

Utilizing clinical support staff and electronic health records to increase tobacco use documentation and referrals to a state quitline

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The purpose of this study was to determine if incorporation of a workflow in the electronic health record (EHR) that empowered medical assistants (MA) to become tobacco-cessation promoters, would increase tobacco documentation and referral for cessation counseling. MAs in three primary care centers were trained to ask every patient, at every visit, about tobacco use then document this status in the EHR. Patients ready to quit were electronically referred to the quitline for tobacco cessation counseling. Documentation of tobacco status, ongoing verification of tobacco use, and chief complaint recording was compared before and after the intervention. Logistic regression analysis indicated that after adjusting for differences between care centers, there were increased odds in initial documentation (OR = 1.52; 95% CI = 1.42 – 1.62) and ongoing verification (OR = 2.86; 95% CI = 1.42 – 1.62) in 2010 in comparison with 2009. Recording of tobacco cessation as the chief complaint in current smokers increased 91% (OR = 1.91; 95% CI = 1.56 – 2.34). Documentation and referrals for smoking cessation can be increased in organizations using EHR by empowering MAs to promote tobacco cessation and providing electronic referral options. (J Vasc Nurs 2012;30:107-111)

Tobacco use continues to be the leading cause of preventable death and disease in the United States.¹ Approximately 30 million tobacco users receive care by a primary care provider, but only a fraction of patients ever receive counseling and ongoing follow-up for tobacco cessation, which may increase the probability of quitting.²

Recommendations from the U.S. Public Health Service's Clinical Practice Guidelines recognize that using multiple systems to identify smokers, advise and assess readiness to quit

and refer them to an established quitline increases delivery of cessation support for primary care patients beyond that accomplished by traditional tobacco-use vital-sign screening alone.³

The electronic health record (EHR) is an effective way to identify the smoking status of patients.⁴ The growing implementation of the EHR in primary care may provide an opportunity to more systematically identify and refer smokers to quitlines than was done previously.⁵ In addition, the role of medical assistants (MAs) to document tobacco status in the EHR has been shown to increase patient awareness of the availability of access to tobacco-cessation counseling.⁶ One method of increasing tobacco documentation is to empower MAs and other office staff with the responsibility.⁷

The Centers for Medicare and Medicaid Electronic Health Record Incentive Program provides incentives to healthcare organizations that demonstrate meaningful use of the EHR by reporting quality measures. One of these quality measures (stage 1 meaningful use requirement) is that more than 50 percent of patients 13 years of age or older have smoking status recorded as structured data.⁸

The purpose of this study was to determine if incorporation of a workflow that empowered MAs to ask patients about tobacco use, document tobacco status in the EHR, and generate electronic referrals to a quitline for patients who smoke, increased tobacco documentation and referral for cessation counseling.

METHODS

In January, 2010, MAs in three primary care centers from Sutter Medical Foundation, a network of primary care and specialty physicians in Northern California, participated in a training program to improve tobacco-cessation practices. The centers included a large urban family practice clinic (Elk Grove), a small

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urban family practice residency program that included a teaching element (Midtown), and a medium-sized suburban internal medicine clinic (Roseville). The Sutter Health network includes 140 primary care centers with approximately 30 percent of patients in managed-care plans.

A training module was adapted from the "Do you cAARd?" campaign, a partnership among the California Diabetes Program (CDP), a task force of diabetes educators, and the California Smokers' Helpline. MA training tools and patient materials were provided by the Helpline and described by MacAller and colleagues previously.⁹ The first author was a member of the task force, principal investigator of the study and lead instructor for the pilot. The third author is an employee of the CDP, leader of the task force who assisted with the trainings along with the seventh author, an RN who presented the EHR workflow to the MAs. The first and third authors have presented nationally regarding the campaign and created a free online continuing education program for nurses and other healthcare providers. Detailed information and the "Do you cAARd?" Toolkit can be downloaded free from the California Diabetes Program Web site.¹⁰ The original campaign focused on diabetes educators and patients with diabetes; however, the pilot study content was adapted to include all patients in the care-center locations, with a focus on chronic disease. MAs were provided with 1 hour of training that included general background information on the detrimental health effects of tobacco use, instructions on how to implement the "Ask, Advise, Refer" intervention, followed by specific EHR screen shots that outlined the new workflow and documentation requirements. The intervention required MAs to ask every patient, at every visit, about tobacco use and document their status in the tobacco-history field in the EHR. For patients who were non-smokers or former smokers, no further action was required. For patients who stated they used tobacco, the MA verified this status in the EHR by checking a box in the visit encounter, then used educational tools to provide tobacco-cessation information and advised patients to quit. If patients indicated that they were ready to quit, the MA generated an electronic proactive referral to the California Smokers' Helpline (Helpline) for tobacco-cessation education and counseling, and provided patients with Helpline contact information. The referral process entailed generation of a letter addressed to the Helpline that contained patient contact information, language spoken by the patient and verbal acknowledgement of patient consent. The letter was sent to the Helpline through the EHR communication management function, and the Helpline proceeded to follow up with patients once they received the referral. The MA then documented tobacco-cessation education intervention in the chief complaint field and care team notes.

Statistical analysis

The frequency of documentation of tobacco status, verification of ongoing tobacco use, and tobacco-cessation education added in the chief complaint field for current smokers (chief complaint recording) for April, June, and August 2009 (prior to MA training) and in the same months in 2010 was obtained through a retrospective EHR query.

Contingency tables, the χ^2 Test of Independence, and Pearson Residuals were used to assess the distribution of tobacco sta-

tus documentation, verification of ongoing tobacco use, and chief complaint recordings in 2009 versus 2010. Logistic regression analysis and 95% confidence intervals were used to determine if there were increased odds of documentation, verification of ongoing tobacco use, and chief complaint recordings in 2010 versus 2009 when adjusted for differences between the care centers. Analysis was conducted using SPSS 14.0. This study received IRC approval as exempt status from the Sutter Health Central Institutional Review Committee.

RESULTS

A total of 27,628 encounters were recorded at the three care centers in 2009 and 25,943 in 2010. Figure 1A, B, and C illustrates that the changes in documentation, verification and chief complaint recordings increased overall between 2009 and 2010. Table 1 shows that there were variations among the care centers. The percentage of encounters where smoking status was documented increased significantly ($P < 0.05$) at the large urban and suburban care centers but remained unchanged at the small urban facility. Verification increased at the large and small urban centers but not at the suburban center. Chief complaint recording for people who stated that they currently smoked increased at all facilities (Table 1).

Logistic regression analysis indicated that after adjusting for differences between care centers, there were increased odds in initial documentation (OR = 1.52; 95% CI = 1.42 – 1.62) and ongoing verification (OR = 2.86; 95% CI = 1.42 – 1.62) in 2010 when compared with 2009. Recording of tobacco cessation as the chief complaint in current smokers increased 91% (OR = 1.91; 95% CI = 1.56 – 2.34).

DISCUSSION

The current study demonstrated that implementation of a system to document tobacco status in the EHR by engaging MAs in the process improved the documentation, ongoing verification and increased referrals to the Helpline as indicated by recording of tobacco cessation as a chief complaint. Another advantage of having tobacco cessation education documented in the chief complaint field is that it gives healthcare providers a prompt to discuss tobacco use with patients since patient visits are focused on chief complaints.¹¹ Asking patients about tobacco use at every encounter increased the opportunity to identify when a tobacco user was ready to quit and provided an opportunity for referral to counseling. One site, the small urban facility did not show a statistically significant increase in smoking status documentation most likely due to their high baseline rate and final rate of 98.9%. This site has a family practice residency program, so it is likely that residents documented tobacco status more frequently. The suburban facility actually decreased their verification rate post program. Through informal focus-group feedback, MAs indicated that their patients were longstanding and well known to staff, and indicated hesitancy in verifying the tobacco status at every visit. Overall this study supports observations that simple process changes that engage both clinicians and other office staff in tobacco cessation can increase the number of patients who receive tobacco-cessation options.^{5,11,12}

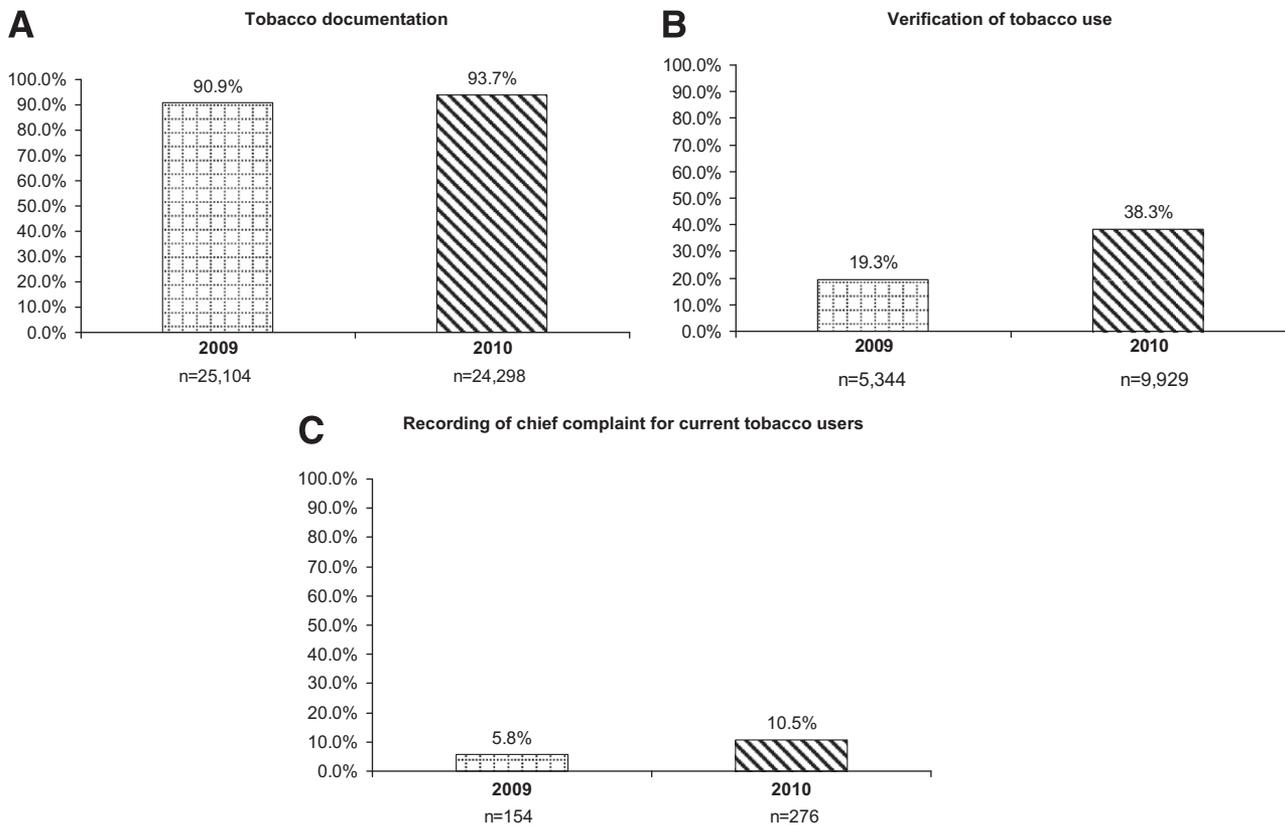


Figure 1. Differences before (2009) and after (2010) a training program to improve tobacco cessation practices*. *Statistically significant increases in the percent of instances of documentation, verification, and recording of chief complaint between 2009 and 2010 for all outcomes (χ^2 , $P < 0.001$).

The success of this project relied on three components: 1) the organization having the technical ability to include tobacco information in the standard EHR screens accessed by MAs; 2) the willingness of MAs to expand their interactions with patients to include asking about tobacco cessation, a topic they likely had not previously discussed with patients; and 3) the organization having a relationship with the California Smokers' Helpline.

Institutional support is required to enhance the EHR. This study demonstrates that by including a new workflow process to add tobacco documentation during a patient encounter with an MA that improved meaningful use of the EHR can be achieved. Organizational support is also required to build necessary EHR tools to facilitate an electronic referral to a quitline. Because there are financial incentives for achieving meaningful use of the EHR, this study could encourage organizations with the staffing and EHR capacity to incorporate a similar process for tobacco documentation.

Engagement of the MAs does not require an EHR but requires MAs to take on the additional responsibility of a "tobacco cessation promoter." One of the roles of MAs in healthcare is to obtain basic health information from patients, which makes them qualified to approach patients about tobacco habits. To maintain the scope of practice, the recommendation to quit using tobacco was a health-system directive and not a personal recommendation by the MA. In addition, the referrals to the Helpline were designated as assistance letters so that the MA would be able to send without requiring the clinician's signature. Verbal patient consent

was the only requirement. This process-change decreased time demands on busy clinicians. Additionally, the MAs felt empowered by the ability to offer tobacco-cessation services to patients. The Helpline referral was an intervention that the MA could offer after screening, which encouraged MAs to continue the practice.

Healthcare providers usually do not have established tobacco-cessation programs at their disposal. Partnering with state quitlines or other local agencies that utilize trained counselors is a viable option for organizations to provide tobacco-cessation counseling.^{13,14} Studies have shown that connecting clinician offices to telephone counseling programs is feasible and cost effective, and that proactive referrals, generated by the healthcare team, increased the use of quitlines by patients for cessation counseling.^{15,16}

This study identified some weaknesses in the design of this EHR particularly for tobacco cessation, promotion and tracking. Currently, tobacco use is not considered a vital sign. Instead, it is included in the "social history" section of the encounter with no tools, such as best-practice alerts and hard stops to force the user to document and refer for tobacco-cessation counseling to continue. Most healthcare systems are reluctant to add hard stops to ensure compliance with best-practice alerts. Without the addition of hard stops, the workflow can be bypassed or only partially completed. In addition, the referral process required multiple steps and was considered cumbersome by some MAs. We recommend that prior to implementation, a one-click referral option from the EHR to the Helpline should be developed. A

TABLE 1

FREQUENCY (%) OF ENCOUNTERS WHERE TOBACCO USE WAS DOCUMENTED, VERIFIED AND A CHIEF COMPLAINT RECORDED BEFORE AND AFTER PROGRAM IMPLEMENTATION

	2009 (n = 27,628)	2010 (n = 25,943)
Initial documentation		
Large Urban (Elk Grove)*	15,760 (92.2)	14,589 (95.0)
Small Urban (Midtown)	3,450 (98.4)	3,480 (98.9)
Suburban (Roseville)*	5,894 (83.9)	6,229 (88.1)
Ongoing verification		
Large Urban (Elk Grove)*	1,626 (9.5)	5,148 (33.5)
Small Urban (Midtown)*	1,772 (50.6)	2,918 (82.9)
Suburban (Roseville)	1,946 (27.7)	1,863 (26.4)
Chief complaint recorded (Current smokers)		
Large Urban (Elk Grove)*	75 (4.4)	135 (8.1)
Small Urban (Midtown)*	42 (10.0)	84 (20.2)
Suburban (Roseville)*	37 (6.9)	57 (10.5)

*Indicates statistically significant difference in 2010 versus 2009 χ^2 , $P < 0.05$

streamlined process with full integration in the EHR as described by Sherman may increase sustainability.¹⁵ Other enhancements to an EHR could include addition of check boxes identifying patients as being ready to quit and identifying whether a referral for counseling has been generated. Knowledge of when patients are ready to quit will provide the ability to link readiness to quit with referral to counseling and subsequent tracking for quality improvement.

This study demonstrated that tobacco documentation and referral can be increased though changes in existing processes in outpatient care centers. It is possible that our results may be due to more patients presenting at the care centers in 2010 ready to quit, which would lead to increased documentation, but there are no known reasons why patients would be more likely to discuss tobacco use in 2010 versus 2009. This study did not track how many patients who received tobacco-cessation counseling from the Helpline actually quit. Therefore, it is possible that this intervention may increase documentation and referral but not increase the percent of people who actually quit using tobacco. The findings of this study are consistent with results from a recent Cochrane review of EHR support for smoking cessation that identified no studies with documented patient quit rates; however, documentation of tobacco use did increase with an EHR.¹⁷ Nevertheless, documentation is an important first step toward engaging people who use tobacco, creating an accurate database in the EHR and initiating the referral process. A future study will include an assessment of the number and percentage of Helpline contacts and the rates of successful quit attempts to evaluate the effectiveness of the intervention.

Documentation and referral can be increased in organizations with an EHR by empowering MAs to engage patients in a discussion about tobacco use, asking smokers if they are ready to quit,

referring them to quitlines and documenting the process in the EHR. Enhancing EHR functionality may improve efficiency, quality of care and ultimately health outcomes. Support personnel respond positively to engaging with patients about tobacco use and represent a practical way to meet new guidelines and improve care.

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