American Cancer Society-National Lung Cancer Roundtable

Final Report for the 2021-2022 Lung Cancer Biomarker Testing 3-State ECHO pilot

American Cancer Society®

Project ECHO®

NATIONAL LUNG CANCER ROUNDTABLE

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Executive Summary: **ABOUT THE PILOT**

In 2021, the American Cancer Society National Lung Cancer Roundtable (ACS NLCRT) launched a 3-state pilot in Georgia, Kentucky, and Mississippi to optimize lung cancer biomarker testing among eligible individuals with non-small cell lung cancer (NSCLC) through Project ECHO. The ACS NLCRT coordinated the implementation nationally and worked with state leads to deliver timely, tailored content to improve provider knowledge and practice and identify opportunities for state-level collaboration and action.

State-Model Approach

7 monthly sessions

A state-based approach to the ECHO model was used to foster collaboration across the 3 states as well as to help address state-specific barriers to biomarker testing.

Building on the ECHO curriculum model, Spokes from each state were engaged in didactic and case-based presentations during each session. Overall, there were 5 combined sessions (all states) and 2 state-based sessions.

Partnerships

25 Institutions Represented
7 National & 13 State Faculty
178 Spokes (i.e. Learner)

The ACS NLCRT Team and volunteer leaders, ACS Regional Leads, and State Leads (i.e., Facilitative Partners), recruited 7 National faculty from 6 institutions across the United States and 13 State faculty. In total 178 Spokes (i.e. Learners) participated in this ECHO series.

Twenty-five institutions participated as Spoke sites for this initiative across three states.

Feedback & Impact

8 Evaluation Data Sources

Results from this report consist of data collected through 8 evaluation data sources

For Spokes: Looking at knowledge and confidence change through pre-survey[1], post-survey[2], 6-month follow-up[3], and post-session polls.[4]

For Faculty: Assess their experience with the project through a survey.[5]

For State and Regional Leads: Assessing their experience interviews[6,7] and narrative reports.[8.] **Appendix A provides additional detail**

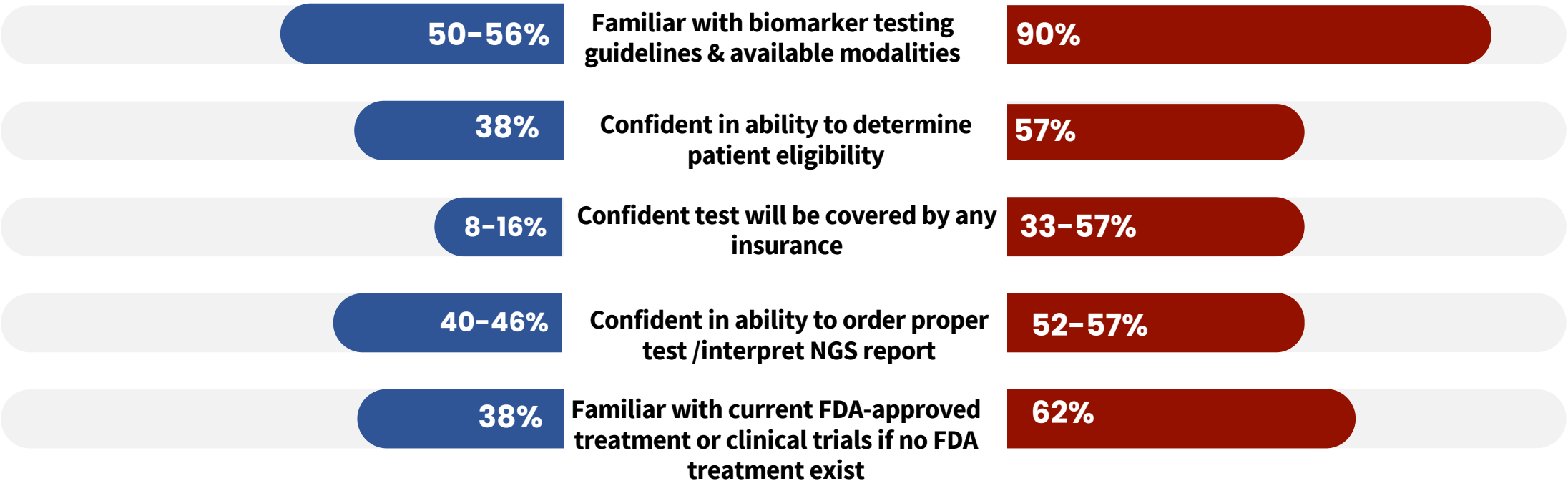
Executive Summary: **BUILDING INSTITUTIONAL CAPACITY- Spoke Respondents**

Pre- Survey (N=42)

78% scored **low-to-moderate** on overall knowledge and confidence

Post- Survey (N=21)

90% score **moderate-to-high** on overall knowledge and confidence



*note: Ranges are provided here as some questions were combined, see "Building Institutional Capacity" section for individual breakdown

Generally, post-survey group responded with more familiarity, confidence, and knowledge regarding biomarker testing guidelines and barriers. However, areas such as determining patient eligibility, insurance coverage, and ordering tests/interpreting Next Generation Sequencing (NGS) reports, and FDA treatment are not as high as their familiarity with biomarker guidelines, available modalities, and understanding of multidisciplinary teams.

Executive Summary: **ACTIVATION OF LEARNING** (6 MONTHS POST ECHO)

INCREASING BIOMARKER TESTING RATES

87% **of institutions** are working to increase biomarker testing rates.

57% **of individuals** are working either within or outside their institution to increase biomarker testing rates since the completion of the ECHO series.

IMPROVING TESTING & TURNAROUND TIME

50% of respondents indicate that **at least half** of their squamous or non-squamous NSCLC patients are receiving biomarker testing.

79% indicated that the average turnaround time from the order of a biomarker test to the recipient of the test is 2 weeks or less. *See page 25 for more detail.*

USE OF ECHO RESOURCES

100% of respondents have used **at least one** ECHO resource since their participation in the pilot.

Executive summary: **STATE-BASED APPROACH**

COMBINED SESSIONS

Benefits

- ✓ Higher quality speakers
- ✓ Network across state lines
- ✓ Universal topics
- ✓ Logistically easier

Rating ★★★★☆

All combined sessions received at least a rating of 4 for **both importance and effectiveness** by State and Regional Leads.

STATE-BASED SESSIONS

Benefits

- ✓ Higher level of engagement
- ✓ Tailored to state-specific challenges, solutions, & local talent
- ✓ Networking within states

Rating ★★★★☆

All state-based sessions had an **importance rating of** 4 or more. However, effectiveness ratings varied by State and Regional Leads.

SATISFACTION WITH OVERALL ECHO SERIES

100%

Faculty Satisfaction

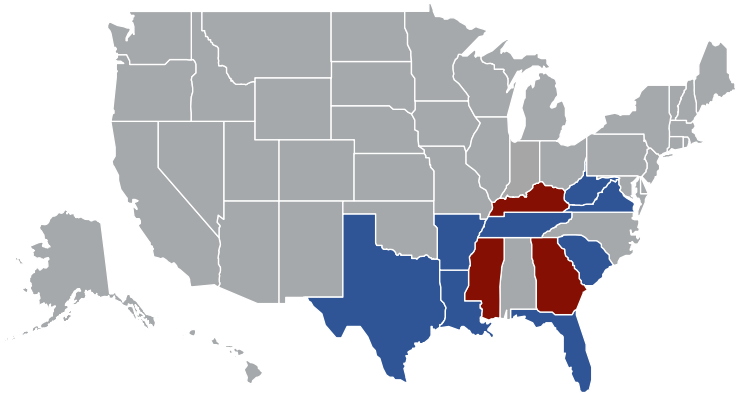
88%

Spoke Satisfaction

OVERALL PROJECT EXPERIENCE OF STATE & REGIONAL LEADS

- **High level of satisfaction with support** from ACS, which contributed to this project feeling like a reasonable time commitment.
- Regional Leads felt this **elevated ACS's reputation** as a "strong partner" and "valued member," as well as enhanced **relationship building**. In addition, State Leads felt that project brought value, including **professional growth**, **improved reputation**, and **strengthened networks**.
- Moving forward, many see this as an opportunity to **continue work with state-level roundtables** and groups.
- Recommendations were offered in the areas of recruitment and engagement strategies.

Future Direction: 8-State Expansion



PROGRAM OVERVIEW

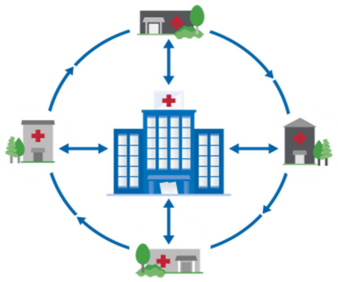
ABOUT ECHO (EXTENSION FOR COMMUNITY HEALTHCARE OUTCOMES)

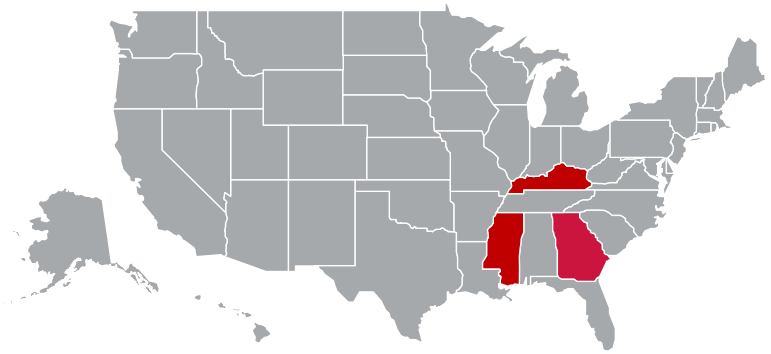
ECHO Project at-a-glance

Project ECHO was founded in 2003 by Dr. Sanjeev-Arora at the University of New Mexico.

The ECHO model addresses the needs of the most vulnerable populations by equipping communities the right knowledge, at the right place, at the right time.

ECHOs are a hub-and-spoke knowledge sharing networking, conducted virtually, that connects groups of community providers with specialist and expert in regular real-time collaborative sessions. ACS serves as an ECHO hub.





Using ECHO to optimize lung cancer biomarker testing in practice

Despite an unprecedented acceleration of new treatment options for non-small cell lung cancer (NSCLC) that targets specific biomarkers, many patients face vast challenges receiving biomarker testing.

The ACS piloted a state-based ECHO model approach to optimize lung cancer biomarker testing in Georgia, Mississippi, and Kentucky. This allowed for engagement both within and across states.

Through a series of 3-state combined sessions and individual state sessions, Spokes (learners) engage in case-based and didactic learning, led by Faculty (experts).

Through this knowledge and learning loop, best practices emerge and can be shared for wider use within individual systems and across the state/region.

CURRICULUM OVERVIEW

Informed by the September 2020 American Cancer Society National Lung Cancer Roundtable Biomarker Summit, and the NLCRT Biomarker Initiative Steering Committee, along with other literature in the field.

SESSIONS	DESCRIPTIONS
1: Understanding the barriers to biomarker testing	**Combined:** Overview of the biomarker continuum through the lens of the critical medical stakeholders & share common challenges institutions face related to lung cancer biomarker testing. N=56
2: Pathways to biomarker testing	**State-based:** Overview of the pathways to biomarker testing, through the lens of the patient, especially emphasizing the steps, the process, and the length of time involved. GA=21|KY=14|MI=19
3: Adequate Tissue for Sampling	**Combined:** Define role of the multidisciplinary care team to ensure adequate lung cancer tissue is collected & guidance on how to procure adequate tissue samples that allow for accurate characterization of histology, biomarker testing, and the tissue. N=41
4: Choice of Panel, Interpretation of Results, and Next steps	**Combined:** Provide practical guidance to decision makers, including recommendations for appropriate biomarker testing modalities, interpreting next-generation sequencing reports, and showcasing why delays may limit a patient's ability to benefit from biomarker testing. N=32
5: Improving turnaround time	**Combined**: Offer strategies to reducing turnaround time and to help ameliorate patient's wait time for results N=18
6: Navigating Insurance Complexities	**State-based:** Provide high-level overview of current coverage policies for single gene test as compared to multi-gene panel test by private and public payers & provide practical solutions for navigating insurance challenges, system navigators, and or navigation processes GA=21|KY=14|MI=missing*
7: State-Elected Topics	**Kentucky**: The role of molecular tumor board **Georgia:** 2021 Review in Lung cancer biomarker testing & What to Expect in 2022 and beyond **Mississippi:** 2021 Reflection in Lung Cancer Biomarker Testing & What's Ahead. GA=6|KY=18|MI=19

Partnerships & Roles

- The ACS national team and Regional Leads: tasked with implementation and program planning.
- State Leads (also known as Facilitative Partners): assisted with implementation of the pilot in their respective state.
- Faculty: both NLCRT Leadership and state-based faculty served as subject matter experts, facilitators, and presenters.
- Spokes (also referred to as Learners): individuals recruited from health systems to participate in the ECHO sessions.
- Institutions are sites

Mississippi

10 Institutions, 80 Spokes

73 Clinicians, 8 Non-clinicians

- Baptist Cancer Center
- Forrest General Hospital- Hattiesburg Clinic
- G.V. "Sonny" Montgomery VA Medical Center
- Jackson Oncology Associates
- MS Oncology Society
- NMMC Cancer Care
- Singing River Health System
- Southwest Mississippi Regional Medical Center
- St. Dominic Hospital
- University of Mississippi Medical Center

3 State Faculty

From University of Mississippi Medical Center Cancer Center and Research Institute & Baptist Cancer Center

Georgia

9 Institutions, 46 Spokes

30 Clinicians, 16 Non-clinicians

- Atrium Health Navicent
- Emory University/Winship Cancer Institute
- Georgia Cancer Center
- Grady Health System/Georgia Cancer Center for Excellence
- Northeast Georgia Medical Center
- Northside Hospital Cancer Institute
- Phoebe Putney Memorial Hospital
- Piedmont Columbus Regional – JBACC
- St. Joseph's/ Candler Health System/ Lewis Cancer & Research Pavilion

3 State Faculty

From Phoebe Putney, Grady Health System/Georgia Cancer Center for Excellence, and Emory University/Winship Cancer Institute

Kentucky

6 Institutions, 51 Spokes

36 Clinicians, 15 Non-clinicians

- Highland ARH Regional Medical Center
- Lake Cumberland Regional Hospital
- LifePoint Central Kentucky: Clark Regional Medical Center & Georgetown Community Hospital
- St. Claire Healthcare
- Taylor Regional Hospital
- UK Markey Cancer Institute

7 State Faculty

From the UK Markey Cancer Institute

7 National Faculty represent NLCRT Leadership and were recruited from Dana-Farber/Harvard Cancer Center, Medical University of South Carolina, The University of Texas MD Anderson Cancer Center, University of North Carolina at Chapel Hill, American Cancer Society, and the University of Washington

BUILDING INSTITUTIONAL CAPACITY

Evaluation of participant knowledge and confidence regarding biomarker testing and barriers associated with it.

Building Institutional Capacity: Key Highlights

KEY HIGHLIGHTS

- Majority of Post-Survey respondents scored **moderate-to-high on their knowledge and confidence** for lung cancer biomarker testing, compared to our pre-ECHO group in which respondents mostly scored moderate-to-low.

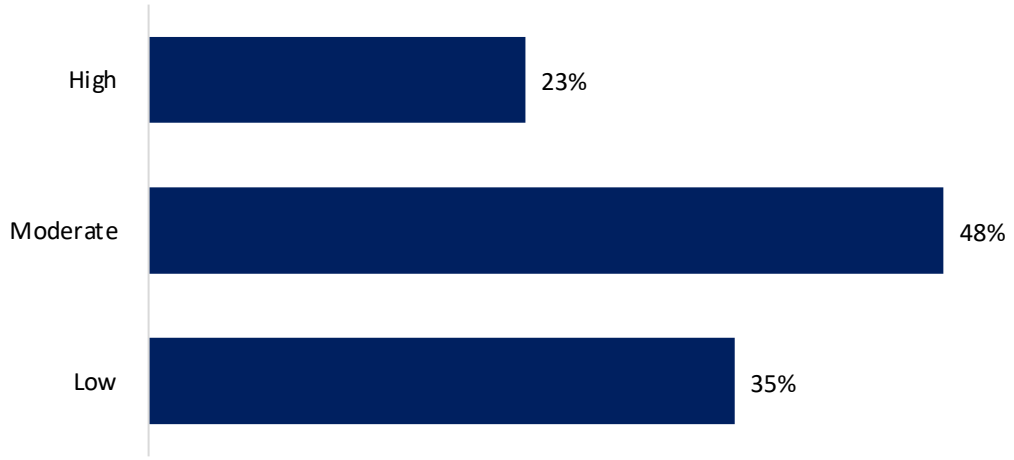
- **Consistently, general hematologist/oncologists and administrators scored the highest levels** of confidence and knowledge. Clinicians, in general, had better overall scores on the post-survey.

- **Majority** of participants felt that participating in the ECHO **improved their ability to address common barriers** to lung cancer biomarker testing.

Overall Knowledge & Confidence

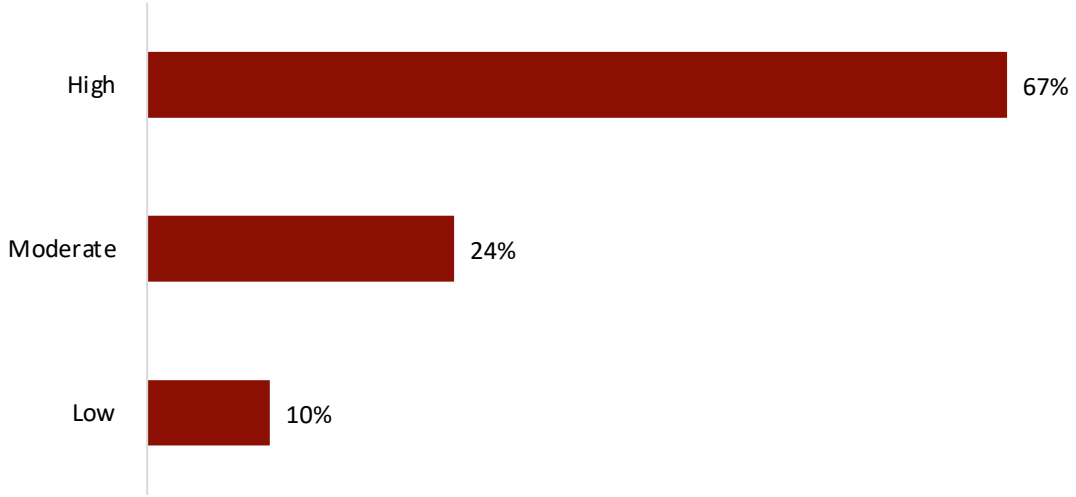
Using a 10-question scale, respondents were assessed on their level of knowledge, confidence, and self-efficacy on lung cancer biomarker testing. Scores ranged from low (0-16), moderate (17-33) and high (34-50)

PRE-ECHO



Prior to the ECHO series, a **majority of respondents** in our pre-survey group had **moderate-to-low levels of confidence and knowledge** regarding lung cancer biomarker testing

POST-ECHO



Upon completion of the ECHO series, a **majority of respondents** in our post-survey group **had moderate-to-high levels of confidence and knowledge** regarding lung cancer biomarker testing

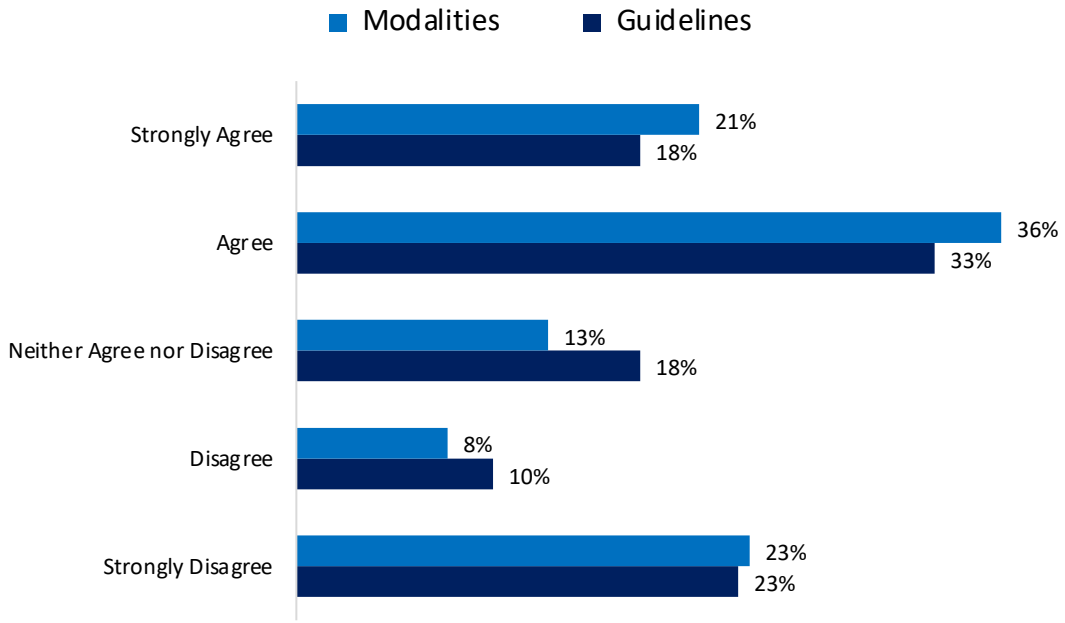
Insights:

General hematologist/oncologists remain as the highest scoring group followed closely by Administrators (in both the pre-survey group and post-survey group). Anecdotally, a review of the respondents' overall knowledge and confidence score from pre- to post-ECHO showed that on average, nurses, nurse navigators, and pathologists in the pre-ECHO group had moderate to low scores, but the same professions scored moderate/high in the post-ECHO group.

Knowledge of Biomarker Testing Guidelines & Testing Modalities

"I am familiar with lung cancer biomarker testing guidelines/available testing modalities"

PRE-ECHO

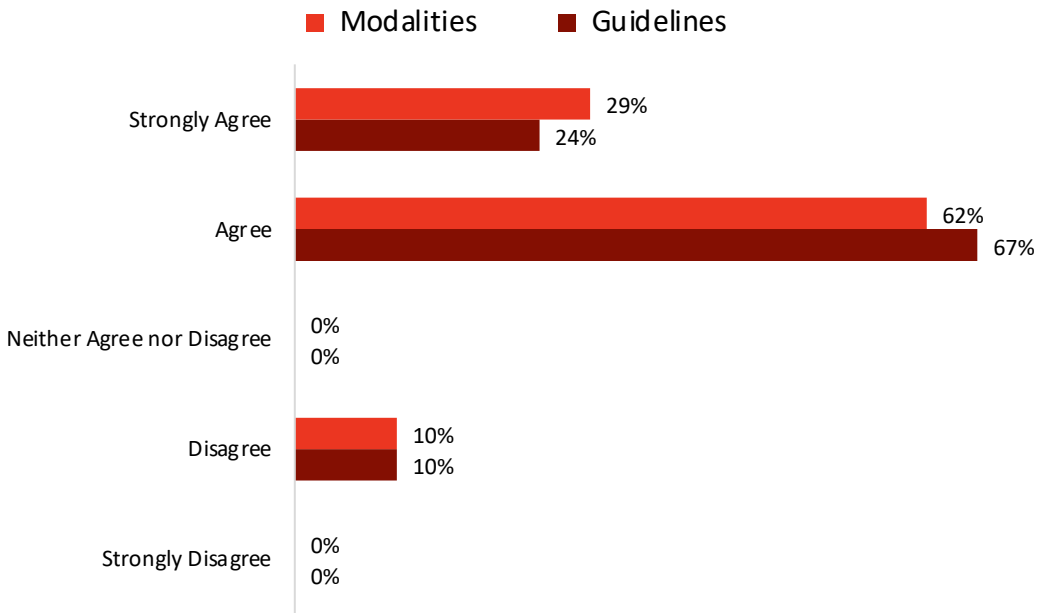


50% felt that they were familiar with **biomarker testing guidelines** (n=20/40)

56% felt that they were familiar with the current available **biomarker testing modalities** (n=22/39)

However, only **38% were confident in their ability to determine patient's eligibility** for lung cancer biomarker testing (n=14/37)

POST-ECHO



90% felt that they were familiar with **biomarker testing guidelines** (n=19/21)

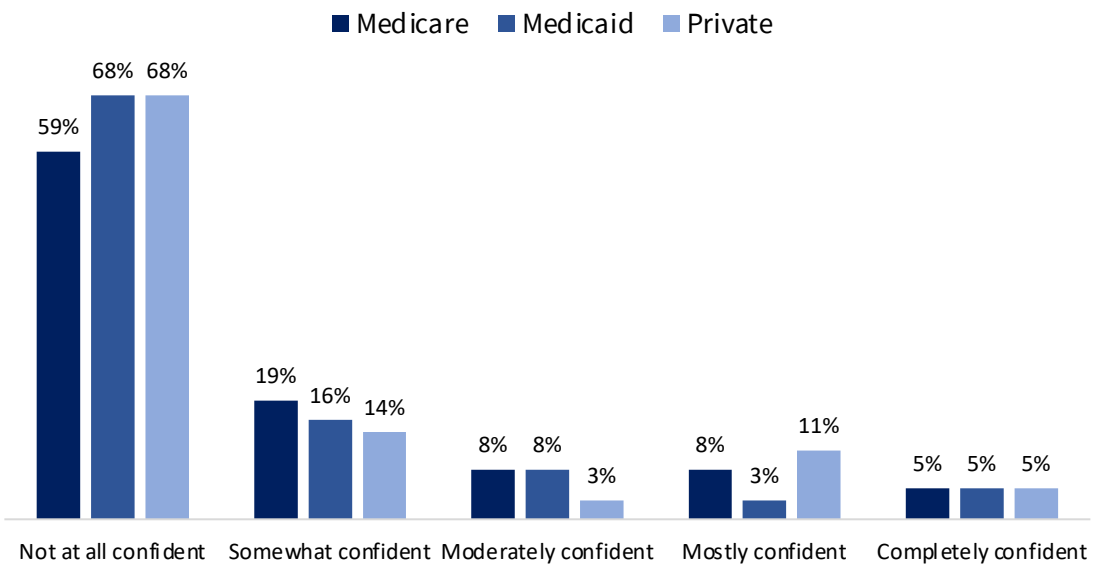
90% felt that they were familiar with the current available **biomarker testing modalities** (n=19/21)

Six months after the ECHO sessions, **57% were confident in their ability to determine patient's eligibility** for lung cancer biomarker testing (n=12/21)

INSURANCE BARRIERS TO LUNG CANCER BIOMARKER TESTING

"I am confident that biomarker testing (multi-gene panels) will always be covered by Medicare/Medicaid/Private Plans"

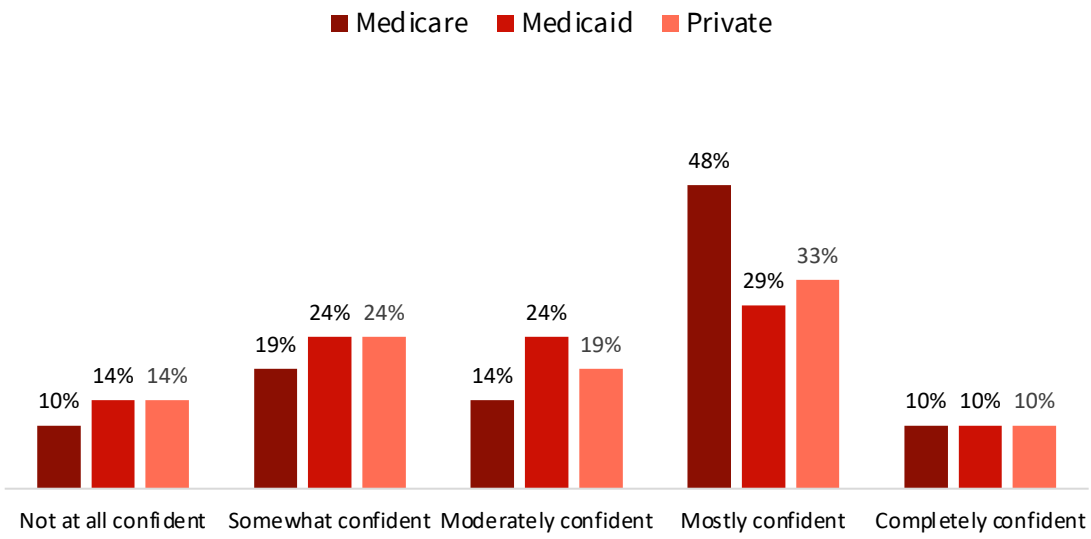
PRE-ECHO



A majority of the pre-ECHO group were **not confident** that biomarker testing will be covered by any form of insurance.

N=37: Medicare: n=22, Medicaid: n=25, Private: n=25

POST-ECHO



A majority of those in the post-survey group, were at least **somewhat confident** that biomarker testing for lung cancer will be covered by some form of insurance, suggesting a need for more attention in this area.

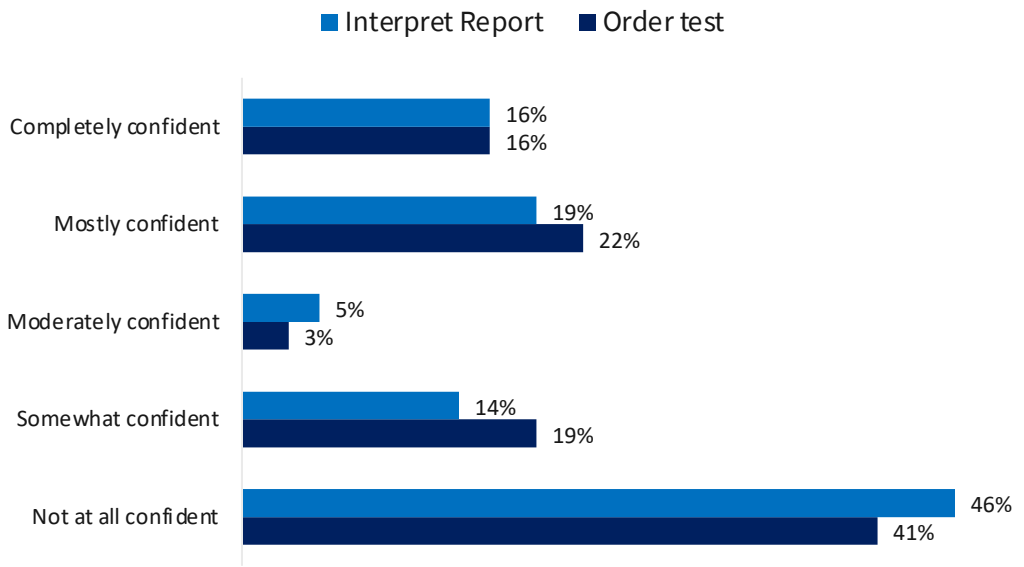
N=21: Medicare: n=19, Medicaid: n=18, Private: n=18

Insight: Those who were completely confident in both the pre-survey group and the post-survey group were the general hematologists/oncologists.

ORDERING TESTS & INTERPRETING NGS REPORTS

"I feel confident in my ability to order the proper lung biomarker lab/test & interpret the current Next-Generation Sequencing (NGS) reports"

PRE-ECHO

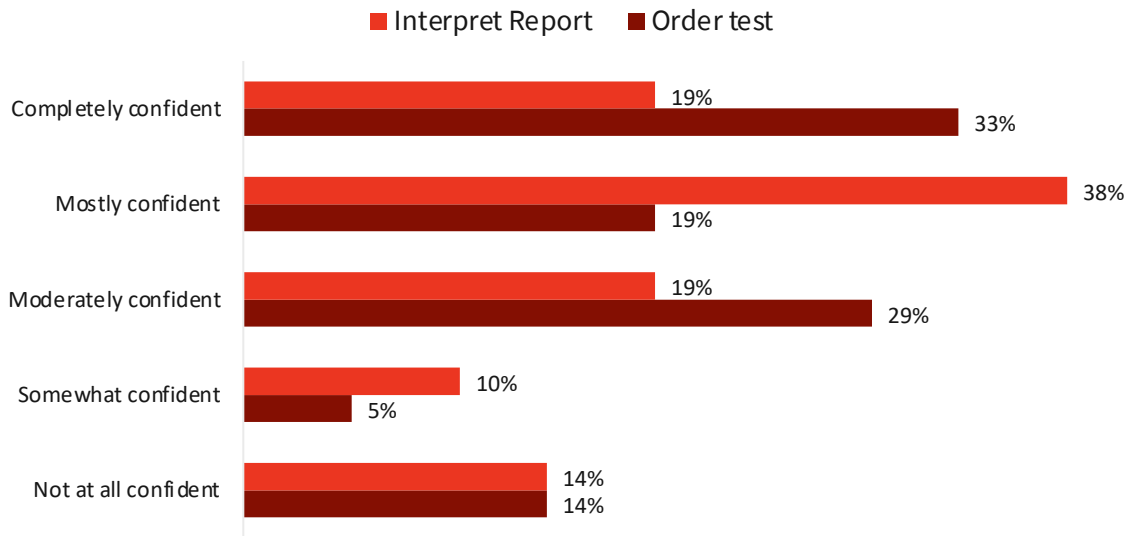


40% were **NOT confident** in their ability to order the proper biomarker test/lab (n=15).

46% were **NOT confident** in their ability to interpret the current NGS reports (n=17).

(N=37)

POST-ECHO



52% were **COMPLETELY/MOSTLY confident** in their ability to order the proper biomarker test/lab (n=11).

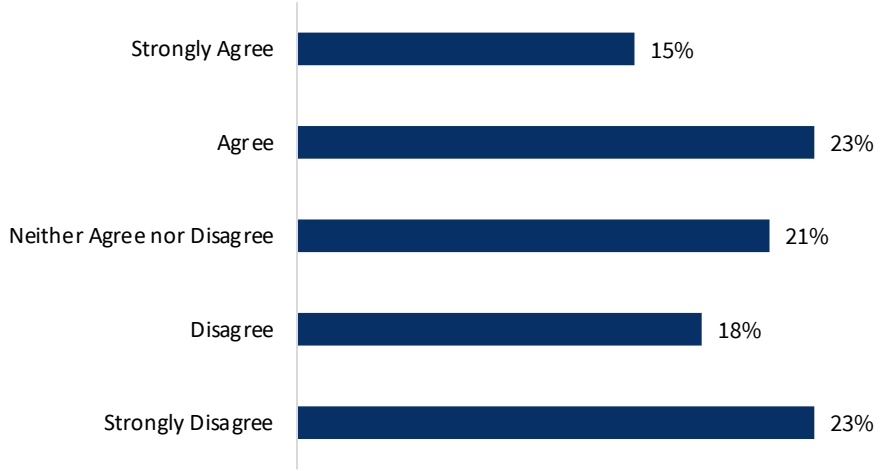
57% were **COMPLETELY/MOSTLY confident** in their ability to interpret current NGS report (n=12).

(N=37)

FDA Treatments OR Clinical Trials if No-FDA Treatment Exist

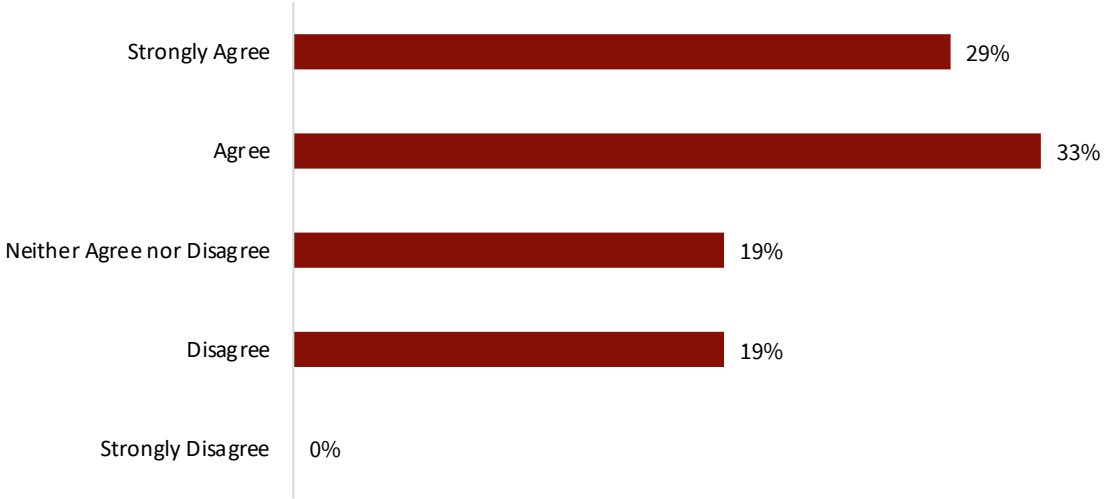
"I am very familiar with the current FDA-approved treatments (or clinical trials if no FDA-approved treatments exists) for lung cancer biomarker testing"

PRE-ECHO



38% strongly agree/agree they were familiar with FDA-approved treatment (or cancer clinical trials if no FDA-approved treatment exist) for lung cancer biomarker testing.

POST-ECHO



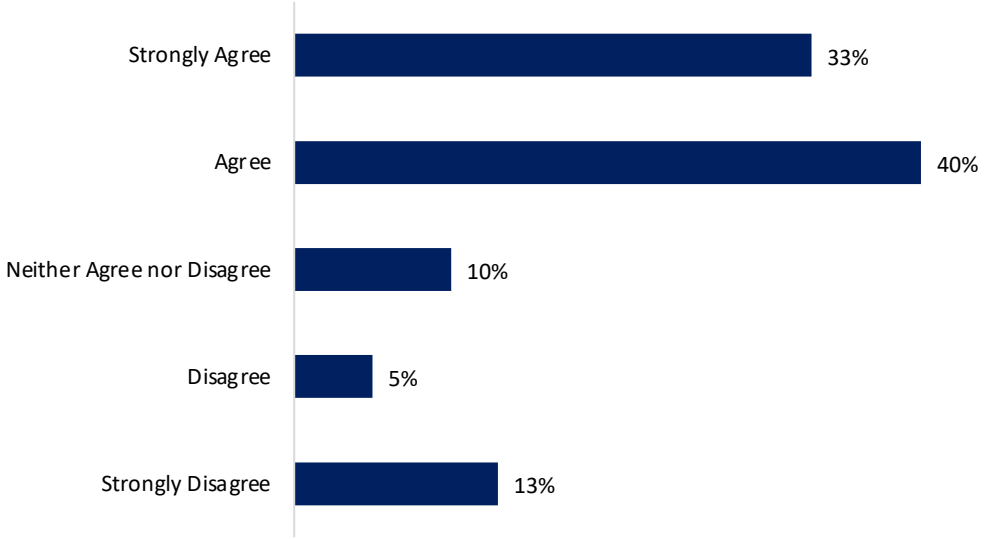
62% strongly agree/agree they were familiar with FDA-approved treatment (or cancer clinical trials if no FDA-approved treatment exist) for lung cancer biomarker testing.

Insight:
Anecdotally, a review of responses to this question in the pre-survey group to post-survey group, show that general hematologists/oncologists were the most familiar with FDA-approved treatments (or clinical trials if no FDA-approved treatments exist), followed by administrators. However, professions such as nurses, nurse navigators, and pathologists who were uncertain or unfamiliar in the pre-survey, responded with more familiarity in the post-echo survey.

Multidisciplinary Teams

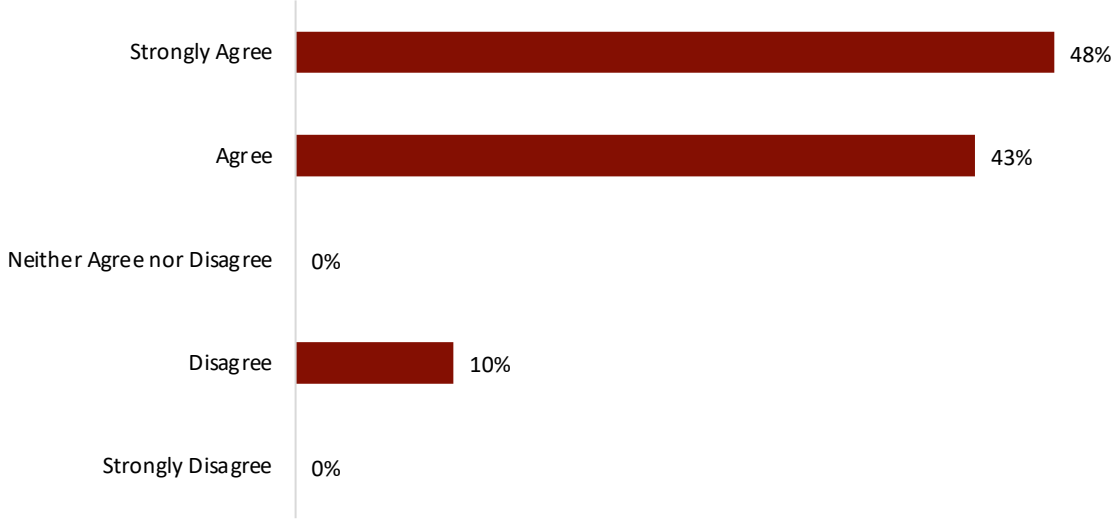
"I understand how the multidisciplinary care team can function to achieve successful biomarker testing"

PRE-ECHO



73% strongly agree/agree that they understand how multidisciplinary care teams can function to achieve successful biomarker testing.

POST-ECHO



90% strongly agree/agree that they understand how multidisciplinary care teams can function to achieve successful biomarker testing.

Persistent Barriers

Pre-survey:
TOP 3 REASONS WHY BIOMARKER TEST WAS NOT ORDERED

Inadequate tumor specimen

57%

23 respondents ranked this one of their top 3 reasons.

Lack of Insurance coverage for testing

50%

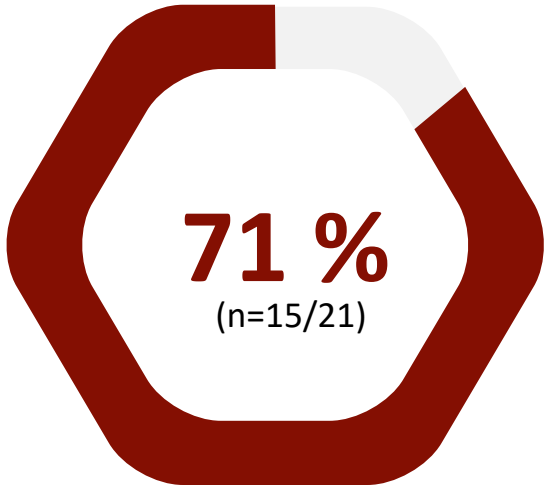
20 respondents ranked this one of their top 3 reasons.

Patient desire for immediate start of treatment

43%

17 ranked this as one of their top 3 reasons

Post-survey:
AS A RESULT OF PARTICIPATING IN THE ECHO SERIES



felt that the ECHO **improved their ability to address common barriers** to lung cancer biomarker testing within their system/practice.

ACTIVATION OF LEARNING

INSTITUTIONAL POLICY/PROCESS
PRE-ECHO Respondents

65%

Work in institutions that already conduct lung cancer biomarker testing (n=26/40)

29%

Work in institutions that can track and measure patients who received a biomarker test (n=10/35)

11%

Worked in systems that have formalized lung biomarker testing policy (n=4/35)

INSTITUTIONAL COMMITMENT TO BIOMARKER TESTING
6 MONTHS POST ECHO

88%

Of respondent's institutions are working to increase biomarker testing rates (n=21)

29%

Indicated their institution was not implementing new strategies but already had **existing strategies** in place (n=7)

58%

Indicated their practice has implemented **new strategies** to increase biomarker testing (n=14)

29%

Indicated they were **able to evaluate** testing rates AND saw an **increase** in biomarker testing rates (n=7)

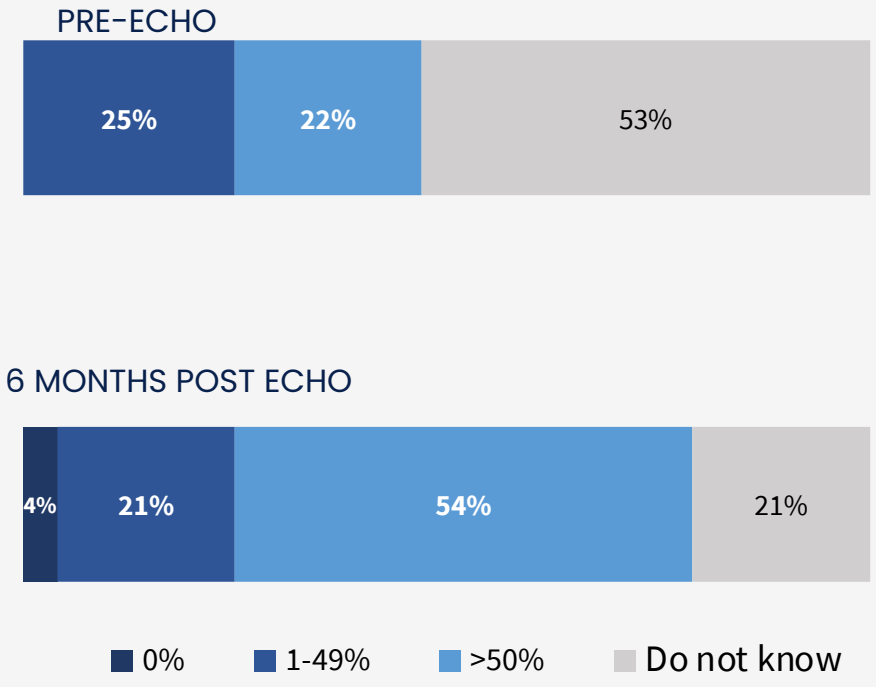
Top Strategies Used

Coordinated across multidisciplinary treatments teams (50%)

Provided clinical education (42%)

NSCLC Patients Receiving Biomarker Testing at Diagnosis

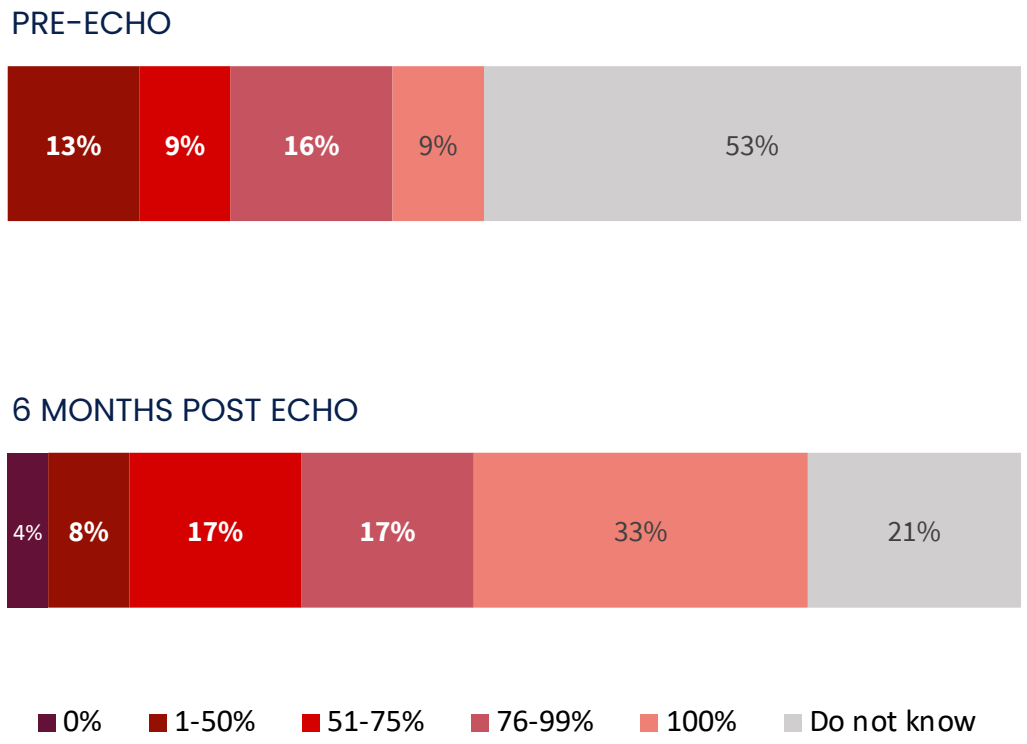
Percentage of SQUAMOUS
NSCLC patients receiving biomarker testing



INSIGHT

In the 6-month follow-up, more than half (n=13) of respondents noted that **over 50% of their squamous** NSCLC patients received biomarker testing, a contrast from less than a quarter (n=7) of pre-ECHO respondents.

Percentage of NON-SQUAMOUS
NSCLC patients receiving biomarker testing



INSIGHT

In the 6-month follow-up, half (n=12) of respondents noted that **over 75% or more** of their non-squamous NSCLC patients received biomarker testing, a contrast from a quarter (n=8) of pre-ECHO respondents.

FREQUENTLY USED METHODS

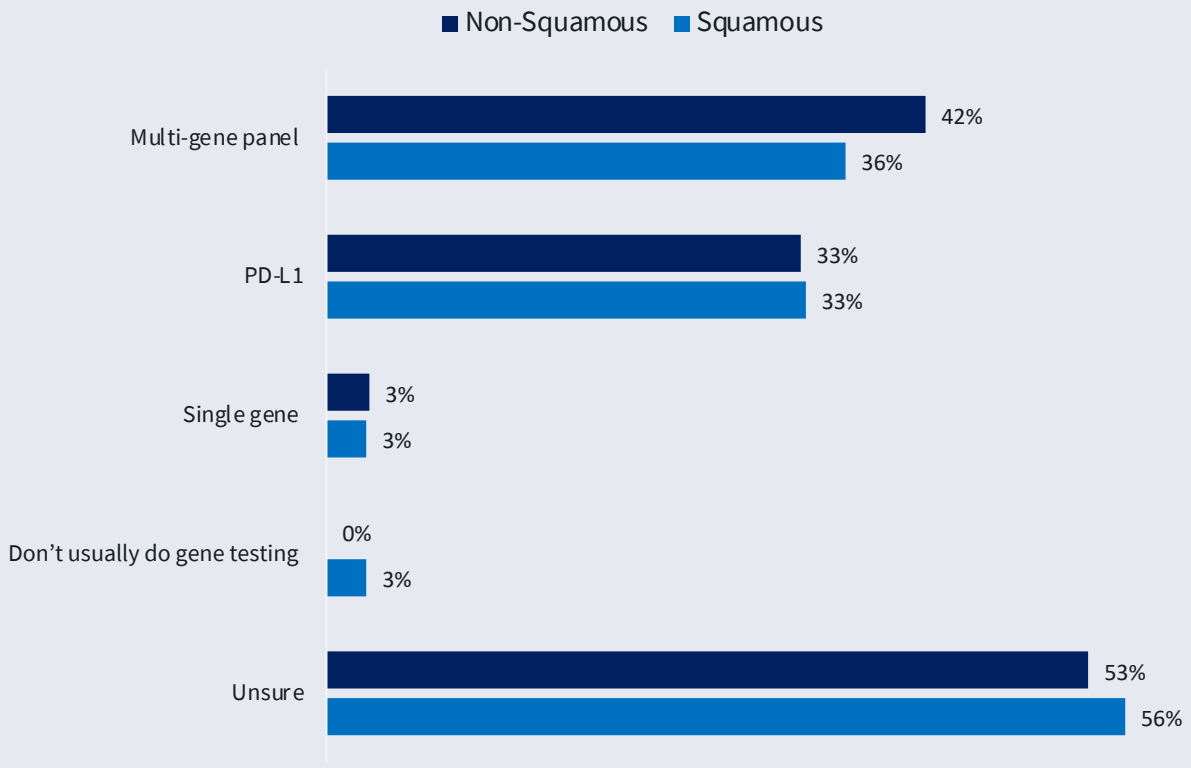
TO OBTAIN A SPECIMEN FOR PATHOLOGIC DIAGNOSIS OF NSCLC (Pre-Survey)

1. **Bronchoscopy endobronchial biopsy & Image-guided percutaneous biopsy** n=25
2. **Surgical Specimen** n=22
3. **Thoracentesis/Pericardiocentesis** n=19
4. **Endobronchial ultrasound-guided transbronchial lymph node aspiration** n=17

FREQUENTLY USED PLATFORMS

FOR LUNG BIOMARKER TESTING (Pre-Survey)

For NSCLC patients, the most frequent platform used for lung biomarker testing

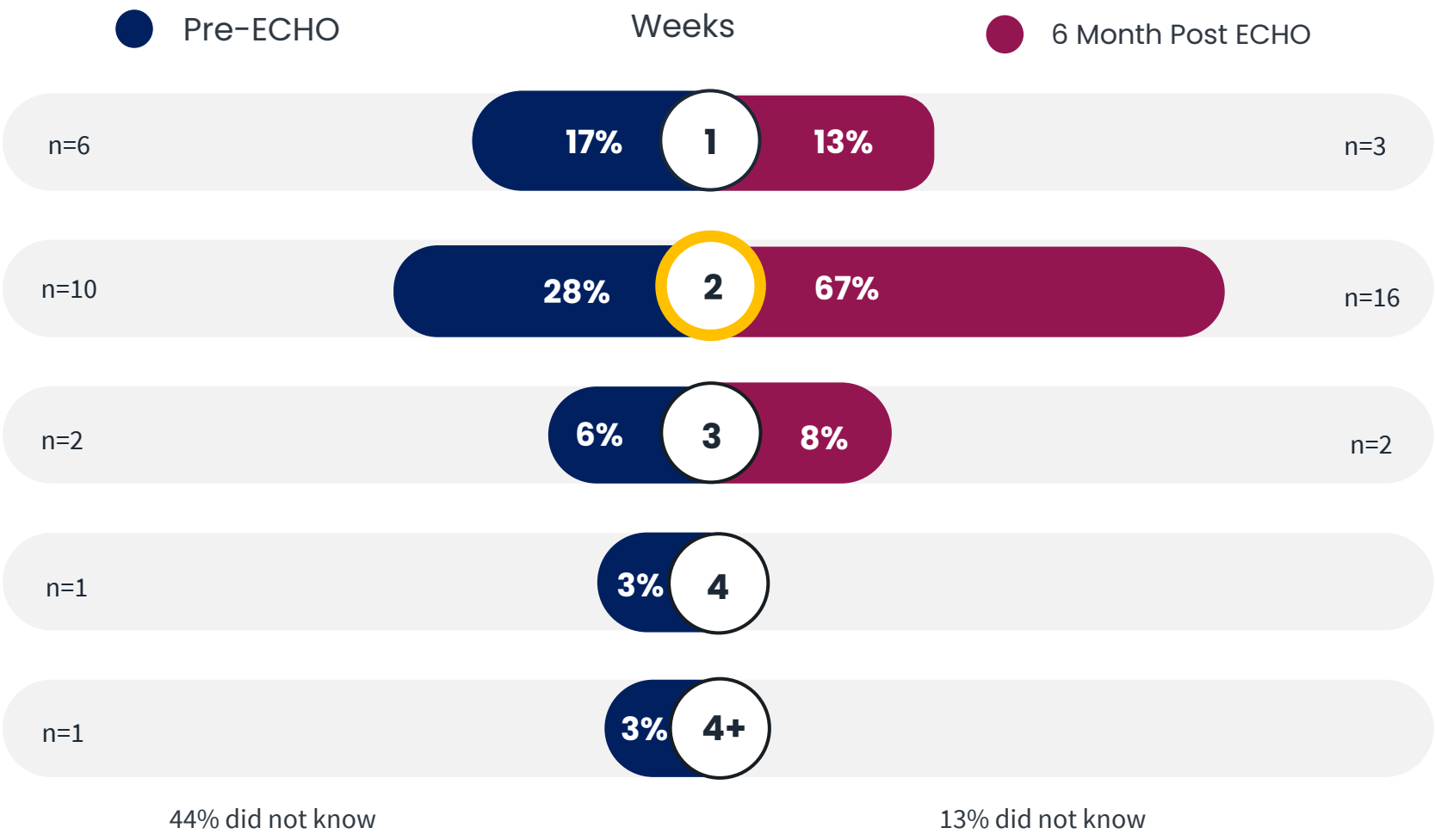


Insights: The mostly frequently cited method of obtaining a specimen for pathologic diagnosis of NSCLC patients is bronchoscopy endobronchial biopsy and/or image-guided percutaneous biopsy (n=25). In addition, a multi-gene panel was cited as the most frequently used platform for both squamous (n=13) and non-squamous (n=15) NSCLC lung biomarker testing.

note: respondents were asked to select all that applied, these percentages are not out of 40

AVERAGE TURNAROUND TIME

FROM ORDERING A BIOMARKER TEST TO THE RECEIPT OF TEST



The clinically acceptable turnaround time is 2 weeks.

In the 6-month post survey group, a majority of the participants met the clinically acceptable turnaround time.

Use of ECHO Resources

100%

Of respondents have used **at least 1 ECHO resource** 6 months since their participation in the ECHO pilot.

TYPES OF ECHO RESOURCES

- **29%** Replayed ECHO recordings (n=7)
- **29%** Utilized materials from the didactic presentation (n=7)
- **21%** Shared recording with colleagues (n=5)
- **17%** Utilized materials from the case presentation (n=4)

78%

Of participants would consider **participating in another** ACS-led ECHO about lung biomarker testing.

Impact of participant's work since participating in ECHO

57%

Of respondents have worked within or outside their institutions to increase rates for biomarker testing.

N=13/23

Their impact:

- "We've come up with a pilot to help increase ... biomarker testing in a timely manner"
- "We have been able to standardize testing & improve turnaround"
- "I have interacted externally to encourage up front testing"
- "Increased further awareness & utilization, further enforced standardization"
- "If we use ... liquid biopsy, it is easy and practical. We know the price up front, very quickly"

Since participating in the ECHO series, respondents have worked to improve biomarker testing rates in a timely and cost-effective way.

Putting ECHO into Action

"I had a meeting with pathology and oncology at our institution and from that meeting **modestly increased the range of biomarker testing up-front at diagnosis**. We have changed vendors and testing methodologies resulting in **more information and lower costs.** We are trying to schedule a meeting to consider developing a "Molecular Tumor Board." - *Pathologist*

"Increased liquid biopsy testing in addition to somatic tissue testing to improve accuracy of results" - *General hematologist/oncologist*

"We are just in the beginning of launching efforts. I think with the **addition of the medical leadership to champion our efforts**, we will be able to make progress and this time next year our service certainly will look different. The medical director arrives in September."- *Administrator*

"Participating in the ECHO project enable[d] me to be a **better advocate for our patients in the early diagnosis of lung cancer**. In my role as LDCT navigator, I have the opportunity to make certain that these patients are getting the appropriate testing."- *Nurse*

"We are making business decisions to **implement NGS testing** in my organization."- *Nurse*

"As a healthcare system leader, hearing the candid opinions of colleagues across the state helped me understand the barriers members of my team at across the healthcare system must be facing. **The solution has to be building robust systems to help people gain access to information when they need it."**– *General Hematologist/Oncologist*

As a result of the participants who have or will be working within or outside their institution to increase biomarker testing rates, the impact thus far includes increasing and improving accuracy of biomarker testing, advocacy for appropriate testing of lung cancer patients, lower cost of testing, the addition of an institutional champion, and a better general understanding of existing barriers to biomarker testing.

STATE MODEL APPROACH

State and Regional Lead Project Experience

Support from ACS-NLCRT: High level of satisfaction

This led to many feeling like their time commitment to this project was reasonable

ACS's support was viewed as indispensable to the project. Many appreciated the clear and quick lines of communication, the ability of ACS to be accommodating and flexible, the ability to anticipate needs , and the high level of organization of ACS staff.

"ACS provided the backbone for organization"
– State Lead

"unbelievable level of, of support and engagement"
- State lead

"it's the best support I've ever gotten"
- Regional Lead

Value of ECHO: Reputation, Visibility, Network

For both ACS and State Lead Organizations (Hub)

State and Regional Leads felt like it:

1. **Elevated ACS's reputation** as a "valuable member," and a "strong partner" by showing "a whole new side of American Cancer Society that they haven't seen before"

2. Increased **Hub's visibility** as support systems and experts.

3. **Strengthened and expanded networks,** "...the biomarker project ECHO has been a nidus to develop a network of engaged individuals and programs, interested in lung cancer." *-State Lead*

Challenges & Takeaways

While most of the challenges noted were around recruitment and in-session engagement, State Leads felt that the pilot helped:

1. **Increase awareness** of biomarker testing
2. **Fill a knowledge gap** by offering current, interesting, and important information
3. **Fostered collaboration and networking** within and across states

Overall, most felt it was **time well-spent**

An ACS regional lead shared:
"...if we can give our providers the resources, they need to provide higher quality cancer care to patients in [our state], I'll do whatever it takes to, to get them those resources. So it's absolutely worth it."

- Regional Lead

ECHO Session Satisfaction

FACULTY

Overall satisfaction with ECHO series **100%**

Agree on importance of topics covered to build a quality lung cancer biomarker testing program **69%**

Would consider participating as a faculty in another ACS-led ECHO **85%**

N=13

SPOKES

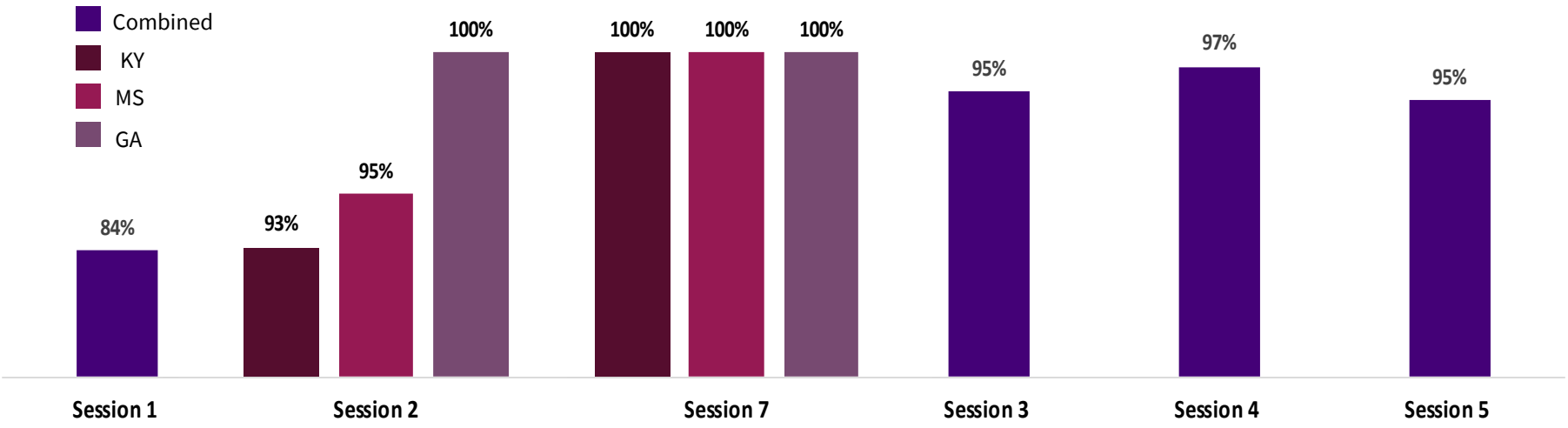
Overall satisfaction with ECHO series **88%**

Agree on importance of topics covered to understanding biomarker testing **95%**

Would recommend future ACS-led ECHO **90%**

N=21

Percentage of Spokes Rating The Overall Sessions as Excellent or Very Good



Majority of participants rating the overall sessions as "excellent/very good."

The highest combined session was Session 4: Choice of Panel, Interpretation of Results, and Next steps. The highest state-based session was Session 7: state-elected topics.

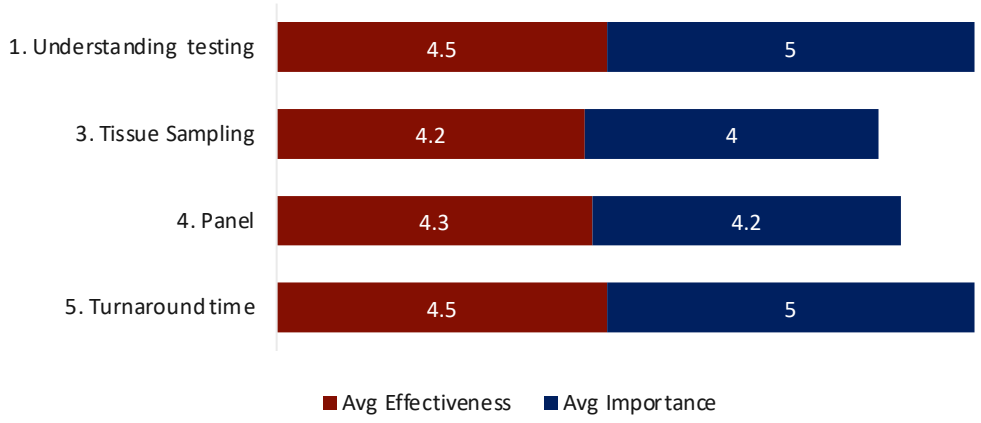
Session 6 results were not captured due to technical difficulties

Benefits, Effectiveness, and Importance of ECHO Sessions

Combined Session

- ✓ Higher quality speakers
- ✓ Opportunity for across state networking
- ✓ Logistically easier and addressed universal barriers

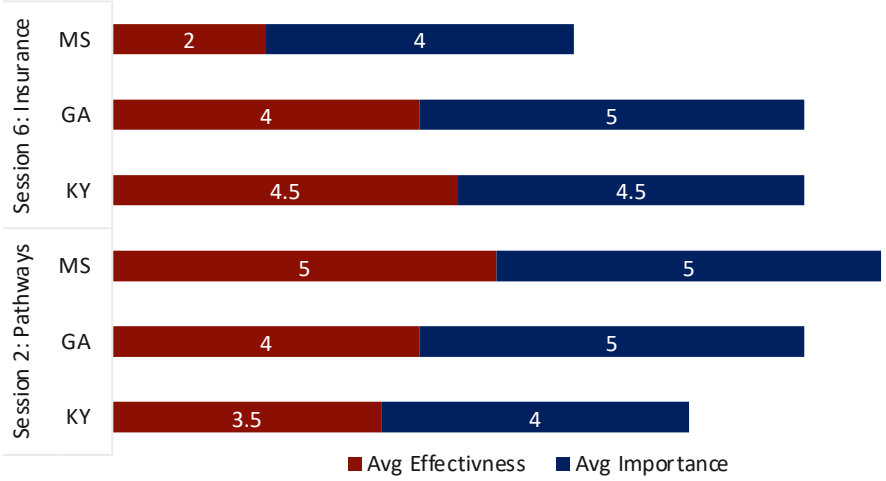
Effectiveness and Importance Rating (out of 5) of **Combined** Sessions



State Session

- ✓ Higher levels of engagement
- ✓ Tailored to state-specific challenges & solutions
- ✓ Networking within-state and with local talent

Effectiveness and Importance Rating (out of 5) on **State-based sessions**



INSIGHT: Sessions 1 (combined), 2 (Mississippi), and 5 (combined) had the highest ratings for effectiveness and importance. State and Regional Leads shared that their ratings largely depended on whether the sessions had the right audience in attendance and the right speakers

"The mix of state-specific and group sessions made the agenda interesting and engaging." – State Lead

Recommendations

From Faculty, Regional Leads, State Leads, and Spokes

Post 3-State Pilot

Continue education for ACS regional staff and spoke sites.

Dissemination of evaluation results from pilot.

Maintain relationships established or strengthened during pilot.

Program Expansion

Compressed timeline: while there was no consensus on how long the programs should be, recommendations ranged from 3-6 months.

Recruitment & participation considerations:

- **Faculty:** ensure there is buy-in, commitment, and adequate time given.
- **Champions**: strong physician leadership and participation in ECHO sessions.
- **ACS involvement**: in recruitment, especially in states where State Leads have not been identified.

Incentives

The grant allocation was supposed used by hubs as incentives, salary support, and program planning. One State Lead recommended changing the grant into an **education agreement** to avoid indirect expenses. A Spoke also recommended offering **CME, CEU credits**. Another recommended offering **publicity** or recognition for cancer programs to participate.

Session Planning

Continue **ACS's role as facilitators** during sessions and in creating a **run-of-show** agenda during session planning.

For state-based sessions, being more intentional about **matching speaker expertise** to session topics and to state needs.

Brainstorm strategies to **increase online engagement.**

CONCLUSION

Conclusion

Summary of Findings

Knowledge & Confidence

Many felt that the ECHO series improved their ability to address the common barriers related to biomarker testing for lung cancer. This sentiment aligns with respondent's knowledge and confidence scores in which the post-ECHO group had a much higher knowledge and confidence score than the pre-ECHO group.

Activation of Learning

6 months following the ECHO series, Spokes indicated that they, or their health systems, are making strides to improving and increasing biomarker testing for lung cancer with all Spokes having used at least 1 ECHO resource since the completion of the ECHO series.

State Model Approach

Overall, a majority of Faculty and Spokes were satisfied with the ECHO series and would consider participating again. In addition, Regional and State Leads deemed all sessions as important and most sessions as effective. The state-based approach was beneficial in addressing state-specific challenges and providing networking opportunities.

Summary of Recommendations

Strategic Partnerships

- State Leads with pre-existing network for easier recruitment.
- Champion at each Spoke Site to encourage participation and engagement.

Session Improvement:

- Session topics that need to be strengthened are insurance coverage, ordering labs & tests, interpreting NGS reports, and FDA approved treatments (or clinical trials). *These had the lowest confidence and knowledge scores*.
- Improve effectiveness of state-based sessions by ensuring the right speakers and the right participants are at the table.

Incentives and engagement

- Alternatives to a "grant": educational agreements or CME/CEU credits. *A State Lead mentioned that this could help avoid indirect expenses.*
- Offering publicity for participants.
- Offer interactive opportunities to increase engagement during sessions.
- Incentives to increase response rates for evaluation surveys.

Things to continue:

The level of involvement from ACS in recruitment, planning, and facilitating as well as continuing the "run-of-show." Many also indicated that the topics for state and combined sessions should stay as-is.

FUTURE DIRECTION

The next phase is to expand the lung cancer biomarker testing ECHO to nine states in 2022-2023, with the aim of eventually expanding to all 50 states. An ongoing evaluation process will guide the expansion.

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AMGEN

Bristol Myers Squibb™

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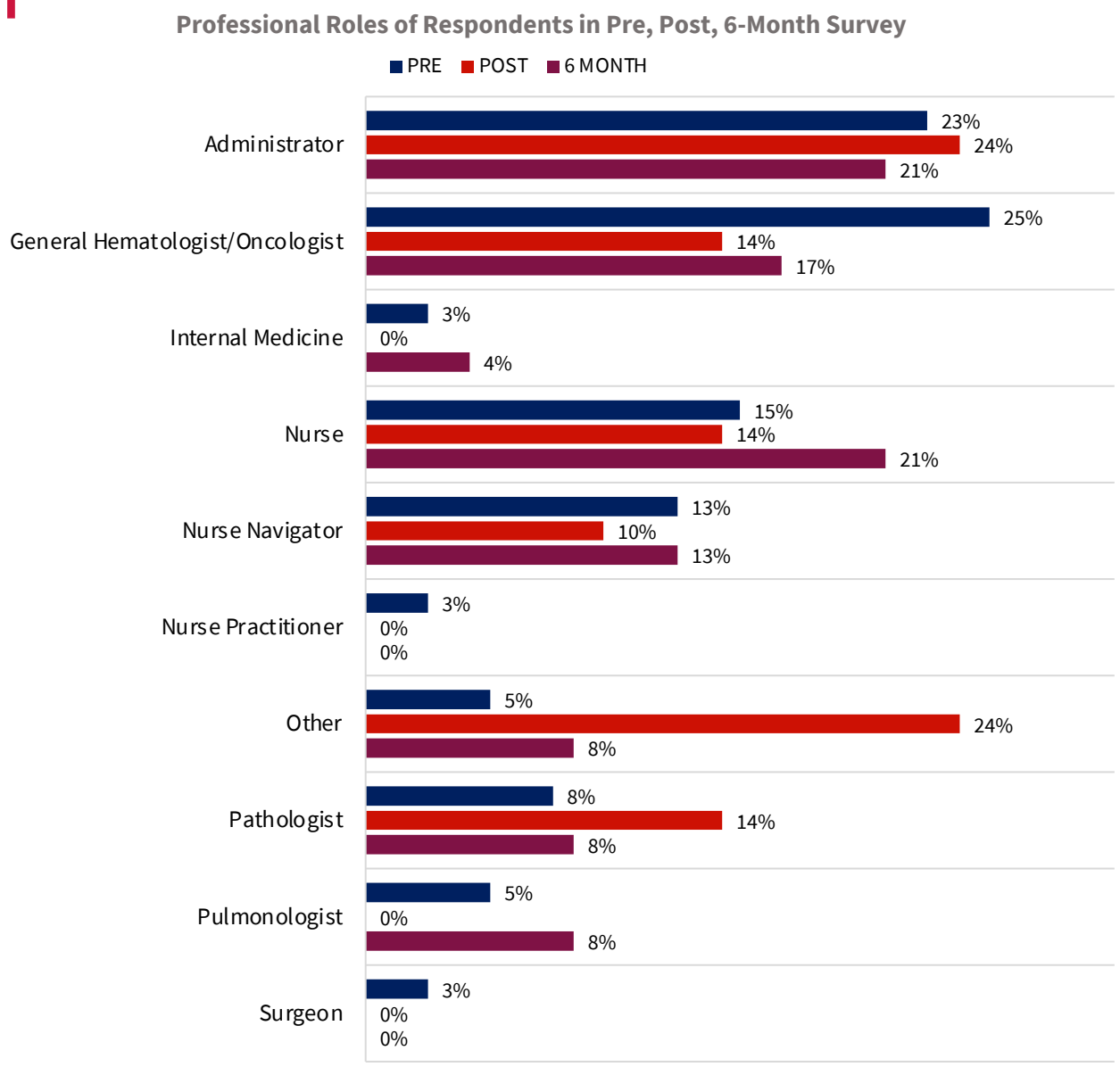
APPENDICES

EVALUATION METHODS

The evaluation employs a mixed methods approach to assess both program process and outcomes. The table below details the data sources for each major topic of the evaluation. Please note the aggregate results are compared across timepoints, as matched analysis was not possible due to anonymity of selected data sources.

Data Sources (Respondent)	Total Respondents	Awareness, Knowledge, Confidence, Self-efficacy	Lung Cancer Biomarkers Testing - Practices, Policies, Barriers, Challenges	ECHO Satisfaction	Lung Cancer Biomarker Testing - Connections / Networking	Program Process Evaluation (Feedback, Recommendations, etc.)	Activation of Learnings (Behavior Change – Practices, Policies)	State-Model Approach - Process	State-Model Approach – Outcomes (Collaboration / Confidence fostered)
Pre-ECHO Survey (Spoke & State lead)	40	X	X	X	X				
Post-ECHO Survey (Spoke & State lead)	21	X		X	X	X			
Six-month Follow-up Survey (Spoke)	24		X				X		
Post-Session Polls (all session attendees – faculty, spoke, ACS staff)	Varies by session			X		X			
Narrative Report (State Lead)	3					X			X
Faculty Experience Survey (faculty)	13			X		X			
State Lead Key Informant Interview (State Lead)	4					X		X	X
ACS Regional Cancer Control Staff Key Informant Interview (ACS staff)	4					X		X	X

Overview of Participants in Pre, Post, and 6-Month Surveys



PRE-SURVEY RESPONDENTS: N= 40
28 clinicians, 12 non-clinicians

"Others": *CLP, Cancer Registrar*

POST- SURVEY RESPONDENTS: N= 21
11 clinicians, 10 non-clinicians

"Others": *COC Cancer Liaison Physician (CLP), Cancer Registrar, Clinical Researcher, Public Health Educator, researcher*

6-MONTH POST SURVEY RESPONDENTS: N= 24
16 clinicians, 8 non-clinicians

"Others": *Lung Oncology Program Coordinator and Tumor Registry*