

Appendix 1 Survey on Patient Expectations for Pulmonary Nodule Diagnosis and Treatment Services

1. Please upload your most recent de-identified CT scan report

2. Basic Information

(1) Age:

- ☐ 18 and below
- ☐ 18-35
- ☐ 36-50
- ☐ 51-65
- ☐ 66-80
- ☐ 81 and above

(2) Gender:

- ☐ Male
- ☐ Female

(3) Education Level:

- ☐ Doctorate or higher
- ☐ Master's degree
- ☐ Bachelor's degree
- ☐ Associate degree
- ☐ Secondary school or below

(4) City of Residence:

(5) Does your occupation involve exposure to asbestos, beryllium, uranium, radon, or similar substances (e.g., coal mining, chemical plant work, etc.)?

- ☐ Yes, my specific occupation is: _____
- ☐ No, please select your occupation type:
 - ☐ Government agency or affiliated institution staff
 - ☐ Democratic party or social organization staff
 - ☐ Public institution staff
 - ☐ Corporate employee
 - ☐ Professional or technical worker
 - ☐ Self-employed
 - ☐ Military personnel
 - ☐ Student
 - ☐ Unemployed

(6) Total Monthly Pre-tax Income (in RMB):

- ☐ 4,999 or below
- ☐ 5,000-9,999
- ☐ 10,000-19,999
- ☐ 20,000-29,999
- ☐ 30,000 and above

(7) Do you have a family history of lung cancer? (Direct relatives within two generations diagnosed)

- ☐ Yes
- ☐ No

(8) Have you ever been diagnosed with pulmonary fibrosis, chronic obstructive pulmonary disease (COPD), or tuberculosis?

- ☐ Yes
- ☐ No

(9) Have you smoked in the past 15 years?

- ☐ Yes

1. What year did you start smoking? _____

2. Have you quit smoking?

- ☐ Yes. Quit in: _____ (Year) _____ (Month)

Average number of cigarettes smoked per day before quitting: _____

- ☐ No.

Current average number of cigarettes smoked per day: _____

(10) Have you ever been infected with COVID-19?

- ☐ Yes

☐ The pulmonary nodule was discovered before the COVID-19 infection.

☐ The pulmonary nodule was discovered after the COVID-19 infection.

- ☐ No

(11) Do you regularly wear a mask?

- ☐ Yes

☐ I had the habit of wearing a mask before the COVID-19 pandemic.

☐ I started wearing a mask only after the COVID-19 pandemic.

- ☐ No

(12) Do you wear a mask correctly?

(Correct wearing includes: touching only the outer surface, distinguishing front and back, pinching the nose clip tightly, replacing every 4 hours, and not reusing it.)

- ☐ Yes

☐ No *(Irregular use or failure to replace it on time)*

3. Does your employer provide regular health check-ups?

- ☐ Yes

☐ No, do you undergo regular health check-ups on your own?

- ☐ Yes

- ☐ No

4. Do you currently have additional private/commercial insurance?

☐ Yes, the types of additional insurance purchased are (multiple choices allowed):

- ☐ Property insurance
- ☐ Life insurance
- ☐ Health/Medical insurance
- ☐ Critical illness insurance
- ☐ Accident insurance
- ☐ Other, please specify: _____

☐ No, reasons for not purchasing insurance:

- ☐ I feel insurance is not useful for me
- ☐ Cost is too high
- ☐ Insurance terms are too complex
- ☐ Coverage is too limited
- ☐ Strict claim policies and complicated procedures
- ☐ I want to buy but haven't had time to research
- ☐ Unable to purchase after being diagnosed with pulmonary nodules
- ☐ Other, please specify: _____

5. When was your pulmonary nodule first discovered?

_____ (Year) _____ (Month)

6. How many hospitals or medical institutions have you visited for pulmonary nodule diagnosis and treatment?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

7. (For those who visited 2 or more institutions) Were the test results consistent across different institutions?

- ☐ Yes
- ☐ No
- ☐ Not sure

8. Have you ever visited a top-tier (Class A tertiary) hospital for diagnosis?

- ☐ Yes
- ☐ No

9. Was your most recent consultation or examination conducted at a hospital or a medical check-up institution?

- ☐ Hospital – Name and department: _____
- ☐ Medical check-up institution – Name: _____

10. Is your current pulmonary nodule a solitary one?

- ☐ Yes
- ☐ No

11. What is the size of your pulmonary nodule?

_____ mm/cm

12. Is this the first time you have been diagnosed with a pulmonary nodule?

- ☐ Yes
- ☐ No, has the diagnosis changed over time?
- ☐ Increased in size – Please describe the changes: _____
- ☐ Decreased in size – Please describe the changes: _____
- ☐ Increased in number – Please describe the changes: _____
- ☐ Decreased in number – Please describe the changes: _____
- ☐ Shape has changed – Please describe the changes: _____
- ☐ Condition fluctuates – Please describe the changes: _____
- ☐ No change
- ☐ Unknown

13. Are you aware of the nature of your pulmonary nodule? Has it been classified?

- ☐ Not sure / Not informed by the doctor
- ☐ Informed that the nature is uncertain
- ☐ Clearly informed of the nature
- ☐ Likely benign
- ☐ Classified as low, medium, or high risk
- ☐ Classified under Lung-RADS system
- ☐ Other, please specify: _____

14. What treatment or management plan do you prefer for your pulmonary nodule?

- ☐ Undergo biopsy or other procedures to determine its nature
- ☐ Enroll in a pulmonary nodule management program/service
- ☐ Regular follow-up, deciding further action based on test results
- ☐ No intervention
- ☐ Other, please specify: _____

15. Self-assessment of Anxiety in the Past Two Weeks

In the past two weeks...	Never	Several days	More than half the days	Nearly every day
1. Felt nervous, anxious, or on edge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Unable to stop or control worrying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Worried too much about different things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Had difficulty relaxing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Felt restless and unable to sit still	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Became easily annoyed or irritable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Felt afraid as if something terrible might happen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Are you currently enrolled in a pulmonary nodule management program/service?

- (1) Yes
1. What type of patient service/management program are you participating in?
- ☐ Hospital-based program
- ☐ Medical check-up institution program
- ☐ Health management platform jointly operated by hospitals and check-up institutions
- ☐ Online management program (Internet-based hospital)

- ☐ Patient-initiated support group
- ☐ Nonprofit organization/association
- ☐ Other: _____
2. How did you learn about and enroll in the patient service/management program?
- ☐ Official hospital information channels
- ☐ Doctor's recommendation
- ☐ Recommendation from a patient group/community
- ☐ Found independently through online research
- ☐ Recommendation from someone else
- ☐ Service platform staff introduction
- ☐ Other: _____
3. What services are provided in the program? (Multiple choices allowed)
- ☐ Online customer service/health consultant Q&A
- ☐ Online/offline personalized health records
- ☐ Development of a follow-up plan
- ☐ Follow-up/check-up/expert fast-track services
- ☐ Multidisciplinary consultation services
- ☐ Health education courses/guidance
- ☐ Nutritional consultation/planning
- ☐ Special fast-track access for surgeries
- ☐ Psychological counseling/support
- ☐ Pulmonary disease insurance
- ☐ Other: _____
4. Is the patient management/service program you joined paid or free?
- ☐ Paid, amount (RMB): _____
- ☐ Free
5. How frequently do you use the services?
- ☐ Never used any services
- ☐ Used most of the services (more than 50%)
- (a) The 1-2 services you use most frequently: _____
- (b) The 1-2 services you have never used: _____
- ☐ Used only a small portion of the services
- (c) The 1-2 services you use most frequently: _____
- (d) The 1-2 services you have never used: _____
- ☐ Used all available services
- (e) The 1-2 services you use most frequently: _____
6. What benefits have you gained from participating in the pulmonary nodule management/service program? (Multiple choices allowed)
- ☐ Gained more professional and objective understanding of pulmonary nodules
- ☐ Reduced or alleviated anxiety about the condition
- ☐ Developed a habit of regular follow-up

- ☐ Established a communication channel with doctors
- ☐ Received treatment that improved the pulmonary nodule condition
- ☐ Other: _____

7. Do you think the pulmonary nodule management/service program has been helpful for you?

- ☐ Yes, the most valuable service is: _____
- ☐ No, the least valuable service is: _____

(2) No

1. Why have you not joined any pulmonary nodule management/service programs? (Multiple choices allowed)

- ☐ Never heard of or encountered such programs
- ☐ Do not think it is useful for me
- ☐ Cost concerns
- ☐ None of the services appeal to me
- ☐ Other: _____

2. What service advantages would convince you to join a patient management/service program? (Multiple choices allowed)

- ☐ Official program offered by a reputable hospital
- ☐ Managed by a team of expert doctors
- ☐ More convenient and streamlined medical processes compared to self-follow-up
- ☐ Ability to consult doctors anytime
- ☐ More cost-effective package compared to self-follow-up
- ☐ Other: _____

3. What types of patient management/services do you think would be beneficial for you? (Select 3-5 items)

- ☐ Online customer service/health consultant Q&A
- ☐ Online/offline personalized health records
- ☐ Development of a follow-up plan
- ☐ Follow-up/check-up/expert fast-track services
- ☐ Multidisciplinary consultation services
- ☐ Health education courses/guidance
- ☐ Nutritional consultation/planning
- ☐ Special fast-track access for surgeries
- ☐ Psychological counseling/support
- ☐ Pulmonary disease insurance
- ☐ Effective monitoring and reminder services
- ☐ Other: _____

4. If you were to purchase a patient management/service package, what is the acceptable annual cost?

- ☐ Below 500 RMB
- ☐ 500-1000 RMB
- ☐ 1000-2000 RMB
- ☐ Above 2000 RMB

5. Additional expectations or suggestions for patient management/service programs:

17. Have you been advised to follow a regular follow-up schedule?

☐ No

☐ Yes

If yes, are you currently following the doctor's recommendations for follow-up?

☐ Yes

1. What is your typical follow-up medical cost per visit?

☐ Below 100 RMB

☐ 100-500 RMB

☐ 500-1000 RMB

☐ 1000-2000 RMB

☐ Above 2000 RMB

2. What are your main expenses during follow-up visits? (Multiple choices allowed)

☐ Consultation fees

☐ CT scans

☐ Medication costs

☐ Blood tests for lung cancer markers/screening

☐ Other: _____

☐ No

If not following medical recommendations for follow-up, what are the reasons?

☐ Cost concerns

☐ Condition does not seem severe

☐ Medical visits and tests are too complicated and time-consuming

☐ Follow-up appointment time has not yet arrived

☐ Psychological factors (specific concerns/thoughts): _____

☐ Other reasons: _____

18. Do you think regular follow-ups according to medical advice are beneficial to you?

☐ Yes

☐ No

Appendix 2 Semi-structured Interview Framework for Physicians on Pulmonary Nodule Care

1. Based on your clinical experience, how do you stratify the risk levels of pulmonary nodules?
2. For pulmonary nodules with different risk levels, what treatment and management strategies do you typically recommend?
3. What is your perspective on the current status of follow-up management for pulmonary nodule patients?
4. What factors do you think influence patients' adherence to follow-up? How can adherence be improved?
5. Does your medical institution have a follow-up management program for pulmonary nodule patients? If so, what are its characteristics and outcomes?
6. What are the main challenges and barriers in implementing existing follow-up management programs? In what areas can they be optimized and improved?
7. If you were to design a new pulmonary nodule patient management program, what key elements would you consider?
8. What do you think are the future trends in pulmonary nodule management? What are your thoughts on disease-specific insurance products for pulmonary nodules?
9. What core coverage elements do you think should be included in pulmonary nodule-specific insurance?
10. How can early intervention through management strategies help make the risk of pulmonary nodule-specific insurance more controllable?