Impact of a Pilot, Pharmacy-Led Tobacco Cessation Medication Protocol at Discharge in a Community Hospital

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Abstract: Purpose: To evaluate the implementation of a pharmacy-led tobacco cessation medication education protocol at discharge in a community hospital. Design: Single center, retrospective quality assessment study. Methods: A retrospective review of a pharmacy-led protocol was completed from November 2016 through April 2017. Data from one year prior to implementation of the protocol was analyzed against the study group. Results: A total of 607 tobacco cessation medication education interventions were made during the study period, 379 patients (62.4%) were given an OTC (Over The Counter) NRT (Nicotine Replacement Therapy) recommendation upon discharge and 148 (24.4%) were referred to the Ohio Tobacco Quit Line. TJC (The Joint Commission) TOB-3/3a measure was met in 44.1% of patients during the study period compared to 0% in the comparator group. Of the 75 patients who were reached via follow-up phone call, 23 (30.7%) purchased an OTC NRT and 22 (29.3%) completely quit using tobacco. Conclusions: Pharmacy-led tobacco cessation interventions during hospitalizations have a positive impact on TJC TOB-3/3a quality measure results and quit rates post-discharge. Our results encourage future studies in this area to further establish the importance of pharmacist involvement in tobacco cessation, specifically in the hospital setting.

Key words: Tobacco cessation, pharmacists, hospital, nicotine replacement therapy.

1. Introduction

Tobacco use is the leading cause of preventable disease and death in the United States. According to the latest data from the Center for Disease Control and Prevention (CDC), about one in every six adults smokes cigarettes in the United States. Additionally, more than 16 million Americans are currently living with a smoking-related disease and about one in every five deaths can be attributed to smoking. Furthermore, health care costs related to tobacco use are about \$170 billion per year [1].

Recognizing the importance of tobacco cessation efforts, TJC created TOB (The Tobacco Treatment) measure set to address tobacco cessation for all hospitalized patients. The measure set consists of several individual measures: TOB-1 (Tobacco Use Screening), TOB-2 (Tobacco Use Treatment Provided

or Offered), TOB-2a (Tobacco Use Treatment), TOB-3 (Tobacco Use Treatment Provided or Offered at Discharge), TOB-3a (Tobacco Use Treatment at Discharge) and TOB-4 (Tobacco Use: Assessing Status after Discharge) [2]. The TOB-3 and TOB-3a measures provide an optimal opportunity for pharmacy intervention prior to hospital discharge.

Healthcare professionals have incomparable access to tobacco users. Hospital admissions in particular provide an opportunity for tobacco cessation education as the patient's tobacco use is often a contributing cause of the visit. Tobacco cessation interventions made during a hospital stay are proven to increase the rate of cessation post-hospitalization [3]. According to the Clinical Practice Guideline for Treating Tobacco Use and Dependence, "there is a strong relation between the number of sessions of counseling when it is combined with medication and the likelihood of successful smoking abstinence.

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Therefore, to the extent possible, clinicians should provide multiple counseling sessions, in addition to medication, to their patients who are trying to quit smoking” [4]. Pharmacists possess the specific skill set required to share information about medication options for quitting and can provide one of these counseling sessions to increase the patient’s likelihood to quit.

There are several studies supporting the involvement of pharmacists in tobacco cessation education in various settings. Dent et al. studied the impact of interactions between a pharmacist and tobacco user via face-to-face sessions in an outpatient clinic or a single telephone counseling session. Participants were offered bupropion or nicotine patches at no cost and were followed-up with at 6 months. Abstinence rates after completion of follow-up were 28% in the face-to-face-group and 11.8% in the telephone session group. The authors concluded that pharmacists are effective providers of tobacco cessation interventions and are capable of having a significant impact on the improvement of public health in this area [5]. Dobrinas et al. studied pharmacist impact on tobacco users in the hospital environment. The interventions consisted of one visit while the patient was in the hospital and a follow-up phone call at least one month after discharge. At the follow-up call, 53% of patients reported an improvement in readiness to quit and 33% declared themselves abstinent. The authors concluded that moderate-intensity smoking cessation intervention from a pharmacist in the hospital led to a higher quit rate than those reported in control groups of other studies. Additionally, readiness to quit improved one month after discharge supporting the role of the pharmacist in tobacco cessation interventions [6]. Lastly, an ongoing study by Thomas et al. is focusing on a pharmacist-led intervention program in the hospital environment. The program consists of three interventions led by pharmacists, one in the hospital, one immediately before or after discharge and one

within one month after discharge. Data is currently being collected, but positive results could lead to similar programs being implemented in other hospitals and more resources allocated towards tobacco cessation efforts [7].

When examining these studies, it is evident that pharmacist involvement in tobacco cessation education has led to increased quit rates and improvement in patients’ readiness to quit. With their specialized knowledge to educate about prescription and OTC medications available for tobacco cessation, pharmacists have a defined role in this area. Current FDA (Federal Drug Association) approved medications for tobacco cessation include NRTs (Nicotine Replacement Therapies), bupropion SR (Zyban) and varenicline (Chantix). Given the wider availability of NRTs as OTC medications and the various routes of administration, the tobacco cessation medication education protocol at UHSJMC (University Hospitals St. John Medical Center) focused on these products.

UHSJMC is a community, teaching hospital in Westlake, Ohio. Prior to pharmacy involvement, the tobacco cessation education process consisted of nurses screening each patient on admission to identify tobacco users. Self-identified tobacco users were then asked if they were interested in tobacco cessation education, medications or both. Patients who were interested in tobacco cessation education were seen by a RT (Respiratory Therapist) who provided a general counseling session. RTs would offer to enroll patients in the Ohio Tobacco Quit Line program which provides counseling sessions over the phone and medications through the mail pending patient qualification. Prior to our study, there was no specific education regarding tobacco cessation medications before discharge which failed to address the TOB-3/3a quality measure.

A pharmacy-led tobacco cessation medication education initiative was implemented at UHSJMC. Per the approved protocol, patients were seen by a pharmacy representative and given an education sheet

reviewing available OTC NRTs. The pharmacist was authorized to order the patient's preferred NRT to be listed on the discharge medication summary. Follow-up phone calls occurred within 30-60 days of discharge for patients who expressed initial interest in tobacco cessation medications. The purpose of this study was to assess the impact of a pharmacy-led tobacco cessation protocol in a community hospital based on the number of medication and education interventions made prior to discharge as well as quit rates post-discharge.

2. Methods

2.1 Study Design

A retrospective review of the pharmacy-led tobacco cessation protocol was completed from November 2016 through April 2017 at UHSJMC. The study protocol was reviewed and approved by the IRB (Institutional Review Board) at University Hospitals in December of 2016. Additionally, the protocol was approved by PNT (the Pharmacy, Nutrition and Therapeutics) Committee and MEC (Medication Executive Committee) at UHSJMC prior to the study period.

In order to be included in the study, patients needed to have inpatient status at UHSJMC and had to report themselves as being an active tobacco user within the last 30 days. Patients were excluded from the study if they met any one of the following criteria: less than 18 years of age, documented cognitive impairment, refusal of screening, duration of stay less than one day or greater than 120 days, those who left against medical advice, those discharged to another facility, those discharged home for hospice care and patients with *Comfort Measures Only* documented. Once included in the study, patients were categorized into either the study group (November 2016 through April 2017) or the comparator group (November 2015 through April 2016).

The pharmacy-led protocol was initiated based on a convenience sample identifying all inpatient tobacco

users. Each patient was seen by a pharmacy representative, given an education sheet (See Fig. 1) reviewing the different OTC NRT options and provided guidance on medications to help him or her quit using tobacco. Once the patient selected an NRT, the pharmacist placed an order for the product on the discharge medication list. Patients who initially expressed an interest in tobacco cessation medications upon admission screening were contacted 30-60 days after discharge via a follow-up phone call.

2.2 Study Objectives

The primary objective of the study was to determine the number of tobacco cessation medication education interventions made before discharge. The secondary objectives were to determine the percentage of tobacco users given an OTC NRT recommendation upon discharge and the percentage of tobacco users referred to the Ohio Tobacco Quit Line.

2.3 Statistical Analysis

The collected data was analyzed using descriptive statistics. The total number of pharmacist interventions made before discharge, percentage of tobacco users given an OTC NRT recommendation and percentage of tobacco users referred to the Ohio Tobacco Quit Line were documented. In addition, based on follow-up phone calls, percentage of tobacco users who purchased an OTC NRT and percentage of those who quit using tobacco 30-60 days post-discharge were documented.

3. Results

A total of 607 tobacco cessation medication education interventions were made before discharge from November 2016 through April 2017. This equates to an average of 101 interventions per month. Of the 607 total interventions, 379 (62.4%) patients were given an OTC NRT recommendation at discharge and 148 (24.4%) patients were referred to the Ohio Tobacco Quit Line.

Over The Counter Tobacco Cessation Medication Options

University Hospitals St. John Medical Center
A CATHOLIC HOSPITAL

Congratulations!

- Quitting tobacco is an important step in becoming healthier and reducing the risk of many diseases such as cancer, heart disease, stroke, and breathing problems.

Over the counter (OTC) medications are available to help quit tobacco use

- The Patch...**
 - helps prevent cravings all day long
 - is applied once a day to a clean, dry, hairless area of skin
 - can be worn for 16-24 hours a day
 - can be used in combination with nicotine gum and/or nicotine lozenges
 - comes in three doses and is based on how many cigarettes you smoke per day

- The Lozenge...**
 - prevents your cravings and can easily be taken with you wherever you go
 - should be dissolved slowly over 20-30 minutes, and should occasionally be moved from one side of your mouth to the other, 1 lozenge every 1 to 2 hours for the first 6 weeks, or when cravings occur
 - should not be used for 15 minutes after eating or drinking, or during eating or drinking
 - comes in 2 doses and is based on how soon you smoke after you wake up

2 mg

If you smoke your first cigarette more than 30 minutes after waking up, use the 2 mg strength.

4 mg

If you smoke your first cigarette within 30 minutes of waking up, use the 4 mg strength.

Nicotine replacement therapy should not be used alone

- Combining the above products with other strategies can improve your chances of quitting and staying tobacco free
- The University Hospitals St. John Medical Center Department of Pharmacy would be happy to provide you with resources to help you quit using tobacco, such as the Ohio Department of Health Quit Line Referral, educational websites, and in-person or telephone counseling and support programs

Ask your pharmacist or primary care provider if you have any questions regarding OTC tobacco cessation medications.

Prescription medications for tobacco cessation also exist, such as Chantix (varenicline) and Zyban (bupropion). If you are interested, contact your primary care provider for more information.

Fig. 1 Tobacco cessation medication education handout given to all tobacco users seen by a pharmacy representative during the study period.

Additional findings based on abstractions for the TOB-3/3a quality measure showed that 44.1% of patients met the measure in the study group versus 0% in the comparator group. A total of 75 patients who were interested in medications for tobacco cessation upon hospital admission were reached via follow-up phone calls (See Fig. 2). Of those patients, 23 (30.7%) had purchased an OTC NRT, 22 (29.3%) had enrolled in the Ohio Tobacco Quit Line and 22 (29.3%) had completely quit using tobacco since being discharged from the hospital. Of the 22 patients that quit using tobacco, 11 (50%) had used OTC NRTs to help them quit. A total of 18 (24.0%) patients reported smoking less than before their hospital admissions and 34 (45.3%) patients reported they were still planning to quit smoking.

4. Discussion

The quit rates from our study are comparable to published literature, which states that the rate of

successful smoking cessation at one year is 3-5% when the patient tries to stop on his or her own. It increases to 7-16% with behavioral intervention and further increases up to 24% with pharmacological treatment and behavioral support combined [8].

The results of this study support the involvement of a pharmacist in the tobacco cessation education process, specifically concerning medications. With pharmacy participation over a six month period, 607 interventions were made focusing on OTC NRT options for quitting. While some patients refused OTC NRT recommendations, a significant number (62.4%) did agree to purchase these products after discharge. While referring patients to the Ohio Tobacco Quit Line was not our main focus in this study, we were still able to supplement RT's efforts and enroll 24.4% of the patients we reached.

Our additional findings further support the involvement of pharmacists in tobacco cessation. The TOB-3/3a measure results improved significantly with

Fig. 2 Additional findings based on follow-up phone calls 30-60 days after hospital discharge.

pharmacy involvement, rising from 0 to 44.1% during the study period. While we were not able to reach all of our patients with a follow-up phone call, the patients we did reach had an overall positive attitude towards the protocol, OTC NRTs and quitting in general. Twenty-two of our patients had completely quit using tobacco and half of them had used OTC NRTs to help them which supports our in-hospital intervention. Of the patients that had not quit, 24% were smoking less than before their admission and nearly half were still planning to quit using tobacco indicating an increase in overall readiness to quit.

Several limitations exist within the study. First and foremost, the protocol was carried out during limited hours (Monday-Friday from 8 am-4:30 pm) and for a limited duration of 6 months. With more comprehensive pharmacist coverage and a longer follow-up period, there would be stronger evidence regarding the accuracy of quit rates and a realistic number of patients who can be reached in the hospital setting. Secondly, there were frequent discrepancies in the tobacco use screening done upon admission between nursing and RT assessments. Both parties were reporting data in the medical record, but there were many inconsistencies found in the

documentation that required further clarification. Thirdly, the TOB-3/3a quality measure requirements initially seemed straightforward, but became more complicated as patients began to be abstracted. To fully meet the quality measure, patients required documentation of OTC NRT acceptance or refusal and a referral to the Ohio Tobacco Quit Line. Since the majority of our educational focus was on medications, it was difficult to assess our success because many patients declined being enrolled in the Quit Line.

Some logistical limitations also existed within the study. There were frequent barriers to provide education, such as patients with contact precautions, language barriers, etc. Additionally, not all patients received follow-up phone calls due to insufficient staff. Ideally, all patients would have received phone calls to better estimate the success of our interventions. However, with limited staff available to make phone calls on a large number of patients, we decided it would be better to target our approach to those who showed initial interest in medications. In future studies, it would be beneficial to look at the entire patient population in follow-up as to avoid potential bias.

In the future, the tobacco cessation education process must be streamlined with enhanced nursing

and RT involvement. Medication education should be an area of focus, regardless of the individual providing the education. It would be helpful to expand pharmacy services to provide prescriptions and free OTC products to our patients, similarly to previous studies in this population. Longer follow-up should be encouraged to accurately assess the long-term effectiveness of in-hospital educational interventions.

5. Conclusions

Our study supports the pharmacist's role in identifying the best tobacco cessation medication options for patients while providing a counseling session to contribute to their likelihood to quit. Additionally, our results indicate that pharmacy-led tobacco cessation interventions during hospitalizations have a positive impact on TJC TOB-3/3a quality measure results as well as quit rates and readiness to quit post-discharge. These results support previous research regarding pharmacist involvement in tobacco cessation education and give further insight on the pharmacist's impact in the hospital setting. Future studies should aim to reach more patients in collaboration with nursing and RT while providing a more comprehensive follow-up process to further establish the importance of pharmacist involvement in tobacco cessation.

References

- [1] Centers for Disease Control and Prevention. 2014. "Current Cigarette Smoking among Adults in the United States."
- [2] The Joint Commission. 2016. "Specifications Manual for National Hospital Inpatient Quality Measures Discharges."
- [3] Reid, R. D., Pipe, A. L., and Quinlan, B. 2006. "Promoting Smoking Cessation during Hospitalization for Coronary Artery Disease." *The Canadian Journal of Cardiology* 22 (9): 775-80.
- [4] Fiore, M. C., Jaen, C. R., and Baker, T. B. 2008. "A Clinical Practice Guideline for Treating Tobacco Use and Dependence: 2008 Update a U.S. Public Health Service Report." *American Journal of Preventive Medicine* 35 (2): 158-76.
- [5] Dent, L. A., Harris, K. J., Noonan, C. W., et al. 2009. "Randomized Trial Assessing the Effectiveness of A Pharmacist-Delivered Program for Smoking Cessation." *Ann Pharmacother* 43 (2): 194-201.
- [6] Dobrin, M., Blanc, A. L., Rouiller, F., et al. 2014. "Clinical Pharmacist's Role in Implementing a Smoking Cessation Intervention in a Swiss Regional Hospital: An Exploratory Study." *International J of Clin Pharm*. 36 (3): 526-34.
- [7] Thomas, D., Abramson, M. J., Bonevski, B., et al. 2013. "A Pharmacist-Led System-Change Smoking Cessation Intervention for Smokers Admitted to Australian Public Hospitals (GIVE UP FOR GOOD): Study Protocol for A Randomised Controlled Trial." *Trials*. 14: 148.
- [8] Laniado-Laborin, R. 2009. "Smoking Cessation Intervention: An Evidence-based Approach." *Postgrad Med*. 122: 74-82.