Published in final edited form as:

J Oncol Pract. 2016 January ; 12(1): 55–58. doi:10.1200/JOP.2015.006148.

Perspective on the National Comprehensive Cancer Network's (NCCN) Clinical Practice Guidelines for Smoking Cessation

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There are important moments in oncology care when there is growing awareness of a compelling clinical problem, sufficient accumulation of clinical evidence, and a quorum of dedicated clinician scientists with relevant expertise to bring about change in the quality of care. The development and dissemination of the National Comprehensive Cancer Network's (NCCN) Clinical Practice Guidelines in Oncology for Smoking Cessation[1] (http://www.nccn.org/professionals/physician_gls/pdf/smoking.pdf) represents just this kind of research-to-practice milestone that has the potential to improve the quality of cancer care and clinical outcomes for cancer patients who are tobacco-dependent.

An estimated 171,000 of the annual 589,430 cancer deaths in the United States—nearly one-third —are caused by tobacco smoking.[2] The most recent Surgeon General's Report on the Health Consequences of Smoking[3] cites smoking as causally linked to at least twelve cancer sites and to one-third of all cancer deaths. In addition to the well-established association with lung cancer, there is now adequate evidence to causally link smoking to oropharynx, larynx, esophagus, acute myeloid leukemia, stomach, liver, pancreas, kidney, bladder, cervical and colorectal cancer.[3]

Of particular note for oncology practitioners, this Surgeon General's Report is the first to conclude that there is sufficient evidence that persistent cigarette smoking causes increased overall and cancer-specific mortality as well as an increased risk of developing a second tobacco-related primary cancer in cancer patients and survivors. This Surgeon General's Report also concludes that the evidence is suggestive but not sufficient to infer a causal relationship between cigarette smoking and the risk of recurrence, poorer response to

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treatment, and increased treatment-related toxicity. Despite these risks, persistent smoking is prevalent among newly diagnosed cancer patients and survivors. Among the 13.7 million cancer survivors living in the United States, the prevalence of smoking is estimated as 15%–33%, depending on the type of cancer and time since diagnosis.[4] Higher rates of smoking are self-reported by cancer patients at diagnosis with approximately 40% of lung cancer patients smoking at diagnosis.[5] Cancer patients, particularly those who are light smokers and those who have recently quit, may not accurately report current smoking[6] such that the true prevalence may be higher. The American Society of Clinical Oncology (ASCO) and the American Association of Cancer Research (AACR) recommend that all patients with cancer should be asked about their smoking status and all current tobacco users should be provided with evidence-based tobacco cessation assistance.[7,8]

The ASCO Tobacco Cessation Subcommittee, under the purview of the Cancer Prevention Committee, has advanced a robust tobacco control policy agenda[8] addressing barriers to tobacco treatment delivery in the United States and globally and has begun to develop implementation tools (*Tobacco Cessation Guide for Oncology Provider*) to assist the oncology workforce in effectively integrating tobacco cessation and control into clinical practice.[9] Table 1[1] summarizes tobacco cessation resources for oncology professionals. In addition, the ASCO Quality Oncology Practice Initiative (QOPI) includes four National Quality Forum (NQF) endorsed core measures of performance on tobacco use assessment and referral or provision of cessation services (Core 21a, 22a-b, 23a) reflecting ASCO's strong endorsement of tobacco use assessment and treatment as recognized standards of quality oncology care.[10]

Unfortunately, recent surveys of oncologists and clinical practices at comprehensive cancer center and community oncology settings demonstrate that treatment of tobacco dependence is lacking.[11–13] Although approximately 90% of oncologists routinely ask their patients about their smoking status and approximately 80% advise patients to quit smoking, only 30–40% provide assistance to help patients quit smoking (i.e., cessation medications, behavioral counseling).[11,12] To date, tobacco use assessments and cessation support have not been adequately incorporated in most cooperative group clinical trials.[14] Lack of adequate training, lack of expertise in providing cessation treatment, and lack of patient support resources, such as dedicated cessation counseling programs, have been reported as leading impediments to implementation of cessation treatment in cancer care.[11,12,15]

The new NCCN Smoking Cessation Guidelines represent a critical step in closing these research-to-practice gaps. These Guidelines should help foster successful integration of tobacco use assessment and treatment into oncology practice. Developed by a multidisciplinary, multi-institutional panel from NCCN member institutions with relevant expertise in tobacco treatment, the Guidelines summarize general principles including: smoking associated risk for patients with cancer, strategies for evaluating and assessing tobacco use in cancer patients, discussion of smoking cessation pharmacotherapy and behavior therapy, and discussion of smoking cessation resources for cancer patients and

[1]An extended list of tobacco cessation resources for health care professionals and patients is available as a digital supplement in table 1e.

providers. Given the nascent state of existing tobacco treatment in cancer literature, most Guideline recommendations are based on lower-level evidence and uniform NCCN Panel consensus (2A).

The Guidelines recommend standardized initial and periodic follow-up assessment according to smoking status (current smokers classified as those patients who report smoking within the past 30 days, former, and never smokers). The Guidelines recommend that all cancer patients who are identified as current smokers receive evidence-based cessation pharmacotherapy, behavioral counseling, and follow-up with retreatment as needed. Based upon strong evidence from Public Health Service (PHS) Guidelines,[16] combining pharmacologic therapy with behavioral counseling is the most effective treatment approach and leads to superior cessation outcomes. Smoking status and the tobacco treatment plan should be documented in the patient's medical record and updated at regular intervals. Importantly, the Guidelines provide specific recommendations for managing patients not yet ready to quit smoking and acknowledge the importance of an inclusive, patient-centered approach to treating tobacco dependence. The Guidelines further acknowledge that tobacco dependence is a chronic, relapsing disorder, and therefore providers should discuss smoking relapse and encourage re-evaluation of cessation treatment with their patients.

Though the NCCN Guidelines represent a critical development in the management of cancer patients, much additional work is needed to implement these strategies in oncology care settings. Given that inadequate training in tobacco treatment delivery is cited as a leading barrier for Guideline implementation, cancer care settings need to consider how to enhance clinician training and facilitate practice changes. ASCO's Tobacco Subcommittee is working on several educational initiatives for the oncology workforce, notably greater inclusion of presentations focusing on tobacco use assessment and treatment at the annual ASCO meeting. The establishment of dedicated institutional tobacco cessation programs with specific expertise in treating tobacco dependent cancer patients can be a highly effective means to provide consistent evidence-based cessation support and patient follow-up, and can reduce the clinical strain experienced by oncologists already providing a spectrum of cancer care.[17,18]

Additional research is needed to strengthen the evidence for the dissemination and implementation of these Guidelines. In particular, there is scant research identifying robust predictors of which patients are at high risk for smoking relapse and existing studies are largely inconclusive.[19] As such, the current Guidelines recommendation for varying clinical management based on stratification of risk for smoking relapse may result in under-treatment and warrant revision when stronger evidence of risk factors for smoking relapse becomes available. Given the high (69%) rate of smoking relapse observed in a large recent cohort of cancer survivors,[20] all cancer patients identified as current smokers or recently quit (past 30 days) should be considered at high risk for smoking relapse, and clinical management should focus on long-term maintenance of smoking cessation for patients who quit following cancer diagnosis.

In addition, few clinical trials have examined the safety, acceptability and comparative effectiveness of cessation medications with cancer patient populations. The Guidelines for first-, second- and third-line cessation pharmacotherapy options should be reviewed and potentially revised as new findings emerge regarding the tolerability and effectiveness of FDA approved cessation medications with cancer patients undergoing active treatment. Recognizing the growing trend of poly-tobacco use and particularly concerns regarding dual use of combustible cigarettes and electronic cigarettes,[21] consideration should be given to assessment and clinical management of a broader range of tobacco products. Finally, the Guidelines provide impetus for much needed comparative effectiveness trials and cost analyses studies, so as to develop and strengthen feasible, sustainable, best practices for implementation of tobacco use assessment and treatment in cancer care settings.

We applaud the development of the new NCCN guidelines to integrate tobacco cessation into cancer care. We encourage further efforts to remove barriers to adoption of these guidelines and conduct the additional research necessary to effectively implement and improve evidence-based care throughout oncology practice.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Tobacco Cessation Resources for Oncology Providers

Tobacco Cessation Resources for Oncology Providers
ASCO Tobacco Cessation Guide for Oncology Providers http://www.asco.org/sites/default/files/tobacco_cessation_guide.pdf Toolkit intended to help oncology providers integrate tobacco cessation strategies into their patient care.
NCCN Clinical Practice Guidelines in Oncology for Smoking Cessation http://www.jnccn.org/content/13/5S/643.full.pdf+html
AACR-ASCO Policy on Electronic Nicotine Delivery Systems (ENDs) http://www.asco.org/sites/www.asco.org/files/e-cig_january_2015.pdf
ASCO University Bookstore http://store2.asco.org/Asco-Cancer-Prevention-Curriculum-CD/dp/B0072H6ZG2 Cancer prevention curriculum with information on smoking cessation
Surgeon General's Report http://www.surgeongeneral.gov/library/tobaccosmoke/report/index.html Chapter 5 of the report is focused on cancer and tobacco use. http://www.surgeongeneral.gov/library/tobaccosmoke/report/chapter5.pdf
ASCO Tobacco Control Policy http://jco.ascopubs.org/content/early/2013/07/29/JCO.2013.48.8932.full.pdf ASCO's tobacco cessation policy statement, 2012 update
American Association for Cancer Research: Assessing Tobacco Use by Cancer Patients and Facilitating Cessation http://www.aacr.org/AdvocacyPolicy/GovernmentAffairs/Documents/AACRStatement_TobaccoUseCancerPatients_2013_CCR___f3f578.pdf
Oncology Nursing Society https://www.ons.org/advocacy-policy/positions/policy/tobacco Nursing Leadership in Global and Domestic Tobacco Control statement, 2008 update
SmokeFree.gov Resources for Healthcare Professionals http://smokefree.gov/health-care-professionals