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**The Power of Proactive Referrals: An Evidence-Based Practice Project to Improve
Smoking Cessation Rates at a Community Health Clinic**

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Abstract

Tobacco use is the leading cause of preventable morbidity and mortality in the United States today. Twenty percent of adults in the United States use tobacco costing the healthcare system approximately \$225 billion annually in disease treatment. Most smokers want to stop smoking and most visit a healthcare provider each year making access to cessation interventions feasible. The purpose of this evidence-based practice Doctor of Nursing Practice (DNP) project was to increase smoking cessation among patients at a community health clinic by proactively linking patients to cessation counseling and support through implementation of the Ask-Advise-Connect model of smoking cessation. During a three-month pilot period, 14 referrals were sent to the California Smokers' Helpline. Of these, four (28.6%) received services from the Helpline (materials or counseling), four (28.6%) did not respond to contact attempts, and six (42.8%) declined services. The short duration of the project prevented measurement of the long-term outcome of smoking cessation. The Ask-Advise-Connect model is an efficient method to connect patients with smoking cessation support. Future projects could include incorporation of the referral system into the electronic health record to improve workflow efficiency and to allow for better patient tracking and follow-up.

Keywords: Smoking Cessation, Ask-Advise-Connect Model, Smokers' Quitlines

Introduction

Tobacco use is one of the leading causes of preventable morbidity and mortality in the United States today. It is associated with a multitude of negative health outcomes including cancer, lung disease, and cardiovascular disease (United States Department of Health and Human Services [USDHHS], 2014). Despite significant declines in tobacco use over the last several decades, many adults in the United States continue to use tobacco (USDHHS, 2020). In 2019, 50.6 million adults (20.8% of all adults) in the United States used tobacco (Cornelius, et al., 2020). Cigarette smoking causes one in five deaths in the United States each year, or more than 480,000 deaths annually (USDHHS, 2014). Just over \$200 billion is spent annually in the United States to treat smoking-related diseases in adults (Xu, et al., 2021). Most smokers want to stop smoking and most smokers visit a healthcare provider each year making access to cessation interventions feasible (United States Public Health Service [USPHS], 2008). Primary care clinics are an ideal location to implement evidence-based interventions to increase tobacco cessation among patient populations.

Background

Historical Perspective

The first Surgeon General report on smoking and health was published in 1964 (Surgeon General's Advisory Committee on Smoking and Health, 1964). That initial report launched multi-level medical and public health efforts to reduce tobacco use and the resultant negative health consequences. As the scientific understanding of nicotine, addiction, and cessation has evolved and the research and data into the health effects of tobacco use have grown, programs and interventions targeted at both the population and individual level have been implemented to encourage tobacco cessation. Tobacco control public health programs have targeted population-

level cessation goals while healthcare providers and clinics have focused on evidence-based individual interventions and treatment plans. This multi-pronged approach has generated notable results. Between 1964 – 2021, tobacco control efforts produced an estimated eight million fewer premature smoking-related deaths and an extended mean lifespan of 19-20 years (Holford, et al., 2014). Despite this remarkable success and the well-known harms of tobacco use, many Americans continue to smoke.

Burden of Tobacco Use

National, State, and Local Data

Nationwide, 50.6 million adults used tobacco in 2019 (Cornelius, et al., 2020). Tobacco use is more common among males, low-income individuals, and uninsured individuals or those using Medicaid or other public insurance (Cornelius, et al., 2020). In addition, tobacco use is higher among certain racial and ethnic groups including Black, White, and American Indian/Alaska Native (Cornelius, et al., 2020).

At the state level, California has been a national leader in tobacco control and cessation. Between 1985 and 2018, the prevalence of smoking among adults in California decreased from 26.7% to 11.2% (Maguire, et al., 2020). However, this decline has not been uniform across all demographic groups. Rates of smoking remain disproportionately high among low-income Californians, those who are uninsured or who receive Medicaid health insurance, and racial or ethnic minority populations (Maguire, et al., 2020; Vuong, Zhang, & Roeseler, 2019). Despite the decreasing prevalence of tobacco use, over 40,000 adults in California die from smoking-related illnesses each year (USDHHS, 2014).

The statistics in San Diego County mirror the California statewide statistics. In San Diego County, approximately 10.2 - 11.1% of the adult population smoke cigarettes (CA Quits,

2021a; Vuong, Zhang, & Roeseler, 2019). The smoking prevalence among adult Medicaid recipients in San Diego is 16.6%, consistent with statewide and national trends of increased tobacco use among low-income individuals (CA Quits, 2021a).

Health Effects and Financial Costs

Tobacco use is associated with increased morbidity and mortality (USDHHS, 2014; USDHHS, 2020). Smoking is causally linked to cancer, heart disease, peripheral vascular disease, respiratory disease including chronic obstructive pulmonary disease and asthma, diabetes, and myriad other chronic diseases (USDHHS, 2014). Between 2012 – 2017, 390,000 people in California were diagnosed with a tobacco-related cancer (Maguire, et al., 2020) and cigarette smoking is a known risk factor for premature death (USDHHS, 2014; USDHHS, 2020).

Tobacco use is a major driver of healthcare costs (USDHHS, 2014; USDHHS, 2020). Nationwide, approximately \$225 billion is spent annually in the United States to treat smoking-related diseases in adults (Xu, et al., 2021). In addition, smoking causes between \$151 billion and \$181 billion in annual productivity losses (Campaign for Tobacco Free Kids, 2021b; Ekpu & Brown, 2015). In California, \$13.29 billion in annual healthcare costs are estimated to be directly caused by smoking (Campaign for Tobacco Free Kids, 2021a). A substantial portion of these costs are absorbed by public health insurance programs. In California, the Medicaid program is known as Medi-Cal. The smoking rate among adults covered by Medi-Cal is almost twice as high as it is for people covered by private insurance (Vuong, Zhang, & Roeseler, 2019). This translates into an annual estimated cost of \$3.58 billion per year in smoking-related diseases covered by Medi-Cal (Campaign for Tobacco Free Kids, 2021a). Mitigating these high costs was a focus of the Master Settlement Agreement, a landmark accord reached in 1998 between the four major tobacco manufacturers and the Attorneys General of 46 states (USDHHS, 2014).

Among its many provisions, the Master Settlement Agreement provided funding to public health programs aimed at tobacco control and smoking cessation.

Tobacco use cessation improves patient health (USDHHS, 2020). Most smokers (68.0%) want to stop smoking (Babb, et al., 2017) and most (60 – 70%) report a past-year quit attempt (Walton, et al., 2019). Among smokers who made quit attempts, less than a third used proven cessation treatments including counseling (6.8%), medication (29.0%), or both (4.7%) and fewer than 10% quit successfully in the past year (Babb, et al., 2017). However, most smokers (70%) visit a healthcare provider each year (USPHS, 2008) creating an opportunity for intervention and treatment.

Evidence-Based Interventions for Tobacco Cessation

Decades of tobacco research have produced evidence-based recommendations and guidelines for tobacco cessation treatment (USDHHS, 2014; USDHHS, 2020). Using evidence-based treatments can increase smoking abstinence rates as much as fourfold (Vidrine, et al., 2010). The approach that produces the highest rates of successful abstinence is a combination of behavioral counseling and medication support (USPHS, 2008). Less than 5% of tobacco users quit successfully without cessation support, including counseling and/or medication (West, 2017). The combination of behavioral counseling plus medication support results in an 82% increase in cessation rates (Babb, et al., 2017). There is a dose-response relationship between behavioral counseling and tobacco abstinence. Increasing the amount of behavioral counseling increases the chance of successful quitting (Hartmann-Boyce, et al., 2019). Multiple clinical organizations and national agencies recommend a combination of behavioral counseling and medication support in their clinical practice guidelines for treatment of tobacco use (Barua, et al.,

2018; Leone, et al., 2020; Patnode, et al., 2021; USPHS, 2008; U.S. Preventive Services Task Force, 2021).

Different modalities for delivery of behavioral counseling for tobacco use cessation have been studied including the use of telephone counseling. Several meta-analyses have examined the efficacy of delivering behavioral counseling and support via the telephone. Lichtenstein, et al., (1996) found that telephone counseling produced statistically significant increases in cessation while an analysis by the U.S. Public Health Service (2008) found that proactive telephone counseling increased long-term abstinence and increased overall quit rates by 60%. Stead, et al. (2013) found that telephone counseling increased the chance of quitting compared to minimal intervention such as self-help materials. For people using pharmacotherapy, providing behavioral support in person or via the telephone increases quit rates and increasing the amount of that behavioral support increases the chances of successful abstinence (Hartmann-Boyce, et al., 2019). One method of delivering behavioral support via telephone is through the use of smokers' quitlines.

Smokers' Quitlines

The National Network of Tobacco Cessation Quitlines was established in 2004 by the U.S. Department of Health and Human Services in conjunction with the Centers for Disease Control and Prevention (USDHHS, 2014). Smokers' Quitlines provide no-cost telephone-based tobacco cessation services including behavioral counseling, printed materials, nicotine replacement therapy, and referrals to smoking cessation resources (Anderson & Zhu, 2007). Smokers' Quitline services are available in all 50 states (Vidrine, et al., 2010).

Research supports the efficacy of quitlines as a method of smoking cessation support (Fiore & Baker, 2020; Lichtenstein, et al., 1996; Lichtenstein, Zhu, & Tedeschi, 2010; Ossip-

Klein & McIntosh 2003; Rabinus, et al., 2004; Stead, et al., 2013; USPHS, 2008). Quitline counseling is convenient and inexpensive for patients, removing barriers associated with transportation, finances, and health insurance limitations from treatment provision (Vidrine, et al., 2010). Quitline services are easily accessible and can be tailored to individual smokers' needs and their individual motivation to quit (Borland & Segan, 2006). In addition, quitlines unburden busy clinic providers and staff from time-intensive cessation counseling by taking over the behavioral counseling role essential to successful smoking cessation.

Despite the demonstrated efficacy and convenience of quitline services, quitlines are severely underutilized, with only about 1% of smokers using the services annually (Cummins, et al., 2007). In particular, low-income populations are less likely to utilize quitline services (Kaufman, et al., 2010; Sheffer, et al., 2015; Varghese, et al., 2014) and less likely to be successful at quitting compared to individuals of higher socioeconomic status (Fiore, et al., 1989; Pierce, et al., 1989). Patients referred to quitlines from Federally Qualified Health Centers (FQHC) are less likely to enroll in quitline services, complete fewer phone sessions while in the program, and are less likely to quit tobacco altogether (Nair, et al., 2019). However, when low-income smokers do engage with quitline services, they are able to achieve a higher rate of abstinence than without quitline support (Bernstein, et al., 2016).

Ask – Advise – Connect Model

Ask – Advise – Connect (AAC) is a model that developed out of the recognition that quitlines are an underutilized resource and that most patients referred to quitlines do not end up contacting the quitline for support (Vidrine, et al., 2010). In this model, healthcare providers proactively refer patients directly to the Smokers' Quitline. The steps of the AAC model include: 1. Ask patients about tobacco use at every visit; 2. Advise patients to stop using tobacco;

and 3. Refer patients directly to a smoker's quitline for further cessation counseling and support. The referral is sent electronically from the provider to the quitline and then the quitline contacts the patient within 48 – 72 hours. By proactively referring the patient to the quitline and having the quitline contact the patient directly, the clinician can efficiently connect the patient with existing resources. Proactive referrals are associated with higher uptake than self-initiated services (Atorkey, et al., 2021) and can increase rates of quitting in areas where smoking cessation services are available but underutilized (Want, et al., 2017). One meta-analysis found moderate-certainty evidence that proactive telephone counseling from quitlines helps smokers quit (Matkin, Ordonez-Mena, & Hartmann-Boyce, 2019).

Implementation of AAC is associated with an increased number of smokers enrolling in treatment (Bui, et al., 2019; Vidrine, Shete, Cao, et al., 2013; Vidrine, Shete, Li, et al, 2013) and improved cessation rates (Blocker, Lazear, & Ridner, 2020). AAC results in higher treatment engagement than traditional self-initiated referral-based approaches (Piñero, et al, 2020; Vidrine, Shete, Li, et al, 2013). Patients are responsive to this new model of referral and receptive to telephone support for tobacco cessation services (Amato, et al., 2018). In addition, provider referrals to quitlines are critical components of linking tobacco users with significant health risks and barriers to quitting to cessation counseling and support (Nair, et al. 2018).

California Tobacco Control Program and California Quits

Established in 1989, California has the longest-standing, publicly-funded tobacco control program in the United States (Schroeder, 2018). The California Tobacco Control Program has worked diligently to reduce the rates of smoking among California's population with notable results. In 1989, 23.7% of California's adult population smoked compared to 11% in 2016

(Maguire, et al., 2020). Despite this success, approximately three million Californians still smoke (Maguire, et al., 2020), thus requiring further, concentrated efforts at cessation.

Over the years, the California Tobacco Control Program has worked closely with Medical to engage both health care providers and health plans in tobacco cessation efforts. These efforts have included both financial incentives and systems interventions to connect patients and providers with the support they need for tobacco cessation (Kaslow, et al., 2018; Schroeder, 2018).

Research supports the efficacy of systems change interventions to support smoking cessation. Creating systems to integrate the identification of smokers and the offering of evidence-based treatments into usual care can increase rates of referral to smoking cessation services (Thomas, et al., 2017). These system changes are of particular importance when addressing the unique needs of low-income smokers. Research demonstrates that formalizing partnerships between healthcare systems that serve low-income patients and tobacco cessation services such as quitlines is an essential component of tobacco use treatment (Vidrine, et al., 2010).

In 2012, in recognition of the importance of systems-based interventions for tobacco cessation, the five University of California [UC] health systems (UC Davis, UC San Francisco, UC Los Angeles, UC Irvine, and UC San Diego) launched the UC Quits program (Kaslow, et al., 2018). The UC Quits program established a two-way eReferral between the UC medical systems and the California Smokers' Helpline. Adapting the AAC model, this system allowed clinicians to refer smokers directly to the Helpline for cessation support (Adsit, et al., 2014; McCarthy, et al., 2020). Research supports that creating an eReferral system that connects healthcare provider offices to a state quitline is feasible, cost-effective, and ultimately results in increased quitline

utilization (Bentz, et al., 2006). Between 2012 – 2018, the UC Quits program facilitated over 10,000 eReferrals to the Helpline (Kaslow, et al., 2018).

Following the success of the UC Quits model, the California Tobacco Control Program launched CA Quits in 2016 (Kaslow, et al., 2018). The focus of CA Quits is to integrate population-based tobacco-cessation treatment into California’s healthcare safety-net. CA Quits targets healthcare systems that serve primarily Medi-Cal patients, the uninsured, or other high-risk populations including FQHCs and community health centers (Kaslow, et al., 2018). CA Quits provides technical support to healthcare systems to integrate the AAC model of tobacco treatment into their workflows (CA Quits, 2021b). In addition, CA Quits acts as a liaison between the California Smokers’ Helpline and the healthcare system to build in the technology infrastructure necessary for eReferrals (CA Quits, 2021b; California Smokers’ Helpline, n.d.). CA Quits aims to target a minimum of 30 healthcare systems to implement referrals to the Helpline (Kaslow, et al., 2018).

The purpose of this evidence-based practice (EBP) project was to increase smoking cessation among patients at a community health clinic by leveraging existing community resources to proactively link patients to cessation counseling and support through web-based electronic referrals to the California Smokers’ Helpline.

Setting and Population

This EBP project was implemented at a community health clinic in southern California. The community health clinic is a Federally Qualified Health Center (FQHC) that serves an ethnically and racially diverse, low-income patient population. Most patients receive Medi-Cal health insurance. The clinic recently started a program to provide focused care and support services to high-risk patients diagnosed with specific chronic medical diagnoses including

hypertension, diabetes, and tobacco use. Smokers referred to this new program were contacted by the team's registered nurse and assessed for current smoking status and readiness to quit. Smokers were then provided with education about nicotine-replacement therapies as well as information about behavioral support resources. As part of the CA Quits program, the clinic had established an account to send web-based electronic referrals to the Smokers' Helpline in 2020 but did not have a workflow to implement sending the referrals. Prior to implementation of this EBP project, one e-referral had been sent to the Helpline.

Methods

Design

This EBP project used the Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care [Iowa Model-Revised] as the foundational model for project development and implementation.

Rationale

The Iowa Model-Revised provides a framework for the development and implementation of evidence-based care in the clinical environment from inception through analysis and dissemination of results (Iowa Model Collaborative, 2017). This EBP project focused on the implementation of a tobacco cessation intervention to decrease rates of smoking and tobacco use among adults at a community health center. The Iowa Model-Revised provides a step-by-step process to organize and implement EBP changes while also highlighting the importance of team engagement and organizational/national priorities (Iowa Model Collaborative, 2017). Following this framework in the community clinic environment provided a guide to successful program design and implementation.

Strengths/Weaknesses of Model

Strengths of the Iowa Model-Revised include prioritizing issues that match organizational and/or national goals and initiatives (Hanrahan & Fowler, 2019). Focusing on priority issues may encourage staff participation and can encourage organizational support, both key elements to project success. Smoking cessation is a focus area for Healthy People 2030 (USDHHS, n.d.) which aligns with the Iowa Model-Revised's focus on national goals and is also a focus area for the project site. In addition, the Iowa Model-Revised encouraged team formation to support project development and implementation. A final strength of the Iowa Model-Revised is the focus on piloting a practice change. This essential step allows staff to identify any unforeseen implementation challenges before widescale dissemination of the practice change.

Weaknesses of the Iowa Model-Revised include the model's inclusion of sustainability practices as the last step (Iowa Model Collaborative, 2017) as opposed to considering sustainability earlier in the process of planning and implementation. Included in the sustainability practices is the hardwiring of the change into the system. While it is appropriate that sustainability is addressed, waiting until the final step to consider this important element neglects consideration of potential organizational limits on any hardwired change. To create truly sustainable change, it is essential to consider organizational limits early in the planning, design, and implementation of any project.

Intervention

This EBP project was initiated following letters of support from the faculty advisor and the clinical mentor at the project location. The University of San Diego Institutional Review Board approved the project application on October 29, 2021. The clinic nurse received instruction and training in how to send the e-referrals to the Smokers' Helpline using a web-based referral system. In addition, communication strategies and motivational tips were

reviewed to encourage patient uptake of offered referrals. After training, the clinic nurse implemented the new protocol and offered every smoker a referral to the California Smokers' Helpline during their initial telephone assessment appointment. For patients who accepted, a referral was sent to the Helpline and the Helpline attempted to contact the patient within 48-72 hours to provide evidence-based smoking cessation support and counseling. At the end of the initial three-month pilot period, data was collected from the California Smokers' Helpline enumerating the referrals sent from the clinic as well as the outcome of the referrals.

Results

Process data showed that during the three-month pilot period, 14 referrals were sent to the California Smokers' Helpline. Of those 14 referrals, four patients (28.6%) received services (including materials or counseling), four patients (28.6%) went no contact (five attempts were made with no contact), and six patients (42.8%) declined services. The short duration of the project prevented measurement of the long-term outcome of actual smoking cessation.

Discussion

The research literature suggests that implementation of the Ask-Advise-Connect model of smoking cessation is associated with higher rates of smokers enrolling in treatment and improved cessation rates (Blocker, Lazear, & Ridner, 2020; Bui, et al., 2019; Vidrine, Shete, Cao, et al., 2013; Vidrine, Shete, Li, et al., 2013). This EBP project implemented the AAC model at a community health clinic to connect smokers with cessation resources, services, and support provided by the California Smokers' Helpline. Research literature demonstrates that smokers who connect with quitline services are more likely to stop smoking (Fiore & Baker, 2021; Lichtenstein, et al., 1996; Lichtenstein, Zhu, & Tedeschi, 2010; Ossip-Klein & McIntosh 2003;

Rabius, et al., 2004; Stead, et al., 2013; USPHS, 2008). This EBP project created an efficient way to connect smokers to those quitline services.

Project Limitations

While this EBP project demonstrated that smokers can be efficiently connected to support resources, it did not complete an outcome evaluation to assess if the quitline referral was associated with smoking cessation. Limitations of the project's timeline prevented a comprehensive outcome evaluation. Future projects could include the development and implementation of a comprehensive outcome evaluation to assess the effectiveness of this model in increasing smoking cessation.

Implications for Practice

Smoking cessation improves patient health. Any programs or efforts that work toward that goal should be encouraged. The time constraints of clinic visits limit the amount of focused cessation counseling that providers can perform. The Ask-Advise-Connect model is an efficient method to connect patients with existing smoking cessation support. By leveraging existing community resources, such as the California Smokers' Helpline, providers can ensure high quality patient care and support patient health while also reducing the time burdens on clinic staff.

Implementation of the web-based e-referral system requires no upfront financial investment and significant support is available through the CA Quits statewide initiative. There are projected financial benefits including the reduction in smoking-related diseases and the reduced cost of medical care for smokers.

Future expansions of this project could include incorporating the e-referral system directly into the electronic health record (EHR). This project used a web-based referral system.

Within the CA Quits initiative, there are several options for sending e-referrals to the Helpline. The web-based referral requires the least up-front investment; however, it is the most labor-intensive from a provider's standpoint. CA Quits offers an option to integrate the referral system directly into the EHR. While this option requires some up-front information technology investment, it can improve workflow efficiency and allow for better tracking and follow-up of patients. For example, using EHR build-ins, there is the option of bidirectional communication with the Helpline to send process data directly into patients' medical records. Enhancing communication channels between separate healthcare entities can improve the quality, efficiency, and provision of patient care.

Conclusion

Smoking cessation continues to be a major health concern in the United States today. This EBP project demonstrated that sending a web-based e-referral is an efficient and effective way to connect smokers with smoking cessation support services. These e-referrals link together disparate parts of the healthcare system and help to create an umbrella of care for patients. The disconnected system of healthcare in the United States today presents challenges for both patients and providers. The Ask-Advise-Connect model of smoking cessation demonstrates that it is possible to create efficient and effective connections between existing healthcare services to treat a chronic medical condition. Creating streamlined systems of connected care can build a more efficient, and hopefully more effective and more easily accessible, healthcare system for all.

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