

A QUALITY IMPROVEMENT PROJECT
TO ADDRESS VETERAN OBESITY

by

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ABSTRACT

Obesity is rising, and veterans have more risk factors than the general public. The health implications and financial burden are enormous. Established guidelines recommend weekly in-person intensive lifestyle counseling focused on diet, exercise, goal-setting, and self-monitoring. Despite referrals to free obesity management classes, few veterans choose to engage. Alternatives to these referrals include provider engagement and nurse follow-up. Research shows promising evidence that self-monitoring with the use of smart phone apps with nurse phone support results in reductions of BMI for some patients. By establishing a clinic workflow, this QI project sought to show that primary care teams can manage obesity alongside other chronic health conditions. The healthcare teams screened, assessed, and began treatment for obesity over an 8-week implementation period. Data from the pilot implementation show greater than 90% staff compliance with process measures. Provider referral rates increased 20% suggesting increased comfort with discussions about weight over time. The project demonstrated that the clinic process is feasible for staff to deliver. Future implementations can focus on patient-level outcomes, such as reduction in BMI and acceptability of the intervention to patients.

CHAPTER ONE

CHALLENGE OF VETERAN OBESITY

The most prevalent chronic disease in the US is obesity. The latest available data from 2017 to 2018 place the current rate of obesity among adults at 42.4% of the United States population. Over the past several decades, this rate has been steadily rising and represents a 30% increase since the year 2000. Trends of severe obesity have doubled since 2000; it now affects 9.6% of the U.S. adult population (Hales et al., 2020). Projections maintain that, by 2030, greater than 50% of the adults will be considered obese (Wang et al., 2020).

Among veterans, these rates are most likely higher. Rates of veteran obesity have generally outpaced the general U.S. population. In 2000, 25% of VHA users were obese (Wang et al., 2005). By 2006, 35.5% met criteria for obesity (Noel et al., 2010). In 2017, these numbers increased to 41.0%, with a higher rate among racial minorities and those with serious mental illnesses and diabetes (Breland et al., 2017).

Especially concerning is the steep rise in the number of veterans with severe obesity. Obesity is classified as Class I (BMI 30 to <35 kg/m²), Class II or moderate (BMI 35 to <40 kg/m²), or Class III or severe (BMI >40 kg/m²). The known health risks and treatment challenges are more pronounced the higher the class of obesity. The population of veterans with very severe obesity with a BMI of 50 kg/m² or above grew more rapidly between 1986 and 2010 than the population with less severe forms of the disease (Breland et al., 2017). Epidemiology studies forecast a continuing increase of obesity in the U.S. veteran population,

especially in younger veterans and those using the VHA as a primary source of care (Stefanovics, Potenza & Pietrazak, 2018).

Risk Factors

The causes of obesity are complex and multifactorial. However, the convergence of mental illnesses, stress, loss of structured environment, and social factors places veterans at increased risk of developing obesity. Veterans suffer from higher rates of PTSD, anxiety, and depression than the public (Breland et al., 2020). While literature has noted that food can be self-soothing for people in mental distress (Levitt, 2007), medications used to treat these disorders often result in weight gain without a change in calorie intake (Obesity Medicine Association, 2021).

High levels of stress are associated with weight gain (Teachman & Tedrow, 2013). This is consistent with published reports that this population tends to gain weight rapidly after deployments and discharge from the service (Buta et al., 2018). Trauma has been identified as an independent risk factor for weight gain (Arditte et al., 2018).

Veteran weight gain is also enabled by the loss of structured environment once they leave military service. There are substantial reductions in physical activity after military discharge (Littman et al., 2013). The loss of military physical fitness and weight standards, changes in daily routine, and food environment all contribute to weight gain (Teachman & Tedrow, 2013). Veterans themselves report that the lack of autonomy while in the service is a barrier to learning how to manage their health when they leave service (Jay et al., 2014). As a result, treatment—

once discharged into a society with an overabundance of calorie-rich food and sedentary behavior—is challenging.

Social factors, such as low income, play a well-known part in the development of obesity. Veterans who use Veteran Health Administration tend to be more low-income (Zenk et al., 2008), disabled, and with more chronic physical and mental health conditions than veterans who do not use VA care (Stefanovics et al., 2018).

Health Consequences

Obesity has devastating health effects. Obesity increases the rates and risks of hypertension, dyslipidemia, diabetes, coronary artery disease, stroke, arthritis and musculoskeletal pain, sleep apnea, certain cancers, and disability (Centers for Disease Control and Prevention, 2021). Researchers have confirmed that obese veterans with COVID-19 are more likely to be hospitalized, admitted to ICU, and suffer death than non-obese veterans (Breland et al., 2021). The mortality rate among patients with obesity proportionally increased with BMI (Poly et al., 2021), especially if age of onset of obesity is less than 45 years old (Zheng et al., 2021). The Centers for Disease Control and Prevention now considers that obesity and overweight are the second leading cause of preventable death in the United States (2021).

Treatment of obesity offers several health benefits in the literature, including decreased risk of diabetes, cardiovascular disease, depression, and overall quality of life (Leblanc et al., 2018). Better control of obesity can substantially decrease the burden of chronic disease management in primary care. Despite these known benefits, treating veteran obesity has proven challenging.

Cost

Obesity is expensive. Medical costs per obese adult amount to \$1861–\$3097 more than normal-weight adults, depending on the severity of the illness. The aggregate costs of obesity in adults are now estimated at \$172 billion a year (Ward, Bleich, Log, & Gortmaker, 2021). This does not include indirect costs from obesity, which are estimated at \$1.24 trillion due to missed time at work, lower productivity, premature mortality, and increased transportation costs (Waters & Graf, 2019). As the great majority of patients stay within our healthcare system for life, the cost savings of discovering a practical treatment strategy are profound. For every obese patient that loses one unit BMI, healthcare costs per individual decreases \$167–\$347 (Ward et al., 2021).

Standard of Care

To address the obesity problem, the VA developed the MOVE! program based on established obesity guidelines (Kinsinger et al., 2009). The program offers in-person intensive lifestyle modification that consists of group classes offered once or twice a week for 8 to 12 weeks. Despite the free cost, enrollment in MOVE! has been low. Nationally, enrollment in this program hovers about 5%. This rate is lower in Montana, where only 2.45% of eligible veterans attended two sessions in the past year (VA Executive Summary, 2021). This low enrollment suggests an unmet need for obesity management acceptable to our patients.

Problem Statement

Projections forecast the rates of obesity in the veteran population will continue to increase. Eighty percent of veterans are currently overweight or obese; however, less than 2.5%

of them chose referrals to intensive lifestyle modification programs offered through the VHA. In addition, rural veterans are plagued by more chronic pain, mental illness, and disability than the general population. Veteran focus groups have called for increased availability of weight management programs. (Department of Defense/Veterans Affairs, 2020). Meanwhile, routine practice in primary care is a continued focus on referrals to intensive lifestyle management rather than directly providing obesity treatment.

Based on review of the literature, there are several modifications that can be made to the current primary care workflow to accommodate obesity management alongside other chronic health conditions. While in-person intensive lifestyle management remains the gold standard, translational studies show promise for alternate modes of delivery practical for primary care clinics to deliver. This project aims to establish a workflow that will screen for obesity, develop treatment plans, and offer follow-up.

This project aligns with the mission and purpose of the VA to improve veterans' health and lives. The project seeks to mitigate barriers posed by traditional intensive lifestyle management programs and increase access to obesity treatment. Since the project places the veteran at the center of their own care, it is patient-centered and individualized, focusing on small incremental changes that the veteran can incorporate into their daily lives. Furthermore, it is aligned with the VA's commitment to Whole Health, an initiative to help veterans self-manage their chronic conditions by taking an active role in treatment plans.

CHAPTER TWO

LITERATURE SYNTHESIS

The purpose of this literature review is to research pragmatic primary care-based interventions for treatment of obesity. In conjunction with a librarian from Montana State University, a literature search was conducted. A comprehensive search was conducted using three electronic databases (PubMed, CINAHL, and Psych net) to identify established guidelines and studies related to treatment of obesity in U.S. primary care clinics published between 2011 and 2021.

Guidelines

Three major guidelines exist to inform obesity management in primary care: The U.S. Preventive Services Task Force (USPSTF) (LeBlanc et al., 2018), the American Heart Association/American College of Cardiology (AHA/ACC) (Jensen et al., 2013), and the Department of Defense/Veteran's Affairs (DOD/VA) (2020). All the guidelines agree that behavioral lifestyle modification is the first-line treatment of choice in weight loss. While the USPSTF (2018) does not elaborate on the components of lifestyle modifications, the DOD/VA (2020) and AHA/ACC (Jensen, 2013) guidelines do. In these guidelines, lifestyle modification or interventions include three critical components: calorie restriction, an increase in physical activity and behavioral counseling.

Diet

The DOD/VA (2020) and AHA/ACC (Jensen et al., 2013) guidelines recommend consumption of a diet designed to achieve a deficit of 500–750 kcal per day, with a resulting loss of 1–2 pounds per week. For women, this equates to 1200–1500 kcal per day. For men, this equates to 1500–1800 kcal per day. If patients have more severe forms of obesity, calorie targets can be adjusted up. In these cases, the guidelines recommend a reduction of 500–700 kcal per day. Reducing portion sizes and decreasing the amount of sugar or fat are convenient ways to achieve negative energy balances (Jensen, 2013).

There is little evidence that any one diet strategy works better than another. A variety of dietary approaches, including low-carbohydrate, high protein, Mediterranean Diet, or low-glycemic-load diets, induce weight loss if they produce a negative energy deficit. There is little evidence that certain amounts of fat, protein, or carbohydrates affect weight loss when the different diets are matched for calorie level. The best diet is the diet that the patient can follow so dietary preferences should be considered when choosing a diet.

Physical Activity

The guidelines recommend 150–180 minutes per week of moderately vigorous aerobic activity, such as walking. The type of activity does not matter as long as patients are exercising hard enough to not be able to sing while engaged in the activity. For some patients, this will mean jogging while for others, it will be walking. Physical activity alone is not likely to result in weight loss if not combined with calorie restriction. Thus, in DOD/VA (2020) and AHA/ACC

(Jensen et al., 2013) guidelines, patients are encouraged to exercise primarily for health benefits rather than weight loss, per se. However, physical activity is central to maintaining weight loss.

Patients who report lack of time to exercise can be encouraged to engage in multiple brief bouts of activity throughout the day. Patients can also increase exercise by incorporating small changes to their daily activity such as using stairs rather than elevators, walking from the farthest parking space, or mowing their lawns with a manual device. Many patients may have to start with a small amount of physical activity that is gradually increased over time.

Behavioral Therapy

Behavior therapy teaches patients tools to change eating and physical activity patterns. Although the guidelines are based on studies with heterogeneous interventions, common behavioral techniques are noted below.

Goal-Setting

Goals for behavior-change identify the behavior to be modified and how it will be achieved. Patients are taught to set goals that they believe they can accomplish and that will produce the desired negative energy balance. If progress toward a goal is suboptimal, then clinic staff can assist patients in problem-solving how to overcome barriers.

Goals should be individualized to the patient. It is most helpful when patients themselves identify which goals they feel confident they can incorporate into their daily lives. Ideally goals will be directed at increasing physical activity and decreasing caloric intake. As patients at this facility often have significant comorbid chronic pain and mobility issues, goals will need to start small. As patients build on previous success, goals can be gradually increased.

Examples of starting goals include:

- “I will weigh myself 4 days this week.”
- “I will go on a walk on Mondays, Wednesdays, and Fridays around my neighborhood for 20 minutes.”
- “I will walk to the mailbox instead of driving in my car 5 days this week.”
- “I will drink a glass of water before I eat every meal this week.”
- “I will walk around the couch in my living room every time there is a commercial when I am watching TV for the next week.”
- “I will chew gum when I feel like eating candy at least 4 times this week.”
- “I will eat at least one vegetable serving a day for 3 days this week.”
- “I will walk with a coworker for 15 minutes during lunch 3 days per week for the next 4 weeks.”
- “I will bring lunch with me to work at least three times per week.”

Self-Monitoring

Self-monitoring of calorie intake, physical activity, and body weight is regarded as central to behavioral counseling. The first step of behavior change is awareness. Tracking through recordkeeping helps individuals identify behavioral patterns and target areas for change. It also provides information regarding progress toward goals. When clinical staff regularly review patients’ logs to evaluate progress toward goals, accountability is reinforced. Recordkeeping also helps staff identify barriers and helps stimulate conversations to problem-solve them. Clinic staff can also congratulate patients when goals are met (Burke, Wang, & Sevick, 2011).

Translational Studies

In-person lifestyle modification for 12–14 sessions is considered the gold standard by the USPSTF (2018) and AHA/ACC guidelines as this was the most studied treatment modality. However, this form of behavioral counseling has generally been found to be too time consuming and poorly reimbursed to offer inside primary care clinics.

Recent translational studies have demonstrated pragmatic interventions effective in primary care. These interventions include team-based models, behavioral interviewing techniques and use of technology such as phone calls and smart phone apps to deliver individualized behavioral counseling. These techniques can streamline the expense and man hours required.

Team-Based Model

Patients benefit when providers offer behavioral counseling. In their systematic review, Melendez et al. found that the most effective weight-loss interventions were those in which providers set the energy intake, exercise, and weight goals (2018). Qualitative studies with group participants show that the supportive relationship with their provider is a crucial aspect of their weight-loss success. Supportive relationships were described as providing an extrinsic motivator, or "hook," which helped to overcome barriers such as skepticism about dietary advice or a lack confidence to engage in physical activity (Sutcliffe, 2018).

However, it is not practical for providers to deliver all the counseling necessary for weight loss, which can be as frequent as weekly for some patients. A team-based model for obesity care in the primary care setting, in which non-provider clinic staff provide follow-up

counseling, has been studied by several trials. Tsai et al. (2010) is the first known weight-loss trial using a team-based model in primary care; medical assistants were trained as counselors. The intervention group received eight short, 15-to-20-minute counseling sessions as well as quarterly PCP visits and lost a mean 4.4 kg over 6 months, while the control group that did not receive follow-up counseling lost 0.9 kg. Most recently, Hochsmann et al. (2020) demonstrated weight loss of 4.5% BMI after 24 months of monthly phone calls from trained lifestyle coaches within the primary care clinic in a hard-to-treat demographic of rural minority patients.

Counseling Frameworks

Two tools that are commonly used in tailoring behavioral counseling to the individual patient are the 5As of Obesity and motivational interviewing (MI). The USPSTF (2018) encourages the use of the 5As framework for obesity counseling: Ask, Assess, Advise, Agree, and Assist.

First, the provider asks the patient their diet, physical activity, and weight. This question is as simple as “Is it okay to talk about your weight?” Next, the provider provides clear strong advice. This can be simple and directive “you need 30 minutes of exercise 5 days a week” or stated in more general terms “it is really important that you exercise more.” The provider also assesses readiness for change by asking the patient if losing weight is something they want to do or see themselves able to do. The provider also assists the patient by offering brief counseling and education. Finally, the provider arranges follow-up. For example, "I will have the nurse call you to for a follow-up. She is an excellent resource to help you attain a healthier weight." (Canadian Obesity Network, 2020).

One study found implementing the 5As framework in primary care clinics doubled the initiation of obesity management compared with clinics that did not use the intervention (Rueda-Clausen et al., 2014) Another study found that patients of 5As-trained providers lost significantly more weight over 12 months compared to patients of the non-5As-trained residents (Jay et al., 2013).

Another counseling style is motivational interviewing (MI), which is heavily endorsed by the other two guidelines (VA/DOD, 2020, & Jensen et al., 2013). There are several types of motivational interviewing questions designed to elicit patient commitment. For example, providers can ask “How is your current weight affecting your life right now?” or “On a scale from 1 to 10, how ready are you to make changes in your eating patterns?” Providers can assess readiness to change with other questions such as “How would you like your health to be different?” or “How do you feel about changing your eating or exercise behaviors?” Other questions home in on the importance to the patient of changing their behavior, such as “What do you think would happen if your weight doesn’t change?” or “What are the most important things to you? What impact does your weight have on that?” Other questions are designed to build confidence in patients to change their lifestyle factors. “What would make you more confident about making these changes?” or “Are there things that you have found helpful in previous attempts to change?” are two of these types of questions. Finally, some questions can address specific barriers, such as “What things stand in the way of your taking a first step?”

This type of counseling has been shown to be particularly effective when patients are ambivalent about changing their behavior. Study participants who received MI in six face-to-face sessions followed by nine telephone sessions lost 3.5 kg more on average than patients in

the control group (Simpson et al., 2015). Because MI includes patients identifying their own goals and motivations, it is ideally suited to tailoring interventions that match the individual patient. Using MI questions to individualize obesity interventions has proven effective for weight loss as well as being cost effective (Armstrong et al., 2011).

Technology for Remote Interventions

The guidelines recommend face-to-face counseling for weight loss, as this mode of intervention has been the most thoroughly studied. However, recent studies lend support to telephone calls and mobile applications as effective tools for behavioral counseling. In addition, they are more convenient modalities for patients, which could potentially increase adherence rates.

Phone Calls

Recent studies on behavioral lifestyle modification delivered through telephone calls show that this mode of intervention can result in clinically significant weight loss. Godino et al. (2019) showed weight loss of 3.63% BMI at 12 months in the intervention groups that received monthly phone calls from counselors while the control group that did not receive phone calls lost 0.61% BMI.

Even lower frequency of phone call-delivered counseling has been shown to result in weight loss. Lutes et al. (2017) compared the weight loss of a group of veterans who received six phone calls in a year to those who received them monthly and found no difference on weight loss. However, data from the VA Executive Summary (2021) show that phone calls appear to have a dose-dependent curve effect on weight in veterans. When patients enrolled in Montana

VA received two phone calls last year, they reported a weight loss of 0.3 pounds, but patients who received eight to 10 phone calls within the year lost 8.4 pounds.

The guidelines do not agree on frequency of behavioral counseling needed to produce weight loss. The USPSTF (2018) recommends at least 12 sessions while the ACA/ACC guidelines recommend 14 in a year (Jensen et al., 2013). Across studies, the mostly frequently studied schedule for phone calls in a primary care setting was weekly in the first 2–3 months and monthly thereafter. On the other hand, DOD/VA (2020) guidelines conclude that there is insufficient evidence to make any recommendation of frequency of encounters and recommend a schedule based on patient preference and treatment response. Therefore, primary care could potentially tailor the amount of follow-up phone calls to individual patient response.

Mobile Applications

The studies from which the guidelines were built used paper records to monitor food, activity, and weight. In the past 5 years, studies have consistently shown that smart phone apps increase adherence to self-monitoring in behavioral counseling. Popular apps on the market include LoseIt! And My Pal Fitness which can sum calorie intake and display how many calories are left in a days' allowance. Some commercial apps include a bar scan feature that will automatically add the calories contained in packaged food. Apps also allow user the ability to tag or identify commonly eaten items.

Commercially available smart phone apps often contain step counters and can calculate daily energy expenditure in calories. Some apps contain an accelerometer that can track the amount of time spent in moderate to vigorous activity. Other commercial apps contain pedometers that count the number of steps a patients takes in a day, displaying graphs of this

activity over weeks or months. Other physical activity apps are capable of measure biking and swimming. Overall, smart phones appear to be more effective than paper records in weight loss as they offer a more convenient way to track behavior and calories (Spring et al., 2017).

Three recent studies using mobile apps in the primary care setting to aid in weight loss show clinically significant weight loss. All the mobile applications had the ability to record dietary intake and physical activity. In Thomas et al. (2019), using a mobile application, supported by online education and monthly weigh-ins, produced as much weight loss as weekly in-person counseling. Bennett et al. (2018) showed more weight loss with a smart phone app combined with coaching calls than the control group that received an app combined with self-help materials and a list of community resources. Wang et al. (2018) documented more weight loss with mobile apps compared to paper diaries.

These studies included data on the frequency of self-monitoring with the mobile applications. The greater the frequency of self-monitory on the application, the more weight was lost in the intervention groups. Wang et al. (2018) and Thomas et al. (2019) observed that tracking frequency on mobile phones was greater than tracking on paper. Bennett et al. (2018) notes at least 80% compliance in tracking on the smart phone in subjects that lost weight. Meanwhile, one study showed that low rates of tracking on a smart phone app failed to demonstrate weight loss (Liang et al., 2014).

The ability of smart phone apps to increase weight loss through self-monitoring behavior is consistent with two longitudinal observation studies. Serrano et al. (2016) analyzed the data of more than 900,000 LoseIt! app users over 4 years and found that users who consistently tracked their diet, physical activity, and weight lost more weight. Going one step further, Kim et al.

(2017), in their longitudinal study of Noom users, discovered moderate evidence for a bidirectional association of logging activity and weight loss.

The smart phone studies also show significant weight loss with minimal face-to-face intervention. The only in-person interaction was monthly weigh-ins at the clinic in Thomas et al., (2019). Meanwhile, Bennett et al. (2018) included phone calls from lifestyle coaches as subjects used smart phones apps to track their activity and diet. However, Liang et al. (2014) did not find weight loss in a study design that did not provide any clinic staff follow-up. This is consistent with observations by Jay (2011), who found that veterans report they are open to smart phone apps for their healthcare as long as there is a knowledgeable person, like a nurse or provider, to provide support and feedback. The accumulated evidence suggests that weight loss and physical activity apps for obesity are not full replacements for in-person encounters. They can, however, augment face-to-face provider visits.

Conclusion

Established guidelines recommend lifestyle modification for weight loss. The three components of lifestyle modification are decreased calories, increased physical activity, and behavioral counseling. Common components of behavioral counseling include goal-setting and self- monitoring. Translational studies of these guidelines in the primary care setting have shown that a team-based model is an effective strategy to deliver behavioral counseling. Furthermore, frameworks such as the 5As and MI have evidence to support their use in individualized treatment plans for obesity management. The use of remote technologies such as phone calls and smart phone apps can be cost effective alternatives to face-to-face counseling.

The literature review suggests that providers setting behavioral goals with patients can be effective for weight loss in primary care when supplemented with follow-up counseling by clinic staff. The length of the interventions can be as short as 10 minutes. However, more frequent interventions may result in more weight loss than less frequent interventions. While face-to-face interventions have the most evidence, a growing number of studies demonstrate remote technologies, such as phone calls and smart phone apps, can be as effective. The amount of counseling needed can be tailored to the individual patient rather than using a one-size-fits-all approach.

CHAPTER THREE

SETTING AND METHODS

This was a quality improvement project. The purpose of this project was to establish and standardize the treatment of obesity within a primary care clinic. Over an 8-week intervention, this project aimed to integrate obesity treatment into existing roles and clinic workflow. Patients were screened for obesity. Problem lists were updated with the class of obesity. The providers populated a template to document discussion of patient's obesity. For agreeable patients, the provider offered convenient and accessible technology: smart phone apps and follow-up nurse phone calls.

The Knowledge to Action (KTA) Framework (Graham, 2006) was used to guide the implementation of this evidence-based project. This model was chosen as it emphasizes adaptation and translation of new evidence into existing organizational structures. The KTA Framework allowed for selecting translational evidence that fit the internal and external healthcare environment rather than solely relying on clinical practice guidelines. The KTA Framework is made up of two cycles that are separate but related: Knowledge Creation and the Action Cycle. A figure of this model is included in Appendix A.

Knowledge Creation

Knowledge creation for this project followed the KTA Framework. The process is depicted as a funnel: studies go in and identification of clinical practice problems comes out. A bidirectional arrow indicates that clinical problems lead to knowledge creation and, in turn,

knowledge creation leads to identification of clinical practice problems. Knowledge creation in the funnel is composed of not only reading primary studies, but analyzing the studies that underlie systematic reviews, meta-analyses, and clinical practice guidelines.

In this project, knowledge inquiry was generated through careful appraisal of recent randomized controlled trials. These studies support the use of team-based care, MI, and the 5As of Obesity, well as phone calls and mobile applications in primary care settings. As shown in Chapter Two, these interventions produce weight-loss results comparable to traditional management as recommended by the guidelines. A further analysis of the studies used to compose the guidelines found that they were done outside the primary care setting and with subjects very different from our local population.

Action Cycle

The action cycle is made of seven steps and is depicted as a circle around the knowledge creation funnel. The seven steps of this projects' action cycle are noted below. It is important to note that the steps do not always go in one direction. In this framework, change can happen when a particular step informs the previous steps.

Once a problem is identified and solutions are selected, the KTA Framework calls for adapting these solutions to the local contexts. In the VA, this means using existing clinic workflows and clinical roles. Also, the framework calls for organizational facilitators to be exploited and barriers addressed. The project is then implemented with data collection and analysis. The final step of the model is to address sustainability of the intervention over the long term.

Identify the Problem

The first step was identifying a clinical problem: greater than 80% of veterans are overweight or obese. It involved determining there was a gap between established guidelines and current practice; namely, a lack of screening and diagnosis by the primary care team.

In this case, it also noted a gap between the guidelines and the local context. The local veterans are overwhelmingly rural white males with a higher burden of mental health conditions, disability, and chronic pain than the general population. Despite this high burden of disease, only 2.5% of these patients engaged in the recommended treatment, in-person intensive lifestyle modification (VA Executive Summary, 2021). This low utilization rate suggested an unmet need for acceptable treatment modalities.

As detailed in Chapters One and Two, the guidelines recommend a treatment modality that is not acceptable to most of the veteran population. At that point, the model called for going back into the knowledge creation funnel. Therefore, the literature was resurveyed for more up-to-date interventions. Interventions then selected for this project included team-based care, 5As and MI, and offering phone calls and smart phone apps.

Adapt to Local Context

The second step of this project's action cycle was to adopt these interventions to the existing clinic setting. The setting was a primary care clinic at the VA where care is delivered in teams. Each of the two teams was composed of a provider (NP) (one of whom is also functioning as the project leader), a Registered Nurse (RN), a Licensed Vocational Nurse (LPN), and a

medical support assistant (MSA). As noted in Chapter Two, team-based care utilizing nurses and ancillary personnel is effective in obesity management.

Nurse Practitioner: The NP diagnosed obesity. This provider managed the patient problem lists and documented annual wellness encounters in medical outpatient notes. In addition, the provider routinely offered phone calls and referrals for nurse phone calls.

Registered Nurse: The RN provided behavioral counseling for weight loss.

Licensed Vocational Nurse: The LPN screened patients for obesity with heights and weights at annual wellness encounters.

Medical Support Assistants: The MSAs scheduled follow-up nurse phone call appointments.

Assess Barriers/Facilitators

Assessing barriers and facilitators was an important step in the action cycle, as it allowed for more efficient planning. There were several facilitators for this project. Staff training in care of obese patients already existed on the facility's online learning platform. There was also online training for MI and the 5As of obesity management. Staff needed time to complete online educational modules; however, there was no added cost to provide this education.

Another facilitator was the electronic health record (EHR) that could be programed with templates. Templates were created for documenting obesity in annual wellness exams (see Appendix D). These templates were inserted into a standard office note with one computer mouse click. The templates were thus quick and easy for providers to use.

Barriers included a general lack of obesity-specific training in the staff's education. Most nurse practitioner programs (Hauff et al., 2019) and medical schools (Crowley et al., 2019) lack obesity-specific training. This lack of formal training allows the perpetuation of incorrect assumptions and biases, such as obese patients are lazy and lack will power. Weight stigma is a fundamental reason many obese patients do not seek medical care (Phelan et al., 2015). To address this barrier, the nursing staff and providers received a short introduction to obesity management at the start of the implementation cycle.

Another barrier was the work culture habituated to referring patients out to MOVE! intensive lifestyle classes in lieu of addressing obesity directly in the clinic. As previously mentioned, most veterans do not choose this mode of in-person intervention. An EHR alert that prompted referral to the program, thereby excusing primary care teams from initiating discussions of diet and exercise, was turned off for the duration of this project.

Select, Tailor, Implement Interventions

This phase involved planning and carrying out specific interventions. While future iterations of the action cycle may look at patient-level interventions and weight loss, this iteration focused on staff behavior to establish a clinic process. In this project, four main staff behaviors were established: screening patients with body mass index, updating the problem list, populating the obesity template, and offering mobile apps and follow-up phone calls. These interventions were chosen as they were easy to integrate into the existing clinic workflow and evidence supported their use.

The LPN screened for BMI while doing vital signs as part of the clinical encounter check-in process. The LPN charted the height, weight, and BMI in the EHR. If a patient's BMI was >30 , the LPN verbally told the provider that the screening for obesity was positive (see Appendix B for a clinic workflow diagram).

The provider then updated the problem list, noting overweight or obesity, specifying the class. As noted in Chapter One, there are three classes of obesity severity. Obesity is classified as Class I (BMI 30 to <35 kg/m²), Class II or moderate (BMI 35 to <40 kg/m²), or Class III or severe (BMI >40 kg/m²). The known health risks and treatment challenges increase proportionally with the burden of disease.

During the encounter, the provider used MI and the 5As framework to assess readiness to change. As previously noted, Melendez et al. (2018) and Sturgiss et al., (2018) demonstrated that the provider has a key role in the management of obesity. Patients benefit when providers are directly involved in weight-loss efforts. If a patient indicated readiness, the provider assisted the patient in setting initial behavioral goals.

The provider documented this discussion in the standard medical outpatient note by populating a template (see Appendix D). This template is a short, fillable form that documents that weight, physical activity, and diet were discussed. The template was designed to minimize the time it takes for practitioners to document the discussion. Practitioners were able to populate the template within a minute.

The provider also offered the patient technology, such as phone calls and a smart phone app. Phone calls from the nurse were designed to help patients develop further individualized SMART goals and increase patient accountability with behavior change. The MSA scheduled

follow-up nurse phone appointments as needed. Available staff handed the patients a flyer of diet tracking apps before the veteran left the clinic.

Roles of clinic staff are represented in Appendix C. The project ran from December, 2021, to February, 2022, with data analysis in March 2022 (see Appendix F).

Monitor Knowledge Use

Data collection from PACT team members was necessary to ascertain if the interventions had the intended effect. During implementation, data were collected on checklists devoid of patient identifiers immediately after a patient visit. The checklist asked the respondent to circle short yes or no responses to identify a particular staff behavior. Specifically, the checklist documented self-reports of staff behavior: if patients were screened for obesity, if the problem list was updated, if the obesity template was populated, and if the patient was offered nurse follow-up phone call and a smart phone app (see Appendix E). Providers filled these out immediately after a patient encounter and kept them in locked file cabinets. The project leader collected these at least weekly during the implementation period.

Evaluate Outcomes

Further iterations of this project will potentially be able to track patient behavior change and weight loss. However, the scope of this project was limited to establishing and standardizing clinic workflow. As such, data analysis was limited to practitioner and staff behavior.

The goals of this quality management project were:

- 1) 100% of patients will be screened for obesity with BMI during the implementation phase of this project by the LPN.
 - 2) The provider will update the problems list of 100% of patients with BMI >30.
 - 3) During annual wellness encounters, the NP will complete the obesity template in the medical note for 100% of patients with BMI >30.
 - 4) 100% of patients with BMI >30 will be offered phone calls and smart phone apps
- At the end of implementation period, the project leader conducted a data analysis. (see Chapter Four).

Sustain Knowledge Use

Addressing sustainability at the end of the implementation phase involved disseminating results. The results of this project were shared with faculty at Montana State University as well with other primary care teams in the organization during the monthly state-wide meeting in April, 2022.

Human Subject Protection

This project was reviewed by the Institutional Review Board of Montana State University. Data used to evaluate outcomes were de-identified.

Conclusion

The KTA Framework offered the opportunity to adapt best practices into existing clinic roles and workflow. Translational studies demonstrated techniques to offer viable obesity

management in the clinic without the need for outside referrals. By using team-based strategies, counseling frameworks, and remote technologies, it was possible to offer obesity management alongside other chronic health conditions. By following the KTA framework, after the above interventions were selected, organizational facilitators were identified and a plan to address barriers was put into action. A clinic workflow was developed that incorporated existing clinical roles. Finally, data collection and analysis demonstrated the feasibility of this approach.

CHAPTER FOUR

RESULTS AND DISCUSSION

The purpose of this project was to implement a process change. The intent was to implement a clinic workflow to accommodate the management of obesity within the primary care clinic rather than automatically referring patients to intensive lifestyle management classes. Two primary care teams (PACTs) at Fort Harrison, Montana VA participated. Two providers and five LPNs were involved.

The providers were two nurse practitioners, one of which was the project's leader. Each nurse practitioner was in charge of a four-member team, or PACT, that provided primary care to a panel of 850–935 veterans. Two LPNs were permanently assigned to their respective PACTs. Three other LPNs belonged to other PACTs within the organization and were temporarily assigned duties due to staff absences.

The workflow began with the LPNs who measured heights and weighed patients as part of the check-in process. After calculating BMI, the LPN alerted the provider verbally if a patient's BMI was $>30 \text{ kg/m}^2$. The provider then updated the problem list with class of obesity and populated a template during the encounter to document that discussion of weight, diet, and physical exercise had taken place. Finally, the provider offered the patient a smart phone app to track their dietary intake and physical activity as well as follow-up nurse phone calls.

The project had four goals:

- 1) 100% of patients will be screened for obesity with BMI during the implementation phase of this project by the LPN.

- 2) The provider will update the problems list of 100% of patients with BMI >30.
- 3) During annual wellness encounters, the NP will complete the obesity template in the medical note for 100% of patients with BMI>30.
- 4) 100% of patients with BMI >30 will be offered phone calls and smart phone apps

At the end of the 8-week implementation period, the project leader collected encounter checklists that were filled out by each provider immediately after each annual wellness encounter.

Results

Table 1: General Outcomes

Outcome	N	%
Number of annual wellness exams	N=166	
Number of screens	N=154	93%
Number BMI >30	74	48%
Updated problem lists	72	97%
Obesity template	70	95%
Patients offered phone call follow up	47	64%
Patients offered smart phone apps	47	64%

Goal #1: Screening

A total of 166 annual wellness exams were conducted during the implementation period between the two teams. The LPNs screened 154 of these patients, or 93%, for BMI (see Table 1). Eleven patients were not screened due to several factors. Seven patients were seen over telehealth and could not be weighed. One patient refused to be weighed. Three other patients were unable to

be weighed as they presented in power wheelchairs and were unable to stand independently on the clinic's scale.

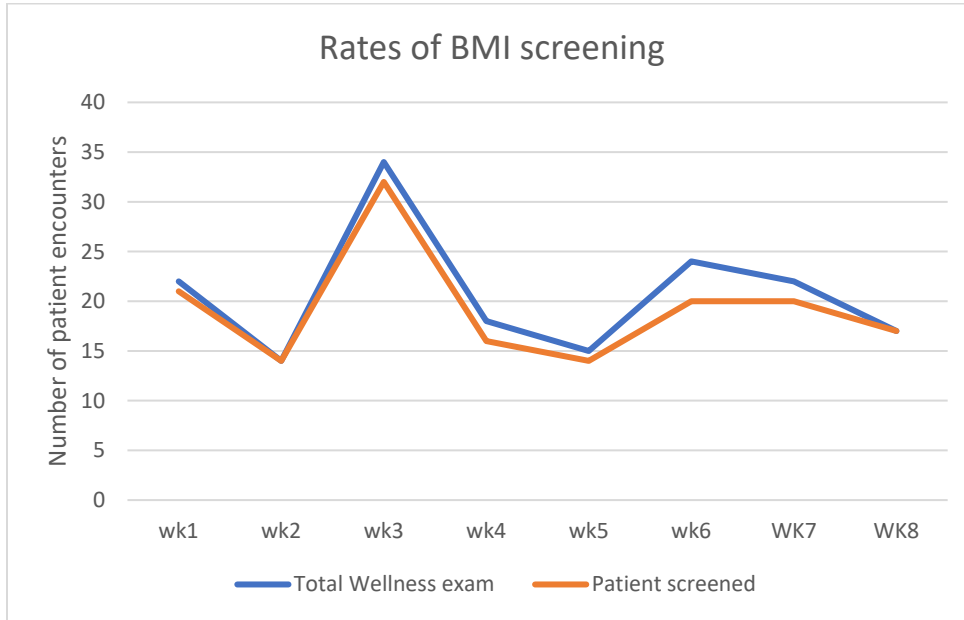


Figure 1: BMI Screening

Goal #2: Updated Problem Lists

The providers updated 72 problem lists, or 94%. Two problem lists were not updated when the provider was not able to ascertain a correct weight and was not able to gauge by visual estimate alone if the patient met criteria for BMI >30. Both patients were seen by telehealth.

Goal #3: Obesity Templates

The providers filled out obesity templates in 95% of medical outpatient notes. Providers used judgement in deciding to initiate conversations regarding lifestyle choices. For example, five

patients presented with terminal illnesses that preempted conversation regarding diet and exercise.

Two other patients presented in a mood inconsistent with discussion of lifestyle factors.

Goal #4: Smart Phone Apps

Providers offered smartphone apps and nurse phone calls during 47 encounters. This equates to 64% of encounters. In general, providers did not refer patients who did not indicate readiness to change diet and exercise. In addition, providers did not refer if patients did not agree to follow-up with the nurse clinic.

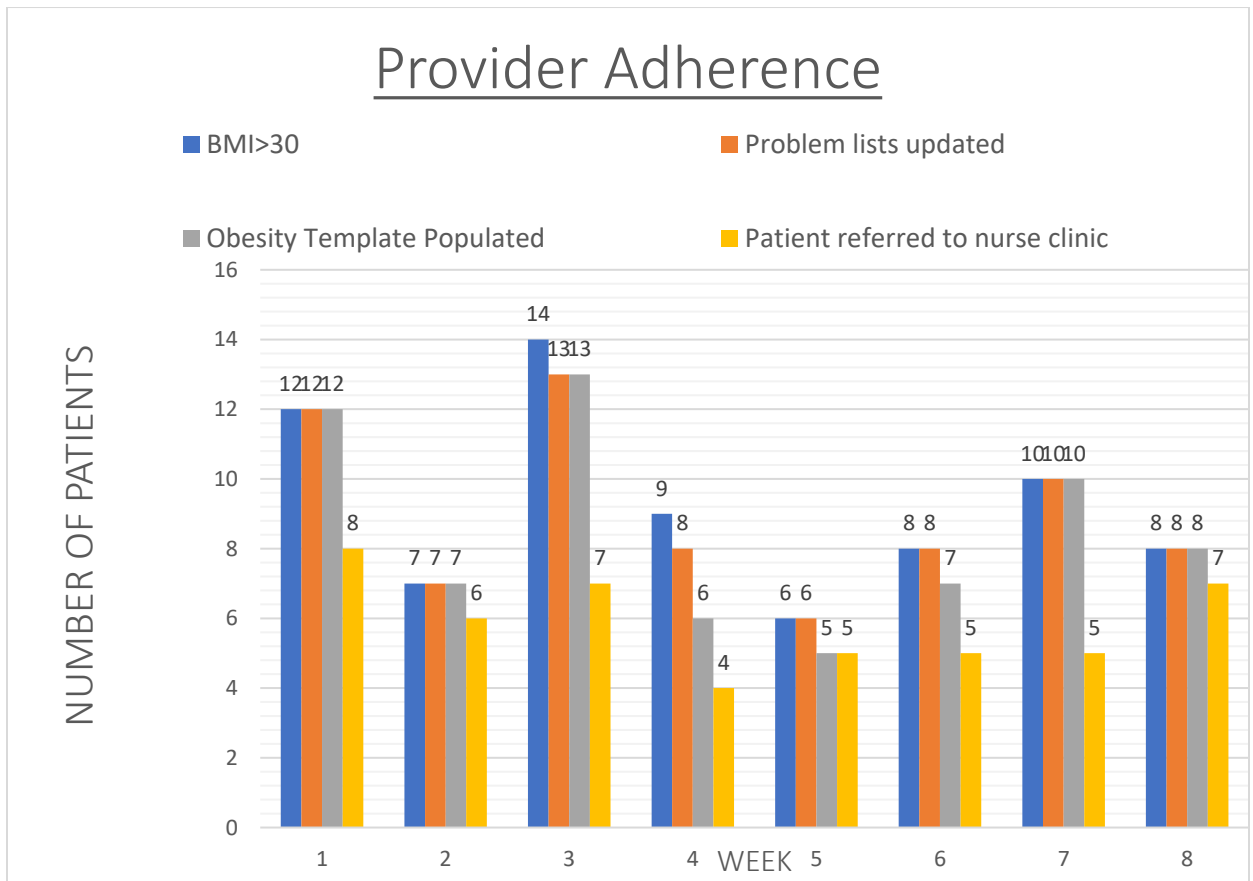


Figure 2: Provider Behavior

Discussion

Overall, the implementation of this project, while falling slightly short of its goals, was a resounding success. The project sought to establish a clinic workflow that could address the rising veteran obesity epidemic. Prior to project implementation, it was not known if discussions of weight could be reasonably included in a short visit that is already full of other mandatory social and medical screenings, medication reconciliation, vaccinations, life sustaining treatment updates, physical exam components, and a generalized history. This project showed that screening and preliminary discussions of dietary factors and exercise could be accommodated during an annual wellness encounter.

Anecdotally, the project demonstrated that the intervention was well-received by veterans. Prior to this project implementation, patients were routinely offered referral to 8 to 12 weeks of intensive lifestyle management classes, the gold standard of obesity management. However, only 10% accepted referral to this therapy, while only 2.45% engaged in it. In contrast, providers in this project referred 64% of their patients to smart phone apps with nurse follow-up. This suggests that self-monitoring may be more a well-received treatment than intensive lifestyle management classes that require extensive time and energy commitment.

BMI screening rates during the implantation were generally high. The LPNs screened 93% of veterans in the check-in process, which lends evidence that this can be integrated easily into the clinic workflow. This high rate persisted even while using float personnel who filled in during staff quarantine and illnesses, suggesting that the process was simple to follow.

Providers updated the problem list at almost every encounter, supporting the idea that this can be easily incorporated into clinic workflow. Treating obesity as an illness by placing it on the

problem list reinforced the notion that it should be addressed, not only at the current encounter, but at all subsequent encounters.

Weight, diet, and exercise were addressed by providers in 95% of the annual wellness encounters as evidenced by filling out the obesity template during the encounter. This is important as research shows patients benefit from this brief lifestyle counseling. Ritten, Waldrop, and Kitson (2016) found that provider visits with MI, goal setting, encouragement, and brief educational lessons resulted in significant changes in health-promoting behaviors. Research also shows that harnessing the power of the provider relationship can be the key ingredient to weight loss. Supportive relationships were described as providing an extrinsic motivator, or "hook," which helped to overcome barriers such as skepticism about dietary advice or a lack of confidence to engage in physical activity (Sutcliffe, 2018).

Finally, providers in this project offered self-monitoring smartphone apps and nurse follow-up phone calls during 64% of relevant encounters. Research shows that tracking diet and exercise on smart phone apps in conjunction with staff support produced clinically significant weight loss. In this way, counseling can be frequent without having to be inconvenient for the patient or too labor-intensive for the clinic.

The initial goal for referrals to smartphone apps and the nurse clinic was 100%, making this the largest shortfall during this implementation. Providers did not refer if patients did not indicate a readiness for lifestyle change or if the patient was not agreeable to the referral. Significantly, there was a 20% rise in the percentage of encounters where providers offered smartphone apps and nurse phone calls over the course of the implementation (see Figure2). This

suggests that the providers became more comfortable with conversations regarding obesity as time went on.

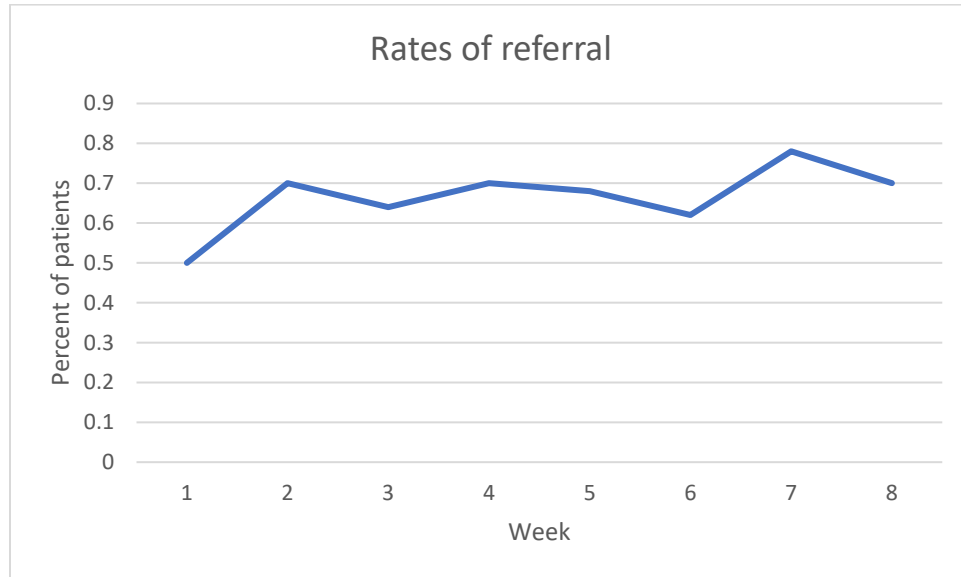


Figure 3: Percent of Patients Offered Phone App & Nurse Clinic

Lessons Learned

This project demonstrated that screening for and addressing obesity is feasible within annual wellness exams. However, it also demonstrated several challenges. First, the clinic lacked the scales needed to weigh all its patients. Not all the veterans are mobile and many lack the lower extremity strength to stand on the scale. The clinic does own a wheelchair scale; however, this was impractical with veterans using power wheelchairs that were too heavy for the scale or whose weight was not known. In addition, the clinic's scales are in a public hallway, which offered little privacy. Future project implementors will need to consider how to manage telehealth appointments as BMI is not easily gauged based on visual inspection.

Second, there are distinct generational differences among veterans in their preference for smartphone apps. Older veterans in general did not express interest in smart phone technology. Younger veterans, on the other hand, often already had several apps already downloaded on their phone. Future implementors should be flexible in offering paper workbooks for older veterans. Younger veterans may benefit more from a list of smart phone apps from which they could choose.

Limitations

A major limitation is that this project relied on self-reported data from the providers who filled out checklists immediately after patient encounters rather than retrospective chart audit. It is possible this over-estimated actual compliance. Attempts to mitigate this potential bias in reporting included filling out data sheets immediately after a visit and collecting them on a daily basis. However, the challenges posed by the COVID epidemic meant that some weeks' data were collected on a weekly, rather than daily basis. Some patient encounters could have been skipped over and not reported at all. Thus, collected data sheets may have overstated meeting the projects' implementations goals.

Other steps to mitigate reporting bias included assurance at the start of the implementation phase that there would be no retribution for missed steps. Staff were also educated to the purpose of the project; namely, to verify the feasibility of a workflow process and that 100% staff adherence to the proposed clinic workflow was not the goal. Rather, the overarching goal was to determine feasibility. If steps were missed, the conclusion would be there was a workflow process problem, not a staff problem. Despite these assurances, these two PACT teams were intimately intertwined.

Generalizability to other PACT teams without a personal investment in the projects' success may find less-encouraging results.

Another limitation was the general slowness of the clinic during the implementation period. This project took place during a surge of Omicron cases within the county. Annual wellness visits were scaled back to accommodate more acute care visits. There were also 10 days of subzero temperatures that further decreased clinic traffic. As such, there may have been the perception of more time to spend on discussion of lifestyle factors. Results could have been very different had the clinics been scheduled for and seeing 10–12 encounters per day.

The project also took place during the holiday season. Patients may have been more receptive to discussions regarding weight and exercise after the New Year. In addition, research has shown that, on average, people gain about 2 pounds during this time of year, giving them more motivation to engage in discussions about weight with their providers. Results might have been different at a different time of the year.

Recommendations

There are several recommendations for future trials of this implementation. First, data collection should include chart audits to increase internal validity of the results. This project intentionally steered clear of using veterans' protected health information by not entering their charts. A full board IRB with VA Research & Development approval would allow chart audits to collect data.

In addition, the project should be repeated with patient-level data. Acceptability to patients of smart phone tracking should be measured formally. Providers anecdotally noted a generational difference in the acceptance of smart phone apps; future implementations would

want to capture this data as well. In addition, it is not known if this intervention would indeed result in reduction of BMI. Future iterations of this project should include data on BMI.

Second, this implementation should take place with a larger number of PACT teams. Due to the labor shortage posed by the COVID pandemic, several staff positions, including two providers, were vacant. Thus, this project was implemented with fewer than half the regular staffing. Having the project implementor serve as one of the providers could have biased the results.

Third, smartphone applications are continually evolving. Future implementation of this project should use the most up-to-date available apps. This project relied initially on the VA MOVE!Coach app. In general, this app was difficult for the staff to download within the clinic due to poor wifi connectivity. Anecdotally, some veterans mentioned that the VA smartphone app is glitchy and not as user friendly as other apps. Future implementors should also ensure that there are enough paper diaries on hand for older veterans.

It is also important to have the proper equipment for weighing patients in the proper location. While the veterans who were weighed for this project implementation were generally amenable, the weighing took place in a busy public hallway. This can be off-putting to some in the veteran population. The clinic lacked a lift scale for patients in power wheelchairs. As more telehealth visits take place, future iterations of this project will want to address how to account for BMI screening when the patient is not physically present.

Conclusion

This quality management project sought to establish a clinic workflow to address obesity among veterans. This clinic workflow allowed high rates of veterans to be screened for obesity. Providers were able to keep updated problem lists on almost all the charts. Most importantly, providers were able to document discussion of physical activity and weight with veterans. A high number, 64%, were referred to smartphone apps with nurse phone call support, indicating that this intervention was acceptable to the patient population. While patient-level data were not collected for this particular project, it is hoped that future investigators could determine the percentage of patients actually engaging in this modality. This project was implemented during COVID staff shortages and may be one way to decrease manhours needed for traditional intensive lifestyle coaching.

CHAPTER FIVE

REFLECTIONS

The DNP Essentials

The purpose of this chapter is to explore how the DNP coursework, culminating in the preceding quality improvement project, A Quality Improvement Project to Address Veteran Obesity, satisfies the Doctor of Nursing Practice Essentials. The American Association of Colleges of Nursing has put forth these DNP Essentials as the foundational competencies required of doctorly prepared nurse practitioners.

Essential II: Organizational Systems Leadership for Quality Improvement and Systems Thinking

Classes in healthcare leadership, healthcare financing, and change theory laid the foundation for several aspects of this QI project. This QI project leans heavily on organizational systems leadership. This essential requires the DNP student to analyze the impact of practice policies and procedures and meeting healthcare needs of patient populations. I identified a huge unmet need for obesity management in a population of patients across the state. This project sought to overcome barriers for this population created by lack of time, energy, and funds for travel to traditional lifestyle management classes offered by VA.

This Essential also requires strategies to balancing productivity with quality of care. By utilizing nurses to deliver follow-up counseling, this project was designed to divert an increased workload for providers. Patients were able to get the care they needed without decreasing overall access to care for other veterans.

The Essential also requires consideration of the financial impact of practice changes. Learning about the financial sustainability of change projects was an important part of my DNP studies. I discovered that keeping obesity management within the primary care clinic, rather than referring out, could raise revenue for the clinic. Nurse visits generate revenue based on the VA's reimbursement structure. This is unique to the VA. In a prior healthcare finances course, I analyzed the financial impact of a nurse in an obesity clinic in the civilian sector and realized it would not be financially sustainable under current Medicare reimbursement.

Obesity is extremely expensive for the VA healthcare system. It raises the cost of medical care per person per year by over \$3000. The cost savings to the healthcare system would be extraordinary if a method could be devised to deliver obesity management in a more convenient way to the patients. Since reduction in BMI is inherently measurable, these cost savings could be captured on future iterations of this project.

DNP nurse practitioners must also be proficient in change therapy. In one class, I mapped out a PDA cycle to implement data collection for sleep and activity. I also learned about a framework for change called Knowledge to Action, which is designed to adapt and translate evidence into existing organizational structures. This was invaluable as the VA is a huge and unyielding bureaucracy; here, change can feel impossible.

During this QI project, I sought to adapt the latest evidence into the structures already in place at the primary care clinic. This involved utilizing the team members in their current roles. For example, LPNs are focused on screening. Providers already diagnose, update problem lists, and hold key discussions about goals. Finally, registered nurses routinely follow patients for chronic diseases such as hypertension, chronic heart failure, and diabetes. Integrating obesity

into this existing clinic structure was one of the reasons the project was successful. Through this, I learned that less is sometimes more when it comes to changing the workflow of clinics.

Essential III: Clinical Scholarship and Analytical Methods for Evidenced-Based Practice

I met the requirement of this Essential over the course of several classes in evidence-based practice. In these classes I learned to conduct rapid critical appraisals of studies and conduct an exhaustive literature search of best practices. I analyzed the current state of obesity as well as patterns and trends in obesity management. In addition, I learned to critique guidelines with AGREE II instruments.

For this quality improvement practice project, I had to critique several guidelines. Prior classes had prepared me with tools to help in this critique and analysis. I identified that the clinical base guidelines were based on studies that overwhelmingly were conducted on subjects on young, urban, White middleclass females. In consequence, they had limited applicability to a population of rural, working-class men with a unique set of risk factors. The analysis led me to studies that were devoted to demographics similar to the population I was working with. I learned that guidelines are only as good as the studies they are based upon.

I also learned to do an exhaustive literature search for this QI project. I learned to work with a librarian and construct a prism diagram, defining criteria by which to include or exclude studies based on rigid criteria. I truly feel that I met the requirements of scholarship as I can tell the reader with certainty there are only six published studies whose subjects were lower-income patients with class II and class III obesity and set in a primary care clinic. This QI project has given me a good appreciation of how methodically flawed most of the studies regarding weight

loss are. I now have a good grasp of the limitations of the research in the weight-loss field and I can carry these analytical skills with me throughout my career.

Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care

The information technology class that I took at the beginning of my DNP studies is one of the most valuable classes I took. I have spent a career at the VA where the computer system is outdated and lacks interoperability with other healthcare facilities across the state. Fortunately, I am also practicing at a time when new technologies are constantly evolving. We now have telehealth, telemetry monitoring, and smart phone apps. I have learned to integrate these new technologies into a dated electronic record. For example, in one class I designed a medication reconciliation process for a primary care clinic that incorporated video house calls (telehealth visits) for high-risk geriatric and cognitively impaired patients so their prescribed medications, sometimes from several different prescribers, and over-the-counter supplements could be readily visualized by staff.

This QI project similarly utilized new technology. I learned that smart phone apps, while appealing perhaps to only certain generations, can be a useful tool in lifestyle management. Tracking diet and exercise on a smart phone enables patients to learn to manage their calorie input and energy expenditures. This is as simple as it is brilliant. In the past, this has been done by in-person clinic weights and self-report based on faulty and self-selected memory. Overall, I learned that newer technology affords innumerable opportunities to enhance patient care.

Essential VI: Interprofessional Collaboration for Improving Patient and Population Health

One of the benefits of the program was the requirement to work with others in a team project. Before this program, I rarely reached out to other disciplines or administration. This QI project demanded collaboration with staff from many different disciplines, such as nursing, schedulers, medical providers, and nutritionists. I became comfortable calling staff that had previously worked in the MOVE! program and dietitians for advice. I also had to learn to approach management and administration of the hospital with my proposal to offer an alternative to the MOVE! program. I learned people in these other roles were actually quite receptive to my ideas.

I also realized that empowering the nursing staff to perform at the top of their license was very satisfying. I originally thought that the nursing staff would push back on the extra workload. However, this proved to be an incorrect assumption. The nurses were quite excited to participate directly in patient care. As one nurse bluntly put it: “I went to nursing school to nurse, not fax scripts to the pharmacy.”

For me, one of the biggest lessons learned was the awareness of how complex the healthcare facility is. Nursing, providers, nutrition, and schedulers all needed to function together. Several service lines including nursing, business administration, medicine, and ancillary services had to be consulted. Even though I had worked in the facility for many years before this project was undertaken, I found that, in this new role, I had to introduce myself to many people.

Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health

Obviously, this QI project focused on obesity management is concerned with population health and prevention of disease. However, I learned about more than just obesity management over the course of the program. Before embarking on my DNP program, I had an incomplete understanding of the role of prevention and population health. Throughout the coursework of this program, I came to understand that it is the overarching goal of what we are trying to achieve in clinic. Previously, I had been focused on “sick care.” This changed during the DNP program, beginning with a class project analyzing epidemiological data and recognizing economic, cultural, and regional forces as risk factors for the development of obesity in childhood. This class laid the foundation for appreciating the broader social forces underpinning health.

While this QI project focused exclusively on obesity management, this is only one concern among many for health prevention and promotion. I learned that DNP-educated nurse practitioners can and should address prevention and public health concerns beyond just checking boxes in templates derived from USPSTF or other society guidelines. I had thought of health prevention as that section of the note that had to be filled out so the clinic metrics looked good. Now, I see health promotion through a much clearer lens. While I consider obesity to be the number one public health issue for my patients, the skills applied to this QI project can be applied to other lifestyle factors for other populations.

Essential VIII: Advanced Nursing Practice

This program better prepared me for advanced practice through classes on pharmacology, diagnostic reasoning, and procedures. During this program, I have had clinical experiences as a

nurse practitioner student in a community health center in rural Lewistown, urgent care in Helena, Montana, and an emergency department on an Indian reservation. The breadth of these experiences has made me a better practitioner. I now have experienced pediatrics and women's health, two areas I thought I would never work in.

The QI project has helped me learn a lot about being a better nurse practitioner. Most specifically during this QI project, I learned that providers need to talk about lifestyle factors with their patients. Throughout the project, I learned skills to help assess patients with their lifestyle factors. The project leaned on being able to use motivational interviewing in the 5As of Obesity to assess patients' lifestyle factors. The focus on goal-setting also helped me learn that what is important to healthcare providers is not necessarily important to the patient. For example, defining weight loss as a greater than 5% reduction in BMI is not meaningful to patients. Instead, goals such as taking a walk with grandchildren and their dog are very important. I learned that therapeutic partnerships between provider and patients can be key to achieving and maintaining health.

Conclusion

This QI project illustrates mastery of the DNP essentials. It demanded initiative and leadership in determining an unmet need for obesity management and approaching stakeholders with a solution. A thorough analytical search of the literature yielded translational studies with applicability to the current patient population and healthcare setting. The project used newer technology, such as smart phone apps and phone calls, to influence healthcare outcomes. The project also necessitated collaboration among different disciplines of nursing, nutrition,

medicine, and business administration. The project focused on prevention and health promotion through obesity management. Finally, the QI project sought to improve advanced practice through enhanced assessment of patient interests and goals.

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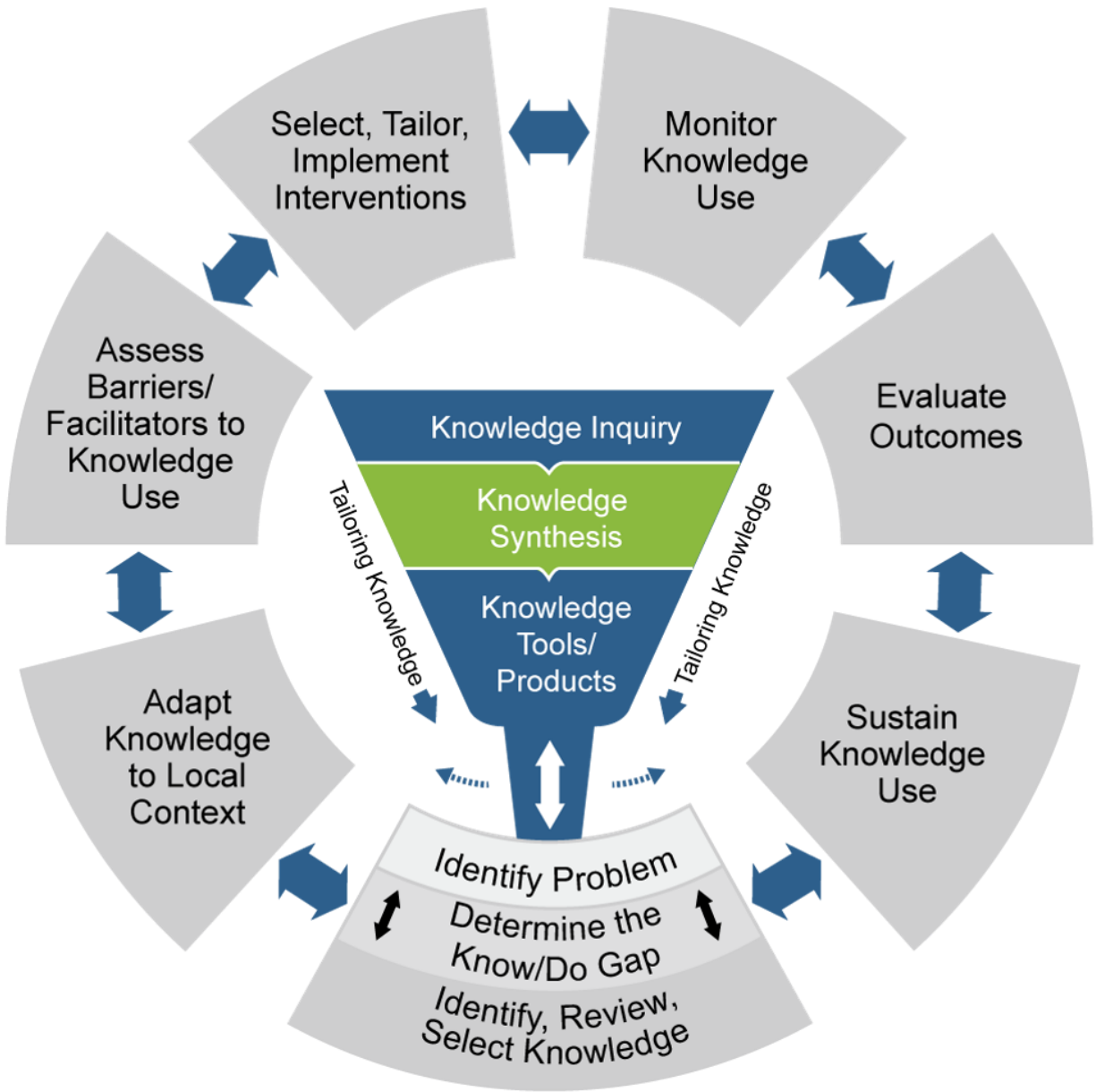
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APPENDICES

APPENDIX A

KNOWLEDGE TO ACTION FRAMEWORK

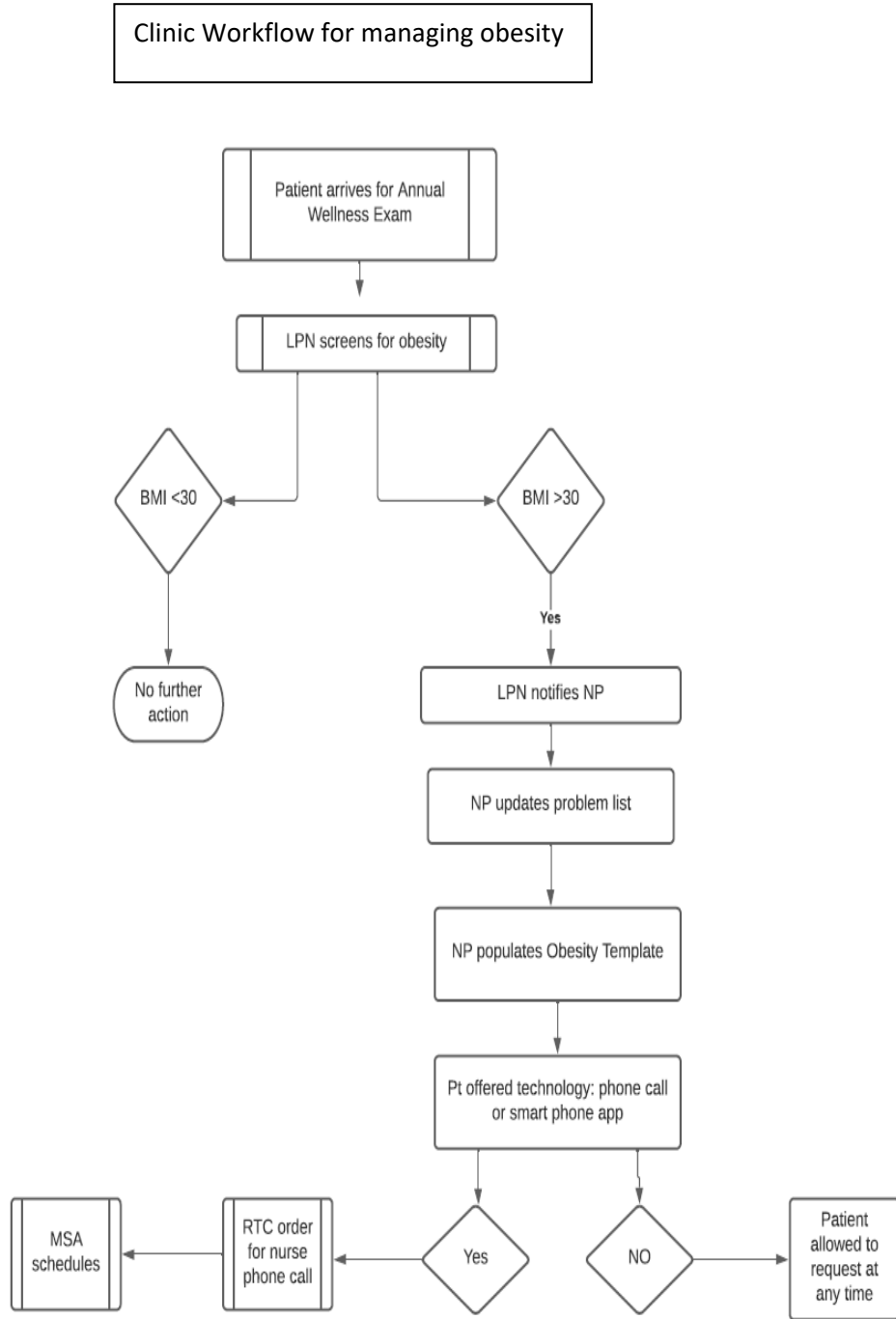
Figure 1. Knowledge to Action Framework



APPENDIX B

CLINIC WORKFLOW FOR MANAGING OBESITY

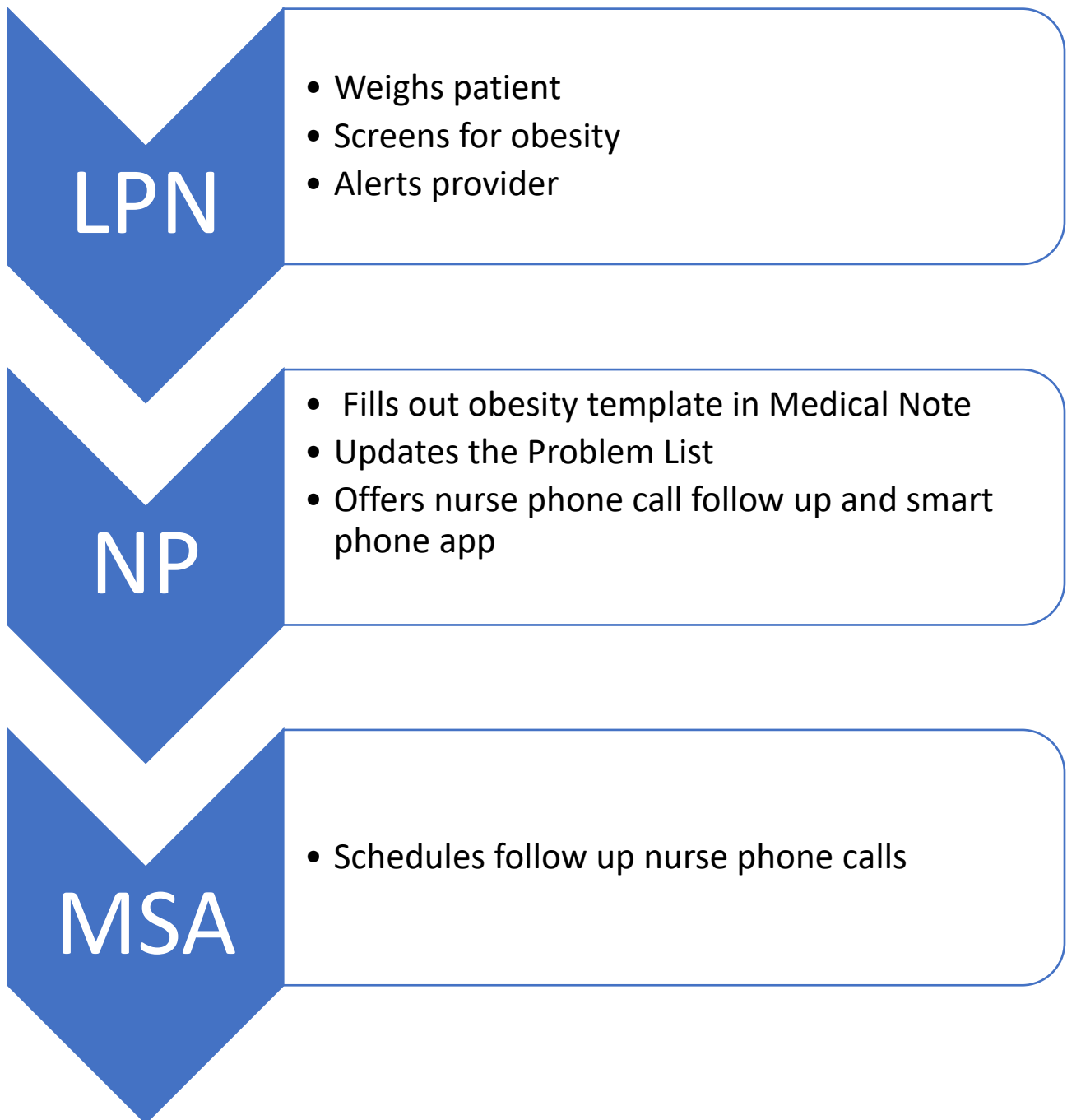
Figure 2



APPENDIX C

PRIMARY CARE TEAM ROLES

Figure 3. Primary Care Team Roles



APPENDIX D

PROVIDER NOTE OBESITY TEMPLATE FORMAT

I discussed health consequences of weight including diabetes,/knee OA/ hypertension, heart disease/

We discussed:

Weight ___ Yes ___ No

Diet ___ Yes ___ No

Exercise ___ Yes ___ No

Pt indicates readiness to lose weight: Yes/No

I discussed self-monitoring weight/diet/physical activity ___YES ___NO

I discussed referral to nurse clinic for weight management: ___ Yes ___ No

The patient expressed a desire for referral: ___ Yes ___ No

I referred the patient to nurse clinic ___YES___NO

Follow up with me prn

APPENDIX E

PROVIDER CHECKLIST

Provider Checklist

FILL OUT IMMEDIATELY AFTER ENCOUNTER

DO NOT PUT PATIENT IDENTIFYING INFORMATION ON THIS PAGE

Please circle answer

1. Patient screened with BMI Y or N

2. Problem List updated? Y or N

3. Obesity Template populated? Y or N

4. Patient offered nurse phone follow up? Y or N

5. Patient offered smart phone app? Y or N

APPENDIX F

PROJECT TIMELINE

Sept-Nov 2021	Dec 2021	Jan-March 2021	April 2021	May 2021
Project Proposal	Pre-Implementation	Implementation	Data Analysis	Dissemination
Problem Identification	Revise Tools as needed: Note Template, Encounter checklist	LPN: Screen for obesity and co-morbidities	Collect Encounter Forms	
Literature Review	Train Staff: 5As, MI	Provider: Updates Problem List Populates the Obesity Template Offers nurse phone calls Offers app for self monitoring	Descriptive Statistics	Presentation at Facility
Project design			Project Defense	
Proposal Defense				
IRB Submission				