

Master of Public Health Capstone Project

**Application of Public Health theory in a Rural Population for
Program Development at the Wellness Partners (a Corporate
Wellness Company)**

The Wellness Partners, McCook Nebraska

Jan 2-Feb 14, 2013

Abby Banks

Master of Public Health Candidate

Kansas State University

Major Advisor: Katie Heinrich

Internship Preceptor: Rebecca Wiemers

Table of Contents

Introduction	2
Logic Model Narrative	3
Goals and Objectives	6
Literature Review	7
Public Health Relevance and Application of Skills	13
Theoretical Framework	15
Methods	16
Results	19
Discussion	24
References	26
Appendix A: Logic Model	28
Appendix B: Employee Benefits Guide Information	29
Appendix C: Journaling Tool Prototype	31
Appendix D: Health Boost Weight Management Program Plan, Flow Chart, Schematic, and Staging Tool	32
Appendix E: Health Boost Manual Content for Type 2 Diabetes	40
Appendix F: Social Ecological Model Visual of Practicum	51

Introduction

My public health field experience was conducted in McCook, Nebraska at a corporate wellness company called the “Wellness Partners.” They are hired by other companies (which I will often refer to as employer groups or clients) to help them offer wellness incentives to their employees. Of the services I will list in a moment, a company can choose which ones they would like to purchase and offer their staff members. The majority of our clients opt for the entire package and offer their employees discounts on insurance for participating in the program. (I will often refer to the employees who chose to enroll in the program as “participants.”) Wellness Partners is quite small, employing approximately 40 people. The owners started out in the insurance industry and by way of intuition saw the opportunity for their clients to lower health costs by improving employee health. In order to meet this need, they started up the Wellness Partners as a separate business. The company has been in operation for ten years. The strategies they have already developed are quite successful and the company finds itself in high demand and needing to establish a growth plan that will allow them to take on larger employer groups. When I first talked with the owner, I was impressed to find that someone with no public health background was able to construct such successful strategies for intervention-based wellness. From my educational research on the topic, I could tell that this company was using some of the most successful strategies the industry has to offer.

The Wellness Partners offers a long list of services including health fairs, flu shot clinics, a comprehensive health risk assessment and accompanying lab tests, monthly publications and wellness challenges, and data management. One unique service that they are able to offer because of their size is individualized counseling. Every employee that chooses to participate in the wellness program has access to one-on-one calls with a registered nurse, dietician, exercise physiologist, and employee advocate. A need for extra intervention for high risk employees led to the creation of the Health Boost program.

A large portion of my practicum focused on the Health Boost program. Health Boost is an additional program that is offered as a part of the full package to employer groups. It was developed in order to give extra support to those employees who are “high risk” or have the

largest probability of costing their employer extra money in health care costs. An employee must fulfill one of the following criteria to enroll:

- Diagnosed Diabetic (Fasting blood glucose (FBG)>125),
- Pre-Diabetic AND Obese (FBG> 110-125 AND BMI>30), or
- Hypertensive: Blood Pressure 160/100 mm Hg or higher.

Anyone meeting these criteria can be invited to join Health Boost which provides them with quarterly A1C kits (diabetics only), nurse consultations and unlimited access to the Health Boost team. The Health Boost team consists of a dietician, exercise physiologist, and mental health counselor who all collaborate for highly individualized wellness plans for the participants. Currently, the primary focus of the program is disease management. Weight management is a large contributor to disease management; however, has not been emphasized as an actual goal of the program. The company is looking to expand the program in two ways. First, they want to open up the program to anyone who is morbidly obese (BMI>40) regardless of comorbidities. Second, they would like to add a weight management program to the existing strategies in Health Boost that would be offered to all Health Boost participants old and new. This new program is to be delivered primarily through print materials and should increase the reach and efficiency of the Health Boost program.

Logic Model Narrative

The practicum logic model highlights the activities to be performed and the expected outcomes and is found in Appendix A.

Inputs

The Wellness Partners provided the resources needed to conduct my practicum. I was given an individual workspace with my own computer and access to office supplies. In addition, I used my status as a Kansas State University student to gain access to online library databases which was an important component of my research. As a part of research and development I maintained regular communication with many Wellness Partners staff members to work as a team on various projects.

Activities

The nature of the activities I performed required me to know the company very well. Some of the activities I performed involved familiarizing myself with the company while simultaneously developing a product. For example, I wrote a description of every service offered by the Wellness Partners to distribute to our clients for inclusion in their employee benefits guides. I read and analyzed every part of their website thoroughly in order to suggest content and layout changes as well as ideas for further development. This process familiarized me with the company as well. Finally, I became very familiar with their Health Boost program in order to make a useful contribution to it. I worked in close contact with the current Health Boost team in order to identify where the needs lie in the current population as well as the potential new participants for the program.

A substantial amount of my time was spent on background research. For the Health Boost program, I researched the effectiveness of many behavior change theories in similar programs in order to determine the best fit for a theory to use as a framework for the new Health Boost program. I chose to use the Transtheoretical Model (TTM) to guide the development of the program for multiple reasons. Most importantly, the target population includes many people who have not developed an intention to change which would render purely action-based approaches ineffective. The constructs of the TTM provide effective avenues of focus for creating intention (stage-matched processes of change, self-efficacy, and decisional balance) for people at varying levels of readiness for change. Because action does not happen without intention, these approaches to creating intention are imperative to successfully move people into an actional stage. Secondly, because the program will be delivered primarily through the mail, intrapersonal approaches are the most logical option. Once the framework was selected, I focused my research specifically on behavior change interventions targeting stress responses, eating patterns, physical activity levels, or some combination of the three. In order to further understand the comprehensive nature of weight management, I researched the human stress response, determinants of eating behavior, and other personal and social influences of wellness. I also researched several wellness journaling

tools and their reviews in order to develop a wellness journal that will be produced and used by Wellness Partner participants.

For one week of my practicum, I traveled to 4 different job sites in Kansas to conduct on-site health fairs. Health fairs are one the most popular services offered by the Wellness Partners. They consist of a team of phlebotomists and nurses and an administrator. At the health fairs, employees have blood draws for labs, and have height, weight, and blood pressure measurements taken. My role as administrator gave me the responsibility of communications with the company before, during, and after the health fair, greeting and registering each employee that attended the health fair, data entry, and paperwork management.

The Wellness Partners did not regularly use social media as a way to communicate with potential and current clients and participants when I began my practicum. I was given access to their Facebook page, and updated the company's information. I was also responsible for posting new and helpful wellness information and tips to the Facebook 'wall.' I encouraged current participants to follow our page in order to expand the page's reach. In addition to posting on Facebook, I started a Pinterest page for the Wellness Partners and began boards for wellness related material. I also encouraged other Wellness Partner employees to contribute to the Facebook and Pinterest pages.

Outputs

At the conclusion of my practicum I had created two tangible products: an employee benefits guide (Appendix B), and a wellness journaling tool complete with calorie guides for basic foods as well as a calorie expenditure guide for various forms of physical activity along with the general format found in Appendix C. In addition, I completed a program plan for the implementation of the new division of Health Boost (Appendix D). I also made progress in regards to ongoing projects such as content and feature ideas for the website, and content for the Health Boost manuals on chronic conditions.

Outcomes

The most immediate outcome of the practicum was increased exposure to current and potential clients via the internet and new materials that would increase the company's cost-effectiveness over time. The impact of these activities would also be reflected long term in our clients' return on investment, as well as the health status of their workforce and health care claims. If we were successful at collecting, analyzing, and marketing data on these anticipated successes, company growth will result.

Goals and Objectives for Practicum activities

The following is a list of the goals I set for the practicum, as well as measurable objectives for post-practicum analysis.

- ❖ Improve upon and increase utilization of social media (Facebook, Pinterest, and wellness-partners.org)
 - Objective: Actively follow clients and local businesses on Facebook to offer support and increase exposure.
 - Objective: Post or share empowering, encouraging, supportive, and informative data relevant to wellness at least twice a week.
 - Objective: Update Facebook status at least 3 times per week to keep our followers engaged and informed.
- ❖ Participate in a collaborative team for planning a new division of the Health Boost program as the lead researcher and coordinator. Conduct a literature review of TTM-based worksite wellness programs and staging tools. From this research and input from team members, create a program plan for the new division of Health Boost.
 - Objective: Acquire at least 10 studies for analysis from PsychInfo and PubMed by January 15.
 - Objective: Actively seek input from team members on strategy ideas and maintain effective communication throughout the designing and planning process and maintain timely development for program launching on June 1, 2013.
- ❖ Research existing wellness journaling tools and create an innovative and comprehensive wellness journaling tool for the clients of the Wellness Partners.

- Objective: Submit at least one prototype for feedback by February 8, 2013.
- Objective: Analyze the needs of the customer to determine key elements that will be the most useful to the target population.

Background Literature Review

The Transtheoretical Model of Behavior Change

The Transtheoretical Model (TTM) is a model of behavior change developed by Prochaska and DiClemente (1984). Originally, the model was developed to explain the course of change for addictive behaviors. Since its introduction, it has become well-researched and widely accepted as a successful strategy for the cessation of unhealthy behaviors. More recently, researchers have been investigating its effects on the acquisition of healthy behaviors, as it is likely the process of change is quite similar (Herrick, Stone &, Metter, 1996; Evers, Prochaska, Johnson, Mauriello, Padula, & Prochaska, 2006; Horwarth, 1999).

At its core, the TTM tries to explain “how” individuals engage in a behavior as opposed to “why” they do it (Faghri, Blozie, Gustavesen, & Kotejoshyer, 2008). This explanation is constructed using a framework of 5 basic stages of change (SOC) that represent motivational readiness to change, 10 processes of change (POC) that explain an individual’s transition from stage to stage, decisional balance (pros versus cons), and self-efficacy. The five stages of change are precontemplation, contemplation, preparation, action and maintenance. The first stage, precontemplation, is marked by a lack of ownership and emotional detachment from a health behavior resulting in no intention to change. In contemplation, a person has internalized some negative aspect of their behavior and is now considering change as an option. Once an individual’s decisional balance has tipped, and the perceived benefits of the new behavior outweigh the perceived barriers, they are considered in the preparation stage. This is marked by committing to change in the next month. The moment an individual changes to adopt the new behavior, they are in the action stage. After an individual has been performing a behavior regularly for 6 months, they are in the 5th stage, maintenance. This last stage is by no means permanent and the majority of people cycle through the stages many times. Stages are considered to be both stable and dynamic, in that a person may stay in one stage for a long

time or could also transition through them very quickly, perhaps even skipping some of the motivational stages (precontemplation, contemplation, preparation) straight to the actionable stages (action and maintenance) (Herrick et al., 1997; Armit et al., 2008; Kim, Hwang, & Yoo, 2004; Povey, Conner, Sparks, James, & Shepherd, 1999; Spencer, Adams, Malone, Roy, & Yost, 2006; Johnson et al., 2008).

There is a diverse body of research debating the applicability of the TTM to changing various healthy behaviors. The behaviors of interest for the weight management program include physical activity, nutrition, and stress management. Physical activity and nutrition (or eating behavior) in conjunction are the direct influences on calorie balance and therefore the management of weight. Stress management skills are an important component of weight management as well. The act of weight management itself can be quite stressful, and many people find it more difficult to adhere to healthy behaviors when they are feeling “stressed” or overwhelmed. For this reason, the inclusion of teaching stress management skills as a part of weight management may help to offset the counterproductive effects of stress and add to overall quality of life. Each behavior will be discussed here separately, followed by a discussion of interventions that have attempted to address more than one behavior simultaneously.

TTM and Physical Activity Interventions

There have been a number of studies examining the effects of a TTM-based intervention on physical activity levels in a variety of settings. For the purposes of this review, interventions implemented in a worksite setting will be analyzed. Although many physical activity interventions are successful at increasing activity immediately post-intervention, long term adherence is less often monitored and is a notoriously difficult outcome to procure (Spencer et al., 2006). However, it is these long term changes that can truly impact health and disease status, and therefore strategies that successfully produce long term results are critical. In a study by Armit et al. (2008), factors associated with increased physical activity levels at a 24 week follow-up were progression in stage of motivational readiness between weeks 1 and 24, increased partner support and both increases and decreases in barrier scores. It is quite unexpected to find that increased barrier scores had an association with increased physical

activity. One possible explanation for this phenomenon could be that simply being mindful and aware of your environment and what poses a threat to your activity could be helpful to maintenance of physical activity levels. Faghri et al. (2008) also found that physical activity SOC interacts with SOC for weight management and nutrition such that being in the action stage for one behavior increased the likelihood that the person would progress to the action stage for another behavior. From these two studies it can be suggested that an increase in mindful living (or higher levels of awareness of your physical state and surrounding environment) can impact more than one health behavior at a time, and that perhaps multiple behaviors could be targeted as a part of a stage-matched intervention. In fact, Johnson et al. (2007) found that in a stage-matched intervention addressing multiple behaviors, a transition into action for any behavior more than doubled the likelihood that the person would transition to action for another behavior.

A meta-analysis reported that out of 15 studies comparing stage-matched to un-stage-matched interventions, 9 found that stage-matched interventions increased physical activity levels significantly more than their non-stage matched controls (Spencer et al., 2006). A twelve week intervention by Kim et al. (2004) also found that stage-matched counseling increased physical activity and resulted in stage progression for 77% of the treatment group, compared to a mere 4% in the control group.

Overall, the evidence suggests that TTM stage-matched interventions are superior to those that are not in producing long term behavior change. A hallmark trait of successful interventions was the inclusion of an individualized counseling component (Spencer et al, 2006; Armit et al., 2008; Herrick et al., 1997; Faghri et al., 2008). Also, interventions that used more than one form of communication produced more robust and longer lasting behavior change. A final interesting trend in the research is that the first three SOC are associated with extrinsic motivation while internal motivation was indicative of presence in the action or maintenance stage. The action and maintenance stages were also characterized by the importance of support from family and friends (Herrick et al., 1997, Spencer et al., 2006).

TTM and Nutrition Interventions

There is little evidence to support the use of a TTM-based intervention for nutritional health. The general consensus in the literature is that nutrition and diet involve multiple, complex factors and behaviors (Povey et al., 1999; Johnson et al., 2008; Horwarth, 1999). The model is designed to be applicable to one specific behavior change. Therefore, using it as a framework for nutritional behavior changes may not be the most effective route to take. Povey et al. (1999) found that when nutrition behavior is loosely defined such as “I eat a well-balanced diet”, there is severe over reporting. In order to achieve accurate staging, a precise definition and nutritional parameters must be defined. However, people have extremely skewed ideas of what they consume and this distorts the outcome as well. Sorensen et al. (2004) found that the majority of barriers to fruit and vegetable consumption were not intrapersonal, and therefore the TTM was an inappropriate framework for changing it. They found that organizational and family support, social context, and availability of fruits and vegetables were much larger barriers than simply not enjoying fruits and vegetables.

In essence, for the TTM to be a constructive framework for changing nutritional habits, the goal must be a specific, measurable behavior such as fruit and vegetable consumption as opposed to an outcome such as consuming a high fiber diet. Objective measures of dietetic nutrition are difficult to obtain and subjective measures are usually inaccurate due to lack of consumer nutrition knowledge, so developing a staging tool is a difficult task. Because the major barriers to a nutritious “good diet” are often environmental, and the TTM is designed to address primarily intrapersonal factors, it may not be the best choice of theory to use a framework for a nutritional intervention. If an investigator did wish to use the TTM framework for a nutritional intervention, they should be certain that they know exactly which intrapersonal barriers they will be able to address in the population and convey a very precise goal behavior to be targeted (Horwarth, 1999; Povey et al., 1999; Sorensen, Linnan, & Hunt, 2004).

TTM and Stress Management Interventions

Of the three behaviors of interest, the least is known about stress management and the role of the TTM in addressing it. However, there is favorable evidence that in a worksite weight management program, the addition of a stress management seminar successfully reduced

anxiety in participants that was still significant after two weeks (Donnelly, 1993). From these results, Donnelly (1993) suggested that adding a stress management seminar to any weight management program would be favorable, as it would help participants to alleviate some of the stress that accompanies the commitment to weight loss.

One study by Evers et al (2006) attempted to stage stress management behavior by defining it as “regular relaxation and physical activity, talking with others, and/or making time for social activities” (p.523). The results were compelling. The treatment group, who received stage-matched materials on stress management, increased their usage of stress management techniques significantly compared to the control group and the treatment group maintained that change over 18 months (Evers et al., 2006). This was particularly impressive when considering that 80% of the treatment group was in pre-preparation stages at baseline. However, their definition of stress management should not be overlooked as a potential confounder. It could be argued that choosing to engage in social activities and physical activity is perhaps a component of stress management for some people, but could be argued as a source of stress for others.

Another interesting perspective on stress management and the TTM model was also proposed by Evers et al. (2006). They suggested that the potential for success in a TTM stage-matched intervention for stress management was rooted in the lag time between the event and the consequence. The effects of stress were apparent and often immediate whereas outcomes from physical activity and nutritional changes were subtle, required more effort, and had a lag time between behavior and outcome. It could have been this more immediate gratification that caused participants to move through the stages of change so quickly in the stress-management intervention.

Stress and weight are self-perpetuating. Stress increases consumption and decreases activity, and weight management causes stress (Donnelly, 1993). However, this relationship changes for people who are in the maintenance stage of physical activity. For these people, stress actually had a positive relationship, suggesting that those who are physically active actually use exercise as an outlet for stress (Lutz, Stults-Kolehmainen, & Bartholomew, 2010).

Recognizing and addressing the source of the stress could be a useful tool for those on the path of weight management.

TTM and Multiple Behavior Interventions

One study that targeted 3 health behaviors; stress management, nutrition, and physical activity, compared results from a web-delivered stage-matched intervention and a print-based stage-matched intervention. There were no significant between-group differences. However, both interventions were successful at improving dietary intention and motivation, and dietary weight and self-efficacy SOC progression (Cook, Billings, Hersch, Back, & Hendrickson, 2007). These results were surprising when considering the research on nutrition-only TTM-based interventions, which largely discouraged the use of TTM for nutritional interventions. Another result that was surprising from this study was that perceived stress and stress management SOC improved only among the print-delivered group. The researchers were unable to offer an explanation for this result (Cook et al., 2007).

In a large study conducted by Johnson et al. (2008), the treatment group was supplied with four individualized reports (3-6 pages each) based on the TTM. The reports were delivered at 4 separate time points: at baseline, three months, six months, and nine months. The targeted behaviors again were nutrition, stress management, and physical activity. At a one year follow up, significant improvements in all three areas were maintained and at the two year follow-up the treatment group had lost significantly more weight than the control. The impact of this study was three times greater than that of similar interventions targeting only one behavior. When considering the conclusions of the singular behavioral interventions previously discussed, it is plausible that strategies targeting each variable were interacting with one another in a way that amplified the effects of each strategy. This idea of a synergistic effect was one possible explanation for this finding.

In a study of government workers, the TTM was validated in a workplace setting with decisional balance and self-efficacy exhibiting a robust positive relationship to SOC. Furthermore, this relationship was similar across four different health behaviors: sun exposure, smoking, physical activity, and dietary fat consumption (Herrick et al., 1997). The results also

pointed out the importance of realizing that most people were in different SOC for different health behaviors. However, the research done by Johnson et al. (2008) offered encouragement that if one behavior was targeted it greatly increased an individual's chance of changing other behaviors as well.

Conclusion

In conclusion, it seems highly likely that the TTM is only an appropriate intervention framework for nutritional components when a) combined with other target behaviors and b) the behavior is clearly defined and properly assessed. For physical activity, interventions based on the TTM yielded larger increases in long term physical activity than interventions that were not stage-matched. The use of personalized coaching and multiple forms of communication were particularly indicative of physical activity stage progression. Stress can perpetuate the struggle for weight management, as dieting in itself is stressful. In order to avoid this setback, offering a stress management component to weight management programs could be very beneficial. It does appear that offering stage-matched print material is more successful than generic material in producing stage progression, particularly for people in pre preparation stages. Finally, the literature suggests that a multi-behavior approach using stage-matched strategies may interact with each other such that the end result is greater than targeting any one by itself.

Public Health Relevance and Application of Skills

Each of the three public health functions has competencies that are represented in the services offered by the Wellness Partners. Although the Wellness Partners do not assess health on a community level, they do monitor very carefully and thoroughly the health of their participants on an organizational level. They offer a wide array of labs at no cost to the employees that would normally cost a tremendous amount of money. Through this thorough testing and reporting, the Wellness Partners have been able to identify and address many major medical issues within their participants that would not have otherwise been found, and have successfully recruited employees for preventive screenings that the employees would not have sought out on their own.

The Wellness Partners offer annual personal wellness profiles and lab testing to their clients. Each participant receives a personalized wellness profile with suggestions for every aspect of wellness along with their lab reports from blood testing. Not only are employees supplied with this individualized plan, they have the opportunity to speak with a registered nurse about any outcomes they have questions about or any general advice they may need. If they would like additional educational materials or personalized feedback, they can also be referred to a registered dietitian, exercise physiologist, or employee advocate (who handles all mental health and crisis type issues.) As a part of the policy development core function, these services help the Wellness Partners fulfill the third essential service of public health: to inform, educate, and empower people about health issues. Many of the activities of my practicum allowed me to contribute to this function. I was able to be involved in the development of educational materials themselves, as well as developing strategies for educating and informing the participants in the most effective way.

Assurance is perhaps the most dominant function that is carried out by the Wellness Partners. During my practicum experience, I spent a great deal of time researching the most current literature on worksite wellness in order to develop the most effective, evidence based strategies possible to offer our clients. Careful assessment of internal data on clients and their needs guided the focus of this research, resulting in innovative new programs to promote the personal investment of the clients in their own health. This is a particularly challenging enterprise when dealing with a population in which obesity is the norm and comorbidities are not seen as being related to this obesity. Attempting to create this link often involves the final function of assurance: linking. Participants are often referred to specialists (dietician, employee advocate, exercise physiologist) in order to discuss the influence of their lifestyles on their health and how to address unhealthy habits. If the client or staff member feels as if someone is in need of assistance we cannot personally offer, every effort is made to be certain they are directed to the help that they require.

The identification of population needs and the corresponding behavior change strategy development based on theory was the primary application of public health skills during my

practicum. For the first time, not only did I have to identify the population's needs from a public health standpoint, but I also had to consider the discrepancy between these identified needs, and what the population could actually be willing or able to accomplish. In addition, I was given limited resources to accomplish my objective. Therefore, many things had to be considered when developing strategies for the new Health Boost program:

- What are the needs of the population from a public health standpoint?
- What are the self-identified needs of the population?
- What do the owners of the Wellness Partners want to target and what outcome do they expect?
- What can we realistically hope to achieve with the given resources and motivation level of the priority population?
- Will the results be reflected in the data in a way that proves the program's usefulness in a timely manner?

This real-world application with the added business perspective proved to be an excellent challenge for me. This challenge to optimize both cost effectiveness and outcome effectiveness in a way that maximized Wellness Partners' profit, participant health, and customer satisfaction simultaneously was a very valuable experience in learning to translate my education into practice.

Theoretical Framework

The many activities of my practicum were most suitably organized using the framework of the Social Ecological Model (SEM) (Grzywacz & Fuqua, 2000). A depiction of the practicum activities as they related to the Social Ecological Model can be found in Appendix F. The majority of the activities I performed with regards to the development of the new Health Boost program were at the intrapersonal level. These strategies in particular were based on the Transtheoretical Model. To be more specific, the new division of the program focused heavily on altering decisional balance to favor intention to change, building self-efficacy, and moving people from precontemplation, contemplation, and preparation stages into action by targeting

stage-matched processes of change for each level. Furthermore, intrapersonal level strategies for relapse prevention and maintenance were also used in the program plan.

At the interpersonal level were the components of the Health Boost program targeting communication with family, friends, and overall support network. Also at the interpersonal level were the anticipated message boards and Q&A boards that will be added to the Wellness Partners' website.

One of my personal goals for the company was to build a sense of community among the Wellness Partners staff members and all of their clients, participants, and affiliates as a unit. Given time, the strategies which I developed to increase marketing and communicating online should have large interpersonal, organizational, and community level impacts. The week that I spent as an administrator at the health fairs would also be classified as an organizational and community level strategy. Although the health fair itself was an organizational level activity, it was not limited to Kan-Equip employees. Their spouses and children were also invited to attend and participate, therefore classifying the health fair as a community level activity as well. The employee benefits guide which I developed would be considered an organizational level activity, as each client organization/company would have their own employee benefits guide offering a consistent and thorough explanation of their wellness program for their employees. This guide assured that every employee at a given worksite had the same understanding of their wellness benefits and was encouraged to participate.

During my practicum experience I did not directly influence any policy level activities of the Wellness Partners. However, the implementation of the new Health Boost program may have policy level implications such as changing the eligibility criteria for membership in Health Boost, and altering incentives that employers offer their employees for participating in Health Boost.

Methods

Target Population Description and Needs

During my practicum, the Wellness Partners had approximately thirty enrolled employer groups. The large majority of these were agriculture based companies such as farmer's cooperatives and equipment suppliers. Other industries that were currently using the Wellness Partner's services included industrial producers and auto groups. The Wellness Partner's clients were spread across 28 different states, the most common being Nebraska.

A trend in the Wellness Partners data suggested that the average participant was showing slow, maintained weight gain from year to year. There was a definite need in the Wellness Partners clientele for new strategies to help prevent this problematic weight gain and its associated health burdens. First, there appeared to be a need for social support for those who wished to take control over their wellness. There was potential to create this needed support group among the Wellness Partners and their affiliates in order to allow participants from different employer groups to interact, and take advantage of the additional resource that lay in the support of fellow participants. Right in line with the need for support from others, was the need for participants to take advantage of the resources they had in the Wellness Partners. A collaborative effort of the employer groups and the Wellness Partners staff members could impact the way in which participants perceived their wellness benefits.

New strategies for marketing the Wellness Partners as an ally in wellness are needed. Many participants view the company as a big brother, out to get their money and make unreasonable requests of them. A shift in perspective is needed in order to empower participants to take advantage of the wellness package as a resource that can make their lives more enjoyable, safe, and healthy.

The need for a new perspective does not end there. There appears to be a real disconnect between what participants think they are doing and what they are actually doing. For example, many participants can not accurately estimate the amount of calories that they are consuming or expending. There is a need for education on the basics of caloric balance. The Wellness Partners would like to launch new strategies to promote self-awareness. This is not limited to food intake. There is a clear need to promote self-awareness by teaching participants to tune in to their bodies' signals for stress, pain, and tension. As a part of this self-aware

approach, the Wellness Partners intend to educate and empower people to be mindful of their eating patterns, activity levels, and signals of distress from their bodies.

Program Plan

I spent my time at the Wellness Partners working on a range of activities that involved research and development, marketing, and client communications. My role in marketing was primarily in social media management. The Wellness Partners had a very inactive Facebook page and a very basic website. I became manager of the Facebook account and expanded our reach by more frequent posting and following other relevant pages. After careful analysis of the existing web page I offered suggestions for development and expansion of the site.

The majority of my time was spent on research and development. In particular, I designed a brand new weight management program to be offered to our morbidly obese participants through Health Boost. I did the background research and basic layout of the program. I worked with a team comprised of an owner, a dietician, an exercise physiologist, a psychologist, and 2 registered nurses in order to develop a program that would complement the existing one and addressed all necessary behaviors, namely: physical activity, stress management, and consumption. I was responsible for keeping the project on track to launch in June, 2013 and was heavily involved in the development of program materials. I completed research and development in other areas as well. There was a need for a new wellness journaling tool for our participants. I researched existing journals and developed an original, comprehensive tool for the Wellness Partner clients. In addition, I was in charge of gathering and laying out the content for a new line of condition specific educational manuals. These included pamphlets on Pre-Diabetes, Type 1 Diabetes, Type 2 Diabetes, COPD, stress management, weight management, hypertension, and hyperlipidemia.

Client communications was a third area in which I gained some experience. As previously mentioned, I attended four on-site health fairs in Kansas in the administrative role of a 3-person team. Finally, I was responsible for writing the content of our 2013 employee wellness benefits guide to be received by all of the employer groups and participants. This

guide was considered marketing, as it was what the employees looked over in order to decide whether or not to enroll.

Measures and Evaluation

In order to analyze the impact of my efforts during this internship, I collected any available and relevant baseline data. Facebook provided users with detailed summaries of the action on their business' page. I collected these data a few days after I started and again at the end of the internship in order to see how much I was able to expand our reach and increase the exposure to our page.

For the Health Boost program, I collected health and participation data on the current participants for baseline. Analysis included comparing the current participants' changes in weight, A1C measures, and blood pressures as compared to one year ago, as well as assessing dropout rates. Since participant data was being continuously updated, these data may have been collected at different time points. Another disadvantage was that while I was able to collect the same baseline data for the new participants, the impact of the program was not ready to be analyzed. Rather, my analysis merely gauged the anticipated reach of the reach of the program and the population demographics.

Finally, I was able to get an accurate estimate of the cost of printed materials obtained through other wellness companies and distributed to our clients. This was relevant because I created new, in-house materials to replace them, and therefore these numbers offered an estimate of the amount of money I potentially saved the company in these costs.

Results

I believe that my practicum experience impacted the Wellness Partners as a company. They had not had a public health professional as a part of their team until this practicum. This seemed quite odd considering most corporate wellness companies inherently associated themselves with public health, and for good reason. I think that the company was able to benefit from a new perspective and was grateful to have a member of their team that was able to tell them what strategies and approaches had a compelling scientific evidence base and

which ones were not worth experimenting with. I believe my insight was beneficial in eliminating some of the “guess-work” in the areas of research and development. I also found that the nurses seemed interested in my insights as to how to approach participants with different attitudes in a coaching call so as to be the most effective in influencing personal health behavior attitudes.

Health Boost

Table 1 contains the descriptive data for the entire population of Wellness Partner participants in 2012. The average age among the 3930 participants was 48; 42.5% female, and 57.5% male. The statistics were somewhat alarming, with only 22% of the participants falling into the healthy BMI range; average BMI was in the obese range. Not surprisingly, there was a large burden of preventable chronic diseases in this population. Hypertension was the most common chronic condition, affecting nearly 1 in 4 Wellness Partner participants.

Table 1. Wellness Partners Participant Numbers by Weight Classification

	# of People/ % of Total	Average BMI	Average Age	#Diabetic	#Hypertensive	#Hyperlipidemia
Morbidly Obese	341/ 8.68	45.31	48	58	143	124
Clinically Obese	449/ 11.42	36.98	49	64	180	107
Obese	971/ 24.71	32.16	49	97	278	182
Overweight	1256/ 31.96	27.41	48	55	243	178
Normal Weight	878/ 22.34	22.58	45	15	75	66
Underweight	35/ <1	17.68	42	1	2	3
Total/Mean	3930	30 ± 6.84	48	290	921	660
Range: 20-78						

Table 1: Current demographics of the total participants enrolled with the Wellness Partners. *These numbers represented only those employees choosing to use the Wellness Partners’ services offered by their employer.

Table 2 contains the descriptive data for the current participants in the Health Boost program. There were 80 participants with diabetes or pre-diabetes, the majority of which had a comorbidity of hypertension, obesity, or both. Sixty-seven people in Health Boost were diagnosed diabetics, and all but 7 of them had comorbid hypertension, obesity, or both.

Table 2. Current Health Boost Participants* by Disease Condition

By Health Condition(s)	Non-Diabetic	Pre-Diabetic	Diabetic	Total
Single Condition	XXX	1	7	8
Plus Obesity	0	9	23	32
Plus Hypertensive	1	1	7	9
Plus Obesity and Hypertensive	0	2	30	32
Total	1	13	67	81

*From all 30 employer groups

The new Health Boost program was designed to expand the pool of participants eligible to participate substantially by making it available to those people who were morbidly obese, but did not yet have any comorbidities. The current Health Boost participant information was a perfect illustration as to why the Wellness Partners would wish to open up a disease management to those who were morbidly obese; obesity was a strong indicator of future chronic disease, and prevention was more cost effective than treatment. Therefore, opening the program up to those who were obese, (even though they had not yet developed one of the other criteria disease parameters), would further serve to be proactive about preventing chronic disease costs in Wellness Partners' client groups. Ideally, Health Boost would be offered to anyone who was overweight or obese (as disease risk increased with a BMI>30). In the current participant pool that would be equal to 3017 people. At this time, the Wellness Partners had only one specialist in each area (1 employee advocate, 1 exercise physiologist, 1 dietician.) Inviting all of these people was not feasible with the current amount of staff members, and therefore only the highest risk category, morbidly obese (BMI>40) would be invited. There were 341 morbidly obese individuals receiving Wellness Partners' services, which could have potentially quadruple the enrollment in Health Boost depending upon how many accepted the invitation. Table 3 highlights the descriptive statistics of the pool of morbidly obese participants to be invited.

Table 3. New HB Candidates Descriptive Characteristics

	Morbidly Obese
Single Condition	179
Plus Diabetes	15
Plus Hypertension	102

Plus Diabetes and Hypertension	31
Total	327
Males	158
Females	183
Average Age	48
	Range: 21-71
Average BMI	45.3 ± 4.79

As previously mentioned, the new Health Boost program was designed using the TTM. SOC and self-efficacy were two of the primary constructs of the model, and tables 4 and 5 depict the readiness and confidence to change among those who would be invited upon implementation of the new program according to the three weight management components it was designed to address: physical activity (or “exercise”), nutrition, and stress.

Table 4. Number of the New Health Boost Candidates by Readiness to Change Category

	Exercise	Nutrition	Stress	Weight
Precontemplation	46	33	73	19
Contemplation	106	78	35	98
Preparation	75	62	35	71
Action	68	91	36	106
Maintenance	32	63	142	35
No Response	14	14	20	12

Table 5. New Health Boost Candidates’ Confidence to Change

	Exercise	Nutrition	Stress	Weight
Very Confident	74	84	177	39
Somewhat Confident	226	225	129	201
Not Very Confident	36	28	28	94
No Response	5	4	7	7

Table 6 depicts the impact of Health Boost in 2012. These data will be quite useful for comparing the impact of the new program to the old in one year or more after the new program has been implemented.

Table 6. Participants enrolled before 2012 and still enrolled

	Improved (%)	Declined (%)	No Change (%)
Hgb A1C	45.16	41.94	9.68
Glucose	46.88	50.00	3.13
Total Cholesterol	46.88	53.13	0.00
LDL	34.38	59.38	3.13
HDL	40.63	53.13	6.25
BMI	43.75	53.13	3.13
Weight	56.25	43.75	0.00
Triglycerides	62.50	37.50	0.00
BP	12.50	9.38	78.13

Table 6: Percentage of participants in Health Boost classified for each health parameter as having improved, declined, or stayed the same. Any improvement/decline put the participant in the respective category regardless of the magnitude of improvement or decline.

Health Boost Manuals

The disease management guides that were being sent out to Wellness Partner participants with information on individual chronic conditions cost the company approximately \$3000 annually. The estimates for producing the new “Health Boost Guides” were \$700-\$900. In other words, the guides that I developed during my practicum could potentially save the company 67%, or over \$2000. Appendix E contains the content of the Type 2 Diabetes manual which I developed during the practicum.

Facebook

During my practicum, I successfully doubled the number of “likes” on the Wellness Partners’ Facebook page. When I began, there was no one talking about or engaged in the page. Although the numbers were modest, and we still had a relatively low exposure compared to many similar companies, there was indisputable progress made and sizable increases in the amount of exposure the company was receiving from this social media site. Table 7 depicts the exact changes in these exposure numbers and describes what each one meant.

Table 7. Change in Wellness Partners’ Facebook Exposure from Dec 2012 to Feb 2013

Past 28 days of Activity:	Baseline: Dec 25-Jan 21	Practicum: Jan 22-Feb 14
People Talking about Wellness Partners	0	39
Page Engaged Users	0	47
Organic Reach	5	70
Viral Reach	8	165
Total Reach	12	220
Lifetime Total Likes	34	69

People Talking about WP	The number of people sharing stories about your page. These stories include liking your Page, posting to your Page's timeline, liking, commenting on or sharing one of your Page posts, answering a question you posted, responding to one of your events, mentioning your Page, tagging your Page in a photo or checking in at your location. (Unique Users)
Page Engaged Users	28 Days The number of people who engaged with your Page. Engagement includes any click or story created. (Unique Users)
Organic Reach	28 Days The number of people who visited your Page, or saw your Page or one of its posts in News Feed or ticker. These can be people who have liked your Page and people who haven't. (Unique Users)
Viral Reach	28 Days The number of people who saw your Page or one of its posts from a story shared by a friend. These stories include liking your Page, posting to your Page's timeline, liking, commenting on or sharing one of your Page posts, answering a question you posted, responding to one of your events, mentioning your Page, tagging your Page in a photo or checking in at your location. (Unique Users)
Total Reach	28 Days The number of people who have seen any content associated with your Page. (Unique Users)
Lifetime Total Likes	Lifetime The total number of people who have liked your Page. (Unique Users)

Proposed Future Analysis

After implementation of the new Health Boost program has occurred, analysis of the program should include the same parameters that were measured for 2012 (change in weight,

BMI, triglycerides, A1C, cholesterol, and BP) in addition to baseline and post-implementation measures of self-efficacy, barriers efficacy, stages of change, and possibly process of change as well. These measurements would give some insight as to whether or not the theoretical framework actually impacted the outcomes of the program. Data available from the analysis of Health Boost in 2012 could be used as a comparison of the 2 programs.

It would also be helpful to analyze Facebook parameters in order to determine if there was a particular time of day or type of post that seemed to receive the most responses or gain the most exposure.

Discussion

Overall, my practicum resulted in mutual benefits for the Wellness Partners and myself. They gained a new perspective on certain aspects of their business, and I was able to translate my education into practice for the first time. I feel grateful to have found a setting that allowed me to be professionally creative. The company was very receptive of my messages and ideas. The experience itself greatly increased my confidence as a public health professional; I could not have asked for a better launching pad. I was able to begin developing my leadership abilities and I look to the future with great enthusiasm and expectation as my career lies ahead of me.

One hard lesson that I experienced was that of the reality that everyone does not share my cognitive pathway. As an example, I thought that I was great at simplifying scientific information for the average person to read. When my supervisor told me that my first draft of my type 2 diabetes Health Boost manual was nowhere near simple enough, I was shocked and really struggled to cut out, condense, or simplify information that to me was already in its simplest form. To sum it up, I learned that I resisted the notion that other people did not share my interest in understanding human physiology or behavior. I wanted people to share my passion so badly that it was difficult for me to try not to spark their interest in it as well.

Time and again my lack of technological savvy left me frustrated and unable to carry out creative visions. I was very lucky that the Wellness Partners is a small company, and that they

were tolerant and willing to work with me in regards to my technological shortcomings. This was a detriment that I will have to address, or it will continue to stifle me professionally.

Working for the first time with real world public health application was an enjoyable challenge. Balancing my desire to maximize public health impact with the owner's necessity of cost-effectiveness was truly challenging. Developing strategies for a profit seeking company in public health is no simple task, particularly when the expected outcome combines not only your ideas, but the ideas of the owners (business-invested) and the Health Boost team (invested in their respective fields from a more clinical standpoint) and develop a program that will produce results in a cost-effective manner. I did not find it undesirable, but motivating. I ended up expanding my mindset tremendously while researching and brainstorming for new and innovative ways to impact health on a large scale. Throughout this process, I lost sight of the direction of the program while trying to make everyone happy. This was the basis for another eye-opening lesson: the importance of goal setting. Once I realized our lack of focus on a singular goal was beginning to take the project off course, I printed up a formal goal which I shared with the rest of the team. I also began to take more ownership for project and directed the flow of communication with the team more assertively. The project came along very smoothly after that.

Limitations

The main limitation of my practicum was that the majority of the projects I was involved in did not reach completion during the practicum, leaving me with little data to present. I did not have immediate supervision from another public health professional, which could have been a potential advantage. Also, the clientele of the Wellness Partners was limited to few blue collar industries, leaving me with little experience working with a white-collar population.

Future Directions

The next step to continue on with the projects of my practicum would be materials development. The implementation plan needs to have a formal list of data to be collected in order to assure proper evaluation. Beyond that, development of material for the program will

take a substantial amount of time and money, and should be continued. The structure of Health Boost meetings will have to change to eliminate individual case management as much as possible (as there will be no time for it once the pool expands three fold.)

With regards to social media, the Pinterest boards need to be developed substantially to draw interest and gain followers. Additionally, the company should consider a Twitter account, and continue to develop their Facebook page. There are some positive ideas that have been proposed for their website as well, and the company should be working with a site developer to pursue these new ideas in order to keep up with the competition in terms of exposure, networking, and of course, resources to offer to clients.

References

- Armit, C. M., Brown, W. J., Marshall, A. L., Ritchie, C. B., Trost, S. G., Green, A. , & Bauman, A. E. (2008). Randomized trial of three strategies to promote physical activity in general practice. *Preventive Medicine*, 48, 156-163. doi:10.1016/j.ypmed.2008.11.009
- Cook, R., Billings, D., Hersch, R., Back, A., & Hendrickson, A. (2007). A field test fo a web-based workplace health promotion program to improve dietary practices, reduce stress, and increase physical activity: A randomized control trial. *Journal of Medical Internet Research*, 9(2), e17. Retrieved from <http://www.jmir.org/2007/2/e17/>
- Donnelly, W. (1993). Assessing anxiety within a weight-management setting: Impact of a stress management seminar. *Psychology*, 30(1), 16-21.
- Evers, K., Prochaska, J., Johnson, J., Mauriello, L., Padula, J., & Prochaska, J. (2006). A randomized clinical trial of a population and transtheoretical model-based stress-management intervention. *Health Psychology*, 25(4), 521-529. doi:10.1037/0278-6133.25.4.521
- Faghri, P., Blozie, E., Gustavesen, S., & Kotejoshyer, R. (2008). The role of tailored consultation following health-risk appraisals in employees' health behavior. *American College of Occupational and Environmental Medicine*, 50(12), 1378-1385. doi:10.1097/JOM.0b013e3181862471
- Grzywacz, J.G., & Fuqua, J. (2000). The social ecology of health: leverage points and linkages. *Behavioral Medicine*, 26(3), 101-115.
- Herrick, A., Stone W. J., & Metter, M. M. (1997). Stages of change, decisional balance, and self-efficacy across four health behaviors in a worksite environment. *American Journal of Health Promotion*, 12(1), 49-56.
- Horwarth, C. (1999). Applying the transtheoretical model to eating behavior changes: Challenges and opportunities. *Nutrition Research Reviews*, 12, 281-317.
- Johnson, S., Paiva, A., Cummings, C., Johnson, J., Dymment, S., Wright, J., . . . Sherman, K. (2008). Transtheoretical model-based multiple behavior intervention for weight-management: Effectiveness on a population basis. *Preventive Medicine*, 46, 238-246. doi:10.1016/j.ypmed.2007.09.010
- Kim, C.-, Hwang, A.-, & Yoo, J.- (2004). The impact of a stage-matched intervention to promote exercise behavior in participants with type 2 diabetes. *International Journal of Nursing Studies*, 41, 833-841. doi:10.1016/j.ijnurstu.2004.03.009

Lutz, R., Stults-Kolehmainen, M., & Bartholomew, J. (2010). Exercise caution when stressed: Stages of change and the stress-exercise participation relationship. *Psychology of Sport and Exercise, 11*, 560-567. doi:10.1016/j.psychsport.2010.06.005

Povey, R., Conner, M., Sparks, P., James, R., & Shepherd, R. (1999). A critical examination of the application of the transtheoretical model's stages of change to dietary behaviors. *Health Education Research, 14*(5), 641-651.

Prochaska, J. O., & DiClemente, C. C. (1984). Self-change processes, self-efficacy and decisional balance across five stages of smoking cessation. *Advances in Cancer Control: Epidemiological Research, 131-140*.

Sorensen, G., Linnan, L., & Hunt, M. (2004). Worksite-based research and initiatives to increase fruit and vegetable consumption. *Preventive Medicine, 39*, S94-S100. doi:10.1016/j.ypmed.2003.12.020

Spencer, L., Adams, T., Malone, S., Roy, L., & Yost, E. (2006). Applying the transtheoretical model to exercise: A systematic and comprehensive review of the literature. *Health Promotion Practice, 7*(4), 428-443. doi:10.1177/1524839905278900

Appendix A: Wellness Partners Practicum Logic Model

INPUTS			OUTCOMES		
	Activities	Outputs	Short-term	Medium-term	Long-term
Funding	Research TTM interventions and construct a literature review	Description of services for employee benefits guide	Increased exposure of the Wellness Partners to the public	More cost effective use of resources	More clients for the Wellness Partners
Facilities	Research and create wellness journaling tools	Wellness Journaling Tool			
Development Hours	Research staging mechanisms for different behaviors using the TTM	Program plan, implementation plan, and evaluation plan for new division of Health Boost	Increased client engagement online	Increased ROI for clients	Increased impact of services provided (ie larger improvements in employee wellness)
Paper	Become familiar with the Health Boost program				
Data Collection	Collaborate with other specialist staff members to create an implementation and evaluation plan for the new sector of Health Boost	Content for diabetes pamphlets	Increased availability of resources to clients	Increased sense of community among Wellness Partners staff, employer groups, and participants	
Research	Analyze data on current and potential participants in the Health Boost program	Blueprint for website overhaul			Better quality of life for all Wellness Partner clients
Computer	Develop new strategies for the new population being added to Health Boost	Literature review over TTM interventions in the workplace	Increased self-awareness of lifestyle and its impact among participants	Increased use of POC for new participants in Health Boost	
Internet	Become familiar with all of the services offered by the Wellness Partners and summarize them for employee benefits guide	# of people reached through Facebook			
KSU Online Libraries	Monitor and contribute to the Wellness Partner's Facebook page	# of people to be invited to the new division of Health Boost			
	Travel as part of a team to conduct health fairs				
	Research pre-diabetes and type 2 diabetes and develop content for an informational/empowerment pamphlets				
	Analyze the Wellness Partner's website and construct new content and features for it's redesign				

Appendix B: Employee Benefits Guide Information

**Note: “All Points Cooperative” is a client of the Wellness Partners. This is their employee benefits guide for wellness which is used as an example. Every client company has a personalized list similar to this, detailing only the Wellness Partners’ services which they offer to their clients.*

This is an overview of benefits. For complete details, refer to the Summary Plan Description (SPD).

Wellness

All Points Cooperative offers the added voluntary benefit of a wellness program. Our wellness program is all-inclusive, meaning that everyone who registers will have access to all of the below specified services that they wish to take advantage of. This is a potentially invaluable resource that all employees are encouraged to participate in. The wellness program is provided through an outside company called the “Wellness Partners.” While All Points does receive group information regarding lab results, no personal information shared with the Wellness Partners staff is relayed to management. We are happy to supply you with the resources you need to be proactive about your health through offering the services described below.

Eligibility and Expectations of Participants (Employee and Spouse)

All employees and spouses eligible for benefits are eligible to participate in the wellness program. All Points Cooperative would like their employees and spouses to take advantage of the excellent wellness tools provided by our wellness plan. To complete the program for the year, each participant is required to complete a HRA, blood draw, and a wellness coaching call.

Personalized Health & Wellness

The wellness program provides an individualized approach to your health using the following methods:

Health Risk Assessment (HRA): A comprehensive questionnaire about your medical history, current health issues, and current health habits. This will be available online as well as in print.

Lab Tests: A one-time blood draw is used to run over 35 tests including: Thyroid, Prostate, Blood Sugar, Cholesterols, Complete Blood Count, and more.

Personalized Wellness Plan: Upon completion of your HRA and Lab Tests, the results of both will be sent to you in the form of a personalized wellness plan (PWP). Your PWP is entirely unique to you and offers feedback and suggestions for every aspect of your personal well-being.

Wellness Call with an RN: All of those lab results and lifestyle feedback can be overwhelming to process. Every participant is also given the opportunity to speak one-on-one with a registered nurse about their PWP. Our nurses will focus on what’s most important to you, offering encouragement and guidance for your pursuit of health.

Wellness Allies

Our RNs are great resources for all things health. In support of a comprehensive, team approach to wellness, staff members with the following expertise are also available to help you achieve your goals and understand your health.

Dietician: Our dietician is available to answer day to day nutrition questions, develop a personalized nutrition plan, and help you to understand any special diet considerations you may have due to food allergies or chronic medical conditions.

Exercise Physiologist: No matter what your current fitness level or physical activity goals are, our exercise physiologist can help develop a plan that is right for you. She can offer advice on how to fit physical activity into your existing routine, help you train for a specific event, or offer guidance for any special considerations you may be facing.

Employee Advocate: Our life coach is there for you in any situation that may compromise your mental or emotional health, including work or personal stress, or traumatic/ crisis situations. Other services in this area include goal setting coaching, tobacco cessation, coping skills coaching, and stress management coaching.

Disease Management Assistance: Health Boost Program

Chronic illness and disease add another dimension to health and wellness. The Wellness Partner's staff offers additional support for anyone living with Diabetes, obesity, and hypertension. For those with diabetes, this includes at-home A1C kits followed with a nurse consultation. The Health Boost team collaborates to develop an individualized plan to make you the master of your health. You will be primed for success with a new set of skills to help you maintain long-term lifestyle modifications.

Financial Issues and Concerns

If sudden financial issues develop, our financial consultant can direct you towards resources that can help you in your situation. She can assist you in building a budget, paying down bills, or preparing for the future.

End Results

It is proven that healthy employees will decrease the costs of healthcare in addition to creating a more productive and positive work environment. This is one way that All Points Cooperative is able to continue to offer medical insurance at a very reasonable cost to their employees and families. We appreciate your support in helping us continue this tradition by investing in your own health, and utilizing the wellness program provided.

Appendix C: Journaling Tool Prototype

Energy In

Date: _____

Time	Food	Hunger Level	Calories

Energy Out

Activity	Duration	Notes: How did I feel before and after?	Calories

How many hours of sleep did I get last night?	
Did I meet my food goal?	Yes / No
Did I meet my physical activity goal?	Yes / No
Did I meet my personal goal?	Yes / No

End of Day Recap:

One thing I feel good about today _____

One thing I can improve tomorrow: _____

Appendix D: Health Boost Weight Management Program Plan, Flow Chart, Schematic, and TTM Staging Tool

Purpose

In order to reduce the burden of preventable chronic disease associated with obesity for our clients, this program enlists strategies designed to prevent or slow the expansion of disease prevalence within their employee population. Furthermore, the program is designed to help maximize client company performance by improving BMI and overall mindfulness with respect to eating, physical activity, and stress management patterns.

Intervention Plan

The intervention will focus on creating small lifestyle changes with regards to physical activity, nutrition and stress management. The main methods of delivery are via print materials and individualized coaching calls with specialists. The participants will also have access to an online message board where they can offer one another support and ask questions for the specialists to answer.

The implementation plan for the program will involve multiple strategies aimed at reaching people with limited motivation while still minimizing wasted resources and time. A schematic of these strategies and how they relate to the three targeted behavior areas of physical activity, stress management, and consumption, can be found in Appendix E. A flow chart mapping the implementation can be found in Appendix A. The first step will involve sending the 341 eligible people an invitation and brief description of the program, and a staging questionnaire for physical activity based on the TTM (Appendix C) with instruction to return it if they would like to participate. Anyone who does not return the questionnaire in the allotted time will automatically be sent a short pamphlet with strategies designed for targeting people who are in pre-contemplation for physical activity. These individuals will then be sent no further materials. Those who do return the questionnaire will be processed and enrolled in the program. They will receive a phone call from a Wellness Partner's staff member during which they will be given a verbal explanation of the program. If they are no longer interested, they will be sent a stage-matched physical activity pamphlet and no further materials after that. If they

are still interested in participating, they will receive a verbal explanation of what to expect next. They will be informed that they will be receiving an array of printed materials that collectively can be referred to as their “wellness toolbox.” This toolbox will contain 7 items:

1. a staged-matched physical activity pamphlet based on the questionnaire responses,
2. a manual with various stress management techniques and brief explanation of the physiology and purpose of stress in humans,
3. a publication called the “Daily Cut” (This is a publication that will be delivered monthly. It will come with a short list of ways to cut 100-200 calories through diet and physical activity changes. They can pick one from the list or create their own goal. Each month they are to pick one food related goal and one physical activity goal and keep track each day if they make this daily cut.),
4. an information packet on the importance of creating SMART goals (This will assist participants in creating goals that are specific, measurable, achievable, realistic, and time-based.),
5. a comprehensive wellness journal to help them track their energy consumption and output as well as sleep, goal tracking, and positive self-talk (A prototype of this tool can be found in appendix D.),
6. informational guides of any comorbidities they may have such as diabetes or hypertension, and
7. a login ID and password to access an online support based message board. Here, participants can share frustrations and successes as well as offer praise and encouragement for one another. Conversation starters may be posted by staff members if activity is low. There will also be an anonymous, online, question and answer forum where participants can post their wellness questions and a nurse or specialist can post a public answer.

They will be instructed to call the Wellness Partners when they receive the toolbox. If they fail to respond within 2 weeks, they will receive a call from a Wellness Partners staff member. If they fail to answer or return the call within one week, no further attempts will be made to

contact them and no further materials will be sent. They will be considered “dropouts.” In the response call to those who continue participation, they will be coached on every material that is in their toolbox.

Follow up will include 4 components:

- 1.) Receipt of monthly “Daily Cut” publications,
- 2.) Continued access to online message boards,
- 3.) Receipt of physical activity stage-matched packets (as needed), and
- 4.) Phone calls from Wellness Partners staff members at 2 weeks, 1 month, 2 months, and 3 months to assess progress in all three areas of weight management (physical activity level, use of stress management skills, and mindful eating), answer questions, make referrals to other specialists.

At the three month follow-up, participants will be encouraged to continue using the online message board. Throughout the program, if an individual reaches the preparation stage for physical activity, they will be referred to the exercise physiologist to devise an exercise plan. If at the three month follow-up an individual is still in contemplation for physical activity, they will be sent the preparation packet and be instructed to call the exercise physiologist when they are ready.

Beyond the three month follow-up, all participants will continue to receive the “Daily Cut” publication and will have continued access to the online message board. Any further contact with Wellness Partners staff members is encouraged, but must be initiated by the participant.

Evaluation Plan

This program will primarily be evaluated on an outcome basis. Baseline measures of fasting blood glucose, blood pressure, BMI, readiness to change and confidence to change will be available for comparison at post-intervention as well as at six months, one year, or any other time frame as needed. Success as measured by these parameters will also be indicative of the success of decreasing healthcare costs, as there is a strong established link between health

indicators and the amount of health care dollars spent (US Department of Health and Human Services, 2013). Pre and post intervention measures for the use of stress relieving techniques and awareness of eating patterns and physical activity will be compared as a part of process evaluation to determine if the materials received translated to behavior changes as intended. A financial effectiveness analysis may also be feasible at one or two years by comparing the cost of the materials and the health care dollars spent by those who participated and those who did not participate but were eligible.

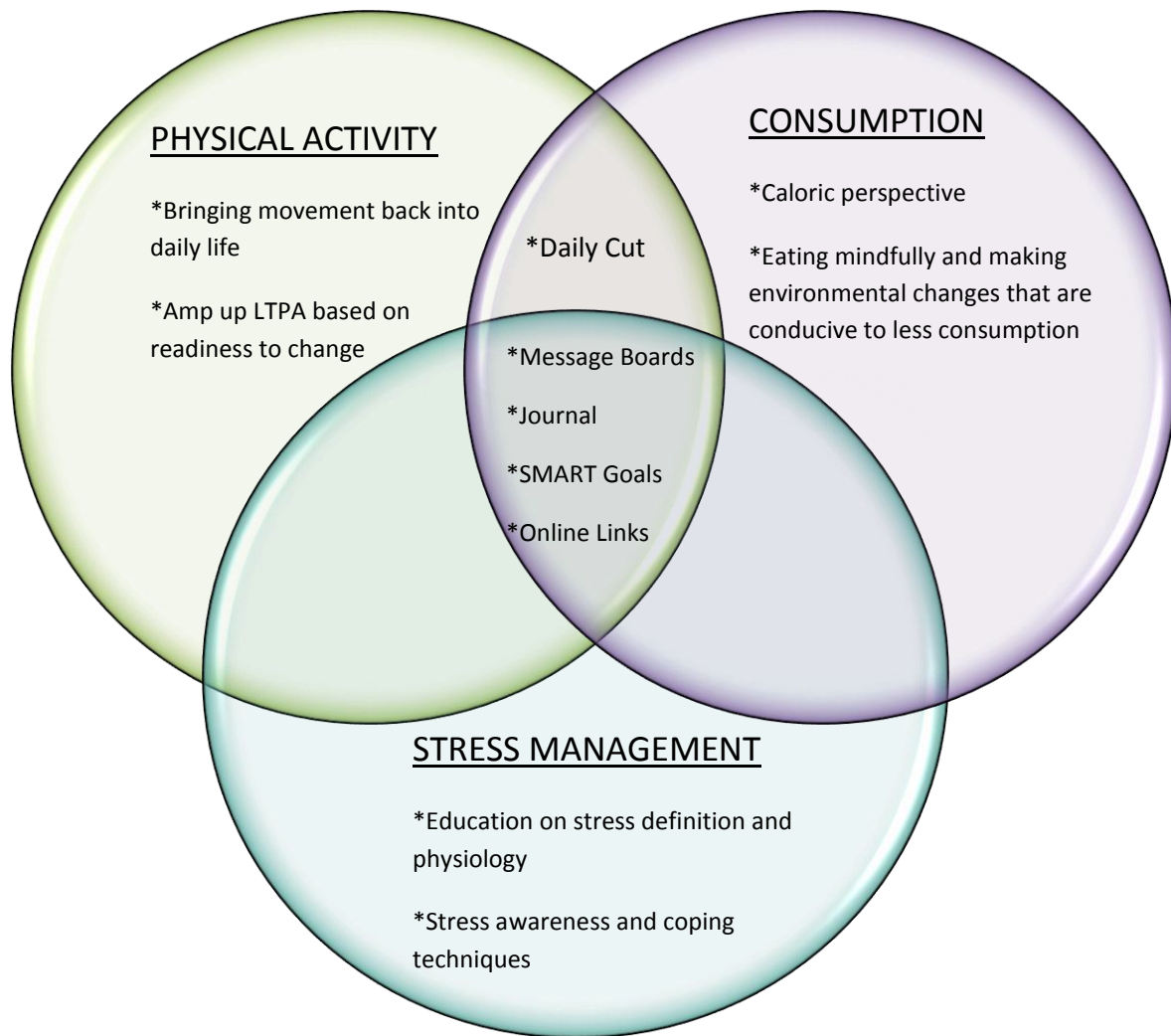
Conclusion

Although it is well established that very individualized, intensive counseling is the most successful strategy for behavior change, this program integrates other more cost-effective strategies that research has shown to provide positive outcome on a population level. We will attempt to maintain as much personalization as possible within the limited access to the resource of personal coaching time available. The basis of the investment in such a program is rooted in the recent success of lifestyle interventions targeting very small and subtle changes that begin to multiply. There are strategies that can target these small building block type changes which do not require extensive individualized coaching with a healthcare professional. Social support is quite important to success, and the program will attempt to establish an online support system for the participants of the program. As the program currently operates, the Wellness Partner's specialists are making the initial investment in the client's health, and then hoping to recruit them into caring about their health. The new program will require eligible people to commit to some change and self-select to join Health Boost instead of being "hunted down" by the specialists. This shift in recruitment strategies should ensure that the Wellness Partner employees involved in the implementation of the Health Boost program are spending their time on coaching calls with individuals who are appreciative of the resource and invested in making positive health changes in their life. The Health Boost weight-management program will focus more on establishing small, maintainable successes in lifestyle change as opposed to the traditional focus on weight loss, diet restrictions, and exercise regimens. By using strategies that are not openly targeted at "diet and exercise" but rather, a triadic

approach to self-awareness and mindful changes in environment paired with intent to change behavior, the program will encourage personal investment in health status among the participants. These approaches will be developed using the Transtheoretical Model as a framework. Based on the current body of literature, it will offer a promising foundation for long-term behavior change.

MINDFUL LIVING

For Weight Management



The Stages of Change Questionnaire: Physical Activity

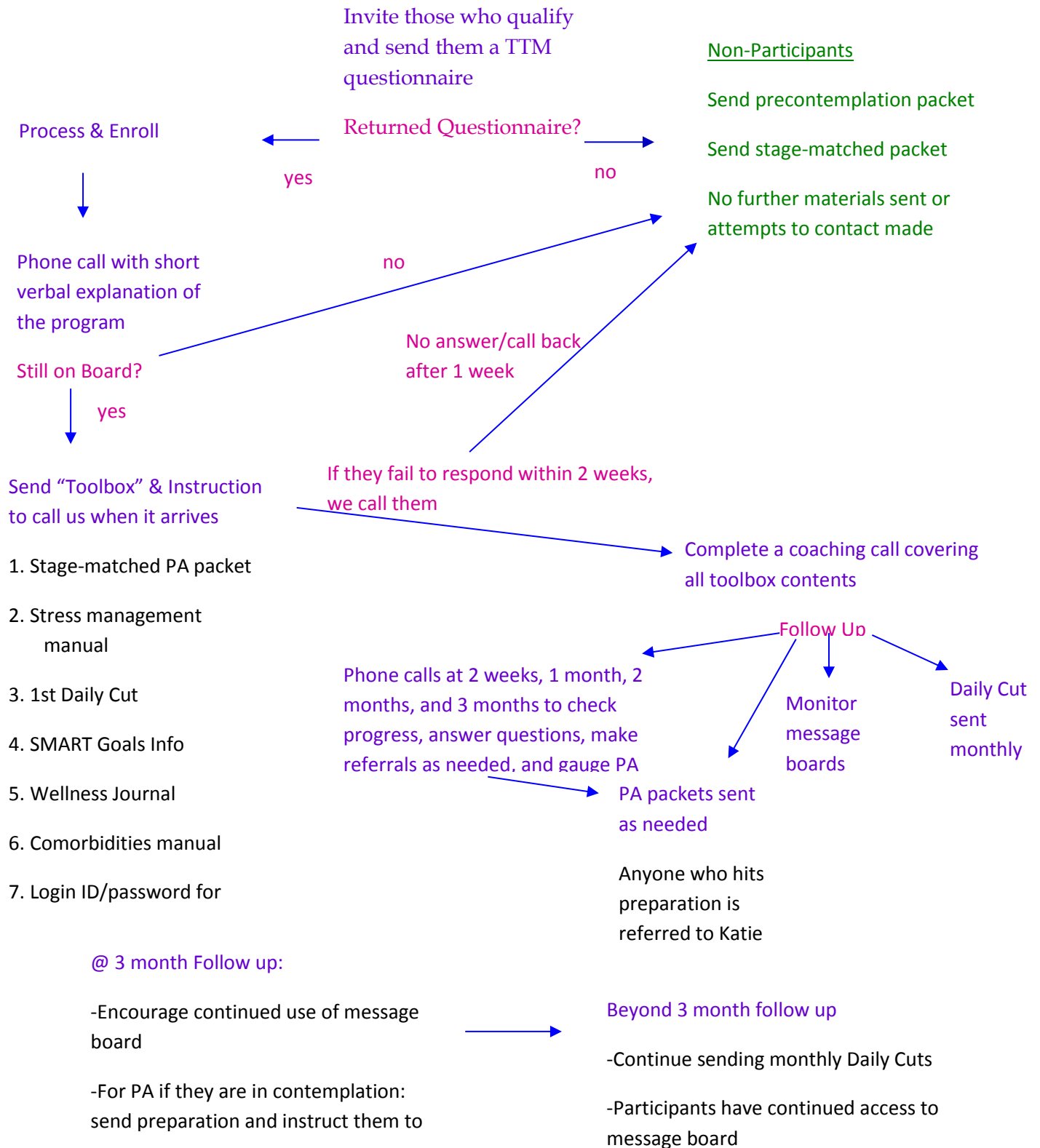
Physical activity includes activities such as brisk walking, jogging, cycling, swimming, or any other activity, such as gardening, in which the exertion makes you feel warmer or slightly out of breath. It does not include regular daily requirements of your job.

	No	Yes
1. I am currently physically active	0	1
2. I intend to become more physically active in the next 6 months	0	1

For activity to be *regular*, it must add up to a *total* of 150 minutes or more per week of activity that makes you at least slightly winded or out of breath. This can also be stated as 20-30 minutes of physical activity outside of work on 5 or more days per week.

	No	Yes
3. I currently engage in <i>regular</i> physical activity	0	1
4. I have been <i>regularly</i> physically active for the past 6 months	0	1

Mindful Living
for weight management



Appendix E: Health Boost Type 2 Diabetes Manual Content

Type 2 Diabetes

Definitions:

Type 2 Diabetes: A chronic condition in which the body's cells have become resistant to the effects of insulin resulting in difficulty regulating blood sugar. Also known as “noninsulin dependent diabetes”.

Glucose: Glucose is sugar. It is an energy source that every cell in our body needs to survive. The glucose our body uses for energy comes from the food we eat. When we eat carbohydrates such as fruit, bread, or pasta, they are broken down in our digestive system. Glucose is one of the usable products of this digestion. Once your body has made glucose, it moves to your blood, and is what we refer to as “blood sugar”.

Insulin: Insulin is a hormone produced in the pancreas and is released in response to high levels of glucose in the blood stream. Its purpose is to get the body's cells to take in the glucose from the blood stream. Basically, it helps the body use the sugar in your blood. You could think of insulin as an escort. Glucose can't enter the party inside the cell unless it shows up with insulin.

What happens to your body in Type 2 Diabetes? A person with Type 2 Diabetes is still producing insulin in their pancreas. The problem is that their cells have become desensitized or resistant to their own insulin. In other words, the body's cells need more insulin than normal to take in the same amount of glucose. It is much like building up a tolerance to a medication or even alcohol. If you begin drinking 3 beers every night to relax, eventually, you will have to drink 4 or 5 beers to achieve the same level of relaxation. Insulin use can be seen the same way. If you are eating lots of foods that are high in glucose, then your body will need more and more insulin to use it. If you are also inactive, these effects are much worse. The reason why inactivity is dangerous for diabetics is that your muscles only need as much fuel as you are using. It is just like a car. Once you fill up your gas tank, you must use some of the fuel before you can put anymore in. It is no different with your muscles and sugar. If you are not using your

muscles, then they are not burning the fuel that glucose is giving them, and just like your car, your muscles will not take in any more fuel until some is used up. Overeating leads to high blood sugar. High blood sugar releases insulin. Insulin is trying to coax your cells into taking the extra glucose because the blood stream doesn't want it. Your cells don't want it because they are not doing anything that requires the extra energy. We call this refusal to take in more glucose "insulin resistance". Insulin resistant cells define Type 2 Diabetes. This flowchart offers an easy look at the process: (**Flowchart is at the end of the document because of formatting issues for now**)

Fast Facts on Type 2 Diabetes

20 Million	Number of diagnosed cases of diabetes in America
7 Million	Estimated number of un-diagnosed cases of diabetes in America
8%	Portion of total population of America with Diabetes
90-95%	Portion of diabetes cases that are type 2
\$175 Billion	Amount of money it takes to treat the diabetics in America each year
4 to 7	Average number of years that Type 2 Diabetes takes off of your life

Diabetes is the leading cause of kidney disease, nontraumatic lower limb amputation, and new cases of blindness among adults in the USA. It is also a major cause of heart disease and stroke (both in the top five causes of death.) On it's own, diabetes is the 7th leading cause of death in the US, shortening the lives of those diagnosed by an average of 4-7 years.

Am I at risk for developing Type 2 Diabetes?

Here are a few things that increase risk of developing Type 2 Diabetes:

- Heredity. If you have family members with Type 2 Diabetes, your risk increases.
*A family history is NOT a guarantee that you will get it too. Diabetes is NOT genetic and there are many things you can do to offset or reduce the risk from

family history. A well-balanced diet and daily physical activity are the best things you can do. As a bonus, they also help reduce your risk of a ton of other health issues!

- Age. Risk increases with age, especially once you are over 40
- Sex. Women are more likely than men to develop Type 2 Diabetes
- Ethnicity. African Americans, American Indians/Alaskan Natives, Asian Americans, Pacific Islanders, and Latino Americans are at higher risk.

Good News! Many of the risk factor for Type 2 Diabetes can be changed by lifestyle choices. If you have any of these risk factors, there are steps you take to improve your risk:

- Weight. More than 80% of people with Type 2 diabetes are overweight or obese.
- Physical Activity Level. Activity helps your cells use your blood sugar, just like insulin. 150 minutes of exercise a week will reduce your risk for Type 2 Diabetes and a ton of other health issues including hypertension, cholesterol, and obesity. (All of which are risk factors for diabetes as well!)
- Nutrition. It is important not to eat too many calories in order to control your weight. Limiting sugary or processed snack food such as candy and potato chips and eating complex carbohydrates such as oatmeal and brown rice will help to keep your body's response to insulin normal.
- Hypertension. A blood pressure of 140/90 mm Hg or higher increases your risk
- Poor cholesterol profile increases risk.
 - HDL cholesterol ("good" cholesterol) levels of 35 or lower and/or
 - Triglyceride levels of 250 or higher
- Having a diagnosis of pre-diabetes is like a "heads-up". If you have been diagnosed with pre-diabetes, it is very likely that you will develop Type 2 Diabetes if you do not make some changes to your lifestyle.
- **What are the symptoms of Type 2 Diabetes?**

- * Excessive thirst and frequent urination
- * Extreme hunger
- * Fatigue, or a feeling of being "run down" and tired
- * Blurred vision
- * Dry, itchy skin
- * Tingling or burning pain in the feet, legs, hands, or other body parts
- * High blood pressure (> 120/80mm Hg)
- * Mood swings or depression
- * Frequent infections, such as urinary tract infections, yeast infections, and skin infections
- * Slow healing of cuts and bruises

Should I be tested?

The National Institutes of Health (NIH) recommends that people age 45 and older consider getting tested for diabetes, and the American Diabetes Association (ADA) suggests a routine test every three years for those over 45, especially if they are overweight, or for those under 45 if they are overweight and have another diabetes risk factor. People with additional risk factors should be tested more often.

How does my doctor determine if I have Type 2 Diabetes?

There are 3 tests that your doctor can do to test you for Type 2 Diabetes.

- Glycated Hemoglobin Test (A1C): Blood test that gives an average blood sugar level for the past 2-3 months.
- Fasting Blood Sugar Test (FBS): Blood test taken after an 8 hour fast.
- Oral Glucose Tolerance Test (OGTT): Blood test taken after an 8 hour fast followed by drinking a sugary beverage and then re-testing after 2 hours to see how quickly your body can clear glucose (sugar).

The following lab values are the guidelines for diagnosing diabetes:

- An A1C value of 6.5% or more

- A random or “non-fasting” plasma glucose value of 200 mg/dl or more (in the presence of diabetes symptoms)
- A fasting glucose value of 126 mg/dl or more
- An oral glucose value of 200 mg/dl or higher at 2 hours post-glucose load

*A definitive diabetes diagnosis requires a second positive test performed on a different day.

How can Type 2 Diabetes hurt me in the long run?

If Type 2 Diabetes is not given the time and attention it deserves to be managed, there are many serious, negative consequences that may happen. These include:

- Heart Disease. Heart disease is the leading cause of death in diabetics, mostly due to the narrowing of arteries that it causes.
- Kidney Disease/Failure. Diabetes makes it hard for the kidneys to do their job, which is to clean waste products out of the blood. In fact, diabetes is the leading cause of kidney disease.
- Diabetic Neuropathy. This is damage to the nerves and blood vessels. Lower limbs and feet become numb and cold. Eventually, this loss of sensation can lead to amputation if proper foot care is not exercised. Diabetes is the leading cause of non-traumatic lower limb amputation in the country.
- Sexual Dysfunction: Damage to the nerves can cause impotence in men and impaired sexual arousal or painful intercourse in women.
- Gum Disease: Diabetics have a higher risk of developing gum disease
- Eye Disease. About half of all diabetics end up with retinopathy, which is blood vessel damage in their eyes. Abnormal eye pressure, or glaucoma, is also twice as likely in diabetics. Finally, cataracts which cause cloudy vision are also a common problem for diabetics. Together, diabetic eye disease leads to about 25,000 new cases of blindness each year, making it the leading cause of new blindness in the country.
- Financially, a person with diabetes spends twice as much in medical expenses as someone without it
- Death: Diabetics have twice the risk of death of a non-diabetic

I have been diagnosed with Type 2 Diabetes. Now what?

Fortunately, there are many steps you can take aside from medication that can help you to manage and control your Type 2 Diabetes. The following is a list of strategies you can use to make sure that you keep your diabetes controlled and avoid as many negative outcomes as possible:

- Stop Smoking
- Treat high blood pressure and high cholesterol
- Track your glucose levels
- Visit your doctor, dentist, and optometrist regularly
- Nutrition:
 - Carbohydrates
 - Complex carbohydrates are the key to diabetes management. Complex carbohydrates break down more slowly than simple carbs and provide a longer, more stable stream of energy. Also, the more natural carbohydrates offer more nutrients and have a much smaller chance of being stored as fat. You should try to eat about the same amount of carbohydrates at similar times each day in order to have a steady stream of glucose being made.
 - Some great sources of complex carbs are fruits, oatmeal, bran, brown rice, sweet potatoes, unsalted beans, wheat germ, cornmeal, and barley. It may be helpful to look for products with “bran” or “germ” right in the name.
 - Try to avoid simple or refined carbohydrates as they do not offer added nutritional benefit, are more likely to be stored as fat, and can cause fast spikes in blood sugar. Examples of these carbs to use sparingly are: refined sugar (white, brown, or powdered), bleached flour, honey, syrup (including soft drinks), and pasta. Substitute sweeteners will not affect your blood sugar. The best ones to use are stevia or splenda.

- Fiber

- Fiber is another very important element to diabetes management. Fiber slows the uptake of sugar, helping to regulate blood glucose levels and lower your risk of heart disease (the number one killer among people with diabetes.) The great thing about whole grains is that they are also an excellent source of fiber, especially beans. Other high fiber foods to include in your diet are citrus fruit, berries, dark green leafy vegetables like spinach and kale, orange vegetables like carrots and squash, and nuts.

- Protein

- Limit portions of high fat proteins such as bacon. Stick with lean proteins and low-fat dairy products. You can calculate the amount of protein you need in one day by dividing your weight in pounds by 2.2. Then, multiply by 0.8. This will give you the number of grams you need of protein per day.


$$(\text{weight in pounds} / 2.2) \times 0.8 = \text{Grams of protein needed per day}$$

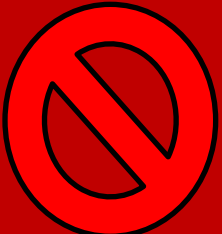
- Eating the correct amount of protein can reduce the threat of kidney disease. Also, try to incorporate heart-healthy fish twice a week. This includes salmon, cod, tuna and halibut, which contain high levels of omega 3, which promotes heart health. If you find it hard to meet this goal, consider taking a fish oil supplements.

- Fats

- In general, fat intake should be limited. Monounsaturated and polyunsaturated fats are the preferable type of fat and include nuts, avocado, olives, and canola, peanut, and olive oils. These can help lower cholesterol when consumed in small amounts.

- Fats to avoid: saturated and trans-fat. These include processed snacks and baked goods, shortening and margarine, hot dogs, bacon, and bologna.
- Other rules of thumb
 - Eat less food more often. Eat correct portion sizes, but eat *at least* 3 times a day.
 - Limit sodium (aka salt) to less than 2,000mg per day
 - Always keep a water bottle with you and drink as often as you can to help offset risk of kidney disease
 - Limit caffeine and alcohol consumption

	Carbs	Protein	Fiber	Fats
	Fresh fruit or “no added sugar” canned fruit Oatmeal without added sugars Bran Brown rice Sweet potatoes “No added salt” beans Wheat germ Cornmeal Barley	Salmon Tuna Cod Halibut Chicken Turkey	Whole grains Beans Citrus fruit Berries Dark green leafy vegetables like kale, spinach Orange vegetables like carrots and squash Nuts	Nuts Avocado Olives Canola, peanut, and olive oil *Even good fats should be limited

	Granulated sugar Brown sugar Powdered or confectioners' sugar Bleached flour Honey Soft drinks Maple syrup White pasta	Limit fatty red meat Bacon Hot dogs Bologna		Potato chips and other processed snack food Shortening Margarine Hot dogs Bacon Bologna
---	---	--	--	--

- Physical Activity: The more you move, the more you *can* move. Physical activity can help regulate blood sugar and increase insulin sensitivity, lowering your need for medication. In addition, it lowers your risk of heart disease and has positive effects on sleeping patterns and mood. However, there are some special considerations for exercise for individuals with Type 2 Diabetes.
 - Develop a schedule that works for you
 - Exercising at the same time each day will help you to maintain the habit, as well as minimize risk of exercise-related changes in blood sugar
 - Do not work out immediately following a meal or insulin injection. A general rule of thumb is to exercise one to two hours after a meal
 - Check glucose before exercising, especially when you are just starting. Do not exercise if your glucose is above 250 mg/dl or lower than 70 mg/dl.
 - If you are not used to physical activity, start slowly with 10 minutes or so at a time.
 - Drink plenty of water before, during, and after exercise
 - Always carry your medical identification with you
 - Practice good foot care by wearing comfortable, well-fitting shoes and cotton socks and inspecting feet after exercise for any blisters, cracks, swelling, etc.

- Stick to only mild, seated exercising if you have any open sores on your feet in order to avoid making them worse.
 - In general, 1 hour of exercise requires an extra 15g of carbohydrates either before or after exercise. Always carry a non-fat carbohydrate with you in case your blood sugar gets too low. If blood sugar is lower than 100 mg/dl after exercise, a carb should be consumed.
- Keep tabs on your body
 - Have an eye exam once a year
 - See a dentist twice a year
 - Moisturize your skin regularly and treat minor cuts and bruises to avoid infections
 - Look at your feet every day. Check in between the toes and the bottom of your feet as well. Avoid going barefoot and always be certain you thoroughly dry your feet after washing. Inform your doctor if you find any unusual sores, calluses, blisters, or breaks in the skin.

Putting all of this together into a plan that you can succeed at can be intimidating! Remember, the Wellness Partner's specialists are here to help you succeed and can assist you in creating a plan that is right for you!

What should I ask my doctor?

- What should I do/look for when I check my feet?
- Can I trim my own toenails?
- Where can I start with exercise? Are there any activities I should avoid?
- When should I check my glucose and what do I do if my levels are too high or too low?
- How do I choose food when I am traveling or eating out?

- What strategies are safe for controlling my high blood pressure or cholesterol considering that I have diabetes as well?
- Are my children at increased of developing diabetes? What can I do to help them prevent it?

* Before going to the doctor, write down your questions and take a paper and pencil with you. Bring any lifestyle, diet, or glucose level journaling you have done. Be honest with your doctor about symptoms and lifestyle. They cannot help you if you are not honest.

Remember!

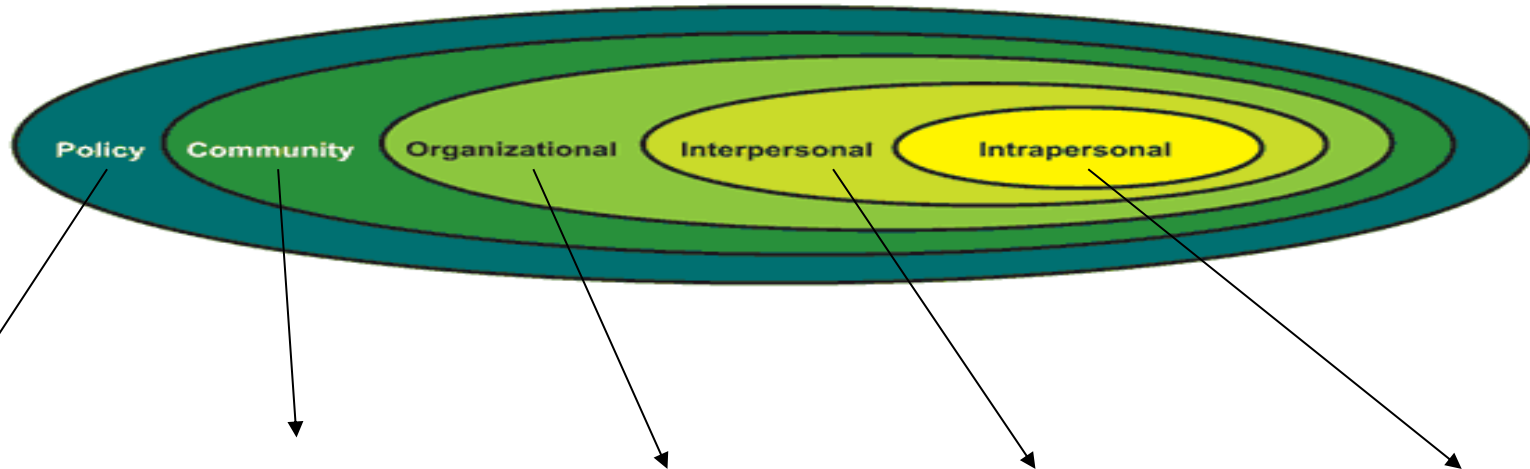
You are not alone! The Wellness Partners staff is here to make sure that you get all of the support and tools you need to control your diabetes. You are not at the mercy of your diabetes! Many people with Type 2 Diabetes live a healthy and fulfilling life, and you can too! The key is to be proactive about managing your diabetes and preventing any damage to your body that can occur from poor disease management.

Additional resources

Webmd.com

Diabetes.org

Ecological Model for Health Promotion Interventions



Future incentives tied to the Health Boost program

Future policy changes associated with website development

Future changes in Health Boost criteria

Expand marketing on the company website, Facebook page, and Pinterest boards

Health Fairs

Health Fairs

Employee Benefits guide

Website discussion boards and Q&A forums for participants

Health Boost Weight Management Program

- Decisional balance
- Self-efficacy
- Processes of change
- Stages of change