Building a Lung Nodule Program: From Detection to Diagnosis

Use this guide to structure a comprehensive nodule management program.

What a comprehensive program should deliver for every nodule:

A. Identify the nodule	B. Stratify risk	C. Set owner & plan	D. Track & follow	E. Review results	F. Escalate if needed	G. Ongoing management
• Screen-detected or incidentally detected • Radiology report flags the finding • Autorouted to an intake queue • Reach out to the patient	• Size, morphology, growth, risk factors • Guideline-based rec (CHEST, Fleischner, Lung-RADS) • Use clinically validated biomarkers and risk calculators as an adjunct	• Plan documented • Interventions scheduled • Follow-up scheduled • Plan to communicate to referring provider • Communicate and discuss the plan with the patient	• Entered in the nodule registry or electronic health record list • Automated reminders for due and overdue • Overdue report worked on a set schedule	• Follow-up imaging completed and reviewed • Next step decided from the findings • Stable and normal results communicated	• Nodule board or multidisciplinary team conference review • PET/CT scan, biopsy, or surgical referral • Recommendation and owner documented	• Adherence to recommended surveillance intervals • Outcome documented; surveillance exit or next interval set • Counted in your metrics

Six Steps to Build Your Program

STEP 1

LEADERSHIP & GOVERNANCE

Who is accountable, for what, and to whom?

- ☐ Name a physician program lead accountable for outcomes
- ☐ Designate a coordinator or nodule navigator for day-to-day tracking, patient outreach, scheduling, and reminders
- ☐ Confirm a defined reporting line to leadership
- ☐ Document program scope, sites covered, and meeting cadence

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STEP 2

DETECTION & INTAKE

Does every nodule actually reach us?

- ☐ State nodule size and density (solid/part-solid/ground-glass) and any follow-up timeframe in the impression
- ☐ Favor radiologist-initiated flagging; use natural language processing to supplement
- ☐ Route every flagged finding to an intake queue
- ☐ Triage at intake; prioritize urgency and route to the appropriate pathway
- ☐ Redirect nonnodule findings (eg, pleural effusion, pneumonia) to general pulmonology rather than nodule clinic—a "thoracic other" designation
- ☐ Name who reviews the queue(s), how often, and with what turnaround
- ☐ Set inclusion/exclusion criteria (eg, nodule size threshold, patients with active malignancy)

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STEP 3

RISK STRATIFICATION & PATHWAYS

Do we make the same decision every time?

- ☐ Start with patient factors and clinical gestalt to estimate pretest probability
- ☐ Apply validated risk models/calculators (Mayo, Brock, Veterans Affairs, etc)
- ☐ Consider clinically validated biomarkers as an adjunct to refine risk and guide clinical decisions

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STEP 4

MULTIDISCIPLINARY COORDINATION

Are the right people in the room on schedule?

- ☐ Confirm members: pulmonology, thoracic surgery, radiology, pathology, medical and radiation oncology
- ☐ Include advanced practice providers and navigators
- ☐ Hold a scheduled nodule or thoracic oncology conference
- ☐ Record recommendations in the chart with an owner for each next step

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STEP 5

TRACKING & FOLLOW-UP

Will the system catch the patient we forget?

- ☐ Maintain a registry or electronic health record list of every patient under surveillance (Note: Track surveillance and escalation pathways as separate workflows; screening is tracked under its own program)
- ☐ Generate automated reminders for due and overdue imaging
- ☐ Work an overdue/loss-to-follow-up report on a defined schedule
- ☐ Give patients a written plain-language plan; address access barriers

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STEP 6

MEASURE & IMPROVE

Do we know our numbers—and act on them?

- ☐ Track key metrics: time from identification to biopsy, time from biopsy to treatment initiation, change in plan based on biomarker testing, guideline-concordant follow-up, and loss-to-follow-up rates
- ☐ Stratify outcomes by payer, race/ethnicity, language, and geography
- ☐ Report to leadership on a cadence; pick one or two priorities per cycle

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CORE METRICS - These are quality metrics to consider for a lung nodule program

METRIC	BASE	TARGET*
Flagged nodules entered into the program		
Guideline-concordant follow-up rate		
Adherence to surveillance intervals		
Rate of loss to follow-up		
Detection to diagnostic resolution (days)		
Time to biopsy (days)		
Rate of plan changed based on biomarker testing		
Diagnosis to treatment initiation (days)		
Stage distribution at diagnosis		
Benign resection rate		
Biopsy yield and complication rate		
Equity: outcomes by payer, race, language		
Nodules exiting surveillance		
Benign biopsy rate		

**Each individual institution sets its own target.*

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