



## What Do You Mean, a Spot?

### A Qualitative Analysis of Patients' Reactions to Discussions With Their Physicians About Pulmonary Nodules

Renda Soylemez Wiener, MD, MPH; Michael K. Gould, MD, FCCP; Steven Woloshin, MD; Lisa M. Schwartz, MD; and Jack A. Clark, PhD

**Background:** More than 150,000 Americans each year are found to have a pulmonary nodule. Even more will be affected following the publication of the National Lung Screening Trial. Patient-doctor communication about pulmonary nodules can be challenging. Although most nodules are benign, it may take 2 to 3 years to rule out cancer. We sought to characterize patients' perceptions of communication with their providers about pulmonary nodules.

**Methods:** We conducted four focus groups at two sites with 22 adults with an indeterminate pulmonary nodule. Transcripts were analyzed using principles of grounded theory.

**Results:** Patients described conversations with 53 different providers about the pulmonary nodule. Almost all patients immediately assumed that they had cancer when first told about the nodule. Some whose providers did not discuss the actual cancer risk or explain the evaluation plan experienced confusion and distress that sometimes lasted for months. Patients were frustrated when their providers did not address their concerns about cancer or potential adverse effects of surveillance (eg, prolonged uncertainty, radiation exposure), which in some cases led to poor adherence to evaluation plans. Patients found it helpful when physicians used lay terms, showed the CT image, and quantified cancer risk. By contrast, patients resented medical jargon and dismissive language.

**Conclusions:** Patients commonly assume that a pulmonary nodule means cancer. What providers tell (or do not tell) patients about their cancer risk and the evaluation plan can strongly influence patients' perceptions of the nodule and related distress. We describe simple communication strategies that may help patients to come to terms with an indeterminate pulmonary nodule.

*CHEST* 2013; 143(3):672-677

Pulmonary nodules are common, with an estimated 150,000 new cases annually in the United States.<sup>1</sup> After publication of the results of the National Lung Screening Trial,<sup>2</sup> implementation of lung cancer screening with chest CT imaging will lead to the identification of even more nodules.<sup>3</sup> Fortunately, most are benign. Given the potential complications of biopsy<sup>4</sup> and low likelihood of cancer for most nodules,<sup>5</sup> most patients are managed with radiographic surveillance; if there is no growth over 2 years, the nodule is presumed benign.<sup>6,7</sup>

Discussing a pulmonary nodule with patients presents challenges. Ideally, providers should indicate why the nodule requires evaluation (to rule out cancer) without causing undue distress. Because most nodules are incidentally detected, providers must explain—and patients must digest—not only the finding of a

nodule but also the results relating to the primary indication for the test. Finally, providers and patients should review the pros and cons of evaluation options

---

**For editorial comment see page 592**

---

and agree on a plan, ideally through shared decision-making.<sup>7,8</sup> All this must fit into the typical 15- to 20-min office visit or even through a brief phone call.

Although the way cancer diagnoses are delivered is known to affect patient quality of life and adherence to subsequent care,<sup>9,10</sup> the more common situation of what providers say about possibly malignant lung nodules has not been described. We conducted a qualitative study of patient perceptions of provider-patient communication about a lung nodule in order to inform and improve these discussions.

## MATERIALS AND METHODS

We recruited participants from Boston Medical Center (which serves a racially diverse, economically disadvantaged urban population) and Dartmouth-Hitchcock Medical Center (a referral center for a rural population of mixed socioeconomic status). We identified English-speaking adults with an indeterminate pulmonary nodule by soliciting names from pulmonary and primary-care providers, reviewing referrals to pulmonary clinics, and searching problem lists and CT imaging reports (e-Table 1). Eligible patients were undergoing evaluation to rule out lung cancer. We invited patients to a 2-h focus group to discuss their experiences with a pulmonary nodule, offering a \$40 gift card. Each site's institutional review board approved this study, and all participants provided informed consent.

We conducted four focus groups (two per site) with 22 patients. Facilitators (R. S. W., a pulmonologist, and J. A. C., a medical sociologist) invited patients to describe their experiences in their own words. Discussions covered topics in prespecified domains (e-Table 2) derived from clinical experience and a literature review and topics raised by participants. Discussions were audio recorded and transcribed.

The analysis centered on characterizing the influence of physician-patient communication on patient understanding of the nodule and related distress and identifying communication elements that helped or hindered patients in coming to terms with the diagnosis. Using grounded theory methodology,<sup>11,12</sup> we developed and revised preliminary thematic content categories through close readings of transcripts, which were then systematically coded with category labels. Repeated comparisons of passages within and between categories, within and between participants, and within and between groups resulted in the iterative formulation of thematic summaries that were critically reviewed by the team. When differing interpretations arose, we discussed relevant sections of transcripts until consensus was achieved. We reached thematic saturation after four focus groups.

## RESULTS

Patients described conversations about their nodule with 53 providers from academic and community

practices, including primary-care providers, pulmonologists, and thoracic surgeons. The involvement of multiple clinicians most often stemmed from referral by the provider first faced with an incidental nodule (eg, ED physician) to the primary-care provider, often followed by a second referral to a pulmonologist. Table 1 shows the characteristics of the study patients.

### *The Impact of Disclosure*

Virtually all participants reported an immediate concern about cancer upon learning of the nodule: "What are we ruling out if it's not cancer?...when they say nodules or spots on your lungs, it's just the first thing you think of. What other options are there?" (patient 11). Some went farther, immediately worrying about chemotherapy or death: "My first thought was, 'which one's going to get me first? Will I die of the emphysema, or will I die of cancer?'" (patient 12). There was no association between actual cancer risk (calculated quantitatively<sup>13</sup>) and patient qualitative risk perceptions; even those with tiny nodules feared that they had cancer.

Because most participants assumed that a nodule meant cancer, it is not surprising that many described learning about the nodule as traumatic, with effects that sometimes lasted for months:

My kidney doctor calls me up and says, "Oh by the way, we found a tumor on your lungs."...They didn't even know what it was, but it was just the way [he] came out and said it. I was devastated....I bawled through Christmas. (patient 13)

By contrast, others found their physicians' explanation reassuring:

[I said,] "What do you mean, a spot? What are you talking about?" He said, "Yeah, but try not to panic."...He described with a pen and a paper and showed me just how big it was on the scan and told me just what it entailed. (patient 7)

### *Patient-Important Communication Elements*

**Addressing Cancer Risk:** Most patients preferred simple language, including acknowledgment of the possibility of cancer: "Don't hide nothing....Tell me the truth, tell me in my language, so I understand what you're saying" (patient 9). Many wanted an estimate of cancer risk in either in quantitative ("5%-10%") or qualitative ("unlikely") terms. In most cases, this information was reassuring because the physician's estimate was much lower than the patient's assumption.

Several participants said that their physicians never mentioned cancer. Only one patient openly preferred this strategy: "Whatever is going to happen will happen, and I don't want to know!" (patient 18). Others were

Manuscript received April 28, 2012; revision accepted June 26, 2012.

**Affiliations:** From the Pulmonary Center (Dr Wiener), Boston University School of Medicine, Boston, MA; Center for Health Quality, Outcomes and Economic Research (Drs Wiener and Clark), Edith Nourse Rogers Memorial VA Hospital, Bedford, MA; Department of Research and Evaluation (Dr Gould), Kaiser Permanente Southern California, Pasadena, CA; VA Outcomes Group (Drs Woloshin and Schwartz), Department of Veterans Affairs Medical Center, White River Junction, VT; Dartmouth Institute for Health Policy and Clinical Practice (Drs Woloshin and Schwartz), Lebanon, NH; and Department of Health Policy and Management (Dr Clark), Boston University School of Public Health, Boston, MA.

**Funding/Support:** This study is funded by a career development award from the National Cancer Institute [K07 CA138772]. Dr Gould is supported by the National Cancer Institute. Drs Wiener, Woloshin, Schwartz, and Clark receive salary support from the Department of Veterans Affairs.

**Correspondence to:** Renda Soylemez Wiener, MD, MPH, Pulmonary Center, Boston University School of Medicine, 72 E Concord St, R-304, Boston, MA 02118; e-mail: rwiener@bu.edu

© 2013 American College of Chest Physicians. Reproduction of this article is prohibited without written permission from the American College of Chest Physicians. See online for more details.

DOI: 10.1378/chest.12-1095

**Table 1—Characteristics of Focus Group Participants**

Characteristic	Value
Age, y	60.7 (22-81)
Female sex	86
Race	
White	77
Black	18
Hispanic	4.5
Current or former smoker	68
Nodule size, mm	8.5 ± 5.4
Subcentimeter nodule	77
Time since diagnosis, mo	10.1 (2-28)
Context of nodule discovery	
Workup of pulmonary symptoms	18
Incidental finding during workup of nonpulmonary issue	82
Lung cancer screening	0
Follow-up testing of nodule/evaluation plan	
Surveillance with serial imaging	100
Bronchoscopy, biopsy, or both	23

Data are presented as mean (range), %, mean ± SD.

confused by medical jargon (“nodule”) or euphemisms (“spot,” “shadow”) without further explanation. For most, avoiding discussion of the “elephant in the room” was neither reassuring nor appreciated.

**Mode of Disclosure:** Although most learned of the nodule in a face-to-face conversation, four patients received the news indirectly (three by letter, one by voicemail). All four immediately called their physician to obtain more information, and three were irritated: “I was like freaking out....If you tell me that it’s not serious, why couldn’t the doctor there tell me that...and I wouldn’t be frantic? Instead, I got a letter in the mail?” (patient 22).

**Provider’s Tone:** Several patients perceived that their providers were more focused on discussing the primary indication of the test rather than the incidental nodule. These patients were sensitive to the provider’s tone, interpreting comments such as “by the way” or “everything was normal, except” as careless or even offensive. When providers dismissed the nodule as trivial, patients were dissatisfied: “[My doctor] didn’t seem too concerned....[I said], ‘I’d like a second opinion’” (patient 4). Although the participants disliked having their concerns minimized, they found it comforting to have the experience of finding a nodule normalized (eg, learning that it is common to identify abnormalities on sensitive tests).

**Priority Given to Nodule:** Several patients were frustrated that their physicians did not give the nodule adequate attention:

There was really no explanation at all. Just, ‘This is it, this is what we’ve found, we want you back in 6 months.’ And I was like, ‘Well, what should I expect? Should I expect to

not be able to breathe at all? Should I expect pain? Should I expect changes in my physical self?’ And no [answers] ever came. (patient 12)

Patients recognized that physicians have competing demands, but nonetheless, they were disappointed when providers seemed to “forget” to discuss the nodule: “You have so many things to take care of...but it’s not enough of [an] answer” (patient 16), and, “If I happen to have pneumonia...they’ll mention [the nodule]. ...Other than that, it’s not even given a second thought. They don’t even mention it to me or what I can do about it” (patient 2).

**Details About Nodule:** Patients reported that details such as nodule size were helpful if put into context (eg, tying size to cancer risk): “They [said that] it was very small, so it probably wasn’t cancer” (patient 15). By contrast, hearing the size described as “x millimeters” without further explanation was frustrating: “They said, ‘Well one is 6 mm.’ I’ve not a clue what that means” (patient 12). Several patients liked being able to visualize the nodule (eg, by comparison with a pea or other familiar object, by seeing its size relative to the lungs on the CT image or a hand-drawn sketch).

**Details About Evaluation:** Patients wanted to understand the evaluation plan. Because the biomedical logic of surveillance (that 2 years without growth indicates a benign etiology) is not intuitive for patients, they appreciated having the rationale explained:

I was told it was a spot that was too small to test to see if it’s cancer...so therefore, come back in 6 months. If it gets any bigger, we’ll test it or take it out. If it doesn’t grow, then we’ll get a second opinion or come back in 6 months and test it again. (patient 7)

Without such a clear explanation, several participants felt frustrated by the lack of a biopsy specimen: “How do they really know what it is?...Nobody’s taken any little piece....I’d like to know...for peace of mind” (patient 17). Another common misconception was that surveillance would continue indefinitely: “It’s going to be for life, until I die” (patient 18). Many patients expressed concern that surveillance might eventually be discontinued: “I’d be worried about that. I want them to continue to...check on it” (patient 8).

**Acknowledging Downsides of Evaluation:** Patients consistently indicated that the uncertainty surveillance entails can be distressing. When physicians acknowledged these challenges, patients were grateful: “[My doctor] said, ‘A spot on your lung is always something to worry about. But I don’t want you to get frantic or upset. We’ll just take the tests as we go along.’... He sounded very sincere. (patient 22) Conversely,

patients felt frustrated when physicians did not acknowledge these downsides:

Would [doctors] want to go through that every 3 months?... Knowing what they're putting them through?...They're looking at the medical part of it and...not thinking of the consequences. (patient 14)

One strategy that appealed to patients was describing surveillance as an active process (“keeping an eye on it”) rather than as a passive process of waiting to see whether the nodule would grow.

Several patients were anxious about radiation exposure: “One CT scan is worth a gazillion x-rays....It’s just nerve-racking” (patient 14). Those who had explicitly discussed this concern experienced less distress and were more willing to comply with surveillance: “[My doctor] said, ‘I think even given the risk of the increased radiation, it’s probably a good idea.’ I trust her. We discuss everything. And so I feel very comfortable with what I’m doing” (patient 11).

DISCUSSION

This study is the first to our knowledge to provide data on provider-patient communication about pulmonary nodules, offering insight into patients’ experiences through their own words. Study patients described both satisfying and frustrating conversations. From their accounts, we identified patient-important communication elements; formulated them into seven questions that providers might consider in framing discussions about a nodule; and identified specific, patient-endorsed strategies that may make living with a nodule easier (Table 2). Although many of these strategies are familiar from the literature on breaking bad news,<sup>9,14-17</sup> the extent to which some patients perceive a small, indeterminate pulmonary nodule as bad news may surprise providers.

Many of the dissatisfying experiences stemmed from an apparent disconnect between physicians and patients about the significance of the nodule. Physicians see patients with pulmonary nodules routinely; 18% to 51% of patients undergoing chest CT imaging

have a nodule detected.<sup>18-20</sup> Among all patients with pulmonary nodules, <5% turn out to have cancer.<sup>5</sup> Thus, for providers, finding a nodule may not be particularly noteworthy. But for patients, learning of a pulmonary nodule can cause substantial distress, as borne out by anecdotal reports<sup>21-23</sup> and surveys of participants in lung cancer screening trials.<sup>24-26</sup> Most patients in the present study assumed that a nodule or spot on the lung meant cancer. Starting off with that assumption, they preferred clear communication on the likelihood of cancer. Several who did not receive this information experienced distress about cancer for months. This type of distress may lead to poor adherence with evaluation (as described in the context of screening for other cancers).<sup>26-28</sup> As noted in studies of communication about abnormal Papanicolaou tests,<sup>29</sup> physicians may not mention cancer because they wish to avoid evoking fears that might not otherwise arise, but patients tended to worry about cancer regardless of whether the physician raised it. Therefore, unless the patient specifically requests not to be told, physicians should explicitly discuss cancer risk.<sup>10</sup> Online calculators<sup>13</sup> can help providers to estimate a patient’s cancer risk.

Many of the present findings echo those from studies of patient preferences for communication about results of cancer screening. Sending test results by letter, although expedient,<sup>30</sup> denies patients the chance to ask questions and can perpetuate misconceptions, thus representing a missed opportunity to reduce distress.<sup>27,31-33</sup> Engaging in an open dialogue that elicits and addresses patient values and concerns, both about the abnormal finding and about its evaluation, and involving the patient in decision-making can mitigate distress.<sup>34,35</sup> Indeed, the American College of Chest Physicians recommends this type of shared decision-making for all patients with pulmonary nodules.<sup>7</sup> Clearly explaining the plan helps patients to understand that 2 years of surveillance without growth typically is considered good evidence of a benign nodule.<sup>6,7</sup> If a biopsy is not offered, physicians should explain why (eg, nodule is too small, risk of complications too high) as well as when a biopsy specimen would be sought (eg, enlarging nodule).<sup>36</sup> Otherwise, patients

Table 2—Summary of Seven Patient-Endorsed Communication Strategies for Discussing Pulmonary Nodules

Question About How to Frame Discussion	Patient-Endorsed Strategy
1. Should physicians directly address the risk of cancer?	Yes, and provide estimate of risk.
2. Does the disclosure need to be verbal?	Yes, and a letter is not a satisfactory alternative.
3. What is the right tone to adopt?	Avoid minimizing or dismissive language.
4. How high a priority should the nodule be given?	Recognize that the nodule may be an important concern for patients and allow time for discussion of the patient’s questions.
5. Is it helpful to provide details about the nodule?	Yes, only if put into context (eg, smaller size suggests lower cancer risk).
6. How much information do patients want to hear about the evaluation plan?	Clearly explain evaluation options and plans to patients upfront, including duration of surveillance and when to take a biopsy specimen.
7. Should downsides of the evaluation strategy be mentioned?	Yes, let patients know what to expect and acknowledge their concerns.

may feel frustrated not to receive an immediate, definitive answer.<sup>37</sup>

The present study has limitations. Patient recollection may not accurately reflect actual physician-patient communication particularly because months passed between the initial disclosure of the nodule and the focus groups. A major prespecified content area for focus group discussions, and hence the subject of this analysis, was the influence of communication on patient experiences, but there are many other variables that affect patient perceptions. These include the provider (eg, specialty, experience, empathy, concordance with patient's race/ethnicity [physician and patient are of the same race/ethnicity]), the patient (eg, time since nodule diagnosis, physical and mental health comorbidities, beliefs about health care, relationship with physician), and external factors (eg, context of nodule discovery, friends and family with cancer, information from nonmedical sources).<sup>38-44</sup> We did not collect sufficient information to explore these relationships. The qualitative method enabled a fuller exploration of patient experiences than quantitative methods could, but the smaller sample size constrains generalization. The sample comprised mostly women undergoing surveillance for subcentimeter nodules. Patients who agreed to participate in a focus group may have been more troubled than others by their experiences. Many of these patients discussed their nodules with at least two providers; we do not know to what extent this reflects patient dissatisfaction, requests for a second opinion, or usual referral patterns. Although the findings may not represent the experiences of all patients with pulmonary nodules, we believe that it is important to alert providers that some of their patients may be powerfully affected by the ways in which providers discuss nodules.

With rising use of CT imaging, particularly following the publication of the results of the National Lung Screening Trial,<sup>2</sup> physicians and patients will be confronted more and more often with the finding of a pulmonary nodule. In this study, 22 patients from diverse racial and socioeconomic backgrounds described conversations with 53 providers from a variety of settings and specialties, thus offering broad insight into communication about pulmonary nodules. The patient-endorsed communication strategies described here may help to mitigate distress and improve adherence with evaluation for the many thousands of patients with a potentially malignant pulmonary nodule.

#### ACKNOWLEDGMENTS

**Author contributions:** Dr Wiener had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

**Dr Wiener:** contributed to the conception, hypotheses delineation, and design of the study; data acquisition, analysis, and interpretation; and writing and revision of the article prior to submission.

**Dr Gould:** contributed to the conception, hypotheses delineation, and design of the study; data acquisition, analysis, and interpretation; and writing and revision of the article prior to submission.

**Dr Woloshin:** contributed to the conception, hypotheses delineation, and design of the study; data acquisition, analysis, and interpretation; and writing and revision of the article prior to submission.

**Dr Schwartz:** contributed to the conception, hypotheses delineation, and design of the study; data acquisition, analysis, and interpretation; and writing and revision of the article prior to submission.

**Dr Clark:** contributed to the conception, hypotheses delineation, and design of the study; data acquisition, analysis, and interpretation; and writing and revision of the article prior to submission.

**Financial/nonfinancial disclosures:** The authors have reported to *CHEST* that no potential conflicts of interest exist with any companies/organizations whose products or services may be discussed in this article.

**Role of sponsors:** This material is the result of work supported with resources and the use of facilities at the Edith Nourse Rogers Memorial VA Hospital (Drs Wiener and Clark), Bedford, MA and VA Hospital (Drs Woloshin, Schwartz) White River Junction, VT. The views expressed herein do not necessarily represent the views of the funding agencies, the Department of Veterans Affairs, or the US government.

**Other contributions:** We thank Terry Kneeland, MPH, and Emilie Zoltick, MPH, who were invaluable in organizing the focus group meetings, and the members of the Center for Health Quality, Outcomes and Economic Research Writers Group, who provided feedback on an earlier version of the manuscript.

**Additional information:** The e-Tables can be found in the "Supplemental Materials" area of the online article.

#### REFERENCES

1. Ost D, Fein AM, Feinsilver SH. Clinical practice. The solitary pulmonary nodule. *N Engl J Med*. 2003;348(25):2535-2542.
2. Aberle DR, Adams AM, Berg CD, et al; National Lung Screening Trial Research Team. Reduced lung-cancer mortality with low-dose computed tomographic screening. *N Engl J Med*. 2011;365(5):395-409.
3. Silvestri GA. Screening for lung cancer: it works, but does it really work? *Ann Intern Med*. 2011;155(8):537-539.
4. Wiener RS, Schwartz LM, Woloshin S, Welch HG. Population-based risk for complications after transthoracic needle lung biopsy of a pulmonary nodule: an analysis of discharge records. *Ann Intern Med*. 2011;155(3):137-144.
5. Wahidi MM, Govert JA, Goudar RK, McCrory DC; American College of Chest Physicians. Evidence for the treatment of patients with pulmonary nodules: when is it lung cancer?: ACCP evidence-based clinical practice guidelines (2nd edition). *Chest*. 2007;132(suppl 3):94S-107S.
6. MacMahon H, Austin JH, Gamsu G, et al; Fleischner Society. Guidelines for management of small pulmonary nodules detected on CT scans: a statement from the Fleischner Society. *Radiology*. 2005;237(2):395-400.
7. Gould MK, Fletcher J, Iannettoni MD, et al; American College of Chest Physicians. Evaluation of patients with pulmonary nodules: when is it lung cancer?: ACCP evidence-based clinical practice guidelines (2nd edition). *Chest*. 2007; 132(suppl 3):108S-130S.
8. Gould MK, Wiener RS. Shared decision making in patients with pulmonary nodules. In: *Pulmonary, Critical Care, and Sleep Update*. American College of Chest Physicians website. <http://www.chestnet.org/accp/pccsu/shared-decision-making-patients-pulmonary-nodules?page=0,3>. Published 2009. Accessed April 2, 2012.
9. Paul CL, Clinton-McHarg T, Sanson-Fisher RW, Douglas H, Webb G. Are we there yet? The state of the evidence base for guidelines on breaking bad news to cancer patients. *Eur J Cancer*. 2009;45(17):2960-2966.

10. Hagerty RG, Butow PN, Ellis PM, Dimitry S, Tattersall MH. Communicating prognosis in cancer care: a systematic review of the literature. *Ann Oncol*. 2005;16(7):1005-1053.
11. Strauss AL, Corbin J. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, CA: Sage; 1990.
12. Miles MB, Huberman AM. *Qualitative Data Analysis: An Expanded Sourcebook*. Thousand Oaks, CA: Sage; 1994.
13. Probability of malignancy in SPN: Bayesian analysis. Chest X-ray website. <http://www.chestx-ray.com/spn/spnprob.html>. Accessed November 10, 2011.
14. Sparks L, Villagran M, Parker-Raley J, et al. A patient-centered approach to breaking bad news: communication guidelines for health care providers. *J Appl Commun Res*. 2007;35(2):177-196.
15. Ptacek JT, Eberhardt TL. Breaking bad news. A review of the literature. *JAMA*. 1996;276(6):496-502.
16. Ellis PM, Tattersall MH. How should doctors communicate the diagnosis of cancer to patients? *Ann Med*. 1999;31(5):336-341.
17. Girgis A, Sanson-Fisher RW. Breaking bad news: consensus guidelines for medical practitioners. *J Clin Oncol*. 1995;13(9):2449-2456.
18. Jett JR. Limitations of screening for lung cancer with low-dose spiral computed tomography. *Clin Cancer Res*. 2005;11(13):4988s-4992s.
19. Lee CI, Tsai EB, Sigal BM, Plevritis SK, Garber AM, Rubin GD. Incidental extracardiac findings at coronary CT: clinical and economic impact. *AJR Am J Roentgenol*. 2010;194(6):1531-1538.
20. Harthun NL, Lau CL. The incidence of pulmonary neoplasms discovered by serial computed tomography scanning after endovascular abdominal aortic aneurysm repair. *J Vasc Surg*. 2011;53(3):738-741.
21. Cooper JD. Management of the solitary pulmonary nodule: directed resection. *Semin Thorac Cardiovasc Surg*. 2002;14(3):286-291.
22. Miller YE. Minimizing unintended consequences of detecting lung nodules by computed tomography. *Am J Respir Crit Care Med*. 2008;178(9):891-892.
23. Stinchcombe TE, Detterbeck FC, Lin L, Rivera MP, Socinski MA. Beliefs among physicians in the diagnostic and therapeutic approach to non-small cell lung cancer. *J Thorac Oncol*. 2007;2(9):819-826.
24. van den Bergh KA, Essink-Bot ML, Borsboom GJ, et al. Short-term health-related quality of life consequences in a lung cancer CT screening trial (NELSON). *Br J Cancer*. 2010;102(1):27-34.
25. Byrne MM, Weissfeld J, Roberts MS. Anxiety, fear of cancer, and perceived risk of cancer following lung cancer screening. *Med Decis Making*. 2008;28(6):917-925.
26. Taylor KL, Shelby R, Gelmann E, McGuire C. Quality of life and trial adherence among participants in the prostate, lung, colorectal, and ovarian cancer screening trial. *J Natl Cancer Inst*. 2004;96(14):1083-1094.
27. Allen JD, Shelton RC, Harden E, Goldman RE. Follow-up of abnormal screening mammograms among low-income ethnically diverse women: findings from a qualitative study. *Patient Educ Couns*. 2008;72(2):283-292.
28. Brett J, Austoker J. Women who are recalled for further investigation for breast screening: psychological consequences 3 years after recall and factors affecting re-attendance. *J Public Health Med*. 2001;23(4):292-300.
29. Simon MA, Cofta-Woerpel L, Randhawa V, John P, Makoul G, Spring B. Using the word 'cancer' in communication about an abnormal Pap test: finding common ground with patient-provider communication. *Patient Educ Couns*. 2010;81(1):106-112.
30. Leekha S, Thomas KG, Chaudhry R, Thomas MR. Patient preferences for and satisfaction with methods of communicating test results in a primary care practice. *Jt Comm J Qual Patient Saf*. 2009;35(10):497-501.
31. Karliner LS, Patricia Kaplan C, Juarbe T, Pasick R, Pérez-Stable EJ. Poor patient comprehension of abnormal mammography results. *J Gen Intern Med*. 2005;20(5):432-437.
32. De Morgan S, Redman S, White KJ, Cakir B, Boyages J. "Well, have I got cancer or haven't I?" The psycho-social issues for women diagnosed with ductal carcinoma in situ. *Health Expect*. 2002;5(4):310-318.
33. Marcus EN, Drummond D, Dietz N. Urban women's preferences for learning of their mammogram result: a qualitative study. *J Cancer Educ*. 2012;27(1):156-164.
34. Joosten EA, DeFuentes-Merillas L, de Weert GH, Sensky T, van der Staak CP, de Jong CA. Systematic review of the effects of shared decision-making on patient satisfaction, treatment adherence and health status. *Psychother Psychosom*. 2008;77(4):219-226.
35. Pickles T, Ruether JD, Weir L, Carlson L, Jakulj F; SCRNC Communication Team. Psychosocial barriers to active surveillance for the management of early prostate cancer and a strategy for increased acceptance. *BJU Int*. 2007;100(3):544-551.
36. Hewson MG, Kindy PJ, Van Kirk J, Gennis VA, Day RP. Strategies for managing uncertainty and complexity. *J Gen Intern Med*. 1996;11(8):481-485.
37. Montgomery M. Uncertainty during breast diagnostic evaluation: state of the science. *Oncol Nurs Forum*. 2010;37(1):77-83.
38. Ando N, Iwamitsu Y, Kuranami M, et al. Psychological characteristics and subjective symptoms as determinants of psychological distress in patients prior to breast cancer diagnosis. *Support Care Cancer*. 2009;17(11):1361-1370.
39. Kola S, Walsh JC. Determinants of pre-procedural state anxiety and negative affect in first-time colposcopy patients: implications for intervention. *Eur J Cancer Care (Engl)*. 2012;21(4):469-476.
40. Lelorain S, Bredart A, Dolbeault S, et al. A systematic review of the associations between empathy measures and patient outcomes in cancer care. *Psychooncology*. In press. doi:10.1002/pon.2115.
41. Winzelberg AJ, Classen C, Alpers GW, et al. Evaluation of an internet support group for women with primary breast cancer. *Cancer*. 2003;97(5):1164-1173.
42. Iezzoni LI, Rao SR, DesRoches CM, Vogeli C, Campbell EG. Survey shows that at least some physicians are not always open or honest with patients. *Health Aff (Millwood)*. 2012;31(2):383-391.
43. Goh AC, Kowalkowski MA, Bailey DE Jr, et al. Perception of cancer and inconsistency in medical information are associated with decisional conflict: a pilot study of men with prostate cancer who undergo active surveillance. *BJU Int*. 2011;110(2b):E50-E56.
44. Cooper LA, Roter DL, Johnson RL, Ford DE, Steinwachs DM, Powe NR. Patient-centered communication, ratings of care, and concordance of patient and physician race. *Ann Intern Med*. 2003;139(11):907-915.