

Registered Nurse Initiation of a Tobacco Intervention Protocol

Leading Quality Care

Kathleen K. Zarling, MS, ACNS-BC, RN-BC, FAACVPR; Michael V. Burke, EdD; Kim A. Gaines, MS, RN; Thomas R. Gauvin, MA

This article summarizes the development and implementation of a registered nurse–initiated protocol to intervene with hospitalized patients who are tobacco-dependent, may be experiencing tobacco withdrawal, and who are hospitalized in a smoke-free environment. **Rationale:** Tobacco use is the leading cause of preventable death in the United States. Hospitalization provides a unique teachable moment to treat tobacco dependence. Nurses can be effective in talking with patients about tobacco use. **Development:** The clinical nurse specialist spheres of influence model and the role of the clinical nurse specialist were important for developing a tobacco use intervention protocol. A multi-disciplinary team created key objectives. These included identifying and assessing all patients who use tobacco, providing treatment to manage both withdrawal and address tobacco dependence, providing comfort to patients while hospitalized in a tobacco-free environment, encouraging lifelong cessation. The bedside admitting nurse was chosen as the pivotal professional to trigger tobacco use interventions. **Implementation:** A protocol was finalized that requires the bedside nurse to assess all patients for past and current tobacco use. The nurse is then prompted to (1) provide information about tobacco dependence and treatment, (2) ask if the patient wants nicotine patch therapy to address withdrawal and, (3) order a consult with a specialist at the patient's request. Extensive and varied educational programs were developed to support the implementation of the protocol. **Outcomes:** The tobacco use intervention protocol has become important for providing assessment and intervention to patients who use tobacco. It has increased the number of specialist consults provided to patients. It has increased compliance with quality reporting data by national quality accrediting bodies.

KEY WORDS: CNS spheres of influence, inpatient protocols, quality improvement, quality performance measures, nursing practice innovations, RN-initiated practice change, smoking cessation, smoking interventions

Rationale

Nurses can make an impact on the leading, preventable cause of death and disability in the United States. Tobacco use causes multiple morbidities including cardiovascular disease, stroke, numerous cancers, and chronic obstructive pulmonary disease.¹

Kathleen K. Zarling, MS, ACNS-BC, RN-BC, FAACVPR

Clinical Nurse Specialist, Department of Nursing, Mayo Clinic, Rochester, Minnesota.

Michael V. Burke, EdD

Treatment Program Coordinator, Nicotine Dependence Center, Mayo Clinic, Rochester, Minnesota.

Kim A. Gaines, MS, RN

Nurse Administrator, Department of Nursing, Mayo Clinic, Rochester, Minnesota.

Thomas R. Gauvin, MA

Counselor and Tobacco Treatment Specialist, Nicotine Dependence Center, Mayo Clinic, Rochester, Minnesota.

Corresponding author

Kathleen K. Zarling, MS, ACNS-BC, RN-BC, FAACVPR, St Mary's Nursing Service, St Mary's Hospital, Mayo Clinic, Rochester, MN 55902 (zarling.kathleen@mayo.edu).

Tobacco kills an estimated 438,000 people each year.¹ Clinical practice guidelines have been developed to help address this widespread health problem. The guidelines call for each patient entering a healthcare environment to receive a 5 A's approach: ask about tobacco use, advise to quit, assess for motivation to quit, assist with a quit attempt, and arrange follow-up.²

Hospitalization provides a unique opportunity to treat tobacco dependence.³ National monitoring groups such as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the National Quality Forum recognize this by requiring tobacco screening and advice/counseling as mandatory performance measures for hospitalized patients with particular health problems such as congestive heart failure, myocardial infarction, or community-acquired pneumonia.⁴

Hospitals are required by groups such as JCAHO and National Quality Forum to be smoke-free environments. Patients who are addicted to tobacco

products will frequently experience nicotine withdrawal symptoms and tobacco cravings when hospitalized. Because of this, they are more likely to violate hospital policies.⁵ Nicotine replacement can help alleviate the patients' withdrawal symptoms, but it is underused and frequently not provided to hospitalized patients.⁶

Nurses can be effective in providing treatment. Bedside nurses are uniquely placed to understand and meet the patients' need for comfort and support.⁷ Schultz⁸ conducted a comprehensive review of the literature regarding nursing and tobacco use interventions. Ten studies demonstrating the effectiveness of nurse-delivered hospital interventions were published from 1996 to 2003. Intensive interventions were more likely to be effective, particularly those with extended follow-up. The authors found that it was important to provide nurses with education to enhance their comfort level and communication skills in addressing tobacco use with patients. System enhancements such as chart reminders were found to be helpful in increasing tobacco use interventions by nurses. McEwen et al⁹ randomly sampled general practitioners and practice nurses in England and Wales to assess their interventions with smoking patients. Ninety-nine percent of the nurses declared that helping smokers stop tobacco use was part of their role. Almost all reported that they recorded smoking status when the patient first entered the healthcare system. Ninety-five percent of the nurses indicated that they occasionally provided advice to stop smoking. Seventy-one percent reported that they advised at nearly all consultations. Nurses who reported being educated in treating tobacco dependence were more knowledgeable, engaged more actively in helping patients, and had more positive attitudes toward treating tobacco dependence.

Rice and Stead¹⁰ reviewed 42 studies of nursing interventions for smokers. Thirty-one of the studies compared a nursing intervention to a control or usual care group. These studies showed a significant increase in the odds of quitting tobacco among those in the intervention groups. Advice and support from nursing staff were especially successful for increased success in quitting smoking when delivered in a hospital setting. The recommendation was to monitor tobacco use and smoking cessation interventions as an integral part of standard practice, so that all patients were asked about tobacco use and provided support if needed. Below, we describe a project that translated these findings into practice.

At Mayo Clinic in Rochester, Minnesota, a registered nurse (RN)-initiated protocol was proactively developed to comprehensively address tobacco use and dependence among hospitalized patients. The protocol empowers the bedside nurse to (1)

assess each patient for tobacco use, (2) provide nicotine patch replacement for comfort from withdrawal, and (3) order a behavioral consult with a tobacco treatment specialist.

This article will review the process by which this RN-initiated protocol was developed and implemented; describe the impact that the clinical nurse specialist (CNS) practice model has had upon the process; describe the resulting protocol and practice change; and discuss the performance measures, practice guidelines, and quality care standards being met through the use of the protocol.

Specific Steps in the Development of the "Tobacco Use Intervention Protocol"

A CNS championed the development and implementation for this system change. Clinical nurse specialists have unique skills for addressing patient needs, engaging nurses, and promoting system changes.¹¹ In this process, the CNS, as a change agent, was uniquely poised to engage key players, execute system changes, and develop procedures that were critical for creating this practice change.

The CNS spheres of influence model was the framework for creating, developing, and implementing the protocol (see Figure 1).^{12,13}

The model describes 3 spheres through which the CNS can impact patient care: the patient/client sphere, the nurses/nursing practice sphere, and the institutional/system sphere. This model helped to systematically identify and engage a multidisciplinary team. It provided the framework to incorporate appropriate steps of development and implementation in a way that addressed patient needs, nurse practice needs, and institutional needs.

The first step in the process was to formulate a work group. In addition to the CNS, the team consisted of representatives from nursing staff, nursing education, physicians from medicine and surgery, pharmacists, tobacco treatment specialists, and quality/continuous improvement staff.

The group identified key objectives to be accomplished through the change process:

1. Identify and intervene with all hospitalized patients who use tobacco or have used tobacco in the previous 12 months.
2. Include interventions to treat withdrawal symptoms as well as treatment for ongoing abstinence from tobacco.
3. Engage bedside nurses because they are uniquely poised to work with all patients, monitor tobacco withdrawal, and discuss tobacco use with all patients.
4. Provide patients with more intensive specialized treatment as requested or indicated.

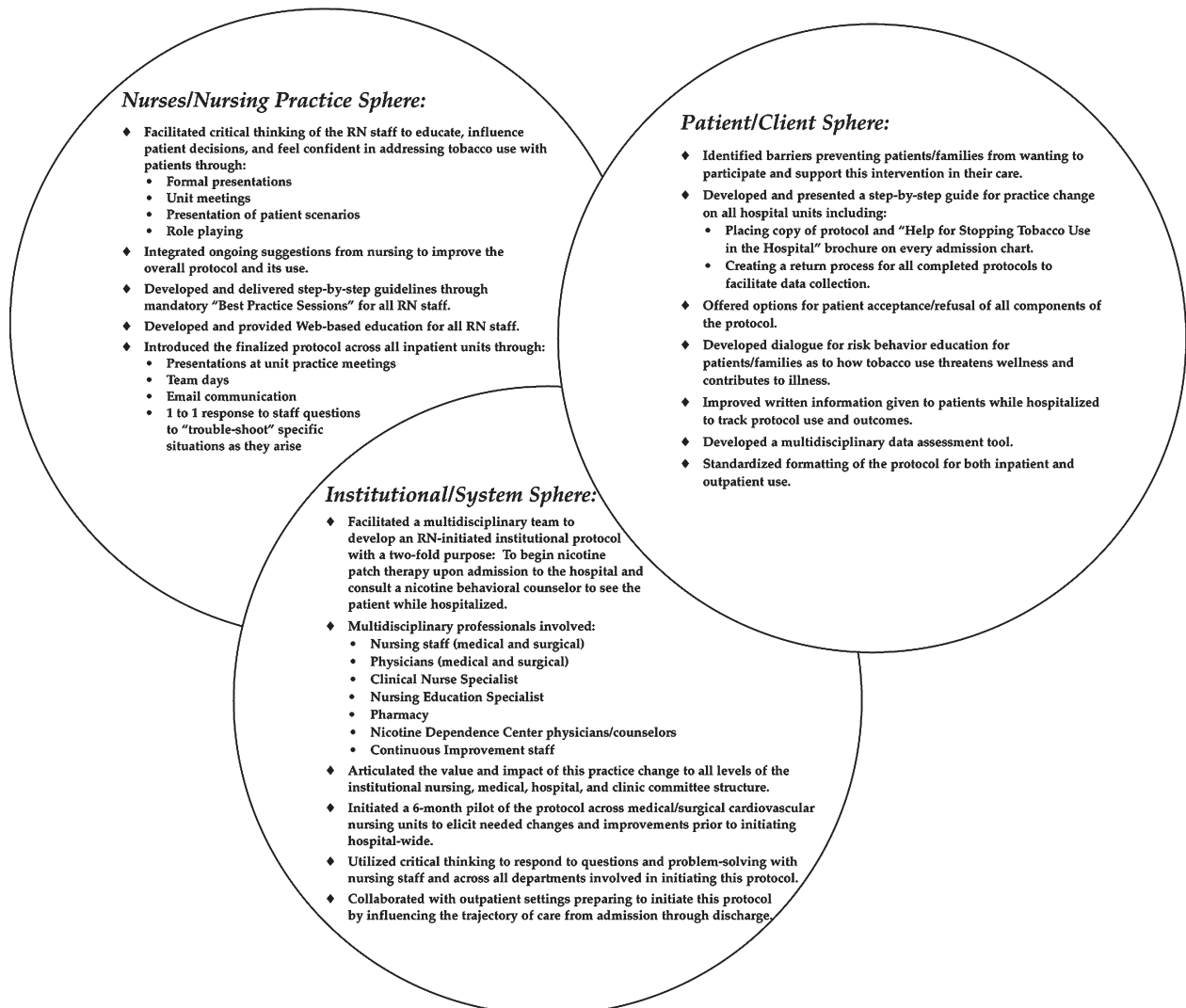


FIGURE 1. Clinical Nurse Specialist Spheres of Influence which guided the tobacco protocol development.^{14,15}

Input from staff nursing was considered vital to the engagement and support for all hospital nurses, as they would ultimately implement and deliver the protocol. It was crucial to work with key institutional practice committees throughout the process, from beginning to end. Input from physicians, pharmacists, and tobacco treatment specialists assured that evidence-based assessment and treatment were applied and sufficient medication use was provided to address withdrawal and ensure patient safety. In addition, quality improvement staff and a nurse education specialist helped ensure that the protocol would meet standards and performance measures as well as incorporate competency-based best practice.

Through collaboration, the work group developed a draft protocol. On admission, the bedside nurse was required to ask every patient if he/she had used

tobacco in his/her lifetime, and if so, had he/she used tobacco in the past 12 months? The protocol allowed the nurse to request nicotine replacement patches to alleviate the patients' withdrawal and/or request a consultation with a tobacco treatment specialist for patients.

Once the draft protocol was developed, it was presented to a number of institutional committees for review to encourage support and obtain approval. These committees included the nursing practice committee, medical practice committee, surgical practice committee, and pharmacy practice committee. All departments within the institution that needed to review and give input were identified, and meetings were held with each group to obtain feedback and revise the protocol. Our experience suggested that these meetings should be scheduled early in the process to allow the highest degree of input and

Inpatient, Adult	Protocol
<div style="display: flex; align-items: center;"> <div> <p>Tobacco Use Intervention</p> <p>Protocol applies to all patients. Parental notification required for patients under 18 years of age.</p> <p>Resource: Nicotine Dependence Center (266-1930).</p> </div> </div>	<p style="text-align: right; font-size: small;">(Mayo Clinic Number, Name and Room Number Above)</p>
<p>Age: _____</p> <p>Primary Service: _____</p> <p>Allergy module reviewed. Choose one: <input type="checkbox"/> No additional allergies identified, or <input type="checkbox"/> Additional allergies identified and MICS Allergy updated.</p>	
<p>Step 1</p> <p>Has patient <u>ever</u> used any tobacco products?</p> <p><input type="checkbox"/> Yes – proceed to next question.</p> <p><input type="checkbox"/> No – protocol does not apply.</p> <p>Has tobacco use been within the last 12 months?</p> <p><input type="checkbox"/> Yes – proceed to assessment section.</p> <p><input type="checkbox"/> No – protocol does not apply.</p> <p>Assessment Section: (US cigarette pack = 20 cigarettes; Canada cigarette pack = 25 cigarettes)</p> <p><input type="checkbox"/> Cigarettes per day _____</p> <p><input type="checkbox"/> Spit/smokeless tobacco (can/pouch per week) _____</p> <p><input type="checkbox"/> Pipe/cigar (number per day) _____</p> <p><input type="checkbox"/> Not currently using, date patient reported stopped tobacco use: <u> </u>mm/<u> </u>dd/<u> </u>yyyy .</p>	
<p>Step 2</p> <p>Behavioral Intervention Section:</p> <ul style="list-style-type: none"> Registered Nurse recommends to end tobacco use or continue with abstinence. Give patient education pamphlet: "Help for Stopping Tobacco Use in the Hospital" (MC2065-41). 	
<p>Step 3</p> <p>Exclusion Criteria for nicotine patch therapy: (Select All That Apply)</p> <p><input type="checkbox"/> Patient has a known allergy to Nicotine patch.</p> <p><input type="checkbox"/> Patient is already on Nicotine replacement product.</p> <p><input type="checkbox"/> Patient reports complete abstinence from tobacco for 30 days or more.</p> <p><input type="checkbox"/> Patient reports she is pregnant.</p> <p><input type="checkbox"/> Patient using pipe or cigar only.</p> <p>If any box is checked, Nicotine patch therapy is not indicated. Proceed to Step 4.</p> <p>If none of the boxes are checked, proceed to Step 5.</p>	
<p>Step 4 Offer patient Nicotine Dependence Center (NDC) consult without nicotine replacement therapy.</p> <p><input type="checkbox"/> Patient consents to Nicotine Dependence Center consult only.</p> <ul style="list-style-type: none"> If box checked, sign protocol and have unit secretary send electronic referral to NDC. <p><input type="checkbox"/> Patient refuses NDC consult.</p> <ul style="list-style-type: none"> If box checked, sign protocol and submit completed protocol (Part 2) to Nursing: SMH Joseph M-66. 	
<p>Step 5</p> <p>Consent: Offer patient Nicotine Dependence Center (NDC) consult and Nicotine (patch) replacement therapy.</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px; text-align: center;"> <p>Select Only One</p> </div> <div> <p><input type="checkbox"/> A Patient consents to NDC consult and Nicotine patch.</p> <ul style="list-style-type: none"> If box checked, proceed to medication intervention section and have unit secretary send electronic referral to NDC. <p><input type="checkbox"/> B Patient refuses NDC consult, but consents to Nicotine patch.</p> <ul style="list-style-type: none"> If box checked, proceed to medication intervention section to begin patch therapy. <p><input type="checkbox"/> C Patient refuses Nicotine patch, but consents to NDC consult.</p> <ul style="list-style-type: none"> If box checked, have unit secretary send electronic referral to NDC. <p><input type="checkbox"/> D Patient refuses referral and treatment.</p> <ul style="list-style-type: none"> If box checked, submit completed protocol (part 2) to Nursing (SMH Joseph M-66). </div> </div>	
<p>Step 6</p> <p>Medication Intervention Section: (select appropriate section based on information in step one)</p> <p>Cigarettes</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px; text-align: center;"> <p>Select Only One</p> </div> <div> <p><input type="checkbox"/> Less than 20 cigarettes per day: Nicotine Patch (Nicoderm®CQ) 14 mg applied to skin every morning, remove old patch.</p> <p><input type="checkbox"/> 20 – 30 cigarettes per day: Nicotine Patch (Nicoderm®CQ) 21 mg applied to skin every morning, remove old patch.</p> <p><input type="checkbox"/> 31 – 40 cigarettes per day: Nicotine Patch (Nicoderm®CQ) 35 mg applied to skin every morning, remove old patch.</p> <p><input type="checkbox"/> More than 40 cigarettes per day: Nicotine Patch (Nicoderm®CQ) 42 mg applied to skin every morning, remove old patch.</p> </div> </div> <p>Spit/smokeless tobacco</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px; text-align: center;"> <p>Select Only One</p> </div> <div> <p><input type="checkbox"/> Less than one can/pouch per week: Nicotine Patch (Nicoderm®CQ) 14 mg applied to skin every morning, remove old patch.</p> <p><input type="checkbox"/> 1 can/pouch per week: Nicotine Patch (Nicoderm®CQ) 21 mg applied to skin every morning, remove old patch.</p> <p><input type="checkbox"/> 2 cans/pouches per week: Nicotine Patch (Nicoderm®CQ) 35 mg applied to skin every morning, remove old patch.</p> <p><input type="checkbox"/> 3 cans/pouches or greater per week: Nicotine Patch (Nicoderm®CQ) 42 mg applied to skin every morning, remove old patch.</p> </div> </div>	
<p>Registered Nurse Signature: _____ Nurse Pager # (if applicable): _____</p> <p>Registered Nurse Printed Name: _____ Date: <u> </u>mm/<u> </u>dd/<u> </u>yyyy Time: <u> </u>h : <u> </u>m : <u> </u>m <small>(24 hour clock)</small></p> <p style="text-align: center; font-size: small;">Part 1 – Pharmacy Part 2 – Nursing (SMH Joseph M-66) Part 3 – Order Book</p> <p style="text-align: center; font-size: x-small;">This protocol has been developed to reflect the practice patterns of the clinicians who wrote it. It sets forth recommendations as to practice, not rigid rules.</p>	

© 2006 Mayo Foundation for Medical Education and Research. All rights reserved.

MC1156-407rev DRAFT

FIGURE 2. The registered nurse–initiated tobacco use intervention protocol. This protocol may not be duplicated without the expressed permission of Mayo Clinic.

buy-in from all groups that would participate in approving and implementing the practice changes. The protocol was piloted on 4 cardiovascular units. These were considered key areas, where patients often are tobacco users and frequently have illnesses caused or worsened by tobacco use. Continual “troubleshooting” and response to questions from all staff and departments within the institution were coordinated by the CNS. The input, feedback, and continual updates created a “polished” protocol, which met the 4 key outcome objectives (see Figure 2).

As the protocol was approved and endorsed by the necessary committees, an extensive education program was developed. The education was intended to facilitate a smooth, timely initiation, education, and orientation for all involved nursing staff. Within the Mayo Clinic, Rochester, more than 6,000 nursing department employees were oriented and educated to use the protocol. It was imperative to have a simple, implicit, understandable process of education, orientation, and implementation. A number of communication outlets were used to ensure thorough delivery of the education.

- Power point presentations were provided to all units.
- Questions were answered in a timely fashion, and frequent e-mail updates were delivered.
- Project leaders attended “team days” on all nursing units to answer questions and educate staff.
- Presentations were provided at “best practice sessions.” (These are mandatory, quarterly, medical centerwide, educational sessions to introduce new practice changes.)
- Posters and other written information were placed on all units to inform staff about the implementation of the protocol.

Implications for Practice

We believe that the RN-initiated protocol has provided a number of advantages for our patients. It helps to ensure that there is a provision of consistent care for all patients who use tobacco, and it empowers the bedside nurse to initiate the protocol. The nursing role is critical because the bedside nurse has a unique vantage from which to observe nicotine withdrawal and discuss treatment options with patients. The protocol triggers tobacco treatment specialist interventions for patients through communication between the patient and the bedside nurse. The protocol provides hospitalized patients with options for treatment including nicotine patch therapy, which can be requested from the nurse directly; information about tobacco dependence and treatments provided by the bedside

nurse; and more intensive interventions from a tobacco treatment specialist when requested. The specialist can provide additional pharmacotherapy options, cognitive behavioral therapy, and resources for ongoing support and relapse-prevention. This care is provided in collaboration with the primary physician.

As discussed earlier, the JCAHO requires that tobacco use be addressed with every patient diagnosed with myocardial infarction, heart failure, or community-acquired pneumonia.⁴ The nursing protocol is one measure to ensure that this is done with all patients and the intensity of the intervention can match what is requested by the patient. Patients who must be tobacco-free while hospitalized report being comfortable and experiencing fewer withdrawal symptoms from tobacco. The number of specialist interventions requested since the protocol was initiated has increased by approximately 50%, from 742 hospitalized patients seen in 2004 to 1,086 patients seen in 2006.

Currently, the protocol is being changed from paper documentation to electronic documentation. This will allow us to evaluate more fully the use and effectiveness of the protocol. Nursing competencies have been developed enabling uniform implementation of the protocol. This contributes to high quality outcomes. Studies are also being planned to evaluate the eventual impact of the protocol upon ongoing abstinence from tobacco.

Acknowledgment

The authors would like to thank Dr Richard D. Hurt for his review, input, and support of this project and article.

REFERENCES

1. Centers for Disease Control and Prevention. Annual smoking-attributable mortality, years of potential life lost, and productivity losses—United States, 1997–2001. *MMWR Morb Mortal Wkly Rep.* 2005;54(25):625–628.
2. Fiore MC, Bailey WC, Cohen SJ, et al. *Treating Tobacco Use and Dependence. Clinical Practice Guideline.* Rockville, MD: US Department of Health and Human Services Public Health Service; 2000.
3. Rigotti NA, Munafo MR, Murphy MFG, Stead LF. Interventions for smoking cessation in hospitalized patients. *Cochrane Database Syst Rev.* 2007;(3):CD001837.
4. The Joint Commission. Specification manual for national hospital quality measures: AMI-4, JF-4, PN-4. 2008:21. <http://www.jointcommission.org/PerformanceMeasurement/PerformanceMeasurement/Current+NHQM+Manual.htm>. Accessed April 28, 2008.
5. Rigotti NA, Arnsten JH, McKool KM, Wood-Reid KM, Pasternak RC, Singer DE. Smoking by patients in a smoke-free hospital: prevalence, predictors, and implications. *Prev Med.* 2000;31(2 Pt 1):159–166.

6. Rigotti NA, Arnsten JH, McKool KM, Wood-Reid KM, Singer DE, Pasternak RC. The use of nicotine-replacement therapy by hospitalized smokers. *Am J Prev Med.* 1999;17(4):255–259.
7. Nussbaum GB. Spirituality in critical care: patient comfort and satisfaction. *Crit Care Nurs Q.* 2003;26(3):214–220.
8. Schultz AS. Nursing and tobacco reduction: a review of the literature. *Int J Nurs Stud.* 2003;40(6):571–586.
9. McEwen A, West R, Preston A. Triggering anti-smoking advice by GPs: mode of action of an intervention stimulating smoking cessation advice by GPs. *Patient Educ Couns.* 2006;62(1):89–94.
10. Rice VH, Stead LF. Nursing interventions for smoking cessation. *Cochrane Database Syst Rev.* 2008;(1):CD001188.
11. Miller N. Translating smoking cessation research findings into clinical practice: the “staying free” program. *Nurs Res.* 2006;55(suppl 4):S38–S43.
12. Zuzelo PR. Clinical nurse specialist practice—spheres of influence. *AORN J.* Feb 2003;77(2):361–366, 369–372.
13. McCabe PJ. Spheres of clinical nurse specialist practice influence evidence-based care for patients with atrial fibrillation. *Clin Nurse Spec.* 2005;19(6):308–317; quiz 318–319.
14. Zarling KK. RN-initiated tobacco use intervention protocol: the role of the clinical nurse specialist. Poster presented at: *National Association of Clinical Nurse Specialist National Meeting*; March 2005; Orlando, FL.
15. National Association of Clinical Nurse Specialists. *Statement on Clinical Specialist Practice and Education.* 2nd ed. Harrisburg, PA: National Association of Clinical Nurse Specialist; 2004.