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'The thing is not knowing': patients' perspectives on surveillance of an indeterminate pulmonary nodule

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Abstract

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Background The hundreds of thousands of patients found to have a potentially malignant pulmonary nodule each year are faced with tremendous uncertainty regarding what the nodule is and how it should be evaluated.

Objective To explore patients' responses to the detection and evaluation of a pulmonary nodule.

Design Qualitative study based on four focus-group discussions. We performed inductive analysis using principles of grounded theory to identify themes relating to responses to the nodule and strategies to manage uncertainty.

Setting and participants Twenty-two patients from two medical centres who were undergoing surveillance for an indeterminate pulmonary nodule.

Results Patient responses to an indeterminate pulmonary nodule were varied and evolved over time. Although almost all patients reported an initial fear about cancer, subsequent depictions of the nodule diverged into four types defined on two dimensions: cognitive ('it's cancer' vs. 'I don't know what it is' vs. 'it's nothing serious') and emotional (anxiety vs. equanimity). Most eventually accepted that the nodule was unlikely to be malignant; however, some remained anxious, convinced the nodule could turn into cancer at any time and should be aggressively monitored for life. Patients used results of surveillance tests as well as their own strategies (e.g. vigilance for symptoms, information-seeking, contemplating and controlling modifiable risk factors, avoidance, faith) to manage uncertainty.

Conclusions Surveillance for a pulmonary nodule can weigh heavily on some patients for months or years. Our findings may help clinicians prepare patients with a newly detected pulmonary nodule for the burden of the prolonged uncertainty of surveillance.

Introduction

With the increasing sensitivity of imaging tests, physicians are able to find minute abnormalities, which previously would have remained undetected. In many cases, technologic advances have outpaced the evidence on the clinical significance of these abnormalities and how they should be managed. This type of uncertainty dominates the clinical scenario facing doctors and their patients in the increasingly common situation of having found a pulmonary nodule that may or may not be lung cancer – a problem that now affects more than 150 000 Americans each year.¹

For most patients with a small pulmonary nodule, clinical practice guidelines^{2,3} recommend a conservative approach of radiographic surveillance to avoid the potential harms of biopsy.⁴ If the nodule does not grow during 2–3 years of surveillance, it is assumed to be benign. Guidelines calling for surveillance of low-risk nodules offer an effective strategy for doctors to manage the uncertainty these nodules present with a routine approach. Yet, patients may not accept surveillance as ‘routine’. For patients, the often unexpected discovery of a ‘spot’ on the lung may be alarming and the uncertainty ominous. Surveys of patients with an indeterminate pulmonary nodule, whether detected incidentally or through lung cancer screening, indicate that some experience substantial distress and reduced health-related quality of life.^{5–7} Providers may be familiar with the intense distress that some women with abnormal mammogram results experience^{8–10}; however, for these women, the uncertainty about cancer is typically resolved within a few weeks by a definitive biopsy. By contrast, most patients with an indeterminate pulmonary nodule must live through years of uncertainty.

To counsel patients on the evaluation process once a nodule has been found, providers should be aware of what surveillance of an indeterminate pulmonary nodule will mean for patients. Yet, there has been little in-depth research on the patient’s experience of living with a pulmonary nodule that may or may not be lung cancer. We sought to characterize how patients with an indeterminate pulmonary nodule respond to the prolonged uncertainty that surveillance entails, how their perceptions of the nodule evolve over time and what strategies they used to manage uncertainty.

Methods

We conducted focus groups from April–November 2010 with patients who were undergoing surveillance for an indeterminate pulmonary nodule, to elicit patients’ accounts of their experiences and their commentaries on similar patients’ experiences. Eligible participants were English speakers aged 18–89 years. Participants were recruited from primary care and pulmonary clinics from two geographically distinct United States academic medical centers, one that serves a racially diverse, economically disadvantaged urban population, and the other, a referral center for a rural population. Two focus groups were conducted at each site. We identified potential participants through solicitation of names from providers; review of referrals to pulmonary clinic for nodule evaluation; and search of problem lists and CT reports for the phrase ‘pulmonary nodule’. After receiving permission from the treating provider, we invited patients to attend a 2-h focus group to discuss their experiences, offering a \$40 gift card as a token of appreciation. All participants provided informed consent according to protocols approved by each site’s institutional review board.

Two facilitators [a pulmonologist (RSW) and medical sociologist (JAC)] led discussions, covering both pre-specified content areas (Table 1) and topics raised by focus group participants. We asked participants to tell their stories of how they responded to the discovery and surveillance of their pulmonary nodule. The content of the discussions was largely determined by how participants answered when asked to describe what happened when they first heard about 'the spot in your lung', what they

thought about it and how their thoughts changed over time. Discussions were audio-recorded and transcribed verbatim.

The goal of our analysis was to characterize patients' perceptions of their pulmonary nodules, including their evolving depictions of the nodule and the ways in which they managed the uncertainty associated with surveillance. Our analysis was interpretive and inductive, according to the precepts of grounded theory.^{11,12} Two investigators (RSW, JAC) developed and revised preliminary thematic content categories through close readings of transcripts, which were then systematically coded with category labels by RSW. Repeated comparisons of passages within and between categories and participants resulted in the iterative formulation of thematic summaries, each supported by quotations, that were critically reviewed by the team. Differing interpretations were discussed until consensus was achieved. After four focus groups, we achieved thematic saturation.

Table 1 Pre-specified topics and sample questions to be covered during focus groups

Doctor-patient communication	
Tell me what happened when you first heard about the spot in your lung. What did your doctor say? What was that like for you?	
Did your doctor talk to you about the different possibilities of what the spot in the lung might be? What did the doctor say about that?	
Did your doctor mention cancer or give you a sense of how likely that was? Was that helpful?	
Did your doctor talk about the next steps they would do to figure out what the spot in the lung is? Do you have a sense of what the plan is? Were you involved in deciding on the plan?	
Are there things that your doctor did that you really liked or that you wish your doctor had done differently when they first told you about the spot in your lung?	
If you have questions about the spot in your lung, do you feel like that is something you can talk to your doctor about?	
Knowledge about nodule and its evaluation	
What do you think the spot in the lung is?	
How likely do you think it is that the spot in the lung will turn out to be cancer?	
How long do you think you'll have to have CAT scans to check on the spot in the lung?	
Do you ever think the spot in your lung is causing symptoms?	
Experience of living with pulmonary nodule	
When you first found out about the nodule, what was going through your head? Has that changed? How do you feel about the spot in your lung now?	
What is the hardest thing about living with a spot in the lung?	
How often does the spot in your lung cross your mind?	
Are there things that bother you about the tests you've had to get done for the spot in the lung?	
Have you told your loved ones about the spot in your lung? How did they react?	

Results

Overview

The 22 participants described experiences with pulmonary nodules that were identified 2–28

Table 2 Characteristics of focus group participants

Mean age, years (SD)	60.7 (15.4)
Female, %	86
Race/ethnicity, %	
White	77
Black	18
Hispanic	4.5
Current or former smoker, %	68
Median nodule size, millimetres (SD)	6 (5.4)
Sub-centimetre nodule, %	77
Median time since diagnosis, months (range)	10 (2–28)
Context of nodule discovery, %	
Work-up of pulmonary symptom	18
Incidental finding during work-up of non-pulmonary issue	82
Lung cancer screening	0
Follow-up testing of nodule/evaluation plan, %	
Surveillance with serial imaging	100
Bronchoscopy and/or biopsy	23

(median = 10) months previously (Table 2). For most (82%), the diagnosis was incidental to a work-up for a non-pulmonary issue. All were undergoing radiographic surveillance; 23% had also undergone bronchoscopy or biopsy that had not revealed a definitive diagnosis. Their average age was 61 years, most were female, and 68% were current or former smokers. Median nodule size was 6 mm.

Participants described depictions of their pulmonary nodules that evolved over time and varied with respect to two dimensions: cognitive and emotional. Cognitively, the nodule was construed in three ways. Initially, it was a clear threat (i.e. ‘cancer’) for virtually all participants. For some, the nodule later became ‘nothing serious’. However, most participants were expressly cognizant of the nodule’s uncertain identity; they did not know what it was or what threat, if any, it posed. Emotional responses ranged from fear (for all who defined the nodule as ‘cancer’) to equanimity (for all who considered the nodule to be ‘nothing serious’). Thus, from the participants’ accounts, we identified four depictions of indeterminate pulmonary nodules (Fig. 1) and a typical trajectory of their responses over time, as indicated by the arrow. Participants also discussed their ways of managing the uncertainty of the nodule.

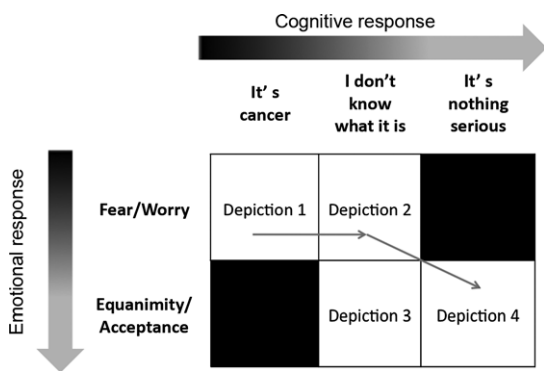


Figure 1 Four depictions of indeterminate pulmonary nodules. Grey arrow indicates the most commonly reported trajectory of patient response; however, not all patients experienced this ‘typical’ trajectory.

Evolving depictions of the nodule

Depiction 1. Cognitive: It's Cancer; Emotional: Fear/Worry

For almost all participants, the clinician’s disclosure of a nodule evoked frightening images of cancer: ‘if anybody was told they had a nodule on their lungs, ...the majority of the people would have this big C-word running through their head’ [Pt17]. This response occurred irrespective of obvious risk factors: current, former and never smokers all had an immediate impression that the nodule was lung cancer.

For most, the nodule was unexpected, an incidental finding when the patient presented with a non-pulmonary issue (e.g. chest pain, pre-operative evaluation for cholecystectomy). The news was upsetting, even shocking:

you expect to be healthy. ... The reason why I got the CAT scan in the first place was because of my liver. ... Then they said, “well, there’s something on your lung.” I’m like, “well, that’s not what you’re supposed to be looking at!” ... It was like somebody putting a ball and chain and a yoke around your neck. [Pt7]

It was really scary, especially since the abdominal MRI only showed the bottom of my lungs. So I’m like, ‘ok what’s in the rest of my lungs?’ [Pt5]

Whereas most participants described subsequently moving to a less ominous understanding of their nodule, some remained convinced it was cancer and persisted in a heightened state of fear and worry for weeks or months:

Even though I didn’t have an official diagnosis, ... a certain part of me accepted that I had lung cancer. And I just thought that’s what it was. [Pt5]

The conviction that the nodule was cancer led some to make lifestyle changes to make the most of what they perceived as a limited time remaining with their families:

I actually gave notice at my job because I work anywhere from 55 to 60 hours a week. ... I’m going to take a job that’s 40 hours a week and spend more time with my kids. ... I don’t know what’s going to happen and I don’t want to miss anymore. [Pt20]

Several individuals who displayed this depiction described painful experiences with a parent dying of cancer. They expressed a variety of fears about cancer treatment (e.g. chemotherapy, surgery), cancer death and what would happen to their children if they died.

Depiction 2. Cognitive: I don't know what it is; Emotional: Fear/Worry

After their initial shock subsided, most patients recognized that the diagnosis was not necessarily cancer, and it was uncertain rather than clearly malignant or benign. For many of our participants, this uncertainty created substantial anxiety.

It's a scary roller coaster ride... I've never gotten any definitive answers...And that's scary in itself, not knowing. [Pt2]

It can be traumatic when you think about it. ... If it's not cancerous then it's just a spot. It's not going to really bother you one way or another, you can still live your life. If it's the opposite, then that's when is it going to grow? [Pt7]

Most participants described spending a substantial amount of time distressed over not knowing what the nodule was, even if they did eventually move to a depiction associated with greater equanimity.

Depiction 3. Cognitive: I don't know what it is; Emotional: Equanimity

By contrast, some were more comfortable with the uncertainty of the diagnosis. They recognized that the nodule might turn out to be cancer, but felt it was premature to worry about something that had not yet happened and, moreover, was beyond their control. This depiction appeared to be more common among older patients.

At my age [82 years], things are bound to go wrong. ... I don't know if this thing is malignant, or if it's ever going to be malignant, something else to get me worried. Let's see how it plays out. [Pt21]

I'm not living thinking that I'm going to get cancer from this. ...Yes, there's a possibility that I could. But at that point in time I will deal with

it. I do not worry about something before it happens. [Pt4]

Depiction 4. Cognitive: It's nothing serious; Emotional: Equanimity

Shortly after learning about the nodule, some dismissed it as a trivial health concern of little significance, experiencing little distress. This response was most common in patients with substantial comorbid disease:

I had 2 heart attacks within one year. So I could've died then, right? I won't worry about this little thing I've got on my lung. [Pt19]

These patients tended to worry more about potential downsides of evaluation (e.g. radiation exposure, medical expenses) than about the nodule itself:

[The CTs are] a nuisance, taking up some of my time. And I do worry about the radiation. ... That's increasing my chances to get cancer too. [Pt11]

Most patients in our study, however, described coming to Depiction 4 more gradually, first fearing that the nodule was cancer (Depiction 1), then processing the inherent uncertainty of the nodule (Depictions 2 and 3), before eventually accepting that it was not a serious health threat (Fig. 1).

Moving towards 'It's Nothing Serious': influence of test results

The biomedical logic of surveillance holds that the more time that passes without a clinical change, the less likely the nodule is to be malignant: in most cases, after 2 years without growth, the nodule is deemed benign and radiographic surveillance is terminated. Many participants accepted this framework, reporting that results from surveillance CTs helped to change their perceptions of the nodule towards less worrisome depictions. As time passed with neither nodule growth nor onset of concerning symptoms, they began to believe the nodule was benign and ultimately felt equanimity about it (Depiction 4):

[When I first found out], I was going out the window. But then they told me don't worry about it because ... nothing's changed. ... Then we just let it go. ... That's the way it is. [Pt10]

However, not every patient shared this way of thinking. For some, subsequent tests without biological change were not construed as evidence of a benign aetiology and did not diminish their concern: 'It's still the same size ... but it doesn't reassure you ... Some day down the line, it could turn cancerous. Nobody really knows' [Pt13]. Some found tests indicating 'no growth' to be reassuring but brief respites from chronic worry. These participants expressed dissatisfaction with the usual 2-year plan of surveillance; they wanted to monitor the nodule for the rest of their lives or even to undergo biopsy to lay the issue to rest:

I'm depending on them keeping check on it. See if it's enlarging or anything. [Pt8]

It really, really would be easier to know if you had [cancer]. ...If [my doctor] said, "Okay, you can come in tomorrow to have a biopsy done," I would. [Pt20]

Managing the uncertainty

For many, undergoing surveillance entailed chronic worry: 'It's nerve-wracking just to sit and wait, ...wondering when the bomb is going to drop' [Pt2]. Not content with the timeline of clinical surveillance, patients used their own approaches for coming to terms with the nodule in the months between CT results. Some approaches focused on trying to define the nodule's meaning to reduce uncertainty. Others were aimed at mitigating the emotional distress.

Vigilance for symptoms

Most patients reported monitoring themselves for any change in symptoms, expressing a belief that certain symptoms would signify nodule growth (i.e. cancer): 'Has it gotten any bigger? ... I don't feel any different. My breathing is good' [Pt17]. For many, the absence of symptoms mitigated their concern, but they

nonetheless remained vigilant for respiratory symptoms that would warrant further work-up:

If I was having symptoms as a result of the nodules, ...I would probably be more concerned and I would probably then think maybe a biopsy was a good idea. [Pt4]

Most patients were unaware that a small pulmonary nodule is unlikely to cause symptoms such as dyspnoea or pain, whether malignant or not.

Information-seeking

Some patients tried to make sense of the nodule by seeking additional information from clinicians, friends or the internet:

I asked my doctor, but I was thinking, when I get home, I will read more ... like anyone with the internet. [Pt16]

While some found additional information reassuring, others reported it exacerbated their uncertainty and distress: 'in the computer ... they had a list of things that could happen. ... It scared you ... It confuses you if you don't have a person there that knows what they're talking about' [Pt6]. Several participants reported that one reason they attended the focus group was to obtain further information about pulmonary nodules.

Contemplating risk factors

Participants considered a variety of possible risk factors, many biomedically implausible, that might explain how the nodule developed and whether it was likely to be malignant. Patients considered environmental, occupational, recreational and familial exposures, but lingered on tobacco use, given its well-publicized association with lung cancer.

Maybe it was the cigars that you're not supposed to inhale. ... Everything has to be logical in my world. [Pt7]

Tobacco use implied responsibility to patients as well. Smokers expressed guilt, while non-smokers expressed resentment that they had developed a pulmonary problem.

Avoidance

In contrast to those who spent time considering various aspects of the nodule and what it might be, for some patients, the nodule was simply too painful to contemplate.

Many strove to protect themselves by keeping it out of their thoughts as much as possible: 'I try to forget about this, because if I put it in my head, I'm going to be like her, crying all day and depressed' [Pt18]. Several participants described exercising care when discussing the nodule with friends or family, minimizing its significance or providing qualifications to protect themselves and their loved ones:

I don't like to talk about it. If anything, I blow it down, or I make sure I tell them comforting words that the doctor said. ... We all walk away from it. [Pt3]

Some reported denying the nodule's existence at times:

I know I don't have anything. It must be a mistake, just a shadow. But it's there, it's there. You have to deal with it. ... It's a painful diagnosis [Pt1].

Controlling what they could

Several patients attempted to control all elements of the situation, believing that controlling the uncertainty of the situation would render it less distressing. They began by reducing exposures they thought might cause the nodule to become malignant (e.g. quitting or cutting back on tobacco). Some expressed frustration that, despite their best efforts, what happened to the nodule was beyond their control:

How can I control my lungs? I'm not smoking, I'm not drinking, I have a healthy lifestyle. Exercises, you know, eating the right organic food. ... [But] this is beyond my control. [Pt16]

Fate and faith

In contrast to those who tried to control the situation, other patients found it useful to accept that it was beyond their control. One patient left the outcome of the nodule to 'fate;'

others invoked their faith: 'You're kind of put in the hands of God' [Pt6]. For many, this strategy resulted in a feeling of equanimity towards the nodule.

Discussion

We have described the complex responses that patients may have to the diagnosis and evaluation of an indeterminate pulmonary nodule and how they may develop over time. Several patients presented perceptions that evolved from an immediate fear about cancer (Depiction 1); to a recognition of the inherent uncertainty of the diagnosis, which tended to create anxiety (Depiction 2); to an eventual acceptance that the nodule was no longer a health threat (Depiction 4) after receipt of reassuring test results and the passage of time (see arrow in Fig. 1). However, the trajectory varied: some never moved past the distressing conviction that the nodule was cancer (Depiction 1), and a few, while recognizing that cancer was a possibility, never experienced much distress over the nodule (Depiction 3). Patients employed a variety of coping strategies to inform their evolving perceptions of the nodule, particularly to resolve its unsettling uncertainty. Personal experiences may also have informed patients' depictions of the pulmonary nodule. For example, family histories of cancer were linked to fears that the nodule was malignant (Depiction 1), while older patients and those with substantial comorbid disease expressed more equanimity about the nodule (Depictions 3 and 4). Perhaps, surprisingly, smoking status did not appear to be associated with particular response types: there were cases of smokers and non-smokers who presented each depiction. However, more subtle differences in patient responses by smoking history might be discovered if this topic was explored further in a study focused on this topic.

The participants' depictions of their nodules echoed the common sense model of health threats: cognitive formulations of what the nodule might be and emotional responses to it.¹³ Their stories highlighted the troubling

problem presented by health threats that cannot be named. A central theme in our analysis was that patients' inability to assign a clear identity to the nodule (in their words, 'not knowing') was the hardest part of living with an indeterminate pulmonary nodule. Remarkably, some commented that it would be easier to be told that they had cancer than to grapple with the uncertainty of an indeterminate pulmonary nodule. In many ways, these patients acted as though they had been already given a diagnosis of cancer. In the most extreme cases, some made life changes to 'prepare for the worst'.¹⁴ Other coping strategies, also associated with a threat of cancer, included monitoring themselves for symptoms that might indicate the emergence of cancer,^{15,16} seeking information about the diagnosis,¹⁶⁻¹⁹ contemplating risk factors for cancer^{20,21} and eliminating unhealthy exposures.^{15,20-22} Like cancer patients and others facing an uncertain health threat, some patients sought to avoid reminders about the nodule^{16,23} or to surrender the nodule and its health implications to fate or faith.^{24,25} Some strategies (e.g. faith) appeared to be more effective than others (e.g. information-seeking) at resolving the distressing uncertainty of the nodule, an area that warrants further study.

This study has limitations. The experiences reported by our focus group participants may not speak for all individuals with pulmonary nodules (e.g. we did not include individuals with a high likelihood of a malignant nodule, nor patients who had had a nodule detected through lung cancer screening, which was not routinely offered at the time of this study). Patients who accepted the invitation to engage in a focus group discussion may be more concerned about their nodule than others who declined to participate. Arguing against this potential source of bias, some participants reported very little distress about the nodule, and some seemed almost indifferent towards it. We cannot comment on the clinical significance of the distress created by the uncertainty of an indeterminate pulmonary nodule, nor on whether individuals in our focus groups had

comorbid mental health issues that may have led to a distress response that was both more likely and more debilitating. However, other studies have demonstrated that a broad cross section of patients who have received abnormal (though still indeterminate) cancer screening test results experience distress that not only adversely affects quality of life, but also can lead to poor adherence with the evaluation of potentially malignant findings.^{10,26,27} Finally, we recognize that other factors beyond those reported here likely influenced patient responses. For example, we have explored patients' perceptions of the effects of their doctors' communication about the nodule elsewhere.²⁸

Despite these limitations, we believe our results are an important addition to the literature, particularly in the light of newly released guidelines for lung cancer screening that call for clinicians to counsel patients on the trade-offs of screening.²⁹ An important downside to lung cancer screening is the high false-positive rate – in the National Lung Screening Trial, 39% of patients were found to have an indeterminate pulmonary nodule that required further evaluation to rule out malignancy, and only 5% of these turned out to be cancer.³⁰ As part of shared decision making about lung cancer screening, providers should discuss with patients that there is a good chance an indeterminate pulmonary nodule will be found and what evaluation of the nodule will entail. Our findings draw attention to the intense distress that some patients with an indeterminate pulmonary nodule experience during surveillance, a fact that clinicians should discuss with patients considering lung cancer screening. Although our results may not be generalizable to patients who have a screen-detected (as opposed to incidentally detected) pulmonary nodule, surveys of individuals enrolled in trials of lung cancer screening have shown increased levels of distress related to the finding of an indeterminate nodule.^{5,6}

Moreover, our results may extend beyond the specific instance of the indeterminate pulmonary nodule to the broader scenario of how

patients respond to an uncertain clinical finding and the distress it may evoke.³¹ The profound distress accompanying a clinically uncertain diagnosis such as an abnormal cancer screening test has been well documented.^{8–10,31} However, for many patients in this situation, such as for women who have received a false-positive mammogram, the uncertainty may be intense, but it is quickly resolved through a definitive biopsy showing that the lump is not cancer. By contrast, prolonged uncertainty during medical surveillance, such as that experienced by patients with an indeterminate pulmonary nodule or patients with low-grade prostate cancer, can be particularly difficult for patients.³² In the context of prostate cancer, many men opt for definitive treatment despite the risks of sexual and urinary dysfunction to avoid the distress of ‘watchful waiting’ for a known cancer.^{33–36} However, few studies have taken an in-depth look at what surveillance for an indeterminate result means for patients, how the distress of an uncertain diagnosis manifests itself for patients and the strategies patients use to handle this uncertainty³⁷ – particularly in the context of a diagnosis like an indeterminate pulmonary nodule, which may be a life-threatening cancer or nothing more than a scar.

The way clinicians and patients perceive surveillance may at times be at odds. Clinical surveillance monitors the size of the nodule, ending after 2 years without growth and a presumptive determination of a benign aetiology. Surveillance as experienced by patients entails a complicated vigilance, as patients grapple with an unknown, potentially ominous threat to life and well-being. Our data suggests that routine surveillance and the findings of ‘no growth’ are not always reassuring to patients in the same way they are to clinicians, and that patients may continue to engage in their own version of surveillance long after the doctor has terminated clinical surveillance. Hence, effective, patient-centred communication between doctors and patients is critical to ensure that doctors and patients are on the same page and that any misconceptions are

addressed. Without such clear communication, neither informed nor shared decision making can be achieved.

Patient-centred communication can, in principle, help patients make sense of the nodule, modulate its psychosocial sequelae and thereby mitigate distress.^{38–40} Beyond the mere presentation of facts about the nodule, which may only highlight the cognitive uncertainty surrounding what the nodule is and how best to manage it,³⁷ clinicians should recognize that the uncertainty of an indeterminate pulmonary nodule weighs heavily on some patients, and offer emotional support to patients. Specific communication strategies, including providing clear information to patients, exploring the patient’s values and attitudes and making management decisions collaboratively with the patient, have been described as a means for clinicians to mitigate the burden on patients of an uncertain medical diagnosis.^{41–43} As has been described in the context of prostate cancer,³⁶ patients with indeterminate pulmonary nodules want and need *active* surveillance, not just ‘watchful waiting’ – and it is incumbent upon clinicians to let them know what to expect even before a screening test for lung cancer is ordered.

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