary School, and Central High School. The overall goal of the program will be to increase physical activity, increase fruit and vegetable consumption, and decrease overall obesity rates in Phillips County after 3 years.

To accomplish these goals, program leaders will be tasked with developing a work plan to help learn about the worksites and decide on the best ways to reach potential participants. The use of surveys, fliers, and electronic communication through emails and company listservs will allow program sponsors to reach potential participants and gauge interest in the program at each school. The goal will be to have one person in charge of developing the program, but also to have close relationships with the program site leaders who will keep track of how the ALIVE!
program is working at different sites and relaying that information back to the program sponsors and community leaders.

Adaptations

The ALIVE! behavioral intervention program aims to promote healthy lifestyle interventions by communicating weekly goals to participants through email for constant connections and reminders of a person’s health goals. To adapt this program, alteration of communication routes can occur by including text message reminders to participants if they desired to communicate through means. This can be considered as a minor adaptation, as the possibility to communicate through email still stands. Text messages would simply be an additional option for participants, rather than an alternative option. Text messages could be warranted in this type of program, because people are constantly connected through their phones. If participants are away from the computer, they can still receive text messages, and possibly emails, though their phones. If a participant misses an email, they can opt-in to receive text messages about their lifestyle goal, and this will ideally prompt them to continue their healthy lifestyle throughout the week.

In terms of fidelity monitoring, information will continuously be gathered through the program implementation phase to assess program successes, challenges, and areas of improvement. Researchers will meet with program participants every 3 months to gather their thoughts about the program, its implementation, and ways in which the program can be improved. As participants will be recruited in waves (see Appendix A: Grant Timeline), fidelity monitoring will allow for constant improvements to be made to the program. Although this intervention is entirely computer based, researchers will want to gather information from the participants about the content and frequency of the reminders, as well as other ways the
participants need help in reaching their goals. Additionally, through fidelity monitoring, researchers will be able to focus on the physical outcomes of the intervention. Although the researchers understand that behavior outcomes may create a more long-term overall impact, assessing physical outcomes in the short grant period may help establish the foundation for lifelong behavior changes.

_Stakeholders_

To see a behavior modification program aimed at decreasing obesity rates come to fruition, many aspects of obesity need to be addressed. These include access to healthy foods, physical activity, emotional and mental support, policies for communities and workplaces, and changing social norms. Therefore, people who join the Community Advisory Group (CAG) should be stakeholders in these different areas of human development. For example, regarding access to healthy foods, nutritionists, farmers, and representatives from the Arkansas Department of Health will be invited to join the CAG and offer expertise in assessing the availability, affordability, and access to healthy foods for people in the community. The Arkansas Department of Health will be instrumental in this capacity because it covers those families who receive WIC funding (Special Supplemental Nutrition Program for Women, Infants, and Children). Per the US Department of Agriculture, Arkansas received approximately $69 million in WIC funding in the 2016 fiscal year. Thus, the Department of Health representative will be able to speak to the access and availability of fresh food sources as well as ways to provide healthier options to community members as they are likely familiar with the WIC program.

The CAG will have a great responsibility in ensuring the success of the behavioral intervention program. Medical doctors and physical therapists will be invited to join the CAG as they have experience in thinking of creative and safe ways to get people involved in physical
activity based on their current fitness levels. This meshes well with increasing physical activity in the workplace, especially as school boards will be involved in the planning process. These stakeholders will also be important in the creation of an education environment centered on physical activity. This will make it easier for all those in the specified schools to experience physical activity because it would be encompassed in their workplaces. As a greater number of people become more physically active, engage in healthier eating, and receive positive social support, ideally social norms will begin to shift towards a healthier lifestyle for the educators in Phillips County.

Program Planning

The planning for sustainability of the ALIVE! behavioral intervention program needs to occur before the federal funding period ends, as there needs to be conscious thought on how the program can remain viable after outside funding ends. Sustainability involves many factors that can work together to keep a program running, such as organizational culture, prioritization and resources, program promotion, ongoing training, and the workings of the program itself. In terms of the ALIVE! behavioral intervention program, sustainability will involve continual outreach and promotion of the program so that people will consistently hear about the program and can learn of its health benefits and impacts. Secondly, sustainability will entail maintaining organizational culture such that employers will continue to provide the program to their employees, not only for the benefit of the employees, but to the benefit of the employers. As employees are getting healthier and adjusting their lifestyles, employers may see fewer missed days from work due to employee health concerns. This leads to the goal of encouraging the employers’ participation in the program as their employees become healthier, over time. Challenges to sustainability for this program may include lack of support for the program, lack of
resources to track outcomes, turnover or staff attrition, or staff resistance. To address these challenges, there needs to be communication to ensure staff and program trainers are in support of the program and are willing to continue with the program when funding ends. Also, ensuring that the intervention is simple to deliver such that complexity is minimized and those who are not “technologically savvy” can follow along is imperative to the success and sustainability of the program. The purpose of constantly checking in with the participants through the quarterly meetings will allow researchers to sense if there are challenges in the program implementation that cannot be overcome, if the program is too complicated, and ways in which the researchers can focus their efforts to help the program’s success.

Intervention Dissemination

For the ALIVE! program to be successful in Phillips County, it needs to have adequate reach to the target population through each year of grant funding. Initially, the outreach will be aimed at large workplaces to target both the employers and employees. Per the Arkansas Economic Development Commission, Research Division, Helena/West Helena School District is the largest employer in Phillips County with approximately 300-499 employees in 2014. If this program could reach 30% of this population, the participant pool would range between 90 to 150 participants over the course of the study.

Strategic dissemination and communication to raise awareness for the behavioral intervention program will aid in the overall success of the program. As this program involves educational facilities, discussions with the school district superintendent, board members, and principals, could allow for policy changes. The program coordinator can spearhead the process by scheduling meetings to discuss the program and the short- and long-term impacts the program can have on employee productivity and overall health. Other policy options could include
making the program an “opt-out” approach, such that all school district employees are automatically enrolled in the program and it is up to each individual employee to opt-out on their own terms.

Recruitment of individuals will be through communicating with the employers. Once the school district agrees to participate in the program, a licensing agreement with the Block Dietary Data Systems (BDDS) is signed. BDDS then sends an invitation email to the school district’s human resource director or other official. The individual schools then forward that email to the employee listserv. Following this batch email, an email message appears in the employee’s email reader inbox for program initiation. Initiating the program in the work setting allows for a sense of competition or community support from fellow coworkers so people will feel more obligated to reach their health goals based on the success of others. To retain individuals and ensure continuous quality improvement, participants will meet with researchers every 3 months to assess the electronic interface and how the participants interact with the system. This will allow for program adjustment continually so that the overall goals of a reduction in obesity rates can be achieved within three years.

Once the program is complete and there are sufficient results, the results will be made accessible to the program sponsors and participants without ability to connect results to individual participants. This will allow people to gain a better understanding of their role in the behavioral intervention program. As the ALIVE! program is centered in workplaces, dissemination of results will involve collaborating with those participating agencies. Ideally, dissemination would occur with those involved in decision making for the employees (school district superintendent, school board members, school principals) to validate the effect of the program and the impact it can have on the employees as well as for the worksites. The
dissemination of program results can be spearheaded by site champions, who will be responsible for the education setting and communicating the measured outcomes back to the stakeholders and decision-makers. This is in aims of increasing the stakeholders’ appreciation of what the ALIVE! program will accomplish and allowing funds to be allocated for the program’s continuation. Lastly, information sessions with the employers will occur for the program to maintain success and uphold the results that were found during the initial phase of the program.

In terms or assessing communication preferences for key stakeholders, this will be addressed during a meeting of stakeholders and school district partners. As these team members are vital to the success and onset of the program, learning of the ways in which they wish to communicate will be paramount for the ALIVE! program to be successful in the worksites.

One of the major challenges to the project is the selection of participants and maintenance of a steady pool of participants. Initial recruitment for the program, such as targeting educational settings and school districts, is feasible, but concerns about maintaining participants is valid. This is especially true if the participants do not realize or experience the health benefits from the ALIVE! behavioral intervention program. As this intervention revolves around making a lifestyle change, participants may become disengaged with the program if they do not see immediate results. An option to maintain a consistent pool of participants is to branch out to more employers, or offer a rewards program that will provide incentives for people to remain in the program, especially once federal funding ends. Along with maintaining a consistent pool of participants, incentives may all for competition and a sense of community within the proposed worksites. To receive these incentivized prizes, participants may be challenged to exercise contests to further promote physical activity. For example, the following challenges have been discussed for implementation: Participants walking 90,000 steps per week, exercising 5 days per
week, climbing 30 flights of stairs per week, etc. After every week, participants at each school will be ranked based on the specific exercise challenge and the top 5 participants will have a choice between a tee shirt or a water bottle. To further promote competition and community within the schools, teams of 5 participants may be formed and entered into the grand challenge. This grand challenge will be the culminating event of the program and will tally results from the previous challenges to decide the winning team. The team members that win this challenge will receive a Fitbit Flex Sport. Although the incentive program may encourage participants during grant funding periods, offering incentives will lead to issues of funding for those rewards and other monetary concerns when the grant period expires if there is not proper budgeting upfront.

**Performance Measures and Evaluation**

To evaluate the ALIVE! behavioral intervention program, a quasi-experimental design was chosen, which would include a non-equivalent control group design with a pretest and posttest. The pretest-posttest design allows for the assessment of the participants’ baseline knowledge of recommended physical activity amounts, suggested amounts of daily fruit and vegetable consumption, and their knowledge of proper physical activities that can lead to weight loss. The pretest allows the researchers to gain basic information and understanding about the program participants to examine if the program could change their attitudes, views, and overall health later. The posttest allows the research team to gauge opinion about whether the program worked for the participants as well as to assess their overall knowledge of healthy habits and weight loss. Both the pretest and posttest assessments will be derived from the original evaluation, to include diet, exercise, and stages of change evaluations. The importance of understanding a participant’s stage of change revolves around the understanding that not everyone possesses the same motivation for change. Knowing where someone falls on the
continuum of readiness for change will help researchers understand their overall results in the program. If the program is a success, then people will have lost weight and developed healthier eating and exercise habits, but those are often transient. Gaining an understanding if people truly retain the knowledge so they can implement the strategies and techniques themselves when the program has ended will be a great success for the program.

The pretest will also allow the research team to assess baseline knowledge the participants have about healthy lifestyle habits and exercise choices. One major challenge of this study design is differential selection - the idea that the selection of the subjects will determine how the findings may be generalized. For example, if the chosen participants highly motivated, then their results may not be generalizable to a group of individuals who are not as motivated for change. Similarly, selection bias may be inherent based on the program intervention. As this worksite intervention is based on email communication, it may preferentially select participants who have access to their email consistently, such as executives, principals, and certain teachers, and disadvantage those who do not readily access their email accounts, such as custodians. To help alleviate some of this possible selection bias, the adaptation of providing text message communication with program goals and reminders will be implemented. Although certain employees may not always be able to check their email messages, they will likely have greater access to these messages through their cellular devices, which will help them participate in the program despite limited email access.

To assess the ALIVE! behavioral intervention, many measures will be utilized for the surveys to assess change. Before participants begin the program, they will complete health risk assessments to ascertain their baseline knowledge and activity. These health assessments will involve both dietary and physical activity components. In terms of assessing dietary habits, the
Williams 17

Block Fat/Sugar/Fruit/Vegetable Screener will be used. This self-administered measurement tool contains 55 questions and takes approximately 10-12 minutes to complete. This tool looks to assess a person’s usual intake of low-fat/trans-fat free or low-carbohydrate/low-sugar versions of various foods. Analysis produces estimates of saturated fat, trans fat, total sugars, “added sugars”, fruit and fruit juice, vegetable intake, glycemic load, and glycemic index. This screener also assesses a person’s interpretation of appropriate portion sizes.17 In terms of physical activity assessment, participants will complete the International Physical Activity Questionnaire (IPAQ) – long format (Appendix B). This is a tool that can be used to obtain estimates of physical activity with categorization of participants into three categories – low, moderate, or high amounts of physical activity.18 This questionnaire consists of 27 questions and assesses a person’s physical activity in the previous 7 days. To assess the participants’ possible change after the intervention, these surveys will be administered again after the intervention with the goal of participants moving to a higher category of physical activity than they self-reported at the beginning of the intervention. This will allow for comparison of the data prior to the intervention and post-intervention.

In terms of reliability and validity of these measures, Lalonde L., et al studied the validity of the Block Fat/Sugar/Fruit/Vegetable Screening in a population of cardiac rehabilitation patients. These researchers found that the participants who received physical activity tracking and monitoring as well as contact with their cardiologist were more successful at incorporating physical activity into daily lives than those who did not receive these same tools.19 One consideration to acknowledge from this study, however, is the participants in this intervention will not have readily available access to their healthcare providers as the Lalonde L., et al study participants had with a cardiologist. Another option would be to use the Block98 Food
Frequency Questionnaire (FFQ). This is a longer, more complete survey that looks at a person’s nutrition status. This questionnaire has been validated many times, with broad generalizability to many different racial and ethnic groups.\textsuperscript{20} To assess the reliability and validity of the International Physical Activity Questionnaire, Craig CL, et. al looked at a 12-point reliability and validity assessment to determine the appropriateness of this questionnaire in assessing physical activity. These researchers found that The IPAQ instruments have acceptable measurement properties, at least as good as other established self-reports and they are appropriate at assessing physical activity in those between 18-65 years of age. They also concluded the short IPAQ form "last 7-day recall" is recommended for national monitoring and the long form for research requiring more detailed assessment.\textsuperscript{21} In this way, the long form was used to evaluate the physical activity component of the ALIVE! behavioral intervention program for a more detailed assessment of the participants’ differences.

There are two primary outcomes after people participate in the ALIVE! behavioral intervention program. Through the dietary and physical activity changes implemented in the intervention program, the goal is for obesity rates to have decreased in Phillips County. As the ALIVE! program is a worksite intervention, there is also an outcome to favor the employers. In this regard, as participants become healthier through the program, there will be fewer days of work missed due to health issues. To reach these long-term outcomes, intermediate goals are set throughout the program period. In terms of dietary changes, the goal is for participants to increase fruit and vegetable intake. For the physical activity component, the goal will be for the participants to increase their overall physical activity, regardless if it is low-intensity, moderate-intensity, or vigorous exercise. These goals will be measured through the ALIVE! tracking system. This system allows for each individual participants’ weekly goals to be electronically
sent to each individual so they can remain reminded of their diet and exercise goals. Participants will also receive tips and motivating messages for reaching their weekly goals in case they are experiencing stagnation in their progress. In this way, the research team will better understand the number of participants who reach their goals each week and ways to target those participants who have trouble reaching their individual goals so more participants will begin to reach their goals each week. Along with personal messages to the participants, the intervention will provide links for participants to track their diet and physical activity. In this way, participants will be able to track their progress, watch for trends, and evaluate areas for improvement.

As mentioned previously, weekly emails will be sent to program participants to remind them of their overall goals and help with interim goals. These interim goals will be established when participants establish their goals for the following week and will allow the participants to remain motivated and reach for smaller objectives towards a larger overall goal. These weekly emails will provide a convenient opportunity for researchers to obtain constant data collection. As emails are being received weekly, participants will be able to assess constantly how the program is progressing and if they feel they are making positive steps towards their dietary and exercise goals.

The plan for process evaluation includes gaining feedback about the weekly emails and whether the participants feel they are useful in helping them remain on track to reach their goals. The research team will be made aware through communication with participants if there needs to be a dialing-back on communication to further tailor the intervention program to the needs of the participants. This communication to the researchers will be done through the meetings with researchers to be held every 3 months.
In terms of understanding if dietary and exercise intervention outcomes were met, that will be based on the program goals of increasing fruit and vegetable intake and increasing physical activity. The individuality of the program stems around the idea that each individual participant can set their own dietary and exercise goals, although the overall program goals are the same for each person. This is important for the success of the program because each individual person has a different starting point and they will each seek to achieve something different through their participation in the program. Although this outcome evaluation may be difficult to measure due to the individuality and adaptability of the program, steps can be taken to find objective measures to evaluate. Diet and exercise differences will be determined through anthropometric measurements. These measurements will include weight, body mass index (BMI), waist circumference, and percentage body fat and will be taken for each participant prior to beginning the program by the clinical research nurse. To help the participants establish their initial goals, the clinical research nurse will meet with participants after they complete their initial nutrition and physical activity assessments to set reasonable goals. This person will also oversee monitoring this data every 3 weeks during meetings with researchers. Subjective measures to monitor dietary changes will include dietary assessments to determine the change in eating habits over the course of the program.

Finally, as diet and exercise are such malleable entities, it is important for the researchers to be able to distinguish the health changes of the participants are due to the behavioral intervention program. Through the email communications researchers will track what an individual’s goal is and see if the participant self-reports achieving that goal for the week. This tracking system will include various types of physical activity in which the participants can indicate if they participate in those activities. For example, some general activities that will be
included on this pre-filled list include walking, running, bicycle, elliptical, playing sports (to include basketball, football, soccer, tennis, volleyball, golf, and swimming). There will also be an open section where participants can freely type any other activities that they participate in if it is not included on the pre-defined list. So, if a participant went hiking, they can free type “hiking” into the text box, as this activity may have components of walking and climbing activities. It is important to track the type of physical activity just for the researchers’ understanding of the types of activities the participants partake in, and whether those activities can be implemented more frequently to help other participants. Overall, through the tracking system that encompasses the program, researchers will be able to track if participants are meeting their weekly goals to mitigate if the health outcomes are being achieved through other means.

In terms of formative evaluation, the pretest and posttest discussed earlier will be used to assess the success or failure of the program. This test will include the Block Fat/Sugar/Fruit/Vegetable Screener and the International Physical Activity Questionnaires as both a pretest and posttest for both the participants and the researchers to see the hopeful improvement made over the duration of the program. Along with these subjective means, objective data will be collected through anthropometric measurements every 3 weeks to assess if the participants lost weight and their body mass indices decreased. Limitations of the data will be assessed at the end of the study to see if there were any gaps in data collection and possible confounding variables. The cost of administering these tests should be minimal, and the site-specific program coordinator at each participating location will conduct the test. This evaluation will allow researchers to gain a fuller understanding of the success of the program and ways in which to improve for future implementation.
Capacity of Applicant Organization

Arkansas Department of Health (ADH)

The mission of the Arkansas Department of Health is “to protect and improve the health and well-being of all Arkansans.” The ADH is a unified health department with numerous Centers that oversee the various aspects of public health practice in Arkansas. The vision of ADH is to achieve “optimal health for all Arkansans to achieve maximum personal, economic, and social impact.” The Department has over 100 services provided statewide to ensure the needs of the public are being met. These services are distilled to several centers, including the Center for Local Public Health, Center for Health Protection, Center for Health Advancement, Center for Public Health Practice, Public Health Laboratory, and Director’s Office/Administration. Dr. Nathanial Smith, MD, MPH serves as the Director of the ADH and State Health Officer. In this position, Dr. Smith oversees three deputy directors and leads dozens of public health leaders. Dr. Smith will also be the lead physician for the ALIVE! intervention program and will work in conjunction with the Director of the Center for Health Advancement as she as experience in leading community projects with diet and exercise interventions. The organization chart of the Arkansas Department of Health may be found in Appendix C. The ALIVE! behavioral intervention program will be implemented through the Physical Activity and Nutrition section of the Center for Health Advancement. This section is led by Cristy Sellers, MS, RD, LD. Ms. Sellers will serve in a consultant capacity for Dr. Smith. In terms of consistency, the health department has seen minimal turnover as a government entity, so it is projected these individuals will be present in these positions for the duration of the intervention period.

Partnerships and Collaboration
Since the ALIVE! behavioral intervention program will be adapted to a worksite that is culturally and ethnically different from the Northern California community served in the pilot study, the involvement of diverse community partners will be vital to the success of the intervention program in Phillips County. The partners that will have the greatest involvement in the ALIVE! behavioral intervention program are the three schools located in the Helena-West Helena School District.

**Helena-West Helena School District**

The Helena-West Helena School District is one of three school districts in Phillips County, Arkansas and operates three schools – J.F. Wahl Elementary School, Eliza Miller Primary School, and Central High School. The school district has approximately 250 employees and 1600 students enrolled. Comparable to other counties in the eastern Arkansas region, the poverty rate in the school district is 92.74% with 95% of the students being eligible for free and/or reduced school meals. The mission of the Helena-West Helena School District, in partnership with the community, is to “prepare our students academically by providing them with appropriate curriculum and effective instruction in a safe, nurturing learning environment.” This school district envisions to be a globally competitive district where their students can receive the highest quality instruction. As the school district is the largest employer in Phillips County, this seems to be a great place to implement the behavioral intervention program. With such high poverty rates and the obesity epidemic in the state, the ALIVE! program may serve to help those adults in this region thrive physically.

As mentioned in the Program Approach section, all three schools in the Helena-West Helena School District will serve as sites for the implementation of the ALIVE! behavioral intervention program. The clinical research nurse will be responsible for assessing participants in
the program prior to program implementation as well as assessing participants every 3 weeks by measuring their weight, BMI, waist circumference, and percentage body fat. The clinical research nurse will keep track of the participants’ progress throughout the program period to monitor for overall changes. The school district site coordinator will be responsible for answering questions participants may have about the program and ensuring participants are interacting with the program appropriately.

**Project Management**

![Project Management Hierarchy]

*Program Coordinator*

The program coordinator will serve as the program coordinator. As program coordinator, he will be fully responsible for all aspects of the project throughout the duration of the 3-year grant period. This person will provide management of all staff employed for the purposes of the program as well as coordinating the activities involved in the planning, implementation, and
evaluation of the proposed ALIVE! behavioral intervention program. The program coordinator will work alongside the fiscal manager to maintain budgetary considerations and assess if the program is remaining on track according to the proposed budget. The coordinator will be responsible for continually assuring that the goals and objectives for the program are being met. This will entail ensuring data collection is timely and appropriate, reports are complete and submitted to the appropriate parties on time. This person will be responsible for monitoring the rollout and implementation of the ALIVE! behavioral intervention program, including scheduling rooms for initial healthcare assessments and anthropometric measurements of the participants, as well as assessing the pre- and post-surveys for participant changes throughout the course of the program. The program coordinator will also be responsible for coordinating meetings with the project coordinator, fiscal manager, site coordinator, and the Community Advisory Group every 3 months to assess the progress of the program. To facilitate his development and success in this role, the health department director, Dr. Nathaniel Smith will serve in an advisory role.

Fiscal Manager

The Fiscal Manager (to be appointed/hired) will be responsible for maintaining the overall budget of the ALIVE! behavioral intervention program. The Fiscal Manager will be responsible for ensuring the program is aligned with the proposed budget, modifying the budget as needed throughout the 3-year period, and reporting these changes to the funding agency, where appropriate. The Fiscal Manager will also be responsible for maintaining budgetary records and reporting to the funding agency at the pre-defined intervals set forth by the individual funding agencies.

Additional Personnel
Additional personnel include a technology chair, clinical research nurse, and site coordinator. As the ALIVE! behavioral intervention program is based on an email communication system, the technology chair plays an important role in the success of the program. The technology chair will be responsible for assuring the electronic interface is easy to follow and engaging. This person will also be responsible for answering technological questions as triaged to them by the site coordinators. Lastly, the technology chair will be responsible for ensuring the participants can interact with the interface appropriately and will aid in the training of participants as the program is getting initiated.

A clinical research nurse (to be hired/appointed) will be responsible for the medical aspects of the intervention program. This person will be responsible for meeting with program participants after they complete their initial nutrition and physical activity survey with the responsibility for helping participants set reasonable goals. These goals will be established based on the SMART goals acronym in which the participants’ goals must be specific, measurable, attainable, realistic, and timely. Along with assisting the participants establish their initial goals and complete the initial assessments, the clinical research nurse will be responsible for conducting the physical assessments of the participants every 3 weeks. This entails collecting the participants’ weight, body mass index, waist circumference, and percentage body fat. In this way, the clinical research nurse will be able to track if the participants are improving physically over the course of the 10-month implementation period. Lastly, the clinical research nurse will be responsible for monitoring the physical activity and nutrition inputs of the participants throughout the program.

As there will be distinct sites in which the ALIVE! behavioral intervention program will be implemented, one site coordinator will be assigned to the school district to help the three
schools during the program implementation period. As displayed in Appendix A, the program will be rolled out to the three schools in distinct months, so ideally only one site coordinator will be needed over the course of the program. As mentioned previously, if the site coordinator needs to take time off, the program director will be able to step-in and take over responsibilities until the site coordinator returns. The site coordinator will be the point-of-contact about the behavioral intervention program for the listed workplaces. If participants have program questions, the site coordinator will be available to answer questions. Additionally, the site coordinator will track the email communication systems to ensure that participants are reading their program emails and will act as triage personnel if participants have questions in which they cannot answer. All triaged technology questions will be directed to the technology chair and all program-specific questions that are not technology-based will be directed to the program coordinator. The site coordinator will be responsible for promoting the behavioral intervention program to the workplaces, as well as training personnel on how to interact with the electronic interface in conjunction with the technology chair, if needed.

### Budget and Budget Justification

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<th>Year 3</th>
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Personnel

Dr. Grant Goodfellow, EdD, MPH, Program Coordinator – 100% effort

Mr. Goodfellow will be responsible for the daily management of project resources. This person will be responsible for continually assuring that the goals and objectives for the program are being met. This will entail ensuring data collection is timely and appropriate, reports are complete and submitted to the appropriate parties on time. Dr. Goodfellow will be responsible for monitoring the rollout and implementation of the ALIVE! behavioral intervention program, including scheduling rooms for initial healthcare assessments and anthropometric measurements of the participants, as well as assessing the pre- and post-surveys for participant changes throughout the course of the program. He will also be responsible for coordinating meetings with the project coordinator, fiscal manager, site coordinator, and the Community Advisory Group every 3 months to assess the progress of the program. Dr. Goodfellow will ultimately be responsible for generating reports for the Directors, partners, and Community Advisory Group about the trends of the program as well as assessing the pre- and post-surveys for participant changes throughout the course of the program. Dr. Goodfellow will attend annual meetings regarding program improvement strategies and development workshops, as appropriate.

Sophia Chung, MBA in Accounting, Fiscal Manager – 5% effort

The fiscal manager will be responsible for assisting the Project Director in monitoring and assessing the finances of the project over the course of the grant period. Ms. Chung has served as a personal accountant for 4 years and has served as an accountant for a major corporation for the last 2 years.

Danielle Stallings, Technology Chair – 50% effort
Ms. Stallings will be responsible for maintaining the user interface, answering technology-focused questions as triaged by the site coordinators, and ensuring participants are adequately trained and comfortable with the electronic communication system. She has extensive experience in IT through her work at many universities as an IT consultant and previous assistant director of the IT department.

*TBD, Clinical Research Nurse – 100% effort*

The clinical research nurse will be responsible for the medical aspects of the intervention program. This person will be responsible for meeting with program participants after they complete their initial nutrition and physical activity survey with the responsibility for helping participants set reasonable goals. The clinical research nurse will also be responsible for leading nutrition and physical activity classes to help participants become educated about proper portion sizes, weight-bearing and non-weight bearing exercises, and flexibility/stretching activities. Lastly, the clinical research nurse will be responsible for monitoring the physical activity and nutrition inputs of the participants throughout the program. The person hired for this position must have a registered nurse (RN) degree with at least 2 years of experience preferably in family medicine.

*TBD, Site Coordinator – 100% effort*

One site coordinator will be selected. This person will be responsible for carrying out the daily activities of the program, including initial training (along with the technology chair). The site coordinator will also be available to answer program-specific questions that may arise throughout the implementation phase. Additionally, the site coordinator will serve as a liaison between the participants and the program coordinator, and will present their program thoughts,
concerns, and ideas at monthly meetings with their program coordinators. The site coordinator will also aid in the initial program promotion and gather participant information in the recruitment phase of the program. Throughout the program, the site coordinator will serve as an ambassador for the program and will continually encourage participants through individual and group meetings, when appropriate. Site coordinators must have an MPH with at least 1 year of research experience.

Fringe benefits

The fringe benefit rate on this grant is 22%.

Travel

In-State Travel

The grant writers request travel funding for both in-state and out-of-state opportunities. Travel in-state will be done by the site coordinator, technology chair, and project coordinator for program recruitment, training visits, and technical assistance when needed. It is estimated that more miles will be traveled in the first two years of program implementation as there needs to be recruitment, training, and close monitoring as the program is rolled out to the various worksites. Additionally, the amount of technological assistance is currently unknown, so budgeting appropriately for that needs to be considered upfront. Funding is requested for 1,500 miles in Years 1 and 2, and 750 miles in Year 3. At a $0.54 federal mileage reimbursement rate the total will be $810 for Years 1 and 2, and $405 in Year 3 = $2,025.

Out-of-State Travel
As grantees are encouraged to attend project meetings and trainings, we request funding for the following members: Mr. Bradley Yuen, Project Director, Mr. Grant Goodfellow, Project Coordinator, and the site coordinator. Funding is requested for these members to attend one conference during each year of the grant to present findings from the proposed project. Mr. Bradley Yuen would attend the National Wellness Institute National Wellness Conference, held in St. Paul, MN this year. Mr. Grant Goodfellow and the site coordinator will each attend the American Public Health Association meeting (held annually each fall) in Year 1, as well as an annual regional training in years 2-3.

2 nights lodging x $125/night = $250
Airfare = $300
Registration = $300
3 days per diem x $50/day = $150
Ground transportation = $30
Baggage = $30
Parking = $50
Total = $1,110 per year x 3 personnel = $3,330 per year

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
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<tr>
<td>In-State</td>
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<td>$810</td>
<td>$405</td>
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<tr>
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<tr>
<td>Total</td>
<td>$4,140</td>
<td>$4,140</td>
<td>$3,735</td>
</tr>
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</table>

**Equipment**

Computer equipment for the implementation of the ALIVE! behavioral intervention program will already be provided/facilitated by the program sites. Additional funding for equipment will be made at the discretion of Ms. Daniella Stallings as Technology Chair for use in specific sites after initial surveying of resources is determined.

**Supplies**
Supplies are needed to support the implementation of ALIVE! behavioral intervention program, including promotional materials. These supplies include: printer paper, printer cartridges, folders, and business cards. Office supplies are estimated to cost $500 in Year 1, and $250 in Years 2 and 3 for a total of $1,000.

**Program Licensing Fees**

Contractual costs involve the contract the program sites need to have in order to receive the ALIVE! behavioral intervention from the program sponsors. According to nutritionquest.com pricing for the ALIVE! program is based on the total number of employees to whom the program is offered. Based on the data provided in the Program Approach section of this grant, up to 400 people could possibly be reached as that was the projected number of employees in the Helena-West Helena School District as January 2014. With a goal of 30% participation, the grant program aim is to reach at least 150 people, however the researchers understand the need to budget in case more people participate than anticipated. Per the program costs, to support 100-499 employees, the cost would be $1.50/member/month. With this participation estimate of 400 participants, the program cost would be $1.50/member/month x 400 members x 20 months = $12,000.

**Incentives**

To maintain commitment to the ALIVE! behavioral intervention program for the participants, the program coordinator has initiated an incentive program. At the discretion of the site coordinator, participants may be challenged to physical activity contests to further promote physical activity and healthy life choices. For example, the following challenges have been discussed for implementation: Participants walking 90,000 steps per week, exercising 5 days per
week, climbing 30 flights of stairs per week, etc. To remain within the budget guidelines, once incentives are exhausted they will not be replenished; therefore, incentives will be budgeted for years 1 of the program to accommodate the goal of having 150 participants total. For those participants who complete the challenges, prizes to include tee shirts, water bottles, and a grand prize of a Fitbit Flex Sport for the winning office division will be awarded. Additionally, as an incentive for the schools to participate in the behavioral intervention program, filtered water stations will be installed in each school for their agreement to participate in the program.

Incentives will be priced as follows:

- Tee shirts = $10/shirt x 400 members = $4,000
- Water bottles = $5/bottle x 400 members = $2,000
- Fitbit Flex Sport = $20/device x 5 members/month x 20 months = $2,000
- Filtered water fountains = $1,000/unit x 3 units = $3,000
References


## Appendix A: Grant Timeline

<table>
<thead>
<tr>
<th>Months 0-3</th>
<th>Begin IRB and submit to proper channels</th>
<th>Contact Phillips County School Board and begin recruiting worksites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month 4</td>
<td>Confirm recruitment of J.F. Wahl Elementary School, Eliza Miller Primary School, and Central High School</td>
<td></td>
</tr>
<tr>
<td>Month 5</td>
<td>Recruit first wave of participants at J.F. Wahl Elementary School (ideally 30-50 people)</td>
<td></td>
</tr>
<tr>
<td>Months 6-10</td>
<td>Start intervention at JFW Elementary School</td>
<td></td>
</tr>
<tr>
<td>Month 10</td>
<td>Recruit second wave of participants at Eliza Miller Primary School (ideally 30-50 people)</td>
<td></td>
</tr>
<tr>
<td>Months 11-15</td>
<td>Start intervention at Eliza Miller Primary School</td>
<td></td>
</tr>
<tr>
<td>Month 15</td>
<td>Recruit final wave of participants at Central High School (ideally 30-50 people)</td>
<td>Finalize intervention at JFW Elementary School (10 months total)</td>
</tr>
<tr>
<td>Months 16-20</td>
<td>Start intervention at Central High School</td>
<td>Finalize intervention at Eliza Miller Primary School (10 months total)</td>
</tr>
<tr>
<td>Month 25</td>
<td>Finalize intervention at Central High School (10 months total)</td>
<td></td>
</tr>
<tr>
<td>Months 26-36</td>
<td>Collect results, discuss next steps, and program impact/sustainability; report results to participating worksites and school board</td>
<td></td>
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</tbody>
</table>

### Cohort meetings (every 3 months with participants and research team)

- JFW Elementary School – months 9, 12, and 15
- Eliza Miller Primary School – months 14, 17, and 20
- Central High School – months 19, 22, and 25
Appendix B: International Physical Activity Questionnaire (IPAQ)

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE
(October 2002)

LONG LAST 7 DAYS SELF-ADMINISTERED FORMAT

FOR USE WITH YOUNG AND MIDDLE-AGED ADULTS (15-69 years)

The International Physical Activity Questionnaires (IPAQ) comprises a set of 4 questionnaires. Long (5 activity domains asked independently) and short (4 generic items) versions for use by either telephone or self-administered methods are available. The purpose of the questionnaires is to provide common instruments that can be used to obtain internationally comparable data on health–related physical activity.

**Background on IPAQ**
The development of an international measure for physical activity commenced in Geneva in 1998 and was followed by extensive reliability and validity testing undertaken across 12 countries (14 sites) during 2000. The final results suggest that these measures have acceptable measurement properties for use in many settings and in different languages, and are suitable for national population-based prevalence studies of participation in physical activity.

**Using IPAQ**
Use of the IPAQ instruments for monitoring and research purposes is encouraged. It is recommended that no changes be made to the order or wording of the questions as this will affect the psychometric properties of the instruments.

**Translation from English and Cultural Adaptation**
Translation from English is encouraged to facilitate worldwide use of IPAQ. Information on the availability of IPAQ in different languages can be obtained at www.ipaq.ki.se. If a new translation is undertaken we highly recommend using the prescribed back translation methods available on the IPAQ website. If possible please consider making your translated version of IPAQ available to others by contributing it to the IPAQ website. Further details on translation and cultural adaptation can be downloaded from the website.

**Further Developments of IPAQ**
International collaboration on IPAQ is on-going and an *International Physical Activity Prevalence Study* is in progress. For further information see the IPAQ website.
More Information

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the last 7 days. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the vigorous and moderate activities that you did in the last 7 days. Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal.

PART 1: JOB-RELATED PHYSICAL ACTIVITY

The first section is about your work. This includes paid jobs, farming, volunteer work, course work, and any other unpaid work that you did outside your home. Do not include unpaid work you might do around your home, like housework, yard work, general maintenance, and caring for your family. These are asked in Part 3.

1. Do you currently have a job or do any unpaid work outside your home?

☐ Yes

☐ No → Skip to PART 2: TRANSPORTATION

The next questions are about all the physical activity you did in the last 7 days as part of your paid or unpaid work. This does not include traveling to and from work.
2. During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, heavy construction, or climbing up stairs as part of your work? Think about only those physical activities that you did for at least 10 minutes at a time.

______ days per week

☐ No vigorous job-related physical activity ➞ *Skip to question 4*

3. How much time did you usually spend on one of those days doing vigorous physical activities as part of your work?

______ hours per day
______ minutes per day

4. Again, think about only those physical activities that you did for at least 10 minutes at a time. During the last 7 days, on how many days did you do moderate physical activities like carrying light loads as part of your work? Please do not include walking.

______ days per week

☐ No moderate job-related physical activity ➞ *Skip to question 6*

5. How much time did you usually spend on one of those days doing moderate physical activities as part of your work?

______ hours per day
______ minutes per day

6. During the last 7 days, on how many days did you walk for at least 10 minutes at a time as part of your work? Please do not count any walking you did to travel to or from work.

______ days per week

☐ No job-related walking ➞ *Skip to PART 2: TRANSPORTATION*

7. How much time did you usually spend on one of those days walking as part of your work?
PART 2: TRANSPORTATION PHYSICAL ACTIVITY

These questions are about how you traveled from place to place, including to places like work, stores, movies, and so on.

8. During the last 7 days, on how many days did you travel in a motor vehicle like a train, bus, car, or tram?  
   _____ days per week
   
   [ ] No traveling in a motor vehicle  
   
   Skip to question 10

9. How much time did you usually spend on one of those days traveling in a train, bus, car, tram, or other kind of motor vehicle?  
   _____ hours per day  
   _____ minutes per day

Now think only about the bicycling and walking you might have done to travel to and from work, to do errands, or to go from place to place.

10. During the last 7 days, on how many days did you bicycle for at least 10 minutes at a time to go from place to place?  
    _____ days per week
    
    [ ] No bicycling from place to place  
    
    Skip to question 12

11. How much time did you usually spend on one of those days to bicycle from place to place?  
    _____ hours per day  
    _____ minutes per day
12. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time to go **from place to place**?

_____ days per week

☐ No walking from place to place ➔ **Skip to PART 3: HOUSEWORK, HOUSE MAINTENANCE, AND CARING FOR FAMILY**

13. How much time did you usually spend on one of those days **walking** from place to place?

_____ hours per day

_____ minutes per day

**PART 3: HOUSEWORK, HOUSE MAINTENANCE, AND CARING FOR FAMILY**

This section is about some of the physical activities you might have done in the **last 7 days** in and around your home, like housework, gardening, yard work, general maintenance work, and caring for your family.

14. Think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, chopping wood, shoveling snow, or digging **in the garden or yard**?

_____ days per week

☐ No vigorous activity in garden or yard ➔ **Skip to question 16**

15. How much time did you usually spend on one of those days doing **vigorous** physical activities in the garden or yard?

_____ hours per day

_____ minutes per day

16. Again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** activities like carrying light loads, sweeping, washing windows, and raking **in the garden or yard**?

_____ days per week
17. How much time did you usually spend on one of those days doing moderate physical activities in the garden or yard?

_____ hours per day
_____ minutes per day

18. Once again, think about only those physical activities that you did for at least 10 minutes at a time. During the last 7 days, on how many days did you do moderate activities like carrying light loads, washing windows, scrubbing floors and sweeping inside your home?

_____ days per week

19. How much time did you usually spend on one of those days doing moderate physical activities inside your home?

_____ hours per day
_____ minutes per day

PART 4: RECREATION, SPORT, AND LEISURE-TIME PHYSICAL ACTIVITY

This section is about all the physical activities that you did in the last 7 days solely for recreation, sport, exercise or leisure. Please do not include any activities you have already mentioned.

20. Not counting any walking you have already mentioned, during the last 7 days, on how many days did you walk for at least 10 minutes at a time in your leisure time?

_____ days per week

21. How much time did you usually spend on one of those days walking in your leisure time?

_____ hours per day
_____ minutes per day
22. Think about only those physical activities that you did for at least 10 minutes at a time. During the last 7 days, on how many days did you do vigorous physical activities like aerobics, running, fast bicycling, or fast swimming in your leisure time?

_____ days per week

☐ No vigorous activity in leisure time → Skip to question 24

23. How much time did you usually spend on one of those days doing vigorous physical activities in your leisure time?

_____ hours per day
_____ minutes per day

24. Again, think about only those physical activities that you did for at least 10 minutes at a time. During the last 7 days, on how many days did you do moderate physical activities like bicycling at a regular pace, swimming at a regular pace, and doubles tennis in your leisure time?

_____ days per week

☐ No moderate activity in leisure time → Skip to PART 5: TIME SPENT SITTING

25. How much time did you usually spend on one of those days doing moderate physical activities in your leisure time?

_____ hours per day
_____ minutes per day

PART 5: TIME SPENT SITTING

The last questions are about the time you spend sitting while at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading or sitting or lying down to watch television. Do not include any time spent sitting in a motor vehicle that you have already told me about.

26. During the last 7 days, how much time did you usually spend sitting on a weekday?

_____ hours per day
_____ minutes per day

27. During the last 7 days, how much time did you usually spend sitting on a weekend day?
_____ hours per day
_____ minutes per day

This is the end of the questionnaire, thank you for participating.
Appendix C: Arkansas Department of Health Organization Chart
**Appendix D: Logic Model**

**ALIVE! Behavioral Intervention Logic Model**
Overview: Worksite intervention utilizing email communication to foster greater physical activity and healthier eating habits to decrease obesity

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<thead>
<tr>
<th>Inputs</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
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</table>
| Local and state resources  
- Partnership with Helena-West Helena School District  
- Sufficient electronic resources for program implementation  
- Funding for program implementation and continuation  
- Incentives for program maintenance and continuation |
| Promote physical activity and healthy eating at specified worksites |
| Provide electronic communication through email and text messages for activity reminders |
| Self-reporting of weekly goals and if those goals are achieved each week |
| Self-record exercise through electronic system to track different activities done by the participants |
| Short-Term  
- Attempts are made to modify diet |
| Attempt are made to modify physical activity |
| Attempts are made to engage with the electronic system |
| A greater number of participants reach their goals each week |
| Intermediate-Term  
- Participants eat more fruit and vegetables than before the program started |
| Participants engage in physical activity more regularly than before the program started |
| Participants utilize support groups and incentives to maintain positive efforts |
| Participants have increased knowledge of various types of physical activities |
| Participants feel weekly emails are beneficial to achieving goals |
| Reduction in obesity prevalence |
| Fewer missed days from work due to health concerns |